DRAFT

ENVIRONMENTAL IMPACT STATEMENT

for the

VIRGINIA MASON MEDICAL CENTER

MAJOR INSTITUTION MASTER PLAN

July 19 2012

prepared by the

City of Seattle, Department of Planning and Development
Seattle, Washington

DRAFT

ENVIRONMENTAL IMPACT STATEMENT

for the

VIRGINIA MASON MEDICAL CENTER

MAJOR INSTITUTION MASTER PLAN

Master Use Permit #3011669

This Draft Environmental Impact Statement (Draft EIS) for the Virginia Mason Medical Center *Major Institution Master Plan (MIMP)* has been prepared in compliance with the State Environmental Policy Act (SEPA) of 1971 (Chapter 43.21C, Revised Code of Washington); the SEPA Rules, effective April 4, 1984, as amended (Chapter 197-11, Washington Administrative Code); and rules adopted by the City of Seattle implementing SEPA – Seattle's Environmental Policies and Procedures Code (Chapter 25.05, Seattle Municipal Code). Preparation of this EIS is the responsibility of the Seattle's Department of Planning and Development (DPD), which has determined that this document has been prepared in a responsible manner using appropriate methodology and DPD has directed the areas of research and analysis that were undertaken in preparation of this EIS. This document is not an authorization for an action, nor does it constitute a decision or a recommendation for an action; in its final form – as a Final EIS – it will accompany the *Proposed Action* and will be considered in making final decisions concerning the *MIMP* and individual projects identified in the *MIMP*.

Date of Draft EIS Issuance..... **July 19, 2012**

Date of Draft EIS Public Meeting..... **August 22, 2012**
(Refer to pg. vii/viii of this Draft EIS for time, location and intended meeting format)

Date Comments are Due on the Draft EIS.....**September 4, 2012**

City of Seattle

Department of Planning and Development
Diane M. Sugimura, Director

July 19, 2012

Dear Affected Agencies, Organizations and Interested Parties:

Enclosed is the Draft Environmental Impact Statement (Draft EIS) for **Virginia Mason Medical Center**'s updated *Major Institution Master Plan*.

Virginia Mason Medical Center (VMMC) proposes to adopt and implement a new *Major Institution Master Plan* (*MIMP*). The proposed *Draft MIMP* – a document separate from this Draft EIS – identifies the goals and objectives for development of the VMMC campus; a conceptual site plan of the campus for the ***Proposed Action***, depicting the approximate location and size of planned[1] and potential[2] development (buildings, landscaped open spaces, and vehicular circulation/parking) that is anticipated to occur as part of the new *MIMP*. The *Draft MIMP* also addresses potential expansion of the existing major institution boundary, proposed changes with regard to development standards, and a new Transportation Management Plan. This Draft EIS analyzes probable adverse environmental impacts associated with the proposed *Draft MIMP*.

The public comment period associated with this Draft EIS is:

July 19, 2012 through September 4, 2012.

In order to provide an opportunity to learn more about the project and to present comments concerning this Draft EIS – in addition to submittal of written comments – a public hearingis scheduled for 5**:00 PM on August 22, 2012**. The hearing will be held at the following location:

Virginia Mason Medical Center
925 Seneca Street (Hospital Central Pavilion)
Seattle, WA
Correa Conference Rooms A and B
(The Hospital Central Pavilion is located at the south side of Seneca Street at the intersection with Terry Avenue. The conference room is located on Level 4 and accessed through the cafeteria.)

See pgs. *vii/viii* of this Draft EIS for additional details concerning the public meeting.

1 Planned development is defined by the Seattle Land Use Code as "development which the Major Institution has definite plans to construct" (Seattle Municipal Code [SMC] 23.69.030 D.).

2 Potential development is defined by the Seattle Land Use Code as "development or uses for which the Major Institution's plans are less definite" (SMC 23.69.030 D.).

Following the Draft EIS comment period, DPD will prepare a Final EIS that addresses comments submitted during the Draft EIS public comment period and at the public meeting. This Draft EIS, together with the *Draft MIMP*, have been distributed to agencies, organizations and individuals noted on the *Distribution List* of this Draft EIS (**Appendix A**). The Draft EIS and the *Draft MIMP* can be reviewed at the following public libraries and websites:

- **Seattle Public Library – Central Library** (1000 Fourth Ave.);
- **Seattle Public Library – Douglas Truth Branch** (2300 E. Yesler Way);
- **Seattle Public Library – International District/Chinatown Branch** (713 Eighth Ave. S.);
- **http://www.seattle.gov/neighborhoods/mi/miac/vm/**
- **http://www.virginiamason.org/MIMP**

A limited number of complimentary copies of this Draft EIS are available – while the supply lasts -- from the Seattle Department of Planning and Development Public Resource Center, which is located in Seattle Municipal Tower (700 Fifth Ave., Suite 2000.) in Downtown Seattle. Additional copies may be purchased at the Public Resource Center for the cost of reproduction.

Copies of the *Draft MIMP* are available at Virginia Mason Medical Center's master plan website (**https://www.virginiamason.org/body.cfm?id=6443**) or at the Design, Construction and Properties Management Office, Blackford Hall, Room 309, 1202 Terry Avenue for the cost of reproduction.

Thank you for your interest in Virginia Mason Medical Center's *Major Institution Master Plan*.

Sincerely,

Stephanie Haines

Stephanie Haines
SENIOR LAND USE PLANNER
SEATTLE DEPARTMENT OF PLANNING AND DEVELOPMENT

--PREFACE--

The purpose of this Draft Environmental Impact Statement (Draft EIS) is to:

- identify and evaluate probable adverse environmental impacts that could result from development associated with the *Proposed Action,* another development alternative, and the *No Action Alternative;* and
- identify measures to mitigate those impacts.

The range of environmental impacts that are analyzed in this Draft EIS include: direct, indirect, cumulative and construction-related impacts. As such, this Draft EIS is a disclosure document. The *Draft Major Institution Master Plan* (*MIMP*) -- prepared by Virginia Mason Medical Center -- and this Draft EIS -- prepared by the Seattle Department of Planning and Development (DPD) -- should be reviewed together for a comprehensive understanding of all aspects of the *Proposed Action* and possible environmental impacts.

This Draft EIS does not authorize a specific action or alternative nor does it recommend for or against a particular course of action; it is one of several key documents that will be considered in the decision-making process for this project. A list of expected licenses, permits and approvals is contained in the *Fact Sheet* to this Draft EIS (page *v/vi).* The Final Environmental Impact Statement (Final EIS) associated with this *MIMP*, which is expected to be issued later this year, will accompany the applications specifically associated with the permit processes and will be considered as the final environmental (SEPA) document relative to those permit applications.

The environmental elements that are analyzed in this Draft EIS were determined as a result of the formal, public EIS scoping process that occurred January 6, 2011 through February 3, 2011. The SEPA Determination of Significance/Scoping Notice was mailed to agencies and organizations and a Scoping Meeting/Open House was held on January 26, 2011. During the EIS Scoping period, DPD received written comments, as well as oral comments, regarding the scope of the Draft EIS. With input from Virginia Mason Medical Center's Citizen's Advisory Committee (an advisory committee for the purpose of developing this *MIMP)*, DPD determined the issues and alternatives to be analyzed in this Draft EIS. Eleven broad areas of environmental review are evaluated, including: **air quality, energy/greenhouse gas emissions**, **noise**, **land use**, **aesthetics**, **light/glare/shadows**, **housing**, **historic resources**, **transportation/circulation**, **public services** and **construction-related** impacts.

The Table of Contents for this Draft EIS begins on pg. *ix* of the *Fact Sheet.* In general, the Draft EIS is organized into four major sections:

- ***Fact Sheet*** (immediately following this *Preface*) -- provides an overview of the proposed project, its location, approvals needed, contact information, and the Table of Contents);
- ***Section I*** (starting on page S-1) -- summarizes the *Proposed Action* and the alternatives, and includes a comparative matrix describing adverse environmental impacts, mitigation measures, and potential significant adverse environmental impacts associated with the ***Proposed Action*** and the alternatives;
- ***Section II*** (beginning on page 2-1) -- provides a detailed description of the ***Proposed Action*** and the alternatives; and
- ***Section III*** (page 3-1) -- is an analysis of probable adverse environmental impacts that could result from implementation of the ***Proposed Action*** or the alternatives. This section also identifies possible mitigation measures and potential significant adverse environmental impacts.

FACT SHEET

Name of Proposal	Virginia Mason Medical Center ***Major Institution Master Plan***
Proponent	Virginia Mason Medical Center Design, Construction and Properties Management Office Blackford Hall, Room 309 1202 Terry Avenue P.O. Box 900 Seattle, WA 98111-0900
Location	The campus of Virginia Mason Medical Center is located within Seattle's First Hill/Capitol Hill Urban Center and is generally bounded by University St. on the north,[3] Boren Ave. on the east, Spring St. on the south, and the mid-block alley between 8th and 9th Avenues on the west.
Proposed Action	The ***Proposed Action***[4] involves adoption and implementation of a new *Major Institution Master Plan* (*MIMP*) for Virginia Mason Medical Center. The proposed *MIMP* is described in detail in Virginia Mason's *Draft Major Institution Master Plan* (dtd. July 19, 2012) and is also described in this Draft EIS. Key elements of the proposed *MIMP* that are considered in this Draft EIS include the following: • A total area of approximately 3 million sq. ft. of development; • A net increase of approximately 1.7 million sq. ft. of planned[5] and potential[6] building spaces;[7] • Floor Area Ratio (FAR)[8] of approximately 8.1; • Expansion of the existing Major Institution Overlay (MIO) boundaries and MIO 240 designation to include the block bordered by Boren Avenue, Madison Street, Terry Avenue, and Spring Street referred to as the "1000 Madison Block;" • Retention of the Benaroya Research Institute, Lindeman

3 A portion of the existing north boundary of the campus extends north of University St.

4 previously referred to as *Alternative 6b*

5 Planned development is defined by the Seattle Land Use Code as "development which the Major Institution has definite plans to construct." (SMC 23.69.030 D.)

6 Potential development is defined by the Seattle Land Use Code as "development or uses for which the Major Institution's plans are less definite" (SMC 23.69.030 D.). For VMMC, these are projects that are expected to be developed within the long-range -- by approximately 2040.

7 Building square footages exclude below-grade development, including parking that is located below-grade.

8 Floor Area Ratio (FAR) is a ratio of the relationship between the amount of gross floor area or chargeable floor area permitted in one or more structures and the area of the lot on which the structure(s) are located (SMC 23.84A.012).

Pavilion, Floyd & Delores Jones Pavilion, and the Baroness Hotel (a total of approximately 465,000 sq. ft.);

- Demolition of approximately 860,000 sq. ft. of existing buildings to allow for redevelopment of the following campus locations:
  - University/Terry Parking Lot;
  - Cassel Crag, Blackford Hall and the MRI Building;
  - Health Resources Building consistent with the City - Horizon House – VMMC Agreement (Ord. No. 117106);
  - East, Center and West sections of Virginia Mason's Central Hospital, including the site of the Inn at Virginia Mason and the Buck Pavilion; and the
  - 9th Ave. parking garage;
- Provide approximately 6,500 sq. ft. of usable open space on the VMMC campus;
- Redevelopment of the remainder of the 1000 Madison Block for major medical and retail use;
- Vacation of the alley on the 1000 Madison Block;
- Retention of the existing skybridge over Seneca Street and provision of up to six additional skybridges and eight tunnels crossing over eight public rights-of-way;
- Modification of certain development standards, as authorized by the MIMP approval process;
- Provision of on-campus structured parking;
- Adoption of a new Transportation Management Plan; and
- Correction of a mapping error regarding the existing MIO boundary on the University/Terry Parking Lot. [9]

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EIS Alternatives

In addition to the ***Proposed Action***, a development alternative and the ***No Action Alternative*** are evaluated in this Draft EIS. These two alternatives are included to meet SEPA and/or City requirements. Key elements of each alternative include the following:

Alternative 5a -- No Boundary Expansion – The primary difference between ***Alternative 5a – No Boundary Expansion*** and the ***Proposed Action*** is that the campus would not be expanded to include the 1000 Madison Block. With the exception of the following elements, the key elements of ***Alternative 5a – No Boundary Expansion*** would be the same as those described above for the ***Proposed Action***. In comparison to the ***Proposed Action***, ***Alternative 5a – No Boundary Expansion*** would include:

- No expansion of the existing MIO boundaries with the exception of the correction of a mapping error

[9] The map change is to accurately reflect VMMC ownership of the University/Terry Parking Lot (located in the northeast portion of campus) by moving the boundary 20 feet to the north.

regarding the existing MIO boundary on the University/Terry parking lot;
- No redevelopment of the 1000 Madison Block; existing structures and uses on that block would remain until redeveloped pursuant to the underlying Highrise and Neighborhood Commercial zoning;
- No vacation of the alley on the 1000 Madison Block;
- Height increase to 300 feet for the center hospital block;
- Connect the redeveloped Cassel Crag/Blackford Hall site to the Lindeman Pavilion with a structure over Terry Avenue; Terry Avenue would be maintained as a public street;
- Provide approximately 6,500 sq. ft. of usable open space on the VMMC campus;
- Retention of the existing skybridge over Seneca Street and provision of up to five additional skybridges and seven tunnels crossing over seven public rights-of-way; and
- Modification of certain development standards, as authorized by the MIMP approval process.

No Action Alternative – This alternative would retain the VMMC campus as it currently exists and would include:

- No expansion of the existing MIO boundary;
- No new building construction would occur;
- FAR of approximately 4.0;
- Retention of existing, aging structures;
- Continuation of routine building maintenance and remodeling;
- No additional usable open space provided;
- No modifications to on-site pedestrian and vehicular circulation or parking;
- No vacation of public rights-of-way; and
- Retention of the existing skybridge over Seneca Street; no additional skybridges or tunnels would be provided.

Lead Agency

City of Seattle
Department of Planning and Development

SEPA Responsible Official

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P.O. Box 34019
Seattle, WA 98124-4019

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Final Actions

- **Virginia Mason Medical Center** – Approval of the Final Virginia Mason Medical Center *Major Institution Master Plan*

- **Seattle City Council** – Approval of the Virginia Mason Medical Center *Major Institution Master Plan*

Phased Environmental Review[10]

This EIS has been prepared for Virginia Mason Medical Center's *MIMP*, which is a conceptual planning document. Additional, project-specific environmental review may be necessary when details of planned and/or potential development are determined.

Required Approvals and/or Permits

Preliminary investigation indicates that the following approvals and/or permits may be required for the ***Proposed Action*** -- including agencies with jurisdiction.[11]. Additional permits/approvals may be identified during the review process associated with specific elements of the project.

Virginia Mason Medical Center

- Approval of the *Final MIMP*
- Approval of modifications to the existing Horizon House Agreement as amended in the MIMP.

Horizon House

- Approval of modifications to the existing Horizon House – Virginia Mason Medical Center Agreement as amended in the MIMP.

[10] WAC 197-11-060(5)

[11] An agency with jurisdiction is "an agency with authority to approve, veto, or finance all or part of a nonexempt proposal (or part of a proposal)" (WAC 197-11-714 (3). Typically, this refers to a local, state or federal agency with licensing or permit approval responsibility concerning the proposed project.

Agencies with Jurisdiction

State Agencies

- **State of Washington, Department of Health**
  - Approval of specific, proposed healthcare construction plans

- **State of Washington, Department of Labor & Industries**
  - Elevator Permits for subsequent development

- **State of Washington, Department of Health**
  - Commercial Kitchens

Regional Agencies

- **Puget Sound Clean Air Agency**
  - Asbestos surveys (associated with building renovation/demolition)
  - Demolition Permits

- **Seattle – King County Department of Health**
  - Plumbing Permits

City of Seattle

- **City Council**
  - Adoption/approval of the Virginia Mason Medical Center *MIMP*
  - Approval of a rezone for the proposed MIO Boundary expansion
  - Approval of the proposed alley vacation

- **Department of Planning and Development**
  - Approval and issuance of the EIS for the Virginia Mason Medical Center *Major Institution Master Plan*
  - Permits/approvals associated with subsequent, planned and potential development, that is consistent with the *Adopted MIMP*, including:
    - Master Use Permits
    - Demolition Permits
    - Building Permits
    - Grading / Shoring Permits
    - Mechanical Permits
    - Electrical Permits
    - Occupancy Permits

- Sign Permits
- Comprehensive Drainage Control Plan Approvals
- Large-Parcel Drainage Control Plans with Construction Best Management Practices and Erosion and Sediment Control Approvals

- **Department of Transportation**
  - Street Improvement Approvals (e.g., curbcut and/or sidewalk modifications)
  - Street Use Permits (temporary – construction-related)
  - Term Permits for Skybridges and Tunnels[12]

- **Seattle Public Utilities**
  - Water/Wastewater
  - Recycling

- **Seattle City Light**
  - Electrical Power

Authors and Principal Contributors to this EIS

This Virginia Mason Medical Center *Major Institution Master Plan* Draft EIS has been prepared under the direction of the Seattle Department of Planning and Development. Research and analysis associated with this EIS were provided by the following consulting firms:

- **EA│Blumen** – lead EIS consultant; document preparation; environmental analysis – greenhouse gas emissions, land use, aesthetics (viewshed,), light/glare/shadows, and historic resources;

- **Transportation Solutions, Inc.** – transportation, circulation and parking;

- **ENVIRON International Corp.** -- air quality, noise;

- **BOLA** – historic resources; and

- **SRG** – EIS aesthetics (viewshed photosimulations and shadow diagrams).

[12] The *Proposed Action* includes up to six additional skybridges and eight tunnels crossing over eight public rights-of-way.

Location of Background Data	**EA | Blumen** 720 Sixth St. S., Suite 100 Kirkland, Washington 98033 *Telephone:* 425.284.5401 **Transportation Solutions, Inc.** 8250 – 165th Ave. N.E., Suite 100 Redmond, Washington 98052-6628 *Telephone:* 425.883.4134
Date of Issuance of this Draft EIS	**July 19, 2012**
Date Draft EIS Comments Are Due	**September 4, 2012** **Written comments may be submitted to the City of Seattle Department of Planning and Development, at the following addresses:** *Postal Address*: Stephanie Haines Senior Land Use Planner Department of Planning and Development Seattle Municipal Tower – 700 Fifth Ave., Suite 2000 P.O. Box 34019 Seattle, WA 98124-4019 *E-mail Address*: Stephanie.Haines@seattle.gov
Date of Draft EIS Public Meeting	A public hearing concerning the Draft EIS is scheduled for **5:00 PM**, **August 22, 2012** at **Virginia Mason Medical Center** **925 Seneca Street (Hospital Central Pavilion)** **Seattle, WA** **Correa Conference Rooms A and B** *(The Hospital Central Pavilion is located at the south side of Seneca Street at the intersection with Terry Avenue. The conference room is located on Level 4 and accessed through the cafeteria.)* The purpose of the public hearing is to provide an opportunity for agencies, organizations and individuals to present comments regarding the proposed *Draft MIMP* and the Draft EIS – in addition to submittal of written comments.

The intended format of the hearing is:

- 5:00 pm – sign-in
- 5:15 pm -- opening remarks, introductions and purpose of the meeting
- 5:30 pm – public comments

Availability of this Draft EIS

Copies of this Draft EIS, together with the *Draft MIMP*, have been distributed to agencies, organizations and individuals noted on the Distribution List (**Appendix A** to this document).

The Draft EIS and the *Draft MIMP* can be reviewed at the following public libraries and websites:

- **Seattle Public Library – Central Library** (1000 Fourth Ave.;
- **Seattle Public Library – Douglas Truth Branch** (2300 E. Yesler Way);
- **Seattle Public Library – International District/ Chinatown Branch** (713 Eighth Ave. S.);
- **http://www.seattle.gov/neighborhoods/mi/miac/vm/**
- **http://www.virginiamason.org/MIMP**

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Copies of the *Draft MIMP* are available at Virginia Mason Medical Center's master plan website (https://www.virginiamason.org/body.cfm?id=6443) or at the hospital's Design, Construction and Properties Management Office, Blackford Hall, Room 309, 1202 Terry Avenue for the cost of reproduction.

TABLE OF CONTENTS

Section Page

LIST OF TABLES

LIST OF FIGURES

Figure Page

SECTION I

SUMMARY

SECTION I

SUMMARY

A. PROPONENT/PROJECT LOCATION/PROJECT OVERVIEW

Proponent

The proposed *Major Institution Master Plan* (*MIMP*) is sponsored by Virginia Mason Medical Center.

Project Location

The 7.05-acre campus of Virginia Mason Medical Center (VMMC) is located within Seattle's First Hill/Capitol Hill Urban Center and is generally bounded by University St. on the north,[1] Boren Ave. on the east, Spring St. on the south, and the mid-block alley between 8th and 9th Avenues on the west. The address of VMMC is 1100 Ninth Avenue, Seattle, WA 98101.

Project Overview

The ***Proposed Action*** involves adoption and implementation of a new *Major Institution Master Plan* (*MIMP*) for VMMC. The proposed *MIMP*, which must be approved by the City, would replace the existing *MIMP* that was adopted by Seattle City Council in 1994.[2]

Major Institution Master Planning Process

Previous Campus Master Planning. While Virginia Mason has had several campus master plans since its inception in 1920, this proposed *MIMP* represents the second *Major Institution Master Plan* that has been prepared for VMMC to satisfy requirements of the City's Major Institution Code,[3] as well as to fulfill VMMC's need for a comprehensive campus development plan. VMMC's existing *MIMP* was completed in November 1992 and formally adopted by the City of Seattle in 1994.[4] That *MIMP* proposed phased development on the 7.05-ac. campus, which included approximately 879,000 sq. ft. of new construction, demolition of 174,300 sq. ft., and the addition of 930 parking spaces.[5] The *MIMP* also included vacation of an alley[6] and establishment of a Transportation Management Plan (TMP). The existing *MIMP*, which was adopted under previous Major Institution Code requirements, expired in 2004.

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1 A portion of the existing north boundary of the campus extends north of University St.
2 Ord. #117106
3 SMC 23.69
4 Ord. #117106
5 30 spaces were identified as temporary
6 This was an alley that extended between Seneca St. and Spring St. in the location of the present Floyd & Delores Jones Pavilion.

Current Campus Master Planning. VMMC has determined that its First Hill campus needs to be redeveloped in order to meet the demands of regional growth, advancements in technology and patient care practices, and to replace aging facilities. In addition, VMMC has acquired the **1000 Madison Block**, which is outside the hospital's existing MIO boundary. Those factors, together with the fact that the existing *MIMP* has expired, necessitates an update of VMMC's existing *MIMP*.

The proposed *MIMP* is also intended to address an administrative correction associated with a mapping error of a portion of VMMC's existing north campus boundary. The University/Terry surface parking lot on Terry Avenue consists of Lots 9 and 12, Block 112. A 20-foot strip of land (part of Lot 8, Block 112), which extends from Terry Avenue to the mid-block alley immediately north of the surface parking lot, should have been included within VMMC's MIO boundary.

VMMC began the process of updating the existing *MIMP* in August 2010 with submittal of a Notice of Intent to the City of Seattle Department of Neighborhoods. The City published a notice relative to formation of the required Citizens Advisory Committee (CAC) and in November, recommendations concerning prospective CAC members were submitted to the City Council for formal appointment. The first formal meeting of the CAC (orientation meeting) occurred November 29, 2010 and the first public meeting occurred on December 16, 2010. Throughout the autumn (2010), VMMC compiled the required *MIMP* Application/Concept Plan,[7] which was submitted to the City in December 2010 and subsequently to the CAC.

The planning process associated with VMMC's proposed *MIMP* has also involved numerous meetings to encourage substantial and timely involvement by many entities. Such meetings have included internal and external involvement. The following types of meetings have occurred to-date: VMMC departmental, Citizens Advisory Committee, VMMC neighbors and City of Seattle departments.

Project Goals and Objectives

Virginia Mason Medical Center's *Major Institution Master Plan* (*MIMP*) is a land use plan specific to VMMC's existing campus and the proposed MIO expansion area. The *MIMP* indicates that.

> *"(T)he goal of this effort is to fully understand the capacities and constraints inherent in the redevelopment of the existing properties, to collaborate with the neighborhood on how to best accommodate this growth, to smooth the development process and to eliminate the waste of redesign.*

The following goals are from VMMC's Draft *MIMP*. They provide guidance in terms of campus buildings, landscaping/open space, campus mobility, neighborhood vitality/character, environmental stewardship, transit/traffic/parking, and construction impacts. The Draft *MIMP* should be reviewed concerning objectives that are aimed at implementing the goals. The goals provide the basis for VMMC's proposed Long-Term development, which is described in **Section 2.4** of this Draft EIS.

[7] VMMC, 2011

Virginia Mason proposes to redevelop and expand its Downtown campus based on the following goals:

CAMPUS BUILDINGS

- Design the edges of the campus to contextually relate to the adjoining properties in scale, style and massing.
- Design buildings, including rooftops and street level facades, with consideration of how they will appear to viewers from surrounding residential buildings, non motorized travelers at street level, and motorized travelers.
- Acknowledge the diversity of scales and styles in neighboring buildings, from high-rise to single-family.
- The scale of the pedestrian streetscape is important.
- Protect public view corridors.
- Provide shared spaces that community members can also use.

LANDSCAPING AND OPEN SPACE

- Maintain plantings and street trees.
- Enhance campus greenery, open space.

CAMPUS MOBILITY

- Maintain and improve the mobility of pedestrians and other non-motorized travelers to move through the Virginia Mason MIO boundaries (don't become a closed-off campus).
- Improve sidewalks and streetscapes to enhance the pedestrian and other non-motorized user experience.
- Make entries easy to find, welcoming and accommodating.
- Enhance ease of pedestrian flow, improve circulation, accessibility, wayfinding, connectivity, visual interest.
- Enhance the ability of people to pass through the larger buildings via interior and exterior "streets" that are combinations of entries, major corridors and sky bridges.
- Provide attractive non-motorized connections across the campus to Downtown and other Seattle neighborhoods.
- Create open spaces in ways that tie together the public spaces of the neighborhood.

NEIGHBORHOOD VITALITY AND CHARACTER

- Contribute to the economic vitality of First Hill that exists from the interdependence of residential, commercial, and the educational and health care institutions.
- Maintain the residential character of First Hill.
- Honor and protect designated historic structures.
- Maintain and support opportunities for retail that serve both Virginia Mason and the residential community.

ENVIRONMENTAL STEWARDSHIP

- Employ Environmental Stewardship in the design and practices of buildings, grounds, and operations.
- Build facilities that are resource-efficient.
- Minimize glare, noise, wind effect and shading.

TRANSIT, TRAFFIC AND PARKING

- Continue to encourage the use of transit over driving to Virginia Mason by making transit an easy and enjoyable way to get to and from the Virginia Mason campus and adjacent First Hill neighborhoods.

- Continue to reduce peak-commute trip single occupancy vehicle use and encourage alternative modes of transportation, including walking, bicycling, mass transit, shuttles and carpools.
- Build parking to meet but not exceed present, future need, sequence parking development.

CONSTRUCTION IMPACTS

- Minimize construction impacts on the larger community.
- Maintain traffic and pedestrian flow.
- Maintain the viability of retail.

B. DESCRIPTION OF THE PROPOSED ACTION

The ***Proposed Action*** involves adoption and implementation of a new *Major Institution Master Plan* (*MIMP*) for Virginia Mason Medical Center. In the *Draft MIMP*, the *proposed master plan* is referred to as **Alternative 6b**, whereas in this Draft EIS, it is referred to as the ***Proposed Action***.

The ***Proposed Action*** would involve expansion of VMMC's existing MIO boundary to encompass the block immediately southeast of the existing campus boundary that is referred to as the **1000 Madison Block**. This block is bounded by Spring St. on the north, Boren Ave. on the east, Madison St. on the south, and Terry Ave. on the west. The block contains a mid-block, north-south alley. The area associated with this boundary expansion (including the alley) approximates 1.4 acres.

The ***Proposed Action*** would add approximately 1.7 million sq. ft. of gross floor area to the existing campus total of approximately 1.2 million sq. ft. (gross square footage per Seattle zoning). The result would be a campus-wide total gross floor area of roughly 3 million sq. ft. and a campus-wide Floor Area Ratio (FAR)[8] of 8.1.

C. ALTERNATIVES

SEPA requires analysis of "reasonable alternatives" as part of an EIS and defines reasonable as "actions that could feasibly attain or approximate a proposal's objectives, but at a lower environmental cost or decreased level of environmental degradation."[9] VMMC has identified goals and objectives, which are included in the *Draft MIMP* and this Draft EIS (**Section 2.3**).

As indicated in the *Draft MIMP*, VMMC has identified the ***Proposed Action***. However, for compliance with City requirements and SEPA[10], two alternatives to the ***Proposed Action*** are presented in this Draft EIS; they include:

***Alternative 5a* – No Boundary Expansion**; and the

No Action Alternative.

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8 FAR is a ratio of the relationship between the amount of gross floor area or chargeable floor area permitted in one or more structures and the area of the lot on which the structure(s) are located (23.84A.012). Building area below-grade is not included in FAR calculations.

9 WAC 197-11-440(5)

10 WAC 197-11-440(5bii)

Alternative 5a -- Other than correction of a mapping error, ***Alternative 5a*** would not involve any modifications to the existing MIO boundary.

As with the ***Proposed Action***, ***Alternative 5a*** would add approximately 1.7 million sq. ft. of gross floor area to the existing campus total of 1.2 million sq. ft. (gross square footage per Seattle zoning). The additional square footage does not include structured parking or portions of a building that are entirely below-grade. Like the ***Proposed Action***, the result would be a campus-wide total gross floor area of nearly 3 million sq. ft. and a Floor Area Ratio (FAR)[11] for ***Alternative 5a*** of 9.74.

No Action Alternative -- The ***No-Action Alternative*** would involve no new building construction on the VMMC campus and existing aging structures would remain; conceivably, limited building remodeling would still occur. The ***No Action Alternative*** would not involve expansion of the MIO boundary, and no modifications to on-site pedestrian and vehicular circulation or parking.

[11] FAR is a ratio of the relationship between the amount of gross floor area or chargeable floor area permitted in one or more structures and the area of the lot on which the structure(s) are located (23.84A.012). Building area below-grade is not included in FAR calculations.

D. POTENTIAL ENVIRONMENTAL IMPACTS & MITIGATION

The following table summarizes the potential environmental impacts and mitigation measures identified in this environmental analysis. It is not intended to be a substitute for the complete discussion of each element that is contained in ***Section III***.

PROPOSED ACTION (ALTERNATIVE 6B)	ALTERNATIVE 5A	NO ACTION ALTERNATIVE
3.1 Air Quality		
Impacts Model-calculated carbon monoxide (CO) concentrations at the worst-performing project-affected intersection (Sixth Avenue at Spring Street) would be below the levels allowed by the 1-hour and 8-hour ambient air quality standards for CO (35 ppm and 9 ppm respectively), for both the near-term and the future analysis scenarios. Therefore, no significant air quality impacts associated with the proposed traffic conditions or proposed parking structures would be expected as a result of redevelopment activities.	*Impacts* Air quality impacts for ***Alternative 5a*** would be the same as those described for the ***Proposed Action***.	*Impacts* No new development is proposed on the VMMC site or in the **1000 Madison Block** under the ***No Action Alternative***; therefore, no new air quality impacts are anticipated.
Mitigation Measures No significant air quality impacts have been identified and no mitigation measures are proposed. The Draft MIMP includes as one of VMMC's Goals and Objectives – To build facilities that are resource-efficient - Participate in the Seattle 2030 District challenge, which would help reduce emissions and improve air quality in this area.	*Mitigation Measures* • Mitigation measures would be the same as those identified for the ***Proposed Action***.	*Mitigation Measures* • No new air quality impacts would be associated with the ***No Action Alternative*** and no mitigation measures are proposed.
3.2 Energy (Greenhouse Gas Emissions)		
Impacts Estimated total lifespan GHG emissions resulting from the ***Proposed Action***: • 6,519,814 $MTCO_2E$ Annual GHG emissions (based on an average building lifespan of 62.5 years): 104,317.024 $MTCO_2E$. As a comparison, the annual GHG emissions for the City of Seattle as a whole in 2008 were 6,770,000 $MTCO_2E$.	*Impacts* Estimated total lifespan GHG emissions resulting from ***Alternative 5a***: • 6,573,046 $MTCO_2E$ 105,168.736 Annual GHG emissions (based on an average building lifespan of 62.5 years): 105,168.736 $MTCO_2E$. As a comparison, the annual GHG emissions for the City of Seattle as a whole in 2008 were 6,770,000 $MTCO_2E$.	*Impacts* The ***No Action Alternative*** would involve no new building construction on the VMMC Campus and existing aging structures would remain; conceivably, limited building remodeling would still occur. The ***No Action Alternative*** would not involve expansion of the MIO boundary, and no modifications to on-site pedestrian and vehicular circulation or parking. Greenhouse gas emissions would as occur under existing conditions.
Mitigation Measures A variety of mitigation measures are available to reduce energy use, increase sustainable building design and reduce GHG emissions. As is stated in this section, VMMC is committed to reducing waste and organizational sustainability through its environmental stewardship initiative called EnviroMason. VMMC is also considering other potential mitigation measures that could be implemented during future design and construction of buildings on campus including the following: • **Natural Drainage and Green Roofs** – Green roofs can provide additional open space, opportunities for urban agriculture and decreased energy demands by reducing the cooling load for the building. Green Stormwater Infrastructure (GSI) would be developed for flow control and water quality treatment to the maximum extent feasible.	*Mitigation Measures* • Mitigation measures would be the same as those described for the ***Proposed Action***.	*Mitigation Measures* • No new greenhouse gas emissions would be associated with the ***No Action Alternative*** and no mitigation measures are proposed.

PROPOSED ACTION (ALTERNATIVE 6B)	ALTERNATIVE 5A	NO ACTION ALTERNATIVE
• **Tree Protection** – The City of Seattle has aggressive urban forest goals in order to help restore tree cover which has been lost due to development. Trees can provide stormwater management, habitat value, noise buffering, air purification, carbon sequestration, and mitigation of the urban heat island effect. Trees also have a positive effect on property values and neighborhood quality. Protection of existing trees, as feasible, and careful attention to new tree planting could help meet the Seattle Comprehensive Urban Forest Management Plan Goals for multi-family residential and commercial development by achieving 15-20 percent overall tree canopy within 30 years. • **Native Plants** – Native plants are adapted to the local climate and do not depend upon irrigation after plant establishment for ultimate survival. Landscaping with native plants, beyond that required by code, could be planted to reduce water demand and integrate with the local ecosystem. VMMC's goal is to create green spaces that use native, non-invasive plants, to reduce water and fertilizer consumption, and align with good urban landscaping design practices. • **Waste Management and Deconstruction** – When existing buildings are demolished, there are often opportunities to reduce the amount of waste being sent to the landfill with sustainable waste management strategies. In the Seattle area, standard practice for building construction and demolition results in fairly high recycling rates of over 50 to 60 percent. However, these rates can be increased by implementing aggressive demolition recycling. Such efforts can require considerable additional effort on the part of the contractor. Some of the options under consideration that could mitigate waste generated by redevelopment on the VMMC campus include on-site source separated recycling, potential reuse of demolition materials on-site, deconstruction of existing buildings, and salvage and reuse of building components. • **Building Design** – Building design on the VMMC campus could integrate a wide variety of green building features. Green building encompasses energy and water conservation, waste reduction, and good indoor environmental quality. Tools and standards that are used to measure green building performance could be used at VMMC. Some options include: Built Green, LEED, and the Evergreen Sustainable Development Criteria. Custom green building guidelines could also be developed to guide building design and construction. Some of the specific building design strategies that might be considered include solar panels for electricity generation or domestic solar hot water, energy star rated appliances, water conserving fixtures beyond code, low toxic materials, finishes, and flooring, energy and water sub-metering for individual units, high efficiency fixtures such as dual flush toilets, toilet flushing and irrigation supplied by recaptured wastewater or rainwater, dual plumbing systems for all new buildings to accommodate water reuse, and wind generated alternative energy. • **Transportation** – Transportation plays a major role in climate change and VMMC plans to address this concern through several initiatives including contributing to a vibrant pedestrian-oriented development and encouraging fewer personal vehicle trips. A Transportation Management Plan (TMP) is included in the *MIMP*, which identifies strategies to reduce single-occupancy vehicle travel. A traffic study has also been prepared for this Draft EIS to analyze potential traffic and parking impacts. Continued focus on and implementation of these measures throughout the *MIMP* implementation process would contribute to reducing the GHG emissions estimated in **Table 3.2-1** for the ***Proposed Action*** or **Table 3.2-2** for ***Alternative 5a***.		

PROPOSED ACTION (ALTERNATIVE 6B)	ALTERNATIVE 5A	NO ACTION ALTERNATIVE
3.3 Noise		
Impacts **Traffic-Related Noise –** Changes in traffic noise levels resulting from anticipated increases in traffic volumes would not be expected to be discernible to people, especially because the change would occur over a long period of time. No significant impacts are anticipated from changes in traffic volumes. Operational traffic noise from proposed onsite parking facilities would have no potential to cause noise impacts at nearby off-site receiving properties because parking facilities would be located underground. **HVAC/Mechanical System Noise –** Noise from HVAC systems would be subject to the Seattle noise limits, and compliance with these limits would be considered during design and permitting of construction of the elements of the respective plans. **Loading Dock/Refuse Hauling Noise –** Operational noise from these facilities received at off-site locations would be subject to the City noise limits, so the potential for noise-generating activities to comply with daytime and nighttime limits would need to be considered during siting and design. **Emergency Vehicles –** While noise from emergency vehicle sirens is exempt from the City noise limits, such noise could nonetheless cause relatively high, but short-term sound levels at noise sensitive uses near the emergency department access routes. **Emergency Electrical Generators** – Medical facilities are required to have emergency generators for backup in the event of a power failure. Generators are usually tested for a short period about once a month and noise related to such testing is subject to the Seattle noise limits. During actual emergency use of such generators, the noise limits do not apply. **Outdoor Campus Maintenance Activities –** Outdoor maintenance activities including lawn mowing, landscaping/gardening, and leaf blowing would be subject to the Seattle noise limits. Any such effects would be temporary and are unlikely to rise to the level of a significant impact. However, perceived impacts could be minimized by ensuring that outdoor workers are aware of any nearby sensitive receivers and striving to minimize both the duration and the level of noise from maintenance activities while near such receivers.	*Impacts* Noise impacts associated with ***Alternative 5a*** would be similar to the ***Proposed Action***, but would not extend to the **1000 Madison Block**. No significant noise impacts would be anticipated.	*Impacts* No new development is proposed on the VMMC site or in the **1000 Madison Block** under the ***No Action Alternative***; therefore, no new noise impacts would be associated with the ***No Action Alternative***.
Mitigation Measures Potential noise impacts could result from new HVAC equipment and other mechanical equipment associated with new or renovated facilities and from loading docks and any refuse-hauling sites near off-site receivers. The following processes could be implemented to reduce the potential for noise impacts from these sources and activities. The following processes could be implemented to reduce the potential for noise impacts from these sources and activities. • To minimize noise impacts associated with HVAC and air-handling equipment, such equipment could be selected and positioned to maximize noise reduction to the extent possible. When conducting analyses to ensure compliance with the Seattle noise limits, facility designers would assess sound levels as they relate to the nearest residential uses and any adjacent commercial locations. More distant residential receivers could also be considered. • Exhaust vents for all underground parking facilities could be located and controlled to reduce noise at both on- and off-site residential uses and to ensure compliance with the City noise limits.	*Mitigation Measures* • Mitigation measures would be the same as those identified for the ***Proposed Action***.	*Mitigation Measures* • No new noise impacts would be associated with the ***No Action Alternative*** and no mitigation measures are proposed.

PROPOSED ACTION (ALTERNATIVE 6B)	ALTERNATIVE 5A	NO ACTION ALTERNATIVE
• Loading docks could be designed and sited with consideration of nearby sensitive receivers and to ensure that noise from truck traffic to and from the docks and from loading activities would comply with the City noise limits. Depending on the proximity of loading docks and their relative "exposure" to on- and off-site sensitive receivers, it could be warranted and worthwhile to implement restrictions to limit noisy activities associated with deliveries to daytime hours. • Garbage and recycling collection could, to the extent feasible, be designed to minimize or eliminate line-of-sight to nearby sensitive receivers. In addition, VMMC could work with the collection vendors to schedule collections at appropriate (i.e., least intrusive) times. For example, garbage and recycle hauling contracts could specifically limit pickups to daytime hours so as to avoid potential noise impacts from such activities at night. • Emergency generators should be considered during actual facility design so as to be located and equipped with noise controls to minimize the potential for noise impacts and to ensure compliance with applicable noise limits during regular testing of such equipment. • The potential for noise impacts related to outdoor maintenance activities on the campus could be minimized by ensuring outdoor maintenance is restricted to daytime hours, whenever possible. In addition, any noisy outdoor work and especially lawn mowing and leaf blowing should employ both the quietest available equipment and be limited in duration when working near (e.g., within 200 feet) sensitive receivers.		
3.4 Land Use		
Impacts Implementation of the ***Proposed Action*** would result in the intensification of hospital/medical office uses on-campus as a result of new building development, more intensive use of existing buildings, and the modification of existing parking areas. The pattern and types of land uses on campus would not change significantly; however, building density, intensity, and existing building heights would likely change as a result of the proposed redevelopment. In the **1000 Madison Block**, the Baroness Apartment Hotel would be retained and all other existing retail and residential uses within the block would be demolished and the site redeveloped, primarily with new hospital and medical uses. **Displacement of Existing Uses** – To accommodate development under the ***Proposed Action***, the existing 419 parking spaces associated with the University/Terry parking lot and Ninth Avenue Garage would be demolished; the existing Health Resources Building, Cassel Crag, Blackford Hall, and the hospital (Hospital East Wing, Original Hospital, Hospital West Addition, Buck Pavilion North and South) (and any associated parking) would also be demolished and the existing uses would be temporarily displaced. Construction activities would be phased to ensure that existing hospital/medical uses that are temporarily displaced can be relocated to new onsite or existing onsite/nearby offsite facilities prior to redevelopment. On the **1000 Madison Block**, the existing residential (apartment) and retail uses would be demolished and conceivably many of the uses could be permanently displaced. Housing would be replaced in accordance with the City of Seattle Land Use Code. The existing 24,630 GSF of retail uses currently on-site would be replaced with 24,630 GSF of new retail uses.	*Impacts* Redevelopment of the VMMC campus under ***Alternative 5a*** would result the intensification of hospital/medical office uses on-campus, more intensive use of existing buildings, and the modification of existing parking areas on the existing campus in a manner that would be similar to, but slightly greater than those discussed under the ***Proposed Action***. Expansion to the **1000 Madison Block** would not occur under ***Alternative 5a***. **Displacement of Existing Uses** – Displacement of existing uses within the existing VMMC campus boundary would be similar to the impacts described for the ***Proposed Action***. No new development is assumed to occur in the **1000 Madison Block**; the Baroness Hotel, Chasselton Court Apartments and retail uses currently located within the block are assumed to remain. VMMC or a VMMC partnership could in the future redevelop the block with permitted (non-institutional) uses under existing zoning if conditions warranted.	*Impacts* No new development is proposed on the VMMC site or in the **1000 Madison Block** under the ***No Action Alternative***; therefore, no new land use impacts would occur.

PROPOSED ACTION (ALTERNATIVE 6B)	ALTERNATIVE 5A	NO ACTION ALTERNATIVE
Changes in Activity Levels – Activity levels on-campus and within the expansion block would increase, but would be generally reflective of the existing VMMC campus, including pedestrian and vehicular traffic, as well as the dense nature of proposed redevelopment, proposed increases in outpatient services, and resulting increases in the VMMC employee population. The overall site activity and increases associated with this alternative would be compatible with the surrounding dense, urban environment. Increases in activity levels could also potentially benefit surrounding businesses through increased support and patronage from the additional population and activity.	**Changes in Activity Levels** – The increase in population on the VMMC campus associated with ***Alternative 5a*** would result in increased activity levels on-campus and in the vicinity of campus similar to, but slightly higher than those discussed under the ***Proposed Action***.	
Relationship to Onsite Uses – The proposed new hospital and medical uses that are assumed throughout the VMMC campus would be compatible with the existing hospital and medical uses that would remain in the three existing buildings. Within the **1000 Madison Block**, the existing apartment and retail uses would be demolished and redeveloped with new hospital/medical and retail uses; the Baroness Hotel would remain. The proposed hospital/medical and retail uses that would be redeveloped on the site would be designed to be compatible with the Baroness Hotel. In order to facilitate hospital-related pedestrian connections and create on-campus building cohesion, five new skybridges and/or tunnels are proposed that would cross public rights-of-way.	**Relationship to Onsite Uses** – Under ***Alternative 5a***, the relationship of existing onsite uses within the VMMC campus would be similar to those discussed under the ***Proposed Action***.	
Relationship to Surrounding Offsite Land Uses – Proposed medical/hospital uses in would be generally compatible with offsite large multifamily residential and nursing/convalescent uses located adjacent to the VMMC campus. Such redevelopment would be consistent with the goals and policies of the City's *Comprehensive Plan* that call for urban infill development with the greatest densities and widest range of land uses to be accommodated within Urban Centers, of which First Hill is one.	**Relationship to Surrounding Offsite Land Uses** – Under ***Alternative 5a***, the relationship of existing onsite uses within the VMMC campus would be similar to those discussed under the ***Proposed Action***.	
Proposed Zoning/Major Institution Overlay – The MIO Boundary for the VMMC campus would be expanded to include the approximately 1.4-acre **1000 Madison Block** and the block's existing HR-160 and NC3-160 zoning would be rezoned to MIO-240. The rezone would preclude potential development of residential uses that could occur on the northern portion of the block under the existing zoning. Street level retail uses that would be consistent with the underlying NC3P-160 zoning could still be provided in newly developed buildings in the southern portion of the block.	**Proposed Zoning/Major Institution Overlay** – Under ***Alternative 5a***, other than the mapping correction, the MIO Boundary for the VMMC campus would not be expanded; at a location within the central campus area**,** the existing MIO-240 designation would be rezoned to a new MIO-300 designation.	
Mitigation Measures • Ultimately, the *MIMP* will guide redevelopment of the VMMC campus over the long-term. This plan, and campus-specific development standards, along with individual project review by the City and the Standing Advisory Committee (SAC), could serve as mitigation to preclude potential significant land use impacts from future redevelopment and ensure compatibility among site uses and uses in the site vicinity. Possible mitigation measures could include requiring retail uses along Madison Street and portions of Spring Street and Boren Avenue that are located in the Pedestrian Overlay (P) zone. Mitigation measures for indirect land use impacts (i.e., noise, transportation, aesthetics, etc) are addressed in their respective sections of this Draft EIS and through applicable City codes.	*Mitigation Measures* • Mitigation measures would be the same as those identified for the ***Proposed Action***.	*Mitigation Measures* • No new land use impacts would be associated with the ***No Action Alternative*** and no mitigation measures are proposed.
3.5 Housing		
Impacts Under the ***Proposed Action*** the existing 62-unit Chasselton Court Apartments, located in the **1000 Madison Block**, would be demolished and redeveloped with hospital and medical uses.	*Impacts* Under ***Alternative 5a*****,** no new development is proposed on the **1000 Madison Block**, and no existing permanent housing stock would be displaced to accommodate the proposed redevelopment.	*Impacts* No new development is proposed on the VMMC site or in the **1000 Madison Block** under the ***No Action Alternative***; therefore, no impacts to housing stock are anticipated.

PROPOSED ACTION (ALTERNATIVE 6B)	ALTERNATIVE 5A	NO ACTION ALTERNATIVE
Mitigation Measures If the ***Proposed Action*** is approved by the City Council and the Chasselton Court Apartments are demolished, VMMC would propose comparable replacement housing or pay for mitigation to maintain the housing stock of the City. The housing replacement proposal described in **Section 3.5.2** is intended to address the City's policy and program goals for comparable affordable housing and contribute to the replacement of at least 62 housing units within the First Hill Neighborhood, per the SEPA housing policy codified in SMC 25.05.675 I. Housing, c. "Compliance with legally valid City ordinance provisions relating to housing relocation, demolition and conversion shall constitute compliance with this housing policy." Approval of the proposed replacement housing would be made by the City Council as part of the *MIMP* review and approval process. If approved, VMMC's housing replacement package would constitute mitigation for the loss of the Chasselton Court Apartments.	*Mitigation Measures* • No impacts to housing stock would be associated with redevelopment activities assumed under ***Alternative 5a*** and no mitigation measures are proposed.	*Mitigation Measures* • No new housing impacts would be associated with the ***No Action Alternative*** and no mitigation measures are proposed.
3.6.1 Aesthetics: Viewshed		
Impacts With the ***Proposed Action***, redevelopment associated with the VMMC campus would be visible from the several public viewpoints, view corridors and scenic routes. Although the buildings would frame the viewsheds, they would not extend into the view corridors. The proposed skybridges, however, would alter views within affected view corridors. Aside from the skybridges, the overall visual character of the First Hill Urban Village is not expected to change significantly from that which presently exists. The height, bulk and scale of the proposed buildings would not encroach upon public rights-of-way, and would be consistent with the City's Comprehensive Plan and zoning, as well as the First Hill Neighborhood Plan. Under the ***Proposed Action***, the **1000 Madison Block** would be redeveloped with new buildings that could reach up to 240 ft. The height and scale of the proposed buildings within the **1000 Madison Block** would present a visual continuation of the development proposed in the existing VMMC Campus boundary. No significant impacts would be anticipated.	*Impacts* Under ***Alternative 5a***, the proposed redevelopment within the existing VMMC campus boundary could reach heights of up to 300 ft. at certain locations, and would be visible from certain public viewpoints, City Landmarks, View corridors and scenic routes; however, the overall visual character of the First Hill Urban Village would not change from the existing view. The height and scale of the proposed buildings under ***Alternative 5a*** would be consistent with that of other adjacent high-rise buildings nearby, would not encroach upon public rights-of-way, would be consistent with the City's Comprehensive Plan and zoning, as well as the First Hill Neighborhood Plan and would blend into the City skyline. No significant impacts would be anticipated. The proposed skybridges would alter views within affected view corridors. No redevelopment activities are assumed within the **1000 Madison Block** under ***Alternative 5a*** therefore, no new aesthetic impacts would be anticipated in this area.	*Impacts* The ***No Action Alternative*** would involve no new building construction on the VMMC campus; existing buildings would remain and limited building remodeling would be expected to occur. The existing MIO boundary would remain and no expansion to the **1000 Madison Block** would occur. No impacts to visual resources would be anticipated.
Mitigation Measures Street-level and upper level setbacks are proposed along property lines in most areas of the campus under either alternative, which would help to maintain the westerly view corridors along Madison, Seneca, Spring and University streets. Skybridges would be designed and constructed with materials that would contribute to transparency of the skybridge to the extent possible in order to minimize potential impacts to view corridors on campus. Height and width of skybridges would be limited to accommodate the passage of people and supplies between buildings. Approval of the location and final design of skybridges would occur through the City's Term Permit process, which would be sought at the time a potential project requiring such a connection is developed. Conceivably, not all skybridges may be executed, depending on the sequencing of projects and the eventual VMMC space programming that occurs at the time.	*Mitigation Measures* • Mitigation measures would be the same as those identified for the ***Proposed Action***.	*Mitigation Measures* • No new aesthetic impacts would be associated with the ***No Action Alternative*** and no mitigation measures are proposed.
3.6.2 Aesthetics: Height, Bulk and Scale		
Impacts **Height** – Under the ***Proposed Action***, new buildings on the existing campus and the **1000 Madison Block** would be built to heights of 240 ft., except for the Health	*Impacts* **Height** – Under ***Alternative 5a***, new buildings would be built to heights of 240 ft. on all portions of the campus except for the following locations:	*Impacts* Under the ***No Action Alternative***, no new building development would occur. The aesthetic character of the campus, including the character of height, bulk and scale, would remain as under existing conditions.

PROPOSED ACTION (ALTERNATIVE 6B)	ALTERNATIVE 5A	NO ACTION ALTERNATIVE
Resources Building site, which would be built to heights of 190 and 95 ft. Building heights would be greater than the underlying zoning on the south half of the **1000 Madison Block** (240 ft. as opposed to 160 ft.) and would be lower than the underlying zoning on the north half of the block (240 ft. as opposed to 300 ft.). In some cases, new buildings would be taller than adjacent development, but the use of lower and upper level setbacks would help modulate the height of new development, and existing streets would help to buffer on and off-site development. **Bulk and Scale** – The bulk and scale of new development would generally be greater under the ***Proposed Action*** as compared to existing conditions and existing surrounding development. With adherence to the VMMC design guidelines and the employment of suitable architectural treatments such as articulation, indentations, façade treatments, greenwalls and building setbacks, no significant impacts would be anticipated.	• Original Hospital, Hospital East Wing and Hospital West Addition site– increased to 300 ft. • Health Resources Building site – lowered to 190 ft. and 95 ft. New buildings could be built to a maximum height of 240 ft. under existing zoning but proposed building heights would range from 300 ft. to 95 ft. The impacts of new taller buildings along the campus boundaries would be similar to that described for the ***Proposed Action***. **Bulk and Scale** – The bulk and scale impacts of new buildings constructed under ***Alternative 5a*** would generally be similar to those described for the ***Proposed Action***, within the existing VMMC campus boundary. As with the ***Proposed Action***, no significant impacts would be anticipated with the use of appropriate mitigation measures	

Mitigation Measures
 	
The following measures could be implemented to better integrate new development into the neighborhood and lessen impacts as related to height, bulk and scale:
 	
• New buildings could be designed in accord with the adopted VMMC Design Guidelines.
 	
• VMMC's Standing Advisory Committee (SAC) will continue to be afforded an opportunity to review and comment on proposed major development projects on-campus, including the proposal's consistency with the adopted Design Guidelines.
 	
• Under the ***Proposed Action***, VMMC would comply with or exceed the setback requirements of the underlying campus zoning, including the Lindeman North and West building sites, which are across the street (to the south) of the 19-story Horizon House, which would be developed in accordance with the Horizon House agreement, as amended in the MIMP. The Horizon House agreement stipulates the following setbacks along University Street:
 	
  • No setback from 0 to 59 ft. above grade;
  • 5 ft. setback from 60 to 95 ft.; and
  • 20-foot setback from 95 to 190 ft.
 	
  Along Madison Street, VMMC would set the upper portion of the structure (above approximately 45 ft.) back an additional 30 ft., for a total of 40 ft. from the property line.
	Mitigation Measures
	
	The following measures are proposed to better integrate new development into the neighborhood and lessen impacts as related to height, bulk and scale:
	
	• New buildings would be designed in accord with the adopted VMMC Design Guidelines.
	
	• VMMC's Standing Advisory Committee (SAC) will continue to be afforded an opportunity to review and comment on proposed major development projects on-campus, including the proposal's consistency with the adopted Design Guidelines.
	
	• Under ***Alternative 5a***, VMMC would comply with the setback requirements of the underlying campus zoning.
		Mitigation Measures
		
		• No new height, bulk or scale impacts would be associated with the ***No Action Alternative*** and no mitigation measures are proposed.

3.7 Light, Glare and Shadows		
Impacts **Light & Glare** – New and renovated structures would provide additional light sources on the VMMC campus, including interior and exterior building lighting and security lighting. Additional vehicular traffic associated with more-intensive campus development and increased activity levels would result in additional light from vehicles entering and exiting the campus. The primary sources of glare from development assumed under the ***Proposed Action*** would be direct glare from lighting sources (i.e. building and security lighting) and reflective solar glare from specular surfaces (i.e., glazing, luminaire housing). Additional development would also occur within the **1000 Madison Bloc**k; new sources of light and glare within this block would be similar to those that currently exist on the VMMC Campus and would be perceived as a continuation of the VMMC Campus light and glare conditions. Significant impacts would not be anticipated.	*Impacts* **Light & Glare** – Light and glare impacts under ***Alternative 5a*** would be similar to those identified for the ***Proposed Action***, except that no additional VMMC development would occur within the **1000 Madison Block**.	*Impacts* **Light & Glare** – No new building development and minimal changes in campus activity levels would occur. Light, glare and shadow conditions on the VMMC campus and **1000 Madison Block** would remain as under existing conditions and no additional stationary light and glare sources would be developed on campus.

PROPOSED ACTION (ALTERNATIVE 6B)	ALTERNATIVE 5A	NO ACTION ALTERNATIVE
Shadows – A majority of the on-campus development assumed under the ***Proposed Action*** is proposed to reach between 95 to 240ft. in height. Development of these taller structures would generally cast shadows that are greater than those currently found on the existing VMMC campus. Shadows from VMMC campus development would periodically shade all or portions of the on-site open space bordering University Street, and shadow impacts to Freeway Park would generally result from an existing building (Benaroya Research Institute) and would, therefore, be the same under existing conditions and the ***Proposed Action***.	**Shadows** – A majority of the on-campus development assumed under Alternative 5a is proposed to reach between 95 to 300ft. in height. Development of these taller structures would generally cast shadows that are greater than those currently found on the existing VMMC Campus. Shadows from VMMC campus development would periodically shade all or portions of the on-site open space along 9th Avenue, and shadow impacts to Freeway Park would generally result from an existing building to remain (Benaroya Research Institute), as described for the ***Proposed Action***.	**Shadows** – Under the ***No Action Alternative***, shadows and shading impacts would remain as under existing conditions
Mitigation Measures **Light & Glare** – The following mitigation measures could minimize potential impacts from light and glare: • Light spillage and light trespass, including direct glare, could be controlled through lighting design measures, such as luminaire locations, light distributions, aiming angles, mounting heights, and shielding. • Use of street trees, façade modulation, and building materials with relatively low-reflectivity at street level would minimize reflective glare-related impacts to pedestrians, motorists, and nearby residents. • Landscaping and screening would be used at ground level to obstruct reflected glare from impacting off-site receptors. • Street-level retail activities would be designed to shield light to minimize spilling over onto adjacent residential areas. • Interior lighting could be equipped with automatic shut-off times. • Parking lots and parking structures could include landscaping or screens to obstruct light and glare caused by vehicle headlights. • Pedestrian-scale lighting would be provided consistent with code, function and safety requirements. Exterior lighting would include fixtures to direct the light downward and/or upward and away from off-site residential land uses. • To limit glare impacts, new buildings could be designed with low-reflective glass, window recesses and overhangs, and façade modulation. • The amount of reflective surfaces could be limited. **Shadows** – The following mitigation measures could minimize potential impacts from shadows: • Future new building design could consider the final orientation and massing of the building on adjacent campus and off-campus open spaces, as well as offsite residential uses in order to minimize potential shadow impacts to these campus resources and offsite uses. • Required and proposed setbacks for buildings will contribute to reducing building bulk, thereby reducing potential shadow impacts from those buildings.	*Mitigation Measures* **Light & Glare** • Measures would be the same as those described for the ***Proposed Action***. **Shadows -** Measures would be the same as those described for the ***Proposed Action***.	*Mitigation Measures* **Light & Glare** • No mitigation would occur under the ***No Action Alternative***. **Shadows -** No mitigation would occur under the ***No Action Alternative***.
3.8 Historic Resources		
Impacts It is assumed that nine buildings that are over 25 years old would be demolished and the building sites redeveloped over time. At the time of the Master Use Permit (MUP)	*Impacts* Impacts to historic resources under ***Alternative 5a*** would be generally as described for the ***Proposed Action*** within the MIO boundary (no boundary expansion to the **1000**	*Impacts* No impacts to historic resources would be anticipated under the ***No Action Alternative***.

PROPOSED ACTION (ALTERNATIVE 6B)	ALTERNATIVE 5A	NO ACTION ALTERNATIVE
application, a referral and supplemental info will be made to the City's Historic Preservation Officer to determine if the structure appears to meet any of the criteria for landmarks designation. If a structure is determined to possibly meet the criteria, VMMC will submit a Nomination Application. If designated, controls would be placed on any redevelopment that may occur relative to that structure. If the Historic Preservation Officer determines the structure does not appear to meet the criteria, demolition of the structure will not be conditioned or denied for historic preservation purposes under SEPA. The ***Proposed Action*** would also involve expansion to the **1000 Madison Block**. This block contains one City Landmark (Baroness Hotel). The Baroness Hotel would be retained, and any alterations to the building would be carried out in accordance with the controls and incentives adopted by the Landmarks Preservation Board. Setbacks would be maintained between proposed new development and the building's east and south facades.	**Madison Block** would occur). ***Alternative 5a*** would also involve redevelopment of the Original Hospital, the Hospital East Wing, the Hospital West Wing, and the Buck Pavilion – all, of which is diagonally across the street from the Landmark Baroness Hotel. At the time of redevelopment, it is anticipated that an adjacency analysis would be required.	
Mitigation Measures **<u>Demolition and Construction</u>** – As described earlier, a historical analysis could be prepared for any structure that is proposed for demolition that is 50 years old or older. That analysis would be required at the time of submittal of the Master Use Permit for the replacement project and referred to DON for review. New buildings constructed adjacent or across the street from a designated historic Landmark will also be referred to DON for review and approval. Please refer to Section 3.11, **Construction Impacts**, for a discussion of potential impacts that could occur to historic resources during construction and associated mitigation measures. **<u>Baroness Hotel</u>** – The following controls are imposed on the features and characteristics of the Baroness Hotel that were designated by the Board for preservation: the owner must obtain a Certificate of Approval issued by the Board pursuant to SMC 25.12, or the time for denying a Certificate of Approval must have expired, before the owner may make alterations or significant changes to the following specific features or characteristics: the exterior of the building. No Certificate of Approval or approval by the City Historic Preservation Officer (CHPO) is required for the following: any in-kind maintenance or repairs to the exterior of the building; and the installation of exterior security lighting, video cameras, security system equipment. CHPO review is available for the following: the addition or elimination of duct conduits, HVAC vents, grilles, fire escapes, pipes and other similar wiring or mechanical elements necessary for normal operation of the building; signage; exterior painting; installation of exterior light fixtures not already excluded from the Certificate of Approval process; and alterations to the canopies on the South elevation.	*Mitigation Measures* • Mitigation measures would be as described for the ***Proposed Action***.	*Mitigation Measures* • No mitigation is proposed under the ***No Action Alternative***.
3.9 Transportation, Circulation and Parking		
Impacts **<u>Trip Generation</u>** AM Peak Hour – 1,614 total trips / 1,084 net new trips PM Peak Hour – 1,295 total trips / 870 net new trips	*Impacts* **<u>Trip Generation</u>** AM Peak Hour – 1,638 total trips / 1,108 net new trips PM Peak Hour – 1,314 total trips / 889 net new trips	*Impacts* **<u>Trip Generation</u>** AM Peak Hour – 599 PM Peak Hour – 728 Other projects in the area would generate the volumes listed above. In addition, existing background traffic volumes are assumed to increase at an annual growth rate of 0.25 percent.

PROPOSED ACTION (ALTERNATIVE 6B)	ALTERNATIVE 5A	NO ACTION ALTERNATIVE
Intersection Level of Service – The following intersections would drop to LOS-E or F or remain at LOS-E or LOS-F during the AM Peak Hour: *Signalized Intersections (AM Peak Hour)* • #2 James St/ 7th Ave - Remains at LOS-E with 7 seconds of increased delay • #3 James St/ 9th Ave - Drops from LOS-C to LOS-E with 41 seconds of increased delay • #4 James St/ Boren Ave - Remains at LOS-E with 8 seconds of increased delay • #6 Madison St/ Boren Ave - Drops from LOS-D to LOS-F with 34 seconds of increased delay • #10 Madison St/ 7th Ave - Drops from LOS-D to LOS-E with 21 seconds of increased delay. • #23 Seneca St/ 6th Ave - Continues to operate at LOS-F with 16seconds of increased delay. *Unsignalized Intersections (AM Peak Hour)* • # 15 Spring St/ 9th Ave - EB left turn drops from LOS-C to LOS-F with additional 35 seconds of delay • #19 Seneca St/ Terry Ave Scenario assumes new garage access would be at south leg of intersection. Northbound traffic would operate at LOS-F if stop controlled. Level of service findings for the PM peak hour show that the following intersections would drop to LOS-E or LOS-F or remain at LOS-E or LOS-F: *Signalized Intersections (PM Peak Hour*) • #4 James St/ Boren Ave - Remains at LOS-E with 9 seconds of increased delay • #5 Marion St/ Boren Ave - Remains at LOS-E with a 3 second decrease in delay • #6 Madison St/ Boren Ave - Drops from LOS-D to LOS-E with 21 seconds of increased delay • #13 Spring St/ 6th Ave - Remains at LOS-F with 56 seconds of increased delay • #20 Seneca St/ 9th Ave - Drops from LOS-C to LOS-F • #23 Seneca St/ 6th Ave - Remains at LOS-E with a 2 second increase in delay *Unsignalized Intersections (PM Peak Hour)* • #14 Spring St/ 8th Ave - Eastbound right turn drops from LOS-B to LOS-F. • #15 Spring St/ 9th Ave - Eastbound left turn drops from LOS-C to LOS-E. • #19 Seneca St/ Terry Ave - A south leg would be added to the intersection to access a garage with that leg operating at LOS-F if stop controlled.	**Intersection Level of Service** – The following intersections would drop to LOS-E or F or remain at LOS-E or LOS-F during the AM Peak Hour: *Signalized Intersections (AM Peak Hour)* • #2 James St/ 7th Ave - Remains at LOS-E with 7 seconds of increased delay • #3 James St/ 9th Ave - Drops from LOS-C to LOS-E with 31 seconds of increased delay • #4 James St/ Boren Ave - Remains at LOS-E with 8 seconds of increased delay • #6 Madison St/ Boren Ave - Drops from LOS-D to LOS-F with 30 seconds of increased delay • #10 Madison St/ 7th Ave - Drops from LOS-D to LOS-E with 24 seconds of increased delay • #23 Seneca St/ 6th Ave - Continues to operate at LOS-F with 27 seconds of increased delay *Unsignalized Intersections (AM Peak Hour)* • # 15 Spring St/ 9th Ave - Eastbound left turn drops from LOS-C to LOS-F • #19 Seneca St/ Terry Ave Scenario assumes new garage access would be at south leg of intersection. Northbound traffic would operate at LOS-F if stop controlled. Level of service findings for the PM peak hour show that the following intersections would drop to LOS-E or LOS-F or remain at LOS-E or LOS-F: *Signalized Intersections (PM Peak Hour)* • #4 James St/ Boren Ave - Remains at LOS-E with 9 seconds of increased delay • #5 Marion St/ Boren Ave - Remains at LOS-E with a 3 second decrease in delay • #6 Madison St/ Boren Ave - Drops from LOS-D to LOS-E with 18 seconds of increased delay • #8 Madison St/ 9th Ave - Drops from LOS-B to LOS-E with 46 seconds of increased delay due to increased volumes on southbound approach • #13 Spring St/ 6th Ave - Remains at LOS-F • #18 Seneca St/ Boren Ave - Drops from LOS-B to LOS-E with 58 seconds of increased delay • #20 Seneca St/ 9th Ave - Drops from LOS-C to LOS-E with 51 seconds of increased delay • #23 Seneca St/ 6th Ave - Remains at LOS-E with a small increase in delay *Unsignalized Intersections (PM Peak Hour)* • #14 Spring St/ 8th Ave - Eastbound right turn drops to LOS-F. • #15 Spring St/ 9th Ave - Eastbound left turn drop to LOS-E. • #19 Seneca St/ Terry Ave - A south leg would be added to the intersection to access a garage with that leg operating at LOS-F if stop controlled	**Intersection Level of Service** – All signalized intersections operate at LOS-D or better with the following exceptions: *Signalized Intersections (AM Peak Hour)* • #2 James St/ 7th Ave - LOS-E due to high traffic volumes on all approaches • #4 James St/ Boren Ave - LOS-E due to high traffic volumes on all approaches • #23 Seneca St/ 6th Ave - LOS-F due to high traffic volumes on I-5 exit at Seneca *Unsignalized Intersections (AM Peak Hour)* • All unsignalized intersections operate at LOS-D or better on the controlled approaches. Level of service findings for the PM peak hour show that all signalized intersections operate at LOS-D or better with the following exceptions: *Signalized Intersections (PM Peak Hour)* • #4 James St/ Boren Ave - LOS-E due to high traffic volumes on all approaches • #5 Marion St/ Boren Ave - LOS-E due to high traffic volumes on all approaches • #13 Spring St/ 6th Ave - LOS-F due to high traffic volumes on all approaches • #23 Seneca/ 6th Ave - LOS-E due to high traffic volumes I-5 exit at Seneca *Unsignalized Intersections (PM Peak Hour)* • All unsignalized intersections operate at LOS-D or better on the controlled approaches.
Parking Minimum # of spaces required: 2,993 Maximum # of spaces allowed: 4,041 Recommended Parking Supply: 4,000 **Summary of Long Term Impacts** – Intersection Impacts as described above. *Circulation Impacts* Congestion on 9th Avenue would increase requiring the need for channelization and intersection improvements at Seneca and Spring.	**Parking** – Parking minimum, maximum and recommended supply would be as described for the ***Proposed Action***. **Summary of Long Term Impacts -** Intersection impacts described above. Circulation and Pedestrian impacts would be as described for the ***Proposed Action***.	**Parking** – Supply would remain the same as existing conditions.

PROPOSED ACTION (ALTERNATIVE 6B)	ALTERNATIVE 5A	NO ACTION ALTERNATIVE
Pedestrian Impacts While pedestrian facilities in the area are adequate, the increase in vehicular and pedestrian traffic could result in increased potential for conflicts at road crossings and even mid-block locations.		
Mitigation Measures **<u>Long Term Mitigation</u>** • Implement the adopted TMP prior to the first master plan project • As part of each project, ensure that pedestrian and vehicular circulation needs are addressed in a manner consistent with the campus wayfinding plan. • As part of the review process for master plan projects: – Assess TMP performance – Update MIMP parking requirements and reassess long-term campus parking supply recommendations – Assess operational and safety conditions for proposed garage accesses and loading areas – Assess pedestrian and vehicular circulation conditions and identify safety deficiencies that could be remedied as part of the project under review. – Assess loading berth requirements and where possible consolidate facilities so that the number of berths campus wide is less than the code requirement. – Review city of Seattle mobility master plans and identify project components that should be provided as frontage improvements or as mitigation for project impacts consistent with the 'Seattle Right-of-Way Improvement Manual' and Master Plan Design Standards. – Review adequacy of ADA facilities affecting a proposed project as part of project level review. • As part of project level environmental review, evaluate and implement improvements to mitigate impacts. – Mitigation for impacts to 9th Ave from Madison St to University St t could include: o Adding northbound and southbound left turn pockets at Madison St/ 9th o Ave within the existing road width. o Signalizing and adding northbound and southbound left turn pockets at o Spring St/ 9th Ave. Maintain pedestrian safety by including pedestrian crossing beacons and controls and curb bulbs on Spring Street and on 9th Avenue if there is adequate road width. o Adding northbound and southbound left turn pockets at Seneca St/ 9th Ave within the existing road width. o Improving sidewalks and roadway crossings to enhance pedestrian safety as part of frontage improvements when the 9th Avenue Garage and Buck Pavilion sites are redeveloped. – Mitigation for impacts to Seneca Street could include: o Signalizing the intersection of Seneca St/ Terry Ave when the hospital core is redeveloped and a south leg of the intersection becomes a garage access. o Remove the Lindeman Garage access on Seneca and provide a new access on 9th Avenue when the Lindeman Pavilion is expanded. – Mitigation for impacts to Spring St/ 8th Ave could include providing a	*Mitigation Measures* • Mitigation measures would be as described for the ***Proposed Action***.	*Mitigation Measures* • No mitigation is proposed under the ***No Action Alternative***.

PROPOSED ACTION (ALTERNATIVE 6B)	ALTERNATIVE 5A	NO ACTION ALTERNATIVE
southbound right turn lane within the existing road width. • Reduce the impact of truck movements on local streets and potential conflicts with pedestrians by consolidating loading facilities. **Short Term Mitigation** Mitigation for short term transportation impacts associated with construction of specific master plan projects include: • Implementation of construction traffic management plans associated with street-use permits or demolition permits that affect existing pedestrian, bicycle, and vehicular circulation patterns or transit routes or stops. • To the extent possible, stage construction truck loading and unloading off-street. • Implementation of a construction parking management program to identify off-site parking supplies for construction workers and minimize impacts to VMMC parking supplies and surrounding public parking supplies. • Minimize any lane closures on Madison, Boren, and Seneca. • To the extent possible, schedule deliveries at off peak times to avoid congestion. • Develop a parking phasing plan to minimize disruptions to the parking supply serving VMMC patients and visitors.		
3.10 Public Services		
Impacts **Fire** – Increases in on-site employment and the number of visitors to the VMMC campus would be incremental and accompanied by increased demand for all types of services provide by the Fire Department. New buildings developed could cause an increase in the number of alarms due to larger building's and an increased number of smoke detectors and alarm systems. The Fire Department indicates that they have sufficient capacity and resources to absorb potential increased calls related to fire suppression and EMS services. **Police** – Police Department call volumes could although the exact number of incremental new calls cannot be quantified. SPD indicates that significant additional need for police service is not expected to result from the increases in numbers of calls from the new employment or visitors at the site. **Water/Sewer/Stormwater** – Water demand could increase by 120 to 204 million gallons of consumption annually. There would be adequate capacity in the current system to handle the increase in water consumption, as well as adequate stormwater discharge capacity. No impact to water services or local domestic water pressure would be expected. **Solid Waste –** There would be an increase in solid waste production, however, staff at Seattle Public Utilities indicate that there would be sufficient capacity to handle an increase of at least 3,500 tons of solid waste (three times the existing amount that is generated).	*Impacts* Impacts to fire, police, water/sewer/stormwater and solid waste would be as described for the ***Proposed Action***.	*Impacts* The ***No Action Alternative*** would be anticipated to result in the continuation of existing rates of calls for fire/EMS services and police services, and a continuation of existing demand levels for water, sewer, stormwater and solid waste services.
Mitigation Measures **Fire** – The following mitigation measures could minimize potential impacts to Fire and EMS Services from the VMMC redevelopment: • Increases in employment and visitors to the VMMC campus over the build-out of VMMC's *MIMP* would be incremental and would be accompanied by increases in demand for fire/EMS services under all of the EIS redevelopment alternatives. A portion of the tax revenues generated from redevelopment of the site – including construction sales tax, retail sales tax, business and operation tax, property tax, utility tax and other fees, licenses and permits - would accrue to the City of Seattle and conceivably could help offset demand for public services.	*Mitigation Measures* • Measures would be the same as those described for ***Proposed Action***.	*Mitigation Measures* • No mitigation is proposed under the ***No Action Alternative***.

PROPOSED ACTION (ALTERNATIVE 6B)	ALTERNATIVE 5A	NO ACTION ALTERNATIVE
• All new buildings would be constructed in compliance with the Fire Codes in effect at the time of building permit review. • Access and fire flow issues would be considered during the MUP and building permit review process. **Police** – The following mitigation measures could minimize potential impacts to police services resulting from redevelopment of the VMMC campus: • Increases in employment and visitors to the site over the build-out of VMMC's *MIMP* would be incremental and would be accompanied by increases in demand for police services under all of the EIS redevelopment alternatives. A portion of the tax revenues generated from redevelopment of the site – including construction sales tax, retail sales tax, business and operation tax, property tax, utility tax and other fees, licenses and permits - would accrue to the City of Seattle and conceivably could help offset demand for police services. • The portions of the site that are under construction during phased redevelopment could be fenced and lit, as well as monitored by surveillance cameras to help prevent construction site theft and vandalism. • Permanent site design features could be included to help reduce criminal activity and calls for service, including: orienting buildings towards sidewalks, streets and/or public open spaces; providing convenient public connections between buildings onsite and to the surrounding area; and, providing adequate lighting and visibility onsite, including pedestrian lighting. • The *Draft MIMP* states that Virginia Mason plans to apply Crime Prevention Through Environmental Design (CPTED) principles to the development of its open space and public amenities to enhance the safety and security of the areas. **Water/Sewer/Stormwater** – The following mitigation measures could minimize potential impacts to Water, Sewer, and Stormwater: • Major development on the VMMC campus would examine the impact of development on the sewer infrastructure from the development site to where SPU's collection system connects to King County interceptors (approximately 4,500 LF downstream). • Low impact development measures such as bioretention cells or bioretention planters could potentially be utilized to reduce the demand on stormwater infrastructure. • Continued implementation of EnviroMason measures and other measures to reduce the demand on water and sewer. • The Draft MIMP includes as one of VMMC's Goals and Objectives – To build facilities that are resource-efficient - Participate in the Seattle 2030 District challenge. **Solid Waste** – The following mitigation measures could minimize potential impacts to Solid Waste from the VMMC redevelopment: • Continued implementation of EnviroMason measures - VMMC's environmental stewardship initiative -- would include waste reduction programs, such as recycling operating room plastics, food waste composting, hazardous waste recycling, and general office recycling. • During demolition and construction, construction and debris waste could potentially be recycled, based on the existence of hazardous materials.		

PROPOSED ACTION (ALTERNATIVE 6B)	ALTERNATIVE 5A	NO ACTION ALTERNATIVE
3.11 Construction		
Impacts **Air Quality** – Construction activities would generate air pollutants as a result of fugitive dust from demolition activities associated with the buildings and the surface parking areas, earthwork, and emissions from construction vehicles. Such emissions, however, would be temporary in nature and localized to the immediate vicinity of the construction activity and would not, therefore, be anticipated to be significant. **Noise** – Noise from demolition and construction activities for new or expanded facilities have the potential to impact nearby receivers, particularly sensitive uses such as residences and health care facilities on the VMMC campus. Construction noise management plans should be developed and implemented for those construction projects that are within about 200 ft. of off-site sensitive receivers. The temporary nature of construction coupled with its restriction to daytime hours minimizes the potential for significant impacts from construction activities and equipment. **Land Use** – Potential indirect and/or temporary construction-related impacts could affect access to the existing retail establishments on the **1000 Madison Block**. Existing businesses and associated employees located on the expansion block are currently leasing space from VMMC. During construction of any new buildings on this block, temporary business closures could occur and temporary and/or permanent relocation of existing retail businesses on site may be required. **Historic Resources** – Potential indirect and/or temporary construction-related impacts could minimally affect the Baroness Apartment Hotel and the Sorrento Hotel as a result of potential redevelopment projects. Such impacts could include the following: • Potential Structural Instability/Undermining–Damage that could occur to an historic resource due to structural instability caused by construction-related vibration and/or earthwork. • Temporary Dirt/Unintended Damage– Introduction of atmospheric elements that may temporarily alter and/or potentially damage historic building fabric or architectural features. These construction-related impacts would be temporary and periodic in nature. With implementation of appropriate, site-specific mitigation measures, no significant impacts would be anticipated. **Transportation** – Construction-related traffic impacts would occur in varying degrees throughout the redevelopment process**.** Short term impacts associated with individual projects would likely include temporary closure of sidewalks, removal of on-street parking, and relocation of transit stops because of demolition or construction activity. There would also be temporary increases in heavy vehicles on adjacent streets due to construction activity. Daily truck trip volumes would vary with project and project phase with the greatest volume occurring during periods of excavation. The presence of construction workers would also increase traffic volumes and parking demand in the area. As individual projects are planned and Master Use Permits applied for, project-specific impacts on nearby streets would need to be evaluated to determine the need for a construction management plan and/or street use permits. **Public Services** ***Fire*****:** During construction activities under, there could be an increase in demand for fire services. Fire Department service calls related to inspection of specific construction	*Impacts* Construction impacts as related to Air Quality, Noise, Transportation and Public Services would be as described for the ***Proposed Action***. Impacts to Historic Resources would be as described for the ***Proposed Action***, except that no construction impacts would affect the Sorrento Hotel, since no expansion to the **1000 Madison Block** would occur under ***Alternative 5a***.	*Impacts* No new building construction or significant modifications to the existing buildings on-campus would occur and no construction-related impacts would be anticipated.

PROPOSED ACTION (ALTERNATIVE 6B)	ALTERNATIVE 5A	NO ACTION ALTERNATIVE
projects onsite and to respond to potential construction-related accidents and injuries. Existing Fire Department staffing and equipment are expected to be sufficient to handle any increase service needed for onsite construction activities. ***Police*:** During construction activities, there could be an increase in demand for police services. Police Department service calls could increase due to construction site theft and vandalism. Existing Police Department staffing and equipment would be expected to be sufficient to handle any increased service needed for construction activities. ***Solid Waste:*** During redevelopment of the VMMC campus, solid waste would be generated by both demolition and construction activities. To the extent feasible, construction-generated solid waste would be diverted from landfills and sent to recycling or composting facilities. Other means of reducing the solid waste include: on-site source separated recycling; potential reuse of demolition materials on-site, and, salvage and reuse of building components. Building materials would be tested as part of demolition activities to determine the potential levels of contamination present, such as lead or asbestos. Results would determine whether building materials would be sent to a landfill or to a specialized facility that handles hazardous waste.		
Mitigation Measures To mitigate for potential construction-related impacts, VMMC would develop a Construction Management Plan (CMP) in conjunction with site-specific developments. The intent of the CMP is to anticipate and reduce the potential noise impacts from demolition and construction activities on adjacent properties and minimize impacts on traffic. Management practices shall be established and at a minimum include the following: technological and operational noise control measures to reduce the amount of sound generation; reduce the transmission of demolition and construction noise to off-site receivers through sound-containment measures; limits to construction hours depending on distance from sensitive receivers; and, coordinate with Seattle Department of Transportation (SDOT) on haul routes and street use permits. This plan would be coordinated with the DPD Noise Abatement Office (DPD), SDOT and VMMC. The plan would include the following elements: 1. Construction Communication – including a Contact and Community Liaison. 2. Construction Hours and Sensitive Receivers – identifying demolition and construction activities within permissible construction hours. 3. Construction Noise Requirements – all demolition and construction activities shall conform to the Noise Ordinance, except as approved through the variance process. 4. Measures to Minimize Noise Impacts – list of measures to be implemented to reduce or prevent noise impacts during demolition and construction activities during standard and non-standard working hours. 5. Construction Milestones – a description of the various phases of demolition and construction, including a description of noise and traffic generators, and anticipated construction hours for each phase. 6. Construction Noise Management – identify techniques to minimize demolition and construction noise including: timing restrictions, noise reduction construction technologies, process modifications. These techniques may go beyond code requirements and could include the following: • Using properly sized and maintained mufflers, engine intake silencers, engine enclosures, and turning off idle equipment. Construction contracts can specify that	*Mitigation Measures* Mitigation measures would be the same as those described for the ***Proposed Action***.	*Mitigation Measures* No impacts would occur and no mitigation is proposed.

PROPOSED ACTION (ALTERNATIVE 6B)	ALTERNATIVE 5A	NO ACTION ALTERNATIVE
mufflers be in good working order and that engine enclosures be used on equipment when the engine is the dominant source of noise. • Stationary equipment could be placed as far away from sensitive receiving locations as possible. Where this is infeasible, or where noise impacts are still significant, portable noise barriers could be placed around the equipment with the opening directed away from the sensitive receiving property. These measures are especially effective for engines used in pumps, compressors, welding machines, and similar equipment that operate continuously and contribute to high, steady background noise levels. In addition to providing about a 10-dBA reduction in equivalent sound levels, the portable barriers demonstrate to the public the contractor's commitment to minimizing noise impacts during construction. • Substituting hydraulic or electric models for welding and impact tools such as jack hammers, rock drills and pavement breakers where feasible could reduce construction and demolition noise. Electric pumps could be specified if pumps are required. • Although, as safety warning devices back-up alarms are exempt from noise ordinances, these devices emit some of the most annoying sounds from a construction site. One potential mitigation measure would be to ensure that all equipment required to use backup alarms utilize ambient-sensing alarms that broadcast a warning sound loud enough to be heard over background noise -- but without having to use a preset, maximum volume. An even better alternative would be to use fixed volume or ambient-sensing broadband backup alarms instead of typical pure tone alarms. Broadband alarms have been found to be very effective in reducing annoying noise from construction sites. Requiring operators to lift rather than drag materials wherever feasible can also minimize noise from material handling. • Construction staging areas expected to be in use for more than a few weeks should be placed as far as possible from sensitive receivers, particularly residences. Likewise, in areas where construction would occur within about 200 ft. of existing uses (such as residences, schools/classrooms, and noise-sensitive businesses), effective noise control measures (possibly outlined in a construction noise management plan) should be employed to minimize the potential for noise impacts. In addition to placing noise-producing equipment as far as possible from homes and businesses, such control could include using quiet equipment and temporary noise barriers to shield sensitive uses, and orienting the work areas to minimize noise transmission to sensitive off-site locations. Although the overall construction sound levels will vary with the type of equipment used, common sense distance attenuation should be applied. Additionally, effort could be made by VMMC to plan the construction schedule to the extent feasible with nearby sensitive receivers to avoid the loudest activities (e.g., demolition or jack-hammering) during the most sensitive time periods (10 PM to 7 AM weekdays, 10 PM to 9 AM weekends). A construction noise management plan would again be an appropriate location to identify these types of conflicts and establish less-intrusive construction schedules. 7. Construction Parking Management – construction workers will be encouraged to park in designated on-site parking areas. 8. Construction Traffic/Street and Sidewalk Closures – demolition, earthwork excavating, concrete and other truck routing plans will be developed and submitted for approval through SDOT for site-specific development. Truck routing plans may include limitations on hauling of debris, earth and construction materials during peak hours. Traffic and pedestrian control signage and flaggers will be used as necessary to facilitate traffic and pedestrian flow per the requirements of any street		

PROPOSED ACTION (ALTERNATIVE 6B)	ALTERNATIVE 5A	NO ACTION ALTERNATIVE
use permit issued by SDOT. Sidewalk Closures with phasing and timing if necessary. Other mitigation measures could include: • The proponent would coordinate with Metro transit relative to construction activity that could affect transit service proximate to the project site. • Where existing sidewalks or walkways are temporarily closed during construction, alternative routes would be developed by VMMC and approved by SDOT to maintain pedestrian circulation patterns. • For pedestrian safety, construction sites would be enclosed with a cyclone fence. In addition, a covered walkway with staging could be provided adjacent to construction sites. • A parking provision could be included in construction contracts between VMMC and the general contractor and between the general contractor and subcontractors, such as specifying where construction workers should park, shuttles, etc. 9. Construction Air Quality – Site development would adhere to Puget Sound Clean Air Agency's regulations and the City's construction best practices regarding demolition activity and fugitive dust emissions, including the following: • as necessary during demolition, excavation, and construction, sprinkle debris and exposed areas to control dust; • as necessary, cover or wet transported earth material; • provide quarry spall areas on-site prior to construction vehicles exiting the site; • wash truck tires and undercarriages prior to trucks traveling on City streets; • promptly sweep earth tracked or spilled onto City streets; • monitor truck loads and routes to minimize dust-related impacts; • use well-maintained construction equipment and vehicles to reduce emissions from such equipment and construction-related trucks; • avoid prolonged periods of vehicle idling; and, • schedule the delivery and removal of construction materials and heavy equipment to minimize congestion during peak travel time associated with adjacent streets. 10. Historic Resources – The following mitigation measures could be implemented as necessary to address potential impacts to historic resources resulting from redevelopment activities • Care should be taken in order to avoid structural damage to nearby buildings that could occur due to construction-related vibrations and/or earthwork. Excavation, earthwork, pile driving etc. could be designed and/or monitored to minimize and/or immediately address any such impacts to historic properties. Monitoring could include crack monitors, periodic observation, and photography to document the structural integrity of historic buildings and determine whether there was resulting damage of interior or exterior finishes, or exterior masonry and/or framing. If such damage occurred, repairs should be made to the affected buildings. Care should be taken in order to avoid or limit the introduction of atmospheric elements that could alter and/or potentially damage historic building fabric or architectural features of historic resources. Construction activity could be monitored in order to prevent and address any such impacts to historic properties. Dust control measures would be implemented.		

E. POTENTIAL SIGNIFICANT ADVERSE ENVIRONMENTAL IMPACTS

The following summarizes the potential significant adverse environmental impacts identified in this environmental analysis.

Air Quality

None have been identified and none would be expected.

Greenhouse Gas Emissions

The direct and indirect impacts of the GHG emissions of any of the alternatives are not considered significant.

Noise

The greatest potential for operational noise impacts from the alternatives would result from new ventilation equipment and other mechanical equipment associated with the new buildings on the VMMC campus. Care, therefore, should be taken in the selection, design, and placement of such equipment to ensure that all City of Seattle noise limits are met at nearby properties. Overall, no significant unavoidable adverse operational noise-related impacts are anticipated.

Noise impacts due to traffic are expected to be minimal and/or intermittent. No significant unavoidable adverse traffic noise-related impacts are anticipated.

Land Use Patterns

Proposed redevelopment on the VMMC campus would result in an intensification of development, additional employment opportunities, and hospital/medical uses on campus. Under the ***Proposed Action***, proposed redevelopment would include expansion of the institutional boundary and displacement of existing and potential residential and commercial uses. Activity levels on the VMMC campus and in the vicinity of campus would also increase in conjunction with redevelopment. While the intensity of redevelopment on the site would be substantially greater than the amount associated with existing campus development, such redevelopment would be consistent with the pattern and scale of surrounding land uses, as well as with the intent of the City's *Comprehensive Plan* and zoning.

Housing

With implementation of a City approved replacement housing plan, no significant unavoidable adverse impacts would be anticipated.

Aesthetics – Viewshed

No significant unavoidable adverse viewshed impacts are anticipated with regard to the buildings that are proposed in conjunction with the ***Proposed Action*** and ***Alternative 5a***. The proposed skybridges, however, will alter view corridors.

Aesthetics – Height, Bulk & Scale

With implementation of proposed setbacks, no significant unavoidable adverse impacts are anticipated.

Light and Glare

Development under the *Draft MIMP* would result in new sources of light and glare to the VMMC campus, **1000 Madison Block** and site vicinity. With proposed mitigation measures, significant light and glare impacts to on-site and surrounding uses would not be anticipated.

Shadows

Development under the proposed *Draft MIMP* would result in new sources of shadow impacts associated with the VMMC campus, **1000 Madison Block** and site vicinity. With implementation of the proposed mitigation measures, significant shadow impacts to on-site and surrounding uses would not be anticipated.

Historic Resources

With the mitigation noted, no significant unavoidable adverse impacts are anticipated.

Transportation

Three intersections are forecasted to operate at LOS-F under future conditions. Potential solutions to improve level of service are beyond the scope of this analysis and are the purview of citywide planning efforts that address congestion through trip reduction strategies and corridor improvements such as signal timing and turning restrictions that incorporate the needs of pedestrians as well as motor vehicles.

The intersection of Seneca St/ 6th Ave is forecasted to operate at LOS-F during the AM peak hour in 2042 under the ***No Action Alternative***, the ***Proposed Action***, and ***Alternative 5a***.

The intersection of Spring St/ 6th Ave is forecasted to operate at LOS-F during the PM peak hour in 2042 under the ***No Action Alternative***, the ***Proposed Action***, and ***Alternative 5a***.

The intersection of Madison St/ Boren Ave is forecasted to operate at LOS-F during the AM peak hour in 2042 under the ***Proposed Action***, and ***Alternative 5a***.

Public Services

No significant unavoidable adverse impacts would be anticipated.

Construction

While some construction-related air quality impacts would be unavoidable, due to the temporary and intermittent nature of construction impacts and with implementation of the proposed mitigation, no significant impacts are anticipated.

Construction noise has the potential to affect multiple residential and other sensitive properties in the vicinity of the VMMC. The City of Seattle has established specific noise limits for construction activities that occur during daytime hours. These limits vary depending on the zoning of the source and receiving properties and will be different for each of the proposed new or expanded buildings. Careful attention should be given to the demolition and construction plans for these facilities in order to ensure that the construction activities can comply with the applicable noise limits. With attention to these details, no significant noise impacts would be expected.

With implementation of appropriate mitigation measures, no significant unavoidable adverse impacts to historic resources, public services or transportation resources would be anticipated.

SECTION II

PROJECT DESCRIPTION

and

ALTERNATIVES

SECTION II

PROJECT DESCRIPTION AND ALTERNATIVES

2.0 PROPONENT/PROJECT LOCATION

2.0.1 Proponent

The proposed *Major Institution Master Plan* (*MIMP*) is sponsored by Virginia Mason Medical Center (VMMC).

2.0.2 Project Location

The 7.05-acre campus[1] of VMMC is located within Seattle's First Hill/Capitol Hill Urban Center and is generally bounded by University St. on the north,[2] Boren Ave. on the east, Spring St. on the south, and the mid-block alley between 8th and 9th Avenues on the west. See **Figures 2-1** and **2-2**. The address of VMMC is 1100 Ninth Ave. Seattle, WA 98101.

2.1 PROJECT OVERVIEW

The ***Proposed Action*** involves adoption and implementation of a new *Major Institution Master Plan* (*MIMP*) for VMMC. The proposed *MIMP*, which must be approved by the City, would replace the existing *MIMP* that was adopted by Seattle City Council in 1994.[3]

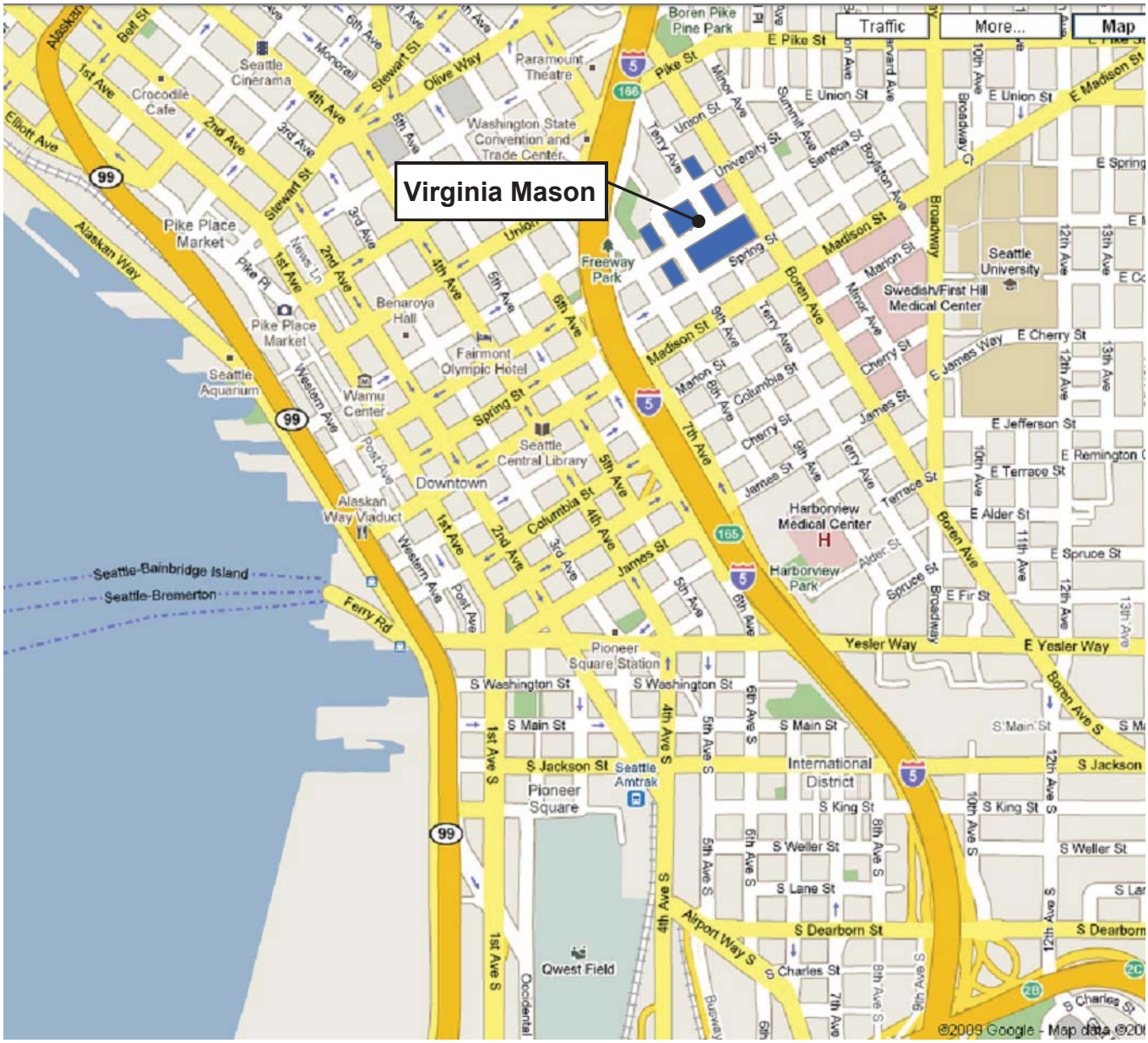
1 7.05 acres represents Virginia Mason-owned property within Virginia Mason Medical Center's Major Institution Overlay (MIO) boundary. This area does not include public rights-of-way.
2 A portion of the existing north boundary of the campus extends north of University St.
3 Ord. #117106

Source: City of Seattle, 2003

Figure 2-1

Regional Map

EA | BLUMEN



Source: Google, 2009

Figure 2-2

Vicinity Map

EA | BLUMEN

2.2 BACKGROUND INFORMATION

2.2.1 Overview – Organization, Programs, Staffing and Statistics

Organization: VMMC is a private, nonprofit organization that provides a broad range of health care services. It is governed by a 14-member board of community volunteers that represent a wide range of community interests.

Programs: VMMC consists of over 80 departments and programs. Several key programs on the VMMC campus include the following:

- **Hospital** -- This is an acute care hospital that is licensed by the State of Washington for 336 beds and it includes one of the region's busiest emergency departments. Virginia Mason was founded in 1920 at the corner of Terry Avenue and Spring Street. The original building was a 65-bed hospital that also contained six physician offices.

- **Benaroya Research Institute at Virginia Mason (BRI)** -- BRI was established in 1999 and is one of the few research institutes in the world that is dedicated to finding causes and cures to eliminate autoimmune diseases including Type 1 diabetes, arthritis, lupus, multiple sclerosis, scleroderma and many others.

- **Floyd & Delores Jones Cancer Institute** -- Nationally recognized physicians and researchers at the Floyd & Delores Jones Cancer Institute at VMMC provide medical care and offer patients opportunities to participate in leading research trials.

Other comprehensive programs associated with VMMC include the following. Information concerning each is available on VMMC's website (https://www.virginiamason.org/).

- Bailey-Boushay House;
- Buse Diabetes Center;
- Center for Hyperbaric Medicine;
- Digestive Disease Institute;
- Heart Institute;
- Neuroscience Institute;
- Orthopedics and Sports Medicine;
- Urology; and the
- Virginia Mason Institute.

Clinics: In addition to the VMMC complex on First Hill, VMMC has a network of seven regional clinics in Western Washington, including: Bellevue, Federal Way, Issaquah, Kirkland, Lynnwood, Sand Point Pediatrics, and Winslow / Bainbridge Island.

Affiliations: VMMC works cooperatively with other health care organizations in the region and is affiliated with Group Health Cooperative, and Pacific Medical Centers.

Staffing and Support: In conjunction with their various facilities, VMMC currently employs more than 5,500 people and over 460 physicians practice in 45 different medical, surgical and diagnostic fields offering both primary and specialized care. Approximately 182 of their

physicians have faculty appointments at the University of Washington, including 26 at the professorship level. In addition, nearly 970 volunteers donate their time in support of VMMC. In 2011, service time for volunteers amounted to over 22,768 hours. Estimates compiled by VMMC for the traffic and parking analysis that is contained in this EIS indicate that as many as 228 hospital-based doctors, 66 staff doctors and 3,035 staff members may be on-campus currently during the afternoon peak hour traffic period.

Statistics: (2011 data):[4]

- 626,791 health care provider visits;
- 16,330 inpatient hospital admissions;
- 10,000 outpatient surgical procedures were performed; and,
- over 15,700 patients were treated at the Emergency Department.

2.2.2 Campus Character

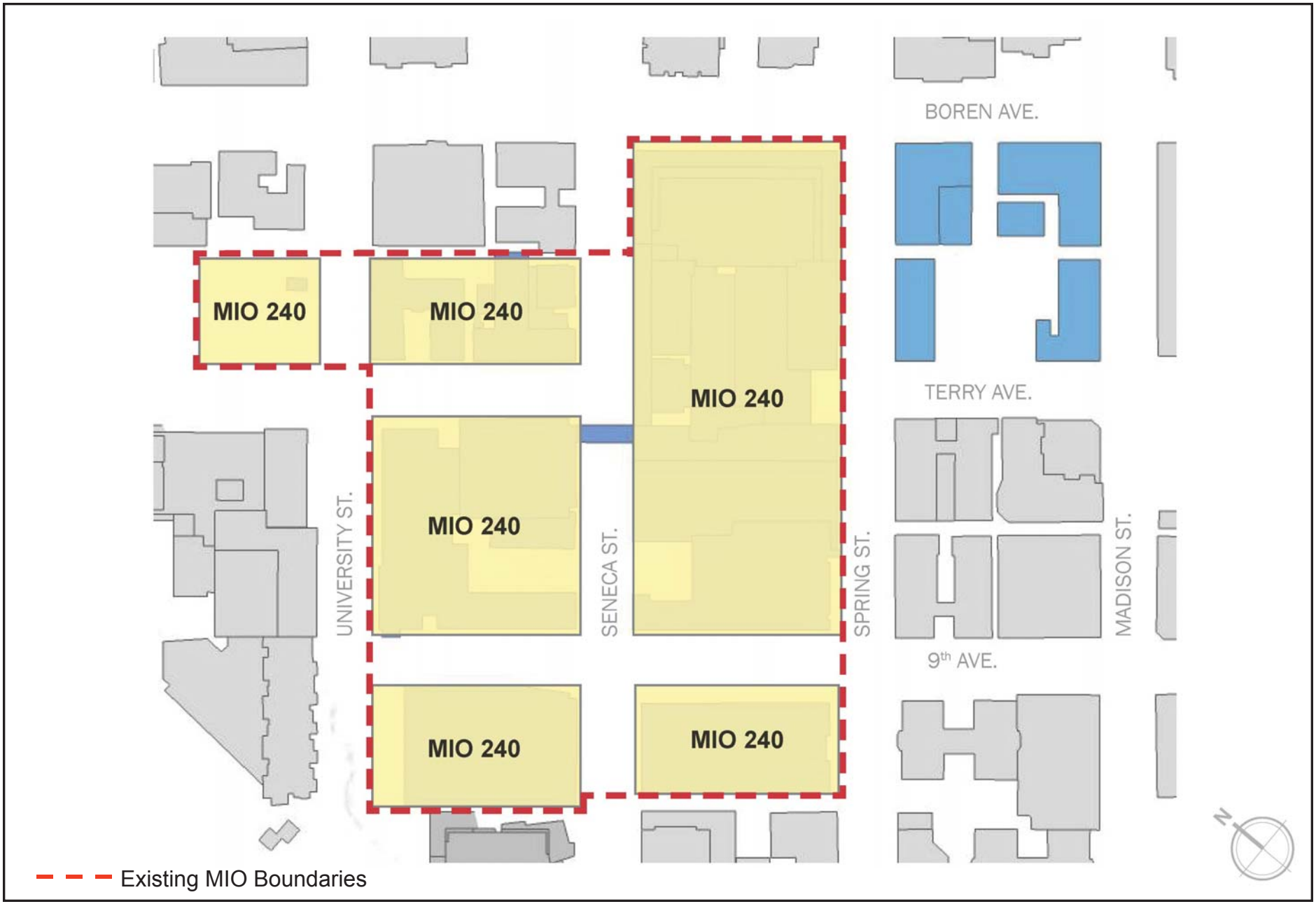
Site

The VMMC Major Institution Overlay (MIO) boundaries presently encompass an area of approximately 7.05 acres; all properties within this area are owned by VMMC and this area excludes public rights-of-way that are located within the campus boundaries.

As shown by **Figure 2-3**, the campus extends approximately 800 ft. in both a north-south and an east-west direction. In general, the campus is generally bordered by University Street on the north,[5] Boren Avenue on the east, Spring Street on the south and the mid-block alley between 8th and 9th Avenues on the west. Portions of Terry Avenue, Seneca Street and 9th Avenue traverse the MIO.

The campus is located on the west and, to a lesser extent, the north-facing slope of First Hill. The highest elevation within the MIO is approximately 329 ft.[6] at the southeast corner of the MIO (intersection of Boren Avenue and Spring Street). The elevation drops 70 ft. to approximately elevation 259 ft. near the southwest corner of the MIO. The elevation drop between the southeast corner of the MIO and the northeast corner is less dramatic – approximately 52 ft. (elevation approximately 277 ft.). The cross-campus topographic change – from the southeast corner of the MIO to the northwest corner (intersection of 9th Avenue and University Street) is approximately 76 ft.

4 Draft MIMP, pg. 15
5 A portion of the existing north boundary of the campus extends north of University St.
6 Data from Google Earth.



Source: SRG, 2012

EA | BLUMEN

Figure 2-3

Existing MIO Boundaries

Existing Campus Development

Figure 2-4 depicts the campus and existing buildings on the campus; **Table 2-1** identifies each of the buildings by use, building square footage, and the year the building was constructed and/or when the most recent major renovation occurred.

- The VMMC campus contains 12 structures with a total of approximately 1.2 million sq. ft. of above-grade building area.[7]

- Building use on-campus is divided into eight broad categories: inpatient, clinic, research, office, support space, hotel, restaurant, and parking.

- Percentage wise, roughly 43 percent of the total building square footage that now exists on campus is attributable to the hospital complex, comprised of the Original Hospital, the Hospital East Wing, the Hospital West Addition, and the Buck Pavilion.

- On-campus office, research, clinic and support space outside the hospital complex comprise roughly 47 percent of the total building square footage.

- Five of the twelve structures on-campus were constructed prior to 1943; four of these have undergone several additions over the years. All have been extensively remodeled.

- Most buildings are multi-story structures – ranging from 2 stories to the highest – the Hospital East Wing – at 14 stories above-grade (plus rooftop mechanical space).

Campus Parking

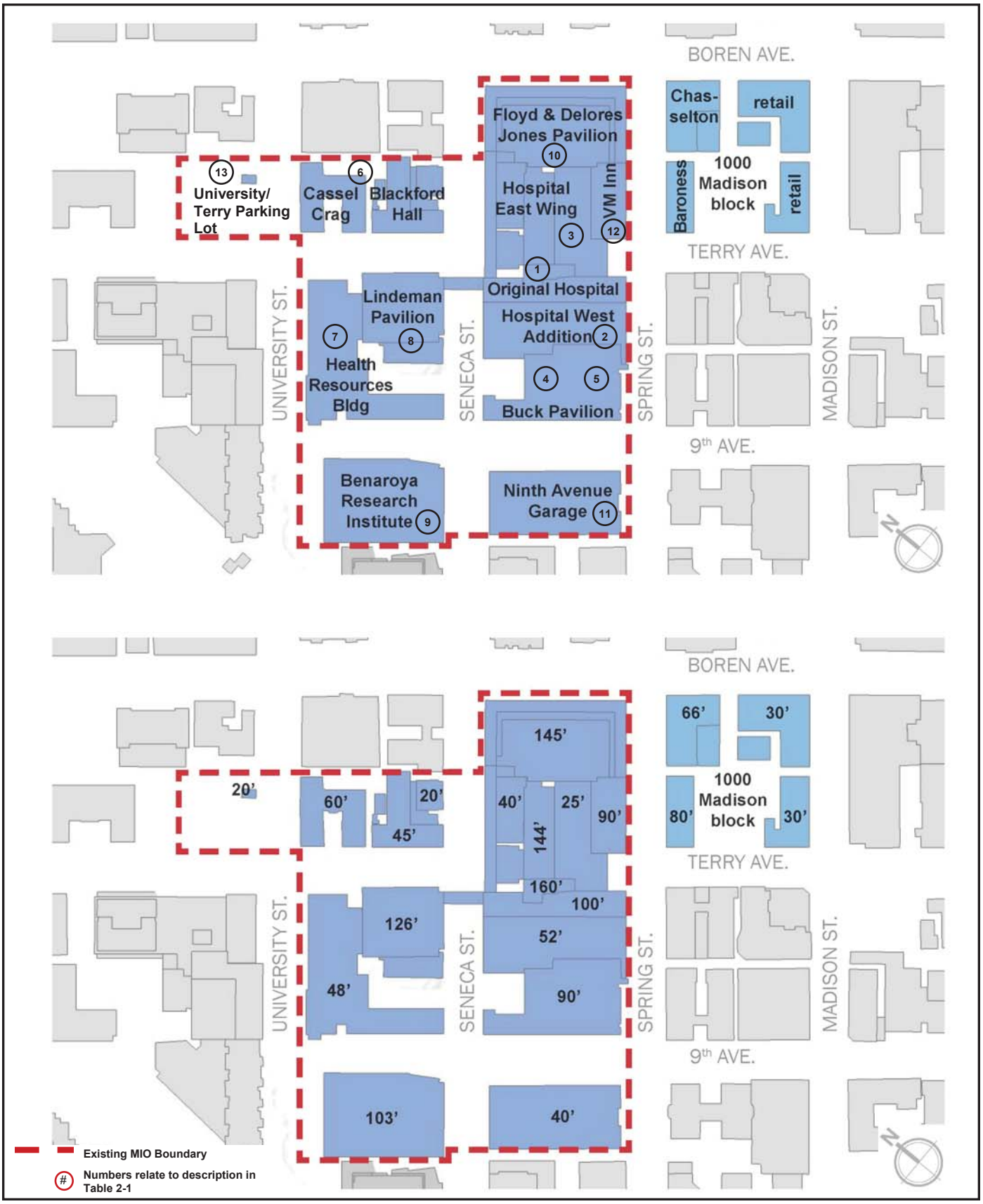
VMMC currently provides on-campus parking for 861 vehicles. Approximately 91 percent of the parking is contained in three parking structures:

- 9th Avenue Parking Garage (347 spaces);
- Benaroya Research Institute (267 spaces); and
- Lindeman Pavilion (169 spaces).

The balance -- 78 spaces – consists of surface parking in conjunction with the University/Terry Parking Lot (72 spaces), 2 spaces in conjunction with Cassel Crag/Blackford Hall, and several spaces associated with the Health Resources Building. VMMC also leases off-campus parking totaling 482 spaces.

Refer to **Section 3.9**, **Transportation, Circulation and Parking**, of this Draft EIS for a detailed analysis of parking.

[7] Based on the City's Land Use Code, building area is measured to the inside surface of exterior walls at floor level and it excludes portions of a building that are entirely below-grade.



Source: SRG, 2012

Figure 2-4

Existing Campus Buildings and Approximate Building Heights

Table 2-1
EXISTING CAMPUS BUILDINGS

Bldg. #	Building	Building Use(s)	Year Constructed	Year Remodeled	Total Above-Grade Building Area
1	**Hospital -- Original**	inpatient, offices, clinics, support space	1920	1928, 1938, 1944	**531,734**
2	**Hospital – West Addition**		1937	1941, 1966, 1977	
3	**Hospital – East Wing**		1960	1962, 1969, 1977	
4	**Buck Pavilion – North**		1952	1963	
5	**Buck Pavilion -- South**		1976		
6	**Cassel Crag/ Blackford Hall/MRI Building**	offices, research	1925/1924		**66,085**
7	**Health Resources Building**	offices, support space	1943		**59,405**
8	**Lindeman Pavilion**	offices, clinic, support space	1989		**157,246**
9	**Benaroya Research Institute**	offices, research	1999		**109,550**
10	**Floyd & Delores Jones Pavilion**	inpatient, support space	2010		**185,193**
11	**Ninth Avenue Garage**	parking structure	1966		**69,786**
12	**Inn at Virginia Mason**	hotel, restaurant, offices, support space	1928		**48,445**
13	**University/Terry Parking Lot**	surface parking	1988		**0**
Total Existing Virginia Mason Development					**1,227,444**

Source: VMMC, 2012.

On-Going Campus Development

Other than renovation and on-going tenant improvements, there are no projects that were authorized as part of VMMC's existing *MIMP* that are currently underway. The last project undertaken in conjunction with the existing *MIMP* was the Floyd & Delores Jones Pavilion, which was completed in 2010.

2.2.3 Major Institution Master Planning Process

Previous Campus Master Planning

While Virginia Mason has had several campus master plans since its inception in 1920, this proposed *MIMP* represents the second *Major Institution Master Plan* that has been prepared for VMMC to satisfy requirements of the City's Major Institution Code,[8] as well as to fulfill VMMC's need for a comprehensive campus development plan. VMMC's existing *MIMP* was completed in November 1992 and formally adopted by the City of Seattle in 1994.[9] That *MIMP* proposed phased development on the 7.05-ac. campus, which included approximately 879,000 sq. ft. of new construction, demolition of 174,300 sq. ft., and the addition of 930 parking spaces.[10] The *MIMP* also included vacation of an alley[11] and establishment of a Transportation Management Plan (TMP). The existing *MIMP*, which was adopted under previous Major Institution Code requirements, expired in 2004.

Current Campus Master Planning

VMMC has determined that its First Hill campus needs to be redeveloped in order to meet the demands of regional growth, advancements in technology and patient care practices, and to replace aging facilities. In addition, VMMC has acquired the **1000 Madison Block**, which is outside the hospital's existing MIO boundary. Those factors, together with the fact that the existing *MIMP* has expired, necessitates an update of VMMC's existing *MIMP*.

The proposed *MIMP* is also intended to address an administrative correction associated with a mapping error of a portion of VMMC's existing north campus boundary. The University/Terry surface parking lot on Terry Avenue (as shown on **Figure 2-4**) consists of Lots 9 and 12, Block 112. A 20-foot strip of land (part of Lot 8, Block 112), which extends from Terry Avenue to the mid-block alley immediately north of the surface parking lot, should have been included within VMMC's MIO boundary.

VMMC began the process of updating the existing *MIMP* in August 2010 with submittal of a Notice of Intent to the City of Seattle Department of Neighborhoods. The City published a notice relative to formation of the required Citizens Advisory Committee (CAC) and in November, recommendations concerning prospective CAC members were submitted to the City Council for formal appointment. The first formal meeting of the CAC (orientation meeting) occurred November 29, 2010 and the first public meeting occurred on December 16, 2010. Throughout the autumn (2010), VMMC compiled the required *MIMP* Application/Concept Plan,[12] which was submitted to the City in December 2010 and subsequently to the CAC.

The planning process associated with VMMC's proposed *MIMP* has also involved numerous meetings to encourage substantial and timely involvement by many entities. Such meetings have included internal and external involvement. The following types of meetings have

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8 SMC 23.69
9 Ord. #117106
10 30 spaces were identified as temporary
11 This was an alley that extended between Seneca St. and Spring St. in the location of the present Floyd & Delores Jones Pavilion.
12 VMMC, 2011

occurred to-date: VMMC departmental, Citizens Advisory Committee, VMMC neighbors and City of Seattle departments.

2.2.4 Phased Environmental (SEPA) Review

This EIS accompanies the proposed *MIMP* for VMMC and is to be considered in conjunction with the *MIMP*. As such, the Draft *MIMP* -- prepared by VMMC -- and this Draft EIS -- prepared by the Seattle Department of Planning and Development (DPD) -- should be reviewed together for a comprehensive understanding of all aspects of the ***Proposed Action*** and possible environmental impacts.

The purpose of this EIS is to:

- identify and evaluate probable adverse environmental impacts that could result from development associated with the *Proposed Action,* another development alternative, and the *No Action Alternative;* and
- identify measures to mitigate those impacts.

Projects proposed in conjunction with the Draft *MIMP* represent planned[13] and potential[14] development. As such, this Draft EIS is a programmatic document in that it addresses a broad range of development that is anticipated to occur over an extended period of time and which few specific details are known -- as compared to project specific development in which considerable detail is known.

As a programmatic EIS, at the time site-specific campus development is proposed, the specific project will be evaluated by DPD as part of the Master Use Permit (MUP) process for the project. Key aspects of the evaluation may focus on proposed development square footages, parking, and environmental impacts and will compare information associated with the site-specific proposal with data noted in VMMC's Compiled Adopted *MIMP*[15] and the associated Final EIS. If DPD determines that additional analyses are needed, such would be provided in conjunction with the MUP for that site-specific project.

For this Draft EIS, DPD issued a SEPA Determination of Significance/Scoping Notice on January 6, 2011 that commenced the formal, public EIS scoping process for this project, which occurred January 6, 2011 through February 3, 2011. In addition, an EIS Scoping meeting was held on January 26, 2011. During the EIS Scoping period, DPD received written comments, as well as oral comments, regarding the scope of the Draft EIS. With input from Virginia Mason Medical Center's Citizen's Advisory Committee (an advisory committee for the purpose of developing this *MIMP*), DPD determined the issues and alternatives to be analyzed in this Draft EIS.

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13 Planned development is defined by the Seattle Land Use Code as "development which the Major Institution has definite plans to construct" (Seattle Municipal Code 23.69.030 D.).

14 Potential development is defined by the Seattle Land Use Code as "development or uses for which the Major Institution's plans are less definite" (SMC 23.69.030 D.).

15 The Compiled Adopted *MIMP* is the approved *MIMP* with all City Council changes and conditions that were imposed during the *MIMP* approval process.

2.3 PROJECT GOALS and OBJECTIVES

Virginia Mason Medical Center's *Major Institution Master Plan* (*MIMP*) is a land use plan specific to VMMC's existing campus and the proposed MIO expansion area. The *MIMP* indicates that.

> *"(T)he goal of this effort is to fully understand the capacities and constraints inherent in the redevelopment of the existing properties, to collaborate with the neighborhood on how to best accommodate this growth, to smooth the development process and to eliminate the waste of redesign.*

The following goals are from VMMC's *Draft MIMP*. They provide guidance in terms of campus buildings, landscaping/open space, campus mobility, neighborhood vitality/character, environmental stewardship, transit/traffic/parking, and construction impacts. The Draft MIMP should be reviewed concerning objectives that are aimed at implementing the goals. The goals provide the basis for VMMC's proposed Long-Term development, which is described in Section 2.4 of this Draft EIS.

Virginia Mason proposes to redevelop and expand its Downtown campus based on the following goals:

CAMPUS BUILDINGS

- Design the edges of the campus to contextually relate to the adjoining properties in scale, style and massing.
- Design buildings, including rooftops and street level facades, with consideration of how they will appear to viewers from surrounding residential buildings, non motorized travelers at street level, and motorized travelers.
- Acknowledge the diversity of scales and styles in neighboring buildings, from high-rise to single-family.
- The scale of the pedestrian streetscape is important.
- Protect public view corridors.
- Provide shared spaces that community members can also use.

LANDSCAPING AND OPEN SPACE

- Maintain plantings and street trees.
- Enhance campus greenery, open space.

CAMPUS MOBILITY

- Maintain and improve the mobility of pedestrians and other non-motorized travelers to move through the Virginia Mason MIO boundaries (don't become a closed-off campus).
- Improve sidewalks and streetscapes to enhance the pedestrian and other non-motorized user experience.

- Make entries easy to find, welcoming and accommodating.

- Enhance ease of pedestrian flow, improve circulation, accessibility, wayfinding, connectivity, visual interest.

- Enhance the ability of people to pass through the larger buildings via interior and exterior "streets" that are combinations of entries, major corridors and sky bridges.

- Provide attractive non-motorized connections across the campus to Downtown and other Seattle neighborhoods.

- Create open spaces in ways that tie together the public spaces of the neighborhood.

NEIGHBORHOOD VITALITY AND CHARACTER

- Contribute to the economic vitality of First Hill that exists from the interdependence of residential, commercial, and the educational and health care institutions.

- Maintain the residential character of First Hill.

- Honor and protect designated historic structures.

- Maintain and support opportunities for retail that serve both Virginia Mason and the residential community.

ENVIRONMENTAL STEWARDSHIP

- Employ Environmental Stewardship in the design and practices of buildings, grounds, and operations.

- Build facilities that are resource-efficient.

- Minimize glare, noise, wind effect and shading.

TRANSIT, TRAFFIC AND PARKING

- Continue to encourage the use of transit over driving to Virginia Mason by making transit an easy and enjoyable way to get to and from the Virginia Mason campus and adjacent First Hill neighborhoods.

- Continue to reduce peak-commute trip single occupancy vehicle use and encourage alternative modes of transportation, including walking, bicycling, mass transit, shuttles and carpools.

- Build parking to meet but not exceed present, future need, sequence parking development.

CONSTRUCTION IMPACTS

- Minimize construction impacts on the larger community.

- Maintain traffic and pedestrian flow.

- Maintain the viability of retail.

2.4 DESCRIPTION OF THE PROPOSED ACTION AND THE ALTERNATIVES

2.4.1 Proposed Action

The ***Proposed Action*** involves adoption and implementation of a new *Major Institution Master Plan* (*MIMP*) for Virginia Mason Medical Center. In the *Draft MIMP*, the *proposed master plan* is referred to as **Alternative 6b**, whereas in this Draft EIS, it is referred to as the ***Proposed Action***. The proposed *MIMP* is described in detail in Virginia Mason's Draft *MIMP* (dtd. July 2012) and is also described in this Draft EIS. Key elements of the proposed *MIMP* that are considered in this Draft EIS include the following; each is described below:

- MIO Boundary Changes;
- Campus Development;
- Development Phasing;
- Parking, Loading and Pedestrian Circulation; and
- Open Space, Landscaping and Public Amenities.

MIO Boundary Changes

The ***Proposed Action*** would involve expansion of VMMC's existing MIO boundary to encompass the block immediately southeast of the existing campus boundary that is referred to as the **1000 Madison Block (Figure 2-5)**. This block is bounded by Spring St. on the north, Boren Ave. on the east, Madison St. on the south, and Terry Ave. on the west. The block contains a mid-block, north-south alley. The area associated with this boundary expansion (including the alley) approximates 1.4 acres.

The ***Proposed Action*** would also involve correction of a mapping error associated with VMMC-owned property that is located immediately north of the University/Terry parking lot. The map change is to accurately reflect VMMC ownership of the University/Terry parking lot property, which is located in the northeast portion of campus by moving the boundary 20 feet to the north.

Source: SRG, 2012

Figure 2-5

Proposed Action—MIO Boundary Expansion

EA | BLUMEN

Campus Development

The ***Proposed Action*** would add approximately 1.7 million sq. ft. of gross floor area to the existing campus total of approximately 1.2 million sq. ft. (gross square footage per Seattle zoning) that is noted in **Table 2-1**. The result would be a campus-wide total gross floor area of roughly 3 million sq. ft. and a campus-wide Floor Area Ratio (FAR)[16] of 8.1. **Table 2-2** provides a breakdown of campus-wide development associated with the ***Proposed Action.***

Table 2-2
PROPOSED CAMPUS DEVELOPMENT

VMMC Campus	Gross Floor Area (GFA)
Existing GFA	**1,227,444**
Existing VMMC GFA to Remain	464,992
Approx. GFA to be Demolished*	-860,000
Net New Development Proposed	1,700,000
Total Campus Development	**3,029,600**

Source: VMMC, 2012.
**includes VMMC campus and a portion of the 1000 Madison Block*

Table 2-3 is a conceptual allocation of building space associated with the ***Proposed Action*** at full build-out. This information was compiled for purposes of the transportation and parking analysis that is contained in **Section 3.9** -- **Transportation, Circulation and Parking** of this Draft EIS. Of the proposed full build-out of the ***Proposed Action***, it is anticipated that 98% of the conceptual area would be allocated to medical uses with commercial development and residential comprising the balance. The Draft MIMP notes that "Virginia Mason is not proposing structures for residential use" (Draft MIMP, pg. 49). This allocation -- if it were to occur -- would be in conjunction with a mixed-use development. If it does not occur, conceivably the space would be allocated to additional medical uses.

[16] FAR is a ratio of the relationship between the amount of gross floor area or chargeable floor area permitted in one or more structures and the area of the lot on which the structure(s) are located (23.84A.012). Building area below-grade is not included in FAR calculations.

Table 2-3
CONCEPTUAL ALLOCATION OF PROPOSED BUILDING SPACE
FOR THE *PROPOSED ACTION*

Use	Gross Floor Area (GFA)
Medical Uses	
Outpatient	1,018,500
Inpatient	885,700
Research	1,067,200
Subtotal -- **Medical**	**2,971,400**
Non-Medical Uses	
Commercial	24,600
Residential	33,570
Subtotal – **Non-Medical**	**58,170**
Total Campus Development	**3,029,570***

Source: TSI, 2012.

*** For simplification, this number has been rounded to 3,029,600 sq. ft. elsewhere in this Draft EIS.***

The *Draft MIMP* notes that certain areas would be exempt from the gross floor area calculation. A list of proposed exemptions are cited in the *Draft MIMP*; several include:

- above and below-grade parking;
- mechanical space, mechanical penthouses, or interstitial space that is not occupiable;
- portions of a building that are entirely below-grade;
- certain ground floor commercial uses; and
- skybridges and tunnels within the public right-of-way.

As indicated in **Table 2-2**, the ***Proposed Action*** would retain four existing buildings with a total area of approximately 465,000 sq. ft., including:

- Benaroya Research Institute;
- Lindeman Pavilion;
- Floyd & Delores Jones Pavilion: and the
- Baroness Hotel.

Correspondingly, redevelopment would involve demolition of approximately 860,000 sq. ft. of buildings. These include several buildings that are located on the existing VMMC campus, as well as several buildings on the 1000 Madison Block, including:

- Cassel Crag/Blackford Hall and the MRI Building;
- Health Resources Building;[17]
- Ninth Avenue Parking Garage;
- East, Center and West sections of the Central Hospital including the site of the Inn at Virginia Mason and the Buck Pavilion; and
- structures on the 1000 Madison Block – with the exception of the Baroness Hotel.

Figure 2-6 includes two graphic depictions of the ***Proposed Action***. The upper portion of the figure is a plan-view of proposed campus development with proposed building heights shown. Whereas **Figure 2-5** indicates that development within the existing MIO and the boundary expansion areas would have a maximum building height of 240 ft., the upper portion of **Figure 2-6** depicts actual proposed building heights within the MIO boundary on a block-by-block basis. Buildings shown in blue are existing structures that would be retained. It is proposed that these four buildings would be conditioned to remain below the authorized MIO height limit: the Floyd & Delores Jones Pavilion (145 ft.), Benaroya Research Institute (120 ft.), Lindeman Pavilion (150 ft.), and the Baroness (80 ft.).

The lower portion of **Figure 2-6** is an aerial perspective of the conceptual campus as seen from the northwest looking in a southeasterly direction. This figure depicts proposed buildings at the building heights noted in the upper portion of this figure and it reflects the topography of the hillside, as well as surrounding existing development.

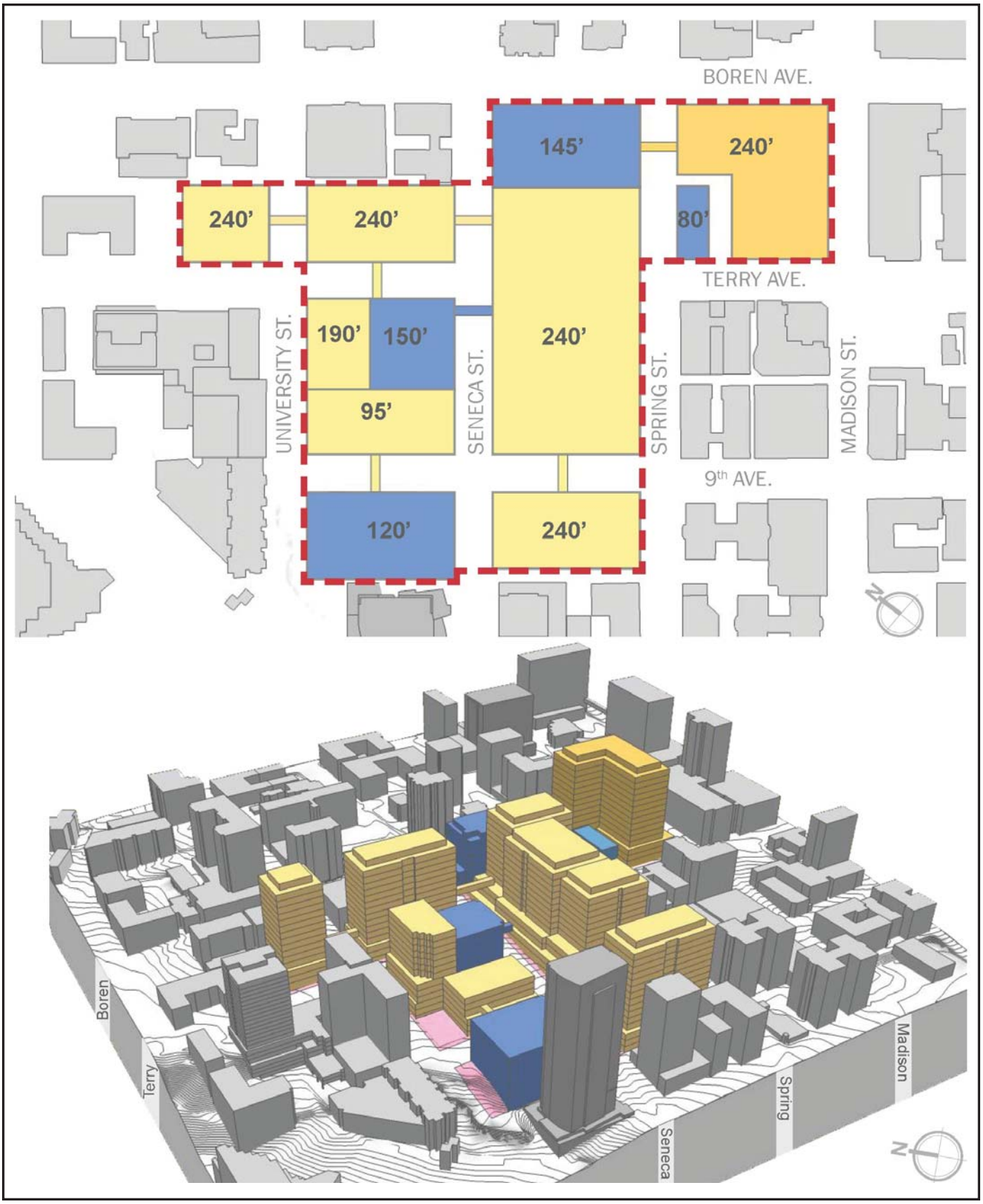
As depicted by **Figure 2-6**, several areas of the campus would experience substantial change.

- The half-block containing the Cassel Crag/Blackford Hall and MRI building and the portion of the block containing the existing University/Terry surface parking lot would change significantly with redevelopment. All structures and uses on these blocks would be demolished and the sites redeveloped with structures extending to a maximum height of 240 ft. (**Figure 2-6)**. As described later in this section with regard to ***Phasing***, it is expected that the Cassel Crag/Blackford Hall and MRI building would be part of the initial phase of campus redevelopment.

- With the exception of the Baroness, all other structures on the 1000 Madison Block would be demolished and the block redeveloped. Whereas the height of existing structures on this block currently ranges from approximately 30 ft. to 66 ft., with redevelopment the height of structures could extend to 240 ft. Redevelopment of the 1000 Madison Block would be part of the initial phase of redevelopment.

- Redevelopment is also proposed for the half-block that is currently occupied by the Ninth Avenue Garage. As shown by **Figure 2-6**, the height of proposed building at Ninth and Terry Avenue could be 240 ft. The height of the existing garage approximates 40 ft. Redevelopment of this site would be part of the initial phase of redevelopment.

[17] consistent with the City - Horizon House - VMMC Agreement (Ord. No. 117106)



Source: SRG, 2012

Figure 2-6

Proposed Action—Potential Development

- The area of campus that includes the Health Resources Building would also change. While Lindeman Pavilion would be retained, the L-shaped (plan view) Health Resources Building, would be demolished and the site redeveloped – presumably with two buildings (**Figure 2-6)**. A building with a height of 95 ft. would be located west of Lindeman Pavilion and oriented in a north-south direction. Another building with a height of 190 ft. would be located immediately north of Lindeman. It is expected that redevelopment of the Health Resources Building site would be part of the second phase of campus development.

- With the exception of the Floyd & Delores Jones Pavilion, the central area of campus, which also includes the Original Hospital, Inn at Virginia Mason, Hospital East Wing, Hospital West Wing, and the Buck Pavilion would all be redeveloped over time. As shown by **Figure 2-6**, the heights of proposed buildings could be 240 ft.

Phasing

The net new development that is the ***Proposed Action*** in the *Draft MIMP* includes both *planned* and *potential* development. Planned development is defined by the Seattle Land Use Code as "development which the Major Institution has definite plans to construct." (SMC 23.69.030 D.) Potential development is defined by the Seattle Land Use Code as "development or uses for which the Major Institution's plans are less definite" (SMC 23.69.030 D.). For VMMC, *potential* development represent projects that are expected to be developed within the long-range -- by approximately 2040. The *Draft MIMP* notes that *planned* development would involve redevelopment of the following areas of campus:

- Cassel Crag/Blackford Hall and the MRI Building – for medical office and clinic;
- Ninth Avenue Parking Garage – for medical research;
- Lindeman 2 site (Health Resources Building) -- for medical office and clinic; and the
- 1000 Madison Block – hospital.

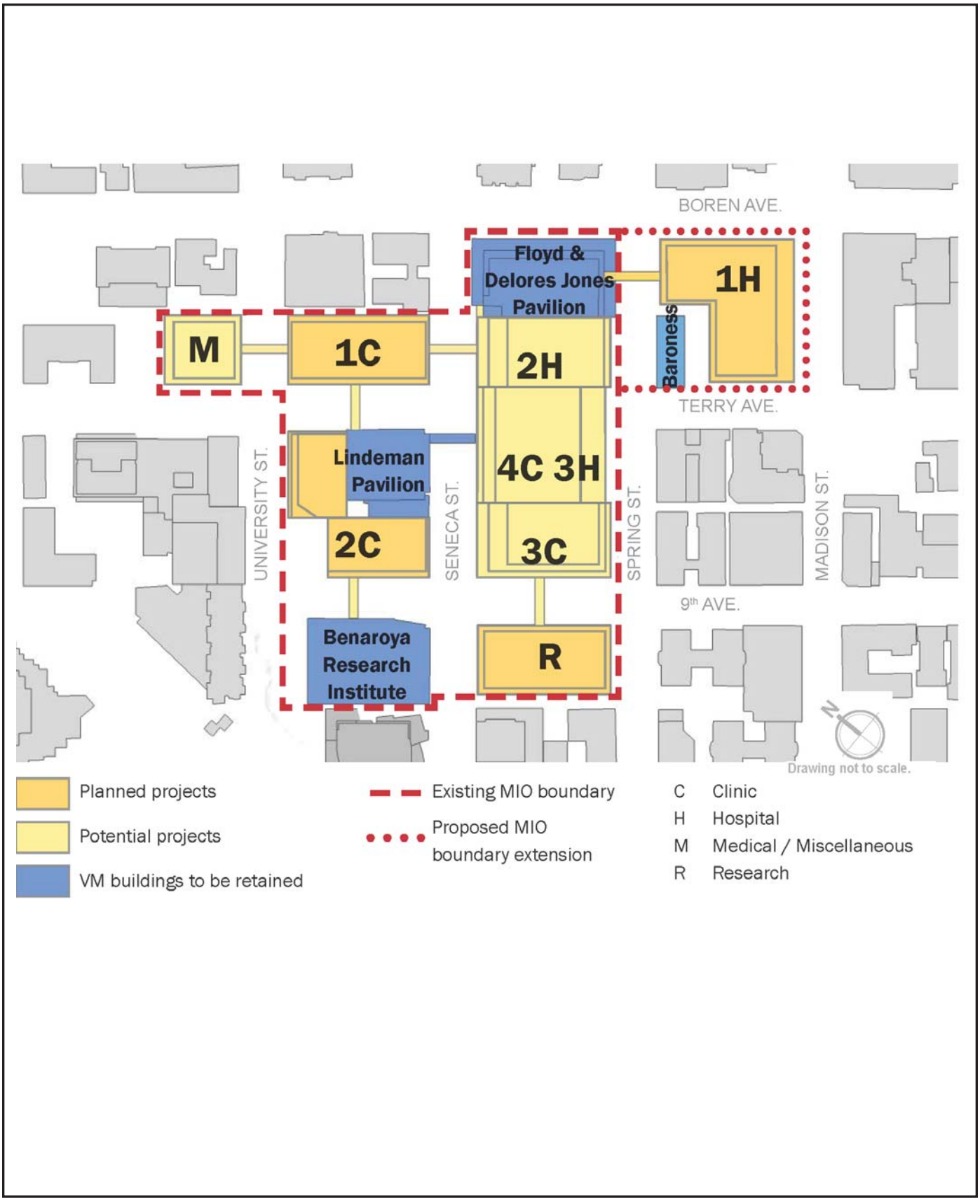
The *Draft MIMP* also indicates that *potential* development would include redevelopment of the core hospital and the Terry/University parking lot. "The exact uses for sites within the Virginia Mason Mio boundary will be determined based on need at the time of development." [18]

VMMC indicates that it is difficult to determine with certainty the phasing associated with proposed development. Factors contributing to this uncertainty are changes in healthcare, healthcare delivery and the economy – as well as the added consideration of whether the clinic grows first or the hospital grows first. **Figure 2-7** depicts a possible phasing scheme; refer to the *Draft MIMP* for additional details.

If the hospital grows first, phasing could include:

(1) 1000 Madison Block;
(2) Hospital East Addition; and the
(3) Original Hospital.

[18] *Draft MIMP*, Section D.8.



Source: SRG, 2012

Figure 2-7

Proposed Action—Possible Phasing Plan

If the clinic grows first, VMMC indicates that the phasing could include:

(1) Cassel Crag/Blackford Hall and MRI building;
(2) Health Resources Building; and
(3) Buck Pavilion site.

Parking, Loading & Pedestrian Circulation (above and below-grade)

Parking

As described in greater detail in **Section 3.9**, **Transportation, Circulation and Parking**, VMMC currently provides parking for a total of 1,426 vehicles consisting of: on-campus parking for 886 vehicles and off-campus parking, which includes 175 spaces at Tate Mason on the VMMC-owned 1000 Madison Block, and 305 spaces that are leased parking from nearby property owners. The majority of the on-campus parking is located in the Ninth Avenue Garage (347 spaces), Benaroya Research Institute (267 spaces) and Lindeman Pavilion (169 spaces). The balance (78 spaces) is surface parking that is located in the northeast and north-central portions of campus. Parking in Benaroya and Lindeman is below-grade. Of the 886 on-campus parking spaces, 238 spaces (27 percent) are for use by physicians and/or staff and 648 spaces (73 percent) are for patients and visitors.

The ***Proposed Action*** would provide approximately 4,000 replacement and new parking spaces. These parking spaces would be provided below-grade in conjunction with redevelopment.

Loading

VMMC currently has four loading areas:

- **Hospital** – the loading dock is located on the south side of Seneca Street, east of Ninth Ave.;
- **Lindeman Pavilion** – a loading dock is located on the west side of Terry St. between Seneca and University Streets;
- **Benaroya Research Institute** – a loading dock is located on Seneca St. adjacent to the entrance to the parking garage; and
- **Spring St**. – a loading dock is located on the north side of Spring St., east of Ninth Ave.

Combined, these loading areas provide six loading berths (2 additional berths are currently occupied by a dumpster and a compactor). Each presently require trucks to back-in from the adjacent street.

As phased, site-specific development occurs in conjunction with the ***Proposed Action***, analysis would be required (as part of the MUP and *MIMP* review processes) to determine if additional loading berths would be required to meet the Land Use Code.

Pedestrian Circulation

The *Draft MIMP* notes that "Virginia Mason is proposing to strengthen existing pedestrian connections at street level through the campus with focus on two pedestrian corridors between the corner of the Pigott Corridor at the corner of University/Ninth Avenue and Madison/Boren, and between the Pigott Corridor along Ninth Avenue to Madison Street. One pedestrian corridor would extend from the east end of the Pigott Corridor north-south along University, east-west along Terry to Madison (through an interior connection in the redeveloped central block, similar to current breezeway)[19] and then along the face of Madison to Boren. A second pedestrian corridor would be north-south along Ninth Avenue between the east end of the Pigott corridor and Madison Street."

Sidewalks are provided on all streets that surround or bisect the VMMC campus.

As depicted in **Figure 2-8**, six additional skybridges and eight tunnels are proposed to cross public rights-of-way. VMMC indicates that "skybridges and tunnels are needed to connect patient and material circulation between the new and existing VMMC facilities, existing Virginia Mason facilities, and are requested for approval in this Master Plan. These vital links between the old and new Virginia Mason facilities protect the patients from the environment, protect supplies and the transport of materials between the various campus buildings and facilitate the efficient flow of staff." Locations shown on **Figure 2-8** are where proposed skybridges and tunnels may be needed. VMMC indicates that "not all of the planned skybridges and tunnels may be executed, depending upon the sequencing of projects and their eventual occupants and amenities."

The *Draft MIMP* notes that the existing skybridge over Seneca Street would be maintained. VMMC indicates that the skybridges would be designed to enhance their transparency, minimize view blockage, and sized to accommodate necessary travel of people and materials. Each of the proposed skybridges or tunnels would require a term permit from the Seattle Department of Transportation at the time a specific campus project is proposed.

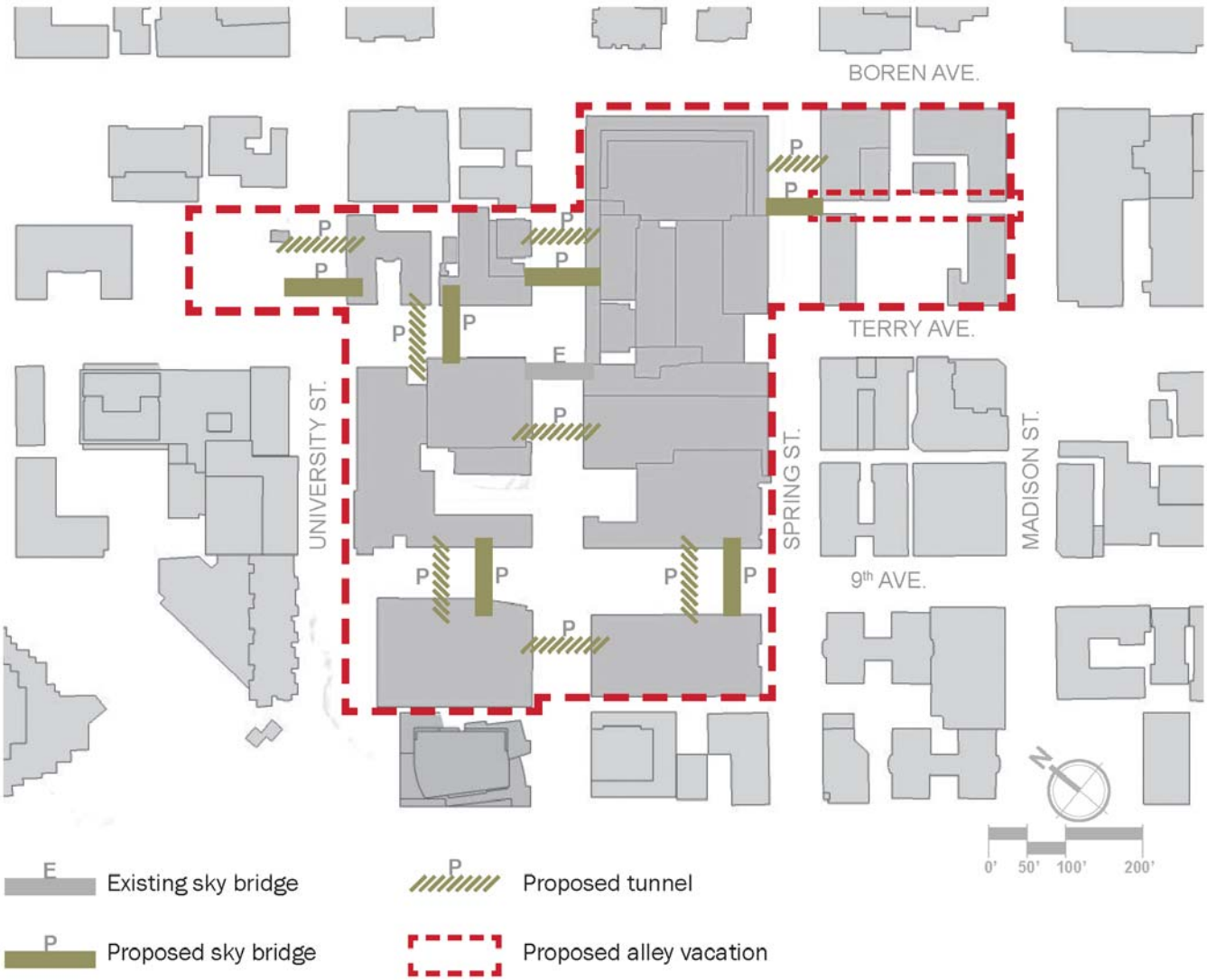
Open Space, Landscaping and Public Amenities

VMMC's *Draft MIMP* notes that there are two existing open space areas on-campus that are open to the public; they include:

- **Benaroya Research Institute Contribution to the Pigott Corridor** – This area contains over 6,000 sq. ft. at the north end of the Benaroya Research Institute, which contributes to the Pigott Corridor. Pigott Corridor is a key pedestrian that links First Hill with Downtown through Freeway Park. This area is defined as "dedicated open space" of the Virginia Mason MIO district and will be protected and preserved."

- **Lindeman Plaza** – This is a 3,400 sq. ft. publicly accessible open space and plaza that is located on the west side of Lindeman Pavilion.

[19] This is a perpetual right of pedestrian passage located in the vicinity of the Terry Ave. right-of-way. It was a condition of vacation of the segment of Terry Ave. (Ord. #101874 of 1973).



Source: SRG, 2012

Figure 2-8

Proposed Vacation, Skybridges and Tunnels

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Figure 2-9 depicts existing and future landscape and open space on the VMMC campus. Also shown are existing open spaces proximate to the campus, but outside VMMC's MIO boundary (e.g., First Hill Park and Pigott Corridor).

VMMC is proposing that a minimum of 4% of the area of the campus be provided as dedicated open space. This is an amount equal to approximately 16,000 sq. ft. of the expanded MIO district at full build-out of the ***Proposed Action***. The open space includes retention of the landscaped open space adjacent to the Pigott Corridor (Benaroya Research Institute Contribution to the Pigott Corridor) and Lindeman Plaza, as well as provision for a new plaza that is proposed either for the north corner of Ninth Avenue and Seneca Street or a linear plaza along the east side of University Street when Phase 2 of Lindeman Pavilion is designed and constructed. The approximate area of this future open space would total approximately 10,000 sq. ft.

As plans are developed for site-specific campus development, the *Draft MIMP* notes that VMMC intends "to identify opportunities for additional open space plazas and rooftop gardens, but such improvements would be in addition to and beyond meeting the open space development standard of 4% of the campus area."

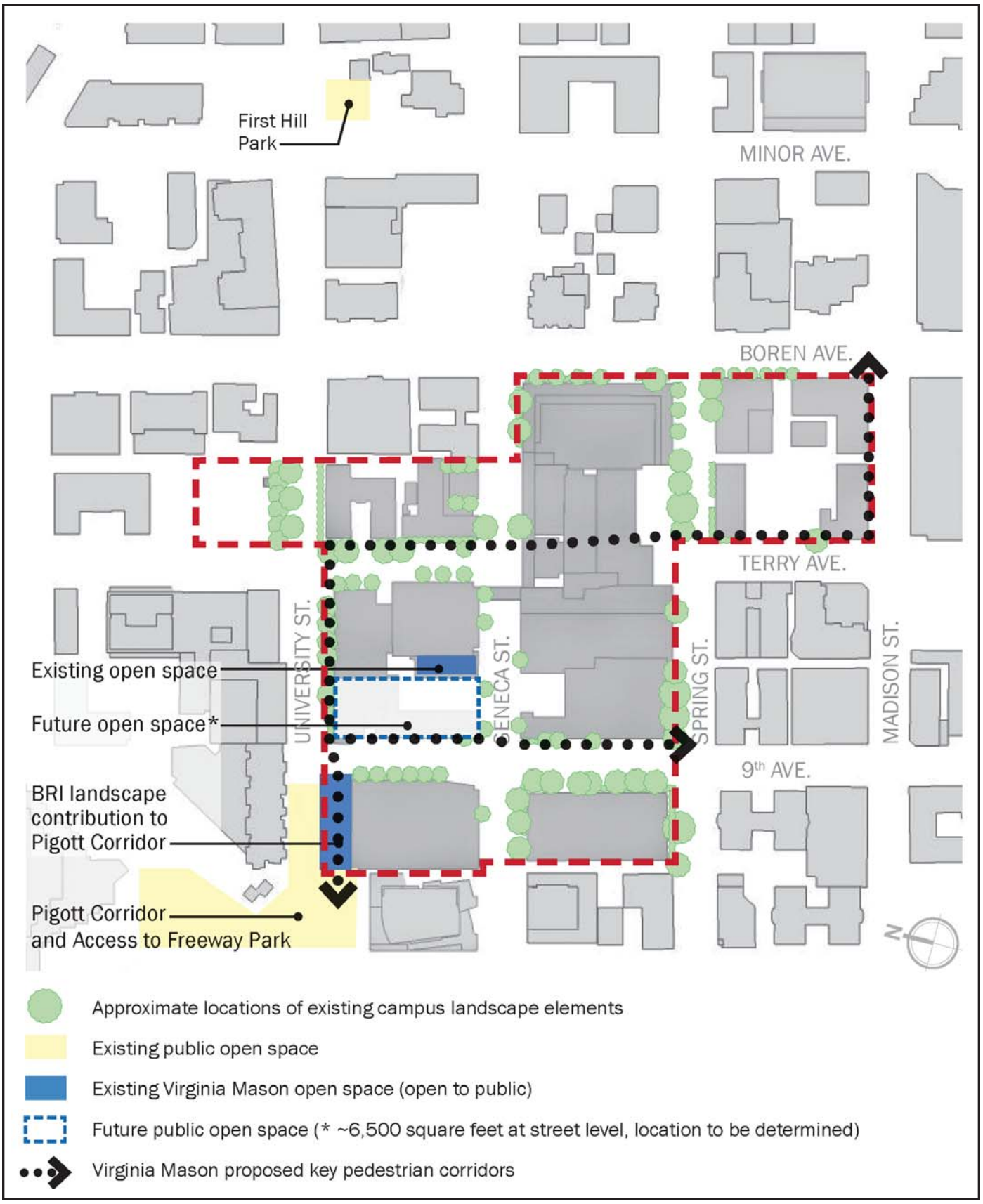
The *Draft MIMP* also notes that VMMC "intends to maintain the street trees that are healthy and do not pose safety hazards. The institution will replace trees when they are removed and as developments require their relocation. Where rows of trees create an identifiable streetscape, that identity will be maintained where feasible."

And the *Draft MIMP* indicates that within the two proposed pedestrian corridors, VMMC is proposing

> "street trees and other landscaping, pedestrian-oriented lighting, street furniture, special paving, art and wayfinding (signage). The corridor amenities would be provided along street frontages with new project development, or when opportunities arise with existing landscape or sidewalk replacement. In addition, Virginia Mason proposes to improve other streetscapes, including along Seneca Street, Spring Street and Ninth Avenue, with street trees and other pedestrian amenities when adjacent property redevelopments occur."

In addition,

> "All open space and public amenity improvements will be designed to accommodate the special user needs of the physically frail, medically challenged/handicapped, elderly and less mobile populations. Features will seek to reduce barriers and make the amenities truly accessible and usable to all, including application of ADA requirements, whichever version is current at the time of development.



Source: SRG, 2012

Figure 2-9

Existing and Proposed Open Space and Landscaping

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2.4.2 Alternatives

SEPA requires analysis of "reasonable alternatives" as part of an EIS and defines reasonable as "actions that could feasibly attain or approximate a proposal's objectives, but at a lower environmental cost or decreased level of environmental degradation."[20] VMMC has identified goals and objectives, which are included in the *Draft MIMP* and this Draft EIS (**Section 2.3**).

As indicated in the *Draft MIMP*, VMMC has identified the ***Proposed Action***. However, for compliance with City requirements and SEPA[21], two alternatives to the ***Proposed Action*** are presented in this Draft EIS; they include:

***Alternative 5a* – No Boundary Expansion**; and the

No Action Alternative.

The ***Proposed Action*** provides a description of key features that are common to the proposal; information below outlines differences between the ***Proposed Action*** and the two alternatives. Each alternative is analyzed in **Section III** of this Draft EIS in light of the following eleven major environmental parameters: Air Quality, Greenhouse Gas Emissions, Noise, Land Use and Relationship to Plans/Policies/Regulations, Housing, Aesthetics, Light/Glare/Shadows, Historic Resources, Transportation/Circulation/Parking, Public Services, and Construction-Related Impacts. The analysis in **Section III** identifies existing conditions, probable adverse environmental impacts associated with each alternative, measures to mitigate identified impacts, and unavoidable adverse impacts.

Alternative 5a -- No Boundary Expansion

MIO Boundary

Other than correction of a mapping error, ***Alternative 5a*** would not involve any modifications to the existing MIO boundary. As noted previously with regard to the ***Proposed Action***, a correction to a mapping error is proposed for VMMC-owned property that is located immediately north of the Terry/University parking lot. The MIO boundary associated with ***Alternative 5a*** would be the same as shown in **Figure 2-3**.

Potential Development

As with the ***Proposed Action***, ***Alternative 5a*** would add approximately 1.7 million sq. ft. of gross floor area to the existing campus total of 1.2 million sq. ft. (gross square footage per Seattle zoning). The additional square footage does not include structured parking or portions of a building that are entirely below-grade. Like the ***Proposed Action***, the result would be a campus-wide total gross floor area of nearly 3 million sq. ft. and a Floor Area Ratio (FAR)[22] for ***Alternative 5a*** of 9.74.

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[20] WAC 197-11-440(5)

[21] WAC 197-11-440(5bii)

[22] FAR is a ratio of the relationship between the amount of gross floor area or chargeable floor area permitted in one or more structures and the area of the lot on which the structure(s) are located (23.84A.012). Building area below-grade is not included in FAR calculations.

As with the ***Proposed Action***, ***Alternative 5a*** would retain the following structures:

- Benaroya Research Institute;
- Lindeman Pavilion;
- Floyd & Delores Jones Pavilion: and the
- Baroness Hotel.

Correspondingly, redevelopment associated with this alternative would involve demolition of the following campus buildings:

- Cassel Crag/Blackford Hall and the MRI Building;
- Health Resources Building;[23]
- Ninth Avenue Parking Garage; and
- East, Center and West sections of the Central Hospital including the site of the Inn at Virginia Mason and the Buck Pavilion.

Figure 2-10 includes two graphic depictions for ***Alternative 5a***. The upper portion of the figure is a plan-view of proposed campus development with proposed building heights shown. As shown, for the most part the MIO would have a maximum building height of 240 ft. and height of 300 ft. in the central core of the campus. This figure also depicts actual proposed building heights within the MIO boundary on a block-by-block basis. Buildings shown in blue are existing structures that would be retained and with the ***Proposed Action***, these four buildings would be conditioned to remain below the authorized MIO height limit:

The lower portion of **Figure 2-10** is an aerial perspective of the conceptual campus as seen from the northwest looking in a southeasterly direction. This figure depicts proposed buildings at the building heights noted in the upper portion of this figure and it reflects the topography of the hillside, as well as surrounding existing development.

Areas of the VMMC campus would experience substantial change similar to that described for the ***Proposed Action***. Two areas that would differ, however, include:

- The height of development within the central core (Hospital East Wing, Original Hospital, Hospital West Addition, and the Buck Pavilion) would increase from existing heights that vary from 25 ft. to 160 ft. to a potential height of 300 ft.

- The development associated with the addition to the north side of Lindeman Pavilion (height of 190 ft.) -- oriented in an east-west direction would extend over a segment of Terry Ave. It is anticipated that this bridge structure could be 9 stories in height and would require an aerial vacation of that portion of Terry Ave.

[23] consistent with the City - Horizon House - VMMC Agreement (Ord. No. 117106)

Source: SRG, 2012

Figure 2-10

Alternative 5a—Potential Development

Phasing

Since ***Alternative 5a*** is not preferred by VMMC, it is anticipated that the net new development associated with ***Alternative 5a*** would all *be potential* development. As noted earlier, *potential* development is defined by the Seattle Land Use Code as "development or uses for which the Major Institution's plans are less definite" (SMC 23.69.030 D.). These would be projects that are expected to be developed within the long-range -- by approximately 2040.

As noted with regard to the ***Proposed Action***, it is difficult to determine with certainty the phasing associated with proposed development. **Figure 2-11** depicts a possible phasing scheme.

Conceivably, phasing associated with ***Alternative 5a*** could entail:

Phase 1

- Redevelopment of the Cassel Crag/Blackford Hall and MRI building site for hospital use;
- Redevelopment of the Health Resources Building with the north addition to Lindeman for hospital use;
- Redevelopment of the Ninth Avenue Parking Garage for clinic and research use;

Phase 2

- Redevelopment of the Health Resources Building with the west addition to Lindeman for clinic use;
- Redevelopment of the Hospital East Addition for hospital use;

Phase 3

- Redevelopment of the Original Hospital and a portion of the Hospital West Addition for hospital use;
- Redevelopment of a portion of the Hospital West Addition and the Buck Pavilion for clinic use;

Phase 4

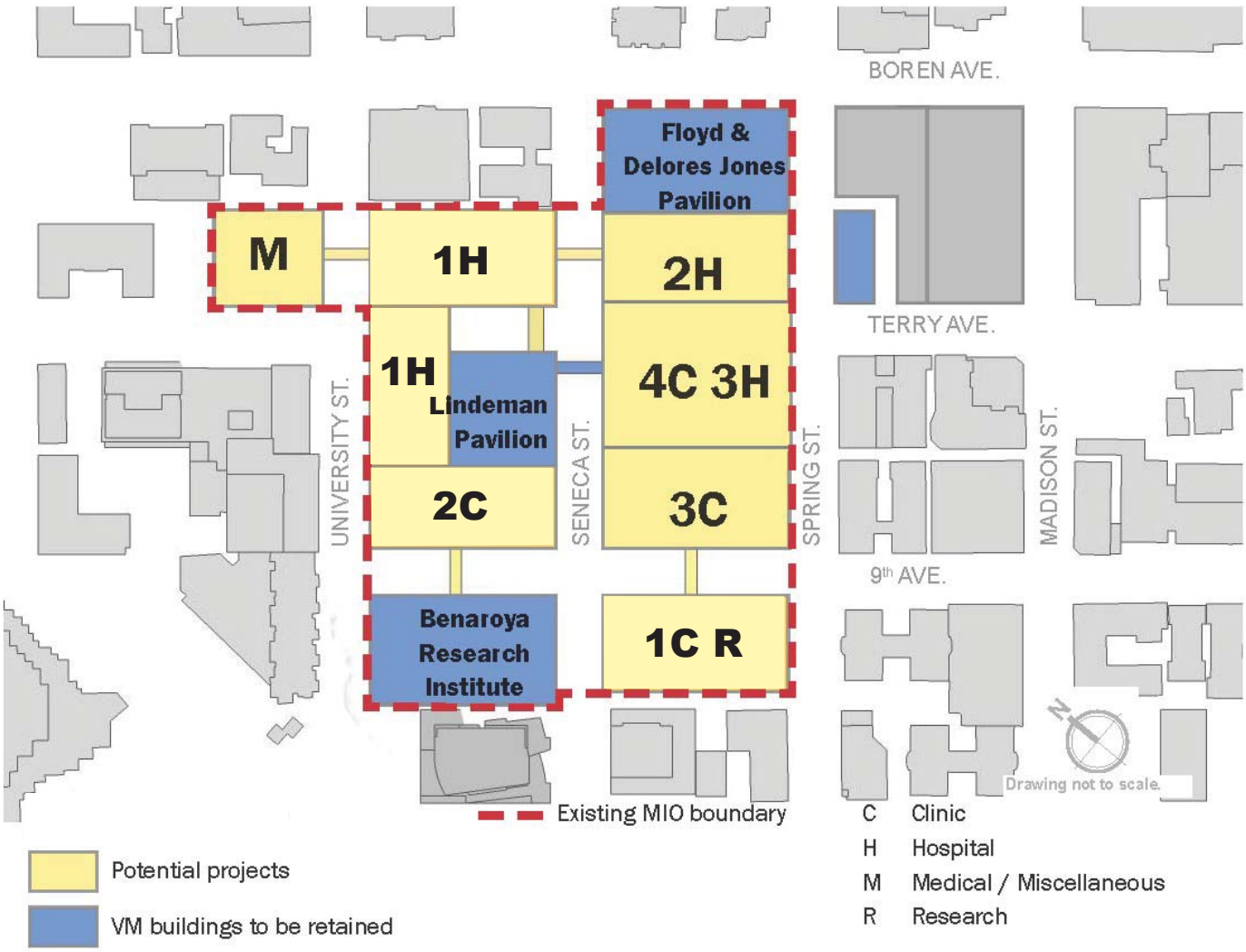
- Redevelopment of a portion of the Hospital West Addition for clinic use; and
- Development of the University/Terry parking lot for medical/miscellaneous or mixed-use.

Parking, Loading & Pedestrian Circulation (above and below-grade)

Parking

Parking, loading and pedestrian circulation would likely be the same as described previously for the Proposed Action. Details concerning parking, loading and pedestrian circulation are provided in **Section 3.9**, **Transportation, Circulation and Parking** of this Draft EIS. Replacement parking would be provided below-grade in conjunction with redevelopment.

Although ***Alternative 5a*** is not preferred by VMMC, conceivably pedestrian circulation would be comparable to that described for the ***Proposed Action***.



Source: SRG, 2012

EA | BLUMEN

Figure 2-11
Alternative 5a–Possible Phasing Plan

As shown in **Figure 2-10**, five additional skybridges are proposed to cross public rights-of-way. While not depicted in this figure, it is expected that five tunnels could also occur in the general vicinity of each of the skybridges.

Open Space, Landscaping and Public Amenities

Unlike the ***Proposed Action***, development associated with ***Alternative 5a*** would be confined to the VMMC's existing MIO boundary. In light of this, more intensive development (increased height to 300 ft.) would occur in portions of the campus. As such, it is anticipated that no additional open space would be provided beyond that which already exists. Conceivably, landscaping and pedestrian amenities (pedestrian-scale lighting, street furniture, etc.) would be provided along street frontages in conjunction with adjacent VMMC-related development, comparable to that described for the ***Proposed Action***.

No-Action Alternative

MIO Boundary

Other than correction of a mapping error, this alternative would not involve any modifications to the existing MIO boundary. The MIO boundary associated with the ***No Action Alternative*** is shown in **Figure 2-3**.

Potential Development

Unlike the ***Proposed Action*** or ***Alternative 5a***, no additional development would occur in conjunction with the ***No Action Alternative***. Existing campus development and landscaping would remain. It is anticipated that existing buildings and landscaping would be more intensively used and internal building remodeling and maintenance would be necessary in order to accommodate more intensive use of existing facilities. Without increased funding for maintenance, existing capital facilities would be unable to keep pace with increased demand and utilization, conceivably shortening the lifespan of existing campus buildings.

With no new campus development, no increases in building height or bulk would occur. Existing building footprints and building heights, as depicted in **Figure 2-4** would remain. Unlike the ***Proposed Action*** or ***Alternative 5a***, no area of the campus would experience significant change; phasing would not be an issue. Similarly, no modifications would occur relative to parking, loading or pedestrian circulation. And, no additions to open space or modifications to streetscape landscaping would occur.

VMMC indicates that this alternative would not meet their objectives.

Benefits and Disadvantages of Delaying Implementation

Another *No-Action*-related consideration involves the possibility of delaying implementation of the proposed *MIMP* update -- to some future time. If this course of action is taken, the following outlines possible benefits and disadvantages of such delay.

Benefits of Deferral

- The advantage of deferral is that environmental impacts noted with regard to the development alternatives would not occur at this time but would be delayed until project implementation.

- Future re-development options for the various portions of the campus would not be foreclosed.

Disadvantages of Deferral

- Deferral would not necessarily eliminate or lessen the severity of environmental impacts that have been identified, but merely postpone them. In some situations, this could result in greater cumulative impacts (e.g., traffic, noise, aesthetics, etc.) as a result of redevelopment,[24] due to changes in background conditions, changes that occur with regard to other nearby major institutions, and changes that occur with regard to nearby Urban Centers.

- It is anticipated that VMMC would continue to grow and develop within its existing MIO boundaries. By deferring the adoption of the major institution master plan, the City and the surrounding community would lose the opportunities expressed in the purpose and intent of establishing boundaries and master plans.

- Deferral would be inconsistent with VMMC's mission, vision and project objectives to provide improved health care facilities.

- Impacts with regard to VMMC operations would occur, including more-intensive utilization of existing facilities. Greater demands on existing capital facilities could result in increased maintenance and operational costs to the institution with the potential for shortening the lifetime of the facilities.

- Deferral may limit VMMC's ability to effectively respond to opportunities for program expansion/modification in response to changes in health care.

- In all probability, deferral would add to the capital cost associated with specific development projects. Depending upon the amount of delay, deferral could result in a less operationally efficient campus or even abandonment of some development projects.

This course of action would not meet VMMC's objectives.

[24] Such development would be consistent with the *Adopted* Compiled *MIMP*.

2.4.3 Alternatives Considered by Not Advanced for SEPA Review

Initially, VMMC considered in a *preliminary Draft MIMP*[25] the following alternatives:

- ***Alternative 1*** – no boundary expansion; addition of approximately 1 million sq. ft.; for a total of approximately 2.3 million sq. ft.;

- ***Alternative 2*** – MIO expansion to include the 1000 Madison block; addition of approximately 1.7 million sq. ft.; for a total of approximately 3 million sq. ft.;

- ***Alternative 3*** – MIO expansion to include 1000 Madison block; addition of approximately 1.6 million sq. ft.; building would be placed over the top of the Baroness Hotel; for a total GFA of approximately 2.9 million sq. ft.; and

- ***Alternative 4*** – No Action alternative.

Following review of the *preliminary Draft MIMP*, VMMC determined that their long term space needs required 3 million sq. ft. In light of that, Alternatives 1 and 3 were dropped from further consideration.

VMMC then developed the following four alternatives -- each totaling approximately 3 million sq. ft. -- to present to the CAC for their review and comment:

- ***Alternative 5a*** – no boundary expansion; heights up to 300 ft. on the Central Hospital block; new building to span over Terry Avenue to connect the redeveloped Cassel Crag/Blackford Hall site with the Lindeman II development; maintains the heights on the Lindeman Block that were agreed to in the Horizon House agreement; addition of approximately 1.7 million sq. ft.; for a total of approximately 3 million sq. ft.

- ***Alternative 5b*** – no boundary expansion; heights up to 240 feet on the Central Hospital block; new building to span over Terry Avenue to connect the redeveloped Cassel Crag/Blackford Hall site with the Lindeman II development; increased height limits on the Lindeman Block above those agreed to in the Horizon House agreement; addition of approximately 1.7 million sq. ft.; for a total of approximately 3 million sq. ft.;

- ***Alternative 6a*** – MIO expansion to include the 1000 Madison block; development of the 1000 Madison block with two connected structures with a tower of approximately 300 ft. on the north portion of the block and a tower of approximately 160 ft. on the south portion; addition of approximately 1.7 million sq. ft.; for a total of approximately 3 million sq. ft.; and

- ***Alternative 6b*** – MIO expansion to 1000 Madison block; development of the 1000 Madison block with two connected structures, both at approximately 240 feet; addition of approximately 1.7 million sq. ft.; for a total of approximately 3 million sq. ft.

The CAC, together with VMMC, identified ***Alternative 6b*** as the preferred alternative at the March 14, 2012 meeting. That alternative has been carried forward in the *Draft MIMP* and is

[25] dtd. August 10, 2011.

presented in this Draft EIS as the ***Proposed Action***. The Draft EIS also evaluates ***Alternative 5a – No Boundary Expansion Alternative***, as well as the ***No Action Alternative (formerly Alternative 4). Alternative 1, 2, 3, 5b,*** and ***6a*** have been dropped from further environmental review.

2.5 LEASED SPACE

Other than its satellite facilities noted previously within the region, VMMC leases major-medical-related space in Metropolitan Park (in downtown Seattle), which is within 2,500 ft. of the VMMC campus. Also, VMMC leases parking in several facilities that are located within 2,500 ft. of the VMMC campus. Refer to **Section 3.9**, **Transportation, Circulation and Parking** in this Draft EIS for additional information concerning leased parking.

2.6 DEVELOPMENT REGULATION CHANGES

The underlying zoning classification is Highrise Multi-Family Residential (HR) – 300 within the existing MIO boundary and both HR-300 and Neighborhood Commercial 3 (NC3) on portions of the 1000 Madison Block. Other than modification of zoning in conjunction with the *Proposed Action*, VMMC's *Draft MIMP* notes the following changes/clarifications are proposed in conjunction with the ***Proposed Action***. Possible development regulation changes associated with ***Alternative 5a*** are also presented below.

Proposed Action

- building setback modifications;
- width and floor size limits;
- MIO heights (for the 1000 Madison Block);
- exemptions from GFA;
- existing and proposed floor area ratios for the entire campus;
- street-level uses and facades in the NC zones; (I don't think they are proposing any changes – please double check MIMP)
- existing and proposed landscaping and open space;
- loading and service facilities;
- the four bullets below are not regulated by the land use code refer to the matrix in the MIMP
- preservation of historic structures;
- view corridors;
- pedestrian bicycle circulation within and through the campus; and
- transit access.

Alternative 5a – Since this alternative is not proposed by VMMC, conceivably development regulation changes may involve modifications to building setbacks, a land use code amendment to create a new MIO – 300 zoning designation and several of the development code changes/clarifications noted for the ***Proposed Action***.

2.7 TRANSPORTATION MANAGEMENT PLAN REVISIONS

In addition to presentation of the Development Program and Development Code Modifications proposed, MIMPs contain a comprehensive Transportation Management Plan. Details regarding VMMC's existing TMP and changes associated with the TMP in conjunction with the proposed *Draft MIMP* are described in detail on pgs. 91-102 and in **Section 3.9**, **Transportation, Circulation and Parking** in this Draft EIS.

SECTION III

AFFECTED ENVIRONMENT, SIGNIFICANT IMPACTS, MITIGATION MEASURES and UNAVOIDABLE ADVERSE IMPACTS

SECTION III

AFFECTED ENVIRONMENT, SIGNIFICANT IMPACTS, MITIGATION MEASURES and UNAVOIDABLE ADVERSE IMPACTS

This section of the Draft EIS analyzes probable adverse environmental impacts that could result from the proposed development alternatives and identifies measures to mitigate those impacts. The *Draft Major Institution Master Plan* (*MIMP*) -- prepared by VMMC -- and this Draft EIS -- prepared by the Seattle Department of Planning and Development -- should be reviewed together for a comprehensive understanding of all aspects of the project and possible environmental impacts.

Projects proposed in conjunction with this *Draft MIMP* represent potential development – long term projects -- that are expected to be completed by 2040. As such, this Draft EIS is a programmatic document in that it addresses a broad range of development that is anticipated to occur over an extended period of time and which few specific details are known -- as compared to project specific development in which considerable detail is known.

To initiate the EIS process for this project, DPD published a SEPA Determination of Significance/Scoping Notice on January 6, 2011. That commenced the formal, public EIS scoping process for the project; the EIS Scoping period occurred January 6, 2011 through February 3, 2011. During the EIS Scoping period, DPD received written comments, as well as oral comments, regarding the scope of the Draft EIS. With input from VMMC's Citizen's Advisory Committee (an advisory committee for the purpose of developing this *MIMP)*, DPD determined the issues and alternatives to be analyzed in this Draft EIS. Eleven broad areas of environmental review are evaluated, including:

- **air quality**
- **greenhouse gas emissions**
- **noise**
- **land use**
- **housing**
- **aesthetics**
- **light, glare and shadows**
- **historic resources**
- **transportation, circulation and parking**
- **public services**
- **construction-related impacts**

The following is an analysis of each of the environmental parameters noted above in terms of affected environment (existing conditions), impacts of the ***Proposed Action*** and alternatives, mitigation measures, and significant unavoidable adverse impacts.

3.1 AIR QUALITY

This section describes the air quality conditions on the VMMC campus and in the site vicinity. Potential impacts to air quality from redevelopment associated with the ***Proposed Action*** and the EIS alternatives are evaluated.

3.1.1 Affected Environment

Policy Context

The Seattle Municipal Code (SMC) contains specific provisions that describe the scope of the SEPA analysis for the air quality element. Relevant policies from SMC 25.05.675 include:

A 2. Air Quality Policies

a. It is the City's policy to minimize or prevent adverse air quality impacts.

b. For any project proposal which has a substantial adverse effect on air quality, the decision maker shall, in consultation with appropriate agencies with expertise, assess the probable effect of the impact and the need for mitigating measures. "Nonattainment areas" identified by the Puget Sound Air Pollution Control Agency shall be given special consideration.

c. Subject to the Overview Policy set forth in SMC 25.05.665, if the decision maker makes a written finding that the applicable federal, state and/or regional regulations did not anticipate or are inadequate to address the particular impact(s) of the project, the decision maker may condition or deny the proposal to mitigate its adverse impacts.

d. Mitigating measures may include but are not limited to:

- *i. The use of alternative technologies, including toxic air control technologies;*
- *ii. Controlling dust sources with paving, landscaping, or other means;*
- *iii. Berming, buffering and screening;*
- *iv. Landscaping and/or retention of existing vegetation; and*
- *v. A reduction in size or scope of the project or operation.*

Background

Air quality is generally assessed in terms of whether concentrations of air pollutants exceed or comply with ambient air quality standards that are established to protect human health and welfare. Three agencies have jurisdiction over the ambient air quality in the proposed project area: the U.S. Environmental Protection Agency (EPA), Washington State Department of Ecology (Ecology), and the Puget Sound Clean Air Agency (PSCAA). These agencies establish regulations that govern both the concentrations of pollutants in the outdoor air and contaminant emissions from air pollution sources.

To track air quality conditions, Ecology and PSCAA maintain a network of monitoring stations throughout the Puget Sound region. These stations are typically located where air quality problems may occur and, therefore, are usually in or near urban areas or close to specific large air pollution sources. Other stations in more remote areas indicate regional air pollution levels.

Based on monitoring information collected over a period of years, the state (Ecology) and federal (EPA) agencies designate regions as being "attainment" or "nonattainment" areas for particular air pollutants. Attainment status is a measure of whether air quality in an area complies with the National Ambient Air Quality Standard (NAAQS). Regions that were once designated nonattainment that have since attained the standard are considered "maintenance" areas. The project area is considered a maintenance area for several air pollutants discussed below. This suggests that air quality is generally good.

Typical air pollution sources in the project area include: vehicular traffic on the numerous streets, retail/commercial facilities in the area, medical offices and facilities, and residential wood-burning devices. While many types of pollutant sources are present in the project vicinity, the single largest contributor to most criteria pollutant emissions in the area during most meteorological conditions would be on-road mobile sources emitting carbon monoxide (CO). Pollutant emissions from diesel sources (e.g., most heavy-duty truck engines) include fine particles and a variety of toxic air pollutants. Non-diesel vehicle emissions are comprised primarily of CO, but also include small amounts of sulfur dioxide, toxic air pollutants, and both hydrocarbons and nitrogen oxides, which can transform in the atmosphere to become ground-level ozone. Residential wood burning produces a variety of air contaminants, including relatively large quantities of fine particulate matter.

With vehicular traffic, the air pollutant of primary concern is often CO. Because of the various vehicular emissions for which there are ambient air quality standards, CO is the pollutant emitted in the largest quantities. For that reason, CO is usually considered an indicator of potential air quality problems related to traffic sources. Other pollutants generated by traffic include the ozone precursors hydrocarbons and nitrogen oxides. Fine particulate matter (PM_{10} and $PM_{2.5}$) is also emitted in vehicle exhaust and generated by tire action on pavement (or unpaved areas), although these levels are small compared with other sources (e.g., a wood-burning stove). Sulfur oxides and nitrogen dioxide are also both emitted by motor vehicles, but ambient concentrations of these pollutants are not usually high except near large industrial facilities.

Existing Air Quality

Several air pollutants have been problematic in the Puget Sound region in the past and, therefore, are subject to special regulatory issues or review. These pollutants are discussed below.

Carbon Monoxide

Carbon monoxide is the product of incomplete combustion. CO is generated by transportation sources and other fuel-burning activities like residential space heating, especially heating with solid fuels like coal or wood. CO is usually the pollutant used as an indicator of potential problems related to transportation source because CO is the pollutant emitted in the greatest quantity for which there are short-term health standards. CO impacts are usually localized near the emission sources and CO concentrations typically diminish within a short distance of roads. The highest ambient concentrations of CO usually occur near congested roadways and intersections during wintertime periods of air stagnation.

There have been no measured violations of the CO ambient air quality standard within Washington State for many years. Although there are no monitoring stations measuring CO in the vicinity of the project, the closest station is located on Beacon Hill and is representative of typical urban CO levels. Based on measured data in the greater Puget Sound, the VMMC is located in an area considered in attainment for CO.

Ozone

Ozone is a highly reactive form of oxygen created by sunlight-activated chemical transformations of nitrogen oxides and volatile organic compounds (hydrocarbons) in the atmosphere. Ozone problems tend to be regional in nature because the atmospheric chemical reactions that produce ozone occur over a period of time, and because during the delay between emission and ozone formation, the precursors can be transported far from their sources. Transportation sources like automobiles and trucks are some of the sources that produce ozone precursors, and in the Puget Sound region, transportation is a primary contributing source to regional ozone levels.

In the past, due to violations of the federal ozone standards, the Puget Sound region was designated as nonattainment for ozone. In 1997, EPA determined that the Puget Sound ozone nonattainment area had attained the health-based ozone standard in effect at that time. The EPA reclassified the Puget Sound region as attainment for ozone and approved the associated air quality maintenance plan for the region. In 2005, EPA revoked the 1-hour ozone standard in most areas of the US including the Puget Sound region. This action ended the ozone maintenance status of this region for this standard. At the same time, however, the EPA adopted a new more stringent 8-hour average ozone standard that has since been made even more stringent. Based on ozone measurements over the last few years, the greater Puget Sound region seems to again be on the brink of becoming nonattainment for ozone based on measured violations of the current 8-hour average standard (PSCAA 2011). Under the current air quality plans and policies, this status has no direct implications for the project under consideration, but any ozone emission control plans are likely to focus on means to reduce vehicle miles traveled.

Inhalable Particulate Matter – PM_{10} and $PM_{2.5}$

Small particles called particulate matter are generated by industrial activities and operations, fuel combustion sources like residential wood burning, motor vehicle engines and tires, and other sources. Federal, state, and local regulations set limits for particle concentrations in the air based on the size of the particles and the related potential threat to health. When first regulated, particle pollution rules were based on concentrations of "total suspended particulate," which included all size fractions. As air sampling technology has improved and the importance of particle size and chemical composition have become more clear, ambient standards have been revised to focus on the size fractions thought to be most dangerous to people. Based on the most recent studies, EPA has redefined the particle size fractions and set more stringent standards for particulate matter based on fine and coarse inhalable particulate matter in order to focus control efforts on the smaller size fractions.

There are currently health-based ambient air quality standards for PM_{10}, or particles less than or equal to about 10 micrometers (microns) in diameter, as well as for $PM_{2.5}$, or particulate matter less than or equal to 2.5 microns in diameter. The latter size fraction and even smaller (ultra-fine) particles are now considered the most dangerous size fractions of airborne particulate

matter because such small particles (e.g., a typical human hair is about 100 microns in diameter) can be breathed deeply into lungs. In addition, such particles are often associated with toxic substances that are deleterious in their own right that can adsorb to the particles and be carried into the respiratory system.

With the revocation of the federal annual standard for PM_{10} in 2006, the focus of ambient air monitoring and control efforts related to particle air pollution in the Puget Sound region has been almost entirely on fine particulate matter ($PM_{2.5}$). Based on particulate matter measurements over the last few years, in 2009 EPA established a $PM_{2.5}$ nonattainment area in Tacoma.[1] There are no other actual or pending particulate matter nonattainment areas in the Puget Sound Region.

3.1.2 Impacts of the Proposed Action (6b) and Alternatives

Air Quality Analysis Methods

The potential for air quality impacts associated with the ***Proposed Action*** and ***Alternative 5a*** primarily relate to on- and off-site operational traffic (air quality-related impacts associated with construction activities are discussed in **Section 3.11**, **Construction Impacts**). For purposes of this EIS, a qualitative review of the potential air quality impacts associated with the ***Proposed Action*** and ***Alternative 5a***, both of which would generate PM Peak Hour traffic volume increases, is provided (see **Section 3.9**, **Transportation**, for details). This analysis does not provide a separate discussion for the air quality impacts associated with the **1000 Madison Block** expansion area, as the qualitative review of the ***Proposed Action*** applies to the VMMC campus with the inclusion of the **1000 Madison Block**.

The air quality review for operational traffic considered the issue of potential CO emissions near congested intersections as well as from various parking structures that would be developed as part of the proposed plan. Because the largest single project-related parking facility would be the underground parking structure proposed to be located between Seneca Street and Spring Street and between Terry Avenue and 9th Avenue, this facility was the focus of the on-site air quality assessment. The air quality review of on and off-site sources was based on comparisons of project-related traffic conditions with previously conducted air quality analyses of traffic conditions that considered traffic-related CO emissions in the same area.

Note that the traffic analysis for future conditions projected traffic volumes associated with the full-buildout of Swedish Medical Center, Seattle University, and Yesler Terrace. Thus, the traffic projections that provided the basis of the air quality review and the actual assessment of the air quality implications of the ***Proposed Action*** and ***Alternative 5a*** represent cumulative analyses of future conditions and potential impacts.

[1] The Tacoma nonattainment area is called the Wapato Hills-Puyallup River Valley area. See information and maps at: http://www.ecy.wa.gov/programs/air/Nonattainment/Nonattainment.htm.

Operational Air Quality Impact Review, Proposed Action (6b) and Alternative 5a

Off-Site Traffic

In accord with EPA guidelines for traffic-related air quality "hot-spot" modeling, signalized intersections that would be affected by traffic related to a proposed project were screened for possible quantitative analysis. This screening was conducted by reviewing predicted future peak-hour traffic levels of service (LOS) at signalized intersections. Intersection LOS is a measure of total weighted average vehicle delay, with rankings ranging from "A" for intersections with little or no congestion or delay to "F" for very congested intersections. For this analysis, the potential for CO impacts near the single most project-affected intersection was assessed by considering traffic conditions and resulting air quality model-calculated CO concentrations near a similar, but more congested intersection on the same traffic corridor. This approach is consistent with both EPA guidelines and approved SEPA methods for assessing potential impacts by comparing project-related conditions with impacts discussed in previously reviewed and approved SEPA determinations.

EPA guidance for traffic hot-spot analyses suggests considering modeling any signalized intersections at which the LOS would deteriorate to "D" or worse due to a proposed project. By definition, intersections that do not warrant signalization, and signalized intersections that operate at LOS "C" or better have little if any potential to cause air quality impacts at nearby locations. The traffic analysis for VMMC found that the PM peak-hour commute period would be the most congested time during the day and that during the PM peak-hour, some intersections would perform at LOS D or worse. The traffic study determined that the worst-performing project-affected intersection would be at Sixth Avenue at Spring Street. (Refer to **Section 3.9**, **Transportation**, for additional discussion on potential traffic impacts.)

Several intersections along the Sixth Avenue corridor are heavily congested during the afternoon commute. In a recent air quality study for the *Yesler Terrace Redevelopment Project EIS* (2011),[2] traffic conditions at the intersection of Sixth Avenue and James Street were evaluated with air quality modeling to assess the potential for CO impacts. That assessment used a screening modeling tool called WASIST (WSDOT 2009) to estimate CO concentrations at nearby locations with traffic conditions in 2010 and 2030. Such screening modeling uses worst-case traffic projections and assumed worst-case meteorological conditions to provide very conservative estimates of potential air quality impacts.

The operational traffic conditions considered in the Yesler Terrace air quality hot-spot intersection modeling were worse than those projected to occur in the scenarios for the ***Proposed Action*** and ***Alternative 5a***. As shown in **Table 3.1-1**, the traffic conditions considered in the air quality modeling for the *Yesler Terrace Redevelopment Project* (expressed in terms of hours of cumulative intersection delay, computed from total intersection volume x the weighted average vehicle delay) were substantially worse at the intersection of Sixth Avenue and James Street than the conditions projected for the intersection of Sixth Avenue and Spring Street under the ***Proposed Action*** and ***Alternative 5a***. For this reason, the traffic conditions considered in the modeling analysis for Yesler Terrace provide an adequate reference for

[2] Seattle Housing Authority. *Yesler Terrace Redevelopment Environmental Impact Statement,* April 2011.

comparison with the worst-case intersection projected to be affected by PM peak-hour traffic related to the VMMC expansion.

As shown in **Table 3.1-1**, model-calculated CO concentrations near the intersection of Sixth Avenue and James Street with traffic related to the *Yesler Terrace Redevelopment Project* were less than the levels allowed by the 1-hour and 8-hour ambient air quality standards for CO (35 ppm and 9 ppm respectively), for both the near-term and the future analysis scenarios. Because the projected volumes and delays at the intersection of Sixth Avenue and Spring Street with VMMC project traffic are much lower than those assumed for the Yesler Terrace project, worst-case CO concentrations would be less than those predicted for the James Street intersection. Therefore, it is unlikely that project traffic would impact air quality under either the ***Proposed Action*** or ***Alternative 5a***.

Table 3.1-1
SUMMARY TRAFFIC CONDITIONS AT WORST-CASE INTERSECTION

Intersection	2010P.M. Peak-Hour		2030 P.M. Peak-Hour	
	Volume	Per Vehicle Delay	Volume	Per Vehicle Delay
6th Ave at James Street **(Yesler Terrace Project)**	3,660	83 sec	4,215	136 sec
	Cumulative delay = 84 hours		Cumulative delay = 159 hours	
Model-Calculated1-hour CO Concentrations	8.0 ppm		7.8 ppm	
8-hour CO	6.8 ppm		6.7 ppm	
6th Ave at Spring Street **(Alt. 5a)**	**2011 P.M. Peak-Hour**		**2042 P.M. Peak-Hour**	
	2,133	65 sec	2,592	156 sec
	Cumulative delay = 39 hours		Cumulative delay = 112 hours	
6th Ave at Spring Street **Proposed Action (Alt. 6b)**	2,133	65 sec	2,590	155 sec
	Cumulative delay = 39 hours		Cumulative delay = 111 hours	

Sources: VMMC traffic data, Transportation Solutions, Inc. 2011; Yesler Terrace Redevelopment Project EIS, 2010: traffic data from Heffron Transportation; air quality modeling data by ENVIRON International Corporation.

On-Site Parking Facilities

Both the ***Proposed Action*** and ***Alternative 5a*** include underground parking structures in conjunction with new construction. These structures would likely be ventilated using exhaust fans, but specific details have not yet been developed due to the conceptual nature of the plan alternatives. The largest of the proposed parking structures would be the facility associated with the Lindeman Pavilion which could have approximately 878 parking spaces.

In the worst possible scenario for vehicle emissions associated with this parking structure, all 878 parking stalls would be occupied, all vehicles would start-up and leave the facility, and another 878 vehicles would enter and park – all within a single 1-hour period. While such a scenario, with a total of about 1,756 vehicles could *possibly* occur, the probability of such an event is very low. Nonetheless, if this sort of worst-case condition were to arise, it would have less potential to result in problematic levels of CO than would normal traffic on streets in the area.

Based on the air quality review for off-site traffic, the largest single project-related planned parking facility would have little potential to affect air quality nearby because the emissions from sources using this facility would be less than at the worst-case intersection described above (**Table 3.1-1**). Because traffic conditions at much more congested intersections have little likelihood of impacting air quality, the unrealistically inflated worst-case scenario delineated above for the parking garage also would not likely affect air quality. Therefore, there would be little potential for CO emissions from the normal parking structure operations to result in air quality impacts.

There are currently no conceptual designs for ventilation systems associated with future VMMC parking structures – either in terms of how many or their specific locations. The air quality modeling described above considered locations 10 ft. from the edge of the nearest travel lane, and up to 200 ft. back from the stop line of the intersection. "Close proximity," from a CO concentration perspective would be distances within about 200 ft. of a garage exhaust fan. This issue should be considered during the design and placement of the parking structure exhaust fans. But in any case, no significant air quality problems would be expected at off-site locations due to emissions from the largest on-site parking structure. Similarly, emissions related to use of other parking structures and surface lots on the campus would be less than would be expected at the Lindeman parking structure, and would, therefore, also not be expected to result in any significant air quality impacts.

No Action Alternative

The ***No Action Alternative*** would involve no expansion of the existing VMMC MIO boundary, no new building construction or building modifications on the campus, no additions to open space, and no modifications to on-site pedestrian and vehicular circulation or parking. No capital funds for construction of major improvements on-campus would be expended; conceivably, however, limited building remodeling and maintenance would still occur. The potential for air quality impacts from the ***No Action Alternative*** would be expected to remain about the same as they are at present. Overall, air quality impacts would be less than under the ***Proposed Action*** or ***Alternative 5a*** -- because major construction would not occur and increases in traffic would be far less.

3.1.3 Mitigation Measures

No significant air quality impacts have been identified and no mitigation measures are proposed.

The Draft MIMP includes as one of VMMC's Goals and Objectives – To build facilities that are resource-efficient - Participate in the Seattle 2030 District challenge, which would help reduce emissions and improve air quality in this area.

3.1.4 Significant Unavoidable Adverse Impacts

None have been identified and none would be expected.

3.2 ENERGY (GREENHOUSE GAS EMISSIONS)

Global climate change is a change in the average weather of the earth, which can be measured by wind patterns, storms, precipitation and temperature. The following section provides a qualitative discussion of the potential impacts of the ***Proposed Action*** and EIS alternatives on global climate change in terms of greenhouse gas emissions.

3.2.1 Affected Environment

The global climate is continuously changing, as evidenced by repeated episodes of warming and cooling documented in the geologic record. The rate of change has typically been incremental, with warming or cooling trends occurring over the course of thousands of years. The past 10,000 years have been marked by a period of incremental warming, as glaciers have steadily retreated across the globe. Scientists have observed, however, an unprecedented increase in the rate of warming in the past 150 years. This recent warming has coincided with the Industrial Revolution, which resulted in widespread deforestation to accommodate development and agriculture and an increase in the use of fossil fuels, which has released substantial amounts of greenhouse gases (GHG) into the atmosphere.

Greenhouse gases such as carbon dioxide, methane, and nitrous oxide are emitted by both natural processes and human activities and trap heat in the atmosphere. The accumulation of GHG in the atmosphere affects the earth's temperature. While research has shown that the Earth's climate has natural warming and cooling cycles, evidence indicates that human activity has elevated the concentration of GHG in the atmosphere beyond the level of naturally-occurring concentrations resulting in more heat being held within the atmosphere. The Intergovernmental Panel on Climate Change (IPCC), an international group of scientists from 130 governments, has concluded that it is "very likely" - a probability listed at more than 90 percent - that human activities and fossil fuels explain most of the warming over the past 50 years."[1]

The IPCC predicts that under current human GHG emission trends, the following results could be realized within the next 100 years:[2]

- global temperature increases between 1.1 – 6.4 degrees Celsius;
- potential sea level rise between 18 to 59 centimeters or 7 to 22 inches;
- reduction in snow cover and sea ice;
- potential for more intense and frequent heat waves, tropical cycles and heavy precipitation; and,
- impacts to biodiversity, drinking water and food supplies.

The Climate Impacts Group (CIG), a Washington-state based interdisciplinary research group that collaborates with federal, state, local, tribal, and private agencies, organizations, and businesses, studies impacts of natural climate variability and global climate change on the

1 IPCC, Fourth Assessment Report, February 2, 2007.
2 IPCC, Summary for Policymakers, April 30, 2007.

Pacific Northwest. CIG research and modeling indicates the following possible impacts of human-based climate change in the Pacific Northwest:[3]

- changes in water resources, such as decreased snowpack; earlier snowmelt; decreased water for irrigation, fish and summertime hydropower production; increased conflict over water; increased urban demand for water;
- changes in salmon migration and reproduction;
- changes in forest growth and species diversity and increases in forest fires; and
- changes along coasts, such as increased coastal erosion and beach loss due to rising sea levels; increased landslides due to increased winter rainfall, permanent inundation in some areas; and increased coastal flooding due to sea level rise and increased winter streamflow.

Regulatory Context

Western Regional Climate Action Initiative

On February 26, 2007, the Governors of Washington, Oregon, California, Arizona, and New Mexico signed the Western Climate Initiative (WCI) to develop regional strategies to address climate change. WCI is identifying, evaluating and implementing collective and cooperative ways to reduce greenhouse gases in the region. Subsequent to this original agreement, the Governors of Utah and Montana, as well as the Premiers of British Columbia and Manitoba joined the Initiative. The WCI objectives include setting an overall regional reduction goal for GHG emissions, developing a design to achieve the goal and participating in The Climate Registry, a multi-state registry to enable tracking, management, and crediting for entities that reduce their GHG emissions.

On September 23, 2008, the WCI released their final design recommendations for a regional cap-and-trade program. This program would cover GHG emissions from electricity generation, industrial and commercial fossil fuel combustion, industrial process emissions, gas and diesel consumption for transportation, and residential fuel use. The first phase of the program, which will regulate electricity emissions and some industrial emission sources, is to begin January 1, 2012.

State of Washington

In February of 2007, Executive Order No. 07-02 was signed by the Governor establishing goals for Washington regarding reductions in climate pollution, increases in jobs, and reductions in expenditures on imported fuel.[4] This Executive Order established Washington's goals for reducing greenhouse gas emissions as the following: to reach 1990 levels by 2020, 25 percent below 1990 levels by 2035 and 50 percent below 1990 levels by 2050. This order was intended to address climate change, grow the clean energy economy and move Washington toward energy independence.

[3] Climate Impacts Group, Climate Impacts in Brief, accessed 9/21/2009, http://www.cses.washington.edu/cig/pnwc/ci.shtml.

[4] http://www.governor.wa.gov/execorders/eo_07-02.pdf

In 2007, the Washington legislature passed SB 6001, which among other things, adopted the Executive Order No. 07-02 goals into statute.

In 2008, the Washington Legislature built on SB 6001 by passing E2SHB 2815, the Greenhouse Gas Emissions Bill. While SB 6001 set targets to reduce emissions, the E2SHB 2815 made those firm requirements and directed the state to submit a comprehensive greenhouse gas reduction plan to the Legislature by December 1, 2008. As part of the plan, Ecology was mandated to develop a system for reporting and monitoring greenhouse gas emissions within the state and a design for a regional multi-sector, market-based system to reduce statewide greenhouse gas emissions.

In 2008,[5] the Department of Ecology issued a memorandum stating that climate change and greenhouse gas emissions should be included in all State Environmental Police Act (SEPA) analyses and committing to providing further clarification and analysis tools. No regulatory guidance regarding greenhouse gas emissions reporting, analysis methodology, benchmarks for significance or appropriate mitigation has been issued to date, however.

In 2009, Executive Order 09-05 was signed ordering Washington state actions to reduce climate-changing greenhouse gas emissions, to increase transportation and fuel-conservation options for Washington residents, and protect the state's water supplies and coastal areas. The Executive Order directs state agencies to develop a regional emissions reduction program; develop emission reduction strategies and industry emissions benchmarks to make sure 2020 reduction targets are met; work on low-carbon fuel standards or alternative requirements to reduce carbon emissions from the transportation sector; address rising sea levels and the risks to water supplies; and, increase transit options, such as buses, light rail, and ride-share programs, and give Washington residents more choices for reducing the effect of transportation emissions.

On December 1, 2010, the Department of Ecology adopted Chapter 173-441 WAC – *Reporting of Emission of Greenhouse Gases*. This rule aligns the state's greenhouse gas reporting requirements with EPA regulations, and requires facilities and transportation fuel suppliers that emit 10,000 metric tons carbon dioxide equivalents ($MTCO_2e$) or more per year, to report their GHG emissions to Ecology. Requirements for reporting began January 1, 2012.

City of Seattle

In 2007, the Seattle City Council adopted *Comprehensive Plan* goals and policies, related to achieving reductions in GHG emissions. In December 2007, the City Council adopted Ordinance No. 122574, which requires City departments that perform environmental review under SEPA to evaluate greenhouse gas (GHG) emissions when reviewing permit applications for development.

According to a 2008 inventory completed by the City of Seattle Office of Sustainability and Environment (OSE), Seattle's greenhouse gas emissions totaled 6,770,000 $MTCO_2E$ in 2008.[6] The OSE conducts greenhouse gas inventories every three years; the most recent inventory available inventory is from 2008. The inventory notes that GHG emissions in the City come

[5] Manning, Jay. RE: Climate Change - SEPA Environmental Review of Proposals, April 30, 2008.

[6] $MTCO_2E$ is defined as Metric Tonne Carbon Dioxide Equivalent; equates to 2204.62 pounds of CO2. This is a standard measure of amount of CO2 emissions.

from three main sources including transportation (62%), energy use in buildings (21%) and industrial operations and processes (17%).[7]

VMMC

VMMC is committed to reducing waste and organizational sustainability through its environmental stewardship initiative -- called EnviroMason. This initiative provides a framework for making unique energy and waste management decisions such as: setting policies on reliability and use, making efficiency improvements, supporting capital planning and infrastructure design, and encouraging employee participation and innovation. EnviroMason focuses on seven principles:

- leadership alignment and commitment;
- compliance assurance and pollution prevention;
- system integration;
- public communication and public involvement;
- measurement and continuous improvement;
- industry leadership; and
- environmental stewardship

In 2011, VMMC accomplished the following through the EnviroMason[8] program:

- Diverted 680 tons of municipal solid waste from local landfills for recycling (34 percent of all waste generated at VMMC)
- Increased overall recycling tonnage by 22 percent as compared to 2010
- Diverted over 95 percent of construction waste generated by ongoing campus work – saving over 60 tons of waste going to landfills
- Replaced more than 1,500 bathroom toilet fixtures with dual-flush fixtures that are estimated to save more than 2 million gallons of water
- Retrofitted lobby lighting with high-efficiency LED lighting

VMMC was the title sponsor for the Seattle **GoGreen Conference** in 2011 and 2012, and has committed to pursue innovations at all levels of environmental stewardship.[9]

7 2008 Seattle Community Greenhouse Gas Inventory.
8 EnviroMason. https://www.virginiamason.org/enviromason
9 GoGreen is a sustainability conference for businesses.

3.2.2 Impacts of the Proposed Action (6b) and Alternatives

For purposes of discussion of the climate change impacts of the alternatives for this Draft EIS, a Greenhouse Gas Emissions Worksheet (originally formulated by King County and the City of Seattle) has been used to estimate the emissions footprint of the ***Proposed Action*** and ***Alternative 5a*** for the lifecycle of the development on a gross-level basis; specifically:

- **Embodied Emissions** – The extraction, processing, transportation, construction and disposal of materials and landscape disturbance (embodied emissions);
- **Energy-related Emissions** – Energy demands created by the development after it is completed (energy emissions); and
- **Transportation-related Emissio**ns – Transportation demands created by the development after it is completed (transportation emissions).

The available methodology for estimating greenhouse gas emissions focuses on a quantitative calculation of emissions from new construction. As such, the methodology shows that redevelopment of the VMMC campus would generate new greenhouse gas emissions as shown in **Table 3.2-1** through **Table 3.2-3**.

Greenhouse gas emission estimates for the existing VMMC campus were not calculated for this analysis. The calculation method that has been developed applies to new construction and uses baseline assumptions (such as current energy code building requirements and emissions associated with construction) that do not apply to the existing VMMC campus. For this analysis, a relative comparison of the redevelopment alternatives is provided, and no deduction has been taken for the existing development in order to account for a net, as opposed to gross, increase in emissions.

The methodology does not take into consideration any reductions in carbon footprint of the development accommodated at VMMC, such as adding density in an Urban Center Village; vehicle trip reductions through contributing to the development of a walkable community where residents can live, work, and play; and LEED building techniques or other energy and resource conservation measures. While some of these measures have been incorporated into the Transportation analysis, the available methodology for calculating greenhouse gas emissions is unable to factor-in these vehicle trip reductions. However, as sustainable design is a guiding principle for VMMC, it is assumed that some sustainable features would be incorporated into redevelopment to reduce the impacts quantified in this section. Therefore, the estimates below are only one part of the analysis and should be considered a worst-case assessment.

The completed Greenhouse Gas Emissions Worksheets for the alternatives, as well as an explanation of the methodology employed to create the formulas, are included as **Appendix B** to this Draft EIS.

In order to calculate the "worst-case scenario" GHG emissions for the ***Proposed Action*** and ***Alternative 5a***, most new development is categorized as "Healthcare-Inpatient." Actual land uses will include a variety of categories including: office, support, research, inpatient and outpatient. However, as detailed and accurate land use assumptions are not known at this time, the Healthcare-Inpatient category was selected as this land use category results in the greatest GHG emissions levels as compared to the other available land use categories within the GHG worksheets (i.e., office and healthcare- outpatient).

Existing buildings that would be retained on the VMMC Campus under the ***Proposed Action*** and ***Alternative 5a*** are not included in the GHG emissions calculations – these buildings include the Benaroya Research Institute, the Floyd & Delores Jones Pavilion, the Lindeman Pavilion and the Baroness Apartment Hotel.

Proposed Action (Alternative 6b)

The ***Proposed Action*** would include approximately 2,564,558 sq. ft. of new building space to meet VMMC's increased space requirements and replace existing facilities within the existing MIO boundary and the proposed expansion area. As noted previously, the primary actions that generate GHG emissions are construction activities and the production/extraction of construction materials, energy consumption from the operation of the new facilities, and vehicle emissions from associated vehicle trips in conjunction with the operational phase of the project. See **Section II** for more information regarding the development of land use, transportation and utility assumptions. As detailed in **Table 3.2-1**, the total lifespan of GHG emissions for the ***Proposed Action*** are estimated at 6,519,814 $MTCO_2E$.[10] See **Appendix B** for the detailed greenhouse gas emissions worksheets. The worksheets assume an average building lifespan of 62.5 years; therefore, in order to calculate estimated annual emissions, the lifespan emissions are divided by 62.5. The annual GHG emissions for the ***Proposed Action*** are estimated at 104,317.024 $MTCO_2E$. This would represent approximately 1.54 percent of the City's annual emissions (according to the 2008 inventory of 6,770,000 $MTCO_2E$).

Table 3.2-1
PROPOSED ACTION – ESTIMATED GREENHOUSE GAS EMISSIONS ($MTCO_2E$)
NEW CONSTRUCTION

Land Use	Sq. Ft.	Lifespan Emissions	Annual Emissions
Healthcare*	**2,539,958**	**6,498,590**	**103,977.44**
Retail	**24,600**	**21,224**	**339.584**
TOTAL		**6,519,814**	**104,317.024**

* This is the total sq. ft. of proposed new development (1.7 million sq. ft.) plus area need to replace existing aging facilities. Does not include buildings to be retained including: Benaroya Research Institute, Floyd & Delores Jones Pavilion, Lindeman Pavilion and Baroness Apartment Hotel (464,992 sq. ft. total).

Alternative 5a

As described in **Section II** of this Draft EIS, ***Alternative 5a*** would include approximately 2,539,958 sq. ft. of new building space to meet VMMC's increased space requirements and replace existing facilities within the existing MIO boundary. No modifications to the existing MIO boundary would occur other than the correction to the mapping error associated with VMMC-owned property that is located immediately north of the surface parking lot on Terry Avenue.

[10] $MTCO_2E$ is defined as Metric Tonne Carbon Dioxide Equivalent; equates to 2204.62 pounds of CO2. This is a standard measure of amount of CO2 emissions reduced or sequestered. Carbon is not the same as Carbon Dioxide. Sequestering 3.67 tones of CO2 is equivalent to sequestering one ton of carbon.

As detailed in **Table 3.2-2**, the total lifespan of GHG emissions for ***Alternative 5a*** are estimated at 6,573,046 $MTCO_2E$.[11] See **Appendix B** for the detailed greenhouse gas emissions worksheets. The worksheets assume an average building lifespan of 62.5 years; therefore, in order to calculate estimated annual emissions, the lifespan emissions are divided by 62.5. The annual GHG emissions for ***Alternative 5a*** are estimated at 105,168.736 $MTCO_2E$. This would represent approximately 1.55 percent of the City's annual emissions (according to the 2008 inventory of 6,770,000 $MTCO_2E$). In comparison to the ***Proposed Action***, no retail space would be provided under ***Alternative 5a***, because the MIO boundary would not be expanded to include the **1000 Madison Block**, where existing retail uses are located, and required by the zoning.

Table 3.2-2
ALTERNATIVE 5A – ESTIMATED GREENHOUSE GAS EMISSIONS ($MTCO_2E$)
NEW CONSTRUCTION

Land Use	Sq. Ft.	Lifespan Emissions	Annual Emissions
Healthcare*	**2,569,078**	**6,573,046**	**105,168.736**

* This is the total sq. ft. of proposed new development (1.7 million sq. ft.) plus area need to replace existing aging facilities. Does not include buildings to be retained including: Benaroya Research Institute, Floyd & Delores Jones Pavilion and the Lindeman Pavilion (431,422 sq. ft.).

Cumulative Impacts

The scale of global climate change is so large a project's impacts can only be considered on a "cumulative" scale. It is not anticipated that a single development project, even one of the scale of the ***Proposed Action*** or ***Alternative 5a*** would have an individually discernable impact on global climate change. It is more appropriate to conclude that the greenhouse gas emissions associated with the alternatives would combine with emissions across the state, country and planet to cumulatively contribute to global climate change.

No Action Alternative

The ***No Action Alternative*** would involve no new building construction on the VMMC Campus. As such, existing aging structures would remain; conceivably, limited building remodeling would still occur. The ***No Action Alternative*** would not involve expansion of the MIO boundary and no modifications to on-site pedestrian and vehicular circulation or parking would be implemented. Greenhouse gas emissions would generally occur as under existing conditions.

3.2.3 Mitigation Measures

A variety of mitigation measures are available to reduce energy use, increase sustainable building design and reduce GHG emissions. As is stated in this section, VMMC is committed to reducing waste and organizational sustainability through its environmental stewardship initiative called EnviroMason. VMMC is also considering other potential mitigation measures that could

[11] $MTCO_2E$ is defined as Metric Tonne Carbon Dioxide Equivalent; equates to 2204.62 pounds of CO2. This is a standard measure of amount of CO2 emissions reduced or sequestered. Carbon is not the same as Carbon Dioxide. Sequestering 3.67 tones of CO2 is equivalent to sequestering one ton of carbon.

be implemented during future design and construction of buildings on campus including the following:

- **Natural Drainage and Green Roofs** – Green roofs can provide additional open space, opportunities for urban agriculture and decreased energy demands by reducing the cooling load for the building. Green Stormwater Infrastructure (GSI) would be developed for flow control and water quality treatment to the maximum extent feasible.

- **Tree Protection** – The City of Seattle has aggressive urban forest goals in order to help restore tree cover which has been lost due to development. Trees can provide stormwater management, habitat value, noise buffering, air purification, carbon sequestration, and mitigation of the urban heat island effect. Trees also have a positive effect on property values and neighborhood quality. Protection of existing trees, as feasible, and careful attention to new tree planting could help meet the Seattle Comprehensive Urban Forest Management Plan Goals for multi-family residential and commercial development by achieving 15-20 percent overall tree canopy within 30 years.

- **Native Plants** – Native plants are adapted to the local climate and do not depend upon irrigation after plant establishment for ultimate survival. Landscaping with native plants, beyond that required by code, could be planted to reduce water demand and integrate with the local ecosystem. VMMC's goal is to create green spaces that use native, non-invasive plants, to reduce water and fertilizer consumption, and align with good urban landscaping design practices.

- **Waste Management and Deconstruction** – When existing buildings are demolished, there are often opportunities to reduce the amount of waste being sent to the landfill with sustainable waste management strategies. In the Seattle area, standard practice for building construction and demolition results in fairly high recycling rates of over 50 to 60 percent. However, these rates can be increased by implementing aggressive demolition recycling. Such efforts can require considerable additional effort on the part of the contractor. Some of the options under consideration that could mitigate waste generated by redevelopment on the VMMC campus include on-site source separated recycling, potential reuse of demolition materials on-site, deconstruction of existing buildings, and salvage and reuse of building components.

- **Building Design** – Building design on the VMMC campus could integrate a wide variety of green building features. Green building encompasses energy and water conservation, waste reduction, and good indoor environmental quality. Tools and standards that are used to measure green building performance could be used at VMMC. Some options include: Built Green, LEED, and the Evergreen Sustainable Development Criteria. Custom green building guidelines could also be developed to guide building design and construction. Some of the specific building design strategies that might be considered include solar panels for electricity generation or domestic solar hot water, energy star rated appliances, water conserving fixtures beyond code, low toxic materials, finishes, and flooring, energy and water sub-metering for individual units, high efficiency fixtures such as dual flush toilets, toilet flushing and irrigation supplied by recaptured wastewater or rainwater, dual plumbing systems for all new buildings to accommodate water reuse, and wind generated alternative energy.

- **Transportation** – Transportation plays a major role in climate change and VMMC plans to address this concern through several initiatives including contributing to a vibrant pedestrian-oriented development and encouraging fewer personal vehicle trips. A Transportation Management Plan (TMP) is included in the *MIMP*, which identifies strategies to reduce single-occupancy vehicle travel. A traffic study has also been prepared for this Draft EIS to analyze potential traffic and parking impacts.

Continued focus on and implementation of these measures throughout the *MIMP* implementation process would contribute to reducing the GHG emissions estimated in **Table 3.2-1** for the ***Proposed Action*** or **Table 3.2-2** for ***Alternative 5a***.

3.2.4 Significant Unavoidable Adverse Impacts

The direct and indirect impacts of the GHG emissions of any of the alternatives are not considered significant.

3.3 NOISE

This section of the Draft EIS describes the existing noise conditions on the VMMC campus and in the site vicinity and analyzes the potential noise impacts that could result from the ***Proposed Action*** and the EIS alternatives.

3.3.1 Affected Environment

Policy Context

The Seattle Municipal Code (SMC) contains specific provisions that describe the scope of the SEPA analysis for the noise element. Relevant policies from SMC 25.05.675 are provided below:

L.2 Noise Policies

- *a. It is the City's policy to minimize or prevent adverse noise impacts resulting from new development or uses.*
- *b. The decision maker may require, as part of the environmental review of a project, an assessment of noise impacts likely to result from the project.*
- *c. Based in part on such assessments, and in consultation with appropriate agencies with expertise, the decision maker shall assess the extent of adverse impacts and the need for mitigation.*
- *d. Subject to the Overview Policy set forth in SMC Section 25.05.665, the decision maker may condition or deny a proposal to mitigate its adverse noise impacts.*
- *e. Mitigating measures may include, but are not limited to:*
  - *i. Use of an alternative technology;*
  - *ii. Reduction in the size or scope of a project or operation;*
  - *iii. Limits on the time and/or duration of operation; and*
  - *iv. Requiring buffering, landscaping, or other techniques to reduce noise impacts off-site.*

Noise Terminology and Descriptors

Noise is sometimes defined as unwanted sound, and the terms noise and sound are used more or less synonymously in this section. The human ear responds to a very wide range of sound intensities. The decibel (dB) scale used to describe and quantify sound is a logarithmic scale that provides a convenient system for considering the large differences in audible sound intensities. On this scale, a 10-dB increase represents a perceived doubling of loudness to someone with normal hearing. Therefore, a 70-dB sound level will sound twice as loud as a 60-dB sound level from the same source.

People generally cannot detect sound level differences (increases or decreases) of 1 dB in a given noise environment. Although differences of 2 or 3 dB can be detected under ideal laboratory conditions, such changes are difficult for people to discern in an active outdoor noise environment. A 5-dB change in a given noise source, however, would be likely to be perceived by most people under normal listening conditions.

When addressing the effects of noise on people, it is necessary to consider the "frequency response" of the human ear, or those frequencies that people hear best. Sound-measuring instruments are, therefore, often programmed to "weight" sounds based on the way people hear. The frequency-weighting most often used to evaluate environmental noise is A-weighting, and measurements using this system are reported in "A-weighted decibels" or dBA. All sound levels discussed in this evaluation are reported in A-weighted decibels.

On the logarithmic decibel scale that is used to describe noise, a doubling of sound-generating activity (i.e., a doubling of the sound energy) causes a 3-dBA increase in average sound produced by that source, not a doubling of the loudness of the sound (which requires a 10-dBA increase). For example, if traffic along a roadway is causing a 60 dBA sound level at some nearby location, doubling traffic on this same roadway, while maintaining the same fleet mix and speeds, would cause the sound level at this same location to increase to 63 dBA. Such an increase might not be discernible in a complex acoustical environment.

Relatively long, multi-source "line" sources, such as roadways, emit cylindrical sound waves. Due to the cylindrical spreading of these sound waves, sound levels from such sources decrease with each doubling of distance from the source at a rate of 3 dBA. Sound waves from discrete events or stationary "point" sources (such as a door slamming) spread as a sphere, and sound levels from these sources decrease 6 dBA per doubling of the distance from the source. Conversely, moving half the distance closer to a source increases sound levels by 3 dBA and 6 dBA for line and point sources, respectively.

For a given noise source, a number of factors affect the sound transmission from the source, which in turn affects the potential noise impact. Important factors include: distance from the source, frequency of the sound, absorbency and roughness of the intervening ground surface, the presence or absence of obstructions and their absorbency or reflectivity, and the duration of the sound. The degree of impact on humans also depends on existing sound levels and who is listening. Impact may also be affected by the listeners' subjective attitudes regarding the noise source. Typical sound levels of some familiar noise sources and activities are presented in **Table 3.3-1**.

Federal regulatory agencies often use the equivalent sound level (L_{eq}) to characterize sound levels and to evaluate noise impacts. The L_{eq} is the level that if held constant over the same period of time would have the same sound energy as the actual, fluctuating sound. As such, the L_{eq} can be considered an energy-average sound level. This metric should not be confused with an arithmetic average, which tends to de-emphasize high and low values. The L_{eq} gives most weight to the highest sound levels, because they contain the greatest amount of sound energy. The hourly L_{eq} is useful for comparing sound levels hour to hour.

Table 3.3-1
SOUND LEVELS BY COMMON NOISE SOURCES

Thresholds/ Noise Sources	Sound Level (dBA)	Subjective Evaluations [1]	Possible Effects on Humans [1]
Human Threshold of Pain Carrier jet takeoff at 50 ft	140	Deafening	Continuous exposure to levels above 70 can cause hearing loss in majority of population
Siren at 100 ft Loud rock band	130		
Jet takeoff at 200 ft Auto horn at 3 ft	120		
Chain saw Noisy snowmobile	110	Very Loud	
Lawn mower at 3 ft Noisy motorcycle at 50 ft	100		
Heavy truck at 50 ft	90		
Pneumatic drill at 50 ft Busy urban street, daytime	80	Loud	
Normal automobile at 50 mph Vacuum cleaner at 3 ft	70		Speech Interference
Air conditioning unit at 20 ft Conversation at 3 ft	60	Moderate	
Quiet residential area Light auto traffic at 100 ft	50		Sleep Interference
Library Quiet home	40	Faint	
Soft whisper at 15 ft	30		
Slight rustling of leaves	20		
Broadcasting Studio	10	Very Faint	
Threshold of Human Hearing	0		

Source: EPA 1974 and Others

[1] Note that both the subjective evaluations and the physiological responses are continuums without true threshold boundaries. Consequently, there are overlaps among categories of response that depend on the sensitivity of the noise receivers.

Another frequently used noise metric is called the day-night sound level, abbreviated L_{dn}. The day-night level is like a 24-hour L_{eq}, except that sound levels measured in the hours between 10PM and 7AM are increased by 10 dBA to account for the potential for noise during these hours to interfere with people trying to sleep. The L_{dn} is useful for comparing sound levels day to day.

Two other noise metrics discussed later are the L_{max} and the L_{90}. The L_{max} is the highest short-term sound level associated with a measurement or a noise event. The L_{90} is the sound level exceeded 90 percent of the time during a measurement interval (e.g., 1 hour) and is often used to characterize the background sound level.

Regulatory Limits

Seattle Noise Code

Because the VMMC campus is located within the City of Seattle, the sound level limits and timing restrictions established in the Seattle Noise Code (Seattle Municipal Code Chapter, 25.08) apply to all aspects of the existing and future facilities. The noise limits pertain to both the construction and the long-term operation of all facilities that could be developed under the ***Proposed Action***, ***Alternative 5a*** and the ***No Action Alternative***. The noise limits vary by the zoning designation of the source and receiving properties. The noise limits for all sources and activities are based on the hourly equivalent sound level (L_{eq}) and short-term maximum sound level (L_{max}) attributable to non-exempt noise sources.

The applicable limits for current and future operational noise during daytime and nighttime hours are shown in the upper portion of **Table 3.3-2**. The daytime construction noise limits are listed in the lower portion of **Table 3.3-2**. As shown, the limits for temporary daytime construction activities are much higher than the limits for typical operational noise in order to allow the sorts of noisy activities required by construction processes. The construction noise limits vary by the types of equipment involved (lower portion of **Table 3.3-2**) and there are additional timing restrictions for sources that involve impact noise (e.g., pavement breakers). The operational and construction noise limits apply at exterior locations.

In order to protect interior commercial uses from excessive levels of construction noise, the Seattle Noise Code (SMC 25.08.425F) prohibits construction noise from exceeding the more stringent operational noise limits (i.e., the upper portion of **Table 3.3-2**) *inside* buildings in commercial districts between the hours of 8:00 AM and 5:00 PM. This requirement applies only in commercially-zoned areas and not at commercial uses within other zones. Compliance with this requirement is intended to be assessed after every reasonable effort, including, but not limited to, closing windows and doors, has been taken to reduce such noise in the interior space.

The Seattle Noise Code identifies a number of noise sources and activities that are either partially or completely exempt from the sound level limits. Exempt sources include sounds created by motor vehicles traveling on public roads (SMC 25.08.480) and sounds from warning devices associated with emergency vehicles (SMC 25.08.530). Sounds created by motor vehicles operating *off* public roadways also are exempt from the limits, *except* when sounds are received in Residential Districts (SMC 25.08.480).

Table 3.3-2
SEATTLE EXTERIOR SOUND LEVEL AND CONSTRUCTION NOISE LIMITS (dBA)

Zoning District of Noise Source [25.08.410 & 420 & 425]	Zoning District of Receiving Property		
	Residential Day / Night	Commercial	Industrial
Operational Noise Limits [1]			
Residential	55 / 45	57	60
Commercial	57 / 47	60	65
Industrial	60 / 50	65	70
Daytime Construction Noise Limits [2]			
On-site sources like dozers, loaders, power shovels, cranes, derricks, graders, off-highway trucks, ditchers, and pneumatic equip (maximum+25) [25.08.425 A.1]			
Residential	80	82	85
Commercial	82	85	90
Industrial	85	90	95
Portable equip used in temporary locations in support of construction like chain saws, log chippers, and powered hand tools (maximum+20) [25.08.425 A.2]			
Residential	75	77	80
Commercial	77	80	85
Industrial	80	85	90
Impact types of equipment like pavement breakers, pile drivers, jackhammers, sand-blasting tools, or other impulse noise sources - may exceed maximum permissible limits between 8 a.m. and 5 p.m. weekdays and 9 a.m. and 5 p.m. weekends, but may not exceed the following limits [25.08.425 B]: ▪ L_{eq} (1 hr) 90 dBA ▪ L_{eq} (30 minutes) 93 dBA ▪ L_{eq} (15 minutes) 96 dBA ▪ L_{eq} (7.5 minutes) 99 dBA			

Source: Seattle Municipal Code - 25.08 - Specific sections indicated.

Note: All sound level limits are based on the measurement interval equivalent sound level (L_{eq}) and a not-to-be-exceeded Lmax level 15 dBA higher than the indicated limits.

[1] The operational noise limits for residential receivers are reduced by 10 dBA during nighttime hours (i.e., 10 p.m. to 7 a.m. weekdays, 10 p.m. to 9 a.m. weekends). The operational noise limits are displayed for daytime/nighttime hours.

[2] Construction noise limits apply at 50' or a real property line, whichever is greater. Construction noise is limited to the higher levels listed in the bottom portion of the table during "daytime" hours only, which vary based on underlying zoning. Except as noted above for impact equipment, within Lowrise, Midrise, Highrise, Residential-Commercial and Neighborhood Commercial zones the levels of construction noise shown in this table are allowed between 7 a.m. and 7 p.m. on weekdays and between 9 a.m. and 7 p.m. on weekends and legal holidays. In all other zones "daytime" hours are defined as between 7 a.m. and 10 p.m. weekdays and 9 a.m. and 10 p.m. on weekends and holidays. These limits effectively prohibit construction at "night" except in special cases.

Zoning and Land Use

As mentioned previously, the Seattle noise limits are based on the zoning designation of the source and that of the receiving properties. The VMMC campus and vicinity include two existing underlying zoning districts: *(1)* Neighborhood Commercial (NC) along the ½ block wide Madison Street frontage, and *(2)* Highrise Multi-Family Residential (HR) for the remainder of the campus and the surrounding area. The entire existing campus is also included within an area that includes Major Institution Overlay (MIO) zoning. Under the ***Proposed Action***, the MIO boundary would be expanded to include the **1000 Madison Block** (see **Figure 2-3**).

Properties within the HR zone are residential noise sources and receivers for purposes of the Seattle Noise Code and properties within the NC zone are commercial sources and receivers. These zoning designations determine the noise limits -- both for construction-related noise during daytime hours and operational noise during all hours of the day and night on receiving properties adjacent to the VMMC campus – both currently and with any future development that would occur under the ***Proposed Action*** or ***Alternative 5a***.

Existing Sound Levels

The existing acoustic environment on and around the VMMC campus is typical of an urban setting, consisting of noise from traffic on the I-5 freeway and on local streets, aircraft overflights, people talking and moving about, and other miscellaneous sources. In some areas on and around the campus, I-5 noise is the dominant source, and in most areas I-5 traffic noise is a contributing source. In some areas near the primary access route to the existing emergency room entrance, ambulance sirens are also occasional sources of noise during all hours of the day and night. The existing entry for ambulances visiting the emergency services department is has been relocated from the intersection of Spring Street and Terry Avenue to the corner of Spring Street and Boren Avenue. This change was adopted as part of the 2004 facility plan update and construction of the new drive-through entry for ambulances visiting the relocated emergency room entry is now complete. The approach routes emergency vehicles use to reach the emergency department entrance has changed slightly as a result, and some emergency medical-related traffic moved from Spring Street to Boren Avenue.

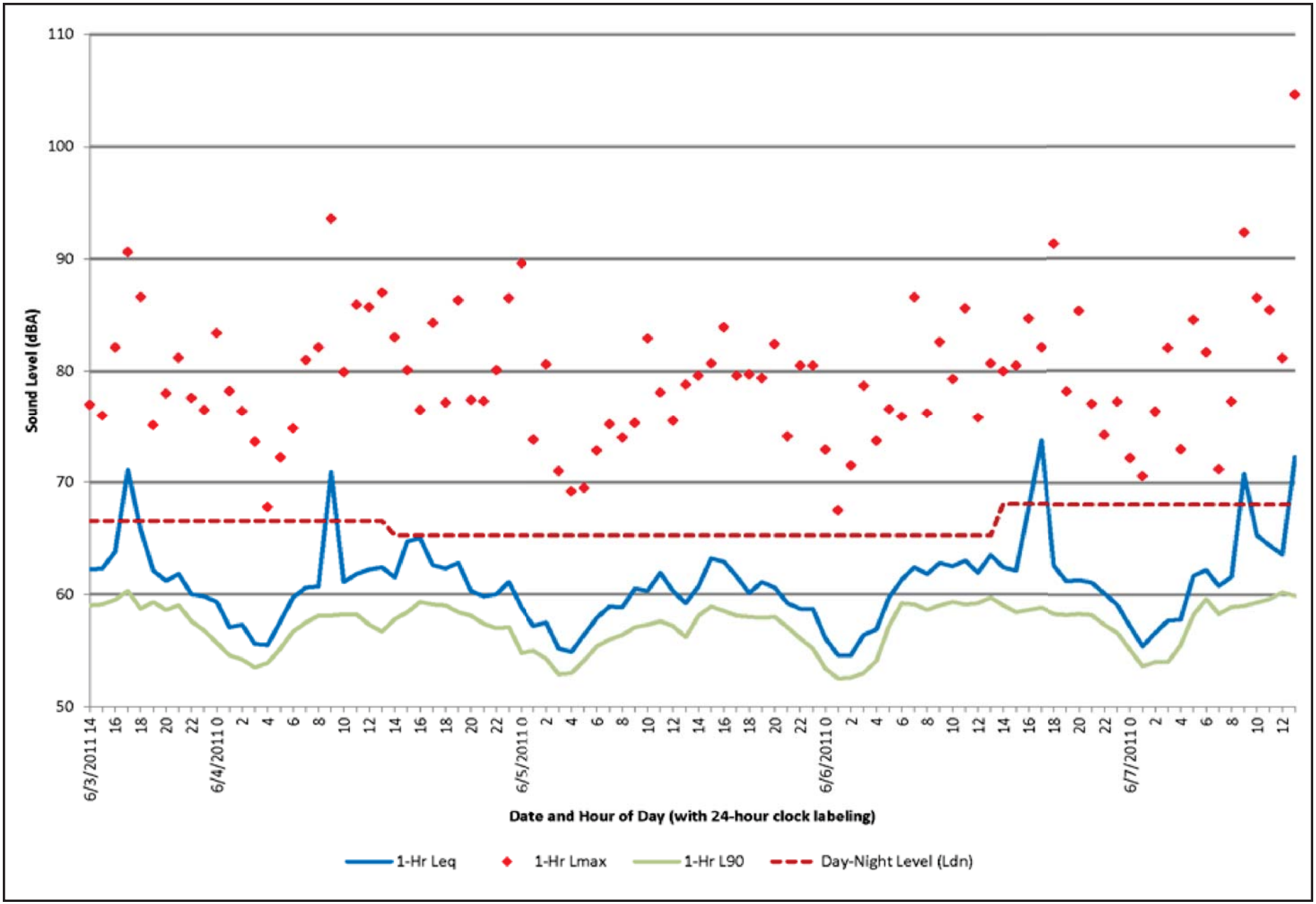
To characterize the existing acoustic environment, multi-day sound level measurements (SLMs) were taken in two locations representing off-site receivers near the edge of the existing VMMC campus. These measurements were taken at ground level (i.e., 5' above the ground), so they include relatively high levels of noise from nearby local traffic. However, these SLMs likely understate levels of noise from the freeway that reach elevated receivers in the area (e.g., residents of high-rises) that are not shielded by intervening buildings. The SLM locations are described and the measurement results summarized in **Table 3.3-3**. SLM locations are depicted in **Figure 3.3-1**, and the measured levels are presented in **Figure 3.3-2** and **Figure 3.3-3**.

The measured existing sound levels at these two locations demonstrate that sound levels in the vicinity of the VMMC campus are relatively high, with hourly L_{eq} levels rarely dipping below 60 dBA, and background levels, represented by the hourly L_{90} metric, rarely dropping below the mid-50s dBA. The measured overall sound levels were higher at SLM 2, which is near and greatly influenced by traffic on Boren Avenue, where the day-night levels were in the high 60's and low 70's dBA. Measured background levels (i.e., the L90 levels in charts) were higher at SLM1, most likely due to the constant contribution and influence of freeway traffic noise. These measurements document the levels of noise from existing traffic on local roads and on the freeway, and indicate most if not all receiving locations in the area are affected by relatively high levels of noise from urban sources.

Source: ENVIRON, 2011

Figure 3.3-1

Sound Level Measurement (SLM) Locations

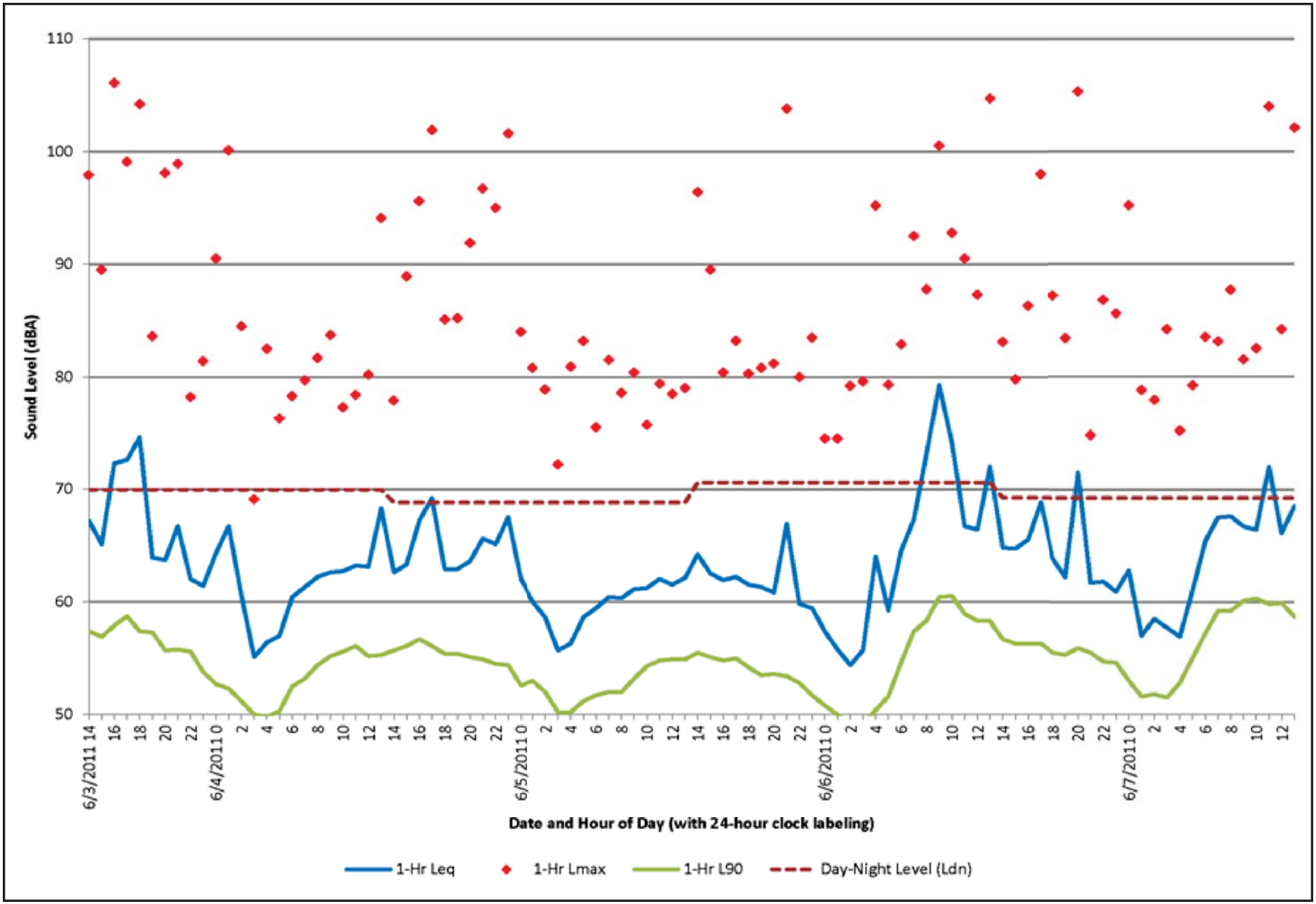


Source: ENVIRON, 2011

Figure 3.3-2

Measured Existing Sound Level at SLM 1

EA | BLUMEN



Source: ENVIRON, 2011

Figure 3.3-3

Measured Existing Sound Level at SLM 2

Table 3.3-3
MEASURED EXISTING SOUND LEVELS

SLM Location	Date/ Time	Time of Day	Range of Hourly L_{eqs}	Range of Hourly L_{maxs}	Day-Night Levels
SLM 1[1]	6/3/11 14:00 Through 6/7/11 13:00	Day	59 – 74	71 – 105	67, 65, 65, 68
		Night	55 - 62	68 – 90	
SLM 2[2]		Day	60 – 79	75 – 106	70, 69, 71, 69
		Night	54 - 68	69 - 102	

Source: Sound Level Measurements by ENVIRON International Corp., 2011.
Notes:
[1] SLM 1 was taken at the One Thousand Eighth Avenue Apartments along Spring Street between 8th and 9th
[2] SLM 2 was taken in the yard of the residence at 1104 Spring Street, facing Boren across from the new emergency services department

3.3.2 Impacts of the Proposed Action (6b) and Alternatives

Proposed Action (Alternative 6b) and Alternative 5a

Several elements associated with the proposed VMMC *MIMP* could have the potential to result in noise impacts at nearby residential receivers. These elements could include noise from increased traffic due to new project-related development, noise from building mechanical systems, such as heating, ventilation, and air conditioning (HVAC), noise from loading docks and refuse/recycling collection, and noise from emergency vehicles. For purposes of this EIS analysis, noise impacts associated with the ***Proposed Action***, the development alternative with the largest footprint, are analyzed. Any impacts associated with ***Alternative 5a*** would be assumed to be somewhat less than those identified for the ***Proposed Action*** Further, except in general terms, this review does not provide a separate discussion for the noise impacts associated with the **1000 Madison Block** expansion area, as the general discussion related to the ***Proposed Action*** would apply to both the VMMC campus and **1000 Madison Block**.

The **1000 Madison Block** expansion area is included in the ***Proposed Action*** and would have a larger footprint than ***Alternative 5a***, which would locate some noise sources nearer to off-site receivers. The adjacent residential properties (i.e., Decatur Condominiums, Cabrini Low-Income Housing, John Alden Apartments, and Sorrento Hotel) surrounding the expansion would therefore have a slightly increased potential to be affected by noise associated with the expanded campus. But as mentioned previously, all aspects of the existing and future facilities included in the ***Proposed Action*** would be subject to the limits in the Seattle Noise Code, and with compliance with these limits, off-site receivers would be unlikely to be significantly adversely impacted by facility-related operational noise.

Alternative 5a would include a portion of the central hospital block to be developed to a height of 300 ft. compared with a development height of 240 ft. with the ***Proposed Action***. With taller buildings, noise from traffic on I-5 could be more effectively obstructed at "shielded" locations, including residential receivers to the east on Boren Avenue. And the smaller footprint associated with ***Alternative 5a*** would slightly reduce the potential for noise impacts in the surrounding area.

The following discussion identifies the potential for elements of the proposed plan to result in noise impacts. Potential construction noise impacts are discussed in **Section 3.11**.

Project-Related Traffic and Parking

Under the ***Proposed Action*** and ***Alternative 5a,*** traffic volumes are expected to increase minimally on area roadways that already carry moderately heavy volumes (e.g., Boren Avenue); volumes are expected to increase to a greater degree on some currently very-lightly traveled roads (e.g., Spring Street west of Terry Avenue). Comparisons of total PM peak-hour traffic volumes (including project-related traffic) in the future (2042) indicate full development of the ***Proposed Action*** would result in increases in traffic noise from area roadways from <0.5 dBA up to about 3 dBA. Changes in traffic noise levels in this range would not be expected to be discernible to people -- especially because the change would occur over a long period of time. Therefore, no significant impacts are anticipated from changes in traffic volumes under the ***Proposed Action,*** and any such effects would be similar or less with ***Alternative 5a***. As indicated previously, existing sound levels in the site vicinity are already fairly high due primarily to traffic sources, so any increases in traffic would slightly worsen this situation.

The ***Proposed Action*** and ***Alternatives 5a*** would include increases in the on-site parking capacity through the development of underground facilities associated with the various components of the alternatives. Because the parking facilities would be underground, operational traffic noise from these facilities would have no potential to cause noise impacts at nearby off-site receiving properties. In fact, the eventual replacement of the existing above ground Ninth Avenue Garage with an underground facility would remove this noise source from the area immediately adjacent to existing residential uses across the alley to the southwest (i.e., the Emerson, Lowell, and Royal Manor Apartments).

Establishing underground parking facilities would likely require mechanical ventilation systems with associated fan noise. Noise from such equipment would be subject to the Seattle noise limits, and because such fans can run 24 hours a day, would need to comply with the nighttime limits. Therefore, both the locations and the specific equipment used will need to be more completely considered during the design and implementation phases of the plan.

The use of alarms signaling vehicles exiting parking garages also could represent intrusive noise sources at any nearby sensitive uses. As safety equipment, noise from exiting alarms is not subject to the Seattle noise limits, but alarm noise could nonetheless potentially impact nearby sensitive uses. Noise from exiting alarms should be considered during subsequent design stages associated with vehicle ingress and egress to parking garages and loading bays.

Because the facilities that will be developed under this plan have not yet been designed, it is possible that some small amounts of surface parking will be associated with some buildings and uses. For example, new buildings may allow ADA access from surface parking. Such small amounts of surface parking would be unlikely to be substantial noise generators and so would be unlikely to result in any significant noise impacts.

HVAC/Mechanical System Noise

All of the buildings that comprise elements of the alternative campus redevelopment plans would include HVAC systems and some would likely require supplemental mechanical systems to provide such things as refrigeration, hot water, and supplemental ventilation (e.g., for the

underground parking lots). Because of the conceptual nature of the ***Proposed Action*** and ***Alternative 5a***, no project-specific details are available at this time regarding the types and specific locations of such equipment; therefore, no quantitative analysis is possible at this time. However, noise from such systems would be subject to the Seattle noise limits and DPD review, and compliance with these limits would be considered during design and permitting of construction of the elements of the respective plans. Most HVAC equipment would likely be located on building roofs, which could make noise a non-issue by placing these sources far away from the nearest sensitive receivers. In instances where mechanical equipment would be located on roof tops near even taller buildings, or at lower-to-mid levels of the buildings, or at ground level, the equipment noise would need to be carefully considered during facility design and would need to be oriented and/or enclosed to ensure compliance with the City noise limits. Architectural design could incorporate exterior mechanical equipment mitigation into structures from their inception, and with detailed review to ensure compliance with the City noise limits at all times of the day and night, noise associated with building mechanical equipment would be unlikely to cause significant off-site noise impacts.

Loading Dock/Refuse Hauling Noise

Facility loading docks and refuse/recycling collection and hauling locations would generate truck visits, truck off-loading, and refuse dumping activities that would generate noise. Depending on the locations of these facilities in relation to sensitive off-site uses and the timing of the activities, these components of the VMMC facility could result in on- and off-site noise impacts. Operational noise from these facilities received at off-site locations would be subject to the City noise limits, so the potential for noise-generating activities to comply with daytime and nighttime limits would need to be considered during siting and design.

Emergency Vehicles

Counts and estimates of the number of emergency vehicles and timing of such vehicles during the day conducted for the 2004 facility plan update indicated ambulances typically transport about 25 patients per day to VMMC in both urgent-care visits and patient transfers, with a total of between one and three visits per hour across the day. Counts for that study indicated about 17 percent of ambulance visits were for urgent-care services. This equates to from four to thirteen urgent-care ambulance visits each day that could involve use of sirens as the vehicles approach the VMMC campus. While noise from emergency vehicle sirens is exempt from the City noise limits, such noise could nonetheless cause relatively high, but short-term sound levels at noise sensitive uses near the emergency department access routes.

The traffic impact study conducted for the 2004 facility plan update determined that that plan, which included relocation of the emergency services access point to Spring Street and Boren Avenue, would not increase either the numbers of vehicles traveling to and from the medical facility or the numbers of emergency vehicles accessing the emergency services entry portal. Those same conclusions apply to the proposed VMMC *MIMP*, and as a result, this plan would not be expected to result in any significant noise impacts due to emergency vehicle traffic.

Emergency Electrical Generators

Medical facilities are required to have emergency generators in place in the event of a power failure. Such equipment can be located inside garages or outside primary buildings, but must be near enough to provide electrical power to primary circuits where needed. Emergency

generators are usually tested for a short period about once a month and noise related to such testing is subject to the Seattle noise limits. During actual emergency use of such generators, the noise limits do not apply. If located inside underground garages, generator-testing noise would be unlikely to present much, if any, of a noise issue to off-site receivers. However, generators located outside buildings would likely need to be equipped with noise control mufflers, probably be at least partially if not completely enclosed, and have regular testing limited to daytime hours to ensure compliance with applicable noise limits.

Outdoor Campus Maintenance Activities

VMMC campus outdoor maintenance activities that may involve noise-generating equipment include lawn mowing, landscaping/gardening, and leaf blowing. Noise from these sorts of activities would be subject to the Seattle noise limits. Although such maintenance activities would likely be limited to daytime hours, noise from some equipment such as leaf blowers may nonetheless intrude on and be perceived as a noise impact by nearby sensitive receivers. Any such effects would be temporary and are unlikely to rise to the level of a significant impact, but could still adversely affect community perceptions of VMMC. The potential for perceived adverse noise impacts from VMMC maintenance activities could be avoided by ensuring that outdoor workers are aware of any nearby sensitive receivers and that they strive to minimize both the duration and the level of noise from maintenance activities while near such receivers.

Cumulative Impacts

Development under the ***Proposed Action*** and ***Alternative 5a*** could result in cumulative changes in environmental noise levels in the site vicinity in terms of both increases and decreases in sound levels. Construction of tall buildings such that they would provide additional obstructions to noise generated by traffic on I-5 could reduce noise from this source at some locations. Similarly, buildings situated between major roadways like Boren Avenue and sensitive receivers could reduce noise from traffic along these roads. On the other hand, noise from any increases in project-related traffic and from mechanical equipment associated with VMMC facilities could alter and possibly slightly increase overall sound levels in the area – in spite of noise from VMMC sources complying with the City noise limits. Locations most likely to be affected by increased noise from traffic or mechanical appliances would be relatively quieter locations with direct lines-of-sight to the source or sources, especially at relatively short distances. In addition, new more or less continuous sources like HVAC system fans could change the nature of the "noise scape" as well as slightly increase sound levels throughout the day. At greater distances and at locations shielded from noise sources by buildings or other obstacles, the overall noise level changes would be minimal. Although with compliance with the City limits based on hourly levels no specific, significant noise impacts would be expected, overall day-long sound levels in an already relatively loud portion of the City would likely increase slightly in some locations under the ***Proposed Action*** and ***Alternative 5a*** due to the presence of more noise sources related to the proposed plan.

No-Action Alternative

The ***No Action Alternative*** would involve no expansion of the existing VMMC MIO boundary, no new building construction or building modifications on the campus, no additions to open space, and no modifications to on-site pedestrian and vehicular circulation or parking. No capital funds for construction of major improvements on-campus would be expended; conceivably,

however, limited building remodeling and maintenance would still occur. The potential for noise impacts from the ***No Action Alternative*** would be expected to remain about the same as they are at present. Overall, noise impacts would be less than under the ***Proposed Action*** or ***Alternative 5a*** -- because major construction would not occur and increases in traffic would be far less.

3.3.3 Mitigation Measures

Potential noise impacts could result from new HVAC equipment and other mechanical equipment associated with new or renovated facilities and from loading docks and any refuse-hauling sites near off-site receivers. The following processes could be implemented to reduce the potential for noise impacts from these sources and activities.

- To minimize noise impacts associated with HVAC and air-handling equipment, such equipment could be selected and positioned to maximize noise reduction to the extent possible. When conducting analyses to ensure compliance with the Seattle noise limits, facility designers would assess sound levels as they relate to the nearest residential uses and any adjacent commercial locations. More distant residential receivers could also be considered.

- Exhaust vents for all underground parking facilities could be located and controlled to reduce noise at both on- and off-site residential uses and to ensure compliance with the City noise limits.

- Loading docks could be designed and sited with consideration of nearby sensitive receivers and to ensure that noise from truck traffic to and from the docks and from loading activities would comply with the City noise limits. Depending on the proximity of loading docks and their relative "exposure" to on- and off-site sensitive receivers, it could be warranted and worthwhile to implement restrictions to limit noisy activities associated with deliveries to daytime hours.

- Garbage and recycling collection could, to the extent feasible, be designed to minimize or eliminate line-of-sight from collection/pickup points to nearby sensitive receivers. In addition, VMMC could work with the collection vendors to schedule collections at appropriate (i.e., least intrusive) times. For example, garbage and recycle hauling contracts could specifically limit pickups to daytime hours so as to avoid potential noise impacts from such activities at night.

- Emergency generators should be considered during actual facility design so as to be located and equipped with noise controls to minimize the potential for noise impacts and to ensure compliance with applicable noise limits during regular testing of such equipment.

- The potential for noise impacts related to outdoor maintenance activities on the campus could be minimized by ensuring outdoor maintenance is restricted to daytime hours, whenever possible. In addition, any noisy outdoor work and especially lawn mowing and leaf blowing should employ both the quietest available equipment and be limited in duration when working near (e.g., within 200 ft.) sensitive receivers.

3.3.4 Significant Unavoidable Adverse Impacts

The greatest potential for operational noise impacts from the alternatives would result from new ventilation equipment and other mechanical equipment associated with the new buildings on the VMMC campus. Care, therefore, should be taken in the selection, design, and placement of such equipment to ensure that all City of Seattle noise limits are met at nearby properties. Overall, no significant unavoidable adverse operational noise-related impacts are anticipated.

Noise impacts due to traffic are expected to be minimal and/or intermittent. No significant unavoidable adverse traffic noise-related impacts are anticipated.

Figure 3.3-3

3.4 LAND USE

This section of the Draft EIS describes the existing land use patterns on the Virginia Mason Medical Center (VMMC) campus and in the site vicinity and analyzes the potential land use impacts that could result from the proposed *Draft Major Institution Master Plan (Draft MIMP)*. A discussion of the project's Relationship to Land Use Plans, Policies and Regulations is also included. Discussion of impacts related to Height, Bulk, and Scale are addressed in **Section 3.6.2**, **Aesthetics**.

Policy Context

The Seattle Municipal Code (SMC) contains specific provisions that describe the scope of the SEPA analysis for the land use element. Relevant policies from SMC 25.05.675 are provided below:

J. 2. Land Use Policies

a. It is the City's policy to ensure that proposed uses in development projects are reasonably compatible with surrounding uses and are consistent with any applicable, adopted City land use regulations, the goals and policies set forth in Section B of the land use element of the Seattle Comprehensive Plan regarding Land Use Categories, and the shoreline goals and policies set forth in section D-4 of the land use element of the Seattle Comprehensive Plan for the area in which the project is located.

b. Subject to the overview policy set forth in SMC Section 25.05.665, the decision maker may condition or deny any project to mitigate adverse land use impacts resulting from a proposed project or to achieve consistency with the applicable City land use regulations, the goals and policies set forth in Section B of the land use element of the Seattle Comprehensive Plan regarding Land Use Categories, the shoreline goals and policies set forth in Section D-4 of the land use element of the Seattle Comprehensive Plan, the procedures and locational criteria for shoreline environment re-designations set forth in SMC Sections 23.60.060 and 23.60.220, respectively, and the environmentally critical areas policies.

3.4.1 Affected Environment

Background

The original six-story, concrete frame VMMC hospital building was built on the present site of the VMMC campus in 1920 and it comprised 65 hospital beds. Since construction of the Original Hospital building, there have been sixteen additions or new buildings constructed within the VMMC campus, the most recent being the Floyd & Delores Jones Pavilion completed in 2011. With construction of new VMMC buildings on-campus, VMMC has expanded onsite hospital uses to include medical office, research, rehabilitation, education/training and other hospital/ medical related-uses.

Site Characteristics

Existing VMMC Campus

The existing approximately 7.05-acre VMMC campus is located in the City of Seattle's First Hill Neighborhood and is generally bounded by University Street to the north,[1] Boren Avenue to the east, Spring Street to the south and the mid-block alley between 8th and 9th Avenues on the west.

The VMMC campus generally slopes from the southeast to northwest. The site has an elevation change of approximately 70 ft. – from elevation 329 ft. at its highest point near the corner of Spring Street and Boren Avenue to 259 ft. near 9th Avenue/University Street.

A steep slope critical area is located in the extreme northwestern portion of the site, north of the Benaroya Research Institute and the offsite Pigott Corridor and Central Freeway Park. As shown on **Figure 2-9**, over 6,000 sq. ft. of this portion of the VMMC campus is a "dedicated open space"[2] and contributes to the Pigott Corridor, a key First Hill pedestrian route that links First Hill with downtown via Central Freeway Park. Additional open space is provided onsite in the form of a 3,400 sq. ft. plaza that is located west of Lindeman Pavilion.

1000 Madison Block

The 1.4-acre **1000 Madison Block** is the site of the proposed MIO boundary expansion that is associated with the ***Proposed Action*** in this Draft EIS. The proposed MIO Boundary Expansion Area is located immediately southeast of the existing VMMC campus, south of Spring Street. The **1000 Madison Block** is bounded by Spring Street to the north, Boren Avenue to the east, Madison Street to the south and Terry Avenue to the west.

The **1000 Madison Block** generally slopes from the southeast corner (330 ft.) to the northwest corner (320 ft.).

Existing Land Uses

Onsite Land Uses

This section describes the existing land uses on and in the vicinity of the VMMC campus and **1000 Madison Block**. Existing onsite buildings are shown on **Figure 2-4**; existing onsite land uses are shown on **Figure 3.4-1**.

Existing VMMC Campus

The existing VMMC campus is located in the City of Seattle's First Hill Urban Center Village, which has been identified by the City as an area targeted to accommodate future growth.[3]

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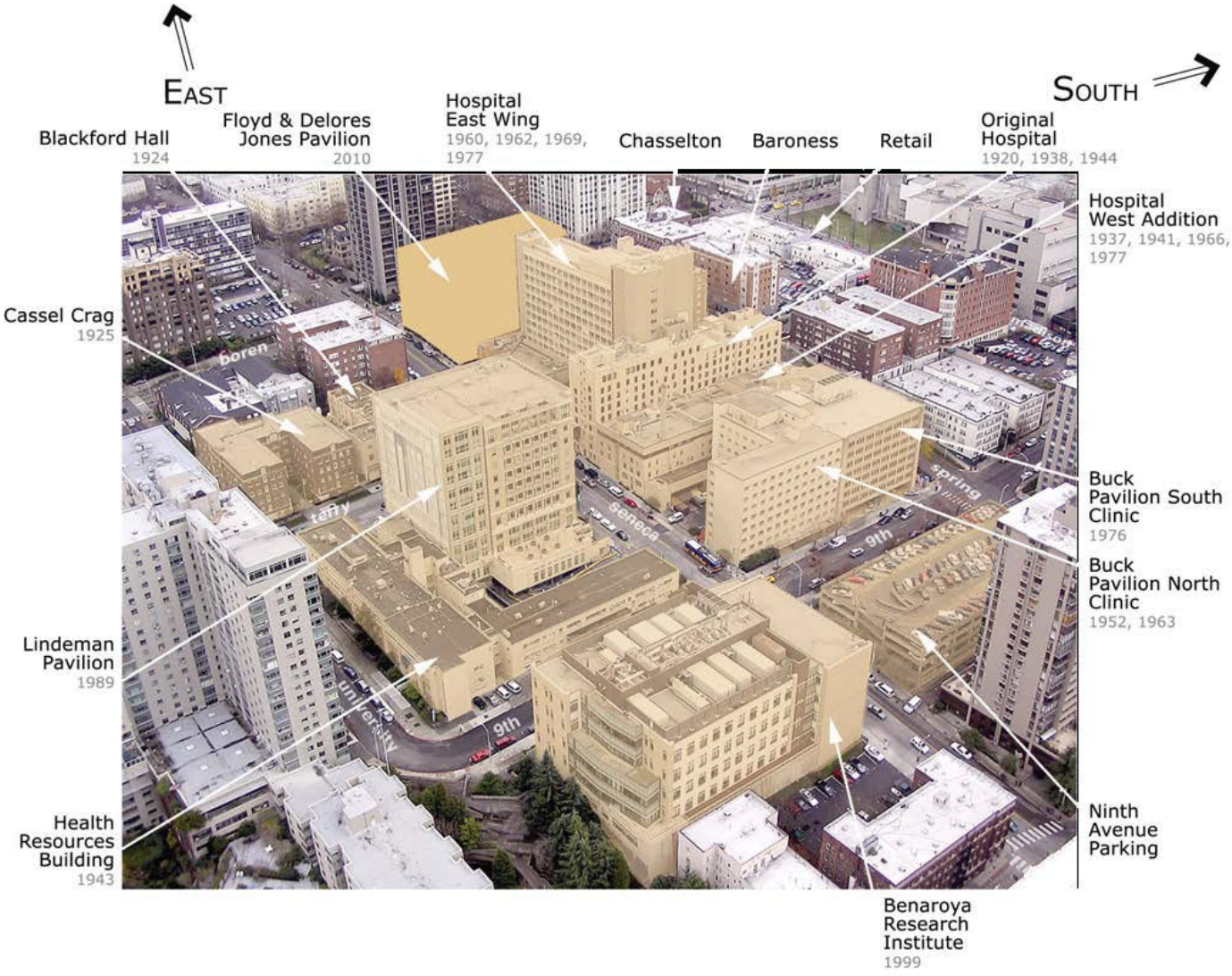
1 A portion of the existing north boundary of the campus extends north of University Street.

2 Dedicated Open Space is defined as "open space within the MIO District that is significant and serves as a focal point for users of the Major Institution. Changes to the size or location of designated open space will require an amendment pursuant to Section 23.69.035 …" (23.69.030 E.4b).

3 City of Seattle.*Seattle Comprehensive Plan, Urban Village Element*, 2004.



Source: SRG 2012

EA | BLUMEN

Figure 3.4-1
Existing Campus Land Uses

The existing general land use character of the VMMC campus reflects what has become a major medical institutional land use; uses comprising the VMMC campus have been present onsite since the 1920s. As such, campus buildings have been constructed at various times between 1920 through 2011. As shown by **Table 3.4-1**, the VMMC campus is currently developed with approximately 1,227,444 GSF[4] of uses comprised of twelve, 4 to 14-story buildings. Four City streets bisect the campus.

An existing skybridge is located near the Seneca Street and Terry Avenue intersection – extending between the existing Lindeman Pavilion and the Original Hospital building.

As noted in **Section II** of this Draft EIS and described in greater detail in **Section 3.9**, **Transportation, Circulation and Parking**, there are approximately 861 parking spaces on-campus – roughly 60 percent are located in two parking structures – the Ninth Ave. Garage and Lindeman Pavilion.

Table 3.4-1 and **Figure 3.4-1** provide an overview of the existing VMMC campus building characteristics and land use patterns. The predominant existing VMMC campus land use is major institution medical uses; medical/hospital buildings comprise approximately 96 percent of the campus area and approximately 4 percent is in hotel uses (The Inn at Virginia Mason). The existing Floor Area Ratio (FAR)[5] on the VMMC campus is 3.99.

Currently, activity levels onsite are associated with employees, outpatients, inpatients, visitors, and volunteers that work on and visit the VMMC campus on any given day.

Table 3.4-1
EXISTING VMMC CAMPUS BUILDING CHARACTERISTICS
(GROSS SQ. FT.)

	VMMC Campus		1000 Madison Block		TOTAL	
Site Use	**GSF**	**Percent**	**GSF**	**Percent**	**GSF**	**Percent**
Hospital/Medical	1,178,999	96%	0	0%	1,178,999	89%
Commercial/Retail	0	0%	24,630	26%	24,630	2%
Residential	0	0%	37,170	39%	37,170	3%
Hotel	48,445	4%	34,070	35%	82,515	6%
TOTAL	**1,227,444**	**100%**	**95,870**	**100%**	**1,323,314**	**100%**

Source: VMMC, 2012.

[4] Gross building area differs from gross sq.ft. for Seattle zoning purposes. Gross building area is a measure of total sq.ft within a building as measured to the outside of exterior walls and it includes portions of a structure below-grade. Gross floor area per zoning is measured to the inside surface of exterior walls at floor level and it excludes portions of a building that are entirely below-grade.

[5] FAR is a ratio of the relationship between the amount of gross floor area or chargeable floor area permitted in one or more structures and the area of the lot on which the structure(s) are located (23.84A.012).

1000 Madison Block

The approximately 1.4 acre **1000 Madison Block** is located immediately southeast of the existing VMMC campus (south of Spring Street). **Table 3.4-1** and **Figure 3.4-1** provide an overview of the existing land use pattern on this block. The existing land uses that have been present on this block since the 1930s include: commercial/retail; residential (Chasselton Court Apartments); and hotel uses (The Baroness).

As shown in **Table 3.4-1**, the **1000 Madison Block** is currently developed with 95,870 GSF of uses comprised of 1 to 6-story buildings with paved parking areas and off-street walkways. A 3,834-sq. ft. City-owned, north-south mid-block alleyway divides the block between Madison and Spring streets. The existing FAR within the **1000 Madison Block** is 1.79.

Existing activity at the **1000 Madison Block** is primarily associated with pedestrians, as well as employees and patrons of the onsite retail uses, the Baroness Hotel, and residents of the Chasselton Court Apartment building.

Existing Immediately Adjacent Land Uses

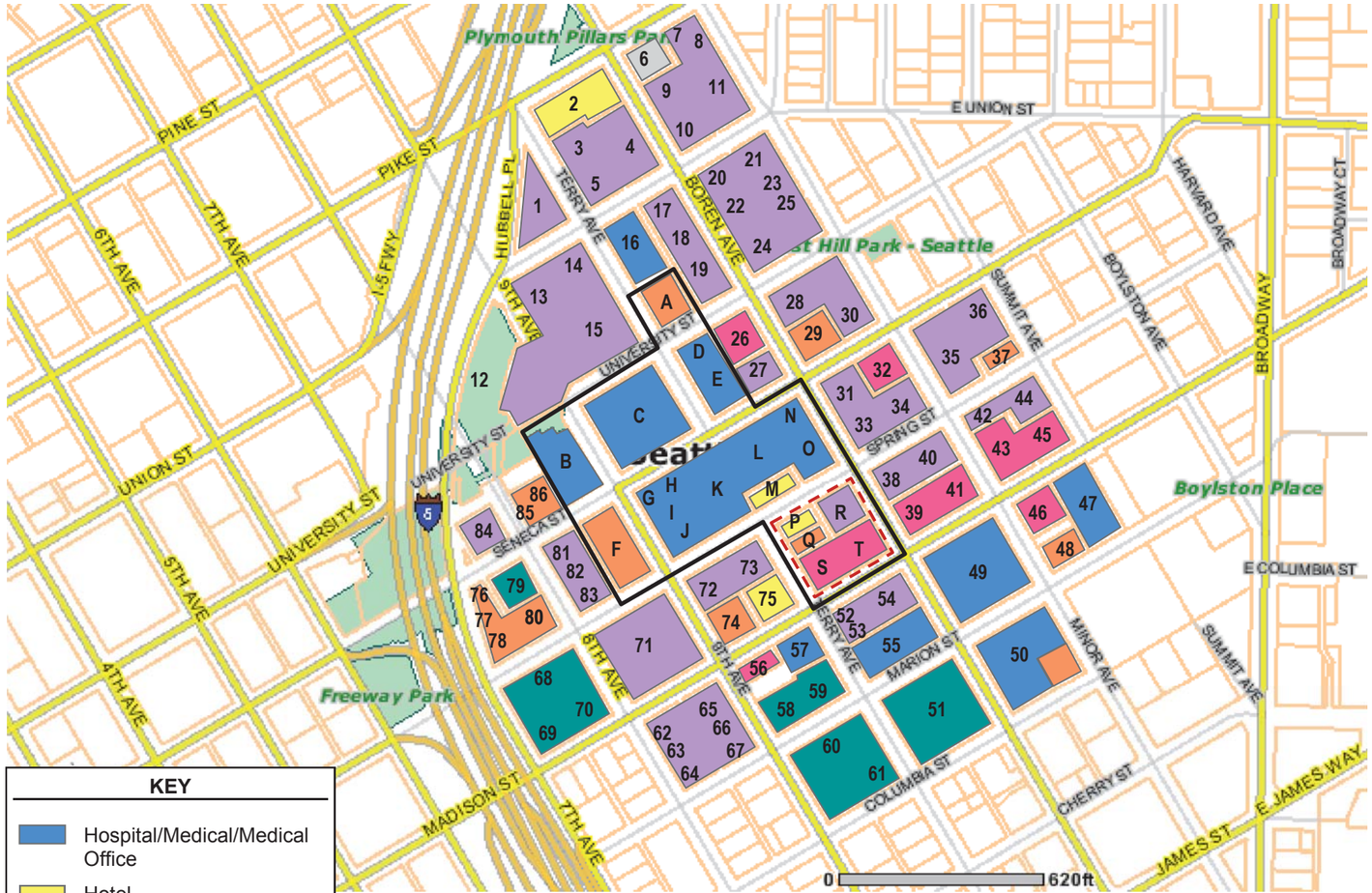
As noted, the VMMC campus is located on First Hill/Capitol Hill, the most densely populated area of the entire Pacific Northwest. General development directly adjacent to the campus includes: single- and multi-family residential uses and commercial and mixed use buildings. See **Figure 3.4-2** for an illustration of existing land uses in the vicinity of the site.

North - Immediately north of the VMMC campus (north of the onsite Benaroya Research Institute and Health Resources Building) across the University Street right-of-way is Horizon House – a continuing care retirement community that offers retirement living, long-term care, and nursing care. VMMC provides medical support services to Horizon House. Immediately north of the onsite University/Terry surface parking lot is the First Hill Convalescent Home.

East - Immediately east of the University/Terry surface parking lot are three multi-family residential buildings (Bolero Condos, Sovereign Apartments and 1020 University Apartments). Immediately east of the onsite Cassel Crag building is the Sunset Club, a private fraternal club. Immediately east of the onsite Blackford Hall is an affordable housing building (John Winthrop Apartments). Immediately east of the Floyd & Delores Jones Pavilion building and east of Boren Avenue is a multi-family residential building (Park View Plaza Condominiums) and a single-family residential home.

South - Immediately south of the onsite Inn at Virginia Mason (and south of the Spring Street is the proposed **1000 Madison Block**. Immediately south of the **1000 Madison Block** is Cabrini First Hill Senior Apartments. Immediately south of the main onsite hospital buildings (south of Spring Street) are two multi-family residential buildings (Paul Revere Apartments and John Aiden Apartments). Immediately south of the onsite Ninth Avenue Garage (and south of the Spring Street right-of-way) is a multi-family residential building complex (One Thousand 8th Avenue Apartments).

Virginia Mason Medical Center MIMP
Draft EIS



KEY

- Hospital/Medical/Medical Office
- Hotel
- Residential
- Retail/Commercial
- Government/Schools/ Church
- City Park/Open Space
- Parking
- Office
- 1000 Madison Block Expansion Area
- VMMC Campus Boundary

Onsite Uses

- A University/Terry Parking Lot
- B Benaroya Research Institute
- C Health Resources Building and Lindeman Pavilion
- D Cassel Crag
- E Blackford Hall
- F Ninth Avenue Parking Garage
- G Buck Pavilion North
- H Parking
- I Buck Pavilion North
- J Buck Pavilion South
- K Hospital West Addition and Original Hospital
- L Original Hospital
- M Inn at Virginia Mason & The Rhododendron Restaurant
- N Floyd & Delores Jones Pavilion
- O Floyd & Delores Jones Pavilion
- P Baroness Apartment Hotel
- Q Parking
- R Chasselton Court Apartments
- S Retail
- T Retail

Offsite Uses

1. Elektra Condominiums
2. Homewood Suites Hotel
3. Meridian Condos
4. Avanti Apartments
5. Talisman Condos
6. Pike and Boren Office Building
7. Group Home
8. Group Home
9. Embassy Apartment
10. Oxford Crest Apartments
11. Faerland Terrace Retirement Facility
12. Central Freeway Park & Pigott Corridor
13. Cambridge Apartments
14. Terri Ann Apartments
15. Horizon House Senior Living
16. First Hill Convalescent Home
17. Bolero Condos
18. Sovereign Apartments
19. 1020 University Apartments
20. Stockbridge Apartments
21. Copperfield Apartments
22. Debonair Apartments
23. Copperfield Apartments
24. Panorama Apartments
25. Copperfield Apartments
26. Sunset Club
27. John Winthrop Apartments
28. Marlborough House Condominiums
29. Sunset Club Parking
30. Sutton Place Condominiums
31. Park View Plaza Condominiums
32. Medical Office
33. SFR
34. Kelleher House Condominiums
35. Tate Mason House Apartments
36. Tuscany Apartments
37. Parking
38. Decatour Apartments
39. University Club
40. Gainsborough Condominiums
41. McDonalds Restaurant
42. San Marco Apartments
43. Bank of America
44. 1223 Spring Street Condominiums
45. Key Bank
46. Bank of America
47. Arnold Medical Pavilion
48. Parking
49. 1101 Madison Medical Tower
50. Medical/Dental Office
51. O'Dea High School
52. Cabrini First Hill Senior Apartments
53. Cabrini First Hill Senior Apartments
54. Cabrini First Hill Senior Apartments
55. Columbus Pavilion & Cabrini Medical Tower
56. Restaurant/Lounge
57. Puget Sound Blood Blank
58. Chancery House
59. Chancery House
60. St. James Cathedral
61. St. James Cathedral Rectory
62. M Street Condominiums
63. M Street Condominiums
64. M Street Condominiums
65. Madison Apartments
66. Apartments
67. Westminster Apartments
68. First Presbyterian Church
69. First Presbyterian Church
70. First Presbyterian Church
71. One Thousand 8th Avenue Apartments
72. Paul Revere Apartments
73. John Alden Apartments
74. Parking
75. Hotel Sorrento
76. Parking
77. Parking
78. Parking
79. Town Hall Assembly Building
80. Parking
81. Royal Manor Apartments
82. Emerson Apartments
83. Powell Apartments
84. Exeter House Retirement Facility
85. Parking
86. Parking

Source: King County, EA|Blumen, 2011

EA | BLUMEN

Figure 3.4-2

Existing Land Uses

West - Immediately west of the **1000 Madison Block** is the Hotel Sorrento. Immediately west of the onsite Ninth Avenue Garage are three multi-family residential buildings (Royal Manor Apartments, Emerson Apartments and Powell Apartments). Immediately west of the onsite Benaroya Research Institute are two vacant lots, a portion of the City's Freeway Park, and a City-designated steep slope area. The vacant lots recently received MUP approval for development of a 31-story, 335-unit residential building.[6] The Pigott Corridor, which borders the north side of Benaroya Research Institute, provides pedestrian access between First Hill and the VMMC campus with Central Freeway Park and Downtown.

Land Uses in the Vicinity

General development within a few blocks surrounding the campus includes: multi-family residential uses, commercial and mixed use buildings, as well as institutional uses (e.g. other hospitals, schools, and government, etc.). See **Figure 3.4-2** for an illustration of existing land uses in the vicinity of the site.

North- The area north of the VMMC campus is primarily developed with multi-family residential apartment and condominium uses (Cambridge Apartments, Terri Ann Apartments, Elektra Condominiums, Meridian Condos, Avanti Apartments, Talisman Condominiums, Embassy Apartments, Oxford Crest Apartments) a group home, a retirement home (Faerland Terrace Retirement Facility), a hotel (Homewood Suites Hotel) and an office building (Pike and Boren Office Building). Further to the northwest are the Plymouth Pillars Park and I-5 corridor and to the northeast are primarily multi-family residential and commercial uses.

East- The area east of the campus is developed with multi-family residential buildings (Stockbridge Apartments, Copperfield Apartments, Debonair Apartments, Copperfield Apartments, Panorama Apartments, Tate House Mason Apartments, Tuscany Apartments, Decatur Apartments, San Marco Apartments) the University Club, condominium buildings (Marlborough House Condominiums, Sutton Place Condominiums, Kelleher House Condominiums, Gainsborough Condominiums, 1223 Spring Street Condominiums), some commercial uses (McDonalds, Key Bank, Bank of America) a medical office, and a few parking lots. Further to the east are the Seattle University and Swedish Hospital campuses. Other uses in the area are primarily multi-family residential and commercial uses.

South- The area south of the campus is developed with medical/office building uses (Arnold Medical Pavilion, 1101 Madison Medical Tower, Columbus Pavilion & Cabrini Medical Tower, Puget Sound Blood Bank), Swedish Medical Center's First Hill Campus, restaurants, a church (St. James Cathedral), condominiums (M Street Condominiums) and apartments (Madison Apartments, Westminster Apartments), and O'Dea High School. Further to the south is the Harborview Medical Center campus, Yesler Terrace housing project, multi-family residential and commercial uses.

[6] MUP #3012797

West- And the area west of the VMMC campus is developed church uses (First Presbyterian Church), the Town Hall assembly building, a retirement home (Exeter House Retirement Facility) with vacant lots near a steep slope area. Further west is City's Central Freeway Park and the Washington State Trade & Convention Center located above the I-5 corridor with the downtown Seattle beyond.

The First Hill neighborhood also includes several major institutions including: Swedish Medical Center, Harborview Medical Center, Seattle University, and Seattle Central Community College, as well as other major medical buildings, such as The Polyclinic.

Existing Zoning/Major Institution Overlay

Existing Zoning

VMMC Campus

The existing underlying zoning designation for the VMMC campus is HR (**Figure 3.4-3**).

- **High-rise Residential (HR)** – High-rise Residential zones are intended to support high-rise apartment buildings that step back with height. The height limit on this zone is 160 ft. with the ability to develop to a height of 300 ft. if the applicant satisfies conditions for extra floor area. The HR zone limits floor size and width above 45 feet in height and contains minimum horizontal separations that function to create base and towers in high-rise buildings (SMC 23.45.520).

1000 Madison Block

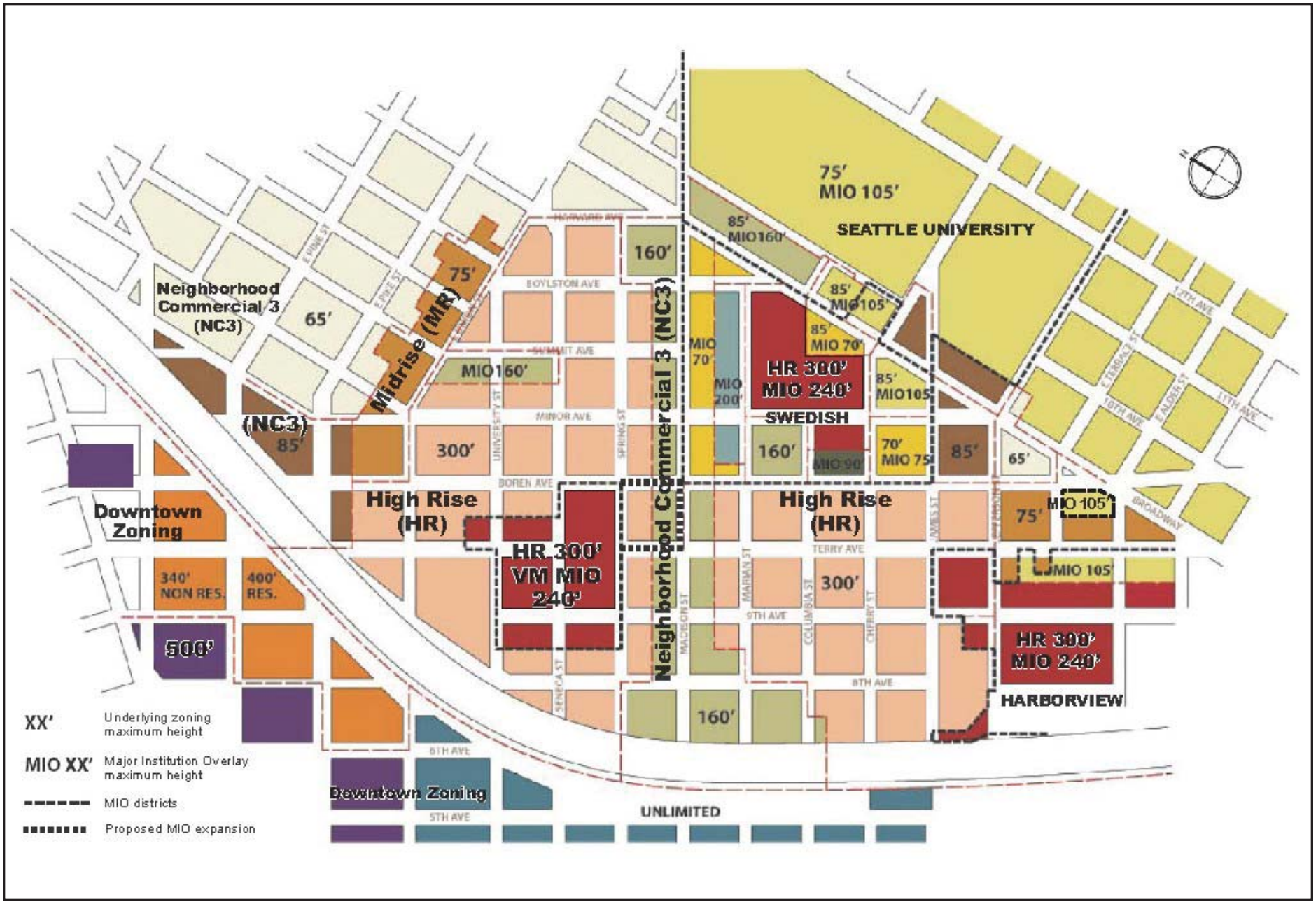
As shown in **Figure 3.4-3**, the northern half of the **1000 Madison Block** is zoned as HR (where the existing Baroness Hotel and Chasselton Court Apartments are located) and the southern half is zoned as NC3P-160 (where existing retail uses are located).

- **Neighborhood Commercial 3 (NC3P-160)** – Neighborhood Commercial 3 zones are intended to support or encourage a pedestrian-oriented shopping district that serves the surrounding neighborhood and a larger community, city-wide or regional clientele that provides comparison shopping for a wide range of retail goods and services, that incorporates offices, business support services; and residences that are compatible with the retail character of the area. P designations are applied to NC zones along pedestrian-oriented commercial streets (such as Madison Street and Boren Avenue). Land uses allowed in this zoning classification include commercial, retail, office and residential uses. Building heights up to 160 ft. are allowed in this zone.

Surrounding Vicinity

The area immediately northeast of the site where the Horizon House retirement facility is located is zoned High-Rise and is developed with a Residential Planned Unit Development.

- **Residential Planned Unit Development** – The Horizon House PRD was developed pursuant to a Council Conditional Use in 1981. An PRD is a zoning mechanism that



Source: SRG, 2012

Figure 3.4-3

Existing Zoning

allows for flexibility in the grouping, placement, size and use of structures on a fairly large tract of land.

The remainder of the area surrounding the existing VMMC campus is zoned as HR with the exception of parcels directly adjacent to both sides of Madison Street, where the zoning is Neighborhood Commercial 3 Pedestrian 160 (NC3P-160).

Existing Major Institution Overlay

According to the *Seattle Land Use Code*, the VMMC campus is designated as MIO-240, as shown in **Figure 3.4-3**.

- **Major Institution Overlay (MIO-240)**–The purpose of the Major Institution designation is to permit appropriate institutional growth while minimizing the adverse impacts associated with development and geographic expansion. In 1992, VMMC's existing *MIMP* was approved and, thereby, established the existing MIO boundary and the overlay zoning for the campus. The maximum height limit permitted on the campus is 240 ft. per the existing *MIMP*. The total area included within the existing VMMC campus is approximately 7.05 acres, which excludes public rights-of-way. All of the properties within the existing VMMC campus boundary are owned by VMMC, excluding the public rights-of-way, which are owned by the City.

Land Use Trends

The area of First Hall/Capitol Hill where the VMMC campus and **1000 Madison Block** are located is undergoing redevelopment and the level of development in the area continues to intensify. Several major institutions in the First Hill neighborhood have updated or are in the process of updating their Major Institution Master Plans, including Harborview Medical Center, Swedish Medical Center – First Hill Campus, and Seattle University, as shown in **Figure 3.4-4**. The updates to the master plans of these three major institutions, in certain circumstances, include plans for: boundary expansions, increases in the intensity and density of development, increases in building heights, and the provision of additional parking facilities. Redevelopment of these major institution campuses would occur incrementally over the next 10-20 years. Other existing, non-institutional and underdeveloped properties in the First Hill neighborhood are also being redeveloped more intensively (e.g., increased number of units or sq. ft. and increased height, bulk and scale); the land use pattern, however, is expected to be much the same as currently exists over the next 10-20 years. New non-institutional office and residential development that is occurring is in mid- to high-rise buildings. The City's *Comprehensive Plan* anticipates an additional 84,000 jobs in the City in the timeframe 2004-2024. A significant portion of those jobs could occur within office, medical office and educational uses within major institutions in the First Hill area, including VMMC, Harborview Medical Center, Swedish Medical Center, and Seattle University, as well as the within the City's Downtown and South Lake Union Urban Centers. As this area is one of the City's designated Urban Centers, this trend of intensification in the area is expected to continue for the foreseeable future.

Source: SRG, 2012

Figure 3.4-4

Major Institutions Near VMMC

3.4.2 Impacts of the Proposed Action (6b) and Alternatives

This section describes potential direct and indirect land use impacts that would be associated with the ***Proposed Action*** and ***Alternative 5a***. The types of direct land use impacts that could potentially occur under the ***Proposed Action*** and ***Alternative 5a*** generally relate to conversion of land uses, compatibility of proposed and surrounding land uses, and changes in density and activity levels. An analysis of the impacts associated with height, bulk and scale is provided in **Section 3.6.2**, **Aesthetics**. Indirect land use impacts that could occur include the potential for increased pressure for off-site development and/or changes in the character or quantity of existing land uses in the area.

Proposed Action (Alternative 6b)

The ***Proposed Action*** would demolish approximately 836,160 GSF of existing building area, retain approximately 488,131 GSF of existing building area, construct approximately 2.51 million GSF of new building area within the VMMC campus resulting in a campus-wide total gross floor area of roughly 3 million GSF. The ***Proposed Action*** assumes that:

- Expand the existing campus MIO boundaries to include the **1000 Madison Block**.
- Correct the MIO district boundary map to accurately reflect VMMC property ownership by moving the boundary 20 ft. to the north. The parcel includes Lots 9 and 12 plus a 20' portion of Lot 8 of Block 112. The portion of Lot 8 is not correctly shown graphically within the MIO boundary on the current city maps.
- Maintain the existing MIO-240, and establish a MIO-240 on the **1000 Madison Block**.
- Further condition heights below the MIO height districts as shown on **Figure 2-6**.
- Retain the Baroness Hotel, the Floyd & Delores Jones Pavilion, the Lindeman Pavilion, and the Benaroya Research Institute.
- Set back new development on the **1000 Madison Block** from the Baroness Hotel.
- Renovate and/or replace the hospital buildings.
- Demolish the Health Resources Building and expand the Lindeman Pavilion.
- Demolish and redevelop the site of Cassel Crag and Blackford Hall.
- Develop the parking lot at University Street and Terry Avenue.
- Demolish and redevelop the Ninth Avenue Garage with major medical use.
- Vacate the alley on the **1000 Madison Block** to enable new development to be placed mid-block for efficient use of space and reduction in potential massing at the edges of the block.
- Connect new development with tunnels and skybridges as shown in **Figure 2-8**.

- Add approximately 1.7 million square ft. of net new development area to campus.

- Result in a total GFA of approximately 3 million.

The ***Proposed Action***, because it includes the expansion to the **1000 Madison Block**, would likely create more intense development on the south and east sides of the campus. The ***Proposed Action*** is illustrated in **Figure 2-6**.

Direct Impacts

Proposed Campus Land Uses

Implementation of the *Draft MIMP* would result in the intensification of hospital/medical office uses on-campus as a result of new building development, more intensive use of existing buildings, and the modification of existing parking areas. The pattern and types of land uses on campus would not change significantly; however, building density, intensity, and existing building heights would likely change as a result of the proposed redevelopment. Additionally, the existing 7.05-acre VMMC MIO Boundary would be expanded to include the approximately 1.4-acre **1000 Madison Block** (bounded by Boren Avenue, Madison Street, Terry Avenue and Spring Street), as well as to correct a mapping error. As a result, the ***Proposed Action*** would create more intense development on the south and east boundaries of the campus and lessen the amount of development necessary within the central portion of the campus (**Figure 2-6**).

Redevelopment of the **1000 Madison Block** under the ***Proposed Action*** would intensify development on this block by displacing existing low-rise residential and retail buildings and replacing them with new mid- to high-rise hospital and medical buildings. The new MIO-240 zoning on the **1000 Madison Block** would allow increased height limits above what currently exists on the block (**Figure 2-6).** The proposed boundary expansion and building heights are intended to accommodate space required for replacement of core hospital functions without the need for new buildings on the existing campus to exceed the existing MIO-240 height limit. In addition, the campus-wide (VMMC and **1000 Madison Block**) FAR would increase from the existing FAR of 3.99 to an FAR of 8.1 under this alternative. Approximately 3,800 replacement and new parking spaces would be provided under the ***Proposed Action*** in below-grade structures associated with new buildings. Parking garages could also be provided above-grade at the base of high-rise buildings, although these parking garages would require separation from street-level street facing facades by another permitted use.

Table 3.4-2 includes a summary of the changes to the existing land uses on campus as a result of redevelopment activities assumed under the ***Proposed Action***.

Table 3.4-2
PROPOSED VMMC CAMPUS BUILDING CHARACTERISTICS – PROPOSED ACTION (GSF)

Site Use	VMMC Campus		1000 Madison Block		TOTAL	
	GSF	Percent	GSF	Percent	GSF	Percent
Hospital/Medical	2,482,750	100%	488,120	89%	2,970,870	98%
Commercial/Retail	0	0%	27,548	5%	27,548	0.9%
Residential	0	0%	0	0%	0	0%
Hotel	0	0%	34,070	6%	34,070	1.1%
TOTAL	**2,482,750**	**100%**	**546,820**	**100%**	**3,029,570**	**100%**

Source: VMMC, 2012.

VMMC indicates that they believe that the boundary and height increases that are proposed as part of the *Draft MIMP* represent the minimum necessary to meet VMMC's modern health care requirements for future development. Like many urban campuses in Seattle that are beginning to move away from a hard separation from the community, VMMC's long-term vision includes stronger integration with the surrounding urban context – it is VMMC's vision for this MIMP to integrate with their surroundings by respecting the existing street grid, by providing additional open space that may include increased setbacks, landscaping, enhanced pedestrian connections throughout campus, street narrowing, and/or linear parks adjacent to new buildings along 9th Ave. and/or University St. Building density and heights assumed under this alternative would be considered the maximum feasible density. Development under the ***Proposed Action*** would include both healthcare-related uses, as well as retail and hotel uses, and would be intended to improve integration within the campus and the surrounding community.

Construction Impacts

Proposed development would result in temporary construction-related impacts to surrounding land uses. Site preparation and construction of infrastructure and buildings would result in periodic impacts to adjacent land uses over the 20-30-year development period of the *MIMP*. Although construction activities would occur incrementally over this time period, such activity would take place at various locations on-campus and on the **1000 Madison Block** and could result in temporary impacts to adjacent uses surrounding the campus boundary. (note: this seems out of context. Are there specific construction impacts that the setbacks will mitigate?) These construction-related impacts, however, would be temporary in nature and would cease once construction of the proposed projects is completed. Please see **Section 3.9**, **Construction Impacts**, for more detailed information.

Displacement of Existing Uses

In order to accommodate proposed development under the ***Proposed Action***, the existing 419 parking spaces associated with the University/Terry parking lot and Ninth Avenue Garage would be demolished. During redevelopment associated with the proposed *MIMP*, the displaced parking spaces would be replaced by new underground parking within redeveloped buildings throughout the campus.

The existing Health Resources Building, Cassel Crag, Blackford Hall, and the hospital (Hospital East Wing, Original Hospital, Hospital West Addition, Buck Pavilion North and South) and any

associated parking would be demolished and the existing uses would be temporarily displaced. Construction activities would be phased to ensure that existing hospital/medical uses that are temporarily displaced can be relocated to new onsite or existing onsite/nearby offsite facilities prior to redevelopment.

As noted, in order to accommodate proposed development under this alternative, the existing residential (apartment) and retail uses located in the **1000 Madison Block** would be demolished and conceivably many of the uses could be permanently displaced. Replacement housing for the existing apartment uses located within the Chasselton Court Apartments that would be demolished would be replaced in accordance with the City of Seattle Land Use Code (refer to **Section 3.5, Housing** for more information). The existing 24,630 GSF of retail uses currently on-site would be replaced with 24,630 GSF of new retail uses when the block is redeveloped, most likely located at street-level within the new hospital/medical buildings.

For purposes of this EIS analysis, the Floyd & Delores Jones Pavilion, Benaroya Research Institute, the Lindeman Building and the Baroness are assumed to remain under the ***Proposed Action***.

Changes in Activity Levels

The increase in population on the VMMC campus and the **1000 Madison Block** associated with the ***Proposed Action*** would result in increased activity levels on-campus and within the expansion block. The general nature of increased site activity would be reflective of the existing VMMC campus, including pedestrian and vehicular traffic, as well as the dense nature of proposed redevelopment, proposed increases in outpatient services, and resulting increases in the VMMC employee population. The overall site activity and increases associated with this alternative would be compatible with the surrounding dense, urban environment. Increases in activity levels could also potentially benefit surrounding businesses through increased support and patronage from the additional population and activity associated with this alternative.

Relationship to Onsite Uses

Under the ***Proposed Action***, the majority of the existing hospital and medical buildings and parking lots on the VMMC campus would be incrementally demolished and redeveloped with new hospital and medical uses. The proposed new hospital and medical uses that are assumed under this alternative throughout the VMMC campus would be compatible with the existing hospital and medical uses that would remain in these three buildings.

Within the **1000 Madison Block**, other than the Baroness, existing apartment and retail uses would be demolished and redeveloped with new hospital/medical and retail uses. The proposed hospital/medical and retail uses that would be redeveloped on the site would be designed to be compatible with the Baroness Hotel.

In order to facilitate hospital-related pedestrian connections and create on-campus building cohesion, six new skybridges and eight tunnels are proposed that would cross public rights-of-way. Skybridges and tunnels would be located between the following buildings (as shown on **Figure 2-8**):

- skybridge and tunnel between the proposed Terry/University St. building and Cassel Crag/Blackford Hall site;
- skybridge and tunnel between the Cassel Crag/Blackford Hall site and the new Lindeman North building;
- skybridge and tunnel between the Cassel Crag/Blackford Hall site and the new Main Hospital Complex (Hospital East);
- the tunnel between the Lindeman Pavilion and the new Hospital Center Complex (the existing skybridge would remain);
- skybridge and tunnel between the new Lindeman West Building and the existing Benaroya Research Institute;
- tunnel between the existing Benaroya Research Institute and the redeveloped Ninth Avenue Garage;
- skybridge and tunnel between the redeveloped Ninth Avenue Garage and the redeveloped Hospital West Complex; and
- skybridge and tunnel between the existing Floyd & Delores Jones Pavilion and the redeveloped **1000 Madison Block**.

An analysis of the visual impacts of these skybridges is provided in **Section 3.6.2, Aesthetics**.

Relationship to Surrounding Offsite Land Uses

Immediately Adjacent Land Uses. The proposed medical/hospital uses in the *Draft MIMP* would be generally compatible with offsite large multifamily residential and nursing/convalescent uses located adjacent to the VMMC campus. Such redevelopment would be consistent with the goals and policies of the City's *Comprehensive Plan* that call for urban infill development with the greatest densities and widest range of land uses to be accommodated within Urban Centers, of which First Hill is one. Redevelopment on the VMMC campus would also be consistent with and represent a continuation of the current trend of intensification in the First Hill neighborhood.

VMMC indicates that the proposed skybridges and tunnels that would cross public rights-of-way are intended to facilitate hospital functions and create on-campus building cohesion. As such, they are not expected to significantly impact land uses patterns in the immediate vicinity of these facilities. An analysis of the visual impacts of these tunnels and skybridges is provided in **Section 3.6.2, Aesthetics**.

Proposed Zoning/Major Institution Overlay

Under the ***Proposed Action***, the MIO Boundary for the VMMC campus would be expanded to include the approximately 1.4-acre **1000 Madison Block**. The existing HR-160 and NC3-160 zoning on the **1000 Madison Block** would be rezoned to MIO-240 to accommodate a proposed patient tower and the existing Baroness Hotel, a designated City Landmark. The rezone of this block would preclude potential development of residential uses that could occur under the existing zoning (note: residential could occur in both HR and NC zones). Street level retail uses

that would be consistent with the underlying NC3P-160 zoning could still be provided in newly developed buildings in the southern portion of the block.

Indirect/Cumulative Impacts

Development under the ***Proposed Action*** would result in increased employment. Surrounding businesses may see an increase in demand for services as a result of the increased employee population. Businesses that could experience increased demand include: retail, restaurants, coffee shops, personal services (barber, dry cleaning, etc), banking/financial services, gas stations, and entertainment services. Proposed new development on-campus could also indirectly influence the timing associated with redevelopment of properties surrounding the campus.

Proposed development associated with ***Proposed Action***, along with future development in the area (particularly institutional development at the Swedish First Hill campus and Seattle University), would contribute to cumulative employment/population growth and intensity of land uses in the area.

- The Swedish First Hill Campus *Final MIMP* identifies six planned projects and three potential projects that would occur on their campus in the next 15 years. Planned development would account for approximately 950,000 GSF of net new chargeable space; projects would include the replacement of four hospital buildings, a medical office building and a central support facility. Potential projects would add approximately 270,000 GSF of net new chargeable space in the form of a medical office building, a hospital replacement building and a central support facility. Certain planned projects on the First Hill campus are already under construction including the replacement of one hospital building on the corner of James St. and Broadway.

- The Seattle University *Final MIMP* identifies 21 projects that could occur over the proposed 20 year time frame, which would result in an increase of 2.145 million GSF of campus building space, an increase of building heights along the portions of the campus perimeter and an expansion of the MIO boundary by 2.4 acres.

Alternative 5a

Alternative 5a would demolish approximately 775,000 GSF of existing building area, retain approximately 455,000 GSF of existing building area, construct approximately 2.49 million GSF of new building area within the VMMC campus resulting in a campus-wide total gross floor area of roughly 3 million GSF. ***Alternative 5a*** assumes the following:

- Maintain the existing campus MIO boundaries except on the northeast corner, which would be corrected to accurately reflect VMMC property ownership by moving the boundary 20 ft. to the north. The parcel includes Lots 9 and 12 plus a 20' portion of Lot 8 of Block 112. The portion of Lot 8 is not correctly shown graphically within the MIO boundary on the current city maps.

- Maintain the existing MIO 240 across campus with the exception of the central hospital block. As shown in **Figure 2-10**, heights would be proposed at 300 ft. for the center hospital block.

- Further condition heights below the MIO height districts as shown on **Figure 2-11**.

- Renovate and/or replace the hospital buildings.

- Retain the Floyd & Delores Jones Pavilion, the Lindeman Pavilion, and the Benaroya Research Institute.

- Demolish the Health Resources Building and expand the Lindeman Pavilion.

- Demolish and redevelop the site of Cassel Crag and Blackford Hall.

- Connect the redeveloped Cassel Crag/Blackford Hall site to the Lindeman Pavilion with a structure over Terry Avenue. This structure would be approximately 9-stories (190 ft.) in height and would connect to proposed buildings on the north side of the Lindeman block. The structure would contain approximately 104,000 square feet and span across Terry Avenue with a minimum clearance above the street of approximately 35 feet. Terry Avenue would be maintained as a public street.

- Develop the parking lot at University Street and Terry Avenue.

- Demolish and redevelop the Ninth Avenue Garage.

- Connect new development with skybridges and tunnels as shown on **Figure 2-11**.
-
- Add approximately 1.7 million sq. ft. of new campus development – see **Table 3.4-3**.

- Result in a total GFA of approximately 3 million sq. ft. of total development.

Because ***Alternative 5a*** does not include the expansion to the **1000 Madison Block**, it would create more intense development on the west and north sides of the campus. ***Alternative 5a*** is illustrated in **Figure 2-11**.

Direct Impacts

Proposed Campus Land Uses

Redevelopment of the VMMC campus under ***Alternative 5a*** would result in direct land use impacts associated with the intensification of hospital/medical office uses on-campus, more intensive use of existing buildings, and the modification of existing parking areas on the existing campus would be similar to, but slightly greater than those discussed under the ***Proposed Action***. The pattern and types of land uses on campus would not change significantly under this alternative; however, building density, intensity, and existing building heights would likely change as a result of the proposed new Major Institution Overlay-300 (MIO-300) zoning. Under this alternative, the more intense development would occur on the southern, western and northern boundaries of the campus. The new MIO-300 zoning would allow increased height limits above the existing MIO-240 height limit along Spring and Seneca streets (between 9th Ave. and roughly Boren Ave.) (**Figure 2-11**). The proposed height change is intended to accommodate the space required for replacement of core hospital functions without the need for a boundary expansion. The remaining campus area has been retained as MIO-240 to provide

flexibility for future hospital development while addressing concerns about building heights and bulk raised by neighboring residents.

For purposes of this EIS analysis, since the MIO boundaries would not be expanded to include the **1000 Madison Block**, no new development is assumed to occur in the **1000 Madison Block**, although VMMC or a VMMC partnership could redevelop the block in the future with permitted (non-institutional) uses under existing zoning. **Table 3.4-3** includes a summary of the changes to the existing land uses on-campus as a result of ***Alternative 5a*** assuming that the **1000 Madison Block** remains as under existing conditions.

Table 3.4-3
PROPOSED VMMC CAMPUS BUILDING CHARACTERISTICS – ALTERNATIVE 5a (GSF)

	VMMC Campus		1000 Madison Block		TOTAL	
Site Use	**GSF**	**Percent**	**GSF**	**Percent**	**GSF**	**Percent**
Hospital/ Medical	3,000,500	100%	0	0%	3,000,500	96.9%
Commercial/ Retail	0	0%	24,630	26%	24,630	0.8%
Residential	0	0%	37,170	39%	37,170	1.2%
Hotel	0	0%	34,070	35%	34,070	1.1%
TOTAL	**3,000,500**	**100%**	**95,870**	**100%**	**3,096,370**	**100%**

Source: VMMC 2012.

1. For purposes of this EIS analysis only, the existing uses on the **1000 Madison Block** are assumed to remain under **Alternative 5a**. If, in the future, conditions warrant a change, VMMC may replace these uses with other functions consistent with existing zoning.

The boundary and height increases that are part of ***Alternative 5a*** represent the minimum necessary to meet VMMC's requirements for campus development to accommodate future growth without expanding the existing campus boundary. Open space on campus currently exists in the form of an urban plaza and a landscaped area adjacent to Pigott's Corridor. Additional open space under this alternative may include increased setbacks, landscaping, enhanced pedestrian connections throughout campus, street narrowing and/or linear parks adjacent to new buildings along 9th Ave. and/or University St. Building density and heights assumed under this alternative would be considered the maximum feasible density. Many of the proposed facilities would include both healthcare-related uses, as well as retail and hotel uses, and would be intended to improve integration within the campus and the surrounding community.

Table 3.4-4
PROPOSED VMMC CAMPUS BUILDING CHARACTERISTICS – ALTERNATIVE 5a (GSF) WITH 1000 MADISON BLOCK REDEVELOPED TO MAXIMUM ALLOWABLE DEVELOPMENT UNDER EXISTING ZONING[1]

	VMMC Campus		1000 Madison Block[2]		TOTAL	
Site Use	GSF	Percent	GSF	Percent	GSF	Percent
Hospital/ Medical	3,000,500	100%	0	0%	3,000,500	79.9%
Commercial/Retail	0	0%	57,600	8%	57,600	1.6%
Residential	0	0%	648,000	88%	648,000	17.6%
Hotel	0	0%	34,070	4%	34,070	0.9%
TOTAL	**3,000,500**	**100%**	**739,570**	**100%**	**3,681,470**	**100%**

Source: NBBJ and EA/Blumen, 2011.

1. Assumes lots will be built to maximum height/maximum FAR using bonuses available in the Land Use Code.
2. Assumes Baroness Hotel remains as it currently exists; remainder of HR-zoned property is developed as residential to maximum height/maximum FAR; assumes NC3-160-zoned property is developed to maximum height/maximum FAR with residential units above street-level retail uses.

Construction Impacts

Construction impacts under ***Alternative 5a*** would be similar to the impacts assumed under the ***Proposed Action***. Please see **Section 3.9**, **Construction Impacts**, for more detailed information.

Displacement of Existing Uses

Under ***Alternative 5a***, displacement of existing uses within the existing VMMC campus boundary would be similar to the impacts described for the ***Proposed Action***.

For purposes of this EIS analysis, the Floyd & Delores Jones Pavilion, Benaroya Research Institute and the Lindeman Building are assumed to remain under ***Alternative 5a***. As stated previously, under ***Alternative 5a,*** no new development is assumed to occur in the **1000 Madison Block**; the Baroness Hotel, Chasselton Apartments and retail uses are assumed to remain. VMMC or a VMMC partnership could in the future redevelop the block with permitted (non-institutional) uses under existing zoning if conditions warranted. Redevelopment in the northern half of the block could contain structures up to 300 ft. in height (if certain conditions are met) and the southern half of the block could contain structures up to 160 ft. in height. Redevelopment of the **1000 Madison Block** under ***Alternative 5a*** could represent up to 648,000 sq. ft. of residential uses (roughly 735 units[7]) and 91,170 sq. ft. of hotel/retail/ commercial uses as shown in **Table 3.4-4**.

7 Assumes 15% of building sq. footage would contain public/mechanical spaces (elevators, lobbies, HVAC); unit size was assumed to be 750 sq. ft.

Changes in Activity Levels

The increase in population on the VMMC campus associated with ***Alternative 5a*** would result in increased activity levels on-campus and in the vicinity of campus similar to, but slightly higher than those discussed under the ***Proposed Action***.

Relationship to Onsite Uses

Under ***Alternative 5a***, the relationship of existing onsite uses within the VMMC campus would be similar to those discussed under the ***Proposed Action***.

In order to facilitate hospital functions and create on-campus building cohesion, approximately five skybridges and seven tunnels are proposed across public rights-of-way (in addition to the existing skybridge on Seneca Street). Skybridges and/or tunnels would be located between the following buildings (as shown on **Figure 2-11)**:

- skybridge and tunnel between the proposed Terry/University St. building and Cassel Crag/Blackford Hall site;
- skybridge and tunnel between the Cassel Crag/Blackford Hall site and the new Lindeman North building;
- skybridge and tunnel between the Cassel Crag/Blackford Hall site and the new Main Hospital Complex (Hospital East);
- the tunnel between the Lindeman Pavilion and the new Hospital Center Complex (the existing skybridge would remain);
- skybridge and tunnel between the new Lindeman West Building and the existing Benaroya Research Institute;
- tunnel between the existing Benaroya Research Institute and the redeveloped Ninth Avenue Garage; and
- skybridge and tunnel between the redeveloped Ninth Avenue Garage and the redeveloped Hospital West Complex.

An analysis of the visual impacts of these skybridges is provided in **Section 3.6.2, Aesthetics**.

Relationship to Surrounding Offsite Land Uses

Under ***Alternative 5a***, the relationship of existing onsite uses within the VMMC campus would be similar to those discussed under the ***Proposed Action***.

Similar to the ***Proposed Action***, the proposed skybridges and tunnels are intended to facilitate hospital functions and create on-campus building cohesion. As such, it is not anticipated that they would significantly impact adjacent land uses. An analysis of the visual impacts of these tunnels and skybridges is provided in **Section 3.6, Aesthetics**.

Buildings adjacent to the southern boundary of campus within the **1000 Madison Block** would remain as under existing conditions under ***Alternative 5a***. The northern half of the **1000 Madison Block** is zoned HR-300 and the southern half of the block is zoned NC-3P-160, which could allow future redevelopment of those areas with building heights of 300 ft. and 160 ft., respectively. Any redevelopment that occurs in the southern half of the block would comply with the NC-3P zoning requirements, such as not including street-facing blank facades and including

appropriate street levels uses, such as medical services (optical), eating and drinking establishments, retail sales and services, indoor sports and recreation, lodging or open space.

Proposed Zoning/Major Institution Overlay

Under ***Alternative 5a***, other than the mapping correction, the MIO Boundary for the VMMC campus would not be expanded and zoning designations would remain as under existing conditions. Under ***Alternative 5a***, within the central campus area**,** the MIO zone would be rezoned from the existing MIO-240 designation to a new MIO-300 designation as shown on **Figure 2-11**, which would require an amendment to the MIO section of the City's Land Use Code.

Indirect/Cumulative Impacts

Indirect/cumulative impacts under ***Alternative 5a*** would be similar to those discussed under the ***Proposed Action***.

No Action Alternative

The ***No Action Alternative*** would involve no new building construction on the VMMC campus and existing aging structures would remain; conceivably, limited building remodeling would still occur. The ***No Action Alternative*** would not involve expansion of the MIO boundary (other than addressing the mapping error) and no modifications to on-site pedestrian and vehicular circulation or parking would occur. Land use conditions would remain as under existing conditions with no significant impacts anticipated.

3.4.3 Mitigation Measures

Ultimately, the *MIMP* will guide redevelopment of the VMMC campus over the long-term. This plan, and campus-specific development standards, along with individual project review by the City and the Standing Advisory Committee (SAC), could serve as mitigation to preclude potential significant land use impacts from future redevelopment and ensure compatibility among site uses and uses in the site vicinity. Possible mitigation measures could include requiring retail uses along Madison Street and portions of Spring Street and Boren Avenue that are located in the Pedestrian Overlay (P) zone. Mitigation measures for indirect land use impacts (i.e., noise, transportation, aesthetics, etc) are addressed in their respective sections of this Draft EIS and through applicable City codes.

3.4.4 Significant Unavoidable Adverse Impacts

Proposed redevelopment on the VMMC campus would result in an intensification of development, additional employment opportunities, and hospital/medical uses on campus. Under the ***Proposed Action***, proposed redevelopment would include expansion of the institutional boundary and displacement of existing and potential residential and commercial uses. Activity levels on the VMMC campus and in the vicinity of campus would also increase in conjunction with redevelopment. While the intensity of redevelopment on the site would be substantially greater than the amount associated with existing campus development, such redevelopment would be consistent with the pattern and scale of surrounding land uses, as well as with the intent of the City's *Comprehensive Plan* and zoning.

3.4.5 Relationship to Adopted Land Use Plans, Policies And Regulations

Information in this section addresses the relationship of the development alternatives to adopted land use plans, applicable policies and regulations. Specific documents that are referenced include:

- City of Seattle *Comprehensive Plan*;
- *First Hill Neighborhood Plan*; and the
- City of Seattle Land Use Code.

City of Seattle Comprehensive Plan

Summary: The City of Seattle's *Comprehensive Plan* was adopted in 1994 to meet the requirements of the State Growth Management Act (GMA) and has been amended nearly every year. The plan contains elements that are required by GMA, Multiple Urban Center concepts associated with the Multi-County Planning Policies (PSRC, 1993), King County's Countywide Planning Policies (King County, 1992), and Seattle's Framework Policies (Seattle, 1992).

GMA also requires a 10-year review of the 20-year plan with action taken to revise the plan, if necessary, which was completed by the City in December 2004. The latest update has included the City working with King County, other cities in the County, and the Growth Management Planning Council to establish new growth estimates. In addition, during the update process the City's Planning Commission and City Departments analyzed the effectiveness of policies contained in the current plan, and an extensive community outreach/public participation effort occurred. The following is an overview of applicable policies that are contained in the updated *Comprehensive Plan*.

Existing Comprehensive Plan

The City's updated *Comprehensive Plan* consists of eleven major elements – urban village, land use, transportation, housing, capital facilities, utilities, economic development, neighborhood, human development, cultural resources, and environment. Each element contains goals and policies that are intended to "guide the development of the City in the context of regional growth management" for the next 20 years. While each element affects development on and adjacent to the VMMC campus, the Urban Village and Land Use Elements are the most relevant. The VMMC campus is located within the First Hill Urban Center Village.

The Urban Village Element includes the following major components:

- Urban Village Strategy;
- Distribution of Growth;
- Open Space Network; and,
- Annexation

The Land Use Element includes the following major components:

- Citywide Land Use Policies;
- Land Use Categories; and,
- Location Specific Land Use Categories

The following goals and policies from the Urban Village and Land Use Elements are most applicable to proposed development on the VMMC campus.

Urban Village Strategy

Goal UVG4 – Promote densities, mixes of uses, and transportation improvements that support walking, use of public transportation, and other transportation demand strategies, especially within urban centers and urban villages.

Goal UVG5 – Direct the greatest share of future development to centers and urban villages and reduce the potential for dispersed growth along arterials and in other areas not conducive to walking, transit use, and cohesive community development.

Policy UV2 – Promote conditions that support healthy neighborhoods throughout the city, including those conducive to helping mixed-use urban village communities thrive, focused transportation demand strategies, vital business districts, a range of housing choices, a range of park and open space facilities, and investment and reinvestment in neighborhoods.

Policy UV18 – Promote the balance of uses in each urban center or urban center village indicated by one of the following designations, assigned as follows: Mixed residential and employment; First Hill Urban Center Village.

Goal UVG32 – Plan for urban centers to receive the most substantial share of Seattle's growth consistent with their role in shaping the regional growth pattern.

Discussion: Based on the mix of activity and intensity of development, key areas of the City have been identified as Urban Centers/Urban Villages, Hub Urban Villages, Residential Urban Villages, and Neighborhood Anchors. There are six designated Urban Centers within the City (each consists of several Urban Center Villages) and two designated Manufacturing/Industrial Centers. The City also has six designated Hub Urban Villages and 18 Residential Urban Villages. In general, these are areas with concentrations of employment, commercial development and/or mixed-use development. The VMMC campus is located within the First Hill Urban Center Village, which is a part of the First Hill/Capitol Hill Urban Center.

As one of the City's 13 designated major institutions, development on the VMMC campus is addressed through the *Draft MIMP*. The ***Proposed Action*** includes adoption of an updated *MIMP* to guide development on the campus for the foreseeable future. Development under the ***Proposed Action*** would include expansion of the campus boundary to include the **1000 Madison Block**, which would displace existing residential and neighborhood commercial land uses on this block by expanding institutional land uses in this part of the neighborhood. Under the ***Proposed Action***, existing residential land uses on the **1000 Madison Block** would be replaced in comparable form and location within the City, and the existing street-level retail uses would likely be redeveloped as part of the *Draft MIMP*. Alternatively, development under ***Alternative 5a*** would concentrate future development within the existing campus boundary, which could result in increased height and density of buildings on campus beyond that proposed in the *Draft MIMP*.

Development under the ***Proposed Action*** or ***Alternative 5a*** would provide a higher level of employment density and opportunities on the VMMC campus. The range of potential

employment uses on campus would contribute to provide jobs for the City's diverse residential population and would contribute towards meeting or exceeding established employment growth targets identified in the Comprehensive Plan for the First Hill Urban Center Village. Either the ***Proposed Action*** or ***Alternative 5a*** would also concentrate employment growth in a location with nearby access to the future First Hill Streetcar, major bus routes, and Sound Transit Light Rail, as well as walkable access to nearby residential areas in the First Hill and Capitol Hill neighborhoods.

Development under the *Draft MIMP* would include street-level retail uses, as well as public open spaces and pedestrian streetscape enhancements on and adjacent to campus boundaries consistent with the policy to promote conditions that support healthy neighborhoods throughout the city. With the implementation of development regulations and design guidelines contained within the *Draft MIMP*, the proposed development would also be consistent with the type and scale of surrounding land uses within the First Hill Urban Center.

Major Institutions

Goal LUG32 – Maximize the public benefits of major institutions, including health care and educational services, while minimizing the adverse impacts associated with development and geographic expansion.

Goal LUG33 – Recognize the significant economic benefits of major institutions in the City and the region and their contributions to employment growth.

Goal LUG34 – Balance each major institution's ability to change and the public benefit derived from change with the need to protect the livability and vitality of adjacent neighborhoods.

Goal LUG35 – Promote the integration of institutional development with the function and character of surrounding communities in the overall planning for urban centers.

Policy LU182 – Establish Major Institution Overlays (MIO) to permit appropriate institutional development within boundaries while minimizing the adverse impacts associated with development and geographic expansion. Balance the public benefits of growth and change for major institutions with the need to maintain the livability and vitality of adjacent neighborhoods. Where appropriate, establish MIO boundaries so that they contribute to the compatibility between major institution areas and less intensive zones.

Discussion: VMMC provides medical and health care services for the greater Seattle community and beyond. The ***Proposed Action*** involves the adoption of an updated VMMC *MIMP* that will guide development on the campus for the next 20 to 30 years. The *Draft MIMP* contains an estimated net amount of approximately 3 million square feet of on-campus building space is proposed under the ***Proposed Action***. Development under the ***Proposed Action***, which would include expansion of the campus boundary to include the **1000 Madison Block**, would displace existing residential and neighborhood commercial land uses on this block by expanding institutional land uses in this part of the neighborhood. Existing residential land uses on the **1000 Madison Block** would be replaced in comparable form and location within the City, and the existing street-level retail uses would likely be redeveloped as part of the *Draft MIMP*. Alternatively, development under ***Alternative 5a*** would concentrate future development within the existing campus boundary, which could

result in increased height and density of buildings on campus beyond that proposed in the *Draft MIMP*.

As discussed previously, development under the ***Proposed Action*** or ***Alternative 5a*** would provide a higher level of employment density and opportunities on the VMMC campus that would contribute towards meeting or exceeding established employment growth targets identified in the comprehensive plan for the First Hill Urban Center Village.

A key objective of the *MIMP* is to provide a physical environment that promotes a positive relationship with the community. The *Draft MIMP* includes proposed development regulations and design guidelines for future development on campus, as well as the provision of public open spaces and pedestrian streetscape enhancements on campus and along campus boundaries. These elements of the *Draft MIMP* would help to integrate the VMMC campus with the surrounding community, as well as contribute to maintaining the livability and vitality of the adjacent neighborhood. Effects of potential development on adjacent neighborhoods are addressed throughout the Draft EIS.

Policy LU183 – Allow modifications to the underlying zone provisions in order to allow major institutions to thrive while ensuring impacts of development on the surrounding neighborhood are satisfactorily mitigated.

Discussion: This policy provides the basis for the MIO District. The purpose of the MIO District is to permit appropriate growth within the campus boundaries while minimizing the adverse impacts associated with development and geographic expansion. Several modifications to underlying development code provisions are proposed as part of the *Draft MIMP*.

Policy LU181 – Provide for the coordinated growth of major institutions through major institution conceptual master plans and the establishment of major institution overlay zones.

Discussion: The *Proposed Action* would involve adoption of an updated *MIMP*, which would include the expansion of the existing MIO-240 overlay district to the **1000 Madison Block**, to guide future development of the VMMC campus. ***Alternative 5a*** would involve the establishment of a new MIO-300 overlay district on campus, which would require a code amendment to the MIO section of the Land Use Code by the City.

Policy LU187 – Encourage significant community involvement in the development, monitoring, implementation and amendment of major institution master plans, including the establishment of citizen's advisory committees containing community and major institution representatives.

Discussion: Consistent with the provisions of Section 23.69.032B of the City's Land Use Code, VMMC has established a Citizen's Advisory Committee (CAC). The CAC participated in the formulation of the existing *MIMP* and has assisted in the formulation of the *Draft MIMP* to help assure that concerns of the community and the institution are considered. The primarily role of the CAC is to work with VMMC to produce a master plan that meets the needs of the institution, addresses the concerns of the surrounding community, is consistent with the intent of the Seattle *Comprehensive Plan,* and satisfies the provisions of the City's Land Use Code. CAC meetings are open to the public. A public meeting was conducted as part of the EIS Scoping process associated with the Draft EIS, meetings have been held as the *Draft MIMP* evolved, and additional meetings are planned throughout the MIMP process.

Policy LU202 – The master plan should establish or modify boundaries, provide physical development standards for the overlay district, define the development time period; and describe a transportation management program.

Discussion: Both the ***Proposed Action*** and ***Alternative 5a*** propose modifications to the existing MIO boundary established as part of the existing *MIMP.* The ***Proposed Action*** includes an expansion of the existing MIO boundary to include the **1000 Madison Block**, which is bounded by Madison Avenue, Boren Avenue, Terry Avenue, and Spring Street. Alternatively, ***Alternative 5a*** would change the existing MIO-240 to a new height of 300 feet in the Central Hospital area. The development alternatives also include an updated development program, development standards, new design guidelines, and an updated transportation management program.

Human Development

HDG6 – Create a healthy environment where community members are able to practice healthy living, are well nourished, and have good access to health care.

HD24 – Seek to improve the quality of, and access to, health care, including physical and mental health, emergency medical, and addiction services.

a. *Collaborate with community organizations and health providers to advocate for quality health care and broader accessibility to services.*
b. *Pursue co-location of programs and services, particularly in under-served areas and in urban village areas.*

Discussion: Through the *MIMP* planning process, VMMC proposes redevelopment of a significant percentage of the existing campus. VMMC needs to replace aging facilities with new facilities that integrate current concepts regarding delivery of patient care, that are compliant with new seismic, ADA and other codes, and that enhance the built environment through their sustainable features.

VMMC is unique on First Hill in that its provision of services extends to the patients and their families through the two VMMC -owned hotels, the Inn at Virginia Mason and the Baroness Hotel. VMMC has also reached out to its neighbors, collaborating with Horizon House on the provision of medical services to its residents.

Neighborhood Planning

The VMMC campus is located within the borders of the First Hill Neighborhood Planning Area – the plan area is generally bounded by Union Street, Broadway, Boren Avenue, Main Street, and Interstate 5. An adjacent neighborhood planning area, the Pike/Pine Neighborhood Plan, is also analyzed in this EIS. The consistency analysis for this EIS also includes the Swedish Medical Center MIMP. Consistency of the proposed *MIMP* with applicable goals and policies from these plans is presented below.

Goal NG3 – Develop neighborhood plans for all areas of the City expected to take significant amounts of growth. Such a plan should reflect the neighborhood's history, character, current conditions, needs, values, vision, and goals. Permit other areas interested in developing neighborhood plans to undertake neighborhood planning. In areas not expected to take

significant amounts of growth encourage limited scopes of work that focus on specific issues or concerns, rather than broad multi-focused planning processes.

Discussion: Plans for the City's major neighborhoods were approved by the City generally in the 1999 – 2000 timeframe. As noted previously, the VMMC campus is located within the First Hill Neighborhood Plan Area and is also a part of the First Hill Urban Center Village.

First Hill Neighborhood Plan

The *First Hill Neighborhood Plan* was adopted in 1999 and portions of the plan have been incorporated into the City's *Comprehensive Plan*. The following goals and policies from the *First Hill Neighborhood Plan* are the most applicable to proposed development on the VMMC campus.

Goal FH-G1 – A community with a culturally and economically diverse residential population that is also a major employment center, home to many of the region's state of the art medical centers and related facilities.

Goal FH-G2 – An active, pedestrian-friendly Urban Center Village that integrates residential, commercial, and institutional uses, and maintains strong connections to surrounding neighborhoods and the Urban Center.

Policy FH-P3 – Seek opportunities to provide additional community facilities to serve the existing diverse population and the new residents and employees projected to move into the neighborhood within the next 15 years.

Policy FH-P5 – Encourage major institutions and public projects to work to preserve, maintain, and enhance the important qualities of the neighborhood plan, i.e. open space, housing, and pedestrian environment.

Goal FH-G5 – A neighborhood which provides a variety of housing opportunities that are compatible with other neighborhood goals, and maintains the economic mix of First Hill residents.

Goal FH-G7 – A neighborhood with safe, accessible, and well-maintained parks, open space, and community facilities that meet the current and future needs of a growing community.

Policy FH-P19 – Seek new opportunities for the creation of useable and safe parks and open space.

Goal FH-G8 – A neighborhood which provides for the safe and efficient local- and through-traffic circulation of automobiles, transit, bicycles, and pedestrians.

Discussion: Redevelopment under the ***Proposed Action*** or ***Alternative 5a*** would include the replacement of aging facilities to meet the demands of regional growth within the medical community. This redevelopment would be consistent with many of the goals and policies of the adjacent First Hill Neighborhood Planning Area. Both the ***Proposed Action*** and ***Alternative 5a*** would increase the amount of employment on the campus; the ***Proposed Action*** would replace displaced housing and street-level retail uses.

Existing and proposed open space areas and enhancements to the pedestrian streetscape on the campus and along campus boundaries would serve not only the employees of and visitors to the campus, but the surrounding community as well, including the First Hill area.

In an effort to reduce the number of trips to the campus, the proposed draft MIMP includes a transportation management plan that would encourage the use of transit, bicycling and walking as a means to access the campus. Proposed development under the draft MIMP would also include an increase in the amount of underground parking provided on campus.

Swedish Medical Center/First Hill Campus MIMP

The Swedish Medical Center/First Hill Campus is located east/southeast of the VMMC campus and is adjacent to the campus at the intersection of Madison Street and Boren Avenue. The multi-block First Hill campus is bordered by Broadway Avenue to the east, James Street to the south, Madison Street to the north, and Boren Avenue to the west (see **Figure 3.4-4**). The Swedish Medical Center/First Hill Campus MIMP was adopted in 2005 by the City Council and contains projects to be phased-in over a 15-year period following master plan approval (2006 – 2025). The approved planned and potential development in the *Final MIMP*, all of which will occur within the Swedish/First Hill MIO boundary, will add approximately 1.22 million net new chargeable square feet to the existing campus development, which currently totals approximately 2,283,394 sq. ft. of campus building area. Proposed parking would add from 1,450 to 1,600 net new spaces. The purpose of this MIMP is to upgrade, improve, replace, and expand Swedish's facilities within is Major Institution Boundaries in order to continue to be responsive to health care demands by providing the highest quality and most comprehensive care to the community. Swedish Hospital currently has 697 licensed beds for the First Hill Campus – the approved Master Plan projects (planned and potential) would not change this number.

Discussion: Development under the *Draft MIMP* would provide a range of medical and retail/commercial uses adjacent to the Swedish Medical Center/Cherry Hill Campus MIMP area. Proposed future development by VMMC in combination with other institutional development in the First Hill Neighborhood and vicinity, particularly at the Swedish First Hill campus, would contribute to cumulative employment/population growth and intensity of land uses in this area. For example, the Swedish First Hill Campus Final MIMP identifies six planned projects and three potential projects that would occur on their campus in the next 15 years. Planned development would account for approximately 950,000 GSF of net new chargeable space; projects would include the replacement of four hospital buildings, a medical office building and a central support facility. Potential projects would add approximately 270,000 GSF of net new chargeable space in the form of a medical office building, a hospital replacement building and a central support facility. Certain planned projects on the First Hill campus are already under construction, including the replacement of one hospital building on the corner of James St. and Broadway. This in combination with future development planned for the VMMC campus over the next 15-20 years, could result in increased height and density of buildings on each campus, expansion of campus boundaries to accommodate future planned development, and displacement of existing residential and neighborhood commercial land uses in this neighborhood.

The *Draft MIMP* includes proposed development regulations and design guidelines for future development on campus, as well as the provision of public open spaces on campus. Additionally, the *Draft MIMP* identifies continued and enhanced pedestrian linkages through

the campus to Boren and Madison streets, as well as along Terry Avenue and encourages public access to and through the campus. Proposed pedestrian safety improvements would also help to create a more attractive and a safer pedestrian environment. These elements of the *Draft MIMP* would help integrate the VMMC campus with the surrounding community, as well as contribute to maintaining the livability and vitality of the adjacent neighborhood. Proposed design standards that are part of the *Draft MIMP* would ensure that future development on its campus would be compatible with surrounding areas in the First Hill Neighborhood and minimize potential impacts.

A transportation management plan is included as part of the *Draft MIMP* to provide transportation management solutions for VMMC and minimize potential impacts to the surrounding areas. In addition, as noted in **Section II** of this EIS, VMMC intends to enhance its internal pedestrian network to provide a more pedestrian scale, while also adding and improving existing pedestrian crossings from the VMMC campus to the surrounding areas.

Seattle University MIMP

The Seattle University Campus is located southeast of the VMMC campus beyond the Swedish Medical Center First Hill campus east of Broadway. The multi-block Seattle University campus is generally bounded by Broadway, Madison Street, 12th and 15th Avenues, and E. Jefferson Street (see **Figure 3.4-4**). The Seattle University MIMP was adopted in 1997 by the City Council. A new *Draft MIMP* and Draft EIS were prepared in 2009 and the *Final MIMP* and Final EIS were issued in June 2011. The *MIMP* is currently undergoing City Council review. The purpose of this MIMP is to address anticipated future increases in student population at the University for the next 20 years.

The *MIMP* document contains a description of planned and potential development projects proposed as part of the Master Plan, a discussion and summary of the Major Institution Master Plan Development Standards, and the Transportation Management Plan. Approximately half of the proposed projects would be developed as new student housing with the remainder developed as other uses.

Discussion: The VMMC campus is located approximately five blocks west of the Seattle University campus and the street pattern is oriented at an acute angle to the north-south street pattern within Seattle University. Development under the *Draft MIMP* would provide a range of medical and retail/commercial uses in the general vicinity of the Seattle University campus. Proposed future development by VMMC in combination with other institutional development in the First Hill Neighborhood and vicinity, particularly at the Seattle University campus, would contribute to cumulative employment/population growth and intensity of land uses in this area. For example, the Seattle University *Final MIMP* identifies 21 projects that could occur over the proposed 20 year time frame, which would result in an increase of 2.145 million GSF of campus building space, an increase of building heights along portions of the campus perimeter and an expansion of the MIO boundary by 2.4 acres. Proposed parking would add approximately 877 parking spaces over the life of the *Final MIMP*. This in combination with future development planned for the VMMC campus over the next 15-20 years could result in increased height and density of buildings on each campus, expansion of campus boundaries to accommodate future planned development, and displacement of existing residential and neighborhood commercial land uses in this neighborhood.

The *Draft MIMP* includes proposed development regulations and design guidelines for future development on campus, as well as the provision of public open spaces on campus. Additionally, the *Draft MIMP* identifies continued and enhanced pedestrian linkages through the VMMC campus. A proposed designated pedestrian corridor connecting Madison Street to Freeway Park through the VMMC campus; pedestrians can then walk east on Madison Street to connect to the Seattle University campus. All of these proposed pedestrian connections encourage public access to the campus. Proposed pedestrian safety improvements would also help to create a more attractive and a safer pedestrian environment. These elements of the *Draft MIMP* would help integrate the VMMC campus with the surrounding community, as well as contribute to maintaining the livability and vitality of the adjacent neighborhood. Proposed design standards that are part of the *Draft* MIMP would ensure that future development on its campus would be compatible with surrounding areas in the First Hill Neighborhood and minimize potential impacts.

A transportation management plan is included as part of the *Draft MIMP* to provide transportation management solutions for VMMC and minimize potential impacts to the surrounding areas. In addition, VMMC intends to enhance its internal pedestrian network to provide a more pedestrian scale, while also adding and improving existing pedestrian crossings from the VMMC campus to the surrounding areas.

Seattle Land Use Code

Because VMMC is one of the 13 recognized major institutions within the City of Seattle, the VMMC campus has basic zoning designations, as well as overlay designations. One primary zoning designation exists on the campus: Highrise Multi-family residential (HR). Neighborhood Commercial 3P-160 (NC3P-160) is located along the half-block wide Madison Street frontage within the MIO expansion area.

Under the existing MIMP, the VMMC campus area contains one overlay zoning designation, Major Institution Overlay-240 (MIO-240). As previously mentioned in this section, the *Draft MIMP* proposes a rezone to allow for an expansion of the MIO boundary and 240' MIO height designation under the ***Proposed Action***. Alternatively, ***Alternative 5a*** involves increasing the height limit on a portion of the existing campus to 300 feet through a code amendment and rezone to the new 300' MIO height. The rezones under the ***Proposed Action*** and ***Alternative 5a*** would include the following:

- ***Proposed Action*** would maintain the existing MIO-240 height district across the existing campus. As shown in **Figure 2-5**, under this alternative, the existing HR-160 and NC3-160 zoning designations on the **1000 Madison Block** (MIO expansion area) would be rezoned to MIO-240.

- ***Alternative 5a*** would maintain the existing MIO 240 height district across campus with the exception of the central hospital block. As shown in **Figure 2-10**, heights would be proposed at 300 feet for the center hospital block.

The proposed changes in height under both the ***Proposed Action*** and ***Alternative 5a*** are intended to accommodate future development. There are no proposed changes to the underlying zoning designations. Land within a Major Institution Overlay District is subject to the

regulations and requirements of the underlying zone, unless specifically modified by an adopted MIMP.

The Land Use Code establishes the Major Institution Overlay District for the purpose of balancing the "Major Institution's ability to change and the public benefit derived from change with the need to protect the livability and vitality of adjacent neighborhoods". Another key consideration of the MIO is to "accommodate the changing needs of major institutions and provide flexibility for development…". Recent changes to the MIMP code include the following:

- MIMPs no longer expire, and are only updated when the institution requests it, therefore, offering the opportunity for the institution to define a longer-term, more-open-ended vision; and
- the requirement to propose specific projects has been removed.

As noted previously, the existing MIMP was adopted by VMMC and approved by the Seattle City Council in 1994 and was originally valid for 10 years, expiring in 2004. VMMC has now completed the last project approved under that Master Plan, the new Floyd & Delores Jones Pavilion. The *Draft MIMP* would allow VMMC to continue to meets its expanding needs. The recent acquisition by VMMC of the **1000 Madison Block** creates the opportunity to allow aging facilities to be replaced while maintaining full operations. VMMC has been working with the City of Seattle Department of Neighborhoods, the Department of Planning and Development, and VMMC's Citizen's Advisory Committee (CAC) to develop the newly proposed *Draft MIMP*. Until a new MIMP is adopted by VMMC and is approved by the Seattle City Council, further campus development may only occur if it is consistent with the development standards of the underlying zoning districts. Once the new MIMP is adopted, all potential campus development must be consistent with the development program, development regulations, design guidelines, and the Transportation Management Program (TMP) associated with the new MIMP.

Seattle's Land Use Code states that "development standards for Major Institution uses within the Major Institution Overlay District may be modified through adoption of a Major Institution Master Plan." The following is a brief comparison between the key provisions of the development standards associated with the underlying zones (HR and NC3P-160).

- **Zoning** – As noted previously, the underlying zones on the VMMC campus include HR and NC3P-160. The existing Major Institution Overlay zone is MIO-240 (refer to **Figure 2-3** for a depiction of the underlying zoning and MIO zoning). The *Draft MIMP* proposes an expansion of the MIO boundary to include the **1000 Madison Block,** as well as the change to correct the mapping error that is described in **Section II** of this Draft EIS. There are no proposed changes to the underlying zoning designations.

  Discussion – As previously mentioned in this section, the ***Proposed Action*** associated with the *Draft MIMP* would maintain the existing MIO-240 height district across the existing campus. As shown in **Figure 2-6**, under this alternative, the existing HR-160 and NC3-160 zoning designations on the **1000 Madison Block** (MIO expansion area) would be rezoned to MIO-240. The proposed expansion area is intended to accommodate future development without increasing building heights across campus, as well as to allow the implementation of mixed-use development along campus boundaries.

Alternatively, under ***Alternative 5a***, a portion of the existing MIO-240 overlay district would be rezoned to a height limit of 300 feet. The changes in height are intended to accommodate future development within the existing campus boundaries and also allow the implementation of mixed-use development along campus boundaries.

- **Density** – Per the Seattle Land Use Code, the density in the *Draft MIMP* is limited to a maximum developable gross floor area and an overall maximum floor area ratio (FAR)[1] for the MIO district. The calculation of gross floor area considers exemptions and exclusions for calculating the FAR. For example, spaces that are entirely below grade and above- and below-grade parking are typically exempt from the calculation of gross floor area. The density for VMMC is measured on a campus-wide basis based on the overall Floor Area Ratio (FAR) of the buildings onsite. VMMC's current FAR is approximately 3.99. Within the MIO district, FAR is calculated at the district scale as opposed to the project level and as a result FAR requirements of underlying zones would not apply.

  Discussion – The *Draft MIMP* requests that the following spaces be exempt from the calculation of gross floor area, which would thereby affect the calculation of campus-wide FAR:

  - Above and below-grade parking
  - Space/penthouses
  - Interstitial space that is not occupiable (mechanical floors/levels)
  - As an allowance for mechanical equipment, in any structure more than 85 feet in height, 3.5 percent of the gross floor area that is not exempt under subsection 23.45.510.E.
  - Below-grade space
  - Ground floor commercial uses meeting the requirements of 23.45.532, if the street level of the structure containing the commercial uses has a minimum floor to floor height of 13 feet and a minimum depth of 15 feet
  - Sky bridge and tunnel circulation space within the public right-of-way
  - Other similar spaces not directly used and/or occupied by the principal medical use

  Using this method, it is anticipated that the maximum FAR on campus is projected to increase from roughly 3.99 to approximately 8.1 under the ***Proposed Action***. At this point in time, VMMC does not anticipate purchasing any additional property, which could result in an increase or decrease in lot area and thus affect the campus FAR level.

  Alternatively, the projected FAR under ***Alternative 5a*** would be approximately 9.74.

  Please refer to **Section 3.6.2, Aesthetics, Height, Bulk and Scale** for more detailed information.

- **Structure Height** – The maximum height limit varies depending on the underlying zoning designation. Maximum base heights for High-rise Residential (HR) zones are 160 feet

[1] FAR is a measure of the amount of gross floor area to lot area.

with the ability to go to 300 ft. if the applicant satisfies conditions for extra floor area and height. Maximum heights for Neighborhood Commercial 3 (NC3P-160) zones allow up to 160 feet in this zone. The existing MIO overlay for the VMMC campus allows a maximum height of 240 feet (MIO-240).

Discussion – No changes to maximum heights limits of the underlying zones are proposed in the *Draft MIMP*. As previously mentioned in this section, the *Draft MIMP* proposes an expansion of the MIO boundary under the ***Proposed Action***, as well as a rezone of the existing MIO District overlay. Alternatively, ***Alternative 5a*** involves increasing the height limit on a portion of the existing campus to 300 feet. The rezones under the ***Proposed Action*** and ***Alternative 5a*** would include the following:

- ***Proposed Action*** would maintain the existing MIO-240 height district across the existing campus. As shown in **Figure 2-5**, under this alternative, the existing HR-160 and NC3-160 zoning designations on the **1000 Madison Block** (MIO expansion area) would be rezoned to MIO-240.

- ***Alternative 5a*** would maintain the existing MIO 240 height district across campus with the exception of the central hospital block. As shown in **Figure 2-10**, heights would be proposed at 300 feet for the center hospital block.

The proposed changes in height are intended to accommodate future development. Please refer to **Section 3.6.2, Aesthetics, Height, Bulk and Scale** for more detailed information.

- **Building Setbacks** – For major institutional uses, the following setbacks are required:

For lot lines abutting a street in the HR Zone:

- For portions of a structure 45 feet or less in height: 7 foot average setback; 5 foot minimum setback, except that no setback is required for frontages occupied by street level uses or dwelling units with a direct entry from the street;
- For portions of a structure greater than 45 feet in height: 10 foot minimum setback

For lot lines abutting a street in an NC zone:

- Street-level street-facing facades shall be located within 10 feet of the street lot line, unless wider sidewalks, plazas, or other approved landscaped or open spaces are provided.

For lot lines abutting an alley in a HR zone:

- For portions of a structure 45 feet or less in height, no setback is required.
- For portions of a structure greater than 45 feet in height, a 10 foot setback is required.

For lots lines that abut neither a street nor an alley in an HR zone:

- For portions of a structure 45 feet or less in height: 7 foot average setback; 5 foot minimum setback, except that no setback is required for portions abutting an existing structure built to the abutting lot line;
- For portions of a structure greater than 45 feet in height: 20 foot minimum setback.

Discussion – The *Draft MIMP* includes the following development limitations aimed at lessening impacts associated with proposed building heights.

Under the ***Proposed Action***, setbacks would vary, but in all cases would meet or exceed underlying zoning development standards. In order to buffer the newly proposed development under the *Draft MIMP* from the Baroness Hotel, a 20 ft. structure setback would be provided to the east of the existing Baroness Hotel (to maintain the mid-block alley width) and a 40 ft. structure setback would be maintained to the south of the existing Baroness Hotel. Please see **Section C.3** of the *Draft MIMP* for more detailed information.

VMMC would comply with the setback requirements of the underlying campus zoning (HR) on the campus perimeters and along view corridor streets (see **Figure 3.6.2-4**), with the exception of the Health Resources building site, which would be developed in accordance with the Horizon House agreement, which stipulates the following setbacks along University Street:

- No setback from 0 to 59 feet above grade;
- 5 ft. setback from 60 to 95 feet; and
- 20-foot setback from 95 to 190 feet.

Alternatively, under ***Alternative 5a***, VMMC would comply with underlying zoning setback requirements as required in Section 23.45.518 of the Seattle Land Use Code. Listed below are the required setbacks for development in highrise zoning:

- Along street frontages, the development standards require an average setback from the property line of 7 feet and a minimum setback of 5 feet for portions of building 45 feet or less in height, and a minimum of 10 feet in setback for building facades above 45 feet in height.
- Along alleys, no setback is required for portions of structures 45 feet or less in height, and a 10 foot minimum setback is required for structures above 45 feet.
- For lot lines that abut neither a street nor an alley, the development standards require an average setback from the property line of 7 feet and a minimum setback of 5 feet for portions of building 45 feet or less in height (except no setback is required for portions of buildings abutting an existing structure built to the abutting lot line, and a minimum of 20 feet in setback for building facades above 45 feet in height.

- **Structure Width and Depth** – In HR zones, portions of structures above a height of 45 feet are limited to a maximum facade width of 110 feet. A maximum facade width of 130

feet is permitted, provided that the average gross floor area of all stories above 45 feet in height does not exceed 10,000 square feet. All portions of structures that reach the maximum facade width limit must be separated from any other portion of a structure on the lot above 45 feet at all points by the minimum horizontal distance depending upon whether the structure is abutting a street or an alley (Table C, SMC 23.45.518).

Discussion – The *Draft MIMP* does not specify any structure width or depth limits as building bulk is sufficiently addressed through height limits, building setbacks, floor area ratios, and design guidelines. VMMC states in the *Draft MIMP* that most of the buildings on campus need to be redeveloped in order to accommodate the advancements in technology and patient care practices, as well as to meet modern healthcare requirements which require significantly larger spaces/floorplates than a typical residential building floorplate would provide (underlying zoning). Moreover, flexibility in the width and depth of buildings is important for the design of high-performance, energy efficient buildings that rely on natural ventilation and access to daylight.

- **Landscaping, Screening and Open Space** – In the commercial zones along Madison Street (NC3P-160), a Green Area Factor score[2] of at least 0.3 is required. Currently, approximately 3 percent of the VMMC campus area is in usable open space.

  Discussion – The VMMC campus already maintains an amount of open space and vegetated area that meets these requirements. Under the *Draft MIMP*, the amount of usable open space would increase to approximately four percent of the total campus area, with the additional proposed open space at 9th Avenue and Seneca Street to be constructed during Phase 2 of the Lindeman Pavilion.

- **Pedestrian Designated Streets** – SMC 23.69.008C3 states, where the underlying zoning is a pedestrian-designated zone, the provisions of Section 23.47A.005 governing street-level uses shall apply. Those standards require that one or more of the following uses are required along 80 percent of the street-level street-facing facade in accordance with the standards provided in subsection 23.47A.008.C:

  a. General sales and services;
  b. Major durables retail sales;
  c. Eating and drinking establishments;
  d. Lodging uses;
  e. Theaters and spectator sports facilities;
  f. Indoor sports and recreation;
  g. Medical services;
  h. Rail transit facilities;
  i. Museum;
  j. Community clubs or centers;
  k. Religious facility;
  l. Library;
  m. Elementary or secondary school; and
  n. Parks and open space.

  Discussion: If the proposed MIO boundary expansion that is part of the ***Proposed Action*** is approved, VMMC would consider any of the following uses for potential location at street level along Madison and the portions of Boren and Terry within the NC3 zoning: medical services, such as optical; eating and drinking establishments;

[2] Per SMC 23.47A.016, the Green Area Factor score is calculated by multiplying the square feet of existing and proposed landscape elements by their corresponding green factor multiplier. This total is then divided by the total lot area to determine the green factor score.

retail sales and services; indoor sports and recreation; lodging uses; or additional open space.

City of Seattle General Rezone Criteria

Summary: *The City of Seattle Land Use Code requires that an analysis be prepared whenever there is a proposed change in zoning, which would include VMMC's proposed Major Institution Overlay (MIO) zoning expansions and MIO zoning height increases. The Land Use Code provides general criteria (SMC 23.34.008), as well as criteria specific to designation of MIO districts or changes in allowed heights in MIO districts (SMC 23.34.124) that must be addressed as part of a proposed rezone.*

Discussion: Please see **Appendix C** for a complete analysis of the rezone criteria noted above.

City of Seattle Alley Vacations Criteria

Summary: *The City of Seattle Street Vacation Policies (Resolution 28605) provides policies to guide City Council decisions regarding the vacation of public rights-of-way. In making the decision regarding street vacations, the Council weighs three components of the public interest including"*

> *One – Impact of the proposed vacation upon the circulation, access, utilities, light, air, open space and views provided by the right-of-way;*
>
> *Two – Land use impacts of the proposed vacation, including consistency of development involving the vacated right-of-way with relevant city land use policies; and,*
>
> *Three – Benefits accruing to the public from the vacation of the right-of-way. Benefits include such things as making land available for public uses other than transportation and benefits from past-vacation development.*

In addition, the City Council considers the recommendation from SDOT, comments received from DPD, the Seattle Design Commission, Public Utilities, other City departments, other public agencies, and interested parties.

The street vacation ordinance gives special attention to procedures for coordinating city review of vacation requests and land use proposals involving the same public right-of-way. When a private development proposal involves public right-of-way, vacation of the right-of-way should be considered part of the land assembly phase and precede application for city land use approvals. Such a sequence is encouraged (but not required) in order to minimize risk to petitioners from substantial investment in a project before vacation approval and to avoid the influence prior investment may have upon the City Council's discretion in reviewing vacation petitions. Recognizing that sequence of vacation petitions and land use application desired by the City may not be possible; petitioners are given the option of filing for both simultaneously.

Discussion*:* One alley vacation is proposed as part of this *Draft MIMP*: an approximately 240-foot long alley that extends between Terry Avenue and Boren Avenue within the **1000 Madison Block** would be vacated under the ***Proposed Action***. If the vacation is not

approved by City Council, proposed plans for the **1000 Madison Block** would need to be revised under the ***Proposed Action*** because the proposed building configuration that is illustrated for this block would not be possible without the vacation. VMMC could redevelop the block under the existing zoning, however, it could not be done with the efficiency that would be enabled by the development proposed under the ***Proposed Action***.

Alternative 5a also includes one aerial street vacation: a structure would be developed over Terry Avenue that would connect the redeveloped Cassel Crag/Blackford Hall site to the Lindeman Pavilion - Terry Avenue would be maintained as a public street. Similar to the ***Proposed Action***, if this vacation is not approved, the building design would need to be reconfigured for this site.

Analysis of the relationship of the potential alley and aerial street vacations with the components of the public interest is provided in the discussions of specific policies below.

Specific policies and guidelines for the vacations relevant to the proposed *Draft MIMP* include:

Summary: Policy 1 – Circulation and Access

Vacations may be approved only if they do not result in negative effects on both the current and future needs for the City's vehicular, bicycle, or pedestrian circulation systems or on access to private property, unless the negative effects can be mitigated. Rights-of-way provide public transportation routes and access to abutting properties.

Guideline 1.1 - Protection of Circulation and Access According to Street Classification.

The following guidelines are organized by street classification consistent with the Transportation Strategic Plan (TSP)

B. Access Streets - Residential and Commercial. Petitions for the vacation of streets designated as Access Streets may be approved only if:

(1) *Access is retained to properties on the block where the right-of-way is located;*
(2) *Circulation to properties on neighboring streets is retained;*
(3) *The right-of-way does not provide a necessary link in the continuity of a route to arterials;*
(4) *Public parking provided by the right-of-way is not needed, can be provided on nearby rights-of-way, or can be replaced; and*
(5) *Vacations that would result in diverting truck or commercial traffic to nearby residential streets will not be approved.*

F. Alleys. Proposed alley vacations will be considered according to the following guidelines.

(1) *The primary purpose of alleys is to provide access to individual properties for loading functions and to provide utility corridors and access to off-street public services such as water, sewer, solid waste and electricity. In addition, alleys may provide other public purposes and benefits including pedestrian and bicycle connections, and commercial and public uses. Alleys should be retained for their primary purposes and other public purposes and benefits. Alley vacations may be approved only when they would not interrupt an established pattern in a vicinity, such as continuity of an alley through a*

number of blocks or a grid, which is a consistent feature of neighborhood scale. The impacts on future service provision to adjacent properties if utilities are displaced will be reviewed.

(2) *Residential Zones. In general, alleys in residential zones will be preserved.*
Alley vacations associated with institutions (as defined in the Land Use Code) may be permitted only when:
a) steep topography prevents development and use of an unimproved alley for access; or
b) the alley is not needed for service functions; and
c) off-street parking access which meets the land use code requirements can be provided otherwise.

(3) *Commercial Zones.*
In general, alleys in commercial zones will be preserved. Such alleys may be considered for vacation only when:
a) their loading, service, delivery, and access to parking functions are retained on the petitioner's property; and
b) the number of curb cuts along commercial frontage is not likely to be increased as a result of the proposed vacation.

Guideline 1.2 – Traffic Code Compliance.
Proposed vacations, which would encourage violation of the traffic code will not be approved. An example is a vacation eliminating one exit to an alley, requiring vehicles to back from the alley on to a street.

Guideline 1.3 – Cumulative Effects to be Assessed
When several vacations are proposed for a particular area of the City, such as within the boundaries of a major institution, a comprehensive review will be undertaken to determine the cumulative effects of the vacations on circulation and access.

Guideline 1.4 – Necessary On-Street Parking Must be Replaced
Streets which provide necessary on-street parking may be vacated only when the public parking can be otherwise provided.

Guideline 1.5 – Circulation/Access Conditions on Vacations
The City Council may impose conditions on vacations to mitigate negative effects of the vacation on vehicular, pedestrian, and bicycle travel.

Guideline 1.6 – Vehicular and Pedestrian Access by Agreements with Property Owners

A. Vehicular Access - Vehicular traffic functions will not be provided by agreement across private property. When the traffic functions of a street are necessary to the operation of the circulation system, the street will be retained as a dedicated right-of-way.

B. Pedestrian Access - Pedestrian circulation functions may be provided by an agreement which provides for public access across private property only when a major public benefit is provided by such an arrangement.

Discussion: The ***Proposed Action*** associated with the *Draft MIMP* includes the potential for one full alley right-of-way vacation on the **1000 Madison Block**. The alley vacation would enable sufficient functional area for envisioned development on the **1000 Madison Block** while preserving the designated historic Baroness Hotel at the northwest corner of the block. This vacation would help VMMC to integrate future development associated with the *Draft MIMP* with the rest of the VMMC campus.

Similar to the ***Proposed Action***, ***Alternative 5a*** includes one aerial street vacation over Terry Avenue near its intersection with University Street on the existing campus. The aerial street vacation would enable future development to be accommodated within the existing campus boundaries.

The potential development resulting from either of the vacations could potentially provide increased building area, open spaces, and pedestrian connections/enhancements within the VMMC campus; the potential buildings would be consistent with the type and scale of surrounding uses and would be consistent with relevant City of Seattle land use policies.

The potential vacations would not negatively impact vehicular circulation, access, deliveries, and/or parking on VMMC's campus. The north-south alley grid in this area of the City is not continuous.

The potential vacations would be designed to accommodate access for garbage and recycling trucks, as well as other support and service vehicles so that it would not be necessary for trucks to back onto neighboring arterial streets.

All on-street parking and below-grade and above-grade utilities associated with the alley segment would be re-routed, replaced, or relocated. As Terry Avenue would continue to function as a public street, utilities would not need to be replaced or relocated for the aerial street vacation.

Summary: Policy 2 – Utilities*. Rights-of-way which contain or are needed for future utility lines or facilities may be vacated only when the utility can be adequately protected with an easement, relocation, fee ownership or similar agreement satisfactory to the utility owner.*

Discussion*:* VMMC would coordinate with the appropriate utility purveyors to re-route, as necessary, existing infrastructure that is located within the vacated area. At the time that a vacation petition is submitted to the City, it would be determined whether adequate utility capacity exists to serve the proposed project. All utilities and planned easements for future utilities located within vacated rights-of-way would be adequately protected by easements, relocation, or agreement(s) satisfactory to the utility owner.

Summary: Policy 3 – Light, Air, Open Space and View*. When the City Council determines that the light, air, open space or view provided by a particular street or alley should be retained, the right-of-way may be vacated only if the public open space, light, air and view can be retained or substituted be dedication to the public of other comparable street right-of-way or other property such as open space property or on future development on the vacated and abutting property.*

Discussion: VMMC intends to integrate pedestrian connections, open space, public space, and landscaping throughout the campus to enhance the existing campus atmosphere. The

alley vacation associated with the ***Proposed Action*** would enable sufficient functional area for envisioned development on the **1000 Madison Block** while preserving the designated historic Baroness Hotel at the northwest corner of the block. The aerial street vacation over Terry Avenue associated with ***Alternative 5a*** would enable VMMC to accommodate future development within the existing campus boundaries. These vacations would also help to integrate future development with the rest of the VMMC campus. Vacation of the alley right-of-way would provide a greater amount and variety of open spaces, light and air than the alley currently provides, the aerial vacation would extend into and across the rights-of-way associated with Terry Avenue and, while elevated above the street, would affect light, air and views along this small segment of the street.

Consistent with City of Seattle criteria for the approval of street and alley vacations, improvements intended to provide public benefits would be proposed at the time an alley vacation petition id submitted to the City for review. Public benefits would focus on public improvements surrounding the block and on campus that would enhance the connectivity between the campus and the surrounding community.

Summary: Policy 4 – Land Use*. A proposed vacation may be approved only when the increase in development potential that is attributable to the vacation would be consistent with the land use policies adopted by the City Council. The criteria considered for making individual vacation decisions will vary with the land use policies and regulations for the area in which the right-of-way is located. The City Council may place conditions on a vacation to mitigate negative land use effects.*

Guideline 4.6 – Zone Specific Review

Adopted City Land Use Policies to be Used – In addition to the general street vacation policies and guidelines contained in this document, the adopted City land use policies for the zone in which a vacation is located, will be used to determine whether or not the land use effects of each vacation are in the public interest. These include policies such as the Comprehensive Plan, particularly its land use, urban village, transportation and neighborhood elements. Vacations will be reviewed according to Land Use Policies as now constituted or hereafter amended.

Area Specific Guidelines – Guidelines related to various land use areas are stated below. They are provided in order to highlight special concerns related to each area. They shall be used to supplement the general provisions and guidelines of the Seattle Vacation Policies and other land use policies for protection of the public interest.

F. Major Institutions –

1. *For proposed vacations within major institution boundaries, the major institutions policy guidelines and objectives (SMC 23.16.010) will be used to evaluate the land use effects of the vacation.*

2. *If a master plan has been adopted, the vacation decision will give substantial weight to the provisions of the individual master plan. Land use, transportation and traffic information contained in the EIS for the master plan will be considered. This information will be updated prior to the vacation decision if conditions in the area have changed or if several years have passed since adoption of the master plan.*

Identification of intended street vacations in an adopted major institution master plan shall not constitute prior approval of the vacations.

Discussion: VMMC is located within one of the City of Seattle's six designated Urban Centers. The medical center is a large employer in the city and provides a vital and active urban environment. The potential alley vacation would promote increased employment density consistent with the intent of Urban Centers. The campus is also served by numerous public transit routes and is near the route for the proposed First Hill Streetcar. The resulting development would also be consistent with the type and scale of surrounding land uses on and adjacent to VMMC. The increase in development potential that is attributable to the proposed vacations would be consistent with the use, density, and development regulations in the *Draft MIMP*, the First Hill Neighborhood Planning Area, the City's Comprehensive Plan, and the City's Land Use & Zoning Code.

Consistent with City of Seattle criteria for the approval of street and alley vacations, improvements intended to provide public benefits would be proposed at the time an alley vacation petition id submitted to the City for review. Public benefits would focus on public improvements surrounding the block and on campus that would enhance the connectivity between the campus and the surrounding community.

Summary: Policy 5 – Public Benefit*. Proposed vacations may be approved only when they provide a long-term public benefit. Vacations will not be approved to achieve short-term public benefits or for the sole benefit of individuals. Mitigation of the adverse effects of a vacation, meeting code requirements for development, paying the required vacation fee, facilitating economic activity, or providing a public, governmental, or educational service do not in themselves constitute providing public benefits.*

Guideline 5.1 – Public Benefits Identified

Public benefits may include, but are not limited to:

A. *On-site Public Benefits: on-site benefits are favored as the provision of the public benefit can also act to offset any increase in scale from the development. On-site public benefits may include: publicly accessible plazas or other green spaces, including public stairways; streetscape enhancements beyond that required by codes such as widened sidewalks, additional street trees or landscaping, street furniture, pedestrian lighting, wayfinding, art, or fountains; pedestrian or bicycle trails; enhancement of the pedestrian or bicycle environment; view easement or corridors; or preservation of landmark buildings or other community resources.*

B. *Off-site Public Benefits: where it is not practicable to provide the public benefit or more than a portion of the public benefit on the development site, the public benefit may be provided off-site. This may include: pedestrian or bicycle trails or public stairways; enhancement of the pedestrian or bicycle environment; enhancement of existing public open space such as providing playground equipment in a City park; improvements to designated Green Streets; funding an element from an adopted Neighborhood Plan; providing wayfinding signage; or providing public art.*

***Discussion*:** The potential vacation identified in the *Draft MIMP* would enable the establishment of new medical office/hospital buildings, as well as smaller retail

establishments on-campus and would provide long-term public benefits. At such time as a vacation is considered, a work plan specific to that vacation would be prepared by VMMC. The work plan would identify opportunities for public participation, contain an analysis of traffic and circulation, include utility analysis, specific design and environmental analysis, landscape analysis, and identify possible public benefits, such as pedestrian amenities, pedestrian lighting, improved pedestrian crossings, bike racks, plazas and open space, wayfinding, art and street art, and the preservation of historic structures.

Consistent with City of Seattle criteria for the approval of street and alley vacations, improvements intended to provide public benefits would be proposed at the time an alley vacation petition is submitted to the City for review. Public benefits would focus on public improvements surrounding the site and on the VMMC campus to enhance the connectivity between VMMC and the surrounding community.

City of Seattle Skybridge and Tunnel Term Permits

Summary: Seattle Municipal Code (SMC) 15.64 establishes the procedures for authorizing skybridge and tunnels within the City of Seattle. CAM 2207 (Skybridge Petition) and CAM 2701 (Term Permit Fee Methodology), and the 2006 Joint Director's Rule for Skybridge Permits provide guidance on the skybridge permitting process.

Skybridges and tunnels are regarded as temporary structures and are usually granted with a 10-year term permit that are renewable for up to 30 years. The City reserves the right to require removal of a skybridge at any time, at no expense to the City. A skybridge and/or tunnel permit provides for the use of the right-of-way under the terms and conditions of the permit or until the permit expires or is revoked. The skybridge and/or tunnel permit review process is administered by the Seattle Department of Transportation, Street Use Division.

Per SMC 15.64, the following elements shall be considered during the permit review for a skybridge; several of the same criterion also apply to tunnels:

(1) That horizontal and vertical clearance is adequate;
(2) That structural adequacy is insured;
(3) Potential conflict with existing or proposed utilities, street lighting or traffic control devices;
(4) View blockage;
(5) Interruption or interference with existing streetscape;
(6) Reduction of natural light;
(7) Reduction of pedestrian activity at street level;
(8) The number of pedestrians projected to use the skybridges;
(9) Effect on commerce and enjoyment of neighboring land use;
(10) Availability of reasonable alternatives;
(11) Effect on traffic and pedestrian safety; and
(12) Accessibility for elderly and handicapped.

Discussion: One skybridge currently exists across Seneca Street, just south of Terry Avenue. The proposed skybridges and/or tunnels are intended for use by hospital staff, patients, and visitors to the Medical Center, and would facilitate the movement of people and supplies and support the interconnected nature of the campus – they are not intended for use to facilitate street-level pedestrian traffic through the campus. The skybridges and

tunnels would protect patients from the environment, protect supplies and the transport of materials between the various campus buildings, and facilitate the efficient flow of staff. Approval for future skybridges and tunnels will be secured through term permits that will be obtained at the time a potential project requiring such a connection is developed. Not all may be executed, depending on the sequencing of projects and their eventual occupants and amenities.

The *Draft MIMP* includes the proposal for future requests for approval of six skybridges and 8 tunnel permits crossing segments of public right-of-way. The skybridges that are proposed under the ***Proposed Action*** are located:

- Across University Avenue east of Terry Avenue;
- Across Terry Avenue north of Seneca Street;
- Across 9th Avenue north of Seneca Street;
- Across 9th Avenue north of Spring Street;
- Across Spring Street east of Terry Avenue; and,
- Across Seneca Street, east of Terry Avenue.

The proposed skybridge across Seneca Street would be in addition to the existing skybridge across Seneca and located west of Terry Avenue. A view analysis for the three north-south view corridors (University Street, Seneca Street, and Spring Street) potentially impacted by the addition of the proposed skybridges is included in **Section 3.6, Aesthetics**. A shadow analysis that includes the proposed skybridges is included in **Section 3.7, Light and Glare and Shadows**.

For the ***Proposed Action***, **Figure 2-8** shows in site plan view the location of VMMC's existing skybridge, as well as the location of the six skybridges and eight tunnels that are proposed to cross public rights-of-way. ***Alternative 5a***, would contain the same skybridges and tunnels as under the ***Proposed Action*** with the exception of those crossing Spring Street to the **1000 Madison Block**.

3.5 HOUSING

This section of the Draft EIS describes the existing housing conditions on the VMMC campus and in the site vicinity and evaluates the potential impacts to housing resources that could occur as a result of development of the ***Proposed Action*** and EIS Alternatives.

Policy Context

The Seattle Municipal Code (SMC) contains specific provisions that describe the scope of the SEPA analysis for the housing element. Relevant policies from SMC 25.05.675 are provided below:

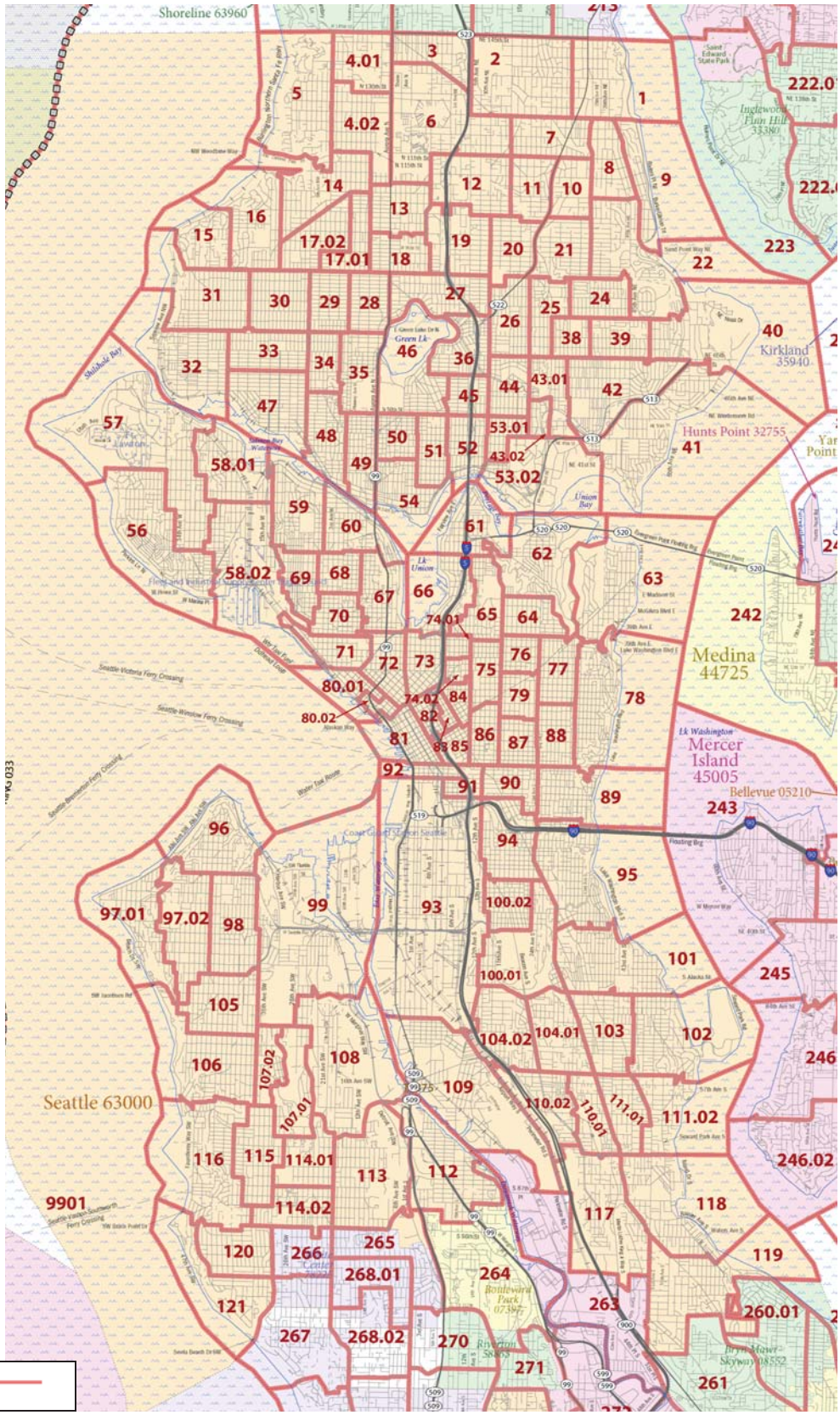
> *I.2. Housing Policies*
>
> *a. It is the City's policy to encourage preservation of housing opportunities, especially for low income persons, and to ensure that persons displaced by redevelopment are relocated.*
>
> *b. Proponents of projects shall disclose the on-site and off-site impacts of the proposed projects upon housing, with particular attention to low-income housing.*
>
> *c. Compliance with legally valid City ordinance provisions relating to housing relocation, demolition and conversion shall constitute compliance with this housing policy.*

As well, SMC 23.34.124 (Land Use Code) states the following with respect to additions to existing MIO districts:

- *"New or expanded boundaries shall not be permitted where they would result in the demolition of structures with residential uses or change of … use of those structures to non-residential major institution uses unless comparable replacement is proposed to maintain the housing stock of the city."*

Background

The housing characteristics and population information in this section were obtained from the 2010 US Census, the 2005-2009 American Community Survey (ACS), and the 2011 Dupre + Scott Apartment Advisors report. The ACS provides data estimates for a period of time, rather than a single point in time as does the Decennial Census, and carries somewhat larger margins of error than the decennial census. In order to characterize existing housing conditions for purposes of this EIS analysis, ACS data is presented for the four census tracts that generally correspond to the First Hill neighborhood (Tracts 82, 83, 84 and 85, as shown in **Figure 3.5-1**). The census tract boundaries are slightly differently than the Urban Village Boundary, as defined by the City of Seattle. Information is also presented for the First Hill neighborhood, as defined by a Dupre + Scott Apartment Advisors report.



Source: 2010 Census - Census Tract Reference Map, King County WA

Figure 3.5-1

City of Seattle Census Tracts

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3.5.1 Affected Environment

The following is a summary of existing housing conditions within the First Hill neighborhood and surrounding vicinity.

Inventory of Existing Housing

Residential Uses within the Existing VMMC MIO Boundary

There is no permanent housing of any type within the existing VMMC MIO boundary.

Residential Uses within the Proposed MIO Boundary Expansion Area

The **1000 Madison Block** contains one multi-family residential building, the Chasselton Court Apartments. Built in 1928, the 6-story brick Chasselton Court Apartments contains 56 studio units and 6 one-bedroom units, for a total 62 rental units. The 62 rental units represent approximately 0.8 percent of the total housing units within the First Hill neighborhood (7,737).

Table 3.5-1 provides information on the total number of units, the bedrooms and baths per unit, average square footage for each unit size, and the average rents for units that are currently rented.

Table 3.5-1
CHASSELTON COURT APARTMENTS - HOUSING CHARACTERISTICS

Type of Unit	Number of Units	Approximate Square Footage Per Unit Size	Monthly Rental Rate Range	Average Monthly Rental Rates
Studio	56	470	$765 - $850	$799
One bedroom	6	950	$1,075 - $1,245	$1,173
Total	**62 units**	**32,960 sq. ft.**		

Source: VMMC, 2012.

According to the King County Tax Assessor, the total square footage of the building is 37,170 sq. ft. This total building area accounts for hallways, lobby and other common space -- in addition to the actual apartment unit area of 32,960 sq. ft., as shown in **Table 3.5-1**.

Affordability

According to the U.S. Department of Housing and Urban Development (HUD) "The generally accepted definition of affordability is for a household to pay no more than 30 percent of its annual income on housing."[1] As shown by **Table 3.5-2**, the monthly rental rate for a studio unit in the Chasselton Court ranges from $765 - $850 (an average of $799 for the 56 studio units); and a one-bedroom unit in the Chasselton Court rents for $1,075 - $1,245 (an average of $1,173 for the 6 units).

[1] Community Planning and Development: http://www.hud.gov/offices/cpd/affordablehousing/index.cfm.

To calculate the minimum household income needed to afford the monthly rental rates cited above, the monthly rental rate is multiplied by 12 (for one year), and divided by 30 percent (0.3). HUD classifies incomes based on family size as: "extremely low income" for those earning less than 30 percent of the median income; "very low income" for those earning less than 50 percent of the median income; and "low income" for those earning less than 80 percent of the median income. The Chasselton Court Apartment rental rates would, therefore, be considered affordable to those earning between 54 and 78 percent of the median income, and would fall under the affordable to "low income" category, as established by HUD guidelines for the Seattle Metropolitan Statistical Area.

Table 3.5-2
CALCULATION OF AFFORDABILITY FOR RENTAL RATES

Number of Bedrooms	Family Size Assumed by HUD Based on # of Bedrooms	2012 Monthly Chasselton Average Monthly Rental Rates	2012 Monthly Chasselton Rental Rate Ranges	Required Annual Income to "Afford" Those Rates (30% of Income for Monthly Rental Payment)	HUD Median Income by family size	Annual Income as Percentage of Median Income
0	1	$799	$765 - $850	$30,600 - $34,000	$56,275	54 – 60%
1	1.5	$1,173	$1,075 - 1,245	$43,000 - $49,800	$63,200	68 – 78%

Source: City of Seattle, 2012.

Residential Uses within the Site Vicinity

Tables 3.5-3 and **3.5-4** compare data for the First Hill area to that of the City as a whole -- in terms of population, demographics, housing units, and income. The population data shown in **Table 3.5-4** is current as of the 2010 US Census. The remaining housing and income data is from the 2005-2009 ACS. As demonstrated by the data in **Table 3.5-3**, the First Hill area has a higher percentage of minorities (39 percent) as compared to the City overall (31 percent).

As shown in by both tables, the First Hill area had a population of approximately 15,181 according to the 2010 census, which is approximately 2.5 percent of Seattle's population of 608,660. **Table 3.5-4** indicates that with 7,737 total housing units, First Hill contains approximately 2.6 percent of Seattle's 277,014 unit housing supply. Most housing units within the First Hill area are in multi-family buildings, with less than 15 percent of the units owner-occupied. Only about 4 percent of the housing in First Hill is in single family homes, as compared to the city-wide average of 46.6 percent.

The data indicate that First Hill has a much lower percentage of owner-occupied units than city-wide. And within the First Hill area, approximately 12.4 percent of the housing units are owned, and 85.6 percent are rented. In comparison, approximately 49.6 percent of housing units are owned within Seattle, while 50.4 percent are rented.

Table 3.5-3
POPULATION and DEMOGRAPHIC CHARACTERISTICS

	FIRST HILL NEIGHBORHOOD[1]	CITY OF SEATTLE
Total Population	15,181	608,660
Population of One Race	14,574 (96%)	577,413 (95%)
White, Alone	9,266 (61%)	422,870 (69%)
Black or African American, Alone	2,245 (15%)	48,316 (8%)
American Indian & Alaskan Native	252 (1.6%)	4,809 (1%)
Asian, Alone	2,247 (15%)	84,215 (14%)
Native Hawaiian & Other Pacific Islander	83 (0.5%)	2,351 (0.4%)
Some Other Race, Alone	481 (3.2%)	14,852 (2.4%)
Population of two or more Races	607 (4%)	31,247 (5.1%)
Hispanic or Latino	1,185 (7.8%)	40,329 (6.6%)

Source: U.S. Census Bureau, 2010 Census Redistricting Data (Public Law 94-171) Summary File.
[1] Includes Census Tracts 82, 83, 85 and 86

Table 3.5-4
HOUSING AND INCOME CHARACTERISTICS

	First Hill[1]	City of Seattle
Population	15,181	608,660
Housing Units	7,737	297,360
Occupied Units	6,700 (86.6%)	277,014 (93.2%)
Vacant Units	1,037 (13%)	20,346 (6.8%)
Owner Occupied	961 (14.3%)	137,341(49.6%)
Renter Occupied	5,739 (85.7%)	139,673 (50.4%)
Housing Units Per Structure		
• **1, detached**	339 (4.4%)	138,660 (46.6%)
• **1, attached**	145 (1.9%)	10,414 (3.5%)
• **2**	250 (3.2%)	9,584 (3.2%)
• **3 - 4**	300 (3.9%)	13,352 (4.5%)
• **5 - 9**	188(2.4%)	18,628 (6.3%)
• **10 - 19**	406 (5.2%)	26,024 (8.8%)
• **20 or more**	6,092 (78.7%)	79,296 (26.7%)
Median Household Income	$33,132	$58,990

Source: 2010 US Census, Summary File 3 and US Census Bureau, 2005-2009 ACS.
[1] Includes Census Tracts 82, 83, 85 and 86

Rental Market

According to Dupre + Scott data (**Table 3.5-5**), the First Hill area had an overall rental market vacancy rate of 3.29 percent in the fall of 2011, compared to 3.36 percent citywide. The average rent in First Hill was $1,048, which is just slightly less than the City's average rent of $1,165. Since 2009, as demonstrated by **Table 3.5-5**, vacancy rates have generally declined and rents increased in both First Hill and Seattle as a whole.

Table 3.5-5
RENTAL MARKET VACANCY AND AVERAGE RENT: ALL UNITS

Month/Year	FIRST HILL		SEATTLE	
	Market Vacancy	Average Rent	Market Vacancy	Average Rent
Spring 2007	2.31%	$901	2.65%	$987
Fall 2007	2.77%	$1,018	2.87%	$1,065
Spring 2008	3.66%	$1,032	3.05%	$1,082
Fall 2008	3.21%	$1,002	3.09%	$1,122
Spring 2009	6.36%	$1,009	5.46%	$1,115
Fall 2009	6.86%	$1,001	5.80%	$1,099
Spring 2010	4.83%	$955	5.09%	$1,083
Fall 2010	3.08%	$985	3.58%	$1,105
Spring 2011	2.78%	$990	3.38%	$1,115
Fall 2011	3.29%	$1,048	3.36%	$1,165

Source: Scott + Dupre Apartment Advisors.

Table 3.4-6 and **Table 3.4-7** provide further details on vacancy and rental rates for studio and one bedroom units in First Hill and Seattle. As shown, First Hill currently has a higher vacancy rate for studio apartments (3.96 percent) as compared to Seattle (3.51 percent), and lower average rents; $806 in First Hill compared to $901 for Seattle. The vacancy rate for one bedroom units is lower in First Hill at 2.71 percent, compared to Seattle's rate of 3.08 percent. Meanwhile, the average rent for one bedroom units is comparable in First Hill and Seattle at $1,073 and $1,097, respectively.

Table 3.5-6
RENTAL MARKET VACANCY AND AVERAGE RENT: STUDIO UNITS

Month/Year	FIRST HILL		SEATTLE	
	Market Vacancy	Average Rent	Market Vacancy	Average Rent
Spring 2007	2.43%	$701	2.31%	$777
Fall 2007	2.09%	$792	2.39%	$840
Spring 2008	3.36%	$808	2.79%	$861
Fall 2008	3.20%	$797	2.90%	$893
Spring 2009	6.86%	$785	6.05%	$876
Fall 2009	5.21%	$777	5.68%	$845
Spring 2010	4.37%	$753	5.64%	$832
Fall 2010	3.73%	$760	3.81%	$847
Spring 2011	1.88%	$768	3.46%	$852
Fall 2011	3.96%	$806	3.51%	$901

Source: Scott + Dupre Apartment Advisors.

Table 3.5-7
RENTAL MARKET VACANCY AND AVERAGE RENT: 1-BEDROOM UNITS

Month/Year	FIRST HILL		SEATTLE	
	Market Vacancy	Average Rent	Market Vacancy	Average Rent
Spring 2007	2.32%	$959	2.56%	$924
Fall 2007	2.86%	$1,057	2.65%	$1,002
Spring 2008	3.56%	$1,042	2.89%	$1,015
Fall 2008	3.16%	$1,064	2.87%	$1,058
Spring 2009	6.39%	$1,063	5.22%	$1,057
Fall 2009	8.31%	$1,049	6.11%	$1,038
Spring 2010	5.03%	$991	4.92%	$1,022
Fall 2010	2.42%	$1,039	3.38%	$1,045
Spring 2011	3.04%	$1,029	3.30%	$1,056
Fall 2011	2.71%	$1,073	3.08%	$1,097

Source: Scott + Dupre Apartment Advisors.

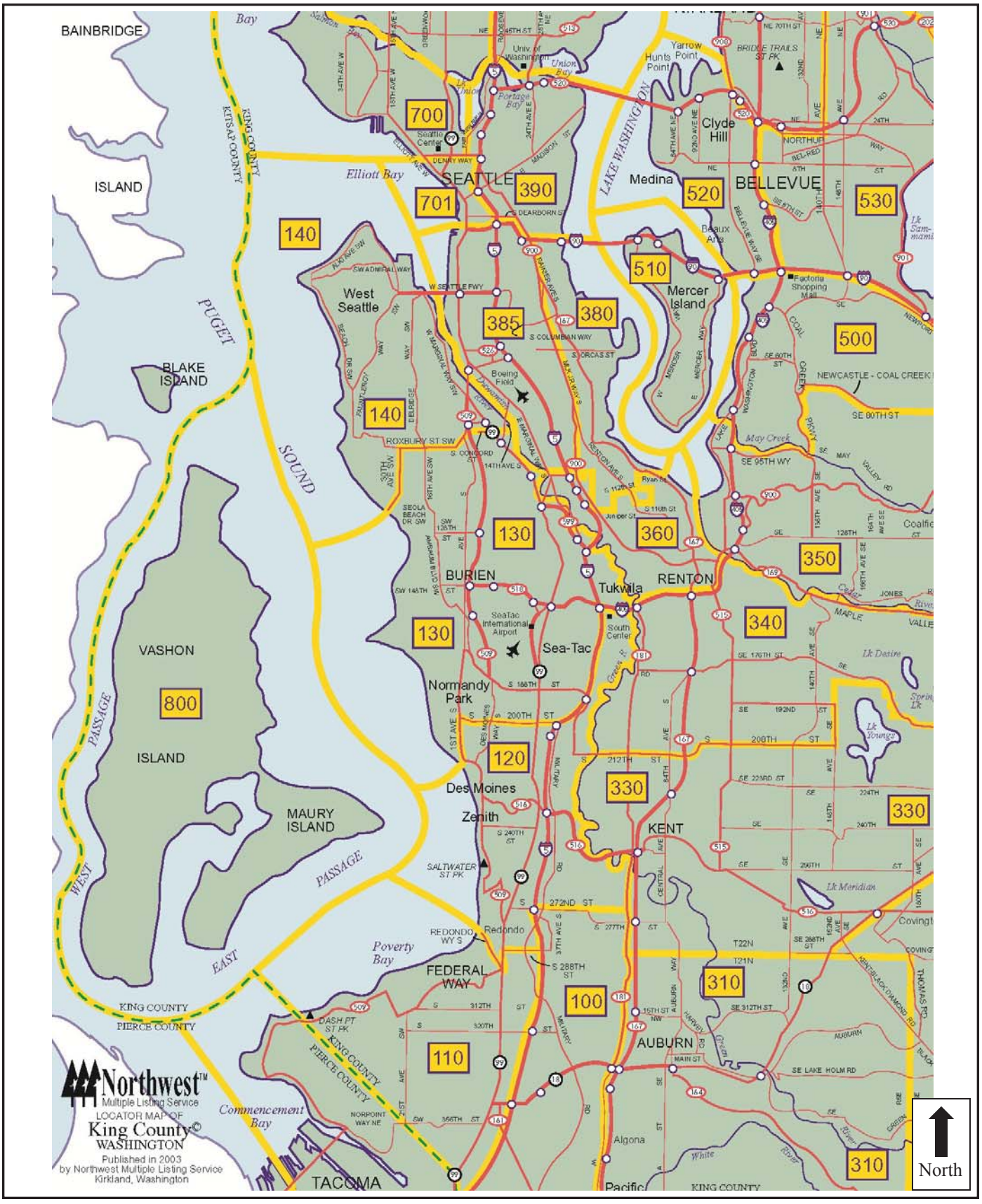
Housing Prices

Table 3.5-8 shows the 2011 median sale prices for all residential and condominium units in Seattle. Prices for new construction are differentiated from 'all units'. See **Figure 3.5-2** for the boundaries used to delineate the sales data. As shown below, the median price for residences in the VMMC neighborhood (which Dupre + Scott Apartment Advisor assign to the Central Seattle, Madison Park, Capitol Hill area) is $518,000 for all residential units, and $248,000 for all condominium units. New construction is slightly cheaper for residential units at $454,750 and slightly more expensive at $352,500, for condominiums.

Table 3.5-8
2011 MEDIAN RESIDENTIAL SALES PRICES – SEATTLE

	All Residential		Residential New Construction Only		All Condominium		Condominium New Construction Only	
Area	Units	Median	Units	Median	Units	Median	Units	Median
(140) W. Seattle, Central	819	$304,650	73	$300,190	104	$245,000	13	$324,500
(380) Seward Park	371	$301,000	50	$297,475	26	$153,725	2	$252,200
(385) Central Seattle SW,	188	$257,975	18	$350,000	10	$187,975	1	$235,000
(390) Central Seattle,	560	$518,000	54	$454,750	309	$248,000	40	$352,500
(700) Queen Anne,	379	$531,000	26	$352,500	224	$285,000	15	$553,000
(701) Downtown Seattle	--	$	--	$	348	$395,000	152	$460,000
(705) Ballard, Greenlake,	1052	$398,000	92	$328,725	191	$234,000	32	$298,400
(710) North Seattle	722	$409,000	34	$352,475	104	$195,000	8	$244,500

Source: Scott + Dupre Apartment Advisors.



Source: King County, 2011

Figure 3.5-2

2011 Median Sales Residential

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Affordable and Low Income Housing

The First Hill neighborhood has six City-funded affordable housing developments containing more than 323 housing units. This currently makes up roughly 4.17 percent of the total 7,737 dwelling units within the neighborhood.

City Housing Targets

The City of Seattle *Comprehensive Plan* (2005) establishes a goal of adding 47,000 new households within the City by 2024, with Urban Centers targeted to handle the bulk of this growth. As noted, the VMMC campus is located within the First Hill/Capitol Hill Urban Center, which is comprised of four urban villages: 12th Avenue, Capitol Hill, First Hill and Pike/Pine. The VMMC Campus is located within the First Hill Urban Village. As demonstrated in **Table 3.5-9**, below, in 2004, according to the *Comprehensive Plan*, there were 6,020 households within the First Hill Urban Village: the 2024 growth target for this area is 1,200 new households. As of 2011, approximately 299 new units had been built in the First Hill Urban Village, and 25 percent of this goal has been met.[2]

In order to meet the City's low income housing needs, the City *Comprehensive Plan* targets 20 percent of the total expected household growth (47,000 units) to be affordable to households earning up to 50 percent of the area median income (estimated at 9,400 units). An additional 17 percent of expected household growth is intended to be affordable to households earning between 51 to 80 percent of the area median income (estimated at 7,990 units).

Policy H34 in the Housing Element of the City of Seattle *Comprehensive Plan* encourages affordable housing, targeting at least one-quarter of the city housing stock to be affordable to households with incomes up to 50 percent of the area's median income.[3] This policy incorporates housing that is publicly subsidized and housing provided by the private housing market. The *Comprehensive Plan* encourages the use of public funds for the production and preservation of low-income housing in urban centers and villages. It also encourages the production of housing for households with incomes up to 50 percent of the median in areas with high land values and little existing rental housing in that income range.

[2] DPD Permit Data Warehouse Building Construction Permits.
[3] City of Seattle Comprehensive Plan, 2005.

Table 3.5-9
2024 HOUSEHOLD GROWTH TARGETS
FOR FIRST HILL/CAPITOL HILL URBAN CENTER

First Hill/ Capitol Hill Center	Land Area (Acres)	Households (HH)			
		Existing (2004)	Existing Density (HH/ Acre)	Growth Target (HH Growth)	2024 Density (Est.)
12th Ave.	160	1,450	9	700	13
Capitol Hill	397	12,250	31	1000	33
First Hill	228	6,020	26	1,200	32
Pike/Pine	131	2,800	21	600	26
Total	**916**	**22,520**	**25**	**3,500**	**28**

Source: City of Seattle Comprehensive Plan Appendix A.

3.5.2 Impacts of the Proposed Action (6b) and Alternatives

Both the ***Proposed Action*** and ***Alternative 5a*** include a combination of replacement of existing hospital facilities, and new outpatient and research development. The increases in new outpatient and research development would correspondingly result in an increase in employment on the VMMC campus. It is possible that increases in employment associated with the campus redevelopment could result in an associated increase in demand for diverse housing opportunities within the neighborhood.

Proposed Action (Alternative 6b)

Campus Redevelopment Impacts

Under the ***Proposed Action***, the existing MIO boundary would be expanded to include the **1000 Madison Block**; the mapping correction would also be completed. It is expected that the Chasselton Court Apartments would be demolished and replaced with a major medical building. The proposed boundary expansion is intended to accommodate space required for replacement of core hospital functions without the need for new buildings on the existing campus to exceed the existing MIO-240 height limit.

As noted above in **Section 3.8.2**, **Affected Environment**, the 6-story brick Chasselton Court Apartments contains 56 studio units and 6 one-bedroom units, for a total 62 rental units. The ***Proposed Action*** would impact housing by removing 62 low-priced housing units, or approximately 0.8 percent of the housing stock within the First Hill area, unless replacement housing is developed.

Replacement Housing

Under SMC 23.34.124.B.7, demolition of residential structures to expand boundaries of major institutions is not permitted unless "comparable" replacement housing is proposed to maintain the City's housing stock. The City has historically interpreted "comparable" in this context to

mean one-for-one replacement of housing that is similar in its location based on sector of the city, and size, based on number of bedrooms. The determination as to whether the proposed replacement housing constitutes "comparable replacement" would be made by the City Council as part of the *MIMP* review and approval process.

Costs in current dollars for replacing the units at the Chasselton Court are variable and would be dependent on the site and project. The components making up the total cost of a project include land, architectural and engineering fees, permits, construction, Washington State sales tax, financing expenses, project administration, and other minor expenses directly associated with developing and filling the project. The level of finish, number of parking stalls (if any), quantity of retail in the building (if any), and market conditions (cost of land, labor, and materials) would represent additional variable factors in the built cost.

Table 3.5-10, below, compares total projects costs for the development of buildings that are of similar size to the Chasselton Court Apartment (62 units). As mentioned previously, the Chasselton Court Apartment building contains 62 apartment units (56 studios of approximately 470 sq. ft. per unit and 6 one-bedroom units). It should be noted that both Dekko Place and Gossett Place are subsidized low income residential facilities, which were developed by the Low Income Housing Institute. In comparison, the Third and Blanchard building and the Ninth and Pine Street buildings are commercial properties.

Table 3.5-10
APARTMENT BUILDINGS - COMPARISON OF TOTAL CONSTRUCTION COSTS

	Dekko Place (911 Stewart Street)	Gossett Place (4719 12th Avenue NE)	Third & Blanchard Bldg.	Ninth Avenue & Pine Street
Residential Sq. Ft. (Number of Units)	35,226 (70 units)	46,821 (62 units)	42,320 (92 units)	(85 units)
Total Cost Per Sq. Ft.	$352.45	$307.10	$200.00	$175.00 to $200.00

Source: City of Seattle, 2011.

VMMC will develop a proposal for the replacement of the 62 units proposed for demolition should the City Council approve the requested expansion of VMMC's MIO boundaries to include the **1000 Madison Block**. Key elements of the proposal, which is based on the City Council's requirement for housing mitigation for Seattle Children's Hospital[4], could include:

- **Notice to Chasselton Court Apartment Tenants:** VMMC would provide the required 90-day tenant notice in accordance with SMC 22.210.120.

- **Compensation to Existing Chasselton Court Apartment Tenants:** VMMC would pay its share of relocation assistance (one-half of the total relocation assistance amount) to all qualifying tenants as defined by SMC 22.210.110.

- **Provision of Replacement Housing:** Before VMMC could receive a temporary or permanent Certificate of Occupancy for any structure that is included in any phase of

[4] Seattle Children's Hospital is a Major Institution within the City of Seattle, which also proposed demolition of a residential building.

proposed development described in its *MIMP*, DPD must find that VMMC has performed either of the following options:

A. That VMMC has submitted an application for a MUP for the construction of comparable housing, as defined below, in replacement of the housing demolished at the Chasselton Court Apartments. In the event that VMMC will construct more than one housing project to fulfill the housing replacement requirement, then VMMC must have applied for a MUP for the first housing replacement project, which shall include no fewer than 30 housing units. A MUP application must be submitted for all of the remaining replacement units before a temporary or permanent certificate of occupancy may be issued for any subsequent project authorized in the *MIMP*. The MUP application(s) for the replacement housing project(s) may not include projects that were the subject of a MUP application submitted to DPD before Council approval of the *MIMP*. VMMC may seek City funds to help finance the replacement housing required by this condition, but may not receive credit in fulfillment of the housing replacement requirement for that portion of the housing replacement cost that is financed by City funds. City funds include housing levy funds, general funds or funds received under any housing bonus provision.

B. As an alternative to the replacement of housing as described above, VMMC may mitigate for the loss of housing by doing one of the following: *1)* pay the City of Seattle $2,601,905; or, *2)* pay the City of Seattle 35 percent of the estimated cost of constructing the comparable replacement housing, as determined by DPD and the Office of Housing. In determining the estimated cost, DPD and the Office of Housing shall consider at least two development pro-form as, prepared by individual(s) with demonstrated expertise in real estate financing or development, and submitted by VMMC. DPD and the Office of Housing's determination of the estimated cost will be final and not subject to appeal. Money paid to the City under this payment option shall be used to finance the construction of comparable replacement housing, as defined below, and subject to the provisions of the City's Consolidated Plan for Housing and Community Development and the City's Housing Levy Administrative and Financial Plan in existence at the time the City helps finance the replacement housing.

For purposes of the housing replacement proposal, the comparable replacement housing must meet the following requirements:

- provide a minimum of 62 housing units;
- provide no fewer than the number of studio (56 units) and 1 bedroom units (6 units) as those in the Chasselton Court Apartments;
- contain no less than 37,170 gross sq. ft.;
- the general quality of construction shall be of equal or greater quality than the units in the Chasselton Court Apartments; and
- the replacement housing will be located within First Hill Neighborhood.

[5] Amount calculated based on a comparison of the development costs for Plymouth Housing's Third and Blanchard Building of $200 per square foot. Applied to the Chasselton Court Apartments total area of 37,170 sq. ft., this would equal a total development cost of $7,434,000 to replace the Chasselton Apartments, including land costs. Using the City Council's requirement for Children's to provide 35% of the housing replacement costs, VMMC would be required to pay $2,601,900 to the City if VMMC did not develop the housing on its own.

Demolition of the Chasselton Court Apartments would remove 62 housing units from the existing housing supply in the First Hill neighborhood. VMMC's funds for replacement housing would have to be used to create a net gain of at least 62 housing units in Seattle. The funds could be used for new construction or to rehabilitate an existing building that is not currently in use as housing. The existing Chasselton Court Apartment units are a mix of studio (56 units) and one-bedroom (6 units). The new housing would need to be of a similar mix of bedroom counts. The total area of housing produced would need to be no less than 37,170 gross sq. ft., and the general quality of construction would need to be of equal or greater quality than the units in the Chasselton Court Apartments.

VMMC proposes that the replacement housing be located in the First Hill neighborhood if replacement is the selected strategy to mitigate the loss of housing.

Housing Demand Impacts

Under the ***Proposed Action***, staffing levels would incrementally increase over current levels with each new or replacement development project that is implemented. VMMC currently employs a broad mix of job types ranging from medical professionals to food service, maintenance and landscaping crew. This diversity of employment would continue under the ***Proposed Action*** and additional jobs would be added to the VMMC campus. This gradual increase in staffing levels could increase the number of people seeking housing in the VMMC campus vicinity, and the First Hill neighborhood in particular. Increased housing demand would be dependent on whether employees were new to Seattle or were existing residents of the City, and whether existing residents of the City decided to relocate closer to the VMMC campus.

As the employment increase would occur gradually over time, the City of Seattle housing stock and nearby residential communities within commuting distance to VMMC would be expected to be adequate to meet any resulting increased housing demand. Housing development is occurring and expected to continue in the First Hill neighborhood. Also, as mentioned previously, the City of Seattle *Comprehensive Plan* (2005) establishes a goal of adding 47,000 new households within the City by 2024, with Urban Centers, such as the First Hill, targeted to handle the bulk of this growth. The largest housing project planned in the vicinity currently is the redevelopment of Yesler Terrace (a Seattle Housing Authority public housing community), which could add up to approximately 4,500 new residential units on the site.[6] Yesler Terrace is located less than half a mile to the south of the VMMC campus. Overall, no significant housing impacts would be anticipated.

Alternative 5a

Campus Redevelopment Impacts

Under ***Alternative 5a***, the existing MIO boundary would be maintained and the mapping correction provided. No direct impacts to the City's existing housing stock would occur, as there is no permanent housing within the existing VMMC MIO boundary. The redevelopment that would occur under this alternative would not, therefore, directly affect the existing housing supply in First Hill.

[6] Yesler Terrace Redevelopment. http://yeslerterrace.org/

Housing Demand Impacts

Housing demand impacts under ***Alternative 5a*** would be expected to be similar to those described for the ***Proposed Action***.

No Action Alternative

The ***No Action Alternative*** would involve no new building construction on the VMMC campus and no expansion of the existing MIO boundary. No impacts to housing resources would be anticipated.

Indirect and Cumulative Impacts

If the ***Proposed Action*** is approved by the City Council, the Chasselton Court Apartments would be demolished and the land redeveloped for hospital uses. This would result in less available housing in the area near VMMC, unless the required comparable housing was proposed to be located within the same neighborhood. This could cause prospective buyers and renters to move to other areas in greater Seattle. As well, the demolition of the Chasselton Court Apartments and redevelopment of the entire block for hospital-related uses would permanently remove land area from available supply that could potentially be redeveloped for housing uses in the future.

3.5.3 Mitigation Measures

If the ***Proposed Action*** is approved by the City Council and the Chasselton Court Apartments are demolished, VMMC would propose comparable replacement housing or pay for mitigation to maintain the housing stock of the City. The housing replacement proposal described in **Section 3.5.2** is intended to address the City's policy and program goals for comparable affordable housing and contribute to the replacement of at least 62 housing units within the First Hill Neighborhood, per the SEPA housing policy codified in SMC 25.05.675 I. Housing, c. "Compliance with legally valid City ordinance provisions relating to housing relocation, demolition and conversion shall constitute compliance with this housing policy." Approval of the proposed replacement housing would be made by the City Council as part of the *MIMP* review and approval process. If approved, VMMC's housing replacement package would constitute mitigation for the loss of the Chasselton Court Apartments.

3.5.4 Significant Unavoidable Adverse Impacts

With implementation of a City-approved replacement housing plan, no significant unavoidable adverse impacts would be anticipated.

3.6.1 AESTHETICS - Viewshed

This section of the Draft EIS describes the existing aesthetic and visual character on the VMMC campus, and evaluates how development associated with the proposal would affect these characteristics.

Policy Context

The Seattle Municipal Code (SMC) contains specific provisions that describe the scope of the SEPA analysis for the viewshed analysis. Relevant policies from SMC 25.05.675 are provided below:

P.2. Public View Protection Policies

a *i. It is the City's policy to protect public views of significant natural and human-made features: Mount Rainer, the Olympic and Cascade Mountains, the downtown skyline, and major bodies of water including Puget Sound, Lake Washington, Lake Union and the Ship Canal, from public places consisting of the specified viewpoints, parks, scenic routes, and view corridors, identified in Attachment 1. (Attachment 1 is located at the end of this Section 25.05.675.) This subsection does not apply to the Space Needle, which is governed by subsection P2c of this section.*

ii. The decision maker may condition or deny a proposal to eliminate or reduce its adverse impacts on designated public views, whether or not the project meets the criteria of the Overview Policy set forth in SMC Section 25.05.665; provided that downtown projects may be conditioned or denied only when public views from outside of downtown would be blocked as a result of a change in the street grid pattern.

b. *i It is the City's policy to protect public views of historic landmarks designated by the Landmarks Preservation Board which, because of their prominence of location or contrasts of siting, age, or scale, are easily identifiable visual features of their neighborhood or the City and contribute to the distinctive quality or identity of their neighborhood or the City. This subsection does not apply to the Space Needle, which is governed by subsection P2c of this section.*

ii. A proposed project may be conditioned or denied to mitigate view impacts on historic landmarks, whether or not the project meets the criteria of the Overview Policy set forth in SMC Section 25.05.665.

c. *It is the City's policy to protect public views of the Space Needle from the following public places. A proposed project may be conditioned or denied to protect such views, whether or not the project meets the criteria of the Overview Policy set forth in SMC Section 25.05.665.*

i. Alki Beach Park (Duwamish Head)
ii. Bhy Kracke Park
iii. Gasworks Park
iv. Hamilton View Point
v. Kerry Park
vi. Myrtle Edwards Park
vii. Olympic Sculpture Park
viii. Seacrest Park
ix. Seattle Center
x. Volunteer Park

d. Mitigating measures may include, but are not limited to:

i. Requiring a change in the height of the development;
ii. Requiring a change in the bulk of the development;
iii. Requiring a redesign of the profile of the development;
iv. Requiring on-site view corridors or requiring enhancements to off-site view corridors;
v. Relocating the project on the site;
vi. Requiring a reduction or rearrangement of walls, fences or plant material; and
vii. Requiring a reduction or rearrangement of accessory structures including, but not limited to towers, railings and antennae.

3.6.1.1 Affected Environment

The City of Seattle has adopted regulations (SMC 25.05.675) that protect views from specific viewpoints and scenic routes, and views of various landmarks, public places, the Space Needle, and skyline views. The City's public view protection policies are intended to: "*protect public views of significant natural and human-made features: Mount Rainier, the Olympic and Cascade Mountains, the downtown skyline, and major bodies of water including Puget Sound, Lake Washington, Lake Union and the Ship Canal, from public places consisting of specified viewpoints, parks, scenic routes, and view corridors identified in Attachment 1."*.[47]

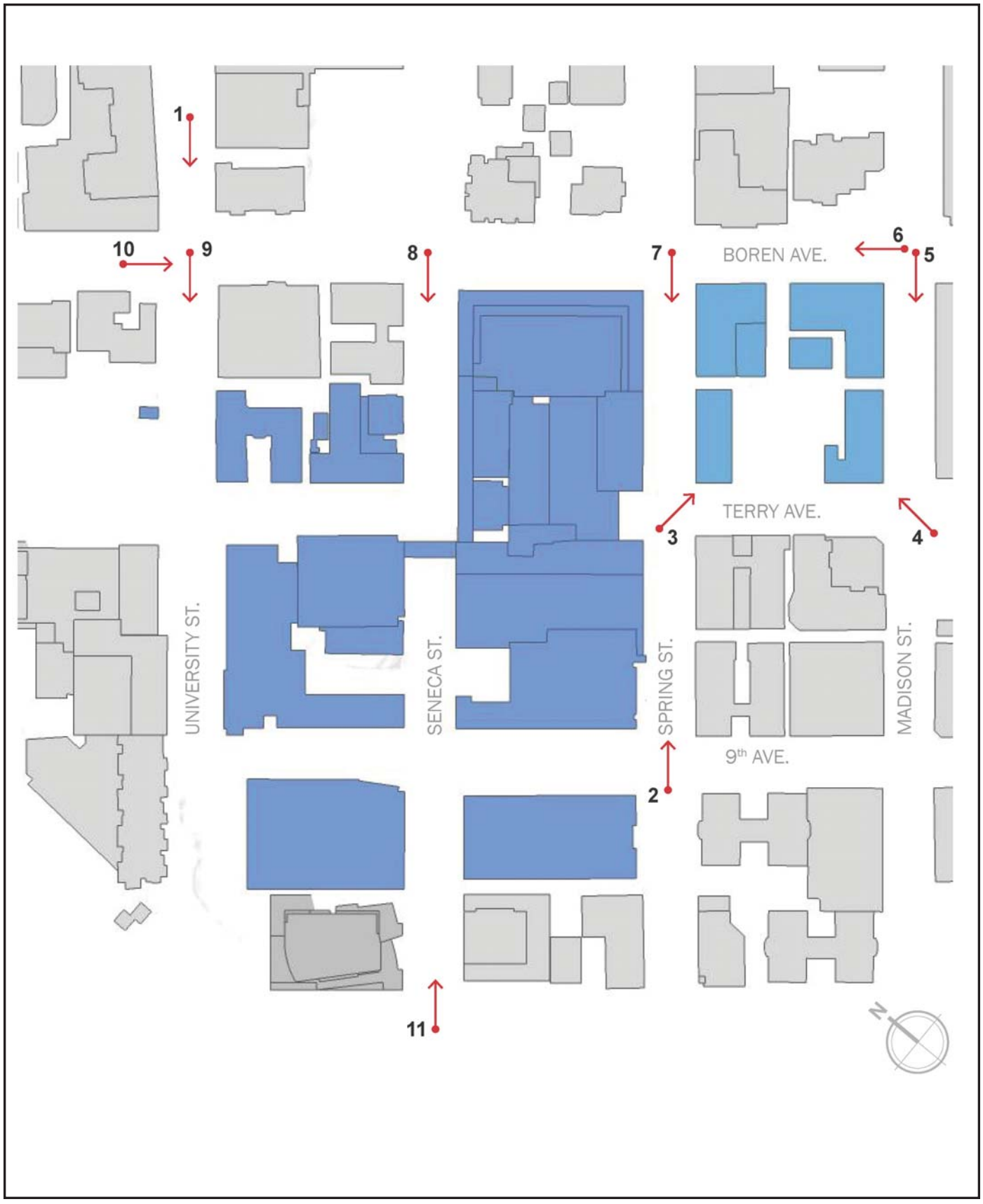
See **Figure 3.6.1-1** for a map showing the location of the viewpoints described below in relation to the VMMC campus.

City Designated Public Viewpoints and Parks

Designated Public Viewpoints: Of the City's 88 officially-designated public viewpoints, only two could be affected by the ***Proposed Action*** and ***Alternative 5a*** that are evaluated in this Draft EIS – Plymouth Pillars Park and Harborview Viewpoint. These viewpoints are described below:

- ***Plymouth Pillars Park*** (formerly known as Four Columns – Pike-Pine-Boren Park) is located approximately three (3) blocks north of the project site. This viewpoint is an area that is roughly 75 ft. wide and borders the east side of I-5, extending from Pine Street to Pike Street (the park also crosses Boren Street). The park includes a pathway that provides a pedestrian connection from Pine Street to Pike Street, a dog run, and benches in several locations. The view from Plymouth Pillars Park is that of close-in views of the Downtown skyline and territorial views of the Olympic Mountains and Lake Union.

[47] Seattle Municipal Code Chap. 25.05.675 P.2.a.i. Attachment 1 is at the end of Section 25.05.675.



Source: SRG, 2012

Figure 3.6.1-1

Viewpoint Location Map

- ***Harborview Viewpoint*** is located in the City's First Hill Neighborhood adjacent to Harborview Medical Center (atop the parking garage), roughly five (5) blocks south of the project site. Amenities within the 3.6 acre park include open landscaped areas, seating, and passive recreational opportunities. The view from Harborview Viewpoint includes a territorial view with I-5 and the King County Parking Garage in the foreground, as well as a panoramic view of the Downtown skyline, a framed view of Mt. Rainier over the hospital helipad south of the park, and westerly views of the Olympic Mountains.

Development associated with the *Draft MIMP* would not affect territorial views from either of these viewpoints. The VMMC campus is located at a higher elevation than either of these viewpoints and is substantially removed from the line of sight between these viewpoints and natural features associated with these viewpoints.

Parks: Three parks are located within the general vicinity of VMMC's campus; they include: Plymouth Pillars Park, Central Freeway Park and First Hill Park; specifically:

- **Plymouth Pillars Park** – This is a linear park/viewpoint that provides westerly and northerly views, as described above.

- **Central Freeway Park** – This park includes a lid over Interstate 5, as well as segments along the east and west sides of I-5. This park provides westerly street corridor views of the Downtown skyline, Elliott Bay, Puget Sound and the Olympic Mountains; and southerly views along the I-5 corridor.

- **First Hill Park** – This is a small park, located on the southeast corner of Minor Ave. and University St. -- one block east of the MIO -- that provides corridor views along Minor Ave. toward Lake Union and corridor views along University St. of the Downtown skyline, Elliott Bay, Puget Sound and the Olympic Mountains.

VMMC is substantially removed from the line of sight between Plymouth Pillars Park and Freeway Park and natural features of the viewshed associated with these two parks. As such, development associated with the *Draft MIMP* and that associated with ***Alternative 5a*** would not affect territorial views from either Plymouth Pillars Park or Freeway Park. However, westerly views along the University St. corridor in the vicinity of First Hill Park could be affected by development under either alternative (Viewpoint 1 on Figure **3.6.1-1**).

Views of Historic Landmarks

In addition to view protection policies associated with officially-designated viewpoints, it is also City policy to: *protect public views of historic landmarks designated by the City's Landmarks Preservation Board which, because of their prominence of location or contrasts of siting, age, or scale are easily identifiable visual features of their neighborhood or the City and contribute to the distinctive quality or identity of their neighborhood or the City*.[48]

[48] Seattle Municipal Code Chap. 25.05.675 P.2.b.i.

There are four existing City-designated Landmark structures in the general vicinity of VMMC's existing campus; they include: the Baroness Hotel, the Sorrento Hotel, Dearborn House, and the Stimson Green Mansion (see **Figure 3.8-1**). Both the Dearborn House and the Stimson Green Mansion are located on Minor Ave. roughly one block east of the VMMC campus. As such, views of these two buildings would not be affected by development alternatives associated with the *Draft MIMP*. Views of the Baroness and the Sorrento Hotel, however, could be affected by the alternatives associated with the *Draft MIMP* (see Viewpoints 3 and 4 on **Figure 3.6.1-1**). The Baroness is located on Spring Street within the identified MIO expansion area and the Sorrento Hotel is located on Terry Avenue directly west of the identified MIO expansion area. A preliminary adjacency analysis for these two landmark buildings depicting the building massings for the ***Proposed Action*** and ***Alternative 5a*** is provided in **Appendix D** to this EIS. Due to the presence of the Baroness Hotel within the MIO boundary expansion area and the nearby Sorrento Hotel, when redevelopment of the **1000 Madison Block** is proposed, a more detailed adjacency analyses will be required at that time (SMC 25.05.675H(2)(d)).

Space Needle Viewpoints

The most visible landmark from many parts of the City is the Space Needle, which is located approximately 1.5 miles northwest of the project site. The City has identified ten viewpoints from which views of the Space Needle are to be protected.[49] The majority of these viewpoints are located to the north of the site and, therefore, there would be no potential for the development proposed under the proposed *Draft MIMP* to affect views of the Space Needle from these locations. The remaining viewpoints are located in West Seattle and the VMMC campus is not within the sightline of the Space Needle from any of these viewpoints.[50]

View Corridors

Resolution No. 30297 (adopted in 2001) addresses the City's Street Vacation Policies and identifies certain Downtown street rights-of-way in which westerly views are to be protected. While all the view corridors are located west of Interstate 5, the importance of these viewsheds is also a consideration for development east of Interstate 5. View corridors that could be affected by development on the VMMC campus include: University Street, Seneca Street, Spring Street and Madison Street (Viewpoints 5, 7, 8, and 9 on Figure **3.6.1-1**).

Scenic Routes

City ordinances[51] also identify specific scenic routes throughout the City from which view protection is encouraged: *It is City policy to protect public views of significant natural and human-made features from designated scenic routes, identified in Attachment 1"* (25.05.675 P.2.).

There are two designated scenic routes in the vicinity of the VMMC campus -- Boren Ave. and Interstate 5. Boren Ave. affords views looking north toward Lake Union, and south towards Beacon Hill and Mt. Rainier (Viewpoints 6 and 10 on **Figure 3.6.1-1**). Depending upon the

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49 Seattle Municipal Code Chap. 25.05.675 P. and Seattle DCLU, 2001,

50 City of Seattle, Viewpoints Locater Map.

51 Ord. #97025 (Scenic Routes Identified by the Seattle Engineering Department's Traffic Division) and Ord. #114057 (Seattle Mayor's Recommended Open Space Policies).

alternative, north-south views along Boren Avenue could be affected by the *Draft MIMP*. While Interstate 5 also provides westerly views towards Elliott Bay and the Olympic Mountains, the VMMC campus is located east of this scenic route, at a substantially higher elevation, and outside the viewshed from Interstate 5 looking west.

3.6.1.2 Impacts of the Proposed Action (6b) and Alternatives

This section describes the potential view impacts from City-designated viewpoints and view and street corridors for development assumed under the ***Proposed Action*** and ***Alternative 5a***. Development associated with the ***Proposed Action*** and ***Alternative 5a*** would entail new buildings on portions of the campus, as well as on the **1000 Madison block** (expansion area – ***Proposed Action***) with building heights of up to 240 ft. and 300 ft. in the central hospital core (***Alternative 5a***) (See **Section II** for details), as well as potential skybridges spanning streets between buildings within the VMMC campus.

City Designated Public Viewpoints – First Hill Park

*Viewpoint 1 Looking West (see **Figure 3.6.1-2**)*

Proposed Action and Alternative 5a

While a portion of the proposed buildings on the site of the surface parking lot would be visible from this location, it is anticipated the buildings would blend into the surrounding urban skyline and would be consistent with other high-rise buildings in this portion of the City. As depicted by **Figure 2-5** and **2-8**, however, the location of the skybridge would likely be closer to Terry Ave. than Boren Ave. and that segment of University St. is relatively steep. As such, for the ***Proposed Action*** and ***Alternative 5a***, **Figure 3.6.1-2** shows that the proposed skybridge across University St. would be visible and could affect the territorial view of Elliott Bay.

Views of Historic Landmarks

*Viewpoint 3 Looking Southeast (see **Figure 3.6.1-3**) - **Baroness Hotel***

Proposed Action

This alternative would include expansion of the campus boundary to include the **1000 Madison Block**, therefore, the existing visual character of this area would change with the ***Proposed Action***[52]. Under the ***Proposed Action***, new development would occur to the east and south of the Baroness Hotel on the site where the Chasselton Apartments and a retail building are presently located. New structures would be setback from the Baroness Hotel which would allow the building's primary historic facades, as well as the roof to be visible from this viewpoint***.*** (see ***Section II*** for a description of potential development for this block). Any alterations to the Landmark building would be carried out in accordance with the controls and incentives adopted by the Landmarks Preservation Board (see the **Section 3.8**, **Historic Resources** for more detail).

[52] Potential development depicted on the **1000 Madison Block** assumes the alley would be vacated.

Existing Conditions

Proposed Action

Alternative 5a

Source: SRG, 2012

EA | BLUMEN

Figure 3.6.1-2
Viewpoint 1—First Hill Park, SE Corner looking West

Existing Conditions

Proposed Action

Alternative 5a

Source: SRG, 2012

EA | BLUMEN

Figure 3.6.1-3
Viewpoint 3—Spring and Terry, SW corner looking East

Alternative 5a

Alternative 5a does not involve expansion of the campus boundary to include the **1000 Madison Block**, therefore, the existing visual character of this block, which contains the Baroness Hotel, a City-designated Landmark, would not change as a result of implementation of the *MIMP*. However, the **1000 Madison Block** could be developed in the future consistent with existing zoning.

*Viewpoint 4 Looking Northeast (see **Figure 3.6.1-4**) – **Sorrento Hotel**.*

Proposed Action

Under the ***Proposed Action***, the retail buildings within the **1000 Madison Block** would be demolished and redeveloped with VMMC-related buildings that could approximate 240 ft. in height (**Figure 3.6.1-4).** The structure to the right of the Sorrento Hotel in this figure (east side of Terry Ave.) is redevelopment that could occur on the **1000 Madison Block**; development that is depicted in the background to the north along Terry Ave. is redevelopment associated with the Hospital East Wing (immediately west of the Floyd & Delores Jones Pavilion.

Due to the presence of the Baroness Hotel within the MIO boundary expansion area, it is anticipated that when redevelopment of the **1000 Madison Block** is proposed, an adjacency analyses would be required to address specific view-related impacts associated with the new development (SMC 25.05.675H(2)(d)).

Alternative 5a

Since no VMMC-related development would occur on the **1000 Madison Block** under this alternative, the existing visual character directly surrounding the hotel would not change with ***Alternative 5a*** (see **Figure 3.6.1-4**). However, as noted previously, under existing zoning the retail buildings along Terry Avenue (directly across Terry Ave. from the Sorrento Hotel) could be demolished and redeveloped with buildings that could approximate 160 ft. in height.

View Corridors

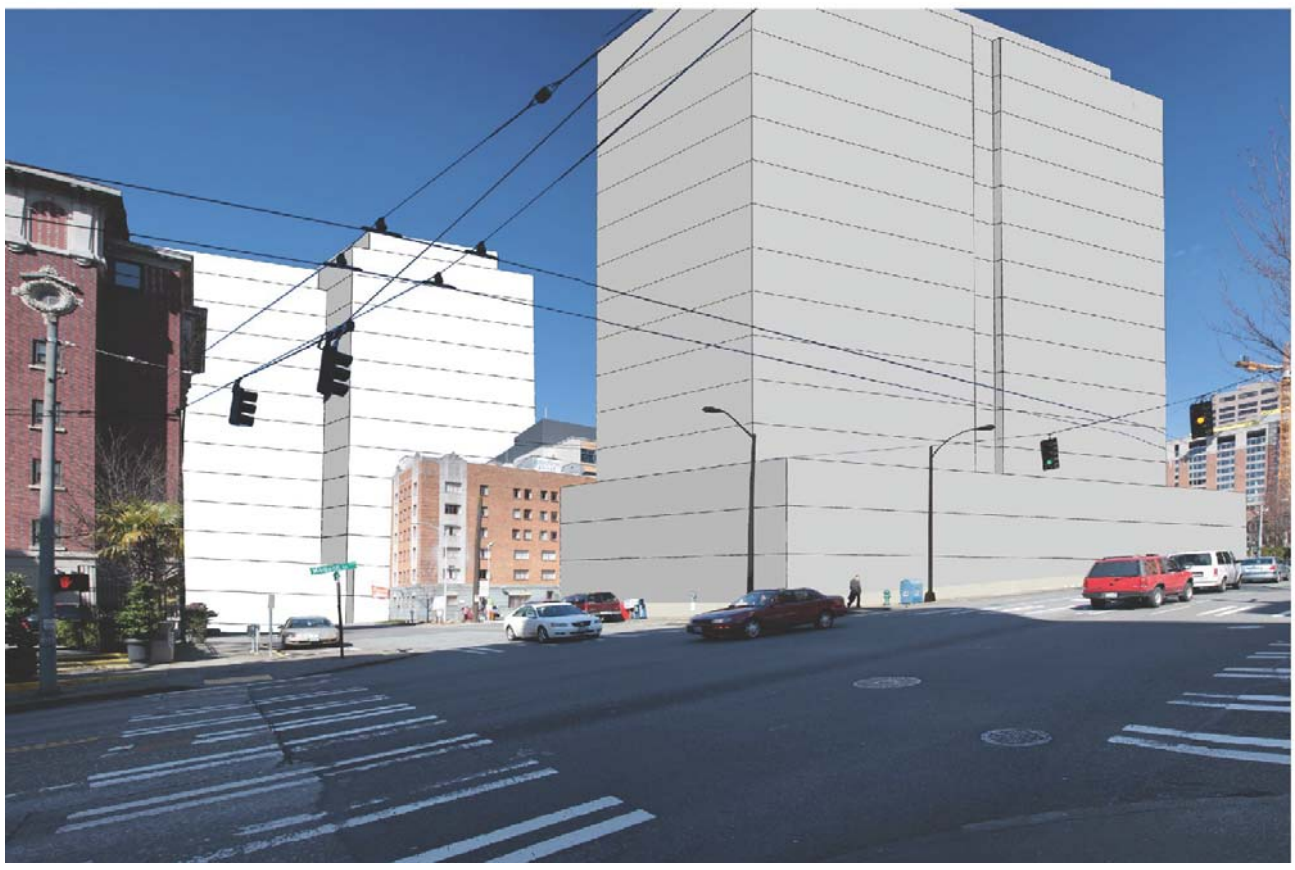
*Viewpoint 5 Looking West (see **Figure 3.6.1-5**) – **Madison Street Corridor***

Proposed Action

While the proposed buildings would be visible adjacent to the northern side of this corridor under this alternative, the buildings themselves would not extend into the right-of-way associated with Madison Street, nor would these buildings affect westerly views looking down this street towards downtown Seattle. As such, no public viewpoint-related impacts are anticipated from the buildings (see **Figure 3.6.1-5**).

Existing Conditions

Proposed Action



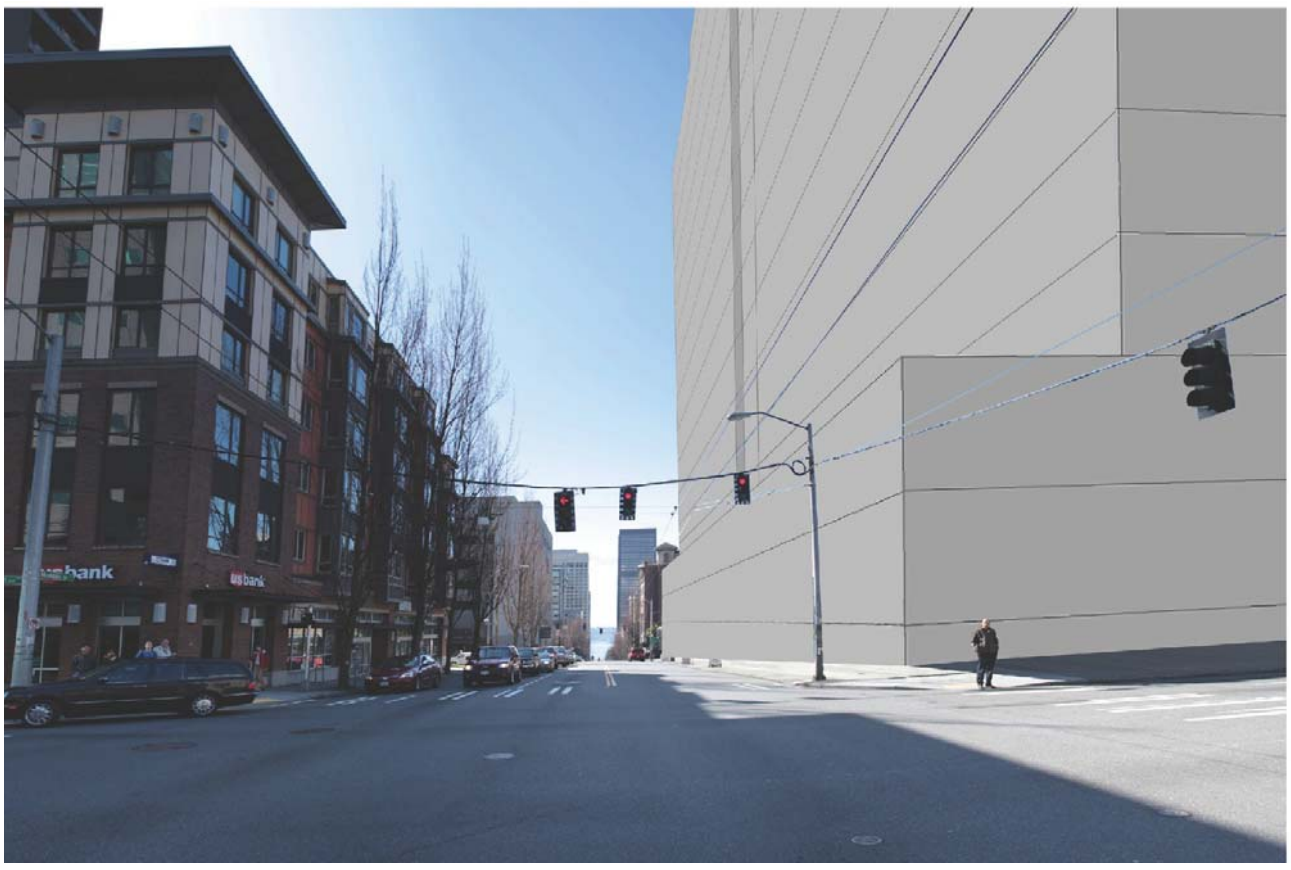
Alternative 5a

Source: SRG, 2012

Figure 3.6.1-4
Viewpoint 4—Madison & Terry, SW Corner looking North

Existing Conditions

Proposed Action



Alternative 5a

Source: SRG, 2012

EA | BLUMEN

Figure 3.6.1-5
Viewpoint 5—Madison & Boren, looking West

Alternative 5a

As noted, ***Alternative 5a*** does not include expansion of the campus boundary to include the **1000 Madison Block**, therefore, the existing visual character of this corridor would not change (see **Figure 3.6.1-5**). As noted previously, future redevelopment of this block is possible, based on existing zoning.

*Viewpoint 7 Looking West (see **Figure 3.6.1-6**) – **Spring Street Corridor***

Proposed Action

While the proposed buildings would frame the sides of this corridor under this alternative, the buildings themselves would not extend into the rights-of-way associated with Spring St. and would not affect westerly views looking down this street towards downtown Seattle (see **Figure 3.6.1-6**).

A skybridge is proposed across the Spring St. corridor to connect buildings within the new and existing VMMC facilities. As shown by **Figure 3.6.1-6**, the proposed skybridge would be visible within this corridor. Due to its location near Boren Ave., the skybridge would likely appear elevated above any westerly territorial views of Elliott Bay and is not expected to affect such views.

Alternative 5a

While the proposed buildings would be visible adjacent to the northern side of this corridor under ***Alternative 5a***, the buildings themselves would not extend into the rights-of-way associated with Spring St., nor would these buildings affect westerly views looking down this street toward Downtown Seattle. As such, no public viewpoint-related impacts are anticipated from the buildings (see **Figure 3.6.1-6**).

*Viewpoint 8 Looking West (see **Figure 3.6.1-7**) – **Seneca Street Corridor***

Proposed Action and Alternative 5a

While the proposed buildings would frame the sides of this corridor in conjunction with the ***Proposed Action*** and ***Alternative 5a***, the buildings would not extend into the right-of-way associated with Seneca St., nor would these buildings affect westerly views looking down this street toward Downtown Seattle.

A skybridge is proposed across the Seneca St. corridor to connect buildings within the new and existing VMMC facilities (see **Figure 3.6.1-7**). This skybridge would be in addition to the existing skybridge. As shown by **Figure 2-5** and **2-8**, the proposed skybridge would likely be located closer to Terry Ave. than to Boren Ave. and that segment of Seneca St. is relatively steep. As such, for the ***Proposed Action*** and ***Alternative 5a***, **Figure 3.6.1-7** shows that the proposed skybridge across Seneca St. would be visible and could affect the territorial view of Downtown Seattle.

Existing Conditions

Proposed Action

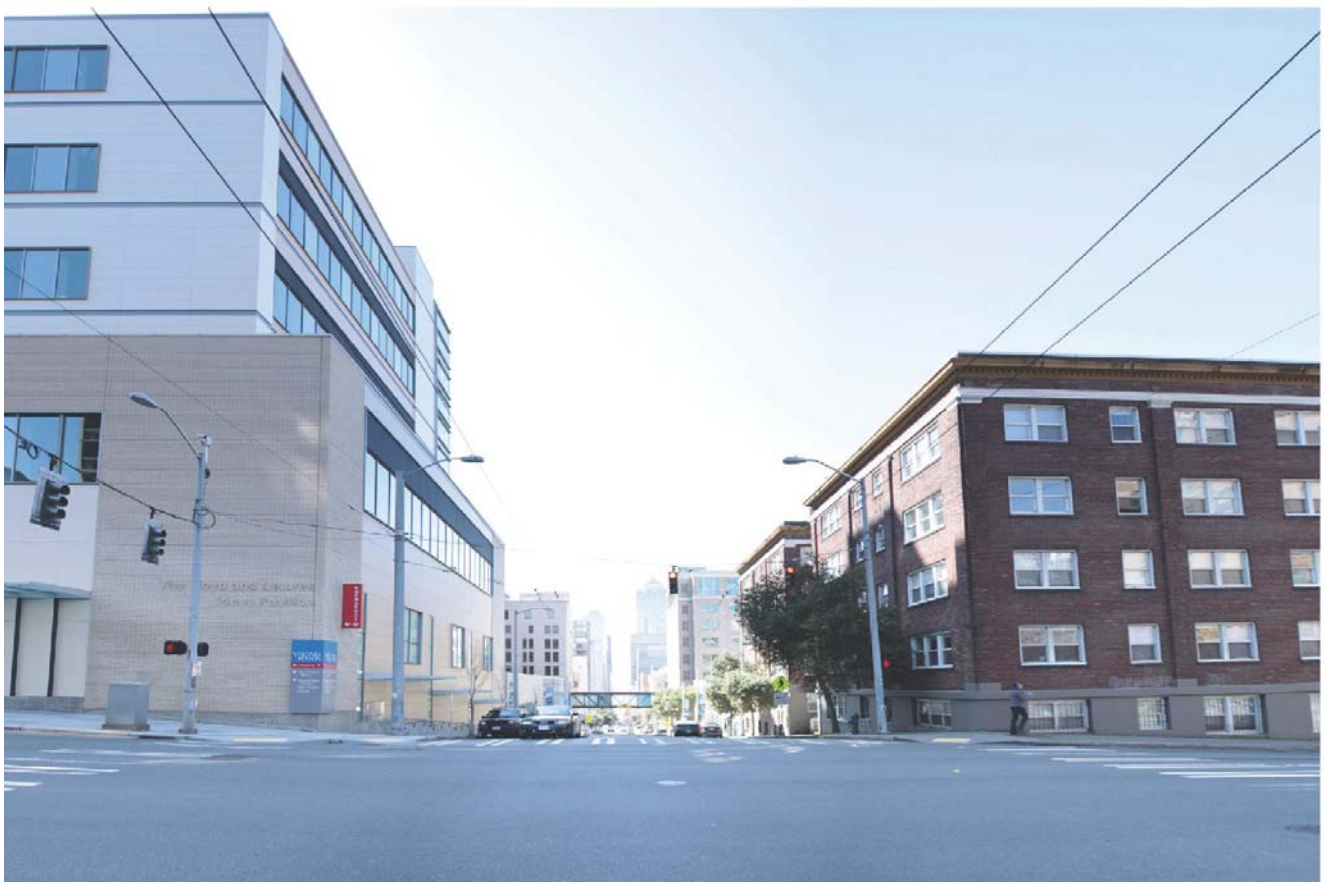
Alternative 5a

Source: SRG, 2012

EA | BLUMEN

Figure 3.6.1-6
Viewpoint 7—Spring & Boren, looking West

Existing Conditions



Proposed Action

Alternative 5a

Source: SRG, 2012

EA | BLUMEN

Figure 3.6.1-7
Viewpoint 8— Seneca & Boren, looking West

*Viewpoint 9 Looking West (see **Figure 3.6.1-8**) – **University Street Corridor***

Proposed Action and Alternative 5a

While the proposed buildings would frame the sides of this corridor under the ***Proposed Action*** and ***Alternative 5a***, the buildings themselves would not extend into the right-of-way associated with University St., nor would these buildings affect westerly views looking down this street toward Downtown Seattle. As depicted by **Figure 2-5** and **2-8**, a skybridge is proposed across the University Street corridor to connect buildings within the new and existing VMMC facilities (see **Figure 3.6.1-8**). The location of the skybridge would likely be closer to Terry Ave. than Boren Ave. and that segment of University St. is relatively steep. As such, for the ***Proposed Action*** and ***Alternative 5a***, **Figure 3.6.1-8** shows that while the proposed skybridge across University St. would be visible, the skybridge would likely appear elevated above any westerly territorial views of Elliott Bay and is not expected to affect such views.

Scenic Routes

*Viewpoint 6 Looking North (see **Figure 3.6.1-9**) – **Boren Street North***

Proposed Action and Alternative 5a

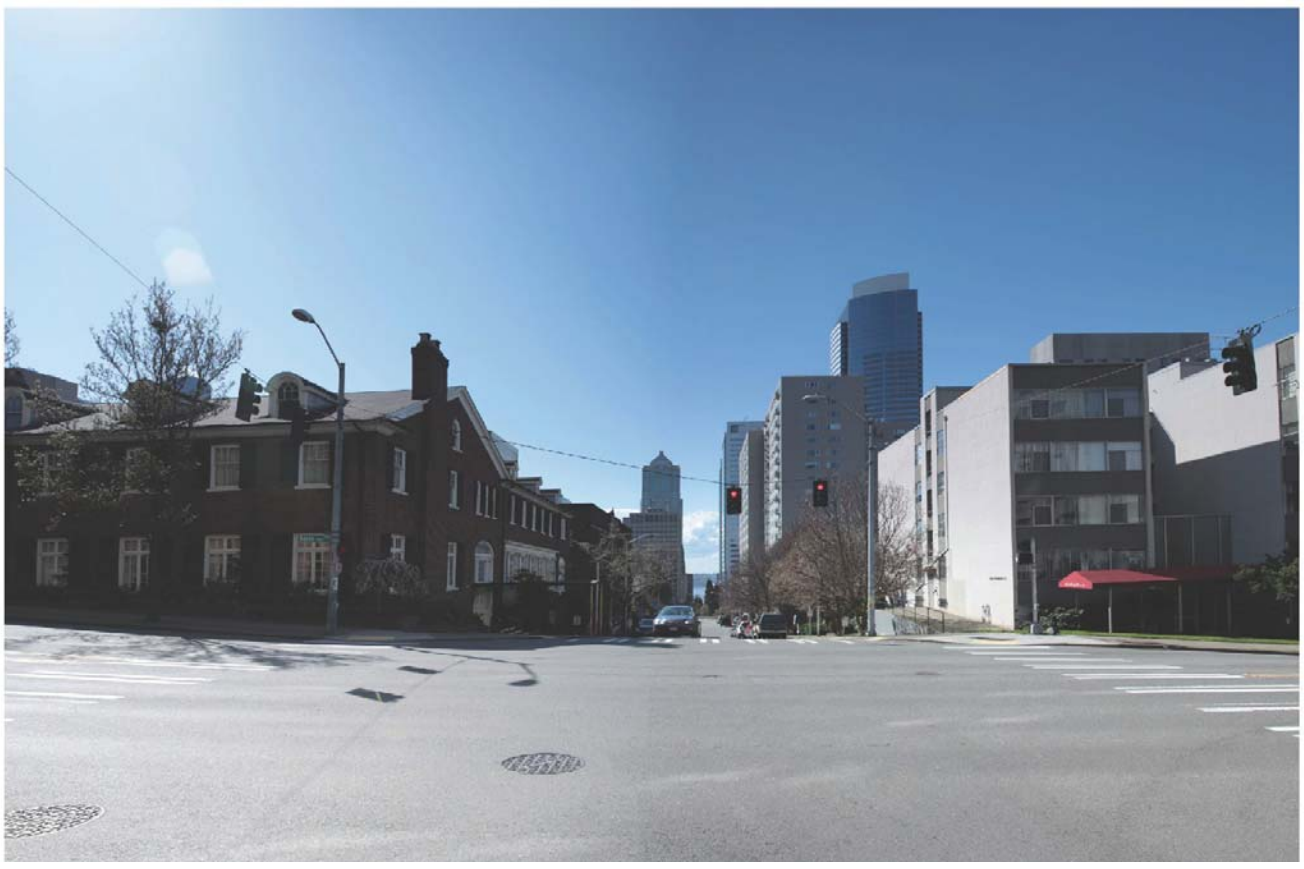
Views north along Boren Ave. would be similar to how they currently exist under these alternatives. While a portion of the proposed buildings would be visible along the corridor, the buildings would not extend into the right-of-way associated with Boren Ave. nor would they affect views looking north in this area. As such, no scenic route-related impacts are anticipated (see **Figure 3.6.1-9**).

*Viewpoint 10 Looking South (see **Figure 3.6.1-10**) – **Boren Street South***

Proposed Action and Alternative 5a

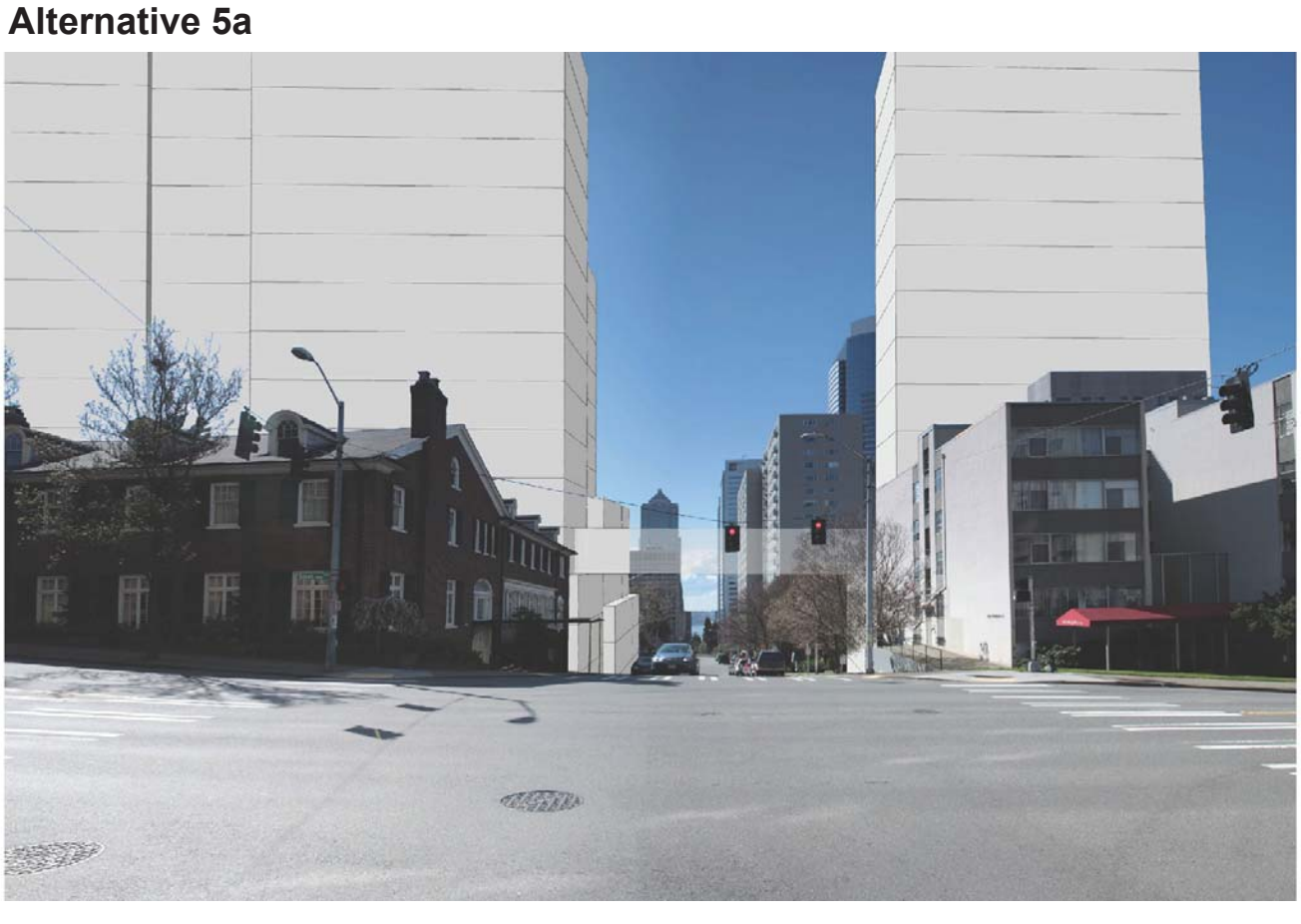
Views south along Boren Ave. would be similar to how they currently exist under these alternatives. While a portion of the proposed buildings would be visible along the corridor, the buildings would not extend into the right-of-way associated with Boren Ave. and would not affect views looking south in this area. As such, no scenic route-related impacts are anticipated (see **Figure 3.6.1-10**).

Existing Conditions



Proposed Action

Alternative 5a



Source: SRG, 2012

EA | BLUMEN

Figure 3.6.1-8
Viewpoint 9—University & Boren, looking West

Existing Conditions

Proposed Action

Alternative 5a

Source: SRG, 2012

EA | BLUMEN

Figure 3.6.1-9

Viewpoint 6— Madison & Boren, looking North

Existing Conditions

Proposed Action

Alternative 5a

Source: SRG, 2012

EA | BLUMEN

Figure 3.6.1-10

Viewpoint 10—University & Boren, looking South

No Action Alternative

The ***No Action Alternative*** would involve no new building construction on the VMMC campus; existing buildings would remain and limited building remodeling would be expected to occur. The existing MIO boundary would remain and no expansion to the **1000 Madison Block** would occur. No impacts to visual resources would be anticipated under the ***No Action Alternative***.

3.6.1.3 Cumulative Impacts

With the ***Proposed Action*** and ***Alternative 5a,*** proposed redevelopment associated with the VMMC campus would be visible from the several public viewpoints, view corridors and scenic routes that are part of this analysis. Although the buildings would frame the viewsheds, as noted, they would not extend into the view corridors. The proposed skybridges, however, would alter views within affected view corridors. Aside from the skybridges, the overall visual character of the identified view corridors is not expected to change significantly from that which presently exists. The height and setbacks of the proposed buildings associated with the ***Proposed Action*** and ***Alternative 5a*** would not encroach upon public rights-of-way and will maintain existing view corridors.

3.6.1.4 Mitigation Measures

View Corridors

Street-level and upper level setbacks are proposed along property lines in most areas of the campus under either alternative, which would maintain the westerly view corridors along Madison, Seneca, Spring and University streets.

Skybridges would be designed and constructed with materials that would contribute to transparency of the skybridge to the extent possible in order to minimize potential impacts to view corridors on campus. Height and width of skybridges would be limited to accommodate the passage of people and supplies between buildings. Approval of the location and final design of skybridges would occur through the City's Term Permit process, which would be sought at the time a potential project requiring such a connection is developed. Conceivably, not all skybridges may be executed, depending on the sequencing of projects and the eventual VMMC space programming that occurs at the time.

3.6.1.5 Significant Unavoidable Adverse Impacts

No significant unavoidable adverse viewshed impacts are anticipated with regard to the buildings that are proposed in conjunction with the ***Proposed Action*** and ***Alternative 5a***. The proposed skybridges, however, will alter view corridors.

3.6.2 AESTHETICS – HEIGHT, BULK & SCALE

The discussion of height, bulk and scale addresses the relationship of potential massing of new VMMC buildings to surrounding development proximate to the VMMC campus boundaries.

Policy Context

The Seattle Municipal Code (SMC) contains specific provisions that describe the scope of the SEPA analysis for the height, bulk and scale analysis. Relevant policies from SMC 25.05.675 are provided below:

G.2 Height, Bulk and Scale. Policies

a. *It is the City's policy that the height, bulk and scale of development projects should be reasonably compatible with the general character of development anticipated by the goals and policies set forth in Section B of the land use element of the Seattle Comprehensive Plan regarding Land Use Categories, the shoreline goals and policies set forth in Section D-4 of the land use element of the Seattle Comprehensive Plan, the procedures and locational criteria for shoreline environment re-designations set forth in SMC Sections 23.60.060 and 23.60.220, and the adopted land use regulations for the area in which they are located, and to provide for a reasonable transition between areas of less intensive zoning and more intensive zoning.*

b. *Subject to the overview policy set forth in SMC Section 25.05.665, the decision-maker may condition or deny a project to mitigate the adverse impacts of substantially incompatible height, bulk and scale. Mitigating measures may include but are not limited to:*

   i. *Limiting the height of the development;*

   ii. *Modifying the bulk of the development;*

   iii. *Modifying the development's facade including but not limited to color and finish material;*

   iv. *Reducing the number or size of accessory structures or relocating accessory structures including but not limited to towers, railings, and antennae;*

   v. *Repositioning the development on the site; and*

   vi. *Modifying or requiring setbacks, screening, landscaping or other techniques to offset the appearance of incompatible height, bulk and scale.*

3.6.2.1 Affected Environment

Existing VMMC Campus

Height, bulk and scale relate to the size of buildings and their relationship to neighboring structures. The City's SEPA policies recognize that physical characteristics of buildings affect the character of neighborhoods. These policies also recognize a need to address building height, bulk and scale as a means to achieve appropriate transition from one zoning district to another.

There is currently a broad range of building types and sizes in the First Hill Neighborhood – from single-family residences, churches, and one- and two-story commercial buildings to mid-rise and high-rise residential buildings. Five of the City's 13 Major Institutions are also located within this neighborhood (VMMC, Swedish Medical Center (First Hill Campus), Seattle University, Harborview Medical Center, and Seattle Central Community College).

The VMMC campus presently encompasses an area of approximately 7.05 acres,[1] below the crest of First Hill in the area known as the West Slope, which slopes from the southeast to the northwest toward Downtown Seattle. The topography of the campus and surrounding areas influences the aesthetic character of VMMC.

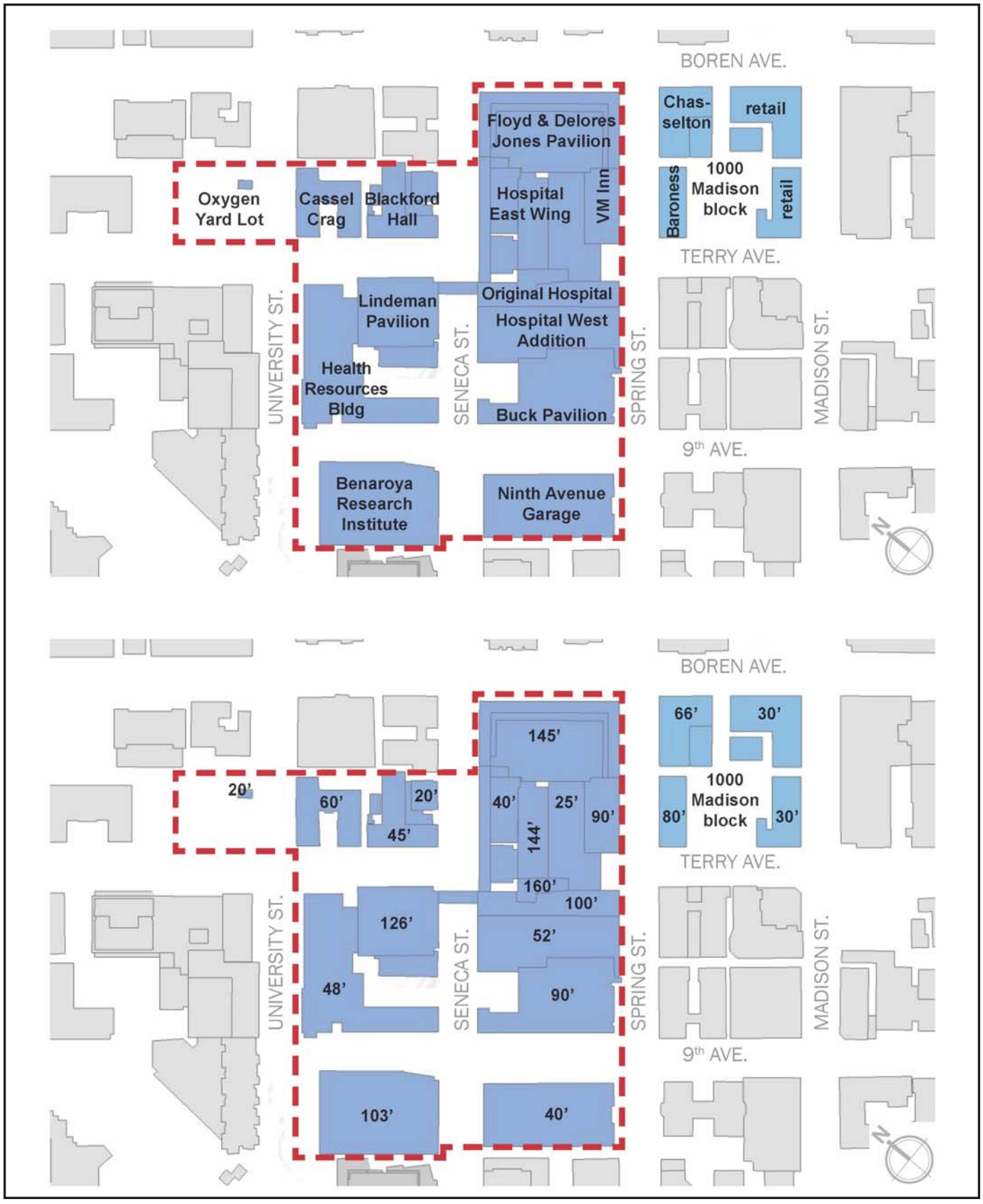
The VMMC campus presently contains 12 buildings comprising a total of approximately 1,277,444 GSF[2] (see **Table 2-1** in **Section II** of this Draft EIS). Medical/hospital buildings comprise the majority of the campus land use. All buildings are multi-story structures – ranging from 2 stories to 14 stories; the tallest two buildings include: the Floyd & Delores Jones Pavilion with a height of approximately 145 ft, and the Original Hospital with a height of 160 ft. Overall, the campus is densely developed with multiple buildings covering entire blocks or half-block areas.

As noted earlier in this Draft EIS, campus buildings have been constructed at various times between 1920 and 2010. With over 90 years of campus growth and development, the architectural styles that are represented by buildings on-campus (and within the expansion area) are diverse. They range from the new and modern Floyd & Delores Jones Pavilion, to the early 20th Century Gothic Revival Cassel Crag building. Five of the twelve buildings were constructed prior to 1943, and four of these have undergone several remodels over the years.

Figure 3.6.2-1 details the approximate heights of existing buildings on the VMMC campus.

1 All of the area excluding public rights-of-way within the MIO boundaries is owned by VMMC.

2 Gross building area differs from gross square ft. for Seattle zoning purposes. Gross building area is a measure of total square ft within a building as measured to the outside of exterior walls and it includes portions of a structure below-grade. Gross floor area per zoning is measured to the inside surface of exterior walls at floor level and it excludes portions of a building that are entirely below-grade.



Source: SRG, 2012

Figure 3.6.2-1

Approximate Existing Building Heights

Also shaping the aesthetic character of the VMMC campus are major arterials that either border or bisect the campus. Because Madison St. and Boren Ave. border the campus, to an extent they provide a buffer between portions of the campus and neighboring offsite development. Other streets and avenues that bisect the campus include: University Street, Seneca Street, Spring Street, Terry Avenue and 9th Avenue.

1000 Madison Block

The **1000 Madison Block** contains 1.4 acres and is developed with 109,870 GSF of uses consisting of: the 6–story hotel (Baroness Hotel), the 5-story apartment building (Chasselton Court Apartments) and low-rise (1-story) retail uses. Several surface parking lots are also present within the central area of the block. See **Figure 3.6.2-1** for the heights of existing buildings within this block.

Site Vicinity

VMMC is located within one of Seattle's most-densely developed neighborhoods. Buildings proximate to the campus are a mix of high-rise, mid-rise and low-rise structures.

Section 3.4, **Land Use** presents a comprehensive overview of the pattern of land uses in the vicinity of the VMMC campus. In summary, immediately north of the VMMC campus (north of the Benaroya Research Institute and the Health Resources building) is the 19-story Horizon House retirement facility. To the north of the University Street surface parking lot is a 4-story nursing convalescent home.

To the east of the University Street surface parking lot (within the same block) are three 5-6 story apartment buildings. Immediately east of the Cassel Crag building is the 3-story Sunset Club. Immediately east of Blackford Hall is a 5-story affordable housing building. Immediately east of the Floyd & Delores Jones Pavilion is a 1-story single-family residential home.

South of the Inn at Virginia Mason is the proposed **1000 Madison Block**. Immediately south of the main onsite hospital buildings (south of Spring Street) are two 4-story apartment buildings (John Alden Apartments and Paul Revere Apartments). To the south of the Ninth Avenue parking garage is a three-building, 14-story, multi-family residential complex (Basrock Northwest Nettleton).

To the west of the 9th Avenue Parking Garage are three multi-family residential buildings including the 11-story Lowell Apartments, the 10-story Emerson Apartments, and the 21-story Royal Manor Condos. Immediately west of the Benaroya Research Institute are two vacant lots, as well as a portion of the City's Central Freeway Park and the City-designated steep slope area. The Pigott Corridor pedestrian route (which is part of Freeway Park) runs adjacent and through the VMMC campus in this area.

3.6.2.2 Impacts of the Proposed Action (6b) and Alternatives

As noted previously, VMMC presently contains approximately 1,277,444 GSF of area within the existing 12 buildings. The *Draft MIMP* indicates that the amount of development on-campus is projected to increase by 1.7 million sq. ft.

Buildings on-campus have been developed over the past 90 years and reflect a diversity of architectural styles and materials. Recent major projects (i.e., Floyd & Delores Jones Pavilion and the Benaroya Research Institute) have undergone an internal review process that evaluates program requirements, design, the relationship to adjacent structures and open spaces, and sustainability. VMMC indicates that a similar process will continue as part of new development. As such, VMMC will continue to exercise internal design review and control over building renovation, as well as new construction, to ensure that potential development is compatible from a design-sense with the existing architectural character of the setting. As required by the MIMP process, VMMC's Standing Advisory Committee will continue to be afforded an opportunity to review and comment on proposed major development projects on-campus, including the proposal's consistency with the adopted Design Guidelines.

Building Heights

Figure 3.6.2-2 depicts a street cross-section along Boren Avenue (key map depicts the location and **Figure 3.6.2-3** depicts a street cross section showing a northerly view of the **1000 Madison Block**, as seen from Madison Street. The purpose of these cross-sections is to show the height relationship of proposed campus development under the ***Proposed Action*** and ***Alternative 5a*** to the maximum allowable development envelope that is possible – either as part of the VMMC MIO or development that may be authorized by zoning – within the context of existing offsite development. Each cross-section is described later in this section.

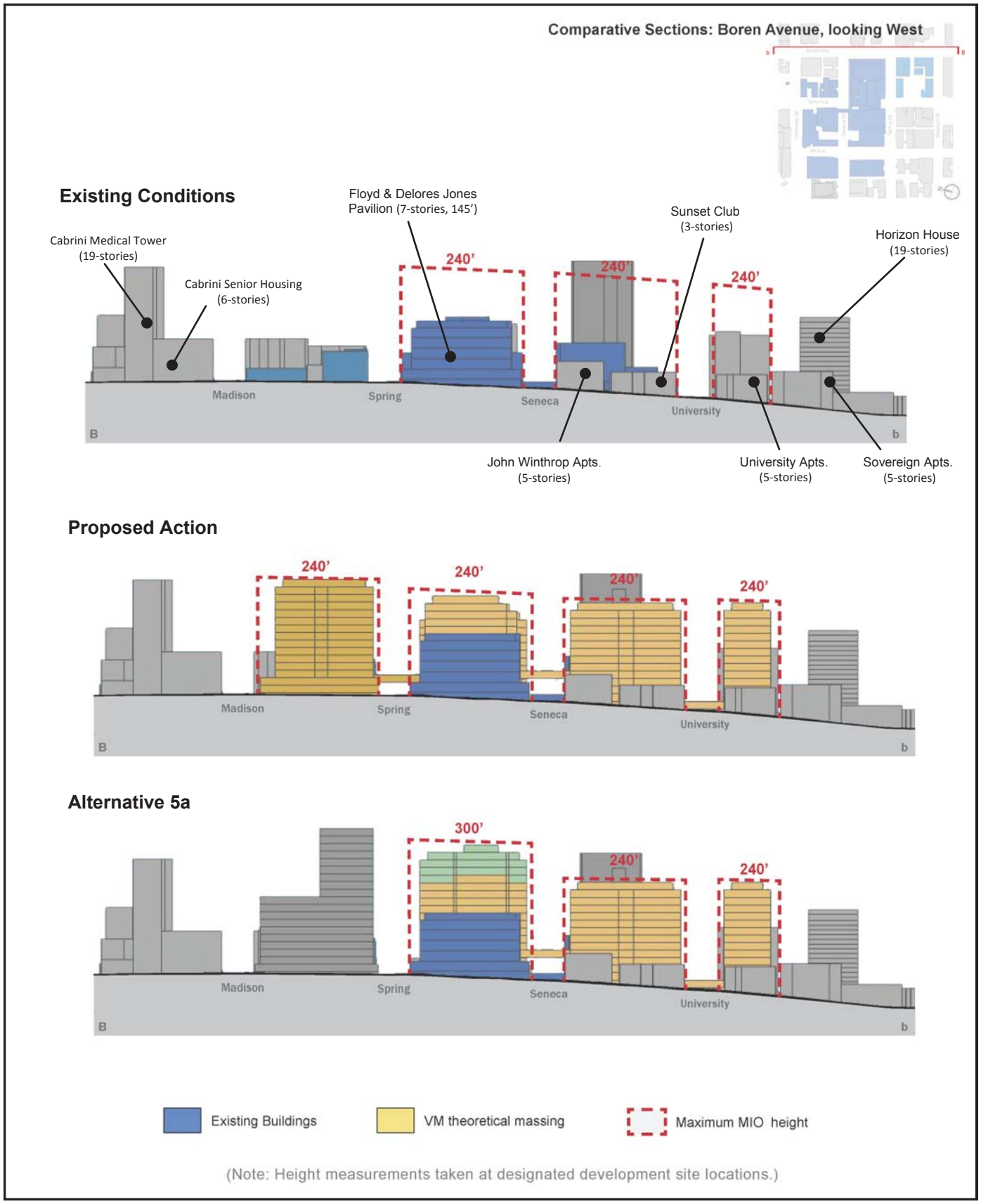
Proposed Action

Under the ***Proposed Action***, the campus building square footage would increase from 1.3 million sq. ft. to 3 million sq. ft. New buildings on the existing campus would be built to heights of 240 ft., except for the Health Resources Building site, which would be built to heights of 190 and 95 ft. (see **Figure 2-8** in **Section II**).

The VMMC MIO boundary would be expanded to include the **1000 Madison Block**. Building heights would be greater than the underlying zoning on the south-half of the **1000 Madison Block** (240 ft. as opposed to 160 ft.) and would be lower than the existing zoning on the north-half of the block (240 ft. as opposed to 300 ft.). Refer to **Figure 2-8** in **Section II** for a graphic depicting an aerial view of the ***Proposed Action*** looking east, showing existing campus buildings and the theoretical massing of new development. As shown, the anticipated height of new buildings would be greater than existing campus buildings to remain, but would be generally similar to some surrounding offsite high-rise development to the north, west and east. A high-rise building can be generally defined as 10-stories or taller. High-rise buildings proximate to the VMMC campus include the Parkview Plaza Condos (18-stories), Cabrini Medical Tower (19-stories) and Decatur Apartments (13-stories).

Boren Avenue Cross-Section (Figure 3.6.2-2)

Figure 3.6.2-2 shows a cross-section of Boren Avenue looking west - from south (Madison Street) to north (University Street). Existing, offsite buildings are depicted in gray, existing VMMC buildings to remain are shown in blue, and proposed new VMMC buildings are shown in yellow. The maximum height allowed under existing zoning is also outlined by a dashed red line.



Source: SRG, 2012

Figure 3.6.2-2

Boren Street Cross Section

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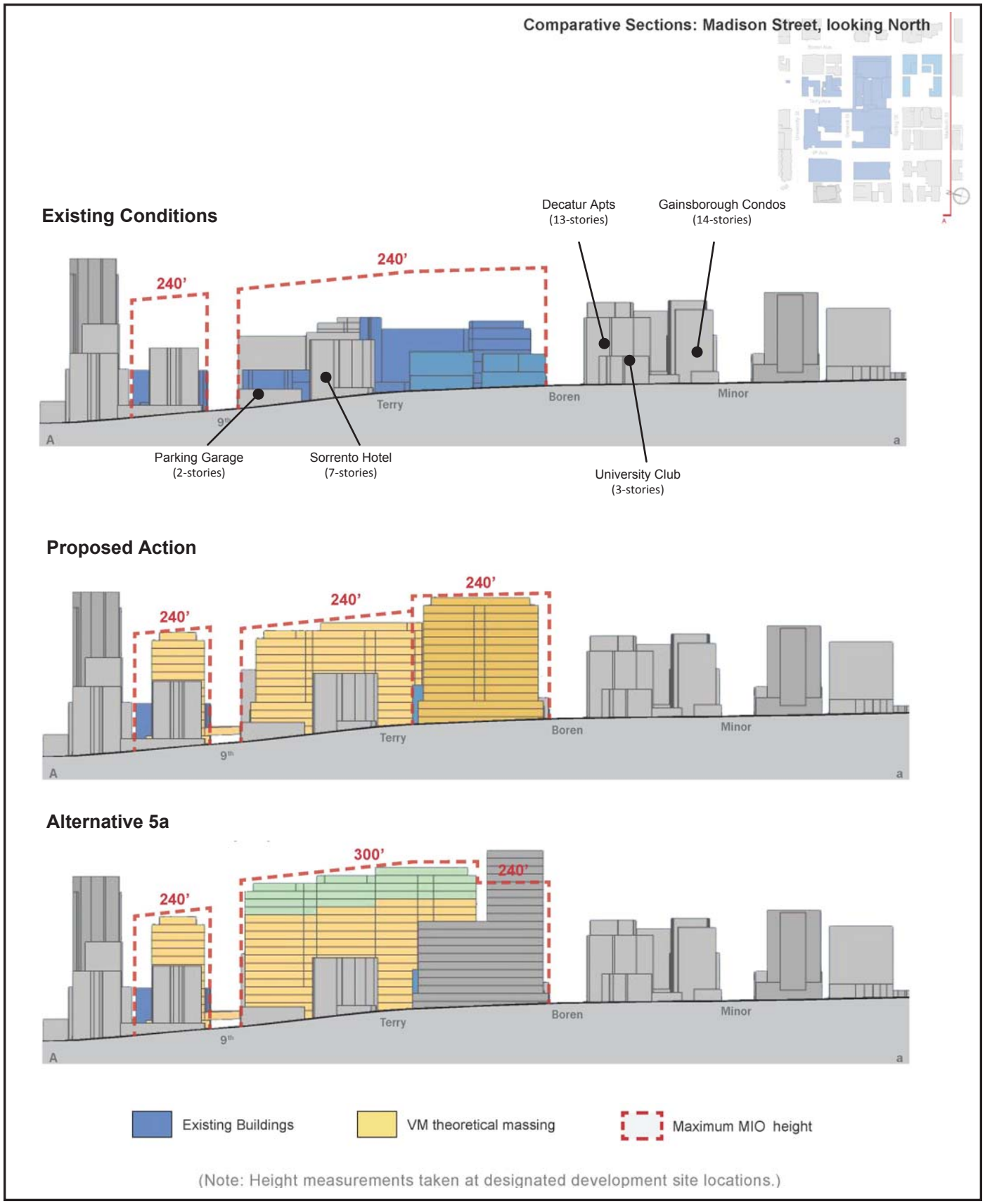

Source: SRG, 2012

Figure 3.6.2-3

Madison Street Cross Section

EA | BLUMEN

The following discussion is a comparison of height impacts, street by street, looking west from Boren Avenue, as depicted by the cross-section in **Figure 3.6.2-2**.

Madison Street

Under the ***Proposed Action***, the VMMC MIO boundary would be expanded to include the **1000 Madison Block**; the height of the proposed development in the south-half of the block would increase from 30 ft. under existing conditions to 240 ft. The height, bulk and scale of the proposed onsite development would be considerably greater than the existing buildings on the site, and taller than adjacent offsite development to the south (the 6-story Cabrini Apartments, gray building on left side of Madison Street). The 240 ft. tall building would be 60 ft. lower than the maximum allowable heights under the existing underlying zoning on the north half of the block (300 ft.), and would be 80 ft. taller than the underlying zoning on the south half of the block (160 ft.). The new 240 ft. buildings would be taller than surrounding offsite development, but generally consistent with the heights of other high-rise buildings in the neighborhood, including: the Parkview Plaza Condos (18-stories), Cabrini Medical Tower (19-stories), Decatur Apartments (13-stories). No significant height impacts would be anticipated to result from the new VMMC development.

Spring Street

Under the ***Proposed Action***, the height of the proposed development in the north-half of the block would increase from 66 to 80 ft. under existing conditions to 240 ft. The height of the proposed onsite development would be considerably taller than the existing building on the site, greater than existing offsite development to the south, and greater than the Floyd & Delores Jones Pavilion to the north.

Under the ***Proposed Action***, development on the north side of Spring Street would increase to 240 ft. The height of the proposed 240 ft. building on the north side of Spring Street, behind the Floyd & Delores Jones Pavilion would be similar to and consistent with the proposed 240 ft. building on the south side of Spring Street.

Seneca Street

Under the ***Proposed Action***, the off-site 5-story John Winthrop Apartment building would be visible in the foreground on the north side of Seneca Street and a new 240 ft. tall VMMC building would be visible behind the apartment building on the same block. The existing Floyd & Delores Jones Pavilion would remain on the south side of Seneca Street, with a new partially visible 240 ft. building in the background. The new 240 ft. tall VMMC building on the north side of Seneca Street would be of considerably greater height than existing development on the east half of the block, as well as the existing Floyd & Delores Jones Pavilion on the south side of Seneca Street. However, although not visible in the cross-section, the on- and off-site development would be buffered by a mid-block alley, and street level and upper (podium) level setbacks, which would modulate the bulk and scale of the new, taller building (see **Figure 3.6.2-2**). Also, as shown by the dashed line in the figure, the new 240 ft. tall VMMC building on the north side of Seneca Street would be less than the maximum building height which could be developed under the underlying zoning on the John Winthrop Apartment building site (300 ft.).

University Street

Under the ***Proposed Action***, the off-site 3-story Sunset Club building would be visible in the foreground on the south side of University Street (to the left), and a new 240 ft. tall VMMC building would be visible behind this building, on the same block. The new 240 ft. tall VMMC building would be of considerably greater height than existing development on the east half of the block. However, street level and upper level building setbacks would be provided (see **Figure 3.6.2-4**) and the height of the new building would be similar to other nearby, offsite development. On the north side of University Street (to the right), the off-site 5-story University Apartment building would be visible in the foreground and a new 240 ft. tall building would be visible behind this building, on the same block. Since existing development on the University/Terry is a surface parking lot, the new building would be considerably taller than existing development within the block, but similar to other nearby off-site buildings. The new building would be partially buffered from the offsite buildings by a mid-block alley. Street-level, and upper level building setbacks would be provided to further modulate the scale of the new buildings (see **Figure 3.6.2-4**).

Madison Street Cross-Section (1000 Madison Block, Figure 3.6.2-3)

Figure 3.6.2-3 shows a cross-section of Boren Avenue looking west - from south (Madison Street) to north (University Street). See the discussion under ***Alternative 5a*** for further detail on this cross-section.

Terry Avenue

Under the ***Proposed Action***, with expansion of the VMMC MIO boundary to include the **1000 Madison Block**, the height of the proposed development in the south-half of the block would increase from 30 ft. under existing conditions to 240 ft. and would increase from 66 - 80 ft. on the north-half of the block to 240 ft. The new high-rise buildings on the **1000 Madison Block** would be taller than the existing development on the south-half of the block (1-story retail buildings), and taller than the 7-story Sorrento Hotel on the west side of Terry Street (to the left). The 240 ft. tall buildings in the background, on the north-half of the block would be taller than existing VMMC buildings, but similar to proposed new VMMC buildings to the north, which are visible in the background, behind the Sorrento Hotel. No significant height impacts would be anticipated; Terry Street would provide a transition between new VMMC development on the **1000 Madison Block** and offsite development, and street level and upper level setbacks would be provided (see **Figure 3.6.2-4**). The proposed 240 ft. development would be similar to other proposed new VMMC buildings to the north, which are visible in the background, behind the Sorrento Hotel.

Boren Avenue

Under the ***Proposed Action***, the height of the proposed development in the south-half of the block would increase from 30 ft. under existing conditions to 240 ft., and from 66 - 80 ft. on the north-half of the block to 240 ft.; the Baroness Hotel would be retained. The proposed 240 ft. tall VMMC development on the south-half of the block would be less than what could be developed on the site under existing zoning (300 ft.), as described under ***Alternative 5a***. No significant height impacts would be anticipated; Boren Avenue would provide a transition between new VMMC development on the **1000 Madison Block** and offsite development (3-story University Club building in foreground). Although not visible in the figure, lower and upper level setbacks

Source: SRG, 2012

Figure 3.6.2-4

Proposed Action—Structure Setbacks

would be provided to modulate the bulk and scale of the new VMMC buildings (see **Figure 3.6.2-4**). The new 240 ft. tall buildings would also be similar in height to off-site development, including the 13-story Decatur Apartments. The proposed 240 ft. development on the north-half of the block would be greater than that described under ***Alternative 5a*** and similar to other proposed new VMMC buildings to the north which are visible in the background, behind the Sorrento Hotel.

Alternative 5a

Under ***Alternative 5a***, the VMMC campus building square footage would increase from 1.3 million sq. ft. to approximately 3 million sq. ft. All proposed development would occur within the existing MIO boundary; no development is proposed within the **1000 Madison Block** expansion area. New buildings would be built to heights of 240 ft. on all portions of the campus except for the following locations (see **Figure 2-5**):

- Original Hospital, Hospital East Wing, Hospital West Wing, Buck Pavilion and Inn at Virginia Mason – increased to 300 ft.
- Health Resources Building site – lowered to 190 ft. and 95 ft.

Refer to **Figure 2-5** in **Section II** for a graphic depicting an aerial view of ***Alternative 5a*** looking east, showing existing campus buildings and the theoretical massing of new development. As shown, the anticipated height of new buildings would be greater than existing campus buildings to remain, but would be generally similar to surrounding offsite development to the north, west and east.

Boren Avenue Cross-Section (Figure 3.6.2-2)

Figure 3.6.2-2 shows a cross-section of Boren Avenue looking west - from south (Madison Street) to north (University Street). See the discussion under the ***Proposed Action*** for further detail on this cross-section. The following discussion is a comparison of height impacts, street by street, looking west from Boren Avenue, as depicted by the cross-section in **Figure 3.6.2-2**. Although under ***Alternative 5a*** the VMMC boundary would not be expanded to the **1000 Madison Block**, the development massing that could occur on this block, based on existing zoning, is shown in dark gray.

Madison Street

As noted, under ***Alternative 5a*** the VMMC boundary would not be expanded to the **1000 Madison Block** and this EIS analysis does not assume development would occur in the south-half of this block, adjacent to Madison Street. Under ***Alternative 5a***, the relationship of the height of structures on the **1000 Madison Block** to surrounding development would remain as under existing conditions.

However, at some future time, the south-half of the block could be redeveloped according to existing zoning with new 160 ft. tall buildings. As such, the new 160 ft. buildings would be considerably taller than existing structures that are on-site and greater than existing offsite development to the south (the 6-story Cabrini Apartments, gray building on left side of Madison Street). However, a new 160 ft. tall building on the **1000 Madison Block** would be consistent with the maximum allowable building heights under the existing zoning (160 ft.) on the other (south) side of Madison Street.

Spring Street

As noted above, the VMMC boundary would not be expanded to the **1000 Madison Block** under ***Alternative 5a***; as such, this EIS analysis does not assume development would occur in the north-half of this block adjacent to Spring Street. Under ***Alternative 5a***, the relationship of the height of structures on the **1000 Madison Block** to surrounding development would remain as under existing conditions.

Conceivably, at some time in the future, a new 300 ft. tall building could be built on the north-half of the **1000 Madison Block** -- on the south side of Spring Street under existing zoning (gray-colored building). A new 300 ft. building on this portion of the block would be 155 ft. taller than the existing Floyd & Delores Jones Pavilion directly to the north (blue building in the foreground), but would be the same height as the proposed new hospital complex on the existing VMMC campus.

On the north side of Spring Street (blue building), the existing 14-story (145 ft. tall) Floyd & Delores Jones Pavilion would remain. West of the Floyd & Delores Jones Pavilion, a new, approximately 300 ft. tall building would be partially visible in the background (yellow/green building). The new 300 ft. building height would be greater than existing onsite development. While the proposed 300 ft. building would be considerably taller than existing adjacent development on the **1000 Madison Block**, the height would be the same as the 300 ft. maximum development allowed under existing zoning on the **1000 Madison Block**.

Seneca Street

Under ***Alternative 5a***, the off-site 5-story John Winthrop Apartment building would be visible in the foreground on the north side of Seneca Street (gray structure to the right), and a new 240 ft. tall VMMC building would be visible behind the apartment building, on the same block. The existing Floyd & Delores Jones Pavilion would remain on the south side of Seneca Street (to the left), with a new partially visible 300 ft. building in the background. The new 240 ft. tall VMMC building on the north side of Seneca Street would be of considerably greater height, bulk and scale than existing development on the east half of the block, as well as the existing Floyd & Delores Jones Pavilion on the south side of Seneca Street. Although not visible in the cross-section, the on- and off-site development would be buffered by a mid-block alley and upper and lower level building setbacks that could modulate the bulk and scale of the new, taller building (see **Figure 3.6.2-4**). Also, as shown by the dashed lines in the figure, the new 240 ft. tall VMMC building on the north side of Seneca Street would be less than the maximum building height that could be developed under the underlying zoning on the John Winthrop Apartment building site (300 ft.).

University Street

Impacts under ***Alternative 5a*** would be as described for the ***Proposed Action***.

Madison Street Cross-Section (1000 Madison Block, Figure 3.6.2-3)

Figure 3.6.2-3 shows a cross-section of Madison Street - from the mid-block alley west of 9th Avenue to Minor Street. Existing, offsite buildings are depicted in gray, existing VMMC buildings to remain are shown in blue, and potential new VMMC buildings are shown in yellow/green. Also, although the VMMC boundary would not be expanded to the **1000 Madison**

Block under ***Alternative 5a***, the height of new buildings that could be developed on this site under existing zoning are shown in dark gray. The following analysis focuses on Terry Avenue and Boren Avenue, as these streets directly border the proposed MIO expansion area (**1000 Madison Block**).

Terry Avenue

This EIS analysis does not assume development would occur in the south-half of this block adjacent to Madison Street. Under ***Alternative 5a***, the relationship of the height, bulk and scale of structures on the **1000 Madison Block** to surrounding development would remain as under existing conditions.

Conceivably, at some point in the future the south-half of the block could be redeveloped with new 160 ft. tall buildings, based on existing zoning, and the north half of the block could be developed with 300 ft. tall buildings. The new 160 ft. ft. tall buildings would be considerably taller than existing development on the south-half of the block (1-story retail buildings), and taller than, but generally similar to, the 7-story Sorrento Hotel on the west side of Terry Street. The 300 ft. tall buildings in the background, on the north-half of this block would also be considerably taller than existing VMMC buildings, but similar to proposed new VMMC buildings to the north which are visible in the background, behind the Sorrento Hotel.

Boren Avenue

Under ***Alternative 5a***, the relationship of the height, bulk and scale of structures on the **1000 Madison Block** to surrounding development would remain as under existing conditions.

As noted, in the future, the south-half of the block could be redeveloped with new 160 ft. buildings, and the north-half of the block could be redeveloped with new 300 ft. tall buildings. New 160 and 300 ft. tall buildings on the **1000 Madison Block,** under the existing zoning, would be taller than existing development on the south-half of the block (1-story retail buildings), and taller than the 3-story University Club, which is across the street on the east side of Boren Avenue. The new 160 ft. tall buildings would be similar to other nearby existing offsite development (i.e., the Decatur Apartments). The 300 ft. tall buildings in the background, on the north-half of the block would be taller than existing VMMC buildings, but comparable in height to proposed new VMMC buildings to the north, which are visible in the background (new center hospital block).

Bulk and Scale

Proposed Action

In addition to greater (taller) building heights, the bulk and scale of new development would also generally be greater under the ***Proposed Action*** as compared to existing conditions and existing surrounding development. For example, development in the vicinity is typified by two to four individual buildings per block, which breaks down the massing and scale of the development footprint. Many blocks are also divided by alleys, which further helps to scale down the bulk of development. Future development in the HR zone would be limited by maximum floor size limits, façade widths and horizontal separation from interior facades. Under the ***Proposed Action***, the central hospital block would be developed with one large building that would connect to the existing Floyd & Delores Jones Pavilion, resulting in a single, large

building that is contiguous over two blocks. However, this is similar to under existing conditions, where under nearly the entire two block area is developed with buildings of varying heights which are connected to each other (refer to **Figure 2-4** in **Section II** for reference).

On the **1000 Madison Block**, a new 240 ft. tall, L-shaped building is proposed, which would cover approximately three quarters of the block. In order to accommodate this building, vacation of the existing mid-block alley would be necessary. As compared to existing conditions, more of the block would be in development, and the bulk and scale of the new building would be much greater than the three existing, low-rise buildings on that portion of the block. Also, the proposed new building would require a modification to the HR zoning regulations, which limit façade widths, floor size and require separation between interior facades on the same lot. The modifications are requested in order to allow for larger floor plates to meet modern hospital layout requirements. The new VMMC building would represent a departure from surrounding development on nearby block, which as mentioned previously, is generally typified by several individual buildings on each block.

With the use of appropriate mitigation measures (e.g. the proposed VMMC design guidelines) and employment of suitable design that includes measures such as articulation, fenestration, façade treatments, greenwalls and building setbacks, no significant impacts would be anticipated to result from the increased bulk and scale of new buildings constructed on the **1000 Madison Block** or the Central Hospital block.

Alternative 5a

The bulk and scale impacts of new buildings constructed under ***Alternative 5a*** would generally be similar to those described for the ***Proposed Action***, within the existing VMMC campus boundary. As with the ***Proposed Action***, no significant impacts would be anticipated with the use of appropriate mitigation measures.

Proposed Setbacks

Proposed Action

Under the ***Proposed Action***, setbacks would vary, but in all cases would meet or exceed underlying zoning development standards. On the Health Resources building site, setbacks would comply with the current Horizon House agreement, as outlined in the *MIMP*.[3] **Figure 3.6.2-4** shows the proposed setbacks that would be employed; as demonstrated, both street level and upper (podium) level setbacks would be provided.

In general, VMMC is proposing 7 to 10 ft. setbacks at the street level, and an additional 10 ft. setback at building heights above 45 ft. Greater setbacks are proposed for portions of the central hospital block. On the **1000 Madison Block**, in order to buffer the new VMMC development from the Baroness Hotel, a 20 ft. structure setback would be provided to the east of the existing Baroness Hotel (to maintain the mid-block alley width) and a 40 ft. structure setback would be maintained to the south of the existing Baroness Hotel (see Section C.3 of the Draft *MIMP* for more detailed information). As well, along Madison Street, VMMC is proposing to set the upper portion of the structure (above approximately 45 ft.) back an additional 30 ft., for a total of 40 ft. from the property line.

[3] City of Seattle Ord. No. 117106

Alternative 5a

For ***Alternative 5a***, VMMC would comply with underlying zoning setback requirements as required in Section 23.45.518 of the Seattle Land Use Code with the exception of the Health Resources building site, where setbacks would comply with the current Horizon House agreement, as outlined in the *MIMP*. The Seattle Land Use Code (Section 23.45.518) lists the required setbacks for development in the HR zone:

- Along street frontages, the development standards require an average setback from the property line of 7 ft. and a minimum setback of 5 ft. for portions of building 45 ft. or less in height, and a minimum of 10 ft. in setback for building facades above 45 ft. in height.

- Along alleys, no setback is required for portions of structures 45 ft. or less in height, and a 10 foot minimum setback is required for structures above 45 ft.

- For lot lines that abut neither a street nor an alley, the development standards require an average setback from the property line of 7 ft. and a minimum setback of 5 ft. for portions of building 45 ft. or less in height (except no setback is required for portions of buildings abutting an existing structure built to the abutting lot line, and a minimum of 20 ft. in setback for building facades above 45 ft. in height).

No Action Alternative

Under the ***No Action Alternative***, no new building development would occur. The aesthetic character of the campus, including the character of height, bulk, scale and setbacks, would remain as described under existing conditions. See **Figure 3.6.2-1** for reference.

3.6.2.3 Mitigation Measures

The following measures could be implemented to better integrate new development into the neighborhood and lessen impacts as related to height, bulk and scale:

- New buildings could be designed in accord with the adopted VMMC Design Guidelines.

- VMMC's Standing Advisory Committee (SAC) will continue to be afforded an opportunity to review and comment on proposed major development projects on-campus, including the proposal's consistency with the adopted Design Guidelines.

- Under the ***Proposed Action***, VMMC would comply with or exceed the setback requirements of the underlying campus zoning, including the Lindeman North and West building sites, which are across the street (to the south) of the 19-story Horizon House, which would be developed in accordance with the Horizon House agreement, as amended in the MIMP. The Horizon House agreement stipulates the following setbacks along University Street:

  - No setback from 0 to 59 ft. above grade;
  - 5 ft. setback from 60 to 95 ft.; and
  - 20-foot setback from 95 to 190 ft.

Along Madison Street, VMMC would set the upper portion of the structure (above approximately 45 ft.) back an additional 30 ft., for a total of 40 ft. from the property line.

- Under ***Alternative 5a***, VMMC would comply with the setback requirements of the underlying campus zoning.

3.6.2.4 Significant Unavoidable Adverse Impacts

With implementation of proposed setbacks, no significant unavoidable adverse impacts are anticipated.

3.7.1 LIGHT AND GLARE

This section describes existing light and glare conditions on the VMMC campus and in the site vicinity and evaluates potential impacts from the EIS alternatives. Mitigation measures to reduce light and glare impacts and a description of significant unavoidable adverse impacts are also provided.

Policy Context

The Seattle Municipal Code (SMC) contains specific provisions that describe the scope of the SEPA analysis for the light and glare analysis. Relevant policies from SMC 25.05.675 are provided below:

K. 2. Light and Glare Policies

- *a. It is the City's policy to minimize or prevent hazards and other adverse impacts created by light and glare.*
- *b. If a proposed project may create adverse impacts due to light and glare the decision maker shall assess the impacts and the need for mitigation.*
- *c. Subject to the Overview Policy set forth in SMC Section 25.05.665, the decision maker may condition or deny a proposed project to mitigate its adverse impacts due to light and glare.*
- *d. Mitigating measures may include, but are not limited to:*
  - *i. Limiting the reflective qualities of surface materials that can be used in the development;*
  - *ii. Limiting the area and intensity of illumination;*
  - *iii. Limiting the location or angle of illumination;*
  - *iv. Limiting the hours of illumination; and*
  - *v. Providing landscaping.*

3.7.1.1 Affected Environment

Existing Light and Glare Conditions

VMMC and 1000 Madison Block

The principal sources of light on the VMMC campus and **1000 Madison Block** are lighting from stationary and mobile sources. On-campus stationary sources of light and potential occasional glare include: interior and exterior building lighting, parking lot lighting, outdoor security lighting, pedestrian-scale lighting, street lighting and occasional temporary glare caused by stationary specular surfaces (i.e., glazing as part of building facades, building windows, and glazed areas of parked cars, etc.). The existing VMMC research and laboratory buildings have high floor-to-floor height and a level of interior lighting which creates a potential for greater light spillage than typical buildings of similar size. Additionally, VMMC campus buildings are typically used at late hours, with interior lighting visible during evening and nighttime hours.

Existing mobile sources of light and glare associated with the campus include light and glare from vehicle headlights (associated with staff and visitors), emergency vehicles, and trucks (delivery vehicles) entering, circulating within and exiting the campus area.

Site Vicinity

Sources of light and glare surrounding the VMMC campus are typical of a highly urbanized metropolitan environment. In a general sense, the sky above the metropolitan area is influenced by light sources throughout the area and as such, the campus and the surrounding area experience a base level of "sky glow" due to their location within this urbanized metropolitan environment. In addition to commercial, institutional, and multifamily residential uses adjacent to campus, major highways/arterials are also located nearby (Interstate 5, Madison Street, and Boren Avenue) – all of which indirectly emanate light into the atmosphere and contribute to "sky glow" via various lighting systems.

Light and glare sources to the north of the VMMC campus primarily include interior and exterior building lighting associated with commercial and multifamily residential buildings, street lighting and light and glare associated with vehicle headlights.

The area to the east of campus includes light and glare associated with multifamily residential, commercial and institutional uses. Specific light and glare sources in this area include interior and exterior building lighting, street lighting, parking lot lighting and light and glare associated with vehicle headlights. The greatest sources of light and glare in the area are associated with Swedish Medical Center and Seattle University due to the size and density of the structures on these campuses, as well as the intensity of the associated institutional uses.

Sources of light and glare south of campus are primarily those associated with multifamily residential and commercial/office uses. Specific sources include interior and exterior building lighting, street lighting and light and glare from vehicle headlights.

The area west of campus includes sources of light and glare associated with I-5 and the Downtown Seattle urban core. Specific light sources include interior and exterior building lighting, street lighting, parking lot lighting and light and glare from vehicle headlights. The greatest source of light and glare in this area is that associated with the I-5.

3.7.1.2 Impacts of the Proposed Action (6b) and Alternatives

While vehicle headlights and glazing (and/or specular surfaces on vehicles) occasionally create glare, the principal source of glare associated with most development projects is sunlight reflected from specular surfaces on building facades. Factors influencing the amount of reflective solar glare that may occur include: weather (e.g., cloud cover); building height, width and orientation of the façade; percentage of the façade that is glazed or composed of specular material; reflectivity of the glass or specular surfaces; design relationship between the glazed and non-glazed portions of the façade (e.g., glass inset from the sash, horizontal and vertical modulation); the color and texture of building materials that comprise the façade; and the proximity of other intervening structures or significant landscaping.

Structures and, to a limited extent, vegetation can mitigate the environmental impacts of reflected solar glare from glazing. Such can occur if these mitigating factors are located *between* the sun and the glass or specular surface or *between* the reflective surface of the façade and the area potentially affected by reflected solar glare. While coniferous and/or evergreen vegetation typically afford the greatest amount of mitigation, at times deciduous vegetation can also restrict the amount of solar glare that is reflected from glazing -- from approximately late April to late October when leaves are present. Street trees in the vicinity of

the project site are deciduous. Between late October and late April, while the amount of glare restriction afforded by deciduous trees is substantially less (influenced by the density of the branches), even during this time of the year they can partially restrict and/or diffuse the amount of reflected solar glare emanating from glazed surfaces below a height of 20-30 ft.

Proposed Action (Alternative 6b)

Development under the ***Proposed Action*** would result in additional light associated with stationary and mobile sources. New and renovated structures under the ***Proposed Action*** would provide additional light sources on the VMMC campus, including interior and exterior building lighting and security lighting. Additional vehicular traffic associated with more-intensive campus development and increased activity levels from additional patients, visitors and medical staff would result in additional light from vehicles entering and exiting the campus.

It is anticipated that light emanating from new development on the campus (structures, security lighting, pedestrian lighting, etc.) would be similar to existing development on-campus, particularly more recently constructed buildings, such as the Floyd & Delores Jones Pavilion and the Benaroya Research Institute. Areas immediately adjacent to proposed development sites could experience some light spillage; however, lighting design standards, as well as potential VMMC campus landscaping, would help to minimize potential impacts to these uses.

The proposed buildings would primarily include office, research and medical uses. The overall level of light from the proposed buildings under the ***Proposed Action*** would be typical of research and administrative buildings in an urban setting, as well as existing buildings on the VMMC campus and other buildings in the area. Research and laboratory buildings tend to have high floor-to-floor height and intensive interior lighting, creating greater potential for light spillage than typical buildings of similar size. Additionally, lab buildings are typically 24-hour operations, so interior lighting could be visible during nighttime and evening hours, particularly to residents in immediately adjacent residential development. Because of Energy Code requirements, however, glazing in new buildings is often tinted slightly in order to reduce heat gain within the structure. This has the added benefit of lessening the obtrusiveness of light within a building as viewed from outside. Proposed buildings could include discrete window openings, as opposed to glass curtain walls, and light associated with new building development would likely be similar to that associated with existing major medical buildings in the vicinity. Additionally, the design of exterior lighting associated with new buildings would incorporate features to minimize the amount of light spillage, including the use of shields on exterior light fixtures to direct light downward and away from sensitive receptors.

Similarly, the presence of glare would depend on the viewer's location, what the viewer is trying to see, and on the distribution of intervening buildings, terrain and vegetation. The primary sources of glare from the ***Proposed Action*** would be direct glare from lighting sources (i.e. building, security) and reflective solar glare from specular surfaces (i.e. glazing, luminaire housings). The impacts of glare are difficult to quantify, as varying conditions, such as ambient light levels, reflective characteristics of surfaces, and atmospheric conditions cause the level of impact to vary considerably on a daily basis.

If deemed appropriate, depending upon building materials proposed and proximity to a major arterial, once a future building design is known, a solar glare analysis could be performed in conjunction with SEPA review of the proposed structure's Master Use Permit application. Such analysis would consider the sun angle at various times of day and various times of the year. Of

equal importance, solar glare analyses are often conducted to evaluate to the probable impact on a motorist's vision. Key considerations are the importance of an adjacent roadway (amount of traffic carried) and time of day that the greatest number of motorists may be affected (typically peak hour traffic periods).

During the daylight hours, development associated with the ***Proposed Action*** would not add any source of lighting that would cause any noticeable or significant glare impacts. In general, the number of structures with the potential to reflect daytime light in a specular manner (i.e., windows), would increase as a result of proposed development under the ***Proposed Action***. Daytime reflection and nighttime headlight glare from vehicular traffic would also increase in proportion to the increase in activity levels from additional patients and medical staff and the amount of traffic on campus.

The proposed lighting systems could potentially contribute to "sky glow" from light emitting directly into the atmosphere and from light reflected by pavement and/or brightly lit surfaces. The extent of "sky glow" is dependent on the amount of water or particulate matter that is in the air for the light to strike, as well as the extent to which the amount of upward-directed light is controlled (i.e., type of lighting system). There is no known recognized industry standard to measure or quantify "sky glow."

Additional development would occur within the **1000 Madison Block** and would result in new sources of light and glare within this block similar to those that currently exist on the VMMC campus. Development under the ***Proposed Action*** would be perceived as a continuation of the VMMC campus light and glare conditions; no significant impacts are anticipated.

Alternative 5a

Under ***Alternative 5a***, it is assumed that redevelopment would, in general, occur as described under the ***Proposed Action*** within the existing VMMC campus, however, no additional development would occur within the **1000 Madison Block**. Light and glare impacts could be expected to be similar to those described for the ***Proposed Action***.

Although no development of the **1000 Madison Block** would occur under ***Alternative 5a***, high-rise commercial and/or residential buildings could be built on this site under the existing zoning. Such buildings could be expected to emit light and glare in a manner consistent with surrounding commercial and multifamily residential buildings in the immediate vicinity. The amount of light and glare emitted could be somewhat less than which would occur with the development of hospital-related buildings under the ***Proposed Action***.

No Action Alternative

Under the ***No Action Alternative***, no new building development and minimal changes in campus activity levels would occur. Light, glare and shadow conditions on the VMMC campus and **1000 Madison Block** would remain as described under existing conditions and no additional stationary light and glare sources would be developed on campus.

3.7.1.3 Mitigation Measures

The following mitigation measures could minimize potential impacts from light and glare:

- Light spillage and light trespass, including direct glare, could be controlled through lighting design measures, such as luminaire locations, light distributions, aiming angles, mounting heights, and shielding.

- Use of street trees, façade modulation, and building materials with relatively low-reflectivity at street level would minimize reflective glare-related impacts to pedestrians, motorists, and nearby residents.

- Landscaping and screening would be used at ground level to obstruct reflected glare from impacting off-site receptors.

- Street-level retail activities would be designed to shield light to minimize spilling over onto adjacent residential areas.

- Interior lighting could be equipped with automatic shut-off times.

- Parking lots and parking structures could include landscaping or screens to obstruct light and glare caused by vehicle headlights.

- Pedestrian-scale lighting would be provided consistent with code, function and safety requirements. Exterior lighting would include fixtures to direct the light downward and/or upward and away from off-site residential land uses.

- To limit glare impacts, new buildings could be designed with low-reflective glass, window recesses and overhangs, and façade modulation.

- The amount of reflective surfaces could be limited.

3.7.1.4 Significant Unavoidable Adverse Impacts

Development under the proposed VMMC *MIMP* would result in new sources of light and glare to the VMMC campus, **1000 Madison Block** and site vicinity. With proposed mitigation measures, significant light and glare impacts to on-site and surrounding uses would not be anticipated.

3.7.2 SHADOWS

This section describes existing shadow conditions on the VMMC campus and in the site vicinity and evaluates potential impacts from the EIS alternatives. Mitigation measures to reduce impacts from shadows and a description of significant unavoidable adverse impacts are also provided.

Policy Context

The Seattle Municipal Code (SMC) contains specific provisions that describe the scope of the SEPA analysis for the shadow analysis. Relevant policies from SMC 25.05.675 are provided below:

Q.2. Shadows on Open Spaces Policies

It is the City's policy to minimize or prevent light blockage and the creation of shadows on open spaces most used by the public.

a. *Areas outside of downtown to be protected are as follows:*

   i. *Publicly owned parks;*
   ii. *Public schoolyards;*
   iii. *Private schools which allow public use of schoolyards during non-school hours; and*
   iv. *Publicly owned street ends in shoreline areas.*

b. *Areas in downtown where shadow impacts may be mitigated are:*

   i. *Freeway Park;*
   ii. *Westlake Park and Plaza;*
   iii. *Market (Steinbrueck) Park;*
   iv. *Convention Center Park; and*
   v. *Kobe Terrace Park and the publicly owned portions of the International District Community Garden.*

c. *The decision maker shall assess the extent of adverse impacts and the need for mitigation. The analysis of sunlight blockage and shadow impacts shall include an assessment of the extent of shadows, including times of the year, hours of the day, anticipated seasonal use of open spaces, availability of other open spaces in the area, and the number of people affected.*

d. *When the decision maker finds that a proposed project would substantially block sunlight from open spaces listed in subsections Q2a and Q2b above at a time when the public most frequently uses that space, the decision maker may condition or deny the project to mitigate the adverse impacts of sunlight blockage, whether or not the project meets the criteria of the Overview Policy set forth in SMC Section 25.05.665.*

e. *Mitigating measures may include, but are not limited to:*
   i. *Limiting the height of the development;*
   ii. *Limiting the bulk of the development;*

iii. Redesigning the profile of the development;
iv. Limiting or rearranging walls, fences, or plant material;
v. Limiting or rearranging accessory structures, i.e., towers, railing, antennae; and
vi. Relocating the project on the site.

3.7.2.1 Affected Environment

Existing Shadow Sources

VMMC Campus and 1000 Madison Block

Existing buildings, as well as a small amount of mature vegetation, on the VMMC campus are the primary sources of shadows. Buildings range from one to 14 stories in height, with the tallest buildings being the 9-story Lindeman Pavilion and 14-story Main Hospital Complex. The majority of the buildings on campus range from 2 to 8-stories in height. A few mature trees are located throughout the campus and also contribute to localized shadowing on-campus. Two existing open space areas are located on-site. A 6,000 sq. ft. portion of the Pigott Corridor is located north of and adjoining the Benaroya Research Institute and is identified as "dedicated open space." A 3,400 sq. ft. plaza is located west of Lindeman Pavilion; this area is identified as "dedicated open space."

Site Vicinity

Due to the urban metropolitan character of the surrounding area, the primary sources of shadows in the vicinity of the VMMC campus and the **1000 Madison Block** are existing buildings. Buildings in the general area that produce the largest amount of shadows include highrise buildings, such as multifamily residential and commercial structures to the north; multifamily residential structures to the east; multifamily residential, commercial, and retail structures to the south; and multifamily residential structures to the west. As a result of the urbanized nature of the surrounding areas, trees and other landscaping are not a major producer of shadows, except near the Pigott Corridor and Freeway Park, which is located immediately northwest of the VMMC campus.

Existing Shadow Conditions

Seattle's SEPA policies aim to "minimize or prevent light blockage and the creation of shadows on open spaces most used by the public."[1] Policy background, however, indicates that "[t]he City's Land Use Code (Title 23) attempts to protect private property from undue shadow impacts through height, bulk and setback controls, but it is impractical to protect private properties from shadows through project-specific review."[2] The SEPA policies identify specific Downtown parks where mitigation of shadow impacts may be considered. Of the five identified, Freeway Park (a portion of which is adjacent to the northwest corner of the VMMC campus, near the Benaroya Research Institute) is a park where shadow impacts may be mitigated. A portion of Freeway Park's Pigott Corridor (a pedestrian pathway) is also located on-site, north of the Benaroya Research Institute. Areas located outside of Downtown that are identified in the City's SEPA policies and that are to be protected include: publicly-owned parks; public schoolyards; private

1 Seattle Municipal Code Chapter 25.05.675 Q2.
2 SMC 25.05.675Q.1.d.

schools that allow public use of schoolyards during non-school hours; and publicly-owned street ends in shoreline areas. No other public parks or schoolyards are located proximate to the site. The 3,400 sq. ft. plaza that is located on-site, adjacent to Lindeman Pavilion, is not an official City-designated area where shadow impacts may be mitigated. See **Figure 2-6** in **Section II** for the location of these open space/park areas.

Beyond weather conditions, the relative amount of shadow and sun available at the pedestrian level depends upon multiple factors; the most relevant of these for the study area include: topography, the built environment (structures and street grid orientation) and vegetation.

Shadows cast by buildings create a striped or stepped pattern of alternating sunny and shady areas at street level. These patterns are constantly changing with the sun angle and vary according to the season. Generally speaking, greater building heights extend the length of the shadow cast, and increased mass (or cross-sectional width) widens the shadow cast by a building. The shadows of tall buildings extend farther from a building, but their effects on more distant locations are of shorter duration, because the sun's motion translates into faster movement of the shadow over the ground. Buildings with greater mass would create wider shadows and an increased amount of shaded area on the immediately adjacent streets and public spaces, but the reach of the shadow would be limited by the building's height.

The amount and impact of shadows cast by a group of buildings depends upon their relative location, spacing and orientation (e.g., some building arrangements may result in overlapping shadows, or cast shadows in patterns that are not detrimental to public areas where solar access is desirable).

Building height and bulk are the main factors with regard to shadow analyses, but other characteristics – such as street level and/or upper level setbacks, spacing between buildings, roof overhangs, rooftop appurtenances, street level canopies and marquees – can significantly modify the total amount and pattern of sun and shadow on the streetscape.

3.7.2.2 Impacts of the Proposed Action (6b) and Alternatives

This section of the Draft EIS contains shadow diagrams (**Figure 3.7-1** to **Figure 3.7-4**) that depict shading from the proposed VMMC campus for vernal equinox (approx. March 21st), summer solstice (approx. June 21st), autumnal equinox (approx. Sept. 21st), and winter solstice (approx. December 21st). The following analysis summarizes shadow impacts for various times of the day on each of these key days of the solar year. While these key days of the solar year and times of the day depict worst-case impacts, shadow-related impacts can occur at other times of the day throughout the year. Because of the earth's rotation, the duration of shadow-related impacts varies for a stationary observer[3] based on season, depending upon the width of the shadow. The shadow graphics have been adjusted to compensate for topography and, in the case of vernal equinox, summer solstice, and autumnal equinox, daylight savings time.[4]

The figures and accompanying text below describe possible shadow impacts to Freeway Park and the on-campus open space that is proposed, in the context of shading from existing and

[3] The rate of change of the sun's angle relative to the earth varies widely by season – from about 5 degrees horizontally and 2 degrees vertically every 15 minutes in June to 3 degrees horizontally and 1 degree vertically every 15 minutes in December.

[4] Pacific Daylight Savings Time (PDST) applies to shadow impacts associated with spring equinox, summer solstice and autumnal equinox.

proposed campus development within one block of the campus. Under the ***Proposed Action***, the on-site open space would be located on the Health Resources Building site, along University Street (see **Figure 2-6**). Under ***Alternative 5a***, the on-site open space would be located to the west of the existing Health Resources Building, along 9th Avenue. The City's SEPA policies address shadow impacts with consideration given to the effect "at times when the public most frequently uses that space."[5]

Vernal (Spring) Equinox (refer to **Figure 3.7-1**)

Sunrise on vernal equinox (approx. March 21st) occurs at about 6:11 AM and sunset at 6:21 PM. The extent of possible shading from existing buildings and proposed development must also be considered within the context of climatic data for the month (e.g., on average the number of clear, partly cloudy and cloudy days). Data[6] indicate that on average, March has 4 clear days, 8 partly cloudy days and 19 cloudy days.[7]

Figure 3.7-1 addresses existing shadow conditions together with shadows under the ***Proposed Action*** and ***Alternative 5a*** for the vernal equinox at 9 AM, 12 PM and 3 PM, respectively. The shadow diagrams are described below; Pacific Daylight Savings Time is in-effect on this day.

9 AM

- ***Existing Conditions*** **-** Shadows from VMMC campus development extend in a northwesterly direction and periodically shade portions of Freeway Park (both on- and off-site segments), as well as the on-site plaza west of the Lindeman Pavilion. The 19-story Horizon House building to the north of the VMMC campus also contributes to shading of Freeway Park at this time of the day on this day of the year, as will the proposed 802 Seneca residential tower that has just been approved by the City.

- ***Proposed Action*** **-** Shadows from VMMC campus development would extend in a northwesterly direction and would periodically shade the on-site open space bordering University Street. An existing building that would remain (Benaroya Research Institute) would continue to contribute to shading of Freeway Park, as described under existing conditions.

- ***Alternative 5a*** **-** Shadows from VMMC campus development would extend in a northwesterly direction and would shade all of the on-site open space along 9th Avenue. An existing building that would remain (Benaroya Research Institute) would continue to contribute to shading of Freeway Park, as described under existing conditions.

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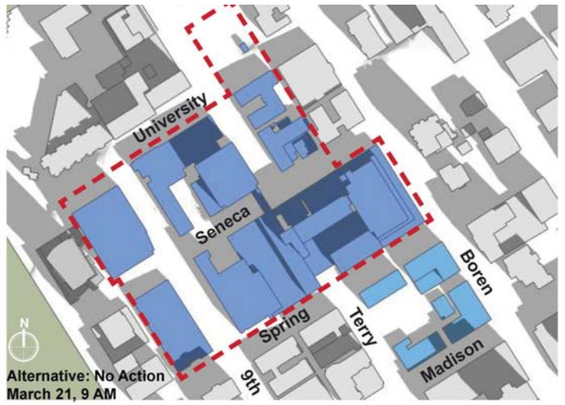
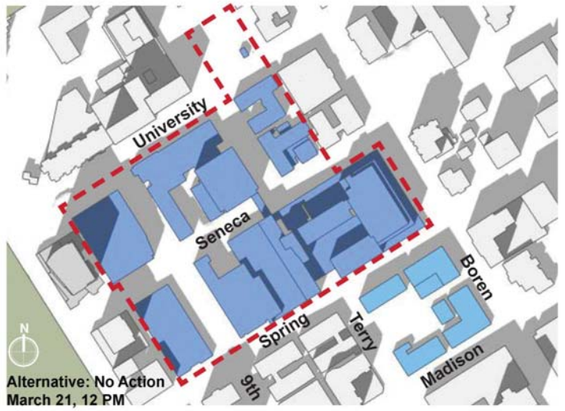
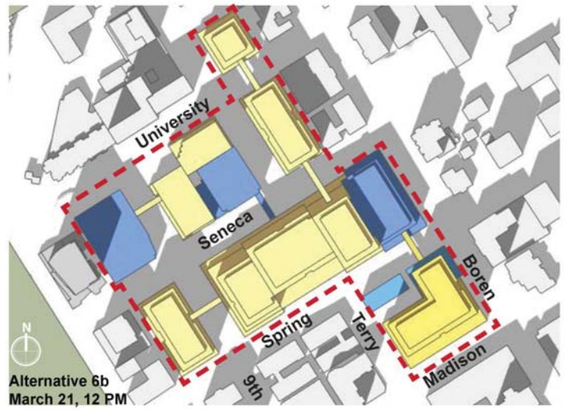
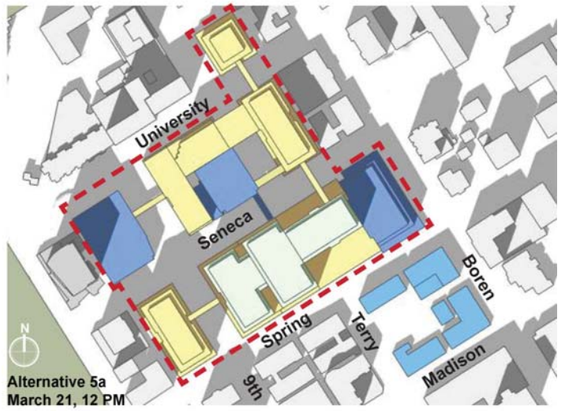
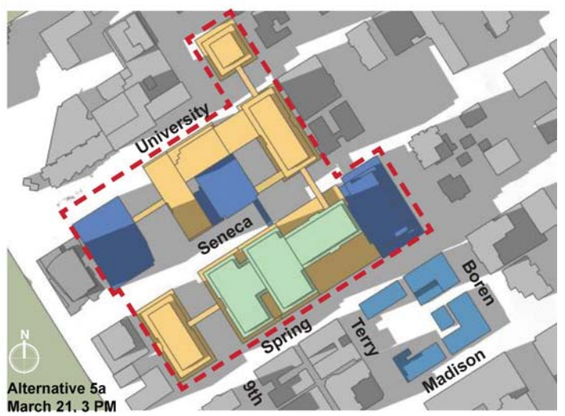
5 Ibid.

6 NOAA, 2005.

7 NOAA defines a clear day as one with zero to 3/10 average sky cover, a partly cloudy is one with 4/10 to 7/10 tenths average sky cover and a cloudy day is one with 8/10 to 10/10 tenths average sky cover.

	Existing Conditions	Proposed Action	Alternative 5a
9AM			
12PM			
3PM			

Source: SRG, 2012

Figure 3.7-1

Shadow Studies—Vernal Equinox, March 21st

EA | BLUMEN

12 PM

- ***Existing Conditions -*** Shadows from VMMC campus development extend in a northerly direction and periodically shade portions of Freeway Park (both on- and off-site segments), as well as portions of the on-site plaza west of the Lindeman Pavilion.

- ***Proposed Action -*** Shadows from VMMC campus development would extend in a northerly direction and would periodically shade portions of the on-site open space bordering University Street. An existing building that would remain (Benaroya Research Institute) would continue to contribute to shading of Freeway Park, as described under existing conditions.

- ***Alternative 5a -*** Shadows from VMMC campus development would extend in a northerly direction and would periodically shade portions of the on-site open space along 9th Avenue. An existing building that would remain (Benaroya Research Institute) would continue to contribute to shading of Freeway Park, as described under existing conditions.

3 PM

- ***Existing Conditions -*** Shadows from VMMC campus development extend in an easterly direction and shade the on-site plaza west of the Lindeman Pavilion. Freeway Park is not affected at this time of day.

- ***Proposed Action -*** Shadows from VMMC campus development would extend in an easterly direction and would shade a small portion of the on-site open space bordering University Street. This shading would largely come from the Benaroya Research Institute building and would be generally similar to that which occurs under existing conditions at this time of day on this day of the year. Freeway Park would not be affected at this time of day.

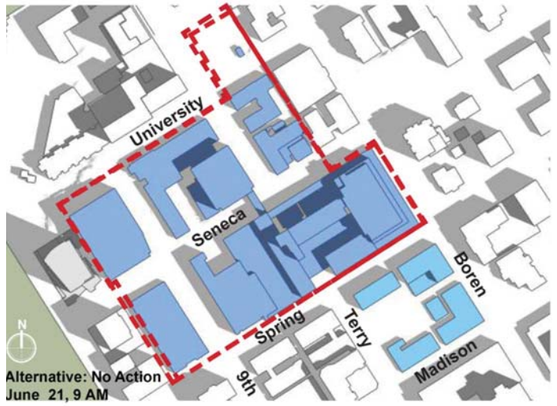
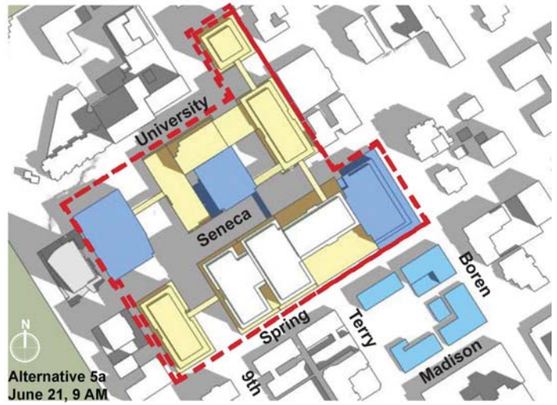
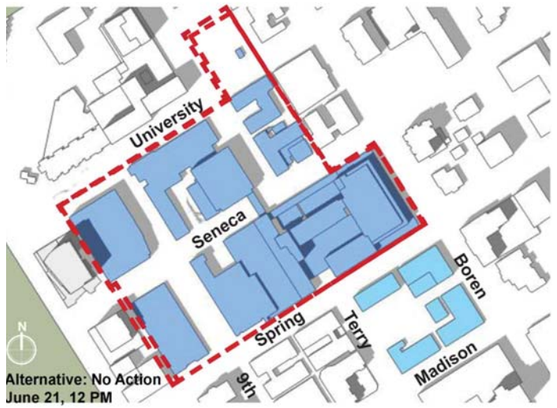
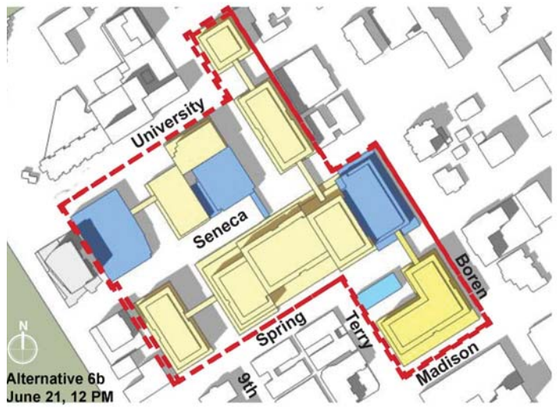
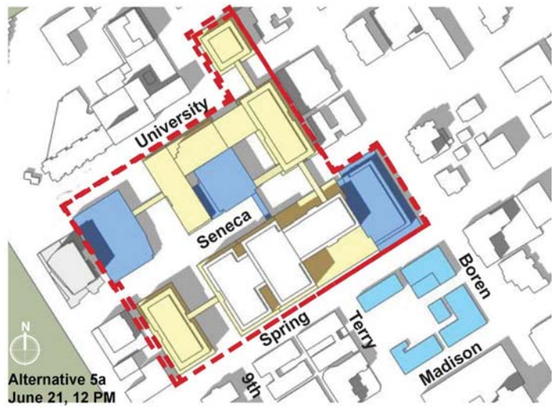
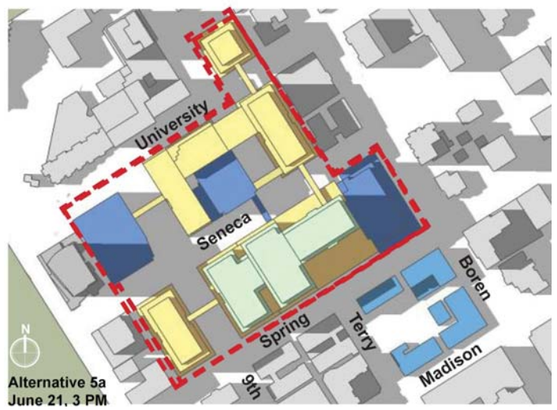
- ***Alternative 5a -*** Shadows from VMMC campus development would extend in an easterly direction and would shade portions of the on-site open space along 9th Avenue. This shading would largely come from the Benaroya Research Institute building and would be generally similar to that which occurs under existing conditions at this time of day on this day of the year.

Summer Solstice *(*refer to **Figure 3.7-2**)

Sunrise on summer solstice (approx. June 21st) occurs at about 5:11 AM and sunset at 9:10 PM. Pacific Daylight Savings Time remains in-effect on this day. The extent of possible shading from the proposed development must be considered within the context of climatic data for the month (e.g., on average the number of clear, partly cloudy and cloudy days). Data[8] indicate that on average, June has 7 clear days, 8 partly cloudy days and 15 cloudy days.[9]

[8] op cit.

[9] NOAA defines a clear day as one with zero to 3/10 average sky cover, a partly cloudy is one with 4/10 to 7/10 tenths average sky cover and a cloudy day is one with 8/10 to 10/10 tenths average sky cover.

	Existing Conditions	Proposed Action	Alternative 5a
9AM			
12PM			
3PM			

Source: SRG, 2012

Figure 3.7-2

Shadow Studies—Summer Solstice, June 21st

EA | BLUMEN

As indicated by **Figure 3.7-2** for summer solstice, shadows from existing campus development, together with shadows from other nearby buildings, were evaluated at 9 AM, 12 PM, and 3 PM and are described below.

9AM

- ***Existing Conditions -*** Shadows from VMMC campus development extend in a northwesterly direction and periodically shade portions of Freeway Park (both on- and off-site segments), as well as the on-site plaza west of the Lindeman Pavilion.

- ***Proposed Action -*** Shadows from VMMC campus development would extend in a northwesterly direction and would shade periodically shade portions of the on-site open space bordering University Street. An existing building that would remain (Benaroya Research Institute) would continue to contribute to shading of Freeway Park, as described under existing conditions.

- ***Alternative 5a -*** Shadows from VMMC campus development would extend in a northwesterly direction and would periodically shade portions of the on-site open space along 9th Avenue. An existing building that would remain (Benaroya Research Institute) would continue to contribute to shading of Freeway Park, as described under existing conditions.

12 PM

- ***Existing Conditions -*** Shadows from VMMC campus development extend in a northerly direction and periodically shade small portions of the on-site segment of Freeway Park.

- ***Proposed Action -*** Shadows from VMMC campus development would extend in a northerly direction. The on-site open space bordering University Street would not be affected. An existing building that would remain (Benaroya Research Institute) would continue to contribute to shading of a small portion of the on-site segment of Freeway Park, as described under existing conditions.

- ***Alternative 5a -*** Shadows from VMMC campus development would extend in a northerly direction. The on-site open space along 9th Avenue would not be affected. An existing building that would remain (Benaroya Research Institute) would continue to contribute to shading of a small portion of the on-site segment of Freeway Park, as described under existing conditions.

3 PM

- ***Existing Conditions -*** Shadows from VMMC campus development extend in an easterly direction and periodically shade the on-site plaza west of the Lindeman Pavilion. Freeway Park is not affected at this time of day.

- ***Proposed Action -*** Shadows from VMMC campus development would extend in an easterly direction and would periodically shade portions of the on-site open space bordering University Street. This shading would largely come from the Benaroya Research Institute building and would be generally similar to that which occurs under

existing conditions at this time of day on this day of the year. Freeway Park would not be affected by VMMC campus development.

- ***Alternative 5a -*** Shadows from VMMC campus development would extend in an easterly direction and would periodically shade portions of the on-site open space along 9th Avenue. This shading would largely come from the Benaroya Research Institute building and would be generally similar to that which occurs under existing conditions at this time of day on this day of the year. Freeway Park would not be affected by VMMC campus development.

Autumnal Equinox (refer to **Figure 3.7-3**)

Sunrise on autumnal equinox (approx. September 21st) occurs at about 6:13 AM and sunset at 8:11 PM. With regard to climatic data for the month of September, data[10] indicate that on average September typically has 3 clear days, 6 partly cloudy days and 22 cloudy days.

As indicated in **Figure 3.7-3** for autumnal equinox, shadows from existing campus development, together with shadows from other nearby buildings, were evaluated at 9 AM, 12 PM, and 3 PM and are described below. Pacific Daylight Savings Time remains in-effect on this day.

9 AM

- ***Existing Conditions -*** Shadows from VMMC campus development extend in an northwesterly direction and shade portions of Freeway Park (on and off-site segments), as well as the on-site plaza west of the Lindeman Pavilion.

- ***Proposed Action -*** Shadows from VMMC campus development would extend in a northwesterly direction and would shade all of the on-site open space bordering University Street. An existing building that would remain (Benaroya Research Institute) would continue to contribute to shading of Freeway Park, as described under existing conditions.

- ***Alternative 5a -*** Shadows from VMMC campus development would extend in a northwesterly direction and would shade all of the on-site open space along 9th Avenue. An existing building that would remain (Benaroya Research Institute) would continue to contribute to shading of Freeway Park, as described under existing conditions.

12 PM

- ***Existing Conditions -*** Shadows from VMMC campus development extend in a northerly direction and periodically shade portions of Freeway Park (on and off-site segments), as well as portions of the on-site plaza west of the Lindeman Pavilion.

- ***Proposed Action -*** Shadows from VMMC campus development would extend in a northerly direction and would periodically shade portions the on-site open space bordering University Street. An existing building that would remain (Benaroya Research Institute) would continue to contribute to shading of Freeway Park, as described under existing conditions.

[10] op cit.

	Existing Conditions	Proposed Action	Alternative 5a
9AM			
12PM			
3PM			

Source: SRG, 2012

Figure 3.7-3

Shadow Studies—Autumnal Equinox, September 21st

EA | BLUMEN

- ***Alternative 5a -*** Shadows from VMMC campus development would extend in a northerly direction and would periodically shade portions of the on-site open space along 9th Avenue. This shading would largely come from the Benaroya Research Institute building and would be generally similar to that which occurs under existing conditions at this time of day on this day of the year. An existing building that would remain (Benaroya Research Institute) would continue to contribute to shading of Freeway Park, as described under existing conditions.

3 PM

- ***Existing Conditions -*** Shadows from VMMC campus development extend in an easterly direction and shade the on-site plaza west of the Lindeman Pavilion. Freeway Park is not affected by VMMC campus development at this time of day.

- ***Proposed Action -*** Shadows from VMMC campus development would extend in an easterly direction and would shade a small portion of the on-site open space bordering University Street. This shading would largely come from the Benaroya Research Institute building and would be generally similar to that which occurs under existing conditions at this time of day on this day of the year. As under existing conditions, Freeway Park would not be affected by VMMC campus development at this time of day.

- ***Alternative 5a -*** Shadows from VMMC campus development would extend in an easterly direction and would shade the majority of the on-site open space along 9th Avenue. This shading would largely come from the Benaroya Research Institute building and would be generally similar to that which occurs under existing conditions at this time of day on this day of the year. As under existing conditions, Freeway Park would not be affected by VMMC campus development at this time of day.

Winter Solstice (refer to **Figure 3.7-4**)

Sunrise on winter solstice (approx. December 21st) occurs at about 7:54 AM and sunset at 5:19 PM. With regard to climatic data for the month of December, data[11] indicate that on average December has 3 clear days, 4 partly cloudy days and 23 cloudy days.[12]

As indicated in **Figure 3.7-4**, for winter solstice, shadows from existing campus development, together with shadows from other nearby buildings, are evaluated at 9 AM, 12 PM, and 3 PM. Pacific Standard Time remains in-effect on this day.

9 AM

- ***Existing Conditions -*** Shadows from VMMC campus development extend in a southeasterly direction and shade the existing on-site plaza west of the Lindeman Pavilion. Freeway Park would is not affected by shading from VMMC campus development at this time of day.

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[11] op cit.

[12] NOAA defines a clear day as one with zero to 3/10 average sky cover, a partly cloudy is one with 4/10 to 7/10 tenths average sky cover and a cloudy day is one with 8/10 to 10/10 tenths average sky cover.

	Existing Conditions	Proposed Action	Alternative 5a
9AM			
12PM			
3PM			

Source: SRG, 2012

Figure 3.7-4

Shadow Studies—Winter Solstice, December 21st

EA | BLUMEN

- ***Proposed Action -*** Shadows from VMMC campus development would extend in a southeasterly direction. All of the on-site open space bordering University Street would be shaded. As described under existing conditions, Freeway Park would not be affected by shading from VMMC campus development at this time of day.

- ***Alternative 5a -*** Shadows from VMMC campus development would extend in a southeasterly direction. The on-site open space along 9th Avenue would not be affected. As described under existing conditions, Freeway Park would not be affected by shading from VMMC campus development at this time of day.

12 PM

- ***Existing Conditions -*** Shadows from VMMC campus development extend in a northerly direction and shade portions of Freeway Park and the on-site plaza west of the Lindeman Pavilion.

- ***Proposed Action -*** Shadows from VMMC campus development would extend in a northerly direction and would shade all of the on-site open space bordering University Street. An existing building that would remain (Benaroya Research Institute) would continue to contribute to shading of Freeway Park, as described under existing conditions.

- ***Alternative 5a -*** Shadows from VMMC campus development would extend in a northerly direction and would shade all of the on-site open space along 9th Avenue. An existing building that would remain (Benaroya Research Institute) would continue to contribute to shading of Freeway Park, as described under existing conditions.

3 PM

- ***Existing Conditions -*** Shadows from VMMC campus development extend in a northeasterly direction and shade the on-site plaza west of the Lindeman Pavilion. Freeway Park is not affected by VMMC campus development at this time of day.

- ***Proposed Action -*** Shadows from VMMC campus development would extend in a northeasterly direction and would shade the majority of the on-site open space bordering University Street. This shading would largely come from the Benaroya Research Institute building and would be generally similar to that which occurs under existing conditions at this time of day. As under existing conditions, Freeway Park would not be affected by VMMC campus development at this time of day.

- ***Alternative 5a -*** Shadows from VMMC campus development would extend in a northeasterly direction and would shade the majority of the on-site open space along 9th Avenue. This shading would largely come from the Benaroya Research Institute building and would be generally similar to that which occurs under existing conditions at this time of day. As under existing conditions, Freeway Park would not be affected by VMMC campus development at this time of day.

Cumulative Impacts

Shadow impacts would result from both the ***Proposed Action*** and ***Alternative 5a*** due to the increased amount of development on the VMMC campus and greater building heights.

Shadows would generally be longest during winter afternoons when the sun is low on the horizon. At noon on winter solstice, shadow impacts could extend great distances, regardless of the alternative. Conversely, at noon on summer solstice, when the sun is at its greatest height above the horizon, shadow impacts would be shorter and less likely to cause impacts.

Under both the ***Proposed Action*** and ***Alternative 5a***, additional sources of shadows would be added to the area as a result of new development and redevelopment, which, in some cases, would increase the development footprint on the campus. Shadows would add to and combine with shadows from existing development on and in the VMMC campus area vicinity. Overall, shadow impacts would not be expected to result in long term, significant adverse environmental impacts. Shadow impacts would be typical of an urbanizing area – one that is transitioning to more intensive development. Shadow impacts to Freeway Park, the only public open space area proximate to the VMMC campus, would generally result from an existing building (Benaroya Research Institute) and would, therefore, be the same under existing conditions and the ***Proposed Action*** and ***Alternative 5a***.

No Action Alternative

Under the ***No Action Alternative***, no new building development and minimal growth in campus population would occur. Shadow conditions on the VMMC campus and **1000 Madison Block** would remain as described under existing conditions and no additional stationary light or glare sources would be developed on campus.

3.7.2.3 Mitigation Measures

The following mitigation measures could minimize potential impacts from shadows:

- Future new building design could consider the final orientation and massing of the building on adjacent campus and off-campus open spaces, as well as offsite residential uses in order to minimize potential shadow impacts to these campus resources and offsite uses.

- Required and proposed setbacks for buildings will contribute to reducing building bulk, thereby reducing potential shadow impacts from those buildings.

3.7.2.4 Significant Unavoidable Adverse Impacts

Development under the proposed *Draft MIMP* would result in new sources of shadow impacts associated with the VMMC campus, **1000 Madison Block** and site vicinity. With implementation of the proposed mitigation measures, significant shadow impacts to on-site and surrounding uses would not be anticipated.

3.8 HISTORIC RESOURCES

This section of the Draft EIS describes existing historic resources on the VMMC campus, resources within the proposed MIO boundary expansion area, and historic structures in the general vicinity of the campus, and analyzes the potential impacts that could result from development of the alternatives.

Policy Context

The Seattle Municipal Code (SMC) contains specific provisions that describe the scope of the SEPA analysis for the historic resources analysis. Relevant policies from SMC 25.05.675 are provided below:

H.2. Historic Preservation Policies.

a. *It is the City's policy to maintain and preserve significant historic sites and structures and to provide the opportunity for analysis of archaeological sites.*

b. *For projects involving structures or sites which have been designated as historic landmarks, compliance with the Landmarks Preservation Ordinance 25.12 shall constitute compliance with the policy set forth in subsection H2a above.*

c. *For projects involving structures or sites which are not yet designated as historical landmarks but which appear to meet the criteria for designation, the decision maker or any interested person may refer the site or structure to the Landmarks Preservation Board for consideration. If the Board approves the site or structure for nomination as an historic landmark, consideration of the site or structure for designation as an historic landmark and application of controls and incentives shall proceed as provided by the Landmarks Preservation Ordinance 25.12. If the project is rejected for nomination, the project shall not be conditioned or denied for historical preservation purposes, except pursuant to paragraphs d or e of this subsection.*

d. *When a project is proposed adjacent to or across the street from a designated site or structure, the decision maker shall refer the proposal to the City's Historic Preservation Officer for an assessment of any adverse impacts on the designated landmark and for comments on possible mitigating measures. Mitigation may be required to insure the compatibility of the proposed project with the color, material and architectural character of the designated landmark and to reduce impacts on the character of the landmark's site. Subject to the Overview Policy set forth in SMC Section 25.05.665, mitigating measures may be required and are limited to the following:*

    i. *Sympathetic facade treatment;*
    ii. *Sympathetic street treatment;*
    iii. *Sympathetic design treatment; and*
    iv. *Reconfiguration of the project and/or relocation of the project on the project site; provided that mitigating measures shall not include reductions in a project's gross floor area.*

e. On sites with potential archaeological significance, the decision maker may require an assessment of the archaeological potential of the site. Subject to the criteria of the Overview Policy set forth in SMC Section 25.05.665, mitigating measures which may be required to mitigate adverse impacts to an archaeological site include, but are not limited to:

i. Relocation of the project on the site;
ii. Providing markers, plaques, or recognition of discovery;
iii. Imposing a delay of as much as ninety (90) days (or more than ninety (90) days for extraordinary circumstances) to allow archaeological artifacts and information to be analyzed; and
iv. Excavation and recovery of artifacts.

Regulatory Framework

Seattle's SEPA polices are outlined in SMC 25.05; with regard to historic buildings, SMC 25.05.675 notes that the City of Seattle protects historic resources through the Landmarks Preservation Ordinance, as administered by the Landmarks Preservation Board.[1] According to the Landmarks Ordinance, a certificate of approval must be obtained from the Landmarks Board before alterations or significant changes may be made to specific features or characteristics of a Landmark building, which are identified in the approved nomination, the Board report on designation, or subject to control in a controls and incentives agreement.

Since 1973, Seattle has designated more than 350 individual sites, buildings, vehicles, vessels, and street clocks as City Landmarks. A building, object, or structure may be eligible to be listed as a City historic landmark if it is more than 25 years old and the City's Landmarks Preservation Board determines that it satisfies one or more of the following criteria:

- It is the location of or is associated in a significant way with an historic event with a significant effect upon the community, city, state, or nation;
- It is associated in a significant way with the life of a person important in the history of the city, state, or nation;
- It is associated in a significant way with a significant aspect of the cultural, political, or economic heritage of the community, city, state or nation;
- It embodies the distinctive visible characteristics of an architectural style, period, or a method of construction;
- It is an outstanding work of a designer or builder; and
- Because of its prominence of spatial location, contrasts of siting, age, or scale, it is an easily identifiable visual feature of its neighborhood or the city and contributes to the distinctive quality or identity of such neighborhood or City.

[1] Ordinance #106348

In addition to the City's Landmark program, properties may also be eligible for listing in the National Register of Historic Places or by the State of Washington in the Washington Heritage Register. The National Register of Historic Places (NHRP) is administered by the National Park Service and is the official federal list of districts, sites, buildings, structures and objects significant in American history, architecture, archaeology, engineering and culture. To be eligible for listing in the National Register, a property must have integrity, which is the "ability of a property to convey its significance" and must meet at least one of four possible criteria related to significant events in history, association with the lives of significant persons, embodiment of distinctive characteristics, or yield information important in prehistory or history.

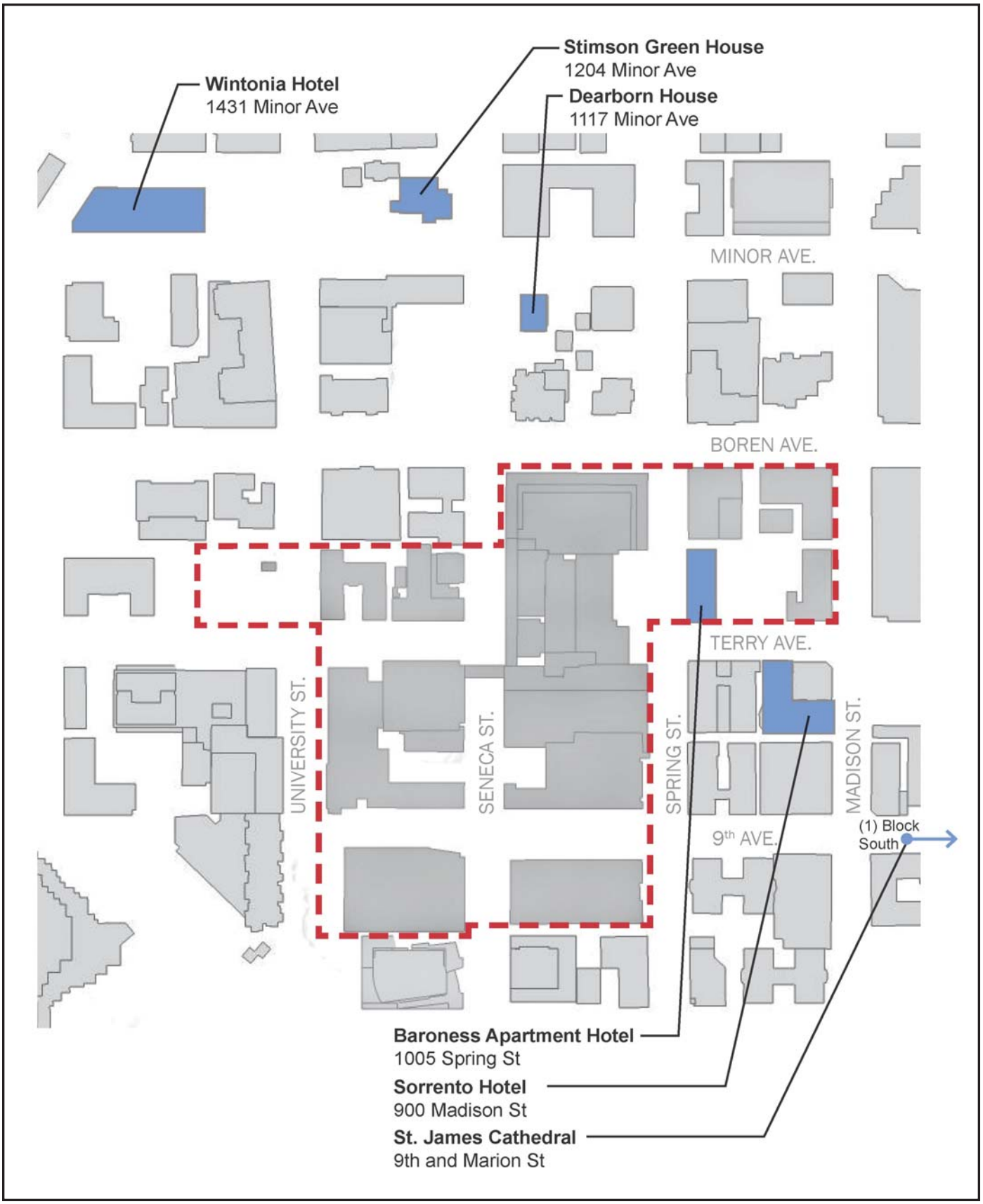
The Washington Heritage Register is an official listing of historically significant sites and properties within the State. The list is maintained by the State Department of Archaeology and Historic Preservation. Properties that are listed in the federal NRHP are automatically included in the Washington Heritage Register.

3.8.1 Affected Environment

As noted previously, the VMMC campus is located within Seattle's First Hill neighborhood, an area that was initially developed in the 1880s and 1890s by wealthy families. First Hill contains numerous designated and potential local landmarks, in addition to several properties which are listed separately on the NRHP. Presently, 13 properties in the neighborhood are designated City of Seattle Landmarks, including:

- **Dearborn House** (1909) 117 Minor Avenue;
- **Fire Station No. 25** (1908), 1400 Harvard Avenue;
- **Fire Station No. 3** (1903) 301 Terry Avenue;
- **German House** (1886) 613 9th Avenue;
- **Seattle First Baptist Church** (1908-1912) 1121 Harvard Avenue;
- **St. James Cathedral** (1907) Rector, and Site, 9th Avenue and Madison Street;
- **Stimson Green House** (ca. 1901) 1204 Minor Avenue;
- **Summit School** (1905) 1415 Summit Avenue;
- **Trinity Parish Episcopal Church** (1891 – 1903) 609 8th Avenue;
- **The Sorrento Hotel** (1908), 900 Madison Street;
- **Wintonia Hotel** (1909), 1431 Minor Avenue; and
- **Baroness Hotel** (1930 – 1931) 1005 Spring Street.

See **Figure 3.8-1** for the location of several of the designated historic buildings proximate to the VMMC campus.



Source: SRG, 2012

Figure 3.8-1

Designated Historic Landmark Locations

VMMC Campus

There are 12 buildings within the existing VMMC MIO boundary, nine of which are greater than 25 years old (**Table 3.8-1**). None of the nine buildings are located within a designated historic district or have been designated as a City of Seattle Landmark, nor are they listed in (or identified as eligible for listing in) the NRHP or the Washington Heritage Register. In 2008, VMMC submitted a nomination of the Cassel Crag Apartments for consideration as a possible City Landmark. The Landmarks Preservation Board reviewed the nomination and on February 6, 2008 denied designation. In 2009, VMMC submitted a nomination for the Inn at Virginia Mason for consideration as a possible City Landmark. The City's Landmark Preservation Board ruled on October 7, 2009[2] that that building should not be designated a City Landmark.

Table 3.8-1
VMMC BUILDINGS OVER 25 YEARS OLD

Building Name	Building Use	Year Built
Health Resources Building	Office, Support Space	1943
Inn at Virginia Mason	Hotel, Restaurant, Offices	1928
Cassel Crag	Offices, Research	1925
Blackford Hall	Offices, Research	1924
Original Hospital	Inpatient, Clinic, Offices, Support Space	1920/1938/1944
Hospital East Wing	Office, Clinic, Support, Inpatient	1960/1977
Hospital West Addition	Office, Clinic, Support, Inpatient	1937-1977
Buck Pavilion North	Office, Clinic, Support	1952/1963
Buck Pavilion South	Office, Clinic, Support	1976

Source: EA\|Blumen, 2011.

1000 Madison Block

The proposed MIO boundary expansion area presently contains six buildings, all of which are more than 25 years old. These buildings are identified in **Table 3.8-2**. The City's Landmarks Preservation Board approved nomination of the Baroness Hotel for designation as a City of Seattle Landmark in 2009.[3] According to the controls established on the building through Ordinance 123487, a Certificate of Approval must be obtained from the Landmarks Board before changes may be made to the exterior of the Baroness Hotel (with the exception of certain maintenance repairs and installation of security related equipment, as outlined in the ordinance).

[2] The City of Seattle, Landmarks Preservation Board Meeting, October 7, 2009.
[3] Ordinance 123487.

In 2009, VMMC submitted the Chasselton Apartments for consideration as a possible Landmark and the Landmarks Preservation Board rejected nomination of that building. None of the remaining buildings within the proposed MIO boundary expansion area have been nominated and/or designated as City Landmarks, nor are they located within a historic district, nor are they listed in the NRHP or the Washington Heritage Register.

Table 3.8-2
PROPOSED MIO EXPANSION AREA - BUILDINGS OVER 25 YEARS OLD

Building Name	Building Use	Year Built
Baroness Hotel	Hotel	1928
Retail	Retail	1930 (est.)
Retail	Retail	1930 (est.)
Retail	Retail	1930 (est.)
Retail	Retail	1930 (est.)
Chasselton Court Apartments	Apartments	1925

Source: EA\|Blumen, 2011.

Buildings Adjacent to the VMMC Campus

As noted previously, there is one designated City Landmark adjacent to VMMC's existing MIO boundary -- the Baroness Hotel, which is located within the proposed MIO expansion area. In addition, there are four buildings that are adjacent to the existing MIO boundary that have been identified within the City's Historic Resources Survey as appearing to meet the criteria for designation as a City Landmark and listing in the National Register of Historic Places.[4] They include:

- **John Alden Apartments** (1924) – 1019 Terry Avenue;
- **Lowell-Emerson Apartments** (1928) – 1100 8th Avenue;
- **Sovereign Apartments** (1925) – 1317 Boren Avenue; and
- **Nettleton Apartments** (1949) – 1000 - 8th Avenue.

The Sorrento Hotel, which is located at 900 Madison Street,[5] is adjacent to the proposed MIO boundary expansion area and is a City-designated Landmark. Also, adjacent to the proposed MIO boundary expansion area is the University Club (1912), which has been identified within the City's Historic Resources Survey as appearing to meet the criteria for designation as a City Landmark and listing in the NRHP.

[4] City of Seattle, Historic Resources Survey.http://www.cityofseattle.net/neighborhoods/preservation/historicresources.htm
[5] Ordinance 123293.

Lastly, the following buildings are adjacent to VMMC's MIO boundary (existing and proposed expansion area) and each is greater than 25 years old. None, however, are identified within the City's Historic Resources Survey.

- **Sunset Club** (1920) – 1021 University Street;
- **John Winthrop Apartments**(1925) – 1020 Seneca Street;
- **Decatur Apartments** (1950) – 1105 Spring Street;
- **Paul Revere Apartments** (1923) – 1018 9th Avenue; and
- **Horizon House** (1954) – 900 University Street.

3.8.2 Impacts of the Proposed Action (6b) and Alternatives

Proposed Action (Alternative 6b)

Under the ***Proposed Action*** it is assumed that 14 buildings that are over 25 years old would be demolished and the building sites redeveloped over time, including the three hospital buildings (Original Hospital, Hospital East Wing, and Hospital West Wing), the Buck Pavilion, Health Resources Building, Cassel Crag, Blackford Hall, the Inn at Virginia Mason, and all buildings on the **1000 Madison Block** except for the Baroness Hotel. Of these buildings, only Cassel Crag and the Inn at Virginia Mason have been evaluated and determined by the City Landmarks Preservation Board to not meet the criteria for consideration as a City Landmark. The Cassel Crag determination occurred in February 2008; should demolition of the building not occur within 5 years of that date (by February 2013), a new Landmark determination by the Landmarks Preservation Board would be required. The Inn at Virginia Mason nomination occurred in October 2009;[6] should demolition of the Inn not occur within 5 years of that date (by October 2014), a new Landmark determination by the Landmarks Preservation Board would be required.

Based on the City's interdepartmental procedures, at the time of a Master Use Permit (MUP) application for development that would involve demolition of a building that is 50 years or older, a referral must be made from DPD to the City's Historic Preservation Officer. In general, the referral contains information regarding the building, the architect, builder, and noteworthy events that may have occurred at the site. Based on this and supplemental information, the Historic Preservation Officer will determine if the structure appears to meet any of the criteria for landmarks designation. If the Historic Preservation Officer determines a structure appears to meet the criteria, VMMC would submit a Nomination Application. If the Landmarks Preservation Board determines that the structure should be designated as a City Landmark, incentives and controls would be negotiated between the City Historic Preservation Officer and the property owner (VMMC). Once an agreement has been reached it would then be approved by the Landmark Preservation Board and a designating ordinance would be forwarded to City Council for approval. If the Historic Preservation Officer determines the structure does not appear to meet the Landmark criteria, demolition of the structure would not be conditioned or denied for historic preservation purposes under SEPA.

The ***Proposed Action*** would also involve expansion to the **1000 Madison Block**. This block contains one City Landmark (Baroness Hotel). The Baroness Hotel would be retained under the ***Proposed Action*** and any alterations to the building would need to be carried out in

[6] The City of Seattle, Landmarks Preservation Board Meeting, October 7, 2009.

accordance with the controls and incentives adopted by the City's Landmarks Preservation Board.

The remaining five buildings within the **1000 Madison Block** would be demolished and the sites redeveloped. As noted earlier, the City's Landmarks Preservation Board has reviewed the Chasselton Apartments and determined that this structure is not eligible for City Landmark status. The remaining four retail buildings within this block are each over 50 years old, but have not been evaluated to resolve their Landmark status. At the time of MUP submittal involving redevelopment of any of these buildings, a referral from DPD to the City's Historic Preservation Officer (mentioned previously) would be required.

A preliminary adjacency analysis for these two landmark buildings depicting the building massings for the ***Proposed Action*** and ***Alternative 5a*** is provided in **Appendix D** to this Draft EIS. Due to the presence of the Baroness Hotel within the MIO boundary expansion area and the nearby Sorrento Hotel, when redevelopment of the **1000 Madison Block** is proposed, a more detailed adjacency analyses would be required at that time (SMC 25.05.675H(2)(d)). The Baroness Hotel is located in the northwest corner of the **1000 Madison Block**. Under the ***Proposed Action***, new development would occur to the east and south of this building on the site where the Chasselton Court Apartments and a retail building are presently located. Setbacks would be maintained between the Landmark building and the new development. **Figure 3.6.1-3** (**Section 3.6**, **Aesthetics**) is a photo simulation depicting the potential height, bulk and scale of conceptual new development that is possible within this expansion area relative to the Baroness Hotel.

Minor alterations to the exterior of the Baroness Hotel may be exempt; other minor changes are reviewed by the City's Historic Preservation Officer. More significant alternations that are proposed to the exterior of the Baroness Hotel would require review and a certificate of approval by the Landmarks Preservation Board, as outlined in Ordinance No. 123487.

The other designated City Landmark that is proximate to the MIO expansion area is the Sorrento Hotel. As noted previously, this building is located immediately west of the **1000 Madison Block**. Under the ***Proposed Action***, the retail buildings within the **1000 Madison Block** (across the street from the Sorrento Hotel) would be demolished and redeveloped. **Figure 3.6.1-4** (**Section 3.6**, **Aesthetics**) is a photo simulation depicting the potential height, bulk and scale of new development that is possible within this expansion area.

See **Section 3.11**, **Construction Impacts**, for a discussion of potential impacts that could occur to designated Landmarks during construction.

Alternative 5a

Under ***Alternative 5a***, it is assumed that nine buildings that are over 25 years old would be demolished and the building sites redeveloped over time, including the three hospital buildings (Original Hospital, Hospital East Wing, and Hospital West Wing), the Buck Pavilion (North and South), Health Resources Building, Cassel Crag, Blackford Hall, and the Inn at Virginia Mason.

Impacts to historic resources under ***Alternative 5a*** would be generally as described for the ***Proposed Action*** within the MIO boundary (no boundary expansion to the **1000 Madison Block** would occur). ***Alternative 5a*** would also involve redevelopment of the Original Hospital, the Hospital East Wing, the Hospital West Wing, and the Buck Pavilion – all, of which is

diagonally across the street from the Landmark Baroness Hotel. As noted earlier in this section, a preliminary adjacency analysis is provided in **Appendix D**, and a more detailed adjacency analysis will be prepared in the future to evaluate the impacts of the new development. Based on SMC 25.05.675H(2)(d), when a project is proposed adjacent to or across the street from a designated Seattle Landmark site or structure, the City's Historic Preservation Officer will prepare an assessment of adverse impacts on the designated Landmark. Mitigation may be required to ensure the compatibility of the proposed project with the color, material, and architectural character of the designated landmark in order to reduce impacts on the character of the Landmark structure.

See **Section 3.11**, **Construction Impacts**, for a discussion of potential impacts that could occur to designated Landmarks during construction.

No Action Alternative

The ***No Action Alternative*** would involve no new building construction on the VMMC campus; existing buildings would remain and limited building remodeling would be expected to occur. The existing MIO boundary would remain and no expansion to the **1000 Madison Block** would occur. No impacts to historic resources would be anticipated under the ***No Action Alternative***.

3.8.3 Mitigation Measures

Demolition and Construction

As described earlier, a historical analysis could be prepared for any structure that is proposed for demolition that is 50 years old or older. That analysis would be required at the time of submittal of the Master Use Permit for the replacement project and referred to DON for review. New buildings constructed adjacent or across the street from a designated historic Landmark will also be referred to DON for review and approval.

Please refer to **Section 3.11**, **Construction Impacts**, for a discussion of potential impacts that could occur to historic resources during construction and associated mitigation measures.

Baroness Hotel

The following controls are imposed on the features and characteristics of the Baroness Hotel that were designated by the Board for preservation: the owner must obtain a Certificate of Approval issued by the Board pursuant to SMC 25.12, or the time for denying a Certificate of Approval must have expired, before the owner may make alterations or significant changes to the following specific features or characteristics: the exterior of the building.

No Certificate of Approval or approval by the City Historic Preservation Officer (CHPO) is required for the following: any in-kind maintenance or repairs to the exterior of the building; and the installation of exterior security lighting, video cameras, security system equipment.

CHPO review is available for the following: the addition or elimination of duct conduits, HVAC vents, grilles, fire escapes, pipes and other similar wiring or mechanical elements necessary for normal operation of the building; signage; exterior painting; installation of exterior light fixtures not already excluded from the Certificate of Approval process; and alterations to the canopies on the South elevation.

3.8.4 Significant Unavoidable Adverse Impacts

With the mitigation noted, no significant unavoidable adverse impacts are anticipated.

3.9 TRANSPORTATION

This section of the Draft EIS documents existing transportation conditions in the vicinity of Virginia Mason Medical Center (VMMC) and presents an analysis of future conditions resulting from development alternatives as described in the *draft VMMC Major Institution Master Plan*. Transportation related factors evaluated in this section include an assessment of the affected environment (existing conditions), an assessment of existing transportation facilities, project trip generation, trip distribution, and analysis of future traffic conditions under twoalternativedevelopment scenarios.Impacts and recommended improvements to mitigate those impacts arealso identified.

This section is organized to first establish transportation conditions for the Affected Environment, followed by an evaluation of future conditions for each of the Alternatives.

3.9.1 Affected Environment

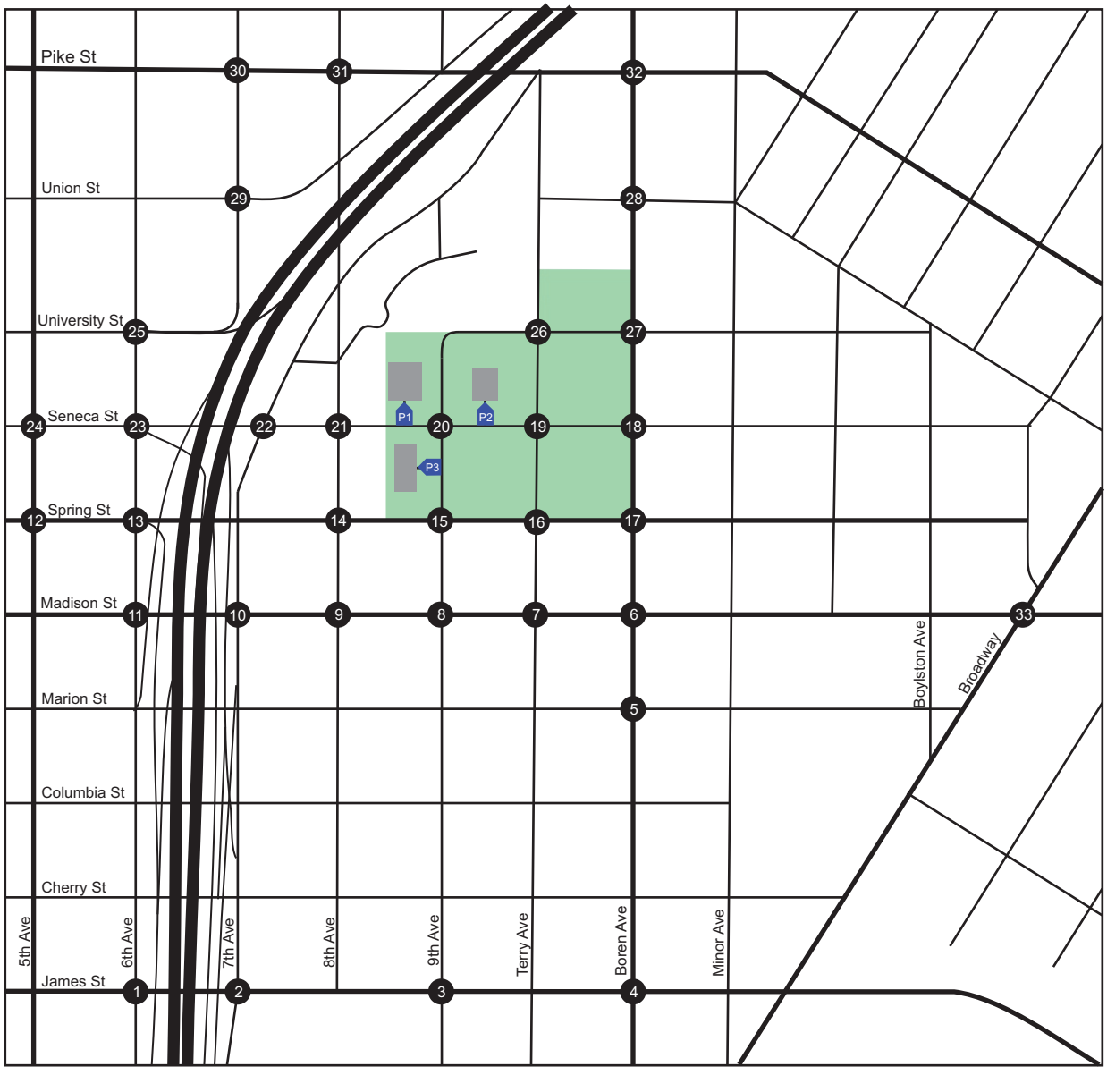
Road Network

The VMMC primary impact area for purposes of analysis extends beyond the campus to include access points to I-5 as well as arterial routes that link the campus with I-5 and primary routes linking the campus with other Seattle neighborhoods. Regional access to the campus is provided by I-5 to the west via James and Madison Streets as well as Seneca and Olive Street I-5 access points. Routes to destinations to the east of Seattle utilize local arterials to access I-90 to the southeast via Rainier Avenue and SR 520 to the northeast via E Madison Street and 23rd Avenue. Local access is primarily along Broadway, Madison Street, James Street, Seneca Street, and Boren Avenue.

The roadways surrounding and within the VMMCcampus primarily consist of commercial local access streets. The principal arterials are Boren, Madison,and James Streets. Seneca Street, 9th Avenue and segments of 8th Avenue and Spring Street are minor arterials and 7th Avenue is a collector arterial. All other streets in the area are defined as Local Access. **Figure 3.9-1** illustrates the existing road network in the vicinity of the campus and intersections selected for analysis.

Existing Traffic Volumes and Level of Service

The scope of this traffic study was established with input of the City of Seattle Department of Planning staff and field observations to identify the major intersections to study within the vicinity of VMMC. Traffic analysis includes an analysis of intersection operations during the AM and PM peak hours. The analyzed intersections and existing peak hour turning movement volumes are illustrated in **Figures 3.9-2** (AM peak hour) and **3.9-3** (PM peak hour).The counts were collected by *All Traffic Data*, a firm specializing in traffic data collection, during the third week of April, 2011 over two three-hour periods (7 to 10 AM and 3 to 6 PM) to capture the AM and PM peak hour commute periods. Hourly garage traffic volume counts collected by the parking management firm employed by VMMC confirmed that the VMMCpeak hour falls within the stated time periods.



Study Intersections

1. James St/ 6th Ave
2. James St/ 7th Ave
3. James St/ 9th Ave
4. James St/ Boren Ave
5. Marion St/ Boren Ave
6. Madison St/ Boren Ave
7. Madison St/ Terry Ave
8. Madison St/ 9th Ave
9. Madison St/ 8th Ave
10. Madison St/ 7th Ave
11. Madison St/ 6th Ave
12. Spring St/ 5th Ave
13. Spring St/ 6th Ave
14. Spring St/ 8th Ave*
15. Spring St/ 9th Ave*
16. Spring St/ Terry Ave*
17. Spring St/ Boren Ave*
18. Seneca St/ Boren Ave
19. Seneca St/ Terry Ave*
20. Seneca St/ 9th Ave
21. Seneca St/ 8th Ave
22. Seneca St/ 7th Ave*
23. Seneca St/ 6th Ave
24. Seneca St/ 5th Ave
25. University St/ 6th Ave
26. University St/ Terry Ave*
27. University St/ Boren Ave
28. Union St/ Boren Ave
29. Union St/ 7th Ave
30. Pike St/ 7th Ave
31. Pike St/ 8th Ave
32. Pike St/ Boren Ave
33. Madison St/ Broadway

P1 Seneca St/ Benaroya Garage*
P2 Seneca St/ Lindeman Garage*
P3 9th Ave Garage/ 9th Ave*

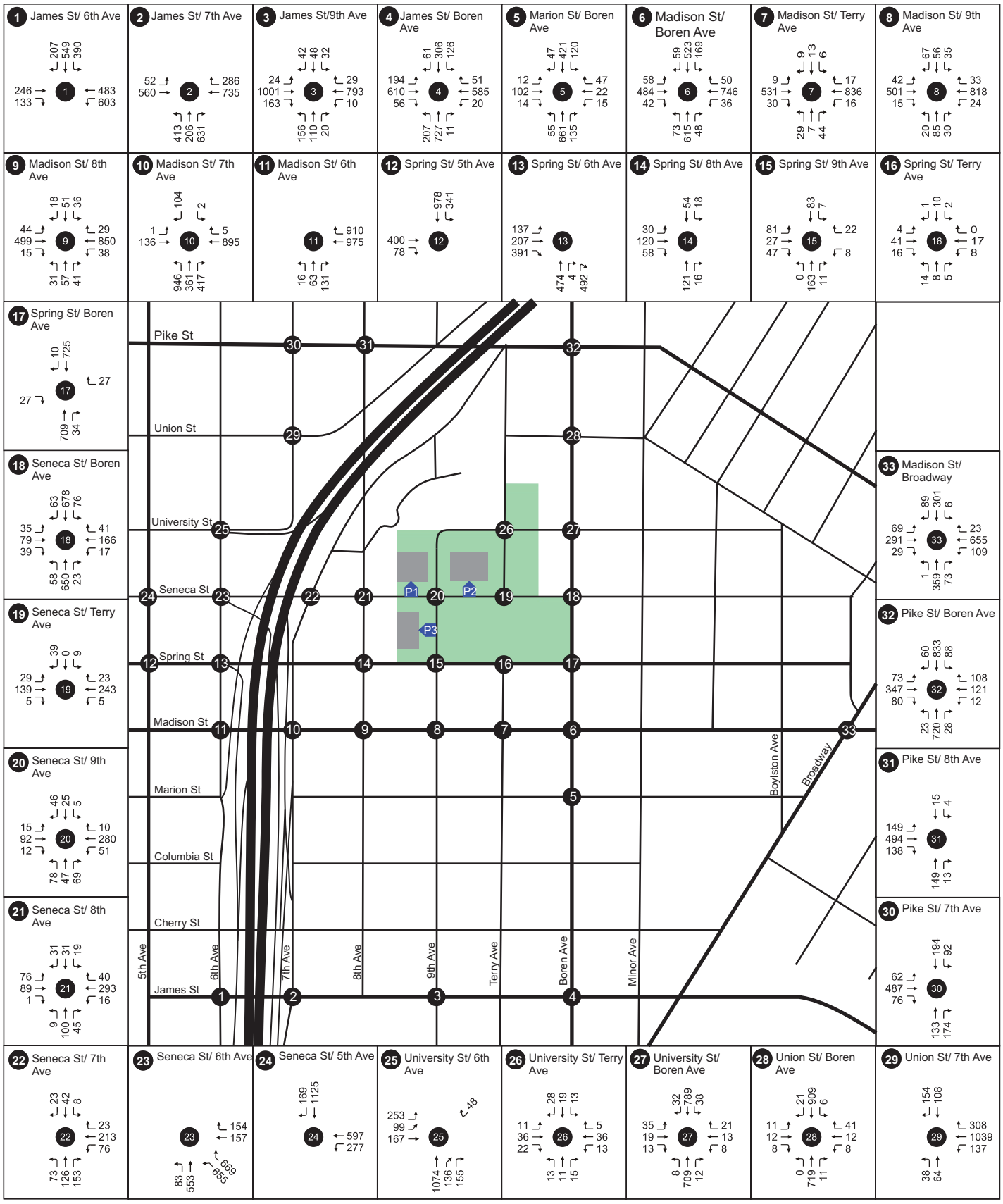
* Unsignalized intersection

Source: Transportation Solutions, Inc., 2012

EA | BLUMEN

Figure 3.9-1
Road Network and Study Intersections

Virginia Mason Medical Center MIMP
Draft EIS

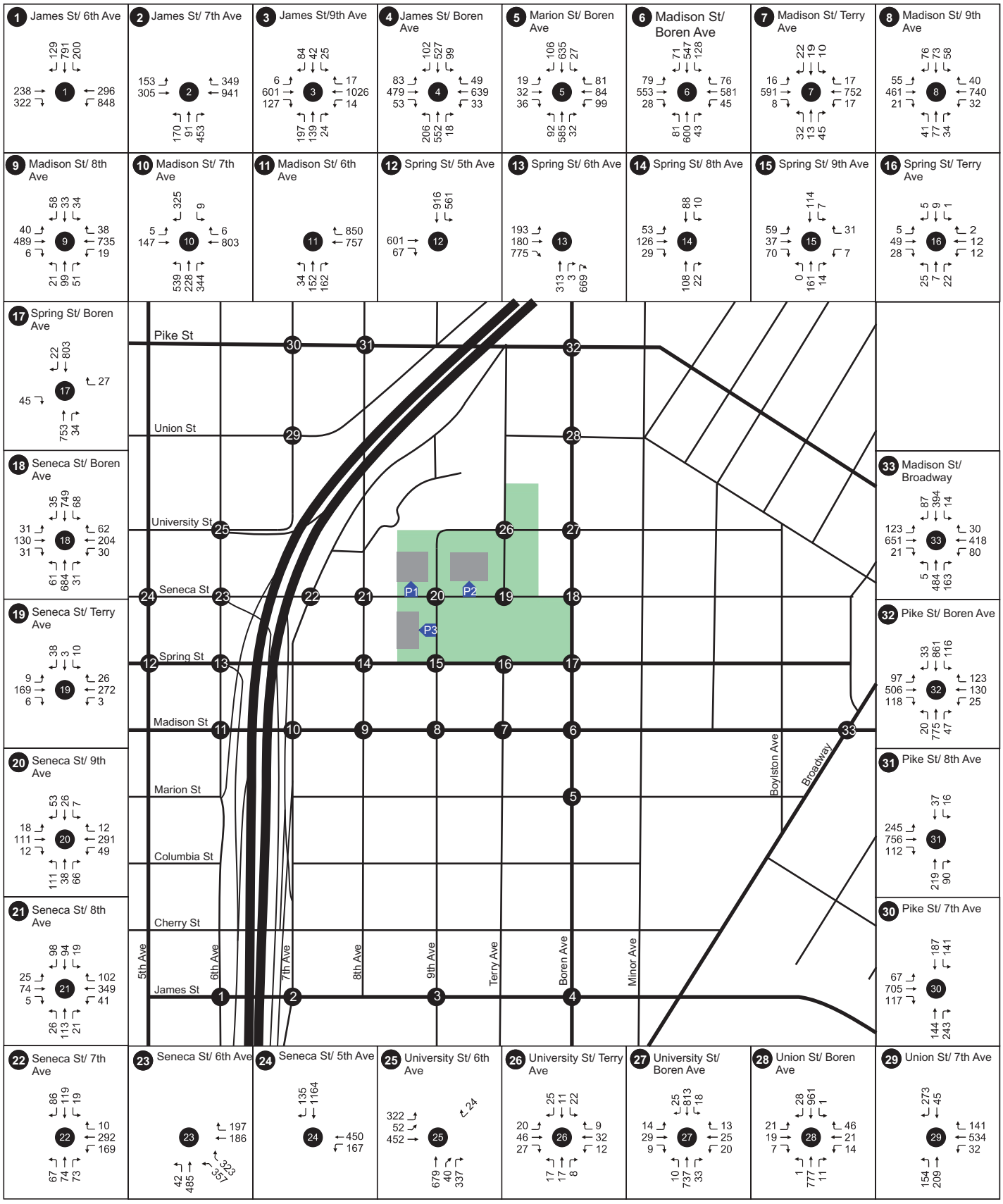


Source: Transportation Solutions, Inc., 2012

EA | BLUMEN

Figure 3.9-2
AM Peak Hour Turning Movement Volumes
Existing 2011

Virginia Mason Medical Center MIMP
Draft EIS



Source: Transportation Solutions, Inc., 2012

EA | BLUMEN

Figure 3.9-3

PM Peak Hour Turning Movement Volumes

Existing 2011

Trip Distribution

Figure 3.9-4 illustrates the distribution of existing vehicle trips generated by VMMC. This distribution pattern assigns trips to routes connecting VMMC with the regional transportation system based on the shortest route that avoids the heaviest congestion.

Existing Level of Service

Intersections

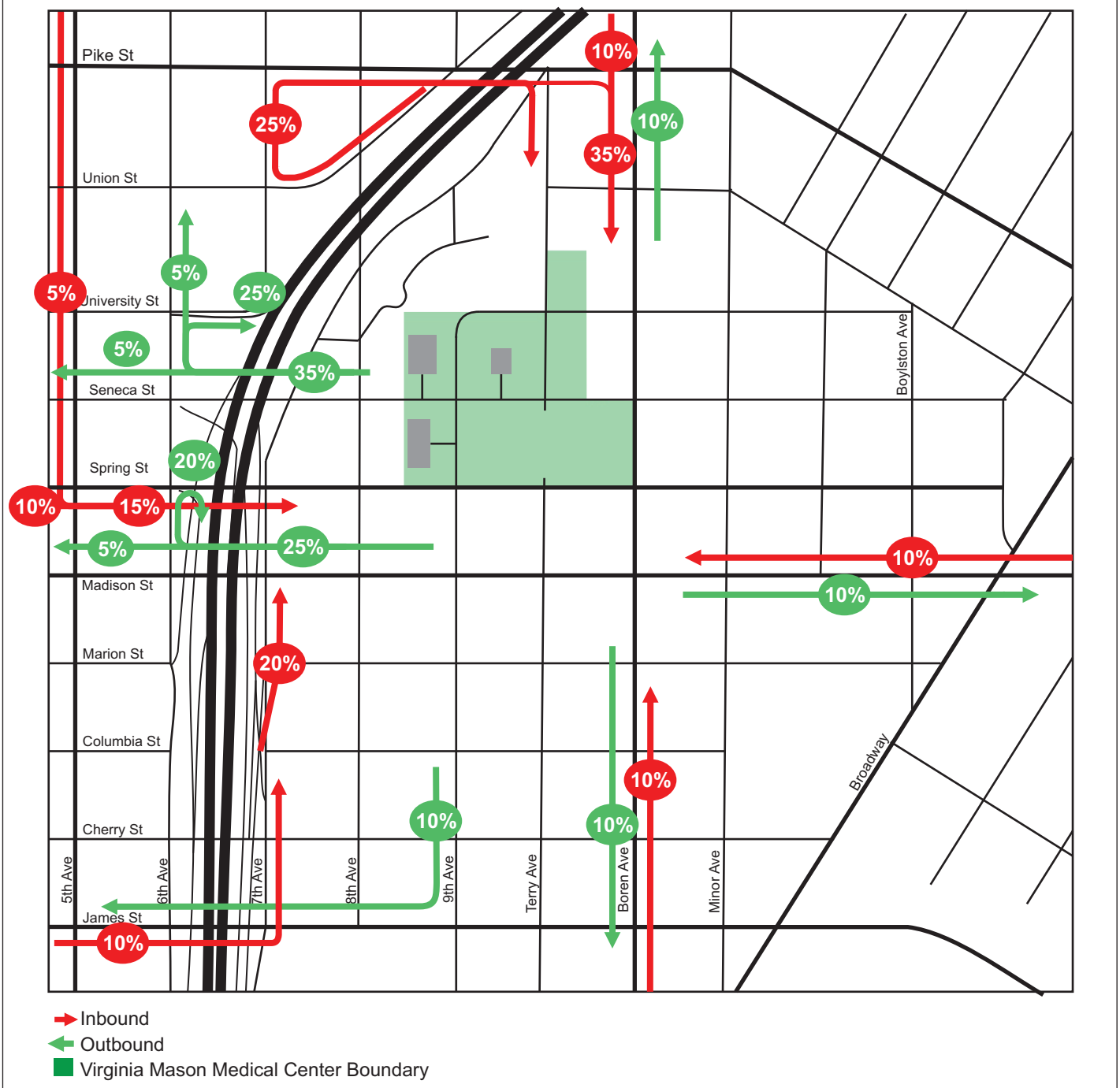
Existing weekday peak hour level of service (LOS) was calculated for the selected intersections using the 2000 Highway Capacity Manual (Transportation Research Board, Special Report 209) methodology. For signalized intersections, the LOS is defined by seconds of average vehicle delay at the intersection. The seconds of delay are divided into several categories or grade levels, ranging from LOS-A, which is very good, to LOS-F, which reflects a breakdown in traffic flow. LOS-D is generally considered as an acceptable level of service during peak periods in the City of Seattle. **Table 3.9-1** below illustrates the relationship between delay and LOS for signalized and unsignalized intersections. Although these letter designations provide a simple basis for comparison, seconds of average vehicle delay should be used as the exact measure of comparison. For this analysis, the critical volume method was used to determine signal timings employed in the HCM calculations. This method optimizes traffic signal timings by proportioning out green time to each traffic movement, based on respective traffic volume.

Table 3.9-1
LEVEL OFSERVICE DESCRIPTION

LOS	Seconds of Delay		Operational Characteristics		
	Signalized	Unsignalized	Maneuverability	Driver Comfort	Average Travel Speed
A	≤ 10	≤ 10	Almost unimpeded	High	Speed limit
B	> 10 and ≤ 20	> 10 and ≤ 15	Slightly restricted	High	Close to speed limit
C	> 20 and ≤ 35	> 15 and ≤ 25	Noticeably restricted	Some tension	
D	> 35 and ≤ 55	> 25 and ≤ 35	Severely limited	Poor	Some slowing
E	> 55 and ≤ 80	> 35 and ≤ 50	Extremely unstable	Extremely poor	Significantly slower than speed limit
F	> 80	> 50	Almost none		

Source: Transportation Solutions, Inc.

The intersections identified for analysis (**Table 3.9-2**) include primary routes between VMMC and the regional highway system. Counts were also made at the three primary parking garage accesses to establish existing trip generation characteristics. **Table 3.9-2** also includes the existing traffic control for each intersection and existing level of service and delay for the analyzed intersections during the AM peak hour. **Table 3.9-3** summarizes PM peak hour level of service.



Source: Transportation Solutions, Inc., 2012

EA | BLUMEN

Figure 3.9-4

INBOUND AND OUTBOUND DISTRIBUTION
EXISTING 2011

Intersection level of service was calculated using Synchro 7 (Build 773, Rev 8) files obtained from Seattle Department of Transportation. The files were updated with current turning movement counts and some minor adjustments to reflect current channelization. The timing and phasing plans for signalized intersection were assumed to be accurate and were not field checked.

Table 3.9-2
EXISTING (2011) AM PEAK HOURINTERSECTION LEVEL OF SERVICE

Intersection		Control[1]	App-roach[2]	LOS	Delay[3]
1	James St/ 6th Ave	S	Avg	B	16.9
2	James St/ 7th Ave	S	Avg	C	32.6
3	James St/ 9th Ave	S	Avg	B	18.7
4	James St/ Boren Ave	S	Avg	D	38.3
5	Marion St/ Boren Ave	S	Avg	B	9.8
6	Madison St/ Boren Ave	S	Avg	C	34.1
7	Madison St/ Terry Ave	S	Avg	A	5.4
8	Madison St/ 9th Ave	S	Avg	B	10.2
9	Madison St/ 8th Ave	S	Avg	B	10.1
10	Madison St/ 7th Ave	S	Avg	C	29.5
11	Madison St/ 6th Ave	S	Avg	B	13.2
12	Spring St/ 5th Ave	S	Avg	B	12.7
13	Spring St/ 6th Ave	S	Avg	B	18.9
14	Spring St/ 8th Ave	EB Stop	EBL	A	8.5
15	Spring St/ 9th Ave	EB-WB Stop	EBL	C	15.6
16	Spring St/ Terry Ave	NB-SB Yield	NB	B	10.3
17	Spring St/ Boren Ave	S	Avg	A	2.7
18	Seneca St/ Boren Ave	S	Avg	A	8.2
19	Seneca St/ Terry Ave	SB Stop	SB	B	14.5
20	Seneca St/ 9th Ave	S	Avg	B	19.5
21	Seneca St/ 8th Ave	S	Avg	B	17.1
22	Seneca St/ 7th Ave	S	Avg	B	12.8
23	Seneca St/ 6th Ave	S	Avg	F	90
24	Seneca St/ 5th Ave	S	Avg	C	16.9
25	University St/ 6th Ave	S	Avg	B	16.7
26	University St/ Terry Ave	AWS	NB	A	7.3
27	University St/ Boren Ave	S	Avg	A	7.7
28	Union St/ Boren Ave	S	Avg	A	4
29	Union St/ 7th Ave	S	Avg	B	13.5
30	Pike St/ 7th Ave	S	Avg	B	18.7
31	Pike St/ 8th Ave	S	Avg	B	12
32	Pike St/ Boren Ave	S	Avg	B	13.3
33	Madison St/ Broadway	S	Avg	C	23.4
P1	Seneca St/ Benaroya Garage	NB-SB Stop	NB	C	15.4
P2	Seneca St/ Lindeman Garage	NB-SB Stop	NB	D	26.2
P3	9th Ave Garage/ 9th Ave	EB Stop	EB	A	9.7

Source: Transportation Solutions, Inc., 2011

[1] S= Signalized, AWS= All-way stop control, Stop=One or two way stop control w/ controlled approach.

[2] Approach – designates the direction of travel for the controlled approach and LOS. (i.e. NB = northbound, Avg. = average of all approaches).

[3] Delay = average seconds of vehicle delay for all vehicles entering intersection or those entering on controlled approaches.

All intersections operate at LOS-D or better with the exception of the intersection of Seneca Street and 6th Avenue which operates at LOS-F during the AM peak hour. This poor level of service is due to the high volume of traffic exiting I-5 at Seneca and turning westbound onto Seneca or northbound on 6th Avenue.

Table 3.9-3
EXISTING (2011) PM PEAK HOURINTERSECTION LEVEL OF SERVICE

	Intersection	Control[1]	App-roach[2]	LOS	Delay[3]
1	James St/ 6th Ave	S	Avg	C	30.9
2	James St/ 7th Ave	S	Avg	C	22.7
3	James St/ 9th Ave	S	Avg	B	15.3
4	James St/ Boren Ave	S	Avg	D	38.1
5	Marion St/ Boren Ave	S	Avg	B	13.2
6	Madison St/ Boren Ave	S	Avg	C	25.9
7	Madison St/ Terry Ave	S	Avg	A	8.2
8	Madison St/ 9th Ave	S	Avg	B	13.5
9	Madison St/ 8th Ave	S	Avg	B	14
10	Madison St/ 7th Ave	S	Avg	C	24.8
11	Madison St/ 6th Ave	S	Avg	B	18.2
12	Spring St/ 5th Ave	S	Avg	C	22.5
13	Spring St/ 6th Ave	S	Avg	E	64.9
14	Spring St/ 8th Ave	EB Stop	EBR	B	13.1
15	Spring St/ 9th Ave	EB-WB Stop	EBL	C	21.7
16	Spring St/ Terry Ave	NB-SB Yield	NB	B	10.7
17	Spring St/ Boren Ave	S	Avg	A	3.1
18	Seneca St/ Boren Ave	S	Avg	B	10.7
19	Seneca St/ Terry Ave	SB Stop	SB	B	12.9
20	Seneca St/ 9th Ave	S	Avg	C	24.5
21	Seneca St/ 8th Ave	S	Avg	C	20.8
22	Seneca St/ 7th Ave	S	Avg	B	14.2
23	Seneca St/ 6th Ave	S	Avg	D	43
24	Seneca St/ 5th Ave	S	Avg	B	10.7
25	University St/ 6th Ave	S	Avg	D	39.8
26	University St/ Terry Ave	AWS	WB	A	7.6
27	University St/ Boren Ave	S	Avg	A	7
28	Union St/ Boren Ave	S	Avg	A	8.3
29	Union St/ 7th Ave	S	Avg	C	20.3
30	Pike St/ 7th Ave	S	Avg	C	21.1
31	Pike St/ 8th Ave	S	Avg	B	15.1
32	Pike St/ Boren Ave	S	Avg	C	22.2
33	Madison St/ Broadway	S	Avg	C	29.7
P1	Seneca St/ Benaroya Garage	NB-SB Stop	NB	C	23.2
P2	Seneca St/ Lindeman Garage	NB-SB Stop	NB	C	22.3
P3	9th Ave Garage/ 9th Ave	EB Stop	EB	B	10.3

Source: Transportation Solutions, Inc., 2011

[1] S= Signalized, AWS= All-way stop control, Stop=One or two way stop control w/ controlled approach.

[2] Approach – designates the direction of travel for the controlled approach and LOS. (i.e. NB = northbound, Avg. = average of all approaches).

[3] Delay = average seconds of vehicle delay for all vehicles entering intersection or those entering on controlled approaches.

All intersections operate at LOS-D or better with the exception of the intersection of Spring Street and 6th Avenue which operates at LOS-E during the PM peak hour. This poor level of service is due to the high volume of northbound traffic making a hard right turn onto the I-5 southbound ramp.

Road Segments

Level of service was also examined for street segments within or adjacent to the Master Plan boundary. Level of service for street segments is expressed as the time it takes a vehicle to travel along through the segment and takes into account intersection delays. The methodology requires that vehicles travel through more than one intersection to calculate travel time. Because of this, arterial level of service cannot be calculated for Terry Avenue and can only be calculated for University Street in the westbound direction. In an urban environment it is anticipated that vehicles traveling on road segments with closely spaced intersection and high traffic volumes will experience significant delays during peak hours. AM and PM peak hour speeds and LOS for road segments within or adjacent to the Master Plan boundary are summarized in **Table 3.9-4**.

Table 3.9-4
ROAD SEGMENT LEVEL OF SERVICE (2011)

Road Segment	Direction	AM Peak Hour		PM Peak Hour	
		Speed	LOS	Speed	LOS
9th Avenue	northbound	5.7	F	5.8	F
	southbound	7.4	E	6.8	F
Boren Avenue	northbound	12.6	D	11.6	D
	southbound	13.6	C	12.1	D
Madison Street	eastbound	9.6	D	5.9	F
	westbound	12.5	D	10.5	D
Seneca Street	eastbound	7.8	E	7.5	E
	westbound	7.2	E	7.1	E
Spring Street	eastbound	19.9	B	19.6	B
	westbound	15.4	C	15.2	C
University Street	westbound	3.5	F	2.5	F

Source: Transportation Solutions, Inc., 2012

Campus Accesses and Loading Areas

The VMMC campus is penetrated by a number of streets including University, Seneca, Spring, 9th, and Terry. Vehicle trips generated by VMMC use these streets to access parking lots and loading areas. Figure 29 of the *Master Plan* identifies existing patient loading areas. The most heavily utilized drop off area is in front of the Buck Pavilion with primary drop off areas at the hospital entrance on Seneca and the old Emergency Room entrance at the intersection of Terry and Spring Streets. The Buck Pavilion entrance provides valet parking services. The Emergency Room has moved to its new location at the southeast corner of the Jones Pavilion; however it is likely that the existing loading area will be retained as a loading area for patients and visitors and operate more efficiently without the emergency room generated traffic. Secondary passenger loading areas are locatedat the following building entrances and streets:

- Blackford Hall: east side of Terry
- Lindeman Pavilion: west side of Terry
- Health Resources Building: north side of University and east side of Ninth Ave.
- Benaroya Research Institute: west side of Ninth Ave

Truck access for the delivery of supplies is provided at four locations:

1. The Hospital loading dock located on the south side of Seneca Street east of Ninth Avenue.This loading dock has two berths that are available with two others used for a dumpster and compactor. The loading dock averages 38.2 truck deliveries per weekday. The maneuvering area can accommodate backing movements by single unit trucks. Larger semi-trucks typically have to back into the area from Seneca.
2. Lindeman Pavilion loading dock located on west side of Terry Street between Seneca and University. This loading dock has two berths that accommodate single unit trucks up to 30 feet in length and on average accommodates 12.8 truck deliveries per day. Trucks must back into the berths from Terry Street.
3. Benaroya Research Institute loading dock is located on Seneca adjacent to the garage access. It has one birth that can accommodate trucks up to 25 feet in length. The dock serves five to ten deliveries a day. Trucks must back into the loading dock from Seneca.
4. The Spring Street loading dock is located on the north side of Spring Street just east of Ninth Avenue. Its primary use is for food deliveries and can accommodate one truck up to 25 feet in length. The dock averages seven deliveries a day between 5:30 AM and 2 PM. Trucks must back into the loading dock from Spring Street.

Safety

Traffic collision data records were obtained from the Seattle Department of Transportation (SDOT) to identify intersections and roadway segments that would be considered 'High-Accident Locations" (HALs) based on SDOT standards (10 or more per year for signalized intersections and 5 or more per year for unsignalized intersections). Collision records covering the period from January 1st, 2006 through December 31st, 2010 were analyzed for the study area intersections. In addition, street segments within the campus boundary were analyzed to identify safety issues between intersections. **Table 3.9-5** summarizes the number of collisions per year and the average annual number of collisions for the 5-year period.

The signalized intersections of 6th Ave/ James St and 5th Ave/ Spring St exceed the SDOT threshold of 10 collisions per year. The majority of collisions at 6th Ave/ James St involved at-angle crashes, particularly for southeast left-turning and through vehicles. Over the five-year period, three collisions involved pedestrians and none involved bicycles. At-angle collisions were also above average at 5th Ave/ Spring St. Over the five-year period, 9 collisions involved pedestrians and none involved bicycles.

Pedestrian and bicycle collisions, while less common than vehicle collisions, occurred most frequently at 9th Ave/ James St, 6th Ave/ Madison St, 8th Ave/ Pike St, and Boren Ave/ Pike St. Many of the pedestrian collisions involved pedestrians crossing at crosswalks. **Table 3.9-6** summarizes the total vehicle-pedestrian and vehicle-bicycle collisions from 2006-2011 and collision locations for each intersection and roadway segment. The locations refer to collisions that occurred within the roadway, within a crosswalk, or 'off-road', which indicates a collision occurring on a sidewalk or other off-road facility such as an alley.

Table 3.9-5
COLLISION SUMMARY – AVERAGE NUMBER OF COLLISIONS PER YEAR (2006 – 2011)

	Intersection	Control	2006	2007	2008	2009	2010	Total	Average
1	6th Ave/ James St	Signal	27	15	18	12	13	85	**17**
2	7th Ave/ James St	Signal	4	4	3	5	9	25	5
3	9th Ave/ James St	Signal	11	4	8	5	5	33	6.6
4	Boren Ave/ James St	Signal	7	4	6	5	3	25	5
5	Boren Ave/ Marion St	Signal	4	4	1	1	2	12	2.4
6	Boren Ave/ Madison St	Signal	7	2	1	7	4	21	4.2
7	Madison St/ Terry Ave	Signal	0	1	2	3	1	7	1.4
8	9th Ave/ Madison St	Signal	1	0	0	4	3	8	1.6
9	8th Ave/ Madison St	Signal	1	3	1	1	4	10	2
10	7th Ave/ Madison St	Signal	6	4	6	3	2	21	4.2
11	6th Ave/ Madison St	Signal	3	2	0	7	4	16	3.2
12	5th Ave/ Spring St	Signal	13	13	8	16	14	64	**12.8**
13	6th Ave/ Spring St	Signal	4	4	5	3	3	19	3.8
14	8th Ave/ Spring	EB Stop	8	2	3	6	0	19	3.8
15	9th Ave/ Spring St	EB-WB Stop	3	1	0	2	0	6	1.2
16	Terry Ave/Spring	NB-SB Yield	-	-	-	-	-	-	-
17	Boren Ave/ Spring St	Signal	0	1	0	0	0	1	0.2
18	Boren Ave/ Seneca St	Signal	5	3	1	4	1	14	2.8
19	Seneca St/ Terry Ave	SB Stop	1	1	0	0	0	2	0.4
20	9th Ave/ Seneca St	Signal	1	1	0	1	0	3	0.6
21	8th Ave/ Seneca St	Signal	1	3	0	2	0	6	1.2
22	Hubbell Pl/ Seneca St	Signal	1	1	0	0	2	4	0.8
23	6th Ave/ Seneca St	Signal	3	2	0	7	4	16	3.2
24	5th Ave/ Seneca St	Signal	7	2	4	3	7	23	4.6
25	6th Ave/ University St	Signal	3	7	4	14	7	35	7
26	Terry Ave/ University St	AWS	-	-	-	-	-	-	-
27	Boren Ave/ University St	Signal	0	2	3	0	2	7	1.4
28	Boren Ave/ Union St	Signal	1	0	1	0	0	2	0.4
29	7th Ave/ Union St	Signal	0	4	2	1	0	7	1.4
30	7th Ave/ Pike St	Signal	1	3	5	4	4	17	3.4
31	8th Ave/ Pike St	Signal	3	7	6	2	1	19	3.8
32	Boren Ave/ Pike St	Signal	9	7	8	7	10	41	8.2
33	Broadway/ Madison St	Signal	4	4	4	6	5	23	4.6
-	University St/ 9th Ave	None	1	0	0	0	0	1	0.2

Road Segment	2006	2007	2008	2009	2010	Total	Average
9th Ave from Spring St to Seneca St	2	0	1	2	1	6	1.2
9th Ave from Madison St to Spring St	4	3	0	1	2	10	2
Boren Ave from Madison St to Spring St	4	2	3	4	1	14	2.8
Boren Ave from Seneca St to University St	2	1	0	3	0	6	1.2
Boren Ave from Spring St to Seneca St	0	2	2	0	1	5	1
Madison St from 9th Ave to Terry Ave	2	4	1	3	3	13	2.6
Madison St from Terry Ave to Boren Ave	4	2	2	0	4	12	2.4
Seneca St from 9th Ave to Terry Ave	0	0	0	0	3	3	0.6
Seneca St from Terry Ave to Boren Ave	0	4	0	0	2	6	1.2
Spring St from 9th Ave to Terry Ave	1	0	0	0	1	2	0.4
Spring St from Terry Ave to Boren Ave	1	0	1	0	0	2	0.4
Terry Ave from Madison St to Spring St	0	0	0	0	2	2	0.4
Terry Ave from Seneca St to University St	1	2	0	0	0	3	0.6
University St from 9th Ave to Terry Ave	0	2	1	0	0	3	0.6
University St from Terry Ave to Boren Ave	1	1	1	2	1	6	1.2

Source: SDOT, 2011

Table 3.9-6
COLLISION SUMMARY – TOTAL VEHICLE-PEDESTRIAN AND VEHICLE-BICYCLE RELATED COLLISIONS (2006 -2011)

Intersection		Pedestrian – Vehicle				Bicycle - Vehicle			
		Cross walk	Road	Off Road	Total	Cross walk	Road	Off Road	Total
1	James St/ 6th Ave	3	0	0	3	0	0	0	0
2	James St/ 7th Ave	3	0	0	3	0	0	0	0
3	James St/ 9th Ave	7	0	0	7	0	1	0	1
4	James St/ Boren Ave	1	0	0	1	0	0	0	0
5	Marion St/ Boren Ave	3	0	0	3	0	0	0	0
6	Madison St/ Boren Ave	2	0	0	2	1	0	0	1
7	Madison St/ Terry Ave	0	0	0	0	0	1	0	1
8	Madison St/ 9th Ave	0	0	0	0	0	1	0	1
9	Madison St/ 8th Ave	3	0	0	3	0	0	0	0
10	Madison St/ 7th Ave	3	0	0	3	0	0	0	0
11	Madison St/ 6th Ave	0	0	0	0	0	2	0	2
12	Spring St/ 5th Ave	8	1	0	9	0	0	0	0
13	Spring St/ 6th Ave	2	3	0	5	0	0	0	0
14	Spring St/ 8th Ave	0	0	0	0	0	1	0	1
15	Spring St/ 9th Ave	0	2	0	2	0	0	0	0
16	Spring St/ Terry Ave	0	0	0	0	0	0	0	0
17	Spring St/ Boren Ave	1	0	0	1	0	0	0	0
18	Seneca St/ Boren Ave	1	1	0	2	0	0	0	0
19	Seneca St/ Terry Ave	1	0	0	1	0	0	0	0
20	Seneca St/ 9th Ave	0	0	0	0	0	0	0	0
21	Seneca St/ 8th Ave	1	1	0	2	0	0	0	0
22	Seneca St/ 7th Ave	0	0	0	0	0	1	0	1
23	Seneca St/ 6th Ave	0	0	0	0	0	0	0	0
24	Seneca St/ 5th Ave	1	0	0	1	0	0	0	0
25	University St/ 6th Ave	3	0	0	3	0	0	0	0
26	University St/ Terry Ave	0	0	0	0	0	0	0	0
27	University St/ Boren Ave	2	0	0	2	0	0	0	0
28	Union St/ Boren Ave	2	0	0	2	0	0	0	0
29	Union St/ 7th Ave	1	0	0	1	0	3	0	3
30	Pike St/ 7th Ave	4	0	0	4	0	2	0	2
31	Pike St/ 8th Ave	7	0	0	7	0	1	0	1
32	Pike St/ Boren Ave	5	1	0	6	0	4	0	4
33	Madison St/ Broadway	3	0	0	3	1	1	0	2
-	9th Ave/ University St	0	0	0	0	0	0	0	0

Source: SDOT, 2011

Table 3.9-6 (cont.)
COLLISION SUMMARY – TOTAL VEHICLE-PEDESTRIAN AND VEHICLE-BICYCLE RELATED COLLISIONS (2006 -2011)

Road Segment	Pedestrian-Vehicle				Bicycle - Vehicle			
	Cross walk	Road	Off Road	Total	Cross walk	Road	Off Road	Total
9th Ave from Spring St to Seneca St	0	0	0	0	0	0	0	0
9th Ave from Madison St to Spring St	0	0	1	1	0	0	0	0
Boren Ave from Madison St to Spring St	0	0	0	0	0	1	0	1
Boren Ave from Seneca St to University St	0	0	0	0	0	0	0	0
Boren Ave from Spring St to Seneca St	0	0	0	0	0	0	0	0
Madison St from 9th Ave to Terry Ave	0	0	0	0	0	0	0	0
Madison St from Terry Ave to Boren Ave	0	0	0	0	0	0	0	0
Seneca St from 9th Ave to Terry Ave	0	0	0	0	0	0	0	0
Seneca St from Terry Ave to Boren Ave	0	0	0	0	0	0	0	0
Spring St from 9th Ave to Terry Ave	0	0	0	0	0	0	0	0
Spring St from Terry Ave to Boren Ave	0	0	0	0	0	0	0	0
Terry Ave from Madison St to Spring St	0	0	0	0	0	0	0	0
Terry Ave from Seneca St to University St	0	0	0	0	0	0	0	0
University St from 9th Ave to Terry Ave	0	0	0	0	0	0	0	0
University St from Terry Ave to Boren Ave	0	0	0	0	0	0	0	0

Source: SDOT, 2011

The study area is noted for its urban density and associated high vehicle and pedestrian traffic volumes. Given this level of density, collision frequency within the area is relatively low except for the locations previously identified. Analysis did not identify any locations where there were safety deficiencies that could be corrected through infrastructure improvements.

Pedestrian Facilities, Volumes, and Circulation

Sidewalks are present on all of the streets surrounding VMMC and marked crossings at most intersections. Signalized intersections also have pedestrian signal heads to control crossing points. Because the VMMC campus spreads across a number of blocks, there is significant pedestrian traffic generated by patients and staff as they walk between buildings.

In addition to sidewalks along the roadways, there is a pedestrian sky bridge crossing Seneca at Terry and a pedestrian route through VMMC buildings along the vacated Terry Avenue right of way between Spring and Seneca Streets. Maintaining a pedestrian route through the building was a condition in the previous master plan for vacating that segment of Terry Ave. Another significant pedestrian facility is the path (Pigott Corridor) that follows the University Street right of way from 9th Avenue and University Street westward to Freeway Park and destinations in the central business district.

An assessment of pedestrian facilities within the existing and proposed Master Plan boundaries found that there are sidewalks on all streets and ADA ramps at all intersections. In general, the pavement is in good condition with only minor cracking. Some of the ADA ramps do not meet current standards in that they lack the yellow detectable warning strip. All sidewalks are at least five feet wide and there is a landscape strip or tree wells present on all block faces except for:

- The south side of University Street between Terry and 9th Avenue
- The east side of 9th Avenue between University and Seneca
- The north side of Madison from Boren to Terry
- The west side of Boren from Madison to Spring

Figure 3.9-5 summarizes AM and PM peak hour pedestrian crossings at intersections within or adjacent to the VMMC campus. Intersections in the vicinity of the campus with 500 PM peak hour pedestrian crossings include Madison/Boren and Seneca/9th. Intersections with 300 to 500 pedestrian crossings during the PM peak hour include Madison/9th, Spring/9th, and Seneca/Terry. A rough interpolation of intersection pedestrian volumes indicates that during the AM peak hour there could be from 100 to 180 pedestrians on busy sidewalk segments and from 40 to 100 pedestrians on less busy segments. During the PM peak hour, there could be from 110 to 190 pedestrians on busy sidewalk segments and from 15 to 110 pedestrians per hour for less busy sidewalks segments.

Pedestrian level of service is calculated by determining the sidewalk area that is available to each pedestrian. Assuming that a sidewalk segment along a block is 250 ft long and has 10 feet of clear width there would be 2,500 SF available to pedestrians. With a peak occupancy of 50 pedestrians there would be 50 SF available to each pedestrian. Pedestrian level of services standards establish LOS-A conditions when each pedestrian has 35 SF or more of sidewalk space available. By comparison LOS-C is 15 to 25 SF of space available and LOS-F is less than 5 SF available to each pedestrian.

Bicycle Facilities and Circulation

Public bicycle facilities in the vicinity of VMMC are limited due to the steep grades of the east/ west streets. Both Seneca and Spring Street to the west of 8th Avenue are designated as shared bicycle/vehicle lanes and marked with the 'sharrow' (shared lane) symbol. Broadway to the east of the campus also is marked with sharrows. Bicycle lanes are present on 12th Avenue to the east of Broadway. East/west routes in the vicinity of the campus include bicycle lanes on Pine Street to the north and sharrows on Jefferson and Yesler to the south.

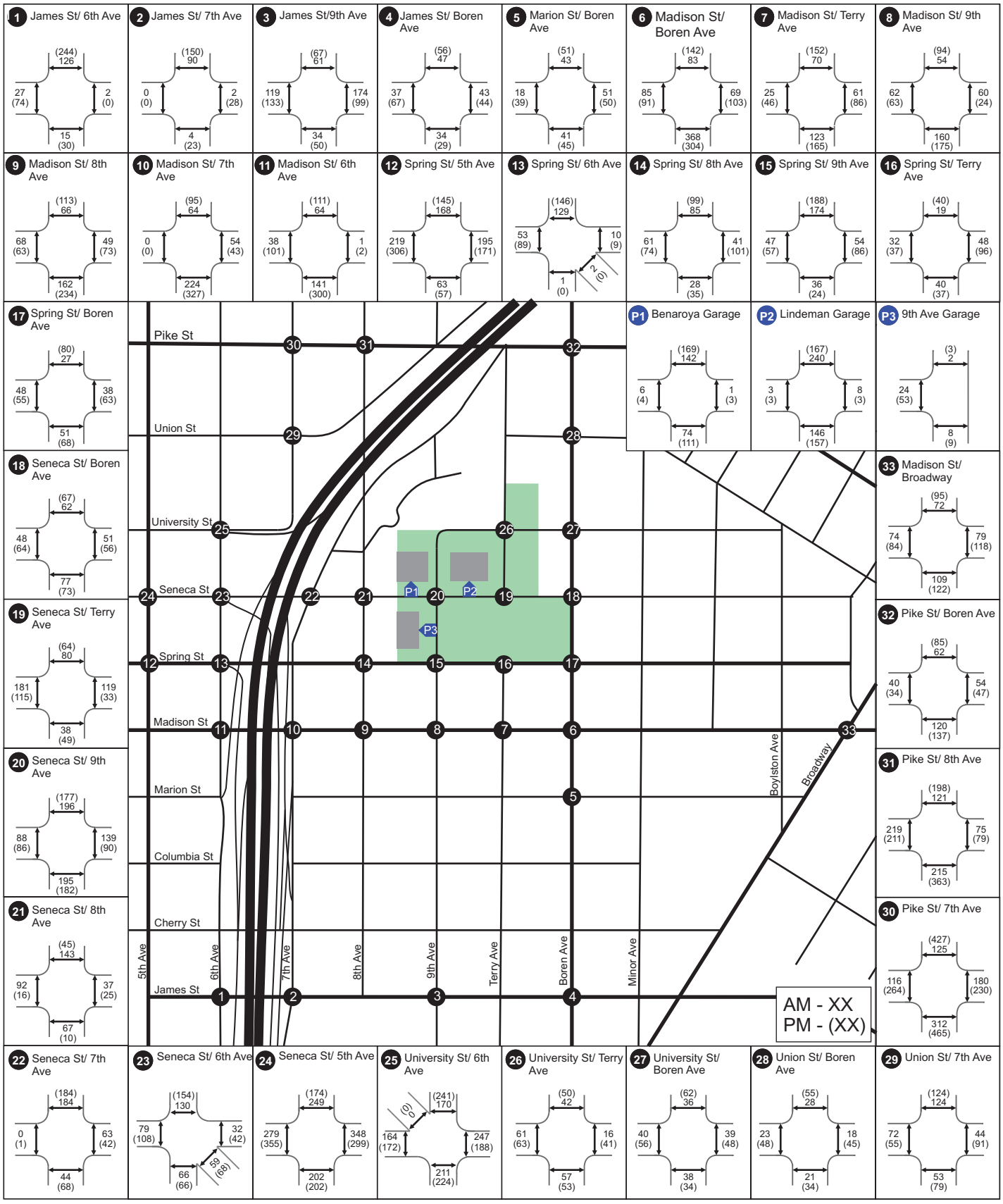
VMMC provides covered secure (bike cages) parking for staff that commute by bicycle in three parking garages as well as access to showers and lockers as part of the Transportation Management Program. There is also a VMMC Bicycle Club in place that promotes cycling and sponsors activities. The adequacy of the supply is monitored by the Club and the Parking and Commuter Services office. Bicycle parking is relocated or added as needed.

Parking Supply and Utilization

VMMC-Managed Parking

The existing parking supply consists of 1,426 parking stalls located within the campus boundary and the surrounding neighborhood. **Table 3.9-7** lists the parking lots by name, stall count, allocation to patients and staff, and peak utilization rate. Parking facilities followed by an 'L' indicate leased parking. **Figure 3.9-6** illustrates the location of the existing parking supplies.

Virginia Mason Medical Center MIMP
Draft EIS



Source: Transportation Solutions, Inc., 2012

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Figure 3.9-5

AM AND PM PEAK HOUR PEDESTRIAN VOLUMES
EXISTING 2011

Off-Campus Parking Locations

A Spring & Summit (GME)
B Tate Mason Garage
C Avanti Apartments (L)
D Cabrini Towers (L)
E Exeter House (L)
F Horizon House (L)
G M Street Garage (L)
H Met Park North (L)
I Met Park West (L)
J Panorama House (L)
K Sorrento Hotel (L)
L Sorrento Hotel Roof (L)
M Stimson Green (L)

Virginia Mason Medical Center Boundary
On-CampusParking Location
Off-Campus Parking Location

Source: Transportation Solutions, Inc., 2012

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Figure 3.9-6
VMMC Parking Supplies
Existing 2011

During periods of peak demand, approximately 94 percent of the supply is occupied. In order to maintain circulation within a parking facility and avoid excessive delay when searching for a parking stall, a utilization rate of 90 percent to 95 percent should not be exceeded. Parking utilization rates at or above this threshold result in congestion, excessive delay, and customer frustration. Based on the available data, utilization of the VMMC parking supply is considered to be at capacity during the periods of peak demand from 10 AM to 3 PM. Accessible parking stalls are provided in the parking garages.

Parking in VMMC facilities is restricted to patients, physicians, carpools, and a small number of staff during the day. Staff working evenings and nights can park in specified facilities. A limited number of parking permits are sold to physicians and staff at the following rates:

- Monthly SOV rate $ 215
- Monthly carpool rate (2 person) $ 168
- Monthly carpool rate (3 person) $ 158
- Monthly vanpool rate $ 27
- Monthly evening rate $ 148

Table 3.9-7
EXISTING PARKING SUPPLIES AND UTILIZATION

Lot	Patient	Staff	Total	Demand	Utilization
1000 Madison Lot	60	0	60	60	100%
Ninth Avenue Garage	230	15	245	234	96%
Benaroya	86	181	267	258	97%
Buck Valet	102	0	102	85	83%
HRB Lot	0	4	4	4	100%
Cassel Crag	0	2	2	2	100%
Lindeman Pavilion	168	1	169	160	95%
Spring & Summit	0	25	25	20	80%
Tate Mason	22	153	175	172	98%
Terry & University Lot	62	10	72	65	90%
Avanti Apts (L)	0	25	25	25	100%
Cabrini Towers (L)	0	10	10	10	100%
Copperfield (L)	0	11	11	11	100%
Exeter House (L)	0	15	15	15	100%
Horizon House (L)	0	10	10	10	100%
Landes (L)	0	10	10	10	100%
M Street Garage (L)	0	18	18	18	100%
Met Park North (L)	0	42	42	40	95%
Met Park West (L)	0	31	31	28	90%
Panorama House (L)	0	10	10	8	80%
Sorrento Hotel (L)	0	59	59	56	95%
Sorrento Hotel Roof (L)	0	17	17	15	88%
Stimson Green (L)	0	47	47	39	83%
Totals	**730**	**696**	**1,426**	**1,346**	**94%**

Source: VMMC, Transportation Solutions, Inc., 2011
L=leased parking supplies

Fees are charged at all times with patients receiving a 10 percent to 25 percent discount off of the regular rates. Current parking fees for visitors and patients are summarized in **Table 3.9-8** below.

Table 3.9-8
VISITOR AND PATIENT PARKING RATES

Times	Garage Rates		Valet Rates	
	Visitor	Patient	Visitor	Patient
0-30 minutes	No charge	No charge	$5	$5
30 minutes - 1 hour	$5	$4	$7	$7
1-2 hours	$8	$6	$10	$10
2-3 hours	$10	$8	$12	$12
3-4 hours	$10	$8	$14	$14
4-5 hours	$12	$10	$16	$16
5-6 hours	$14	$12	$16	$16
6-8 hours	$18	$15	$18	$18
8-9 hours	$18	$15	$19	$19
9-10 hours	$18	$16	$20	$20
10-12 hours	$20	$18	$21	$21
12-24 hours	$22	$20	$24	$24

Source: VMMC, 2011

On-Street Parking

On-street parking supplies in the vicinity of VMMC have time or other restrictions and are metered in most areas. **Figure 3.9-7** illustrates how the on-street supply and curb space is managed in the vicinity of VMMC. Because observations showed that on-street supplies are typically fully utilized during most times of the day parking utilization was not further documented.

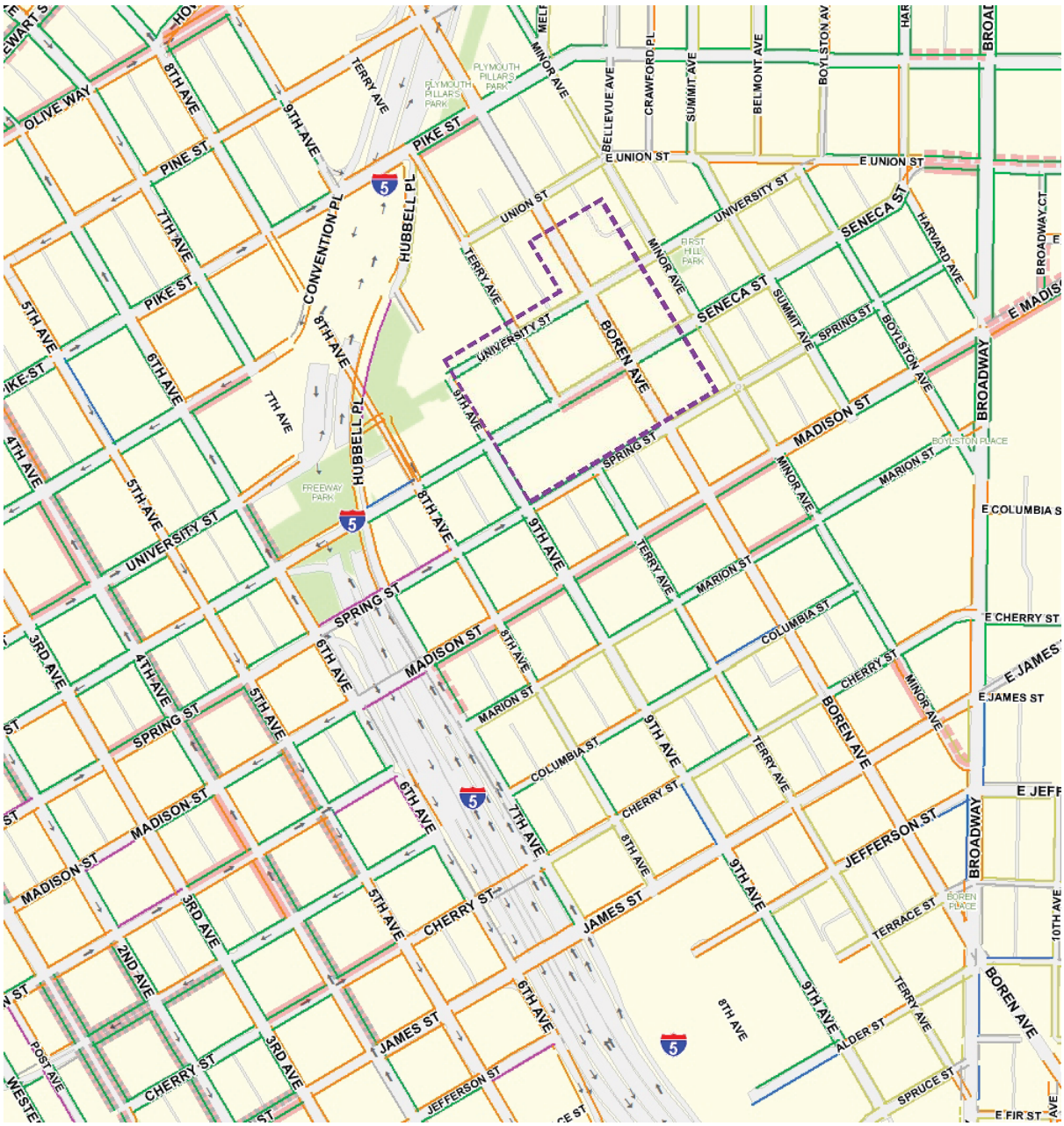
Curb space is regulated by the Seattle Department of Transportation (SDOT) to address competing needs, to assist in moving people and goods more efficiently, to support the vitality of business districts, and to create livable neighborhoods. SDOT prioritizes the uses for curb space as follows.

In residential areas the priorities for curb space use are:

- transit use (bus stops and spaces for bus layover),
- passenger and commercial vehicle loading zones,
- parking for local residents and for shared vehicles, and
- vehicular capacity.

In business or commercial areas, including blocks with mixed-use buildings containing residential units, the priorities for curb space use are:

- transit use (bus stops and spaces for bus layover),
- passenger and commercial vehicle loading zones,
- short-term customer parking,
- parking for shared vehicles, and
- vehicular capacity.



Seattle Parking Map from City of Seattle
(http://web1.seattle.gov/SDOT/seattleparkingmap/)

Legend

Parking Categories
- Carpool
- Paid
- RPZ
- Time Limited
- No Parking
- Restricted

Peak Hour Restrictions
- AM Restrictions
- AM/PM Restrictions
- PM Restrictions

Boundary
- Virginia Mason Existing Campus

Source: Transportation Solutions, Inc., 2012

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Figure 3.9-7

ON STREET PARKING CONTROLS IN THE VICINITY OF VMMC
EXISTING 2011

On-street parking within the campus boundary is designated as short-term paid parking with much of the curb space identified as no parking.

SDOT has conducted studies in the vicinity of VMMC to determine how to maximize the efficient use of on street supplies within Restricted Parking Zones (RPZ). Potential strategies that are being considered are adding paid parking to RPZ blocks to improve daytime turnover and compliance and change unrestricted parking in the area to RPZ with paid parking. Currently, SDOT is not planning on expanding any RPZ's and recently raised the hourly parking rate to $4 in the First Hill area. These changes should not affect parking in the immediate vicinity of VMMC. An SDOT study has concluded that between 30% and 40% of vehicles parked in downtown and First Hill on-street spaces display disabled parking placards. Under current city polices vehicles displaying placards have free unlimited parking and it is assumed that a good portion of those parked on City streets are not legitimate placard holders. The fraudulent use of disabled parking permits restricts access to on-street parking supplies by legitimate users as well as the general population.

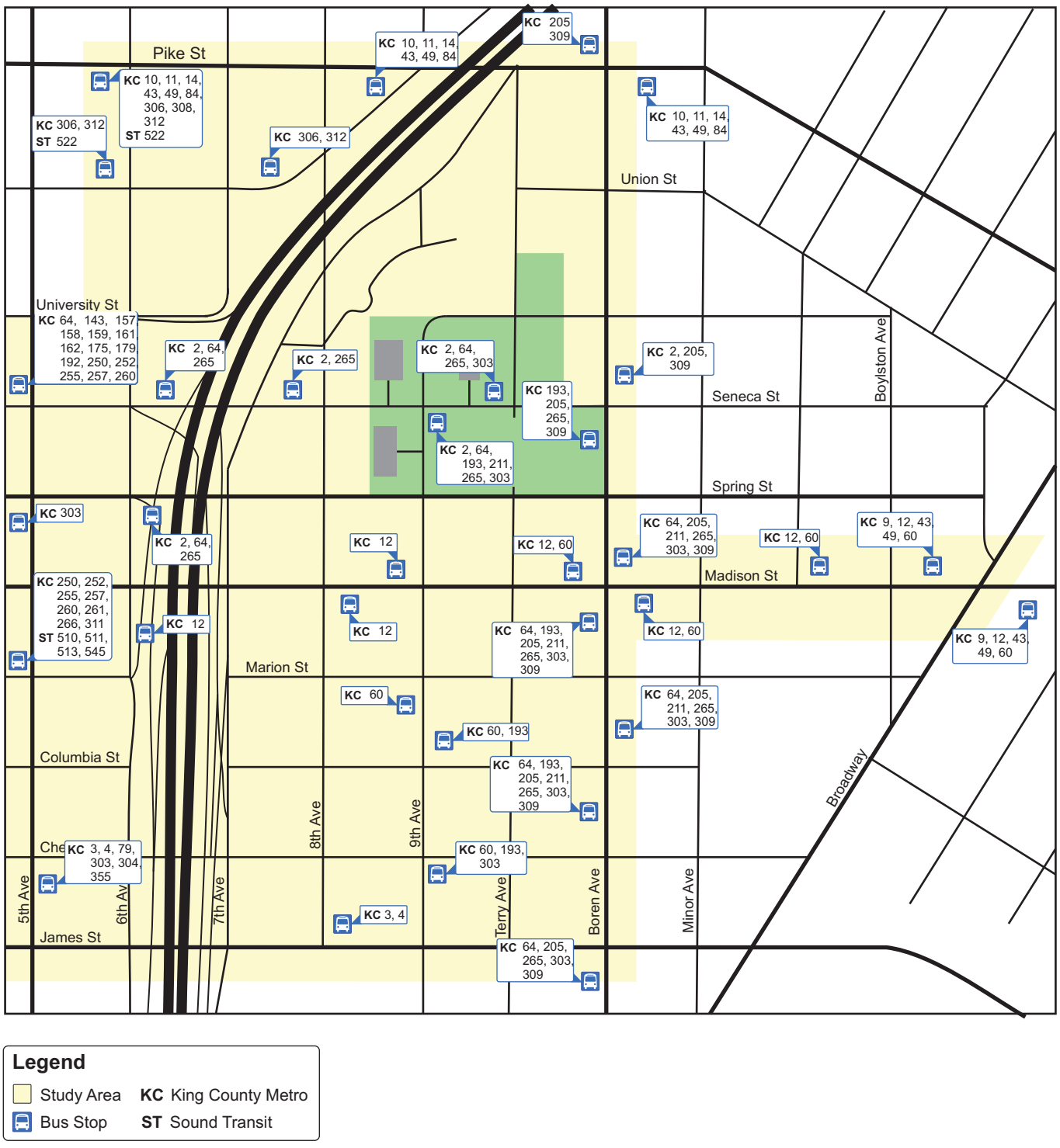
Transit

The campus is served by local transit agencies and includes regular service to Downtown Seattle, University District, White Center, Rainier Beach, Queen Anne, Madrona, Lake City, Shoreline, Kent and Eastgate via a number of King County Metro routes. **Table 3.9-9** details the services provided with stops on streets adjacent to the campus. The campus is served by routes on Madison Street, Boren Avenue, Spring Street, Seneca Street, and 9th Avenue. Routes between the campus and Downtown provide access to the ferry terminal, Sound Transit bus routes, Link light rail, and the Sounder Train. **Figure 3.9-8** illustrates the transit stops and routes in the vicinity of the campus. The stop on the north side of Seneca and west side of Boren are equipped with shelters.

Table 3.9-9
KING COUNTY METRO ROUTES SERVING VMMC

Route #	Area Served	Stops on:	Headway	
			Peak	Off-Peak
2	W. Queen Ann, Downtown, First Hill, Madrona	Seneca	15 min	15 min
12	Downtown, First Hill, Capitol Hill	Madison	10 min	15 min
60	Broadway, First Hill, Beacon Hill, Georgetown, White Ctr.	Madison, 9th	20 min	20 min
64	Lake City, Wedgwood, U District, Downtown, First Hill	Seneca	20 min	N/A
193	Express service between Kent-Des Moines Freeway Station & First Hill	Seneca, 9th, Boren	30 min	N/A
205	Express service between Mercer Island, First Hill, & UW Campus	Boren	60 min	N/A
211	Express service between First Hill & Eastgate Park & Ride	Seneca, 9th	30 min	N/A
265	Express service between Downtown, First Hill, & Redmond	Seneca	15 min	N/A
303	Express service between First Hill & Shoreline Park & Ride	Seneca	20 min	N/A
309	Express service between First Hill & Kenmore	Boren	30 min	N/A

Source: King County Metro, 2012



Legend

- Study Area
- Bus Stop
- **KC** King County Metro
- **ST** Sound Transit

Source: Transportation Solutions, Inc., 2012

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Figure 3.9-8

TRANSIT STOPS AND ROUTES

King County Metro routes 64, 193, 205, 211, 265, 303, and 309 provide service during the morning and afternoon peak periods. During off-peak periods routes 2, 12, and 60 provide service that link with additional routes in the central business district.

Transit stops are located on campus along Seneca St between Terry Ave and 9th Ave and along Boren Ave between Spring St and University St. King County Metro routes 2, 64, 193, 205, 211, 265, 303, and 309 are served directly on campus or on adjacent streets. Building entrances are less than a block away from a transit stop for routes adjacent to the campus. Transit stops serving routes 12 and 60 can be found within two blocks of the campus boundary.

Table 3.9-10 summarizes fall 2010 loading volumes at the major transit stops serving VMMC. The stops on Madison Street receive the greatest use with up to 917 passengers getting on or off buses at the eastbound stop on Madison St at Boren Ave. All transit stops that accommodate 50 or more boardings per day typically include shelters and other amenities where there is adequate space between the curb and building face to accommodate them.

Table 3.9-10
AVERAGE DAILY BOARDINGS (ON AND OFF) AT NEARBY TRANSIT STOPS

Direction	Stop Located on:	Cross Street	Average Daily Boardings (on & off)
Westbound	Madison St	Boren Ave	654
Westbound	Madison St	9th Ave	162
Eastbound	Madison St	Boren Ave	917
Eastbound	Madison St	8th Ave	195
Northbound	Boren Ave	Madison St	57
Northbound	Boren Ave	Seneca St	7
Southbound	Boren Ave	Seneca St	87
Southbound	Boren Ave	Madison St	328
Northbound	9th Ave	Spring St	144
Eastbound	Seneca St	Boren Ave	194
Eastbound	Seneca St	9th Ave	44
Westbound	Seneca St	Boren Ave	75
Westbound	Seneca St	Terry Ave	299

Source: SDOT, 2012

Existing Trip Generation and Parking Demand Ratios

In order to establish a basis for forecasting future trip generation and parking characteristics, existing trip generation and parking demand ratios were established using existing traffic volume data and parking utilization rates.

Trip Generation

To establish existing VMMC trip generation characteristics, AM and PM peak hour turning movement counts were made at the three primary parking garages (Ninth Avenue, Benaroya, and Lindeman). Parking supplies in the Ninth Avenue garage are allocated to patients while the Benaroya garage is mostly (68 percent) allocated to staff. The Lindeman garage is used by

employees at night who depart during the AM peak hour and is reserved for patients during the day. These three garages generated 349 trips during the AM peak hour and 209 trips during the PM peak hour.

In order to estimate the trip generation characteristics for the remaining parking facilities, a trip generation rate per parking stall for patients was calculated by dividing the observed entering and exiting volume of the Ninth Avenue Garage by the number of parking stalls. This resulted in an AM peak hour trip generation rate of 0.58 trips per stall and PM peak hour rate of 0.39 trips per stall for patients. The Benaroya Garage was used to establish a staff trip generation rate. Most patients and visitors prefer to use the Ninth Avenue Garage because it is closer to the campus core and easier to access than the Benaroya Garage. Because of this the Ninth Avenue Garage typically fills up first. Because the Benaroya Garage is a less desirable option for patients when parking is plentiful, it is assumed that all vehicles entering the Benaroya Garage during the AM peak hour are staff. During the PM peak hour patient parking demand is low and it is assumed that all trips entering or leaving the Benaroya Garage are staff. The resulting staff trip generation ratios are 0.19 trips per stall for the AM peak hour and 0.22 trips per stall during the PM peak hour.

The Lindeman garage was not used in this calculation because all of the stalls are allocated to patients during the day and the AM peak hour outbound volumes are primarily generated by staff. Because parking supplies are allocated to either staff or patient/visitor use it was possible to apply the trip generation ratios to the remaining supplies to estimate total campus trip generation. Based on this methodology, VMMC currently generates 530 trips (66 percent inbound, 34 percent outbound) during the AM peak hour and 421 trips (16 percent inbound, 84 percent outbound) during the PM peak hour. From the perspective of building area, VMMC currently generates 0.47 trips per 1,000 SF during the AM peak hour and 0.38 trips per 1,000 SF during the PM peak hour. These rates are based upon 1,112,612 SF of building area, which includes all above and below grade occupied areas and excludes all parking structures. This calculation does not incorporate on-street parking by VMMC staff or patients. It is assumed that employees do not park on adjacent streets due to time restrictions and that very few patients park on-street due to the limited supply and fact that it is time consuming to find an available space.

These rates are approximately one third of the ITE rates for a Hospital (LUC 610) but are appropriate for an urban medical center with excellent transit access and limited staff parking. The Final EIS for the Swedish Medical Center Master Plan was reviewed to compare trip generation characteristics. The Swedish EIS identifies (page 47) an existing floor area of approximately 2,712,000 SF (excluding parking, central plant, and materials management) that generates 2,100 vehicle trips during the AM peak hour vehicles and 2,250 vehicle trips during the PM peak hour (page 142). This equates to an AM peak hour trip generation rate of 0.77 trips per 1,000 SF and a PM peak hour rate of 0.83 trips per 1,000 SF. These rates are approximately double that calculated for VMMC. The difference is likely due to the extensive outpatient program at Swedish, which has approximately four times as many patients per day as the VMMC program, the fact that the VMMC floor area includes central plant and materials management space, and the fact that Swedish provides more parking per 1,000 SF than VMMC. A survey of PM peak hour trip rates based on site studies for medical centers reveals the following trip generation ratios:

- Seattle Children's Master Plan (2007) 0.89 trips/ 1,000 SF
- Stanford Medical Center (2008) 0.81 trips/ 1,000 SF

The Swedish, Seattle Children's and Stanford PM peak hour rates area all based on actual counts and appear comparable with the Swedish rates. However, there are factors such as different travel mode splits for staff, parking availability for staff, access to public transit, and programmatic factors that make each facility unique. A key factor affecting VMMC trip generation is the lack of parking for staff and an associated high transit ridership rate (46% versus 27% for Swedish (CTR Survey report, 2011).

A more detailed look at the relationship between VMMC trip generation and the allocation of space on-campus identifies different trip generation rates for different uses. Medical center occupied space can roughly be separated into inpatient, outpatient and support spaces. Inpatient space is defined as hospital rooms, surgeries, patient care areas, emergency room, and associated offices and circulation areas. Outpatient space consists of medical office space as well as associated circulation space. Support space includes hospital functions such as dietary, environmental services, general offices, labs, and pharmacy and associated circulation space. Outpatient space tends to generate significantly more trips per 1,000 SF than inpatient space while support space generates the fewest trips per 1,000 SF.

Table 3.9-11 summarizes the breakdown of medical uses into the three sub-areas and associated trip generation rates. The trip generation rates for each use are based on survey results from the Evergreen Healthcare (Kirkland) and Good Samaritan hospital (Puyallup) master plan projects were surveys were made to determine the trip generation characteristics of the three main uses of campus space. The ratios from these studies were adjusted so the trip totals approximatedthe 530 AM peak hour and 421 PM peak hour trips generated by existing VMMC operations.

The ratios will be used to forecast trip generation characteristics of the Master Plan alternatives.

Table 3.9-11
Existing Building Area, Use, and Trip Generation

Use	Existing Building Area(SF)		AM Peak Hour		PM Peak Hour	
			Trips / 1,000 SF	Trips	Trips / 1,000 SF	Trips
Outpatient	276,295	25%	0.93	256	0.74	206
Inpatient	362,938	32%	0.44	161	0..36	130
Support	483,378	43%	0.26	125	0.21	100
Total	1,122,612	100%	0.48	542	0.39	436

Source: Transportation Solutions, Inc., 2012

Parking

The existing utilizationratio of parking stalls per 1,000 SF of building area is 1.27 stalls per 1,000 SF. Using the existing allocation of building area assigned to outpatient, inpatient, and support uses, the overall parking ratio can be broken down as follows:

- Outpatient Uses 2.40 stalls / 1000 SF
- Inpatient Uses 1.45stalls / 1000 SF
- Support Uses 0.50stalls / 1000 SF

This separation is based on the observations of the relative demand generated by the different uses documented in a study for Evergreen Healthcare. The ratios were applied to the existing

floor area assigned to each use to ensure that the total calculated amount of parking equaled the observed parking demand.

Since these ratios reflect a parking supply that is at capacity during most weekdays, it is appropriate to adjust these ratios when forecasting parking supply recommendations for future campus development. While future vehicle travel choices and associated parking demand will be affected by improved access to public transit, vehicle operating costs, and efficiencies in health care delivery that may reduce the need for patient trips; it is appropriate to establish parking supply ratios that are at the high end of what may actually be required in order to ensure maximum flexibility. In that context, the following parking ratios will be used to forecast future parking supply recommendations:

- Outpatient Uses 2.50 stalls / 1000 SF
- Inpatient Uses 1.20stalls / 1000 SF
- Support Uses 0.40 stalls / 1000 SF

The outpatient ratio was increased slightly to reflect higher patient volumes (increased efficiency) per 1,000 SF of floor area. The inpatient ratio was decreased to reflect the increase in floor area per patient bed and the support ratio was decreased to reflect a small decrease in the potential number of employees per 1,000 SF. These rates result in an overall parking supply ratio of approximately 1.43 stalls per 1,000 SF of building area.

Status of MIMP Requirements

Parking

The City of Seattle parking codes for major institutions establish a minimum parking requirement and the maximum number of parking stalls allowed. The minimum requirement for hospitals and medical centers is based on the number of hospital based and staff doctors as well as the peak number of employees, number of hospital beds, and average number of outpatients seen per day. **Table 3.9-12** summarizes the code requirement (unit factor), units or population, and the minimum number of parking spaces required for each unit or population group. The maximum number of spaces allowed is 135 percent of the minimum requirement. The minimum code requirement is 1,668 spaces and the maximum number of spaces allowed is 2,251. The current supply of 1,426 spaces is less than the minimum requirement.

Table 3.9-12
MAJOR INSTITUTION PARKING REQUIREMENTS – EXISTING (2011)

Zoning Code Category	Unit Factor	Unit	Stalls
Long-term Parking			
Hospital Based Doctors	0.8	228	182
Staff Doctors	0.25	66	17
Peak # of other employees	0.3	3,035	911
Short-term parking			
# of Hospital beds	0.17	272	46
Average Daily Outpatients	0.2	2,426	485
Fixed seats in Auditorium	0.1	268	27
Min. number of spaces required			1,668
Max. number of spaces allowed	1.35		2,251
Existing Parking Supply			1,426

Source: Transportation Solutions, Inc., 2011

Transportation Management Plan (TMP)

VMMC has operated a Transportation Management Program (TMP) for a number of years. Over the years, the percentage of the campus population that drives to campus in a single occupant vehicle (SOV) has remained below 30 percent. The most recent (2011) survey data shows an SOV rate of 27 percent, which reflects a small increase over the 2009 survey. **Table 3.9-13** summarizes the commuter travel mode splits for the campus staff. The findings are based on biennial Commute Trip Reduction (CTR) surveys made between 1998 and 2011 and incorporate responses from all employees taking the survey.

VMMC currently has 12 percent of the population in car or vanpools and 43 percent of the population using transit (bus and rail). In addition, 6 percent walk to work and 4 percent ride bicycles.

Table 3.9-13
VMMC TRAVEL MODE SPLITS

Mode	Year						
	1998	2001	2003	2005	2007	2009	2011
Drove Alone	26%	28%	29%	28%	25%	23%	27%
Carpool (2-6)	19%	17%	13%	15%	15%	12%	10%
Vanpool (4-6)	0%	0%	2%	1%	1%	2%	2%
Vanpool 7+	1%	1%	1%	1%	1%	-	-
Bus	43%	42%	43%	41%	43%	46%	43%
Rail		1%	1%	1%	2%	3%	3%
Bicycled	2%	1%	1%	2%	3%	2%	4%
Walked	5%	5%	5%	5%	4%	6%	6%
Teleworked	1%	0%	0%	0%	0%	1%	<1%
CWW	0%	0%	0%	0%	0%	0%	<1%
Did not Work	3%	3%	3%	3%	4%	-	-
Other	2%	2%	3%	2%	3%	1%	2%
Motorcycle	0%	0%	0%	0%	0%	1%	1%
Ferry (car/van/bus)	0%	0%	0%	0%	0%	1%	<1%
Ferry (walk-on)	0%	0%	0%	0%	0%	2%	2%

Source: Transportation Solutions, Inc., 2012

The TMP documented in the 1992 master plan has changed significantly over the years with many new program elements added and subsidies increased. **Table 3.9-14** summarizes the 1992 TMP and compares it against the current program. The current program provides a wide range of incentives to encourage non-SOV travel modes as well as disincentives, such as market rate parking fees and limited access to parking to discourage SOV travel. The program elements can be accessed on-line and the program's benefits are widely publicized to staff on a regular basis.

Table 3.9-14
COMPARISON OF 1992 MASTER PLAN TMP AND CURRENT 2011 PRACTICES

Element	1992 Master Plan	2011 Program
Transit *Goal: Increase transit ridership through subsidies, improved access, and the marketing of program benefits.*	1. Lower the cost of transit commutes: a. Assure all employees at VMMC may receive a transit pass subsidy of 45% of the face value of the transit pass. b. Apply the amount of the transit discount to employee vanpool fare when applicable. c. The BTC will develop a procedure to process the discounts. 2. Increase employee awareness of transit: a. Establish commuter information centers with information panels, bus schedules and brochures provided by Metro b. With cooperation of Seattle Engineer Department and Metro, create semi-annual promotional efforts to encourage transit use	1. Lower the cost of transit commutes: a. VMMC offers 75% transit subsidy for bus, ferry and trains b. Guaranteed ride home program c. Zipcar is available for employees for personal and business use (5 hours each per month) d. Company fleet vehicles available through the Parking Office for business use 2. Improve transit access and utilization: a. Financial support for Metro Bus route 211 b. Participation in Transit Now Agreement along with Swedish and Harborview Medical Centers to increase service to the King St. Station and the Ferry terminal c. Attend First Hill transportation meetings to work with Swedish, Harborview and Seattle University on common projects such as transit routes d. Working with First Hill institutions to extend bus routes to King St. Station and ferry access e. A total of 3 taxi service routes were set up to cover gaps in transit service due to limited hours of operation 3. Moved to ORCA pass system in 2010 4. Link Light Rail honors VMMC Puget Passes (not vanpool passes)

Element	1992 Master Plan	2011 Program
HOV (High Occupancy Vehicle) *Goal: Increase HOV program participation by maintaining subsidies and marketing program benefits and opportunities.*	1. Increase carpool participation by: a. Providing 127 carpool parking space b. Discounting the spaces by at least 60% of the prevailing tenant monthly parking rate charged for a space in the VMMC parking facilities c. Providing free ride matching services to individuals forming carpools and vanpools to VMMC (Metro) d. Giving priority to vehicles of greatest occupancy e. Providing information in the Commuter Information Centers (CIC) f. Limiting on-campus parking permits to those employees who have a registered carpool 2. Increase vanpool participation by: a. Allowing vanpools to park at no charge in the VMMC parking facilities b. Providing ride matching services c. Providing seats in regional public vanpool programs (Metro)	1. Cost of HOV commutes is maintained below the cost of SOV commutes a. Carpool parking is priced at $102.50 for a 3 person carpool and $128 for a 2 person carpool b. Free vanpool parking c. Vanpool passes are 75% subsidized 2. Vanshare: 1 vehicle that operates between King St. station, ferry terminal, etc. 3. Increase ridership: a. VMMC provides own program for carpool/vanpool matching service ("Going my Way" carpool registration service) b. Promotes Regional Ride Match System and Rideshare
Bicycle *Goal: Increase bicycleridership by providing support services and establishing marketing and incentive program.*	1. Support services provided: a. Up to 61 secure bicycle parking racks in the underground garage b. Shower facilities at the Sports Medicine Clinic	1. Support services include: a. Three locked bike cages located at the Ninth Ave Garage, Benaroya Garage, and the Lindeman Garage (total capacity of 75) b. Shower facilities available in HRB Building and Buck Pavilion with towels provided 2. VMMC Bicycle Club started in March 2010 to improve bike storage, security, shower facilities, subsidies for frequent riders, etc.
Pedestrian *Goal:Increase pedestrian commutes by providing support services and establishing an incentive program.*	Not Addressed	Not Addressed

Element	1992 Master Plan	2011 Program
Marketing *Goal: Increase the campus population's awareness of program opportunities and benefits.*	1. Establish the position of Building Transportation Coordinator. The BTC will disseminate information to employees to encourage use of public transit, carpools, vanpools, and flex time. 2. Establish Commuter Information Centers (CIC) in the Health Resources Building and the Medical Center. 3. Maintain information provided by Metro and the SED in CIC locations. 4. Create semi-annual promotional efforts to encourage transit use, ridesharing and other activities.	1. V-Net Parking and Commuter Services website provides information for publicizing events, issuing street closure notices, providing training and reminders on the CTR program 2. Two "Commuter Boards" located in the lobby of Buck Pavilion and also In the lobby of the Hospital hallway by Tully's and updated with transit information 3. Commute Trip regulations provided twice per year in brochure and emailed to all employees 4. Parking department prepares emails to all employees advertising program elements and providing link to website. 5. Building transportation Fair in January and August of each year 6. Transportation contest twice a year with information and registration provided by KC Metro
Institutional Policies *Goal: Establish policies that address trip reduction in the context of VMMC sustainability initiatives.*	1. Establish position of Building Transportation Coordinator to implement the Transportation Management Plan 2. Establish policies to promote flextime. Implement such measures as necessary to meet the 50% SOV goal.	1. Building Transportation Coordinator position maintained 2. Attend First Hill Transportation meetings once a quarter to work with Swedish, Harborview and Seattle University on common projects 3. VM Satellites each have own ETC though VM ETC is relied upon for guidance

Element	1992 Master Plan	2011 Program
Parking *Goal: Maintain the minimum parking supply necessary to support operations while minimizing impacts to the surrounding community.*	1. The BTC will certify employees for participation in the VMMC carpool program 2. Parking priority will be given to vehicles of greatest occupancy. Carpools that do not drop off members and are comprised of employees of VMMC will be given priority. 3. Carpools shall have at least two participants commute together at least 4 days a week or 3 participants three days a week. 4. Carpool and vanpool parking only is provided at a discounted rate of 60% of the prevailing monthly parking rate. 5. 200 parking stalls at a remote parking lot will continue to be provided along with the shuttle system. Full build-out of the master plan will phase out these spots. 6. No new on-campus parking permits will be issued to employees except for those who have a registered carpool. Signage will be provided in the garage regarding discounted carpool parking. 7. Parking and storage for bicycles and motorcycles will be provided. 8. No less than 455 short-term parking stalls will be available during the work day for use by clients and visitors. 9. Vanpools will not be charged for parking	1. Minimize employee on-site parking: a. Employee SOV parking on campus restricted between 9:00 am and 3:45 pm. Parking for some physicians and some key personnel is allowed. b. After 3:45 and on weekends, parking is available with a red decal and keycard access c. Main campus-met park shuttle offers free rides between VM and Met Park 2. Encourage alternative methods: a. Provide parking for car and vanpools at reduced rates b. Free motorcycle parking c. Bicycle parking provided
TMP Regulation and Monitoring *Goal: Establish a SOV goal and monitoring program that meets or exceeds City requirements.*	1. Establish a SOV goal of 50%. 2. Establish and maintain Building Transportation Coordinator position. 3. Conduct survey of all employees once every two years. 4. Complete quarterly report forms providing information about carpools and vanpools, monthly parking rates, incidence of violations, projects carried out by the BTC and transit passes. 5. Notify SED of all actions taken to promote and implement all alternative means for employee commuting.	No change.

Source: Transportation Solutions, Inc., 2011

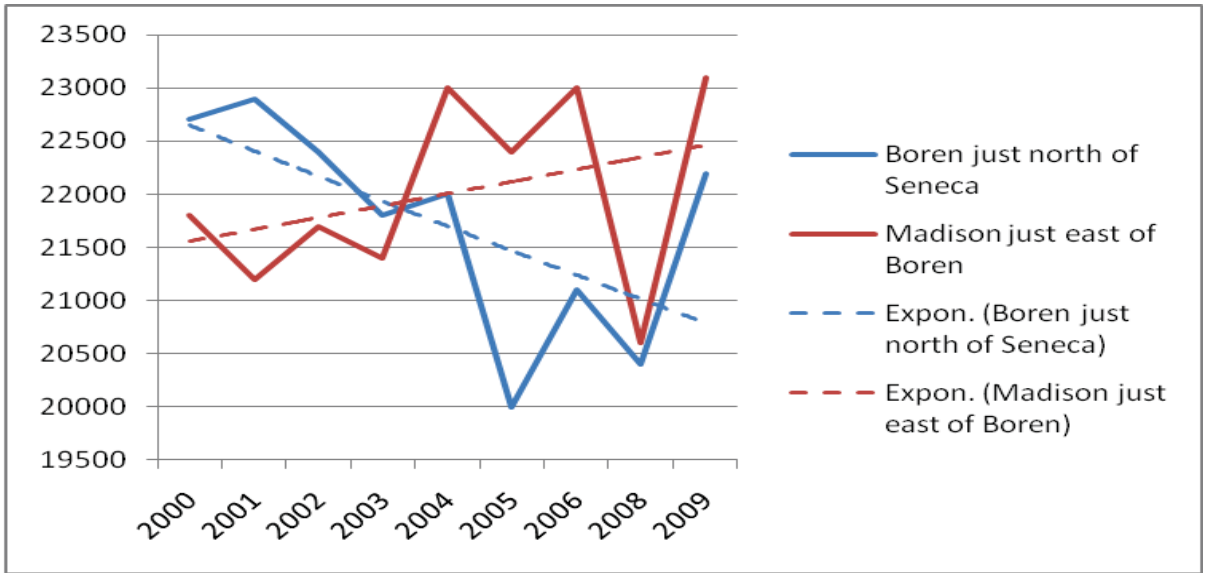
3.9.2 No Action Alternative

The ***No Action Alternative*** assumes that the VMMC master plan boundary would not change and that there would be no increase in campus floor area. Campus development would be limited to the renovation of existing buildings. The purpose of analyzing a ***No Action Alternative*** is to establish a baseline for future conditions against which the potential impacts of VMMC development can be compared. Two components are typically evaluated to establish future conditions for a no action alternative. These are the general growth in existing traffic volumes that cannot be attributed to planned projects and secondly the effects of additional trips generated by planned projects.

Traffic Volumes

Changes in traffic volumes from year to year can be evaluated by examining SDOT's annual traffic volume counts made in the vicinity of VMMC. There are two locations near the hospital; one is on Boren just north of Seneca and the other is on Madison just east of Boren. **Chart 3.9-1** summarizes the Annual Average Weekday Traffic (AAWT) volumes for those locations. The trend lines show that over the past 10 years weekday traffic volumes on Madison have increased by approximately 0.5 percent per year and traffic volumes on Boren have dropped by approximately 0.9 percent per year. The lack of significant change over the past ten years indicates that traffic volumes have remained relatively stable. However, to ensure that a worst case scenario is analyzed, existing traffic volumes were increased by 0.25 percent per year for the ***No Action Alternative*** to take into account traffic generated by unknown projects and general increases in existing traffic volumes.

Chart 3.9-1
AVERAGE DAILY TRAFFIC VOLUMES



Source: SDOT ADT Data, 2011

Planned Projects

Pipeline projects include the Seattle University master plan, which is complete but not yet adopted by the City Council, and the Swedish Medical Center master plan was recently adopted. The EIS for the Seattle University master plan includes analysis of PM peak hour conditions while the analysis in the Swedish master plan includes analysis of both the AM and PM peak hour forecasted conditions. In addition, the following three projects were included in the 'No Action' analysis and are assumed to be complete and fully occupied by 2017:

- 1200 Madison Mixed Use
- Polyclinic at 7th and Madison
- 8th and Seneca Residential Tower

AM peak hour trip generation for Seattle University was derived from the ratio of morning and afternoon peak hour trip rates and the inbound and outbound split from the ITE Trip Generation Handbook, 8th Edition.

Trip generation characteristics for the 8th and Seneca Residential Tower were recently updated to reflect the larger development.

Table 3.9-15 summarizes the trip generation characteristics for pipeline projects. It is assumed that all projects will be fully occupied by 2042. These trip generation volumes and associated distribution patterns were added to the existing AM and PM peak hour traffic volumes (adjusted by an annual growth rate of 0.25 percent) to establish baseline traffic volumes and level of service for 2042 conditions without VMMC master plan projects.

Table 3.9-15
SUMMARY OF PIPELINE PROJECT TRIP GENERATION

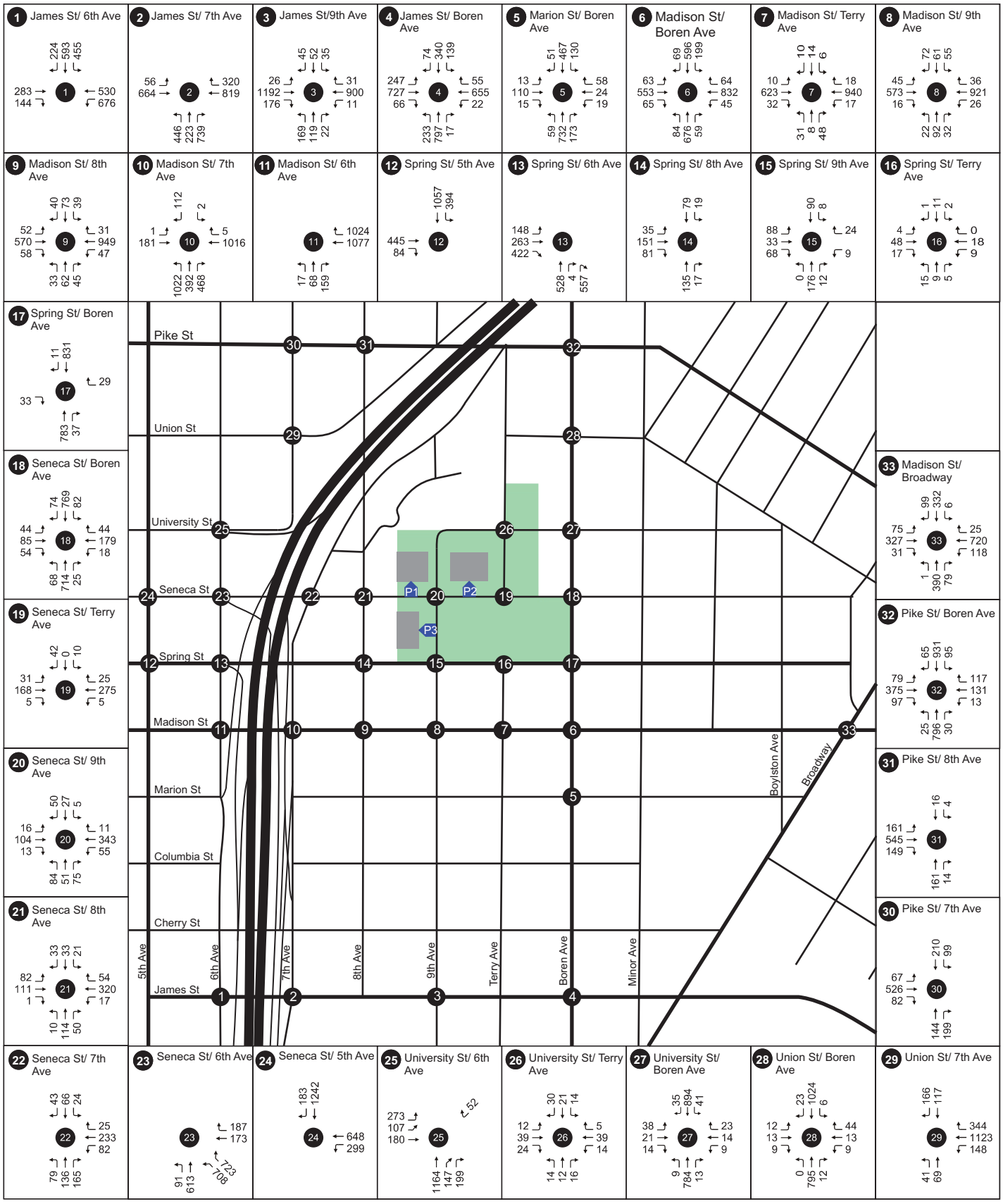
Project	2042 Trips	
	AM	PM
Seattle University[1]	106	106
Swedish Medical Center[2]	226	353
1200 Madison Mixed Use[3]	39	46
Poly Clinic (7th/Madison)[4]	149	136
8th& Seneca Residential [5]	79	87
Total	**599**	**728**

Source:[1] Seattle University Master Plan FEIS: Table 3.8-19
[2]Swedish Medical Center Master Plan FEIS 2006: Table 3.23 Page 154
[3] Heffron Transportation 10/22/07; Table 4
[4]Heffron Transportation 2/14/11; Figs. 7 & 8
[5]Transportation Engineering NW Sept 2006: Fig 8 (Update from DPD 3/27/12)

The following figures illustrate forecasted AM and PM peak hour traffic volumes for 2042 at analyzed intersections for the ***No Action Alternative***.

Figure 3.9-9 AM Peak Hour Turning Movement Volumes – Alt 4. No Action (2042)
Figure 3.9-10 PM Peak Hour Turning Movement Volumes – Alt 4: No Action (2042)

Virginia Mason Medical Center MIMP
Draft EIS



Source: Transportation Solutions, Inc., 2012

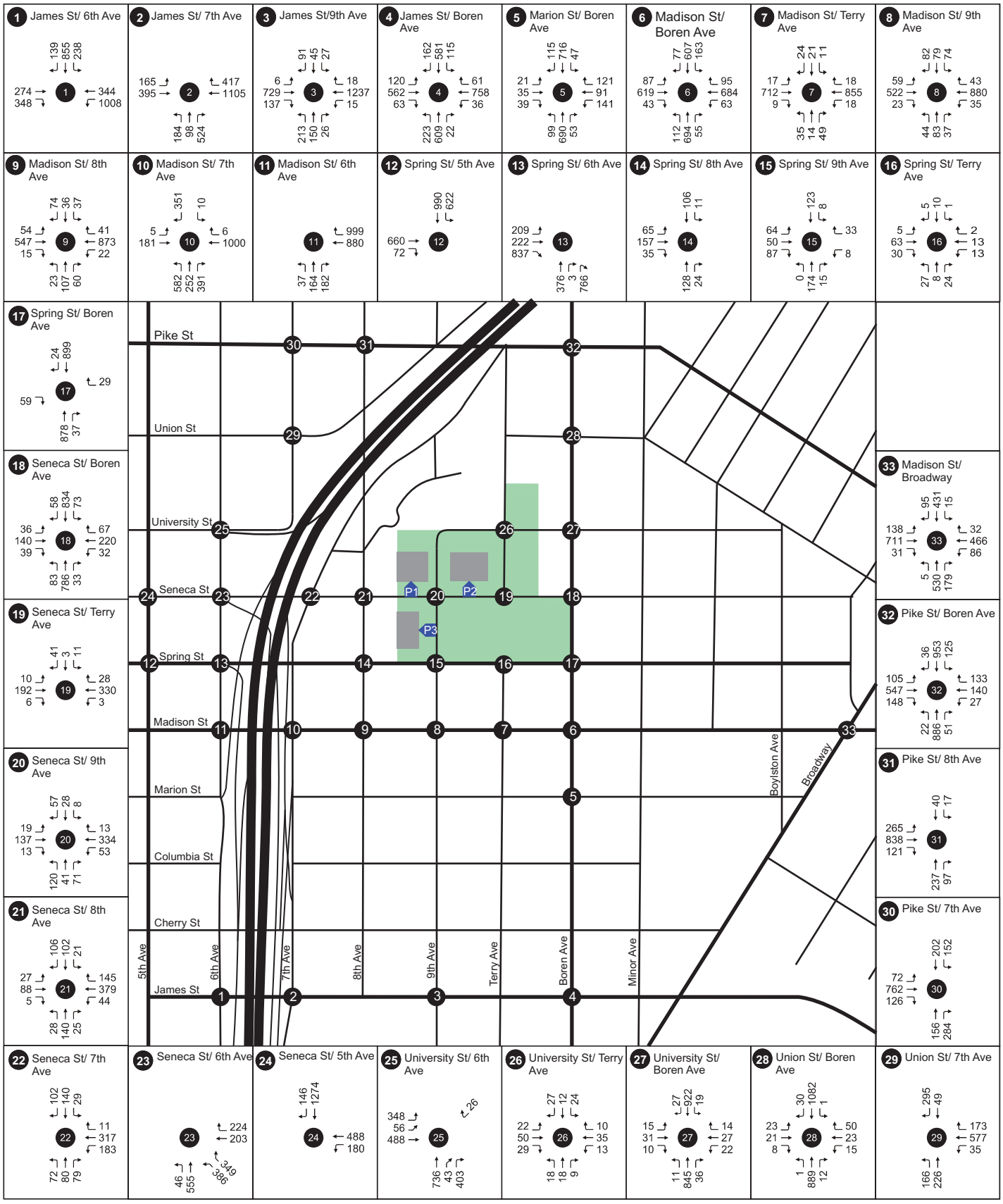
EA | BLUMEN

Figure 3.9-9

AM Peak Hour Turning Movement Volumes

Alt 4: No Action (2042)

Virginia Mason Medical Center MIMP
Draft EIS



Source: Transportation Solutions, Inc., 2012

EA | BLUMEN

Figure 3.9-10

PM Peak Hour Turning Movement Volumes

Alt 4: No Action (2042)

Capital Improvement Projects

The City of Seattle's adopted *Capital Improvement Plan* for 2012-2017 establishes funding priorities for infrastructure improvements. It includes the following projects in the vicinity of VMMC Medical Center:

- Bike Master Plan Implementation: Improvements to bicycle facilities, including intersection improvements and installation of sharrows and/or bicycle lanes
- First Hill Streetcar: A 2.5-mile expansion of the Seattle Streetcar Network that will serve Capitol Hill, First Hill, and surrounding districts.
- Funding for unidentified transit corridor projects.
- Pay Stations: Add 69 new parking pay stations in First Hill and Capitol Hill areas.
- Link Light Rail – University Link: Expansion of Link light rail through First Hill and Capitol Hill Area and construction of the underground Capitol Hill station.

The plan does not detail specific bicycle facility improvements. The implementation of these projects would likely result in a greater number of people using transit and bicycle transportation modes. However, in order to forecast a worst case scenario, forecasted traffic levels were not reduced to reflect anticipated increases in transit ridership.

Level of Service

Table 3.9-16 (AM peak hour) and **Table 3.9-17** (PM peak hour) summarize forecasted level of service results for the ***No Action Alternative*** *(2042)*. The changes in level of service from existing conditions are due to the effects of an assumed 0.25 percent annual growth rate in existing traffic volumes and the addition of trips generated by the previously discussed pipeline projects.

Level of service findings for the AM peak hour show that all signalized intersections operate at LOS-D or better with the following exceptions:

#2 James St/ 7th Ave	LOS-E due to high traffic volumes on all approaches
#4 James St/ Boren Ave	LOS-E due to high traffic volumes on all approaches
#23 Seneca St/ 6th Ave	LOS-F due to high traffic volumes on I-5 exit at Seneca

All unsignalized intersections are forecasted to operate at LOS-D or better on the controlled approaches.

Level of service findings for the PM peak hour show that all signalized intersections operate at LOS-D or better with the following exceptions:

#4 James St/ Boren Ave	LOS-E due to high traffic volumes on all approaches
#5 Marion St/ Boren Ave	LOS-E due to high traffic volumes on all approaches
#13 Spring St/ 6th Ave	LOS-F due to high traffic volumes on all approaches
#23 Seneca/ 6th Ave	LOS-E due to high traffic volumes I-5 exit at Seneca

All unsignalized intersections are forecasted to operate at LOS-D or better on the controlled approaches.

Table 3.9-16
AM PEAK HOUR LEVEL OF SERVICE –NO ACTIONALTERNATIVE (2042)

#	Intersection	Control Type	Move-ment	Alt 4: No Action		Change in Delay from Existing
				LOS	Delay	
1	James St/ 6th Ave	S	Avg	B	19.1	2.2
2	James St/ 7th Ave	S	Avg	**E**	**68.7**	36.1
3	James St/ 9th Ave	S	Avg	C	32.5	13.8
4	James St/ Boren Ave	S	Avg	**E**	**62.6**	24.3
5	Marion St/ Boren Ave	S	Avg	B	11.2	1.4
6	Madison St/ Boren Ave	S	Avg	D	51.3	17.2
7	Madison St/ Terry Ave	S	Avg	A	6.2	0.8
8	Madison St/ 9th Ave	S	Avg	B	11.1	0.9
9	Madison St/ 8th Ave	S	Avg	B	12.9	2.8
10	Madison St/ 7th Ave	S	Avg	D	50.4	20.9
11	Madison St/ 6th Ave	S	Avg	B	15.7	2.5
12	Spring St/ 5th Ave	S	Avg	B	13	0.3
13	Spring St/ 6th Ave	S	Avg	C	21.2	2.3
14	Spring St/ 8th Ave	EB Stop	EBL	A	9.4	0.9
15	Spring St/ 9th Ave	EB-WB Stop	EBL	C	21	5.4
16	Spring St/ Terry Ave	NB-SB Yield	NB	B	10.4	0.1
17	Spring St/ Boren Ave	S	Avg	A	3.5	0.8
18	Seneca St/ Boren Ave	S	Avg	B	12	3.8
19	Seneca St/ Terry Ave	SB Stop	SB	C	15.9	1.4
20	Seneca St/ 9th Ave	S	Avg	C	20.7	1.2
21	Seneca St/ 8th Ave	S	Avg	B	17.4	0.3
22	Seneca St/ 7th Ave	S	Avg	B	13.8	1.0
23	Seneca St/ 6th Ave	S	Avg	**F**	**129.1**	39.1
24	Seneca St/ 5th Ave	S	Avg	B	17.7	0.8
25	University St/ 6th Ave	S	Avg	B	17.6	0.9
26	University St/ Terry Ave	AWS	WB	A	7.6	0.3
27	University St/ Boren Ave	S	Avg	A	6	-1.7
28	Union St/ Boren Ave	S	Avg	A	4	0
29	Union St/ 7th Ave	S	Avg	B	15.2	1.7
30	Pike St/ 7th Ave	S	Avg	B	19.3	0.6
31	Pike St/ 8th Ave	S	Avg	B	12.4	0.4
32	Pike St/ Boren Ave	S	Avg	B	14.2	0.9
33	Madison St/ Broadway	S	Avg	C	24.1	0.7
P1	Seneca St/ Benaroya Garage	SB Stop	NB	C	16.7	1.3
P2	Seneca St/ Lindeman Garage	SB Stop	NB	D	30	3.8
P3	9th Ave Garage/ 9th Ave	EB Stop	EB	B	10	0.3
P4	Spring St/ 9th Ave Garage	SB Stop	SB	A	9.9	-
P5	1000 Madison/ Terry Ave	WB Stop	WB	A	8.8	-
P8	Terry University/ Terry Ave	WB Stop	WB	A	9.2	-

Source: Transportation Solutions, Inc., 2011

Table 3.9-17
PM PEAK HOUR LEVEL OF SERVICE –NO ACTIONALTERNATIVE (2042)

#	Intersection	Control Type	Move-ment	Alt 4: No Action		Change in Delay from Existing
				LOS	Delay	
1	James St/ 6th Ave	S	Avg	D	46	15.1
2	James St/ 7th Ave	S	Avg	D	37.8	15.1
3	James St/ 9th Ave	S	Avg	C	26.6	11.3
4	James St/ Boren Ave	S	Avg	**E**	**66.1**	28
5	Marion St/ Boren Ave	S	Avg	**E**	**79.3**	66.1
6	Madison St/ Boren Ave	S	Avg	D	40.6	14.7
7	Madison St/ Terry Ave	S	Avg	A	8.9	0.7
8	Madison St/ 9th Ave	S	Avg	B	17.1	3.6
9	Madison St/ 8th Ave	S	Avg	B	18.2	4.2
10	Madison St/ 7th Ave	S	Avg	C	33.7	8.9
11	Madison St/ 6th Ave	S	Avg	B	16.7	-1.5
12	Spring St/ 5th Ave	S	Avg	C	27.1	4.6
13	Spring St/ 6th Ave	S	Avg	**F**	**97.8**	32.9
14	Spring St/ 8th Ave	EB Stop	EBR	B	11.5	-1.6
15	Spring St/ 9th Ave	EB-WB Stop	EBL	C	21.2	-0.5
16	Spring St/ Terry Ave	NB-SB Yield	NB	B	10.8	0.1
17	Spring St/ Boren Ave	S	Avg	A	3.2	0.1
18	Seneca St/ Boren Ave	S	Avg	B	11.2	0.5
19	Seneca St/ Terry Ave	SB Stop	SB	C	17.1	4.2
20	Seneca St/ 9th Ave	S	Avg	C	24	-0.5
21	Seneca St/ 8th Ave	S	Avg	C	24.3	3.5
22	Seneca St/ 7th Ave	S	Avg	B	16.1	1.9
23	Seneca St/ 6th Ave	S	Avg	**E**	**56.4**	13.4
24	Seneca St/ 5th Ave	S	Avg	B	11.7	1
25	University St/ 6th Ave	S	Avg	D	48.3	8.5
26	University St/ Terry Ave	AWS	NB	A	7.6	0
27	University St/ Boren Ave	S	Avg	A	6.1	-0.9
28	Union St/ Boren Ave	S	Avg	B	8.3	0
29	Union St/ 7th Ave	S	Avg	C	21.6	1.3
30	Pike St/ 7th Ave	S	Avg	C	21.7	0.6
31	Pike St/ 8th Ave	S	Avg	B	15.3	0.2
32	Pike St/ Boren Ave	S	Avg	C	39.1	16.9
33	Madison St/ Broadway	S	Avg	C	29	-0.7
P1	Seneca St/ Benaroya Garage	SB Stop	NB	C	23.4	0.2
P2	Seneca St/ Lindeman Garage	SB Stop	NB	D	25.9	3.6
P3	9th Ave Garage/ 9th Ave	EB Stop	EB	B	10.2	-0.1
P4	Spring St/ 9th Ave Garage	SB Stop	SB	A	9.4	
P5	1000 Madison/ Terry Ave	WB Stop	WB	A	9.0	
P8	Terry University/ Terry Ave	WB Stop	WB	A	9.3	

Source: Transportation Solutions, Inc., 2011

3.9.2 Impacts of the Alternatives

Long Term Impacts

The ***Proposed Action*** is the preferred alternative that would expand the master plan boundary to include the **1000 Madison Block** site and add approximately 1,000,000 SF of new and replacement building area. Total campus building area would total approximately 3,000,000 SF. This alternative would also include adding providing approximately 25,000 SF of commercial space on the **1000 Madison Block** site to replace existing retail space that would be demolished with site redevelopment. It is assumed that the required replacement of the Chasselton Court residential units would occur outside of the master plan boundary.

Alternative 5a: No Boundary Expansion would keep all new development within the adjusted existing master plan boundary. The alterative would add approximately 1,700,000 SF to the campus as existing buildings are replaced. Total campus building area would total approximately 3,000,000 SF.

For the purposes of analyzing potential master plan impacts, a conceptual development scenario based on **Table 4** of the *Draft MIMP* was created that allocated building area to medical and non-medical uses. The medical space was separated into support/research, inpatient, and outpatient types of uses and the non-medical space was separated into commercial and residential uses. **Table 3.9-18** summarizes the area assigned to each use. The commercial space under **Table 4** of the *Draft MIMP* reflects existing and new commercial uses that serve VMMC, such as cafeterias, a pharmacy or other medical services that could be located so they are accessible from adjacent sidewalks and improve access for the general public. The residential uses are the existing Inn at Virginia Mason and the Baroness Hotel. Under ***Alternative 5a*** the commercial space from **Table 4** is shifted to support space to reflect the fact that its primary function is related to medical uses and it is assumed that the Inn at Virginia Mason would be removed and the space allocated to inpatient related uses. Under the ***Proposed Action*** it is also assumed that the Inn at Virginia Mason would be removed and the space allocated to inpatient space. The Baroness Hotel would be retained as a residential use. The commercial space identified in **Table 4** would also be shifted to support space with the exception of 24,600 SF of retail space that replaces existing retail space on the **1000 Madison Block** site.

Table 3.9-18
CONCEPTUAL ALLOCATION OF BUILDING SPACE

Use	Table 4 of Draft MIMP	Proposed Action	Alternative 5a
Medical Uses			
Outpatient	1,018,520	1,018,500	1,040,100
Inpatient	837,215	885,700	893,200
Support	682,595	1,067,200	1,067,200
Research	286,942		
Sub-Total Medical	**2,825,272**	**2,971,400**	**3,000,500**
Non-Medical Uses			
Commercial	122,280	24,600	0
Residential	82,015	33,570	0
Total	**3,029,567**	**3,029,570**	**3,000,500**

Source: Draft VMMC MIMP (Table 4), 2012
Transportation Solutions, Inc., 2012

Trip Generation

Analysis discussed in **Section 3.9.1 - Affected Environment** established trip generation rates per 1,000 SF of building area assigned to outpatient, inpatient, or support uses

When forecasting trip generation characteristics for the Alternatives, it is assumed that a number of factors could reduce both staff and patient rates from existing levels. These factors include:

- Increased staff and patient transit ridership with the extension of light rail service to Capitol Hill.
- Increased efficiencies in delivering outpatient care that would reduce the need for face to face visits.
- Increases in common space, private patient rooms, and outpatient service areas would reduce the number of trips generated per 1,000 SF.

However, in order to maintain a conservative analysis the trip generation rates presented in **Table 3.9-11** have not been adjusted to reflect a potential reduction in vehicle trip generated per 1,000 SF of building area. **Table 3.9-19** summarizes AM and PM peak hour trip generation characteristics for the alternatives. Both alternatives would generate roughly the same number of trips. ***Alternative 5a*** would generate a total of 1,638 AM peak hour trips (1,108 new trips) and 1,314 PM peak hour trips (889 new trips). The ***Proposed Action*** would generate a total of 1,614 AM peak hour trips (1,084 new trips) and 1,295 PM peak hour trips (870 new trips). It should be noted that these are one-way trips.

Trips generated by the redevelopment of commercial uses on the **1000 Madison Block** site under the ***Proposed Action*** assumes that commercial development would be approximately the same as currently exists and that existing trip generation characteristics for that use would not change. The demolition of the Chasselton Court apartments would reduce the number of residential trips generated. However, since the number of existing trips generated by the apartments is small, they are not deducted from the trip generation forecast. Trips generated by

both the Inn at Virginia Mason and the Baroness Hotel are part of existing conditions and would not change under the alternatives.

Table 3.9-19
TRIP GENERATION FOR THE ALTERNATIVES

Peak Hour	Trips/ 1000 SF	Existing	Proposed Action	Alt 5a
AM Peak Hour				
Outpatient	0.93	256	944	964
Inpatient	0.44	161	394	397
Support	0.26	112	276	276
Total	0.55	530	1,614	1,638
Net New Trips		0	1,084	1,108
PM Peak Hour				
Outpatient	0.74	206	758	774
Inpatient	0.36	130	316	319
Support	0.21	90	221	221
Total	0.44	425	1,295	1,314
Net New Trips		0	870	889

Source: Transportation Solutions, Inc., 2012

Trip Distribution and Assignment

The distribution of trips on the local road network is essentially the same as illustrated in **Figure 3.9-4**. A significant consideration of the master plan is the development of new parking supplies within the master plan boundary and a potential reduction in the amount of leased parking outside the boundary. The addition of new parking supplies within the boundary will change local circulation characteristics. For this reason, the assignment of trips for the alternatives involved removing all existing VMMC generated trips from the road network and then reassigning them based on the potential distribution of future parking supplies and parking access locations.

The following figures illustrate the assignment of VMMC generated trips and forecasted total turning movement volumes at analyzed intersections for the alternatives. While the alternatives generate approximately the same number of trips, the location of parking supplies results in different trip distribution patterns within and adjacent to the master plan boundary. For ***Alternative 5a*** it is assumed that a potion of the required parking supply would be leased outside of the master plan boundary as is the current practice and that approximately 7 percent of the trips would be distributed to parking facilities outside of the master plan boundary. This assumption is based on the limited amount of developable area within the boundary to provide below grade parking. For the ***Proposed Action*** it is assumed that below grade parking would be provided on the **1000 Madison Block** site and that sufficient parking supplies would be provided within the master plan boundary. The effect of this is that under the ***Proposed Action*** all VMMC generated traffic accesses parking supplies within the master plan boundary and

under ***Alterative 5a***, 93 percent of the traffic accesses parking within the master plan boundary and 7 percent use parking facilities outside of the boundary.

At this stage of planning, the garage access locations and potential supplies are conceptual and are identified to illustrate locations of potential impact rather than actual future operations. Project level planning will be required to forecast the operation of planned garage access points and their effect on adjacent streets and circulation patterns.

The following figures illustrate AM and PM peak hour travel assignment for VMMC generated trips and 2042 traffic volume forecasts for the alternatives. These figures are located at the end of **Section 3.9.**

Figure 3.9-11 AM Peak Hour Assignment - Alt. 5a: No Boundary Expansion (2042)

Figure 3.9-12 PM Peak Hour Assignment - Alt. 5a: No Boundary Expansion (2042)

Figure 3.9-13 AM Peak Hour Turning Movement Volumes - Alt. 5a: No Boundary Expansion (2042)

Figure 3.9-14 Peak Hour Turning Movement Volumes - Alt. 5a: No Boundary Expansion (2042)

Figure 3.9-15 AM Peak Hour Assignment – Proposed Action (2042)

Figure 3.9-16 PM Peak Hour Assignment - Proposed Action (2042)

Figure 3.9-17 AM Peak Hour Turning Movement Volumes - Proposed Action (2042)

Figure 3.9-18 PM Peak Hour Turning Movement Volumes - Proposed Action (2042)

Figure 3.9-19 AM Peak Hour Parking Access Volumes - Alt. 5a: No Boundary Expansion (2042)

Figure 3.9-20 PM Peak Hour Parking Access Volumes - Alt. 5a: No Boundary Expansion (2042)

Figure 3.9-21 AM Peak Hour Parking Access Volumes - Proposed Action (2042)

Figure 3.9-22 PM Peak Hour Parking Access Volumes - Proposed Action (2042)

Level of Service

Intersections

Tables 3.9-20 and **3.9-21** summarize level of service forecasts for the AM and PM peak hours for the ***Proposed Action***. **Table 3.9-22** summarizes the level of service analysis for the AM peak hour and **Table 3.9-23** summarizes PM peak hour conditions for ***Alternative 5a*** at build out (2042).

Proposed Action

The ***Proposed Action*** generates approximately the same number of trips as ***Alternative 5a***. The primary difference is that under this alternative the distribution of trips includes a parking garage on the **1000 Madison Block** site, resulting in a less concentrated distribution pattern within the master plan boundary. Level of service findings for the AM peak hour show that the

following intersections would drop to LOS-E or F or remain at LOS-E or LOS-F under the ***Proposed Action***:

Signalized Intersections (AM Peak Hour)

#2	James St/ 7th Ave	Remains at LOS-E with 7 seconds of increased delay.
#3	James St/ 9th Ave	Drops from LOS-C to LOS-E with 41 seconds of increased delay
#4	James St/ Boren Ave	Remains at LOS-E with 8 seconds of increased delay
#6	Madison St/ Boren Ave	Drops from LOS-D to LOS-F with 34 seconds of increased delay
#10	Madison St/ 7th Ave	Drops from LOS-D to LOS-E with 21 seconds of increased delay.
#23	Seneca St/ 6th Ave	Continues to operate at LOS-F with 16seconds of increased delay.

Unsignalized Intersections (AM Peak Hour)

# 15	Spring St/ 9th Ave	Eastbound left turn drops from LOS-C to LOS-F with an increase in delay of 35 seconds due to increased volumes.
#19	Seneca St/ Terry Ave	Scenario assumes new garage access would be at south leg of intersection. Northbound traffic would operate at LOS-F if stop controlled.

Level of service findings for the PM peak hour show that the following intersections would drop to LOS-E or LOS-F or remain at LOS-E or LOS-F:

Signalized Intersections (PM Peak Hour)

#4	James St/ Boren Ave	Remains at LOS-E with 9 seconds of increased delay
#5	Marion St/ Boren Ave	Remains at LOS-E with a 3 second decrease in delay
#6	Madison St/ Boren Ave	Drops from LOS-D to LOS-E with 21 seconds of increased delay
#13	Spring St/ 6th Ave	Remains at LOS-F with 56 seconds of increased delay due to increases in northbound traffic. Signal timing at this intersection is pre-timed and delays could be reduced if signal timing along 6th Ave is refined.
#20	Seneca St/ 9th Ave	Drops from LOS-C to LOS-F
#23	Seneca St/ 6th Ave	Remains at LOS-E with a 2 second increase in delay

Unsignalized Intersections (PM Peak Hour)

#14	Spring St/ 8th Ave	Eastbound right turn drops from LOS-B to LOS-F.
#15	Spring St/ 9th Ave	Eastbound left turn drops from LOS-C to LOS-E.
#19	Seneca St/ Terry Ave	A south leg would be added to the intersection to access a garage with that leg operating at LOS-F if stop controlled.

In summary, the ***Proposed Action*** level of service analysis indicates that intersections would operate at acceptable levels of service except as noted above.

Alternative 5a

Level of service findings for the AM peak hour show that the following intersections would drop to LOS-E or LOS-F or remain at LOS-E or LOS-F:

Signalized Intersections (AM Peak Hour)

#2	James St/ 7th Ave	Remains at LOS-E with7 seconds of increased delay
#3	James St/ 9th Ave	Drops from LOS-C to LOS-E with 31 seconds of increased delay
#4	James St/ Boren Ave	Remains at LOS-E with 8 seconds of increased delay
#6	Madison St/ Boren Ave	Drops from LOS-D to LOS-F with 30 seconds of increased delay
#10	Madison St/ 7th Ave	Drops from LOS-D to LOS-E with 24 seconds of increased delay
#23	Seneca St/ 6th Ave	Continues to operate at LOS-F with 27 seconds of increased delay

Unsignalized Intersections (AM Peak Hour)

# 15	Spring St/ 9th Ave	Eastbound left turn drops from LOS-C to LOS-F with an increase in delay of 68 seconds due to increased volumes.
#19	Seneca St/ Terry Ave	Scenario assumes new garage access would be at south leg of intersection. Northbound traffic would operate at LOS-F if stop controlled.

Level of service findings for the PM peak hour show that the following intersections would drop to LOS-E or LOS-F or remain at LOS-E or LOS-F:

Signalized Intersections (PM Peak Hour)

#4	James St/ Boren Ave	Remains at LOS-E with 9 seconds of increased delay

#5	Marion St/ Boren Ave	Remains at LOS-E with a 3 second decrease in delay
#6	Madison St/ Boren Ave	Drops from LOS-D to LOS-E with 18 seconds of increased delay
#8	Madison St/ 9th Ave	Drops from LOS-B to LOS-E with 46 seconds of increased delay due to increased volumes on southbound approach
#13	Spring St/ 6th Ave	Remains at LOS-F with 57 seconds of increased delay due to increases in northbound traffic. Signal timing at this intersection is pre-timed and delays could be reduced if signal timing along 6th Ave is refined.
#18	Seneca St/ Boren Ave	Drops from LOS-B to LOS-E with 58 seconds of increased delay
#20	Seneca St/ 9th Ave	Drops from LOS-C to LOS-Ewith 51 seconds of increased delay
#23	Seneca St/ 6th Ave	Remains at LOS-E with a small increase in delay

Unsignalized Intersections (PM Peak Hour)

#14	Spring St/ 8thAve	Eastbound right turn drops to LOS-F.
#15	Spring St/ 9th Ave	Eastbound left turn drop to LOS-E.
#19	Seneca St/ Terry Ave	A south leg would be added to the intersection to access a garage with that leg operating at LOS-F if stop controlled

In summary, ***Alternative 5a*** level of service analysis indicates that intersections would operate at acceptable levels of service except as noted above. Garage accesses onto Seneca Street show poor level of service that could be rectified by providing additional accesses on adjacent streets that carry less traffic or potentially signalizing the intersection of Seneca St/ Terry Ave if a garage access forms the south leg of the intersection.

Table 3.9-20
AM PEAK HOUR INTERSECTION LEVEL OF SERVICE – PROPOSED ACTION (2042)

#	Intersection	Control Type	No Action		Proposed Action			Change in Delay
			LOS	Delay	Movement	LOS	Delay	
1	James St/ 6th Ave	S	B	19.1	Avg	C	20.6	1.5
2	James St/ 7th Ave	S	E	68.7	Avg	E	75.6	6.9
3	James St/ 9th Ave	S	C	32.5	Avg	E	73.1	40.6
4	James St/ Boren Ave	S	E	62.6	Avg	E	70.2	7.6
5	Marion St/ Boren Ave	S	B	11.2	Avg	B	11.5	0.3
6	Madison St/ Boren Ave	S	D	51.3	Avg	F	85.4	34.1
7	Madison St/ Terry Ave	S	A	6.2	Avg	A	7.5	1.3
8	Madison St/ 9th Ave	S	B	11.1	Avg	B	16	4.9
9	Madison St/ 8th Ave	S	B	12.9	Avg	B	13.8	0.9
10	Madison St/ 7th Ave	S	D	50.4	Avg	E	71.2	20.8
11	Madison St/ 6th Ave	S	B	15.7	Avg	B	17.1	1.4
12	Spring St/ 5th Ave	S	B	13	Avg	B	13.8	0.8
13	Spring St/ 6th Ave	S	C	21.2	Avg	C	27.6	6.4
14	Spring St/ 8th Ave	EB Stop	A	9.4	EBL	B	11.2	1.8
15	Spring St/ 9th Ave	EB-WB Stop	C	21	EBL	F	56.1	35.1
16	Spring St/ Terry Ave	NB-SB Yield	B	10.4	NB	B	12.5	2.1
17	Spring St/ Boren Ave	S	A	3.5	Avg	A	3.9	0.4
18	Seneca St/ Boren Ave	S	B	12	Avg	C	21.6	9.6
19	Seneca St/ Terry Ave	SB Stop	C	15.9	SB	D	25.1	9.2
		NB-SB Stop	-	-	NB	F	51.4	
		S	-	-	Avg	B	12.9	
20	Seneca St/ 9th Ave	S	C	20.7	Avg	D	43.1	22.4
21	Seneca St/ 8th Ave	S	B	17.4	Avg	C	20.4	3
22	Seneca St/ 7th Ave	S	B	13.8	Avg	B	16.2	2.4
23	Seneca St/ 6th Ave	S	F	129.1	Avg	F	145.2	16.1
24	Seneca St/ 5th Ave	S	B	17.7	Avg	B	18.2	0.5
25	University St/ 6th Ave	S	B	17.6	Avg	B	17.7	0.1
26	University St/ Terry Ave	AWS	A	7.6	WB	A	8.5	0.9
27	University St/ Boren Ave	S	A	6	Avg	B	12.4	6.4
28	Union St/ Boren Ave	S	A	4	Avg	A	4	0
29	Union St/ 7th Ave	S	B	15.2	Avg	B	19.7	4.5
30	Pike St/ 7th Ave	S	B	19.3	Avg	C	21.3	2
31	Pike St/ 8th Ave	S	B	12.4	Avg	B	13.2	0.8
32	Pike St/ Boren Ave	S	B	14.2	Avg	B	17.1	2.9
33	Madison St/ Broadway	S	C	24.1	Avg	C	24.3	0.2
P1	Seneca St/ Benaroya Garage	NB-SB Stop	C	16.7	NB	C	21.8	5.1
P3	9th Ave Garage/ 9th Ave	EB Stop	B	10	EB	A	9.7	-0.3
		WB Stop	-	-	WB	C	15.7	
P4	Spring St/ 9th Ave Garage	SB Stop	A	9.9	SB	B	10.2	0.3
P5	1000 Madison/ Terry Ave	WB Stop	A	8.8	WB	B	11.8	
P6	Hospital East/Main	NB Stop	-	-	NB	F	51.4	
P7	Cassel Craig/ University St	NB Stop	-	-	NB	A	9.8	
P8	Terry University/ Terry Ave	WB Stop	A	9.2	WB	A	9.9	0.7
P9	Lindeman Garage/ 9th Ave	WB Stop	-	-	WB	C	15	

Source: Transportation Solutions, Inc., 2012

Table 3.9-21
PM PEAK HOUR INTERSECTION LEVEL OF SERVICE – PROPOSED ACTION (2042)

#	Intersection	Control Type	No Action		Proposed Action			Change in Delay
			LOS	Delay	Movement	LOS	Delay	
1	James St/ 6th Ave	S	D	46	Avg	D	43.7	-2.3
2	James St/ 7th Ave	S	D	37.8	Avg	D	46.1	8.3
3	James St/ 9th Ave	S	C	26.6	Avg	C	35.4	8.8
4	James St/ Boren Ave	S	E	66.1	Avg	E	75.2	9.1
5	Marion St/ Boren Ave	S	E	79.3	Avg	E	76.4	-2.9
6	Madison St/ Boren Ave	S	D	40.6	Avg	E	61.2	20.6
7	Madison St/ Terry Ave	S	A	8.9	Avg	C	20.2	11.3
8	Madison St/ 9th Ave	S	B	17.1	Avg	D	37.6	20.5
9	Madison St/ 8th Ave	S	B	18.2	Avg	B	18.3	0.1
10	Madison St/ 7th Ave	S	C	33.7	Avg	D	41	7.3
11	Madison St/ 6th Ave	S	B	16.7	Avg	B	17.5	0.8
12	Spring St/ 5th Ave	S	C	27.1	Avg	C	27.9	0.8
13	Spring St/ 6th Ave	S	F	97.8	Avg	F	153.6	55.8
14	Spring St/ 8th Ave	EB Stop	B	11.5	EBR	F	92.8	81.3
15	Spring St/ 9th Ave	EB-WB Stop	C	21.2	EBL	E	43.3	22.1
16	Spring St/ Terry Ave	NB-SB Yield	B	10.8	NB	B	11.8	1
17	Spring St/ Boren Ave	S	A	3.2	Avg	A	4.1	0.9
18	Seneca St/ Boren Ave	S	B	11.2	Avg	D	38	26.8
19	Seneca St/ Terry Ave	SB Stop	C	17.1	SB	C	21.5	4.4
		NB-SB Stop	-	-	NB	F	71.7	
		S	-	-	Avg	B	16.9	
20	Seneca St/ 9th Ave	S	C	24	Avg	F	83.3	59.3
21	Seneca St/ 8th Ave	S	C	24.3	Avg	C	32.1	7.8
22	Seneca St/ 7th Ave	S	B	16.1	Avg	B	18	1.9
23	Seneca St/ 6th Ave	S	E	56.4	Avg	E	58.8	2.4
24	Seneca St/ 5th Ave	S	B	11.7	Avg	B	12.3	0.6
25	University St/ 6th Ave	S	D	48.3	Avg	D	48.4	0.1
26	University St/ Terry Ave	AWS	A	7.6	WB	A	8.3	0.7
27	University St/ Boren Ave	S	A	6.1	Avg	B	13.6	7.5
28	Union St/ Boren Ave	S	B	8.3	Avg	A	8.4	0.1
29	Union St/ 7th Ave	S	C	21.6	Avg	C	22.4	0.8
30	Pike St/ 7th Ave	S	C	21.7	Avg	C	22.1	0.4
31	Pike St/ 8th Ave	S	B	15.3	Avg	B	15.5	0.2
32	Pike St/ Boren Ave	S	C	39.1	Avg	D	52.9	13.8
33	Madison St/ Broadway	S	C	29	Avg	C	29.5	0.5
P1	Seneca St/ Benaroya Garage	NB-SB Stop	C	23.4	NB	D	33.7	10.3
P3	9th Ave Garage/ 9th Ave	WB Stop	B	10.2	EB	B	10.6	0.4
P4	Spring St/ 9th Ave Garage	SB Stop	A	9.4	SB	A	9.5	0.1
P5	1000 Madison/ Terry Ave	WB Stop	A	9	WB	B	10.9	1.9
P6	Hospital East/Main	NB Stop	-	-	NB	F	71.7	
P7	Cassel Craig/ University St	NB Stop	-	-	NB	A	9.8	
P8	Terry University/ Terry Ave	WB Stop	A	9.3	WB	A	9.4	0.1
P9	Lindeman Garage/ 9th Ave	WB Stop	-	-	WB	B	13.6	

Source: Transportation Solutions, Inc., 2012

Table 3.9-22
AM PEAK HOUR INTERSECTION LEVEL OF SERVICE – ALTERNATIVE 5A (2042)

#	Intersection	Control Type	No Action		No Boundary Expansion			Change in Delay
			LOS	Delay	Movement	LOS	Delay	
1	James St/ 6th Ave	S	B	19.1	Avg	C	20.6	1.5
2	James St/ 7th Ave	S	E	68.7	Avg	**E**	**76.1**	7.4
3	James St/ 9th Ave	S	C	32.5	Avg	**E**	**63.0**	30.5
4	James St/ Boren Ave	S	E	62.6	Avg	**E**	**70.4**	7.8
5	Marion St/ Boren Ave	S	B	11.2	Avg	B	11.5	0.3
6	Madison St/ Boren Ave	S	D	51.3	Avg	**F**	**81.4**	30.1
7	Madison St/ Terry Ave	S	A	6.2	Avg	A	5.9	-0.3
8	Madison St/ 9th Ave	S	B	11.1	Avg	B	19	7.9
9	Madison St/ 8th Ave	S	B	12.9	Avg	B	14	1.1
10	Madison St/ 7th Ave	S	D	50.4	Avg	**E**	**74.3**	23.9
11	Madison St/ 6th Ave	S	B	15.7	Avg	B	17.2	1.5
12	Spring St/ 5th Ave	S	B	13	Avg	B	13.8	0.8
13	Spring St/ 6th Ave	S	C	21.2	Avg	C	27.7	6.5
14	Spring St/ 8th Ave	EB Stop	A	9.4	EBL	B	14.2	4.8
15	Spring St/ 9th Ave	EB-WB Stop	C	21	EBL	**F**	**88.5**	67.5
16	Spring St/ Terry Ave	NB-SB Yield	B	10.4	NB	B	10.4	0
17	Spring St/ Boren Ave	S	A	3.5	Avg	A	4.2	0.7
18	Seneca St/ Boren Ave	S	B	12	Avg	C	30.9	18.9
19	Seneca St/ Terry Ave	SB Stop	C	15.9	SB	D	38.5	22.6
		NB-SB Stop	-	-	NB	**F**	**51.4**	
20	Seneca St/ 9th Ave	S	C	20.7	Avg	D	50.3	29.6
21	Seneca St/ 8th Ave	S	B	17.4	Avg	C	20.2	2.8
22	Seneca St/ 7th Ave	S	B	13.8	Avg	B	17.8	4
23	Seneca St/ 6th Ave	S	F	129.1	Avg	**F**	**156.4**	27.3
24	Seneca St/ 5th Ave	S	B	17.7	Avg	B	17.9	0.2
25	University St/ 6th Ave	S	B	17.6	Avg	B	17.8	0.2
26	University St/ Terry Ave	AWS	A	7.6	WB	A	8.6	1
27	University St/ Boren Ave	S	A	6	Avg	B	12.1	6.1
28	Union St/ Boren Ave	S	A	4	Avg	A	4.1	0.1
29	Union St/ 7th Ave	S	B	15.2	Avg	B	19.9	4.7
30	Pike St/ 7th Ave	S	B	19.3	Avg	C	21.4	2.1
31	Pike St/ 8th Ave	S	B	12.4	Avg	B	13.3	0.9
32	Pike St/ Boren Ave	S	B	14.2	Avg	B	16.9	2.7
33	Madison St/ Broadway	S	C	24.1	Avg	C	24.3	0.2
P1	Seneca St/ Benaroya Garage	NB-SB Stop	C	16.7	NB	C	22.9	6.2
P3	9th Ave Garage/ 9th Ave	EB Stop	B	10	EB	A	9.9	-0.1
					WB	C	18.6	
P4	Spring St/ 9th Ave Garage	SB Stop	A	9.9	SB	B	10.2	0.3
P6	Hospital East/Main (#19 NB)	NB Stop	-	-	NB	**F**	**259**	
P7	Cassel Craig/ University St	NB Stop	-	-	NB	A	9.8	
P8	Terry University/ Terry Ave	WB Stop	A	9.2	WB	B	10.1	0.9
P9	Lindeman Garage/ 9th Ave	WB Stop	-	-	WB	C	14.5	

Source: Transportation Solutions, Inc., 2012

Table 3.9-23
PM PEAK HOUR INTERSECTION LEVEL OF SERVICE – ALTERNATIVE 5A (2042)

#	Intersection	Control Type	No Action		No Boundary Expansion			Change in Delay
			LOS	Delay	Movement	LOS	Delay	
1	James St/ 6th Ave	S	D	46	Avg	D	43.7	-2.3
2	James St/ 7th Ave	S	D	37.8	Avg	D	46.5	8.7
3	James St/ 9th Ave	S	C	26.6	Avg	D	35.4	8.8
4	James St/ Boren Ave	S	E	66.1	Avg	E	75.4	9.3
5	Marion St/ Boren Ave	S	E	79.3	Avg	E	76.5	-2.8
6	Madison St/ Boren Ave	S	D	40.6	Avg	E	58.4	17.8
7	Madison St/ Terry Ave	S	A	8.9	Avg	A	8.4	-0.5
8	Madison St/ 9th Ave	S	B	17.1	Avg	E	62.9	45.8
9	Madison St/ 8th Ave	S	B	18.2	Avg	C	23.2	5
10	Madison St/ 7th Ave	S	C	33.7	Avg	D	41.9	8.2
11	Madison St/ 6th Ave	S	B	16.7	Avg	B	17.5	0.8
12	Spring St/ 5th Ave	S	C	27.1	Avg	C	27.9	0.8
13	Spring St/ 6th Ave	S	F	97.8	Avg	F	155.1	57.3
14	Spring St/ 8th Ave	EB Stop	B	11.5	EBR	F	163.5	152
15	Spring St/ 9th Ave	EB-WB Stop	C	21.2	EBL	E	44.4	23.2
16	Spring St/ Terry Ave	NB-SB Yield	B	10.8	NB	B	11	0.2
17	Spring St/ Boren Ave	S	A	3.2	Avg	A	4	0.8
18	Seneca St/ Boren Ave	S	B	11.2	Avg	E	69.1	57.9
19	Seneca St/ Terry Ave	SB Stop	C	17.1	SB	C	24.8	7.7
		NB-SB Stop	-	-	NB	F	250.1	
20	Seneca St/ 9th Ave	S	C	24	Avg	E	75	51
21	Seneca St/ 8th Ave	S	C	24.3	Avg	C	32	7.7
22	Seneca St/ 7th Ave	S	B	16.1	Avg	B	18.1	2
23	Seneca St/ 6th Ave	S	E	56.4	Avg	E	59.9	3.5
24	Seneca St/ 5th Ave	S	B	11.7	Avg	B	12.3	0.6
25	University St/ 6th Ave	S	D	48.3	Avg	D	48.2	-0.1
26	University St/ Terry Ave	AWS	A	7.6	NB	A	8.1	0.5
27	University St/ Boren Ave	S	A	6.1	Avg	B	14	7.9
28	Union St/ Boren Ave	S	B	8.3	Avg	A	8.3	0
29	Union St/ 7th Ave	S	C	21.6	Avg	C	22.4	0.8
30	Pike St/ 7th Ave	S	C	21.7	Avg	C	22.1	0.4
31	Pike St/ 8th Ave	S	B	15.3	Avg	B	15.5	0.2
32	Pike St/ Boren Ave	S	C	39.1	Avg	D	53.9	14.8
33	Madison St/ Broadway	S	C	29	Avg	C	29.5	0.5
P1	Seneca St/ Benaroya Garage	NB-SB Stop	C	23.4	NB	D	33.3	9.9
P3	9th Ave Garage/ 9th Ave	EB Stop	B	10.2	EB	B	10.9	0.7
P4	Spring St/ 9th Ave Garage	SB Stop	A	9.4	SB	A	9.5	0.1
P6	Hospital East/Main	NB Stop	-	-	NB	F	250.1	
P7	Cassel Craig/ University St	NB Stop	-	-	NB	A	9.7	
P8	Terry University/ Terry Ave	WB Stop	A	9.3	WB	A	9.6	0.3
P9	Lindeman Garage/ 9th Ave	WB Stop	-	-	WB	B	13.2	

Source: Transportation Solutions, Inc., 2012

Road Segments

Level of service was also calculated for road segments within or adjacent to the Master Plan boundary. As described in **Section 3.9-1 Affected Environment**, level of service for road segments is based on travel time along the segment and incorporates delays at intersections encountered along the segment. **Table 3.9-24** summarizes road segment level of service for the ***Proposed Action*** while **Table 3.9-25** summarizes the findings for ***Alternative 5a***. The calculations for the 9th Avenue segment incorporate signalization of the intersection at Spring Street, which improves travel time from what was calculated for existing conditions. The Seneca Street segment also incorporates signalization of the intersection at Terry Street and maintains travel time as calculated for existing conditions.

Table 3.9-24
ROAD SEGMENT LEVEL OF SERVICE – PROPOSED ACTION (2042)

Road Segment	Direction	AM Peak Hour		PM Peak Hour	
		Speed	LOS	Speed	LOS
9th Avenue	northbound	5.4	F	7.6	E
	southbound	10.4	D	8.2	E
Boren Avenue	northbound	2.3	F	7.4	E
	southbound	5.9	F	7.7	E
Madison Street	eastbound	4.7	F	9.4	D
	westbound	3.9	F	10.4	D
Seneca Street	eastbound	7.7	E	6.1	F
	westbound	5.7	F	6.8	F
Spring Street	eastbound	12.0	D	10.9	D
	westbound	20.0	B	20.0	B
University Street	westbound	4.2	F	3.5	F

Source: Transportation Solutions, Inc., 2012

Table 3.9-25
ROAD SEGMENT LEVEL OF SERVICE – ALTERNATIVE 5A (2042)

Road Segment	Direction	AM Peak Hour		PM Peak Hour	
		Speed	LOS	Speed	LOS
9th Avenue	northbound	5.5	F	7.6	E
	southbound	10.4	D	8.1	E
Boren Avenue	northbound	2.3	F	11.8	D
	southbound	5.8	F	10.7	D
Madison Street	eastbound	4.7	F	9.4	D
	westbound	3.9	F	10.6	D
Seneca Street	eastbound	7.7	E	6.1	F
	westbound	8.2	E	6.9	F
Spring Street	eastbound	12.2	D	10.9	D
	westbound	20.0	B	20.0	B
University Street	westbound	4.2	F	3.4	F

Source: Transportation Solutions, Inc., 2012

When compared against existing conditions **(Table 3.9-4)**, the travel time for the analyzed road segments does not increases significantly except for the segments of Boren Avenue and Madison Street. Care should be taken when applying these findings to future conditions. The findings are based on road segments of only a few blocks where an intersection that is operating poorly (long delays) essentially controls speeds on the short road segment. This methodology is typically applied to longer road segments or corridors where the effects of intersection delays are spread out over a longer corridor. For example, the segment of Boren Avenue adjacent to VMMC (a distance 0f 0.06 miles) is forecasted to have travel speeds of 2.3 mph northbound and 5.9 mph southbound under the ***Proposed Action*** AM peak hour conditions. If the analyzed segment of Boren Avenue is extended from Fairview Avenue to Broadway (a distance of 1.16 miles); the northbound travel speed averages 7.4 mph and the southbound speed averages 8 mph and more realistically depicts potential future conditions.

Parking

On-Campus Parking

Recommended parking supplies for the alternatives are based on the following parking ratios as discussed in the **Affected Environment** section. These ratios represent an increase over what currently exists and reflect the relative demand generated by support, inpatient, and outpatient uses.

- Support Uses 0.40 stalls / 1000 SF
- Inpatient Uses 1.20stalls / 1000 SF
- Outpatient Uses 2.50 stalls / 1000 SF

Applying these ratios to the conceptual development scenario (**Table 3.9-18**) results in the recommended parking supplies for the three Alternatives (**Table 3.9-26**). For planning purposes, a parking supply of approximately 4,000 parking stalls is recommended for either alternative.

Table 3.9-26
RECOMMENDED PARKING SUPPLIES

Use	Proposed Action	Alternative 5a
Support	420	415
Inpatient	1,089	1,098
Outpatient	2,514	2,568
Total	**4,022**	**4,080**

Source:Transportation Solutions, Inc., 2011

Potential significant increases in outpatient services will drive the need for increased parking supplies since outpatients generate a much greater demand for parking than support or inpatient uses. If future outpatient programs are not developed to the extent identified in the conceptual development scenario (**Table 3.9-18**), recommended parking supply would decrease as master plan projects are developed. Other factors that could decrease the need for parking include increasing outpatient service hours into evenings in weekends or increased use of para-transit or shuttle services, and increased residential density on First Hill, which could increase

the patient base living near VMMC. However, the need for new parking supplies will be driven by the demands of an expanded outpatient program, which will serve an aging population that may not be readily served by transit or other preferable travel modes.

Under ***Alternative 5a***, additional parking is not required for commercial re-development on the **1000 Madison Block** or the existing Baroness Hotel. Parking requirements for these uses will be essentially the same as existing conditions where it is absorbed into surrounding private and public parking supplies. As master plan projects are developed new parking supplies would be provided below grade as part of the project. The amount of parking that is provided for early master plan projects should take into account not only the needs of the specific project but campus wide parking deficiencies and the need to provide parking for future projects. An evaluation of building sites for each alternative **(Table 3.9-27)** indicates the amount of parking that could potentially be provided within the master plan boundary. The calculations for ***Alternative 5a*** assume that new parking would be constructed on 5 levels while under the ***Proposed Action*** it is assumed that parking would be constructed on 4 to five levels. However, due to the cost of construction or unknown geologic or other constraints, the amount of below grade parking that is developed will likely be less than indicated. It may also be more cost effective and of benefit to surrounding parkingto continue to lease available parking outside the master plan boundary to meet a portion of the forecasted supply recommendation.

Table 3.9-27
POTENTIAL PARKING SUPPLY LOCATIONS AND QUANTITIES

#	Campus Sites	Potential Supply	
		Proposed Action	Alt 5a
P8	Terry and University Garage	240	240
P7	Terry Garage	439	439
P9	Lindeman Garage	878	878
P1	Benaroya Garage (existing)	267	267
P3,4	9th Ave Parking Garage	329	411
P10	Hospital West Garage	351	439
P6	Hospital Main Garage	442	552
P5	1000 Madison Garage	775	0
	Total 'On-Campus'	**4,035**	**3,619**
	'Off-Campus' Parking	469	469
	Potential Supply	**4,504**	**4,088**
	Recommended Supply	4,000	4,000
	Parking Surplus/Deficit	***504***	***88***

Source:Transportation Solutions, Inc., 2012

Off-Campus Parking

On-street parking within the campus boundary will likely change with master plan development as existing accesses are removed or relocated and new accesses to parking facilities or loading areas constructed. The effect of campus development on the on-street supply will likely be minor.

The construction of the First Hill Street Car will significantly reduce parking supplies along the route. Approximately 48% to 51% of the on-street parking spaces along the street car route will be eliminated.

MIMP Parking Requirements and TMP

Parking

Major institution parking requirements establish minimum and maximum parking supplies based on institution population and other factors. **Table 3.9-28** summarizes the forecasted changes in population and the calculated minimum and maximum parking supplies for each alternative.

A comparison of the calculated maximum number of allowed spaces and the number of recommended spaces shows that the recommended supply falls within the code requirements for both the ***Proposed Action*** and ***Alternative 5a***.

Table 3.9-28
MIMP PARKING REQUIREMENTS (PROPOSED ACTION &ALTERNATIVE 5A)

		Existing Conditions		Proposed Action & Alt 5a	
Zoning Code Category	**Unit Factor**	Unit	Stalls	Unit	Stalls
Long-term Parking					
Hospital Based Doctors	0.8	228	182	400	320
Staff Doctors	0.25	66	17	75	19
Peak # of other employees	0.3	3,035	911	5,400	1,620
Short-term parking					
# of Hospital beds	0.17	272	46	336	57
Average Daily Outpatients	0.2	2,426	485	4,750	950
Fixed seats in Auditorium	0.1	268	27	268	27
Minimum # of spaces required			1,668		2,993
Maximum # of spaces allowed	1.35		2,251		4,041
Recommended Parking Supply			1,400		4,000

Source:Transportation Solutions, Inc., 2012

Transportation Management Plan

The proposed Transportation Management Plan (TMP) is summarized in **Table 3.9-29** along with the current program for comparative purposes. The proposed TMP will commit VMMC to most of its current practices while retaining flexibility for changes in program elements that may be needed to address future opportunities and challenges.

As vehicle operating and parking costs increase it is likely that additional staff will shift commute modes and transit ridership, walking, and bicycle commuting will increase. The First Hill Streetcar will provide access to the light rail stations on Broadway and King Street Station and increase HOV ridership in the First Hill/Capitol Hill communities. Sound Transit forecasts that the Streetcar will carry between 3,000 and 3,500 daily passengers in 2030. Forecasts do not

indicate what percentage of the ridership represents those who would shift from bus to rail and therefore are not 'new' transit users.

The presence of light rail and the streetcar will help increase opportunities for VMMC staff that now commute by SOV or bus to shift to light rail and street car. The effect of this shift may be less than desired if existing transit riders shift to the light rail or street car. With an existing low SOV rate of 23 percent there is not a lot of room for additional reductions. There is always a percentage of employees who require the mobility a vehicle provides to pick up children from school or day-care or meet other deadlines.

More significant reductions in vehicle trips may be possible by implementing policy strategies outlined in the TMP that focus on 'e-medicine' or shuttle services that could reduce the forecasted growth in patient generated trips.

Table 3.9-29
TRANSPORTATION MANAGEMENT PROGRAM

Element	Current TMP Program	Proposed TMP
Transit *Goal: Increase transit ridership through subsidies, improved access, and the marketing of program benefits.*	1. Lower the cost of transit commutes: a. VMMC offers 75% transit subsidy for bus, ferry and trains b. Guaranteed ride home program c. Zipcar is available for employees for personal and business use (5 hours each per month) d. Company fleet vehicles available through the Parking Office for business use 2. Improve transit access and utilization: a. Financial support for Metro Bus route 211 b. Participation in Transit Now Agreement along with Swedish and Harborview Medical Centers to increase service to the King St. Station and the Ferry terminal c. Attend First Hill transportation meetings to work with Swedish, Harborview and Seattle University on common projects such as transit routes d. Working with First Hill institutions to extend bus routes to King St. Station and ferry access e. A total of 3 taxi service routes were set up to cover gaps in transit service due to limited hours of operation 3. Moved to ORCA pass system in 2010 4. Link Light Rail honors VMMC Puget Passes (not vanpool passes)	1. Lower the cost of transit commutes: a. Provide 75% transit subsidy for bus, ferry and trains through the ORCA program. b. Provide a guaranteed ride home in case of family emergency. c. Provide Zipcar access to employees for personal and business use (5 hours each per month) d. Provide fleet vehicles for business use. 2. Improve transit access and utilization: a. Continue financial support for Metro Bus routes where they benefit VMMC employees. b. Continue participation in Transit Now Agreement along with Swedish and Harborview Medical Centers to increase service to the King St. Station and the Ferry terminal c. Participate in First Hill transportation meetings to work with Swedish, Harborview and Seattle University on common projects such as transit routes d. Continue offering ORCA passes to employees through Wageworks, which automatically deducts costs from staff paychecks and applies the appropriate fare reductions stated above for multiple transportation choices.

Element	Current TMP Program	Proposed TMP
HOV (High Occupancy Vehicle) *Goal: Increase HOV program participation by maintaining subsidies and marketing program benefits and opportunities.*	1. Cost of HOV commutes is maintained below the cost of SOV commutes a. Carpool parking is priced at $102.50 for a 3 person carpool and $128 for a 2 person carpool b. Free vanpool parking c. Vanpool passes are 75% subsidized 2. Vanshare: 1 vehicle that operates between King St. station, ferry terminal, etc. 3. Increase ridership: a. VMMC provides own program for carpool/vanpool matching service ("Going my Way" carpool registration service) b. Promotes Regional Ride Match System and Rideshare	1. Maintain the cost of HOV commutes below the cost of SOV commutes a. Maintain carpool parking rates at no more than 75% of equivalent SOV rates. b. Provide free parking for vanpools. c. Provide vanpool riders with at least a 75% subsidy of the full cost of ridership. 2. Increase ridership by: a. Continuing an internal program for carpool/vanpool matching service ("Going my Way" carpool registration service). b. Promoting the Regional Ride Match System and Rideshare.
Bicycle *Goal: Increase bicycle ridership by providing support services and establishing marketing and incentive program.*	3. Support services include: a. Three locked bike cages located at the Ninth Ave Garage, Benaroya Garage, and the Lindeman Garage (total capacity of 75) b. Shower facilities available in HRB Building, Buck Pavilion and the Inn at Virginia Mason with towels provided c. VMMC Bicycle Club started in March 2010 to improve bike storage, security, shower facilities, subsidies for frequent riders, etc.	1. Continue providing support services that include: a. Locked bike cages with weather protection and a minimum capacity of 75 parking spaces. b. Shower facilities and lockers. c. Continue support for the VMMC Bicycle Club to improve bike storage, security, shower facilities, and provide benefits for frequent riders.
Pedestrian *Goal: Increase pedestrian commutes by providing support services and establishing an incentive program.*	Pedestrian elements are not included in current TMP.	1. Develop new programs and incentives to encourage pedestrians to walk to work. 2. Program benefits will equal those provided to bicycle commuters.

Element	Current TMP Program	Proposed TMP
Marketing *Goal: Increase the campus population's awareness of program opportunities and benefits.*	1. V-Net Parking and Commuter Services website provides information for publicizing events, issuing street closure notices, providing training and reminders on the CTR program 2. Two "Commuter Boards" located in the lobby of Buck Pavilion and also In the lobby of the Hospital hallway by Tully's and updated with transit information 3. Commute Trip regulations provided twice per year in brochure and emailed to all employees 4. Parking department prepares emails to all employees advertising program elements and providing link to website. 5. Building transportation Fair in January and August of each year 6. Transportation contest twice a year with information and registration provided by KC Metro	1. Maintain 'V-Net' Parking and Commuter Services website to provide information for publicizing events, issuing street closure notices, providing training and reminders on the CTR program. 2. Either maintain the two "Commuter Boards" located in the lobby of Buck Pavilion and in the lobby of the Hospital, or consider replacing "Boards" with computer terminals that access transit trip planning services and current traffic conditions as well as marketing features to reduce single occupant vehicle trips. 3. Provide commuter program policy information, program news and updates at least two times per year in a brochure and email to all employees 4. Conduct a Building Transportation Fair twice each year.
Institutional Policies *Goal: Establish policies that address trip reduction in the context of VMMC sustainability initiatives.*	1. Attend First Hill Transportation meetings once a quarter to work with Swedish, Harborview and Seattle University on common projects 2. Other VMMC locations each have own Employee Transportation Coordinator (ETC) though VMMC ETC is relied upon for guidance	1. Continue participation in quarterly First Hill Transportation meetings to work with Swedish, Harborview and Seattle University on common projects. 2. Participate in City or community led transportation initiatives or planning that affects VMMC. 3. Investigate and when appropriate implement health care delivery tools to reduce patient trips. Potential tools include increased use electronic communications between patients and physicians and the use of shuttle services for specific patient groups.
Parking *Goal: Manage parking supplies to minimize the need for additional parking.*	3. Minimize employee on-site parking: a. Only limited monthly parking is available. b. Staff must park in designated levels at Benaroya garage BRI P3/P4). c. No employee parking on campus Monday – Friday, between 9:00 am and 3:45 pm d. Early staff entries must be out of garage by 9:00 am e. On-call and day parking is located off-campus in the Tate Mason Garage at 1100 Minor Avenue for a fee of $12/day. f. Staff parking in Benaroya, Ninth Avenue and Lindeman garages only allowed after 3:45 and on weekends by a red decal and keycard access g. Saturday staff are directed to use the	1. Restrict employee SOV parking on-site during periods of peak demand to encourage use of non-SOV travel modes. 2. Provide shuttle service between VMMC and Met Park. 3. Unbundle parking from tenant lease agreements. 4. Maintain the minimum parking supply necessary to support operations while minimizing impacts to the surrounding community.

Element	Current TMP Program	Proposed TMP
	Benaroya garage as a first option. Saturday staff are only allowed to park in Lindeman garage after 1:00 pm. h. Staff working overtime are directed to park in Benaroya, with Lindeman and Ninth Avenue parking allowed only if Benaroya is full. i. Main campus-met park shuttle offers free rides between VM and Met Park 4. Incentivize alternative methods: a. Provide parking stalls for carpool and vanpool parking b. Free motorcycle parking c. Bicycle parking provided 5. Minimize patient on-site parking: a. No free parking for patients, b. Parking discount of 10 to 25 percent off the regular parking rate depending on the time in the garage. c. Discount is not valid for valet parking at the Buck Pavilion. 6. Minimize vendor or business parking: a. Vendor parking is limited in amount and available only at the Benaroya garage or Terry/University lot. Registration must be made in advance with the parking office. b. Business parking is limited to the Benaroya garage, and limited to use twice per month. c. Satellite staff on business at main campus are directed to use the Benaroya garage, and use is limited to twice per week.	
TMP Regulation and Monitoring *Goal: Establish a SOV goal and monitoring program that meets City requirements.*	1. The goal for the TMP is adopted from Seattle's Major Institution Code and is stated as "Reduce the percentage of employees of the Major Institution who commute by single occupant vehicle (SOV) to 50%, excluding employees whose work requires the use of the private automobile during working hours." 2. Survey campus employees every two years to determine commute patterns. 3. Submit quarterly reports to the City summarizing parking fees, permits, transit passes sold and actions to promote TMP.	1. The goal for the TMP shall be to maintain a SOV commute rate of less than 30% as calculated using the CTR survey methodology for allemployees. 2. In partnership with King County Metro conduct a biennial survey of employee travel mode choices. 3. Provide annual program reports to the City of Seattle Department of Transportation.

Source:Transportation Solutions, Inc., 2011

Transit Ridership

Transit ridership is anticipated to increase with the extension of Light Rail from the CBD to the University District. Access to Light Rail will be supported by the planned First Hill Streetcar that will provide a connection to the Capitol Hill Light Rail Station. The closest stop for the First Hill Streetcar will be on Broadway at Marion Street. This stop is approximately 0.32 miles from VMMC with the pedestrian route including segments of Boren Avenue, Madison Street, and Boylston Avenue. The quality of the connection is good, with signalized intersections at crossing points and the sidewalks are in good condition.

Potential improvements (see following section) could improve transit speeds and headways on Madison Street and improve access to the CBD and the University Street and Pioneer Square Light Rail stations.

Transit facilities adjacent to VMMC should be evaluated when Master Plan projects are implemented to ensure adequacy and determine if improvements are needed and if it is appropriate to include them into frontage improvements for projects or as mitigation for project impacts.

Relationship to City of Seattle Transportation Plans

There are a number of plans in place that will affect transportation facilities and services in the vicinity of VMMC. Key points for each of the plans are summarized below.

Sound Transit – Capitol Hill Light Rail Station. The Capitol Hill Light Rail station will be located underground to the northeast of Seattle Central Community College; just east of Broadway and north of Howell St. It is part of the University Link light rail extension and is scheduled to open for services in 2016. Ridership is forecasted to be at 14,000 daily boardings.

Effects on VMMC master plan include:

- VMMC generated vehicle trips may be reduced
- Underground tunnels and stations do not interfere with surface streets

Sound Transit – First Hill Streetcar. The First Hill Streetcar will become part of the extended Seattle Streetcar Network. It will be a 2.5 mile route from King Street Station, up Broadway to Aloha Street and will serve Capitol Hill, First Hill, Central district, International District and Pioneer Square areas. The start of operation scheduled for 2013. Sound Transit forecasts a ridership of 3,000 to 3,500 daily passengers in 2030. The project will eliminate approximately 48-51% of on-street parking spaces along the proposed alignment (eliminating 265-279 existing parking spaces). The proposed layout preserves parking on one side of the street and on side streets intersecting with the alignment. There would be no changes to the existing on-street parking supply on adjacent parallel and perpendicular roads. Mitigation for the loss in parking includes parking way finding signage, online parking maps and information consistent with city of Seattle's E-Park program, implementing on-street parking management measures in affected neighborhoods including increased use of time-limited and paid parking zones.

The project will be constructed in the existing right of way with bicycle lanes routed behind side platforms. Where deemed appropriate, bicycle facilities will be upgraded to provide sharrows, bike lanes, signing and striping. A two-way bicycle lane adjacent to the entire length of street car route along Broadway is included.

Effects on VMMC master plan include:

- On-street parking along route would be reduced
- VMMC generated vehicle trips may be reduced

SDOT Pedestrian Master Plan. The goal of the SDOT Pedestrian Master Plan is to complete and maintain the pedestrian system as outlined in the plan, improve walkability on all streets, increase pedestrian safety, plan, design and build complete streets, create vibrant public spaces that encourage walking, get more people walking for transportation, recreation and health. Priority areas identified in the plan with high potential pedestrian use in the vicinity of VMMC are listed below (1 designates high priority, 2 designates lower priority). The plan does not provide details for potential improvements at these locations. Projects that are within or adjacent to the Master Plan boundary are in bold.

5th Ave/ Spring St (2)
5th Ave/ Seneca St (2)
6th Ave/ Cherry St (1)
6th Ave/ Spring St (1)
6th Ave/ Pike St (2)
7th Ave/ James St (2)
7th Ave/ Madison St (2)
7th Ave/ Spring St (2)
7th Ave/ Pike St (2)
8th Ave/ James St (2)
8th Ave/ Madison St (2)
8th Ave/ Seneca St (2)
8th Ave/ Pike St (1)
9th Ave/ James St (1)
9th Ave/ Madison St (2)
9th Ave/ Spring St (2)
Terry Ave/ James St (1)
Terry Ave/ Seneca St (1)
Boren Ave/ Columbia St (2)
Boren Ave/ Marion St (2)
Boren Ave/ Madison St (1)
Boren Ave/ Seneca St (2)
Boren Ave/ Union St (2)
Boren Ave/ Pike St (1)
James St from 5th Ave to 6th Ave, south side (2)
James St from 9th Ave to Terry Ave, south side (1)
Columbia St from 7th Ave to 8th Ave, north side (1)
Columbia St from 8th Ave to 9th Ave, south side (1)
Spring St from 5th Ave to 6th Ave, south side (2)
University from 6th Ave to 7th Ave (2)
Union from 7th Ave to I-5 off-ramp (2)
Madison at Broadway, NW and SE corners (1)
5th Ave from Madison St to Spring St, east side(1)
6th Ave from Madison to Spring St, east side (1)
7th Ave/Hubbell Pl from Cherry St to Pike St, west side (1)
8th Ave from Cherry St to Columbia St, east side (1)
8th Ave from Seneca St to Union St (1)
Terry Ave from Union St to Pike St, west side (1)

The two high priority intersections are Terry Avenue/ Seneca Street and Boren Avenue/Madison Street. The intersection at Terry and Seneca was improved by VMMC in cooperation with SDOT a number of years ago to improve pedestrian safety. Curb bulbs were provided and roadway channelization revised to decrease the crossing distance for pedestrians. A Master Plan project to redevelop the central hospital site on the south side of this intersection would likely entail revisions to this intersection and the adjacent loading area. Revisions could include adding a south leg to the intersection to serve as a garage access. Expansion of the Lindeman Pavilion could increase pedestrian crossing volumes at this location as well as the adjacent sky bridge that spans Seneca Street. The other priority intersection of Boren Avenue/ Madison Street could experience increases in pedestrian volumes with Master Plan development. It would also be part of a pedestrian route between VMMC and the planned First Hill street car station at Broadway and Marion. This signalized intersection is currently equipped with pedestrian beacons and controls and marked crossings.

The intersection of Boren Avenue/ Seneca Street is a secondary priority and would not likely be affected by Master Plan development. The intersection is currently fully signalized with pedestrian beacons and marked crossings. The other secondary priority intersection of 9th

Avenue/ Spring Street would be affected by increases in pedestrian and vehicular volumes with Master Plan development. This intersection is identified in **Section 3.9-4** as a location to be evaluated for signalization and pedestrian improvements.

SDOT Bicycle Master Plan. The SDOT Bicycle Master Plan is a 10-year plan to increase use of bicycling in Seattle and improve safety. In the short term from 2007 to 2009 the plan recommends installation of 133.6 miles of new bicycle facilities. Medium-term (2010-2012) plans call for the City to reconfigure arterials roadways and install additional bicycle lanes, climbing lanes and sharrows. Long-term plans (2013-2016) call for the City to complete the Urban Trails and Bikeways System and make crossing improvements at key points in the network. Implementing this Plan over the next 10 years will provide:

- Bicycle facilities on 62 percent (295 miles) of Seattle's arterial streets
- A 230-mile system of signed bicycle routes, connecting all parts of Seattle
- 50 percent more (19 miles of new) multi-purpose trails
- Partnerships to improve bicyclist safety and increase bicycling throughout Seattle

Locations for improvements in the vicinity of VMMC include:

- I-5 crossings into Downtown (Denny Way, Olive Way, Pine Street, Pike Street, Spring Street, Seneca Street, Yesler Way, S Jackson Street, S Dearborn Street).
- Improvements to Broadway E.
- Crossings of Boren Avenue.
- Identifying and improving east-west routes.

Specific locations identified for improvement projects in the vicinity of VMMC

- James St: sharrows from 1st Ave to Broadway
- Cherry St: sharrows from 1st Ave to Broadway
- Madison St: further study required
- **Spring St: sharrows from Pike Pl to Harvard Ave**
- **Seneca St: sharrows from Pike Pl to Harvard Ave**
- Pike St: shared roadway with peak hour bus/bike lanes from 2nd Ave to Boren Ave
- 8th Ave: sharrows from James to Seneca; paved shoulder from Seneca to Pike
- Broadway: sharrows from Alder St to Thomas St
- 9th Ave: sharrows from Cherry St to Spruce St

The projects within the Master Plan boundary are noted in bold and include sharrow pavement markings on Seneca and Spring Streets. Master Plan projects would not affect bicycle circulation on these street segments.

Seattle Transit Master Plan. In April 2012, the City of Seattle adopted the Seattle Transit Plan, which was last updated in 2005. The plan evaluates high demand corridors, prioritize service improvements and updates the Urban Village Transit Network. Appendix C2 of the Draft Master Plan identifies the key elements of the Transit Master Plan and describes how the Draft Master Plan is consistent with those elements. A key element of the Transit Master Plan affecting VMMC is the identification of Madison Street as a 'High Capacity Transit Corridor' with the 'Bus Rapid Transit' (BRT) mode identified as the preferred option for the corridor. BRT combines a rubber-tired transit vehicle with the operating characteristics of rapid streetcar, including longer

stop spacing and use of exclusive right of way. To accommodate this type of service, Madison Street (from I-5 to Broadway) would be re-channelized to provide an 11 foot wide transit only lane in each direction, a 9 foot wide vehicle lane in each direction, and a 9 foot wide shared center turn lane for a total road width of 49 feet. Transit headways would be 5 minutes between 4 AM and 9 PM and every 15 minutes after 9 PM. The plan does not address potential impacts to vehicular level of service caused by the reduction in vehicle lanes within the corridor.

Street Vacation and Right of Way

Alley Vacation. The ***Proposed Action*** redevelops the **1000 Madison Block** site and includes the vacation of the alley that extends between Madison and Spring Streets. This alley currently provides space for dumpsters, service access, and freight delivery for the adjacent businesses as well as a secondary access to a VMMC surface parking lot. With redevelopment of the site the alley would not be needed to support the local businesses. In addition the elimination of the alley and its connection to Madison Street and Spring Street will benefit pedestrian circulation and safety. If street level commercial uses independent of VMMC are developed under the ***Proposed Action*** on the **1000 Madison Block** site provisions will have to be made to provide service access for deliveries and waste disposal.

Right of Way. The SDOT Right of Way Manual identities the desired right of way and configuration of arterial streets. When a site is redeveloped buildings may have to be set back further than desired to provide additional right of way for future road and sidewalk improvements.

The city's arterial plan **(See Table 3.9-30)** for the Madison St/Boren Ave intersection calls for increasing the road width from 49 feet to 55 feet on Madison and 46 ft to 55 ft on Boren. The right of way on both streets increases from 66 to 76 feet. An additional 5 feet of ROW (on the north side of Madison and west side of Boren) would need to be provided when the City makes improvements to the road segments. New development on the **1000 Madison Block** site under the ***Proposed Action*** must provide for this requirement. The master plan includes a building setback of 10 feet on both Boren and Madison to accommodate the requirement. With the proposed setback, there would be 15 ½ feet between the curb face and building face on both Boren and Madison to accommodate pedestrian circulation and amenities after the City widens the roadway. If the City does not widen the roadways, there will be 18 ½ feet of space between the building face and curb face on Madison and 20 feet on Boren.

Table 3.9-30
RIGHT OF WAY REQUIREMENTS

Road	Condition	ROW Width	Road Width	Building Setback from 2012 Property Line	Face of Curb to Face of Building
Madison	Existing	66	49	0	8.5
	Future w/ Road Widening	76	55	10	15.5
	Future w/o Road Widening	66	49	10	18.5
Boren	Existing	66	46	0	10
	Future w/ Road Widening	76	55	10	15.5
	Future w/o Road Widening	66	46	10	20

Source: Seattle Department of Transportation, 2012
Transportation Solutions, Inc., 2012

The city's arterial requirements are long range and there are no current plans to improve the intersection.

Vehicular Circulation

The implementation of master plan projects will increase vehicular trips to the campus resulting in increased congestion on some roadways within the study area. Circulation patterns will change as garage access points serving new parking supplies and loading zones are developed. As new parking garages and buildings are developed, way-finding will become a larger issue and it will be important to provide signage to direct vehicles to primary campus destinations. It will also be necessary to examine circulation patterns at a project level as part of the planning process to ensure that garage accesses minimize circulation conflicts and that appropriate intersection channelization and control refinements are included as project mitigation.

Pedestrian Circulation

Pedestrian volumes between existing and new campus buildings will increase as master plan projects are developed. This will be offset somewhat by providing parking beneath new buildings so pedestrians will not have to cross streets as they walk between a parking lot and their destination. The plan includes a number of sky bridges and tunnels to link buildings, which will also reduce the need for patients to cross streets while walking between parking facilities and building entrances or between buildings. The sky bridges and tunnels are intended to facilitate the movement of patients and supplies between buildings. It is anticipated that pedestrian volumes will increase with master plan development and the associated increase in patients and staff.

Pedestrian safety can be enhanced by providing clearly defined routes linking building entrances, transit stops, neighborhood pedestrian routes, and other destinations. Pedestrian

safety at intersections can be enhanced by providing curb bulbs where appropriate or other measures that would improve pedestrian visibility and safety.

The Draft Master Plan proposes two key pedestrian corridors. One would connect the east end of the Pigott Corridor to the northwest former of the intersection of Boren Avenue and Madison Street. The corridor would extend east along University Street and then south along Terry Avenue and through the central hospital block to Madison Street. It would then extend east along Madison Street to its intersection with Boren Avenue. The second corridor would connect the east end of the Pigott Corridor along 9th Avenue to Madison Street. The Master Plan proposes that the corridors would contain street trees and other landscaping as well as pedestrian oriented lighting and other amenities.

As Master Plan projects are implemented, the design of these corridors should be consistent with Master Plan design standards as well as SDOT standards as described in the 'Seattle Right-of-Way Improvement Manual.'

Loading

As documented in the Draft Master Plan, VMMC is constantly engaged in studies and implementing plans to improve the efficiency of the flow of materials from the distributor to end user. Given the urban nature of the surrounding community the delivery of materials is made more difficult by congestion and constrained loading areas. Changes to existing loading facilities and new facilities may include:

1. The Hospital loading dock located on the south side of Seneca Street east of Ninth Avenue could be reconfigured to increase capacity and provide increased maneuvering space as part of redevelopment of adjacent buildings.
2. Lindeman Pavilion loading dock located on the west side of Terry Street between Seneca and University would likely be removed and relocated to 9th Ave as part of an expansion of the Lindeman Pavilion.
3. Benaroya Research Institute loading dock is located on Seneca just west of 9th Ave. would not change.
4. The Spring Street loading dock is located on the north side of Spring Street just east of Ninth Avenue would be removed as part of site redevelopment.
5. Development of the 1000 Madison block would likely include a large loading/service area to serve the 1000 Madison site as well as adjacent buildings.
6. Demolition of the 9th Ave parking garage and site redevelopment would likely include provisions for a loading dock on Spring St of from the existing alley.

The Draft Master Plan seeks relief from city code requirements for loading berths to allow for the consolidation of facilities and reduce the number of loading berths required by code. The location and access to future loading areas should be evaluated when a specific project is proposed to ensure that loading facilities are consolidated when possible, traffic impacts are minimized, accesses are located on minor streets where possible, and that the need for delivery trucks to back across public right of way is minimized.

Summary of Long Term Impacts

The long-term impacts under all alternatives are related to increased vehicular and pedestrian activity resulting from master plan development. Vehicular impacts result from increased traffic volumes on the surrounding roadways and the parking facilities required to support increased activity levels. A portion of the traffic related impacts resulting from master plan development will be off-set by increased participation the transportation management plan. Improved transit access will also encourage non-vehicle trips. However, the key factor that drives increases in campus generated trips and parking demand is planned increases in patient services which serve an aging population. This population group accesses VMCC because they require health care and frequently need assistance to travel and cannot withstand the longer travel times associated with public transit. The impacts associated with the travel requirements of this population are difficult to mitigate. The following impacts are identified for the Alternatives:

Intersection Impacts

Forecasted increases in traffic volumes would cause the following intersections or at least one approach on a stop sign controlled intersection to operate at LOS-E or LOS-F:

Proposed Action

	AM Peak	PM Peak
#2 James St/ 7th Ave (signalized	E	
#3 James St/ 9th Ave (signalized	E	
#4 James St/ Boren Ave (signalized	E	E
#5 Marion St/ Boren Ave (signalized)		E
#6 Madison St/ Boren Ave (signalized)	F	E
#10 Madison St/ 7th Ave	E	
#13 Spring St/ 6th Ave (signalized)		F
#14 Spring St/ 8th Ave (stop)		F
#15 Spring St/ 9th Ave (stop)	F	E
#19 Seneca St/ Terry Ave (stop)	F	F
#20 Seneca St/ 9th Ave (signalized)		F
#23 Seneca St/ 6th Ave (signalized)	F	E

Alternative 5a

	AM Peak	PM Peak
#2 James St/ 7th Ave (signalized	E	
#3 James St/ 9th Ave (signalized	E	
#4 James St/ Boren Ave (signalized	E	E
#5 Marion St/ Boren Ave (signalized)		E
#6 Madison St/ Boren Ave (signalized)	F	E
#8 Madison St/ 9th Ave (signalized		E
#10 Madison St/ 7th Ave	E	
#13 Spring St/ 6th Ave (signalized)		F
#14 Spring St/ 8th Ave (stop)		F
#15 Spring St/ 9th Ave (stop)	F	E
#18 Seneca St/ Boren Ave (signalized)		E
#19 Seneca St/ Terry Ave (stop)	F	F
#23 Seneca St/ 6th Ave (signalized)	F	E

Vehicular Circulation Impacts

The addition of new buildings, loading zones, and garage accesses to the campus will make it more difficult for patients to find their destination. Congestion on 9th Avenue would increase requiring the need for channelization and intersection improvements at Seneca and Spring Streets under the ***Proposed Action*** and ***Alternatives 5a***.

Pedestrian and Bicycle Impacts

Pedestrian facilities in the area are adequate to accommodate forecasted volumes at most locations. However, a number of sidewalks do not meet current city standards and either are deficient in width and/or do not have a 5 foot planting strip. The increase in vehicular, pedestrian, and bicycle traffic could result in increased potential for conflicts at road crossings and even mid-block locations.

Short Term Impacts

Short term impacts associated with the implementation of master plan projects will likely include temporary closure of sidewalks, removal of on-street parking, and relocation of transit stops because of demolition or construction activity. There would also be temporary increases in heavy vehicles on adjacent streets due to construction activity. Daily truck trip volumes would vary with project and project phase. The greatest number of truck trips would occur during periods of excavation. The presence of construction workers would also increase traffic volumes and parking demand in the area.

During periods of construction activity, existing parking facilities may be demolished or access limited. Additional parking facilities may need to be leased during construction phases to mitigate short-term parking deficits. Pedestrian and bicycle facilities may also be impacted by construction activity and accommodations made for alternative routes or accommodations.

Concurrency

The City of Seattle's transportation concurrency level of service standard is based on the PM peak hour volume to capacity ratio (V/C) at screen lines that cross selected arterials. The screen lines affected by the ***Proposed Action*** are listed in **Table 3.8-31** along with their associated standards.

Table 3.8-31
TRANSPORTATION CONCURRENCY

Screen line #	Screen line Location	Direc -tion	2008 Capacity	2008 PM Peak Traffic Count	2008 PM V/C Ratio	LOS Standard	PM Peak Hour	
							Trips Added	V/C Ratio
5.16	Ship Canal University & Montlake Bridges	NB	4,030	3,833	0.95	1.20	54	0.96
		SB	4,070	3,571	0.88	1.20	10	0.88
12.12	East of CBD	EB	13,300	8,266	0.62	1.20	32	0.62
		WB	11,736	6,491	0.55	1.20	167	0.57
10.12	S of S Jackson St 12th Ave S to Lakeside Ave S	NB	7,400	3,355	0.45	1.00	9	0.46
		SB	7,400	4,366	0.59	1.00	44	0.60

Source: Transportation Solutions, Inc., 2012

The volume to capacity ratio for a project is calculated by adding the project generated PM peak hour trips to the traffic volume based on the last adopted count (2008) and dividing the sum by the capacity of the affected road segments at the screen line. The assignment of new trips generated under ***Alternative 5a*** (the largest number of trips generated by master plan alternatives) is based on the estimated number of trips crossing the selected screen lines. ***Alternative 5a*** traffic volumes would result in no changes or very minor increases in volume to capacity ratios at analyzed screen lines. Concurrency requirements are met.

Cumulative Impacts

Due to the nature of the transportation analysis conducted for the proposed *MIMP*, secondary and cumulative impacts have been addressed as part of the primary analysis documented above.

3.9-4 Mitigation Measures

Long Term Mitigation–Proposed Action and Alternative 5a

- Implement the adopted TMP prior to the first master plan project
- As part of each project, ensure that pedestrian and vehicular circulation needs are addressed in a manner consistent with the campus wayfinding plan.
- As part of the review process for master plan projects:
  - Assess TMP performance
  - Update MIMP parking requirements and reassess long-term campus parking supply recommendations

- Assess operational and safety conditions for proposed garage accesses and loading areas
- Assess pedestrian and vehicular circulation conditions and identify safety deficiencies that could be remedied as part of the project under review.
- Assess loading berth requirements and where possible consolidate facilities so that the number of berths campus wide is less than the code requirement.
- Review city of Seattle mobility master plans and identify project components that should be provided as frontage improvements or as mitigation for project impacts consistent with the 'Seattle Right-of-Way Improvement Manual' and Master Plan Design Standards.
- Review adequacy of ADA facilities affecting a proposed project as part of project level review.

- As part of project level environmental review, evaluate and implement improvements to mitigate impacts.
  - Mitigation for impacts to 9th Ave from Madison St to University St could include:
    - Adding northbound and southbound left turn pockets at Madison St/ 9th Ave within the existing road width.
    - Signalizing and adding northbound and southbound left turn pockets at Spring St/ 9th Ave. Maintain pedestrian safety by including pedestrian crossing beacons and controls and curb bulbs on Spring Street and on 9th Avenue if there is adequate road width.
    - Adding northbound and southbound left turn pockets at Seneca St/ 9th Ave within the existing road width.
    - Improving sidewalks and roadway crossings to enhance pedestrian safety as part of frontage improvements when the 9th Avenue Garage and Buck Pavilion sites are redeveloped.
  - Mitigation for impacts to Seneca Street could include:
    - Signalizing the intersection of Seneca St/ Terry Ave when the hospital core is redeveloped and a south leg of the intersection becomes a garage access.
    - Remove the Lindeman Garage access on Seneca and provide a new access on 9th Avenue when the Lindeman Pavilion is expanded.
  - Mitigation for impacts to Spring St/ 8th Ave could include providing a southbound right turn lane within the existing road width.
- Reduce the impact of truck movements on local streets and potential conflicts with pedestrians by consolidating loading facilities.

Short Term Mitigation – Proposed Action and Alternative 5a

Mitigation for short term transportation impacts associated with construction of specific master plan projects for the ***Proposed Action*** and ***Alternative 5a*** include:

- Implementation of construction traffic management plans associated with street-use permits or demolition permits that affect existing pedestrian, bicycle, and vehicular circulation patterns or transit routes or stops.
- To the extent possible, stage construction truck loading and unloading off-street.

- Implementation of a construction parking management program to identify off-site parking supplies for construction workers and minimize impacts to VMMC parking supplies and surrounding public parking supplies.
- Minimize any lane closures on Madison, Boren, and Seneca.
- To the extent possible, schedule deliveries at off peak times to avoid congestion.
- Develop a parking phasing plan to minimize disruptions to the parking supply serving VMMC patients and visitors.

3.9-6 Significant Unavoidable Adverse Impacts

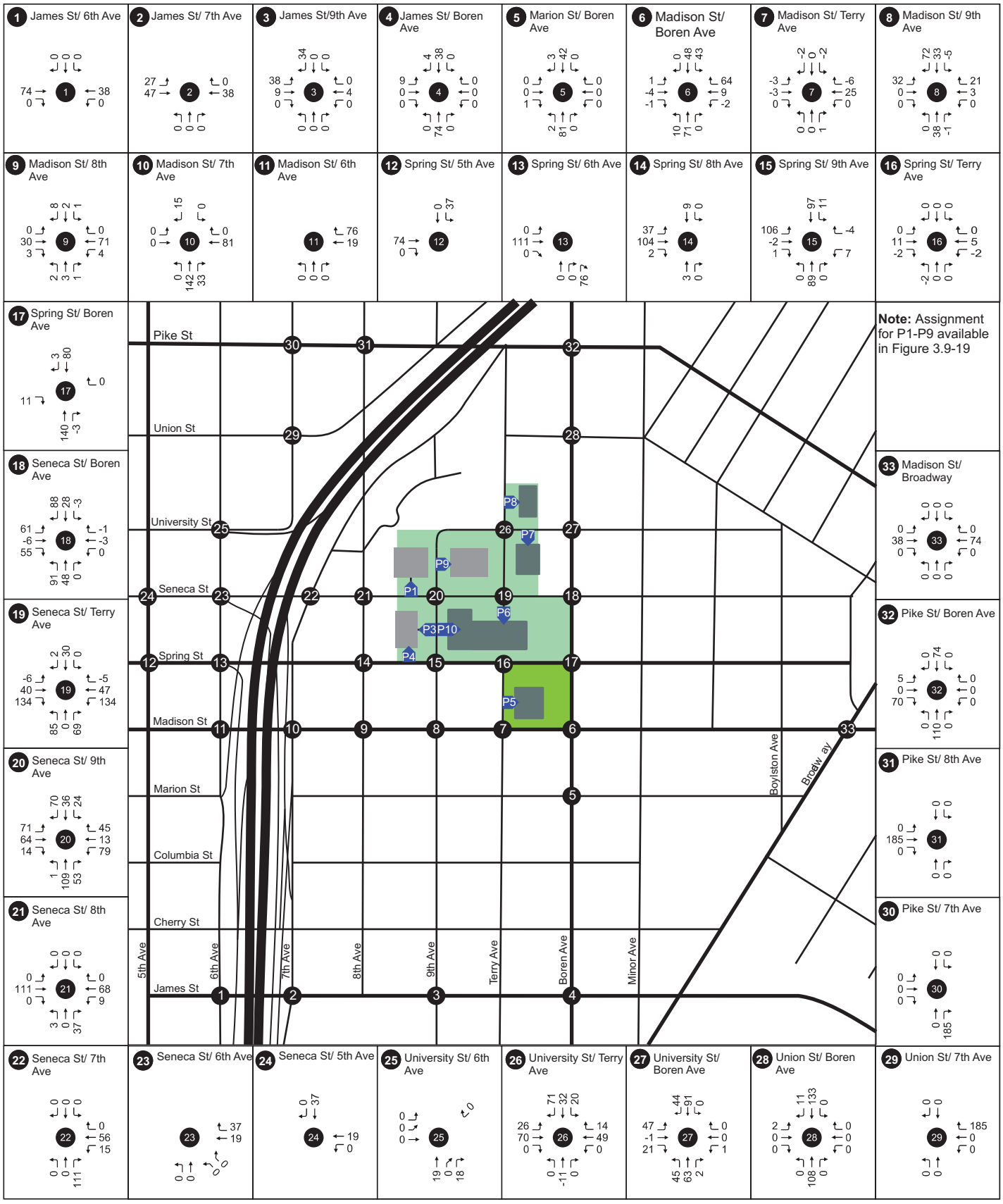
Three intersections are forecasted to operate at LOS-F under future conditions. Potential solutions to improve level of service are beyond the scope of this analysis and are the purview of citywide planning efforts that address congestion through trip reduction strategies and corridor improvements such as signal timing and turning restrictions that incorporate the needs of pedestrians as well as motor vehicles.

The intersection of Seneca St/ 6th Ave is forecasted to operate at LOS-F during the AM peak hour in 2042 under the ***No Action Alternative***, the ***Proposed Action***, and ***Alternative 5a***.

The intersection of Spring St/ 6th Ave is forecasted to operate at LOS-F during the PM peak hour in 2042 under the ***No Action Alternative***, the ***Proposed Action***, and ***Alternative 5a***.

The intersection of Madison St/ Boren Ave is forecasted to operate at LOS-F during the AM peak hour in 2042 under the ***Proposed Action***, and ***Alternative 5a***.

Virginia Mason Medical Center MIMP
Draft EIS

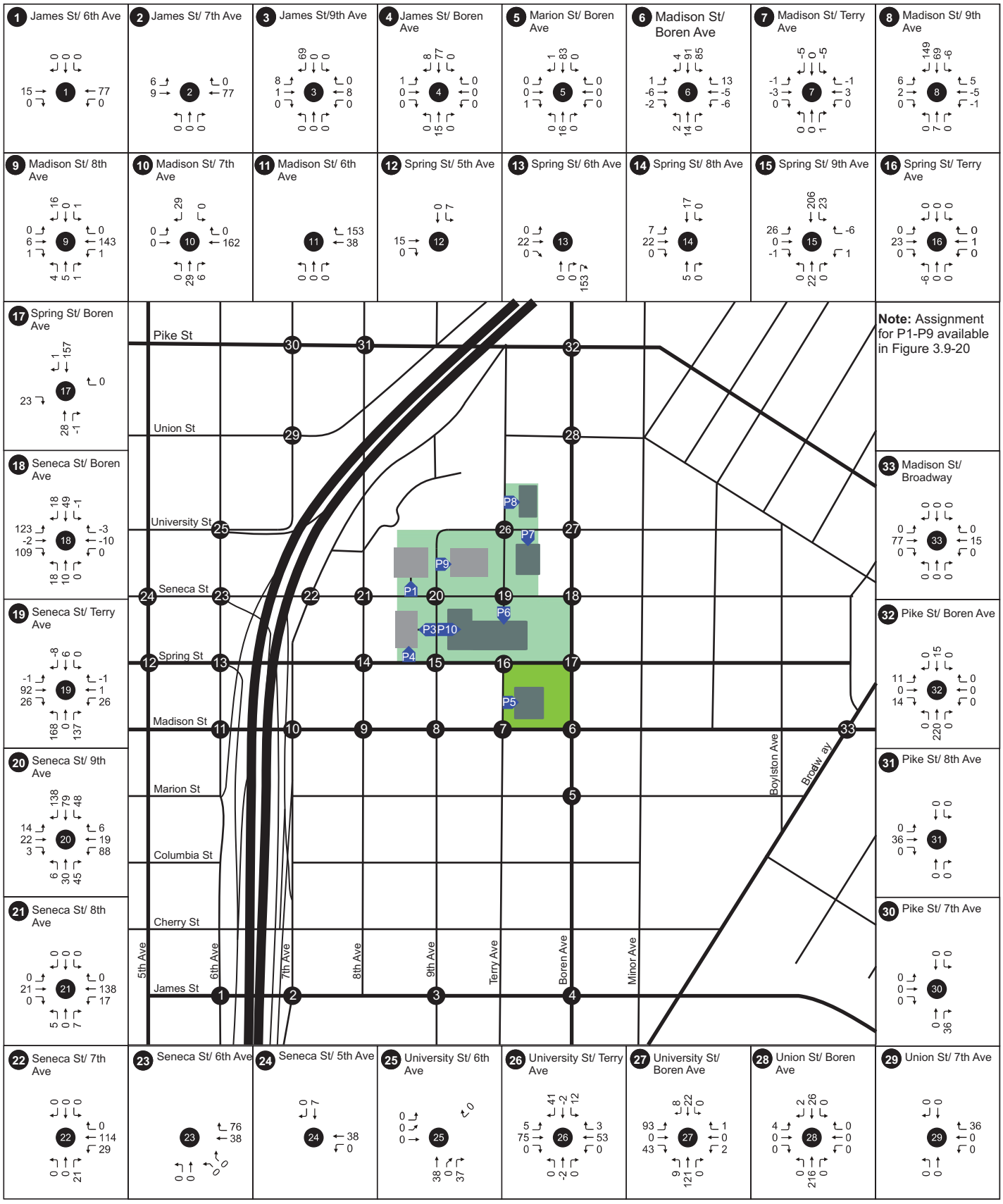


Source: Transportation Solutions, Inc., 2012

EA | BLUMEN

Figure 3.9-11
AM Peak Hour Assignment
Alt 5A: No Boundary Expansion (2042)

Virginia Mason Medical Center MIMP
Draft EIS

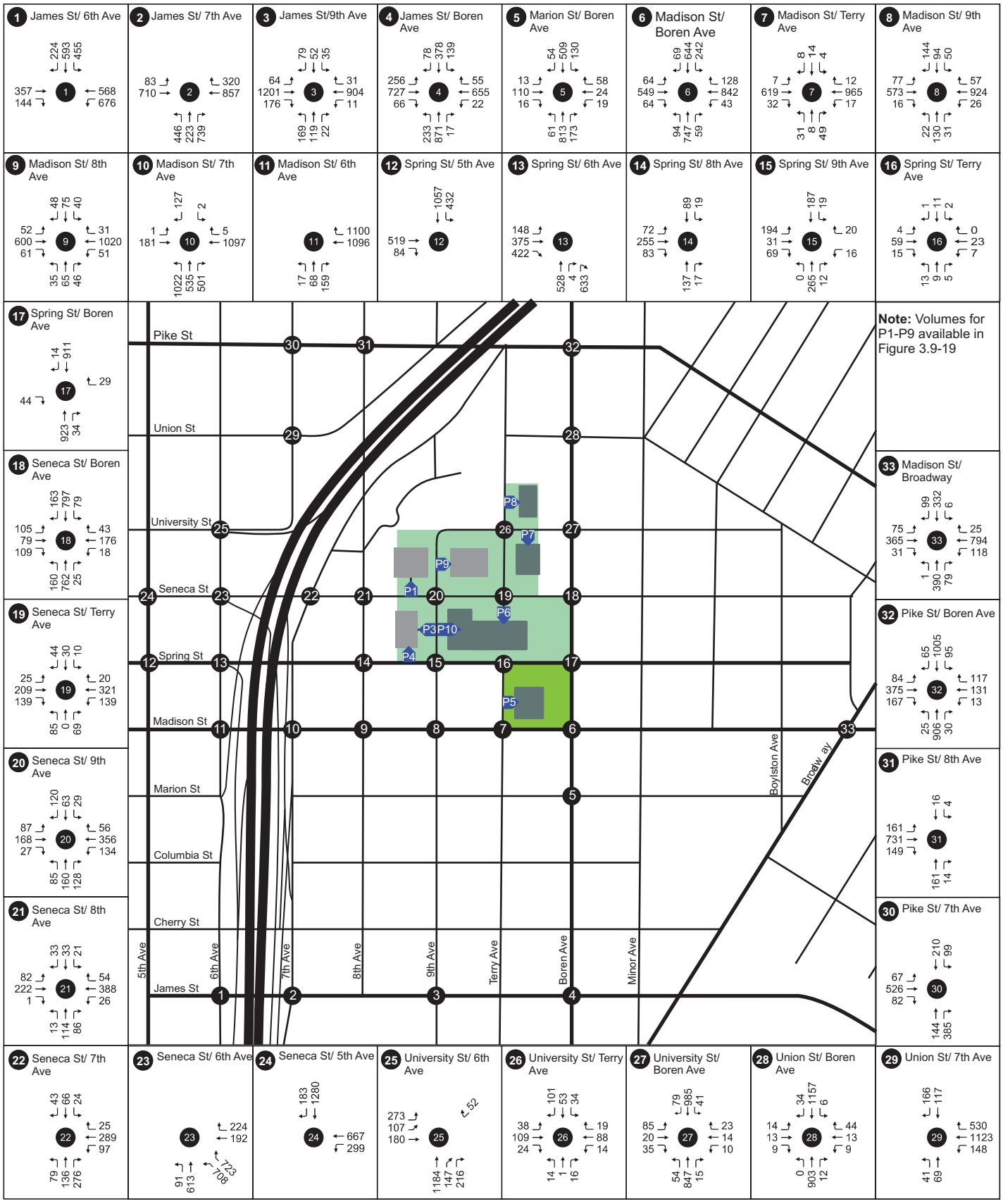


Source: Transportation Solutions, Inc., 2012

EA | BLUMEN

Figure 3.9-12
PM Peak Hour Assignment
Alt 5A: No Boundary Expansion (2042)

Virginia Mason Medical Center MIMP
Draft EIS



Source: Transportation Solutions, Inc., 2012

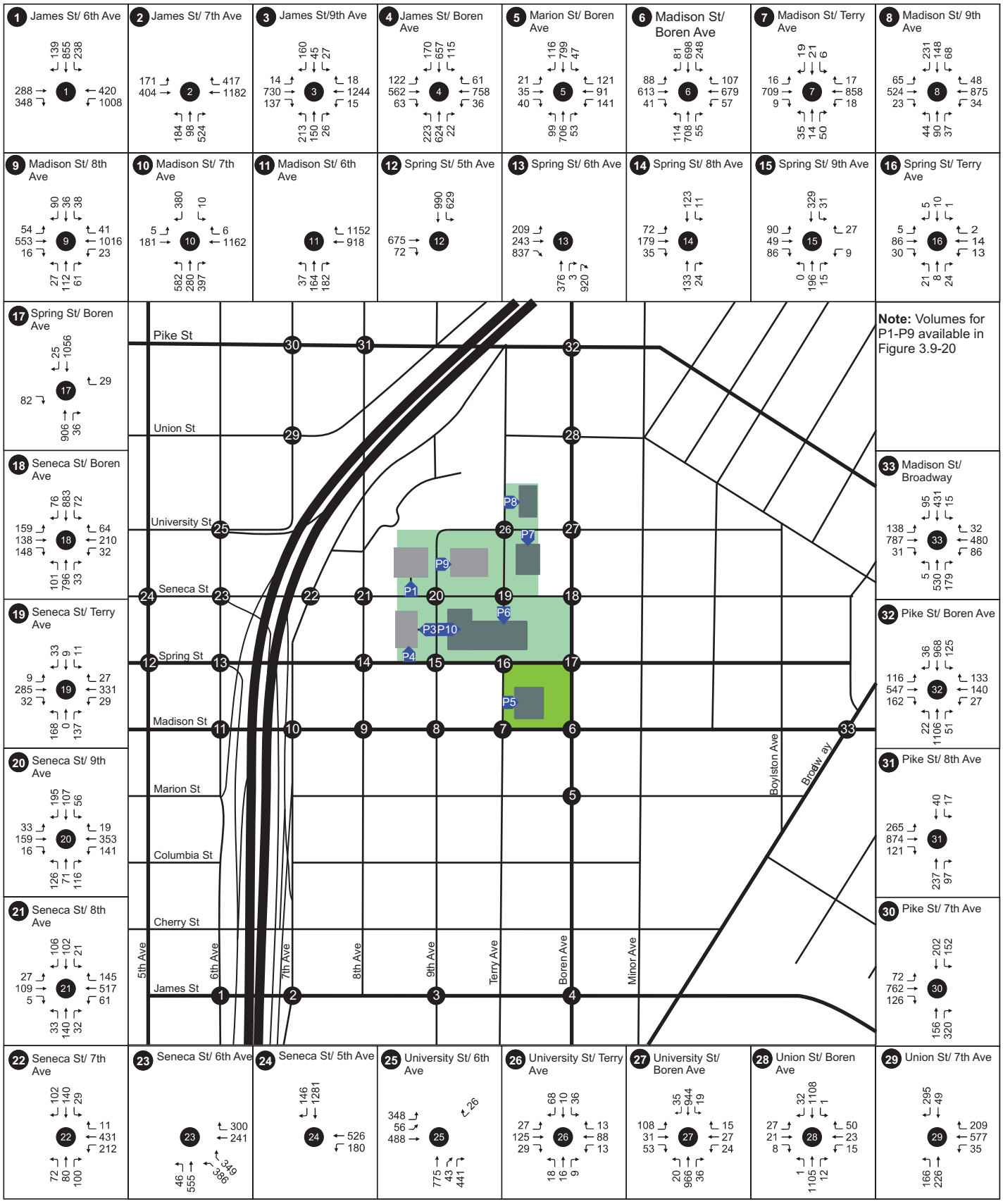
EA | BLUMEN

Figure 3.9-13

AM Peak Hour Turning Movement Volumes

Alt 5A: No Boundary Expansion (2042)

Virginia Mason Medical Center MIMP
Draft EIS



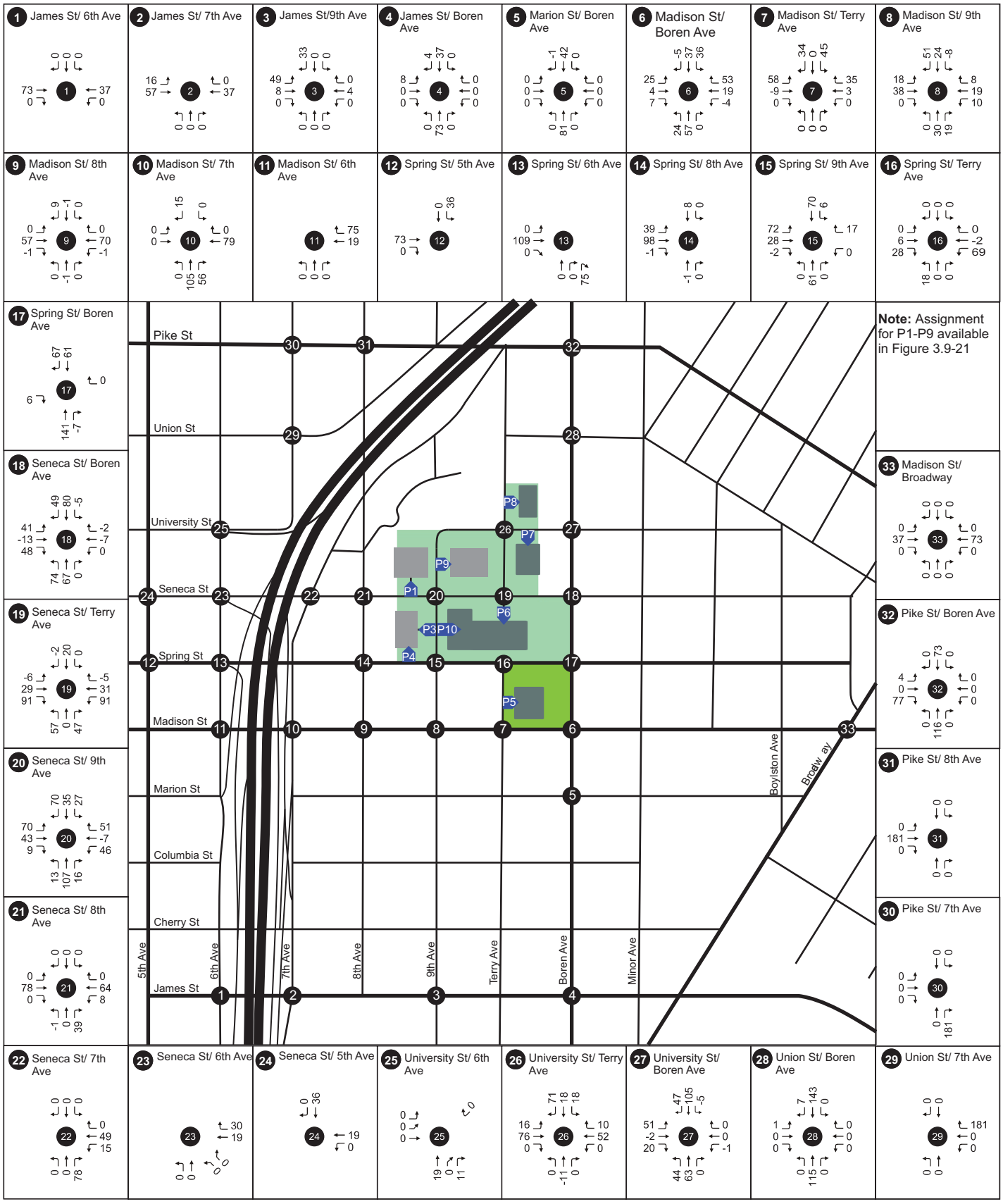
Source: Transportation Solutions, Inc., 2012

EA | BLUMEN

Figure 3.9-14

PM Peak Hour Turning Movement Volumes
Alt 5A: No Boundary Expansion (2042)

Virginia Mason Medical Center MIMP
Draft EIS

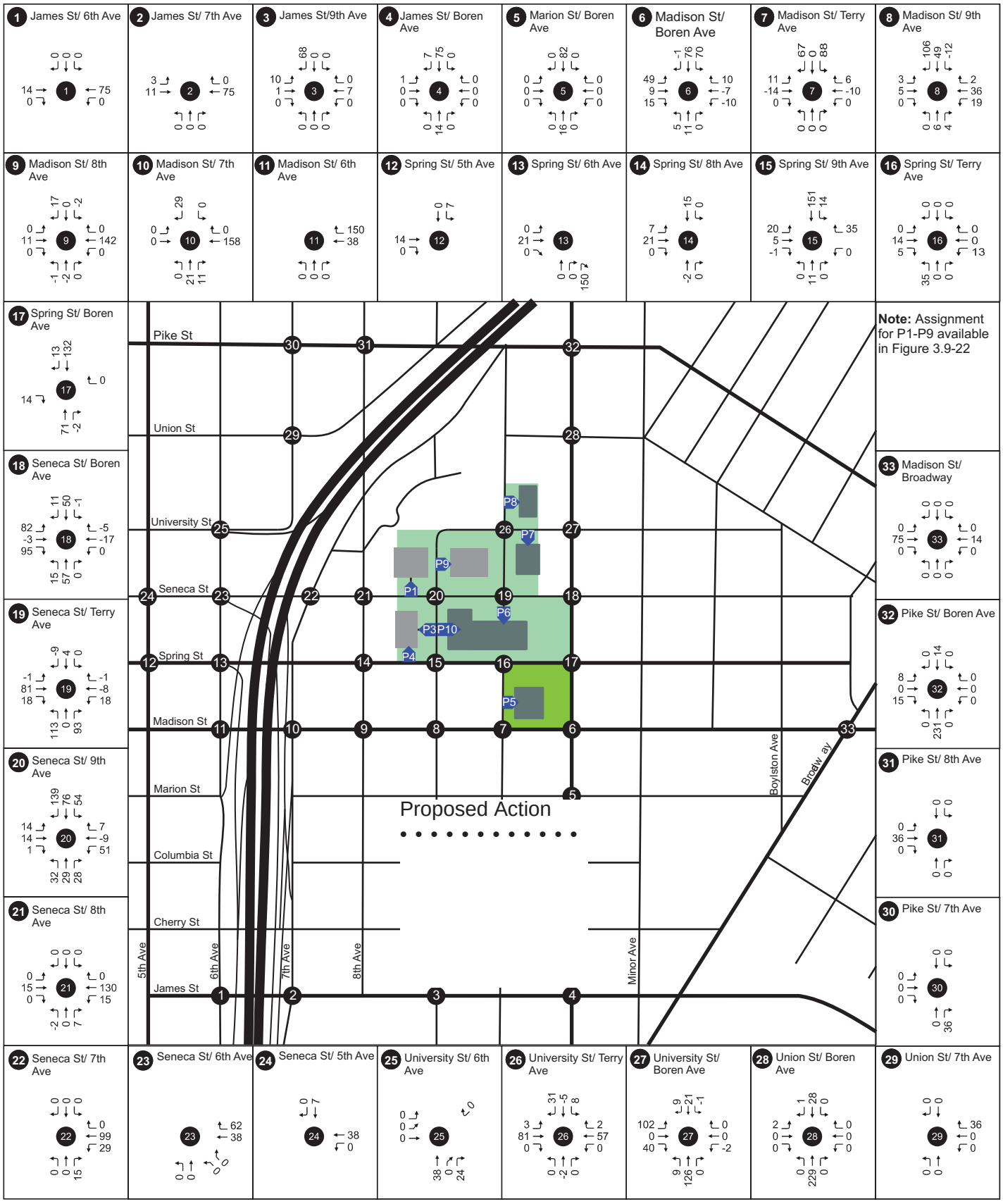


Source: Transportation Solutions, Inc., 2012

EA | BLUMEN

Figure 3.9-15
AM Peak Hour Assignment
Proposed Action (2042)

Virginia Mason Medical Center MIMP
Draft EIS

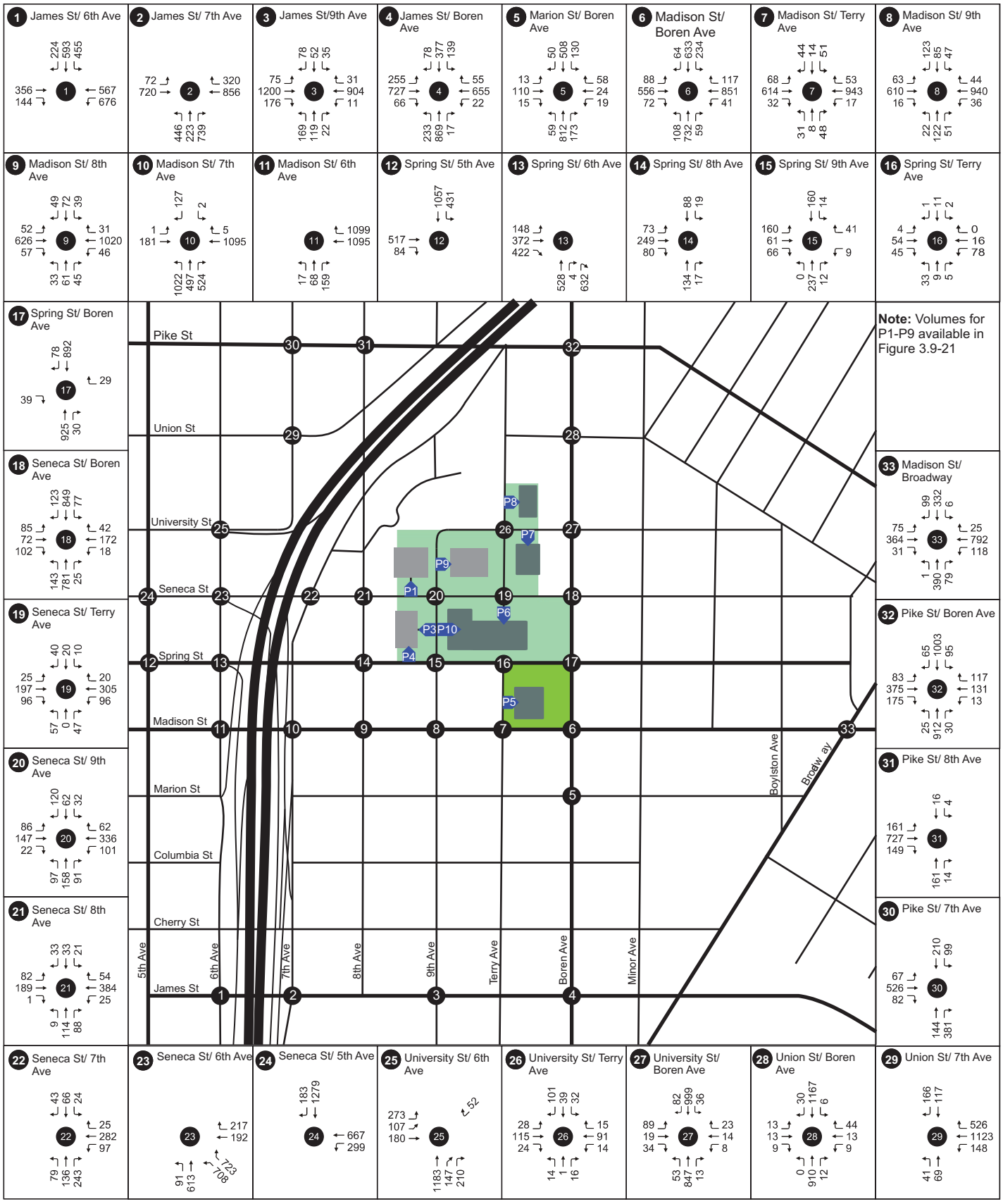


Source: Transportation Solutions, Inc., 2012

EA | BLUMEN

Figure 3.9-16
PM Peak Hour Assignment
Proposed Action (2042)

Virginia Mason Medical Center MIMP
Draft EIS



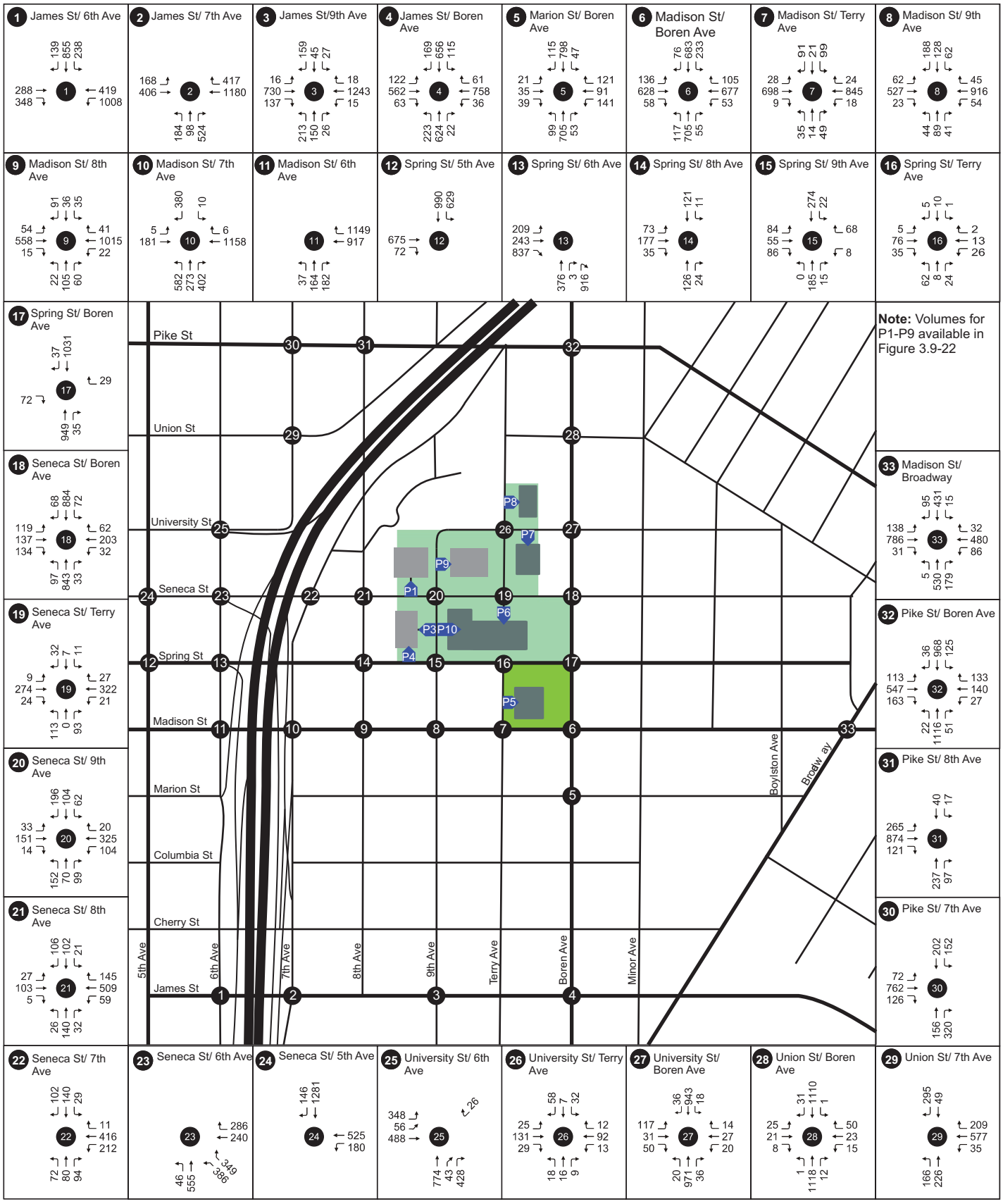
Source: Transportation Solutions, Inc., 2012

EA | BLUMEN

Figure 3.9-17

AM Peak Hour Turning Movement Volumes
Proposed Action (2042)

Virginia Mason Medical Center MIMP
Draft EIS



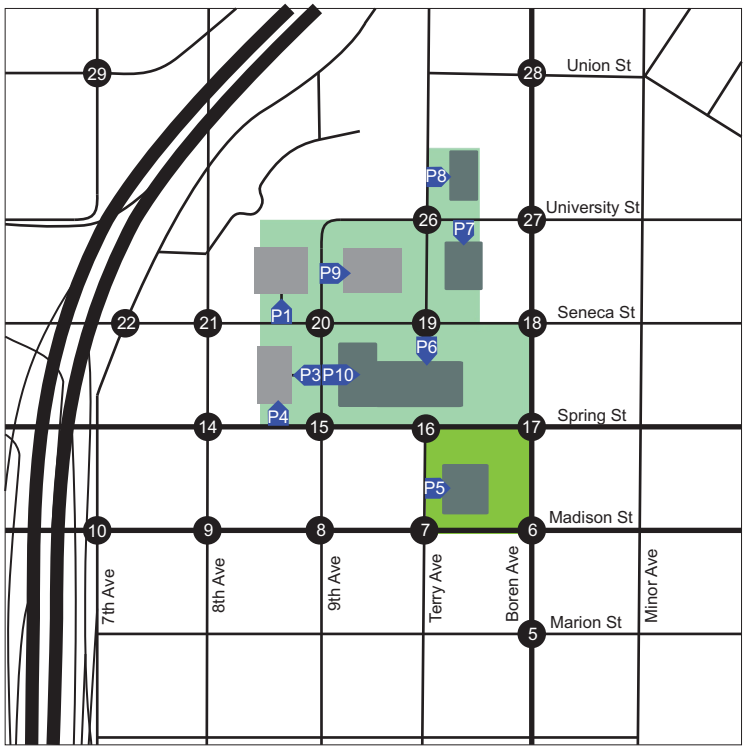
Source: Transportation Solutions, Inc., 2012

EA | BLUMEN

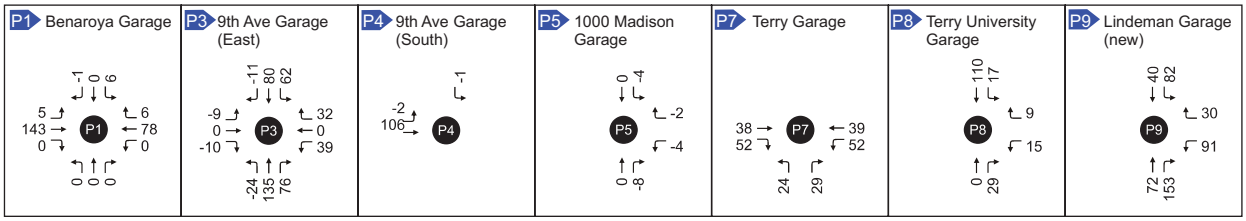
Figure 3.9-18

PM Peak Hour Turning Movement volumes

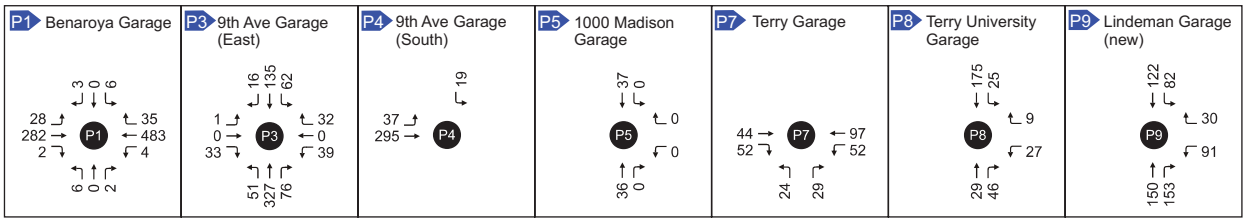
Proposed Action (2042)



ASSIGNMENT



TOTAL VOLUMES



Notes

P2 P2 (Lindeman Garage) is closed and replaced by new access P9 in Alternatives 5A and 6B

P6 For P6, refer to south leg of Seneca St/ Terry Ave (#19) on Figure 3.9-11 for assignment and Figure 3.9-13 for volumes

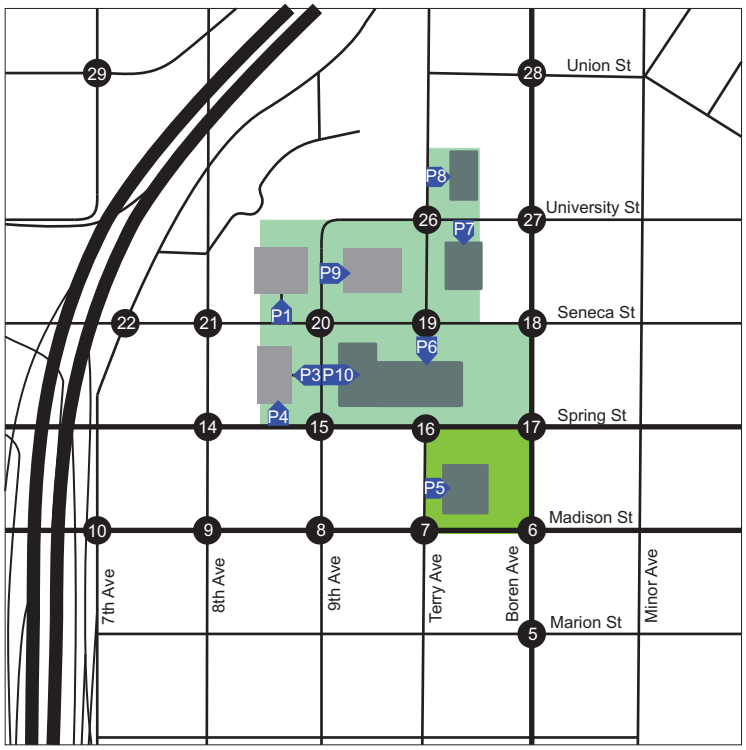
P10 Access shared with P3 (9th Ave Garage)

Source: Transportation Solutions, Inc., 2012

EA | BLUMEN

Figure 3.9-19

AM PEAK HOUR PARKING ACCESS VOLUMES
ALT 5A: NO BOUNDARY EXPANSION (2042)



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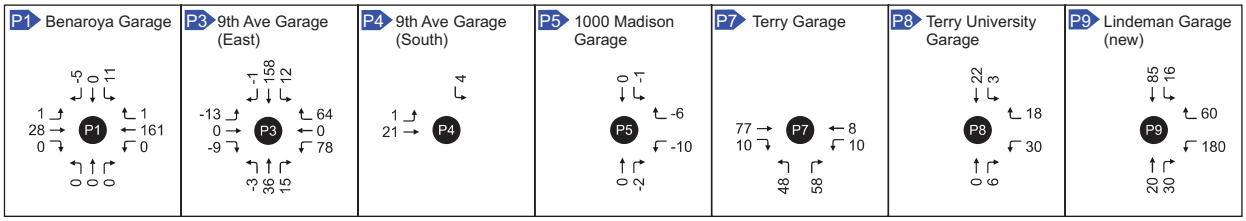
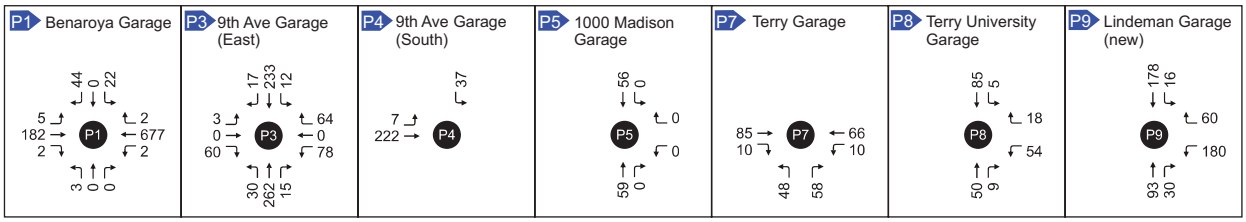


TOTAL VOLUMES



Notes

P2 P2 (Lindeman Garage) is closed and replaced by new access P9 in Alternatives 5A and 6B

P6 For P6, refer to south leg of Seneca St/ Terry Ave (#19) on Figure 3.9-12 for assignment and Figure 3.9-14 for volumes

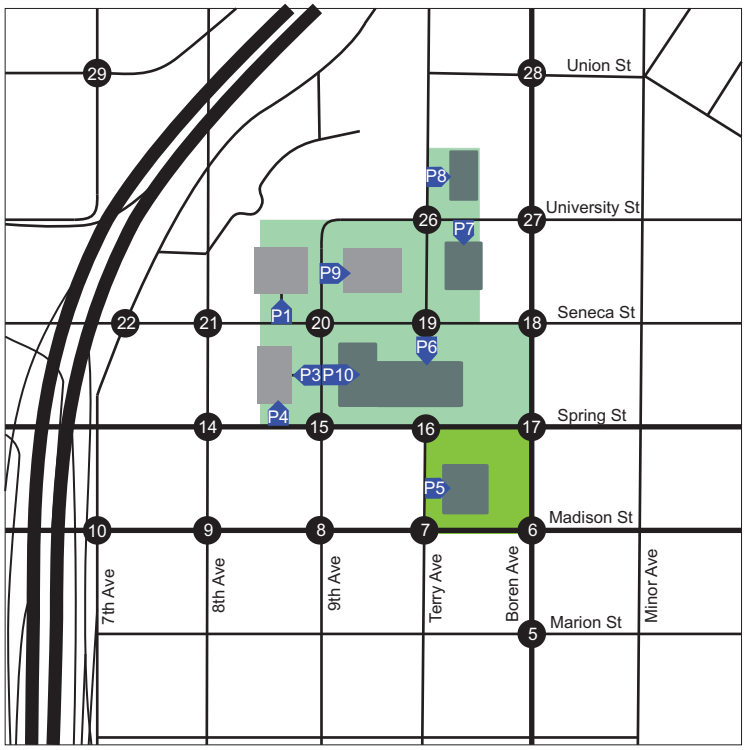
P10 Access shared with P3 (9th Ave Garage)

Source: Transportation Solutions, Inc., 2012

EA | BLUMEN

Figure 3.9-20

PM PEAK HOUR PARKING ACCESS VOLUMES
ALT 5A: NO BOUNDARY EXPANSION (2042)



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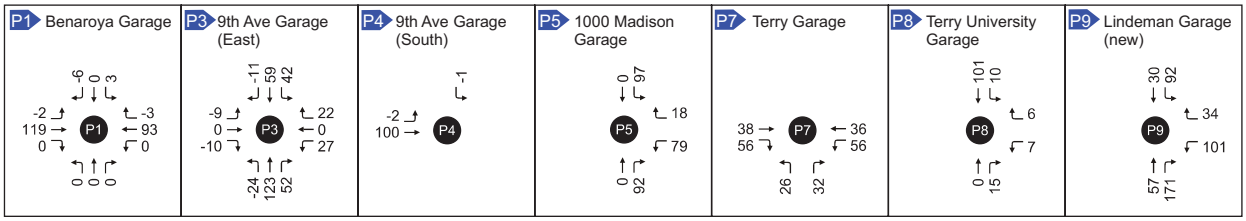
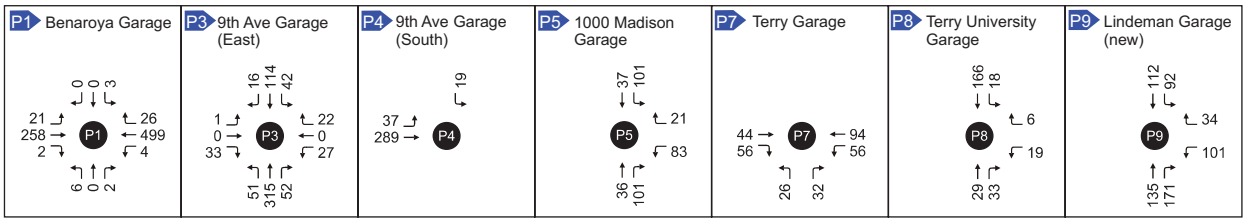


TOTAL VOLUMES



Notes

P2 P2 (Lindeman Garage) is closed and replaced by new access P9 in Alternatives 5A and 6B

P6 For P6, refer to south leg of Seneca St/ Terry Ave (#19) on Figure 3.9-15 for assignment and Figure 3.9-17 for volumes

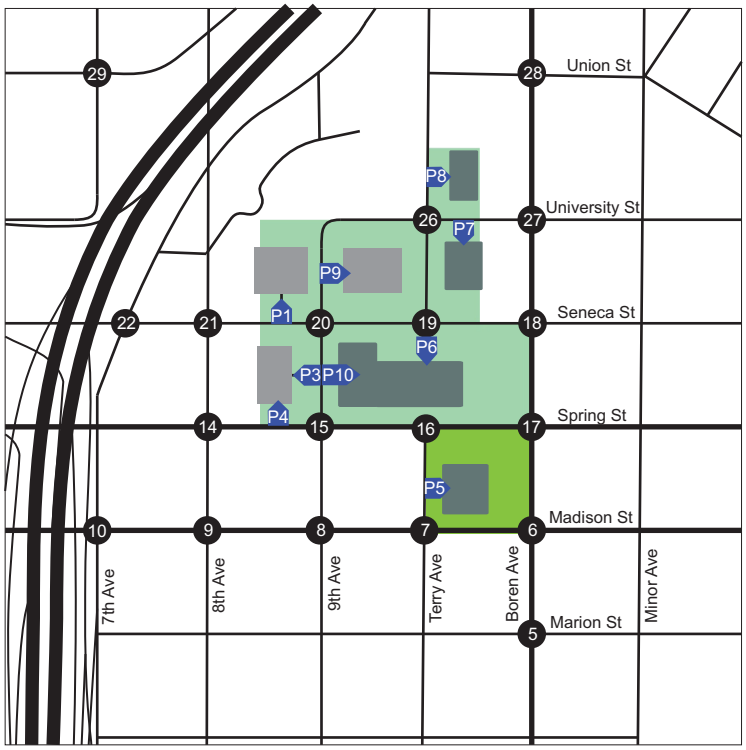
P10 Access shared with P3 (9th Ave Garage)

Source: Transportation Solutions, Inc., 2012

EA | BLUMEN

Figure 3.9-21

AM PEAK HOUR PARKING ACCESS VOLUMES
Proposed Action (2042)



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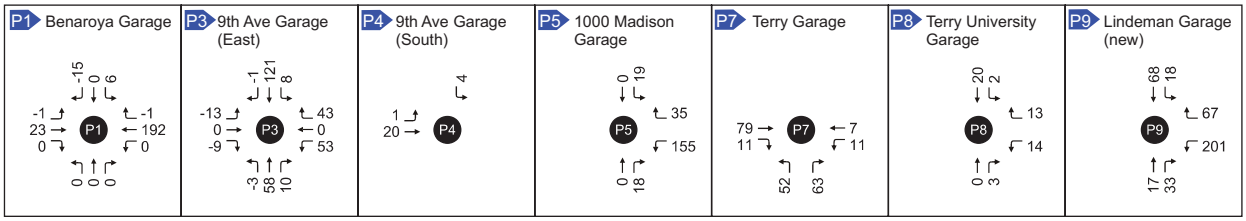
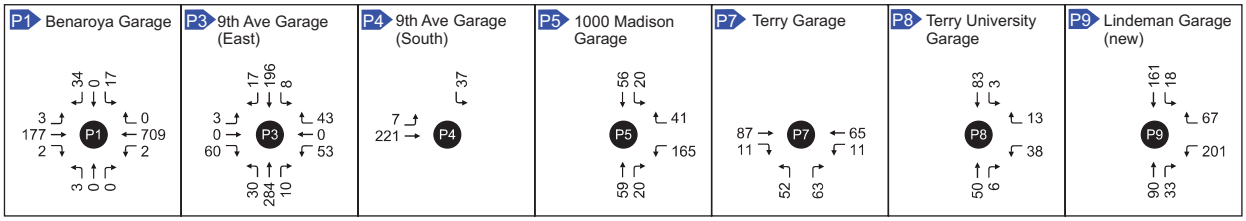


TOTAL VOLUMES



Notes

P2 P2 (Lindeman Garage) is closed and replaced by new access P9 in Alternatives 5A and 6B

P6 For P6, refer to south leg of Seneca St/ Terry Ave (#19) on Figure 3.9-16 for assignment and Figure 3.9-18 for volumes

P10 Access shared with P3 (9th Ave Garage)

Source: Transportation Solutions, Inc., 2012

EA | BLUMEN

Figure 3.9-22

PM PEAK HOUR PARKING ACCESS VOLUME
Proposed Action (2042)

3.10 PUBLIC SERVICES

This section describes the existing public services (police, fire/emergency medical services, water, sewer, stormwater, solid waste) on and in the vicinity of the VMMC campus. Potential impacts to public services with operation of the ***Proposed Action*** and ***Alternative 5a*** are analyzed.

Policy Context

The Seattle Municipal Code (SMC) contains specific provisions that describe the scope of the SEPA analysis for the public services element. Relevant policies from SMC 25.05.675 are provided below:

O.2. Public Services and Facilities Policies

a. It is the City's policy to minimize or prevent adverse impacts to existing public services and facilities.

b. The decision maker may require, as part of the environmental review of a project, a reasonable assessment of the present and planned condition and capacity of public services and facilities to serve the area affected by the proposal.

c. Based upon such analyses, a project which would result in adverse impacts on existing public services and facilities may be conditioned or denied to lessen its demand for services and facilities, or required to improve or add services and/or facilities for the public, whether or not the project meets the criteria of the Overview Policy set forth in SMC Section 25.05.665.

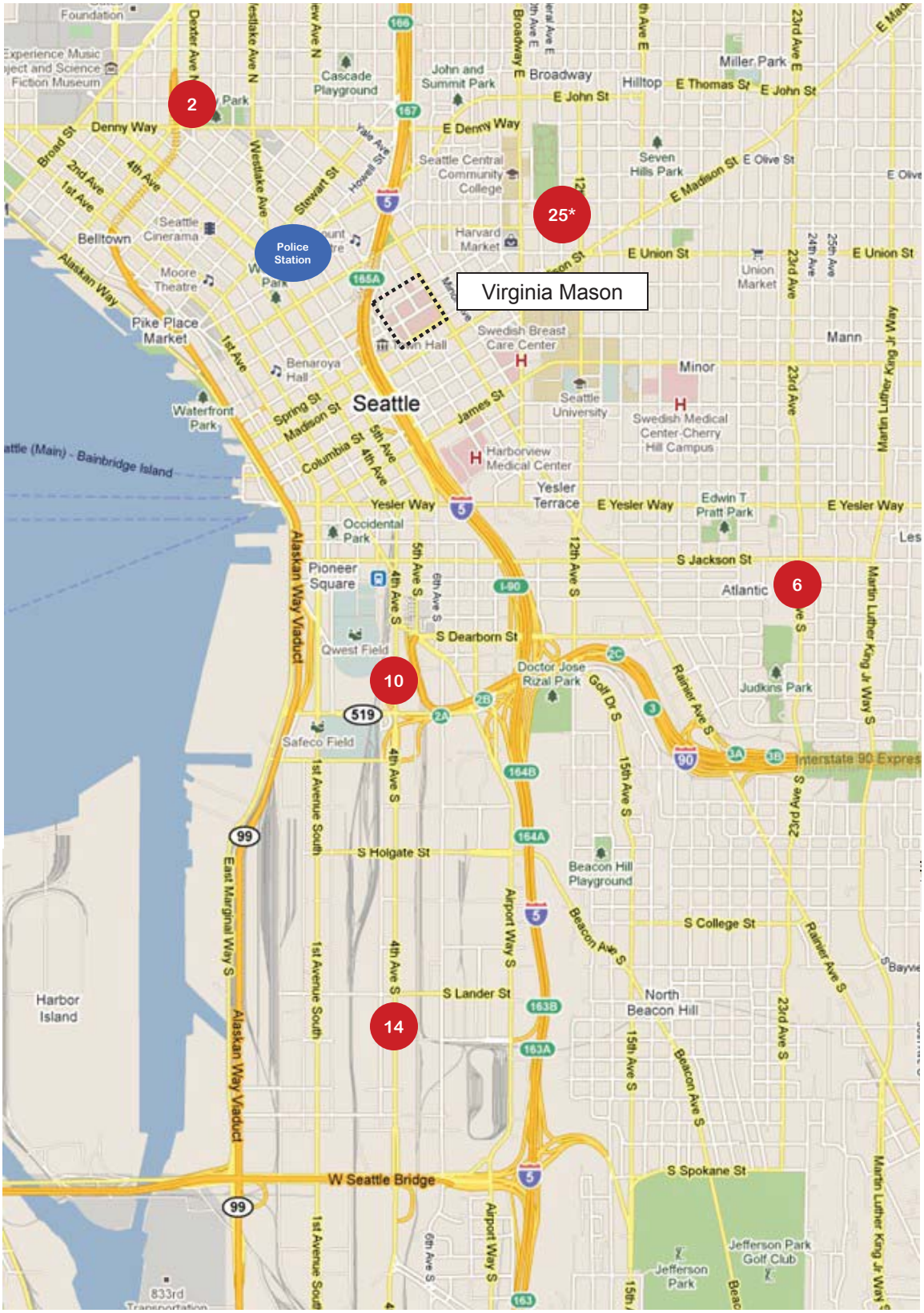
3.10.1 FIRE

3.10.1.1 Affected Environment

The Seattle Fire Department provides fire protection, Basic Life Support (BLS) and Advanced Life Support (ALS)/Emergency Medical Services (EMS) throughout the City from 33 fire stations. Each fire station provides a full range of fire protection services, including fire suppression, emergency medical, and rescue.[1] In 2010, the Department had 1,020 uniformed personnel, with an on-duty strength of 208 officers. Apparatus associated with all stations includes: 33 fire engines, 12 ladder trucks, 4 aid units (basic life support), 7 medic units (advanced life support), 2 air trucks, 4 fire boats, and 2 hose wagons.[2] Fire fighters must use compressed air to survive and air trucks provide air compressors that can refill spent cylinders.

Fire Station 25 (1300 E Pine Street), located approximately 0.8 miles from VMMC, is the closest station to the site and provides first response for fire and EMS. As needed, other stations that also provide service to the site include: Station 2 (2320 4th Avenue), Station 10 (400 S. Washington Street), and Station 6 (101 23rd Avenue South). See **Figure 3.10-1** for the location of these stations relative to the VMMC campus.

1 City of Seattle Comprehensive Plan. 2005. Capital Facilities Appendix.
2 Seattle Fire Department. Department Profile. http://www.seattle.gov/fire/deptInfo/deptProfile.htm.



* Primary Response Station

Source: Google, EA|Blumen, 2011

Figure 3.10-1

Location of Police and Fire Facilities

EA | BLUMEN

Equipment and Staff Resources

Fire Station 25 currently has ten firefighters on duty at all times. Equipment at the station includes: one engine, one ladder truck, and one BLS vehicle.

Response Times

The Seattle Fire Department has established a response time goal of four minutes (to be achievable 90 percent of the time) for the first engine company to arrive at the scene of a reported structure fire and/or basic life support medical emergency. Between 2006 and 2009, the Department met this goal, 83 to 87 percent of the time.[3] For the stations serving VMMC in 2009 and 2010, the average response time ranged from 2.95 to 3.43 minutes for fire services and 2.46 to 3.02 minutes for EMS services.

Fire/Emergency Service Incident History

Table 3.10.1-1 shows total historical incident response data for the Seattle Fire Department in 2009 and 2010 at the five stations which serve the VMMC campus. Included are responses to calls for fire protection, false alarms, EMS, mutual aid and other services (i.e., rescue, car fire, etc.). As shown, the majority of responses at all stations were for EMS.

Table 3.10.1-1
FIRE/EMS INCIDENTS
RESPONDED TO BY STATIONS SERVING THE SITE, 2009 & 2010*

	2009	2010
Structure Fire	404	367
Non-Structure Fire	260	215
False Alarm	2,087	1,955
EMS	18,312	18,442
Mutual Aid	0	0
Other (i.e. rescue, car fire)	1,221	1,305

Source: Seattle Fire Department, 2011.
****Includes Station 2, 10, 14, 16 and 25***

Fire/EMS Incident Responses to Site

Seattle Fire Department records indicate that in 2009 and 2010, approximately 34 to 53 calls were made to VMMC annually. With the exception of false alarms, calls were solely for EMS (see **Table 3.10.1-2**).

[3] City of Seattle. Seattle Fire Department Emergency Response Report. 2009.

Table 3.10.1-2
FIRE/EMS INCIDENTS - RESPONSES AT VMMC, 2009 & 2010

Emergency Types	2009	2010
Structure Fires	0	0
Non-Structure Fires	0	0
False Alarm	37	15
EMS	16	19
Mutual Aid	0	0
Other (rescue, car fire)	0	0
Total	**53**	**34**

Source: Seattle Fire Department, 2011.
****Includes Station 2, 10, 14, 16 and 25***

Fire Facilities and Emergency Response Levy

A Fire Facilities and Emergency Response Levy was approved by Seattle voters in 2003 to improve and upgrade Seattle's fire facilities and emergency response system, which were determined to be outdated and inadequate to maintain the desired response times throughout the City. All of the City's fire stations, which were built between 1918 and 1974, were evaluated as needing major upgrades, renovation or replacement in order to continue to provide service.[4] The Levy provided approximately $167 million for multiple projects, including upgrades, renovations or replacement of 32 neighborhood fire stations.

Funds from this levy facilitated the construction of seismic and safety upgrades at Fire Station 25, which are scheduled to be completed in 2013.[5] Stations 2 and 10 have been upgraded, and Stations 6 and 14 will be upgraded by the end of 2012.[6]

3.10.1.2 Impacts of the Proposed Action (6b) and Alternatives

Impacts Common to the Proposed Action (6b) and Alternatives

Increases in on-site employment and the number of visitors/patients to the VMMC campus would be incremental and would be accompanied by an increased demand for all types of services provided by the Fire Department, including fire protection, BLS and EMS. Also, new buildings developed under the ***Proposed Action*** or ***Alternative 5a*** would be larger than existing buildings, which could result in an increase in the number of alarms due to additional smoke detectors and alarm systems. The Fire Department indicates that they have sufficient capacity and resources to absorb potential increased calls related to fire suppression and EMS services at VMMC.[7]

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4 City of Seattle, Fleets and Facilities Department.Fire Facilities and Emergency Response Levy Program. http://www.seattle.gov/fleetsfacilities/firelevy/.
5 Ibid.
6 Ibid.
7 Personal Communication with William Hepburn, Assistant Chief of Operations. Seattle Fire Department. June 2011.

All new and renovated buildings would be constructed in compliance with the fire codes in effect at the time of building permit review. Adequate fire flow to serve the proposed redevelopment would be provided as required by this Fire Code. Specific code requirements would be adhered to regarding emergency access to structures.

Cumulative Impacts

Planned development in the area includes projects associated with the Swedish Medical Center – First Hill, Harborview Medical Center, The Polyclinic, and Seattle University. Cumulatively, these projects would add new population and employment to the site vicinity. These projects, together with the VMMC campus redevelopment, would increase demand for certain fire/EMS services over the long-term. No significant impacts on fire/EMS services, however, would be expected as a result of this cumulative development.

No Action Alternative

The ***No Action Alternative*** would be anticipated to result in the continuation of existing rates of calls for fire/EMS services; services would be expected to continue to be provided to the VMMC campus as described under **Section 3.10.1.1 Affected Environment**.

3.10.1.3 Mitigation Measures

The following mitigation measures could minimize potential impacts to Fire and EMS Services from the VMMC redevelopment:

- Increases in employment and visitors to the VMMC campus over the build-out of VMMC's *MIMP* would be incremental and would be accompanied by increases in demand for fire/EMS services under all of the EIS redevelopment alternatives. A portion of the tax revenues generated from redevelopment of the site – including construction sales tax, retail sales tax, business and operation tax, property tax, utility tax and other fees, licenses and permits - would accrue to the City of Seattle and conceivably could help offset demand for public services.

- All new buildings would be constructed in compliance with the Fire Codes in effect at the time of building permit review.

- Access and fire flow issues would be considered during the MUP and building permit review process.

3.10.1.4 Significant Unavoidable Adverse Impacts

No significant unavoidable adverse impacts would be anticipated.

3.10.2 POLICE

3.10.2.1 Affected Environment

Police protection service to the VMMC campus is currently provided by the Seattle Police Department's (SPD) West Precinct. The West Precinct headquarters is located at 810 Virginia Street, less than one mile northwest of the VMMC campus. For response purposes the precinct is divided into four sectors and twelve beats; VMMC is located in the David sector, beat D3. Staffing at the West Precinct currently includes: 181 patrol officers, 23 patrol sergeants, four police lieutenants, five detectives, one detective sergeant, and one police captain.[8] See **Figure 3.10-1** for the location of the West Precinct Headquarters relative to the site.

The minimum number of officers at the West Precinct headquarters at any one time would be during the 3 AM to noon shift, with 14 to 16 patrol personnel available during these hours.[9]

While SPD does not have adopted level of service standards for police service, the Department does have an emergency response time guideline of seven minutes. On average, SPD currently meets or exceeds this goal Citywide; however, performance is geographically uneven and may be slower at certain times of the day and during certain days of the week.[10]

In 2007, SPD published the *Neighborhood Staffing Plan (NPP) 2008-2012* that called for a net increase of 105 patrol officers (or an approximate 20 percent increase) to the force between 2008 and 2012. By 2012, SPD expected to have a total police force of approximately 600 patrol officers for emergency call response and proactive work. SPD made good progress with its recruitment efforts from 2008 through the first quarter of 2010. From 490 fully trained 9-1-1 patrol responders citywide on January 1, 2008, the force has expanded to 554 on March 23, 2011. However, the budget difficulties currently facing the City have required a pause in police officer hiring. The pause, initiated in June 2010, extended through 2011, and plans for 2012 are uncertain at this time. This situation will make it difficult for the Department to sustain sworn strength, although patrol will remain its first priority. .

Table 3.10.2-1 shows total dispatched calls for police service and on-views police incidents for the City as a whole, and for the West Precinct, between 2008 and 2010. On-views are events that officers log during routine patrols, based on field observation and follow-up, as opposed to responses to 9-1-1 calls from dispatch. As shown in **Table 3.10.2-1**, total dispatched calls for service to the SPD have steadily decreased both Citywide over the past three years (2008-2010), while dispatched calls for service have increased in the West Precinct.

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8 Personal Communication with Michael Quinn, Strategic Advisor, Office of the Deputy Chief of Staff. City of Seattle, Police Department, May 28, 2011.

9 Ibid.

10 Seattle Police Department. 2007. *Neighborhood Policing Staffing Plan 2008-2012*.

Table 3.10.2-1
CITYWIDE AND EAST PRECINCT CALLS FOR POLICE SERVICE, 2008-2010

	CITYWIDE			WEST PRECINCT		
Year	Dispatched Calls for Service	On-Views	Totals	Dispatched Calls for Service	On-Views	Totals
2008	223,976	154,907	378,883	54,501	37,720	92,221
2009	201,704	137,307	339,011	52,387	43,042	95,429
2010	199,951	141,850	341,801	55,047	51,782	106,829

Source: SPD, 2010.

From 2009 through 2010, total major crimes, including both violent and property crimes, decreased 9 percent in the D3 sector, compared to a 13 percent increase precinct-wide.[11]

Table 3.10.2-2 shows total calls for police service and on-views police incidents at VMMC's campus from 2006 to 2010. These calls have generally declined over the last five years. However, it is important to note that data for 2005-2008 is not strictly comparable to 2009, due to changes that occurred to the Department's coding system. Prior to June 2009, data were coded along street center lines and, therefore, some events that occurred along the VMMC campus boundaries may have been for addresses offsite, overstating the on-site calls for police service. With the new data coding system, events are coded to addresses, and now more accurately represent the actual calls for police service onsite.

Table 3.10.2-2
VMMC TOTAL POLICE CALLS AND ON-VIEWS POLICE INCIDENTS, 2006-2010

Year	Dispatched Calls for Service	On-Views	Total
2006	131	4	135
2007	176	6	182
2008	133	13	146
2009	99	17	116
2010	110	33	143

Source: SPD, 2011.

[11] Personal Communication with Michael Quinn, Strategic Advisor, Office of the Deputy Chief of Staff. City of Seattle, Police Department. June 2011.

Private security is currently provided by VMMC's own Security Services Department, with a total of 18 officers. Security staff is on duty 24 hours a day, every day of the year, with three shifts per day. The officers provide internal and external security, respond to incidents, complete reports, support clinical staff, host security training sessions, and provide customer service. During emergencies, officers can call the operator or call 9-1-1 directly, depending on the situation. The Security Services Department ensures prevention of incidents, engaging through dialogue and visibility of officers.

3.10.2.2 Impacts of the Proposed Action (6b) and Alternatives

Impacts Common to the Proposed Action (6b) and Alternative 5a

Construction

Please refer to **Section 3.11**, **Construction**, for information regarding construction-related impacts.

Operation

Increases in on-site employment and campus visitors/patients over the build-out of the VMMC redevelopment would be incremental and would be accompanied by increases in demand for police services. The Seattle Police Department expects that call volumes could increase under either the ***Proposed Action*** or ***Alternative 5a***; however, the exact number of incremental new calls cannot be quantified. Given the nature of the development, there should be no difference between the alternatives in the level of calls for service or on-view events.[12]

SPD indicates that significant additional need for police service is not expected to result from the increases in numbers of calls from the new employment or visitors/patients at the site. SPD's capability to deliver proactive police-community problem solving services to the site and vicinity is anticipated to significantly increase with the implementation of the Neighborhood Policing Plan. Although the hiring of new officers has been delayed since 2010 due to City budget cuts, approximately 62 percent of the total new staff (64 officers) has already been added to the force. The remaining staff could be expected to be hired well before the site build-out.[13]

Due to the intent to significantly increase capacity for outpatient services, the development might require additional services by SPD Parking Enforcement Officers with regard to on-street parking.

Cumulative Impacts

Planned development in the area (i.e., projects associated with Swedish Medical Center – First Hill, Harborview Medical Center, The Polyclinic and Seattle University) would add new population and employment to the site vicinity. These projects, together with redevelopment of

[12] Personal Communication with Michael Quinn, Strategic Advisor, Office of the Deputy Chief of Staff, Seattle Police Department. June 2010 and May 2011.

[13] Ibid.

VMMC, would increase demand for police services. This increased demand could be managed by adjustments in service provision.[14]

No Action Alternative

The ***No Action Alternative*** would be anticipated to result in continuation of existing rates of calls for police services and police service to the VMMC campus would be expected to continue as described under **Section 3.10.2.1 Affected Environment**.

3.10.2.3 Mitigation Measures

The following mitigation measures could minimize potential impacts to police services resulting from redevelopment of the VMMC campus:

- Increases in employment and visitors to the site over the build-out of VMMC's *MIMP* would be incremental and would be accompanied by increases in demand for police services under all of the EIS redevelopment alternatives. A portion of the tax revenues generated from redevelopment of the site – including construction sales tax, retail sales tax, business and operation tax, property tax, utility tax and other fees, licenses and permits – would accrue to the City of Seattle and conceivably could help offset demand for police services.

- The portions of the site that are under construction during phased redevelopment could be fenced and lit, as well as monitored by surveillance cameras to help prevent construction site theft and vandalism.

- Permanent site design features could be included to help reduce criminal activity and calls for service, including: orienting buildings towards sidewalks, streets and/or public open spaces; providing convenient public connections between buildings onsite and to the surrounding area; and, providing adequate lighting and visibility onsite, including pedestrian lighting.

- The *Draft MIMP* states that Virginia Mason plans to apply Crime Prevention Through Environmental Design (CPTED) principles to the development of its open space and public amenities to enhance the safety and security of the areas.

3.10.2.4 Significant Unavoidable Adverse Impacts

No significant unavoidable adverse impacts would be anticipated.

[14] Personal Communication with Michael Quinn, Strategic Advisor, Office of the Deputy Chief of Staff, Seattle Police Department. July 2010.

3.10.3 WATER/SEWER/STORMWATER

3.10.3.1 Affected Environment

Water

Seattle Public Utilities (SPU) supplies water to 1.3 million businesses and people in the region, including the VMMC campus. In 2009, users of the Seattle Regional Water System consumed approximately 130 millions of gallons per day, or approximately 47 billion gallons per year.

Water service to the VMMC campus is supplied through ductile iron or cast iron mains ranging from 6-inch to 12-inch radii. The area north of Seneca Street is within Pressure Zone 430 and the area south of Seneca Street is within Pressure Zone 530 (See **Figure 3.10-2**). In 2010, the domestic and irrigation water demand for the VMMC campus was approximately 102 million gallons of water per year. With the increase of the newly constructed Floyd & Delores Jones Pavilion, this demand is expected to increase to 144 million gallons per year.[15]

Sewer

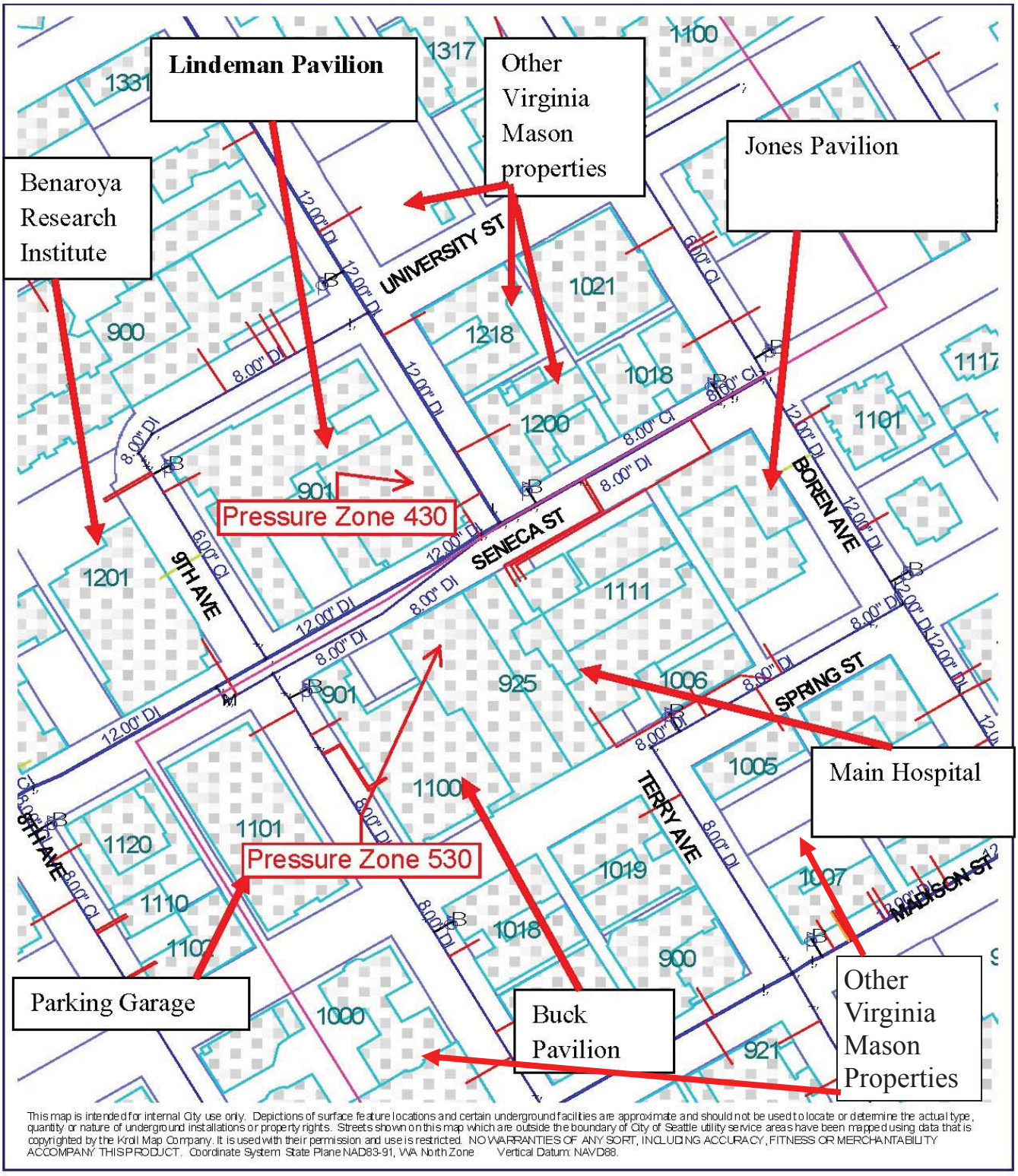
Sewer service to the VMMC campus is provided by the City of Seattle Public Utilities Department. VMMC is served by 8-inch clay and concrete public sewer mains located in Terry Avenue, Seneca Street and Spring Street, with the exception of a 12-inch main in Spring Street between 8th and 9th Avenue. For commercial businesses -- such as VMMC -- sewer bills are based on actual water usage at all times of the year. The City allows medical waste in the form of liquid body fluids to be flushed into the sewer system.

Two sewer mainline pipe segments on Seneca Street have been identified with potential capacity concerns for future development in this area: Seneca between Terry and Boren contains an 8-inch vitrified clay sewer main, and Seneca between 8th and Terry contains an 8-inch concrete sewer main. No system expansions are contemplated by SPU at this time, beyond what could be triggered by major developments in the area. A major development would be required to examine the impact of their development on the infrastructure from their site to the location that SPU's collection system connects to King County interceptors (approximately 4,500 LF downstream).

Stormwater

Stormwater service is provided through the Seattle Public Utilities Department. The VMMC campus is in a separated sewer and drainage area of the city (i.e., separate sewer and drainage mainlines). The campus is served by 12-inch concrete drainage mains in Seneca Street (between Terry and 9th), Spring Street (between Terry and 9th) and Terry Avenue (north of University Street). Drainage fees are collected through property taxes and not through a utility bill. Stormwater rates are charged by 1,000 square feet on the site. Rate charges vary depending on property size and the amount of impervious surfaces.

[15] Personal communication with Jeudi Lao, Virginia Mason Engineering, June 2011.



Source: Seattle Public Utilities, 2011

Figure 3.10-2

Water Mains and Pressure Zones

EA | BLUMEN

3.10.3.2 Impacts of the Proposed Action (6b) and Alternatives

Impacts Common to the Proposed Action (6b) and Alternative 5a

The ***Proposed Action*** and ***Alternative 5a*** could increase water demand by 120 to 204 million gallons of consumption annually.[16] There would be adequate capacity in the current system to handle an increase in water consumption, as well as stormwater discharge. As noted above, two sewer mainline pipe segments on Seneca Street have been identified with potential capacity concerns for future development. Major development on the VMMC campus[17] would be required to examine the impact of development on these pipe segments from the development site to the location that SPU's collection system connects to King County interceptors downstream.[18]

As the water pressure in the public system is static, VMMC neighbors would not experience changes in their water pressure. The only time a reduction in water pressure could be noticed is during a fire flow event[19]. Neither the ***Proposed Action*** nor ***Alternative 5a*** would have an impact on water services or local domestic water pressure.

Cumulative Impacts

Planned development in the area (i.e., projects associated with Swedish Medical Center – First Hill, Harborview Medical Center, The Polyclinic and Seattle University) would add new population and employment to the site vicinity. These projects, together with the VMMC campus redevelopment, would increase water, sewer and stormwater demand. Sufficient capacity is available within these infrastructure systems, with the exception of sewer capacity within mains in Seneca Street. Major developments within the campus and in the vicinity would be required to examine the impact of their development on the infrastructure from their development site to where SPU's collection system connects to King County interceptors.

No Action Alternative

The ***No Action Alternative*** would be anticipated to result in a continuation of existing demand levels for water, sewer and stormwater; services would continue to be provided to the VMMC campus as described under Section 3.10.3.1, Affected Environment.

3.10.3.3 Mitigation Measures

The following mitigation measures could minimize potential impacts to Water, Sewer, and Stormwater:

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16 Calculation: 120 gallons per square foot multiplied by the additional square footage under each alternative. This demand per square foot is based on estimated water demand upon completion of the Jones Pavilion divided by the overall square footage of the campus including the Jones Pavilion.

17 Defined in the Drainage Code as greater than 5,000 sq. ft. of new and/or replaced impervious surface

18 Personal communication with Tanya Treat, Supervising Civil Engineer, Seattle Public Utilities

19 An example of a fire flow event would be when firefighters connect to local fire hydrants utilizing water during a fire in the area

- Major development on the VMMC campus would examine the impact of development on the sewer infrastructure from the development site to where SPU's collection system connects to King County interceptors (approximately 4,500 LF downstream).

- Low impact development measures such as bioretention cells or bioretention planters could potentially be utilized to reduce the demand on stormwater infrastructure.

- Continued implementation of EnviroMason measures and other measures to reduce the demand on water and sewer.

- The Draft MIMP includes as one of VMMC's Goals and Objectives – To build facilities that are resource-efficient - Participate in the Seattle 2030 District challenge.

3.10.3.4 Significant Unavoidable Adverse Impacts

No significant unavoidable adverse impacts would be anticipated.

3.10.4 SOLID WASTE

3.10.4.1 Affected Environment

Solid waste and recycling service to VMMC is provided by Cleanscapes through a City of Seattle partnership. In 2010, VMMC generated 1,126 tons of solid waste and 540 tons of recycling.

Medical waste generated by VMMC is picked up biweekly by Stericycle, the only Washington Utilities and Transportation Commission-permitted medical waste-hauler within the state. In 2010, the VMMC campus generated 117 tons of medical waste.

VMMC also generated approximately 15 tons of hazardous waste in 2010. Several VMMC initiatives are in place to recycle hazardous waste, such as batteries and fluorescent lighting, through Phillips Service Corporation.

In 2010, the VMMC campus generated 198 tons of compost, which is sent to Cedar Grove Composting. Nearly 100 percent of cafeteria product purchases are compostable.

VMMC has reduced its waste stream by the elimination of Styrofoam from the cafeteria, composting food waste, and recycling plastics in operating rooms. Its environmental stewardship initiative -- EnviroMason -- provides the framework for making unique waste management decisions and efficiency improvements.

Garbage and recycling materials are delivered to the South Recycling and Disposal Station (SRDS) at 8100 2nd Avenue S in Seattle, which is managed and operated by Seattle Public Utilities (SPU).

The SRDS is a transfer station that primarily serves the Seattle area south of the Lake Washington Ship Canal, although service is not limited to that area. Solid waste, organics (yard

and food waste) and recyclables (clean wood waste, appliances and other scrap metal, plastics, paper and other recyclables) are collected at the SRDS. The solid waste is compacted, and the waste materials are trucked to an intermodal yard for transfer to trains (solid waste), the Cedar Groves Composing Facility in King County (organics) and other recycling facilities (recyclables).

SPU began rebuilding the SRDS on a property adjacent to the existing station in April 2010. The SRDS is being rebuilt because the existing facility is over 40 years old, is subject to frequent breakdowns and is becoming less reliable. In addition, the outdated design lacks the capacity to meet Seattle's future recycling and waste handling needs. Once the new SRDS is complete in 2012, a new recycling facility will be built on the old SRDS site by 2015. Waste from the SRDS is transported to the Columbia Ridge Landfill and Recycling Center in Gilliam County, Oregon.

3.10.4.2 Impacts of the Proposed Action (6b) and Alternatives

Impacts Common to the Proposed Action (6b) *and Alternative 5a*

Construction

Please refer to **Section 3.11**, **Construction**, for information on construction-related impacts.

Operation

Selection of either of the ***Proposed Action*** or ***Alternative 5a*** would result in an increase in solid waste production. No forecast has been calculated on the future waste stream upon full buildout. However, staff at SPU have indicated that the SRDS would have capacity to handle an increase of at least 3,500 tons of solid waste (three times the existing amount). The new SRDS facility opened in 2012.[20]

Cumulative Impacts

Planned development in the area (i.e., projects associated with Swedish Medical Center – First Hill, Harborview Medical Center, The Polyclinic and Seattle University) would add new population and employment to the site vicinity. These projects, together with redevelopment associated with the *Draft MIMP*, would increase demand for solid waste services. Sufficient capacity is available within the current solid waste system.

No Action Alternative

The ***No Action Alternative*** would be anticipated to result in the continuation of existing demand levels for solid waste services, which would continue to be provided to the VMMC campus as described under Section 3.10.4.1 Affected Environment.

[20] Personal communication with Hans Van Dusen, Seattle Public Utilities, Solid Waste Contracts Manager. July 2010.

3.10.4.3 Mitigation Measures

The following mitigation measures could minimize potential impacts to Solid Waste from the VMMC redevelopment:

- Continued implementation of EnviroMason measures -- VMMC's environmental stewardship initiative -- would include waste reduction programs, such as recycling operating room plastics, food waste composting, hazardous waste recycling, and general office recycling.

- During demolition and construction, construction and debris waste could potentially be recycled, based on the existence of hazardous materials.

3.10.4.4 Significant Unavoidable Adverse Impacts

No significant unavoidable adverse impacts would be anticipated.

3.11 CONSTRUCTION

This section of the Draft EIS describes potential construction-related impacts that could result from development identified under the ***Proposed Action*** and EIS Alternatives. Demolition, site preparation, excavation and construction will generate short-term environmental impacts including: air quality, noise, historic resources, transportation/circulation/parking, and public services. While the majority of all construction activity will occur during the daytime, at times it may be necessary for some construction activity to occur during evening hours. Such may be necessary to reduce the duration of the overall construction timeframe and/or because the City requires certain construction activities to occur at that time in order to reduce impacts to pedestrians and vehicles during the day. As such, construction activity would likely be noticeable to some adjacent land uses.

Policy Context

The Seattle Municipal Code (SMC) contains specific provisions that describe the scope of the SEPA analysis for the construction impacts analysis. Relevant policies from SMC 25.05.675 are provided below:

B.2. Construction Impact Policies

a. *It is the City's policy to minimize or prevent temporary adverse impacts associated with construction activities.*

b. *The decision maker may require, as part of the environmental review of a project, an assessment of noise, drainage, erosion, water quality degradation, habitat disruption, pedestrian circulation and transportation, and mud and dust impacts likely to result from the construction phase.*

c. *Based on such assessments, the decision maker may, subject to the Overview Policy set forth in SMC Section 25.05.665, condition or deny a project to mitigate adverse impacts of the construction process.*

d. *Noise. Mitigating measures to address adverse noise impacts during construction include, but are not limited to:*

   i. *Limiting the hours of construction;*
   ii. *Specifying the time and duration of loud noise;*
   iii. *Specifying a preferred type of construction equipment; and*
   iv. *Requiring sound buffering and barriers.*

e. *Drainage. Mitigating measures to address adverse drainage impacts during construction may include, but are not limited to:*

   i. *Sedimentation traps and filters;*
   ii. *Sedimentation tanks or ponds;*
   iii. *Oil separators;*
   iv. *Retention facilities;*
   v. *Maintenance programs;*

vi Performance bonds; and
vii. Non disturbance areas.

f. Pedestrian Circulation. Mitigating measures to address adverse impacts relating to pedestrian circulation during construction may include, but are not limited to:

i. Covered sidewalks or alternate safe, convenient and adequate pedestrian routes; and
ii. Limits on the duration of disruptions to pedestrian flow.

g. Transportation. Mitigating measures to address transportation impacts during construction may include, but are not limited to:

i. A construction phase transportation plan which addresses ingress and egress of construction equipment and construction worker vehicles at the project site;
ii. Traffic control and street maintenance in the vicinity of the construction site;
iii. Rerouting of public vehicular and pedestrian circulation in the vicinity of the construction site;
iv. Providing a temporary High Occupancy Vehicle (HOV) incentive program for construction workers at the site to reduce the number of their vehicle staking parking places in the vicinity of the construction site; and
v. HOV discounts for members of the public who were displaced from a traditional parking area by the construction activity.

3.11.1 Affected Environment

Air Quality

Typical air pollution sources in the VMMC area include vehicular traffic on numerous roads and the nearby freeway, retail/commercial facilities, and medical/office facilities, and possibly residential wood-burning devices. While many types of pollutant sources are present, the single largest contributor to most criteria pollutant emissions in urban settings such as this is on-road mobile sources (i.e., carbon monoxide - CO). See **Section 3.1**, **Air Quality**, for additional information.

Noise

The existing acoustic environment on and around the VMMC campus is typical of an urban setting, consisting of noise from traffic on both the I-5 freeway and on local roads, aircraft overflights, people talking and moving about, and other miscellaneous sources. In some areas I-5 noise is the dominant source, and in most areas I-5 traffic noise is a contributing source. In some areas near the primary access route to the existing emergency room entrance, ambulance sirens are also occasional sources of noise during all hours of the day and night. See **Section 3.3**, **Noise**, for additional information.

Seattle noise limits are based on the underlying zoning of the source and receiving properties. The VMMC campus and vicinity include two existing underlying zoning districts as follow: (1) Neighborhood Commercial (NC) along the ½ block wide Madison Street frontage, and (2) Highrise Multi-Family Residential (HR) for the remainder of the campus and the surrounding

area. The entire existing campus is also included within an area with Major Institution Overlay (MIO) zoning. See **Section 3.3**, **Noise**, for additional information.

Land Use

The proposed MIO boundary expansion area presently contains low-rise, retail and residential/hotel uses that have been present on the site since the 1930s. The existing land uses are: commercial/retail businesses; residential (Chasselton Court Apartments – 62 units); and hotel uses (The Baroness Hotel). See **Section 3.4.1**, **Land Use**, for more detailed information.

Historic Resources

The proposed MIO boundary expansion area presently contains one designated City Landmark; the Baroness Hotel (see **Figure 2-4**). There is also one designated City Landmark located adjacent to the existing campus boundary; the Sorrento Hotel. See **Section 3.8**, **Historic Resources**, for more detailed information.

Transportation

The roadways surrounding and within the VMMC campus primarily consist of commercial local access streets. The principal arterials are Boren Avenue, Madison Street, and James Street. Seneca Street, 9th Avenue and segments of 8th Avenue and Spring Street are minor arterials; 7th Avenue is a collector arterial. All other streets in the area are defined as Local Access.

Regional access to the VMMC campus is provided by I-5 to the west via James and Madison Streets as well as Seneca and Olive Way I-5 access points. Routes to destinations to the east of Seattle utilize local arterials to access I-90 to the southeast via Rainier Avenue and SR 520 to the northeast via E Madison Street and 23rd Avenue E. Local access is primarily along Broadway, Madison Street, James Street, Seneca Street, and Boren Avenue.

The VMMC campus is penetrated by a number of streets including University Street, Seneca Street, Spring Street, 9thAvenue, and Terry Avenue.

The campus is served by local transit agencies and includes regular service to Downtown Seattle, University District, White Center, Rainier Beach, Queen Anne, Madrona, Lake City, Shoreline, Kent and Eastgate via a number of King County Metro routes. The campus is served by routes on Madison Street, Boren Avenue, Spring Street, Seneca Street and Ninth Avenue. Routes between the campus and Downtown provide access to the ferry terminal, Sound Transit bus routes, Link light rail, and the Sounder train. Metro bus stops are currently located on Seneca Street on the VMMC campus.

Existing parking facilities on the VMMC campus that may be temporarily used by construction workers include VMMC's public garages. In addition, there are commercial surface parking lots in the vicinityof VMMC that could be used by construction workers, as well as short-term on-street parking.

Sidewalks are present on all of the streets surrounding the VMMC campus with marked crossings at most intersections.

Public Services

Fire Station 25 (1300 E Pine Street), located approximately 0.8 mile from VMMC, is the closest station to the VMMC campus and provides first response for fire and Emergency Medical Service (EMS). As needed, other stations that also provide service to the site include: Station 2 (2320 4th Avenue), Station 10 (400 S. Washington Street), and Station 6 (101 23rd Avenue South).Fire Station 25 currently has ten firefighters on duty at all times. Equipment at the station includes: one engine, one ladder truck, one BLS vehicle. See **Section 3.10.1**, for additional information on fire services.

Police protection service to the VMMC campus is currently provided by the Seattle Police Department's West Precinct. The headquarters of the West Precinct is located at 810 Virginia Street, less than one mile northwest of the site. For response purposes, however, the precinct is divided into four sectors and twelve beats, and VMMC is located in the David sector, beat D3. Staffing at the West Precinct currently includes: 181 patrol officers, 23 patrol sergeants, four police lieutenants, five detectives, one detective sergeant, and one police captain.[1] See **Section 3.10.2** for additional information on police services.

Solid waste and recycling service to VMMC is provided by Cleanscapes through a City of Seattle partnership. In 2010, VMMC generated 1,126 tons of solid waste and 540 tons of recycling. See **Section 3.10.4** for additional information on fire services.

3.11.2 Impacts of the Proposed Action (6b) and Alternative 5a

Air Quality

Proposed Action and Alternative 5a

Construction activities under the ***Proposed Action*** and ***Alternative 5a*** would generate air pollutants as a result of fugitive dust from demolition activities associated with the buildings and the surface parking areas, earthwork, and emissions from construction vehicles. The primary types of pollutants during construction would be particulates and hydrocarbons. Gasoline or diesel-powered machinery used for demolition, excavation, and construction emit carbon monoxide and hydrocarbons. Trucks transporting excavated earth and/or construction materials would emit carbon monoxide and hydrocarbons along truck haul routes used by construction vehicles. Such emissions, however, would be temporary in nature and localized to the immediate vicinity of the construction activity. By taking steps such as minimizing on-site diesel engine idling, construction-related diesel emissions would not likely substantially affect air quality on the project site or in the site vicinity.

Demolition of existing structures could require the removal and disposal of building materials that could possibly contain asbestos and lead-based paint. Demolition contractors would therefore be required to comply with EPA and PSCAA regulations related to the safe removal and disposal of any asbestos-containing materials.

[1] Personal Communication with Michael Quinn, Strategic Advisor, Office of the Deputy Chief of Staff. City of Seattle, Police Department, May 28, 2011.

Although some construction phases may cause odors, particularly during paving operations using tar and asphalt, any odors related to construction would be short-term. Construction contractor(s) would have to comply with PSCAA regulations that prohibit the emission of any air contaminant in sufficient quantities and of such characteristics and duration as is, or is likely to be, injurious to human health, plant or animal life, or property, or which unreasonably interferes with enjoyment of life and property.

Construction activities associated with the ***Proposed Action*** and ***Alternative 5a*** would occur incrementally as individual development projects occurred over the near-term and long-term. Such activity, however, would be dispersed throughout the VMMC campus (under ***Proposed Action*** and ***Alternative 5a***) and the **1000 Madison Block** (***Proposed Action***). No construction activity or off-site construction-related truck movements would be expected to cause localized violations of applicable ambient air quality standards or any significant air quality impacts.

No Action Alternative

Under the ***No Action Alternative***, no new building construction or significant modifications to the existing buildings on-campus would occur and there would be no construction-related air quality impacts.

Noise

Proposed Action and Alternative 5a

Noise from demolition and construction activities for new or expanded facilities have the potential to impact nearby receivers, particularly sensitive uses such as residences and health care facilities on the VMMC campus. For daytime construction activities, the Seattle noise code allows temporary construction noise levels to exceed the noise limits applied to long-term operations by set amounts. This allows for noisier construction activities to occur while still controlling the potential for noise impacts to nearby receivers. During nighttime hours (which in residential receiving zones in the city are defined as between 10 PM and 7 AM on weekdays and between 10 PM and 9 AM on weekends and legal holidays), however, allowed increases are not applied to construction activities, and the stricter nighttime noise limits (e.g., 45 dBA for sources in residential zones affecting receivers in residential zones) would apply. Because it is difficult for construction activities to meet these stricter nighttime noise limits, construction activities are generally limited to daytime hours unless granted a special variance from the City. The temporary nature of construction coupled with its restriction to daytime hours minimizes the potential for significant impacts from construction activities and equipment.

The greatest potential for noise impacts related to construction activities would be to the residential uses surrounding the existing and the potentially expanded MIO boundary. Conceivably, construction-related noise also could affect other portions of the VMMC campus. As can be seen in the upper portion of **Table 3.11-1**, construction activities within 50 to 100 ft. of sensitive receivers have the potential to exceed 80 to 85 dBA. In order to control noise impacts, construction noise management plans would need to be developed and implemented. The details of such plans would be dependent on the proximity of sensitive receivers. Construction hours may be limited based on the distance to sensitive receivers.

In addition to showing overall hourly noise levels from various construction activities, **Table 3.11-1** (lower portion) shows the range of sound levels (i.e., minimum to maximum levels) emitted by individual pieces of equipment. Because this equipment would not necessarily operate for an entire hour, it is not appropriate to compare these levels to the Seattle noise limits. However, these levels give an idea of the relative sound levels that can be expected from different kinds of equipment. In the absence of intervening terrain or structures, sounds from construction equipment and activities (usually point sources) decrease about 6 dBA for each doubling in distance from the source.

Table 3.11-1
TYPICAL NOISE LEVELS FROM CONSTRUCTION EQUIPMENT (DBA)

Activity	Range of Hourly Leqs		
	At 50’	At 100'	At 200'
Clearing	83	77	71
Grading	75-88	69-82	63-76
Paving	71-88	66-82	60-76
Erection	72-84	66-78	60-72
Types of Equipment	**Range of Noise Levels**		
	At 50’	**At 100'**	**At 200'**
Bulldozer	77-96	71-90	65-84
Dump Truck	82-94	76-88	70-82
Scraper	80-93	74-87	68-81
Paver	86-88	80-82	74-76
Generators	71-82	65-76	59-70
Compressors	74-81	68-75	62-69
Pneumatic Wrenches	83-88	77-82	71-76
Jackhammers	81-98	75-92	69-86

Source: EPA, 1971

No Action Alternative

The ***No Action Alternative*** would involve no new building construction on the VMMC campus and existing aging structures would remain; conceivably, limited building remodeling would still occur. The ***No Action Alternative*** would not involve expansion of the MIO boundary, and no modifications to on-site pedestrian and vehicular circulation or parking. No significant construction noise impacts would be anticipated.

Land Use

Proposed Action

Potential indirect and/or temporary construction-related impacts could affect access to the existing retail establishments on the **1000 Madison Block** under the ***Proposed Action***. Existing businesses and associated employees located on the expansion block are currently leasing space from VMMC. During construction of any new buildings on this block, temporary business closures could occur and may require the temporary and/or permanent relocation of existing retail businesses on site.

No Action Alternative

The ***No Action Alternative*** would involve no expansion of VMMC's existing Major Institution Overlay boundary, no new building construction on-campus, no modifications or additions to open space, and no modifications to on-site pedestrian and vehicular circulation or parking. Limited building remodeling would still occur, conceivably. No land use-related construction impacts would be anticipated.

Historic Resources

Proposed Action and Alternative 5a

Potential indirect and/or temporary construction-related impacts could minimally affect the Baroness Hotel (***Proposed Action*** and ***Alternative 5a***) and the Sorrento Hotel (***Proposed Action***) as a result of potential redevelopment projects. Such impacts could include:

- **Potential Structural Instability/Undermining** – Damage that could occur to an historic resource due to structural instability caused by construction-related vibration and/or earthwork; and/or

- **Temporary Dirt/Unintended Damage** – Introduction of atmospheric elements that may temporarily alter and/or potentially damage historic building fabric or architectural features.

These construction-related impacts would be temporary and periodic in nature. With implementation of appropriate, site-specific mitigation measures, no significant impacts would be anticipated.

No Action Alternative

Under the ***No Action Alternative*** there would be no new on-campus building construction, although limited building remodeling would occur. No impacts to historic resources would be anticipated.

Transportation

Proposed Action and Alternative 5a

Construction-related traffic impacts would occur in varying degrees throughout the redevelopment process under the ***Proposed Action*** and **Alternative 5a**.

It is anticipated that construction workers would arrive at construction sites prior to the AM peak period and depart either prior to the PM peak period or after the PM peak period, depending upon work schedules. The number of workers at each construction site would vary, depending upon the nature and construction phase of each project. In general, construction workers would be present in greater numbers during the finish stages of a project.

During construction projects, large trucks would make trips to the site for various activities. Earth would be removed and/or imported to construction sites in conjunction with excavation activities associated with individual buildings, and demolition debris would be hauled away.[2] Truck trips would occur to deliver cranes, machinery, and other construction equipment; construction materials (e.g., steel, wood for forms/framing, and concrete); and other materials including prefabricated building components, sheet rock, and building machinery (e.g., HVAC, plumbing, electrical equipment, etc.). Concrete deliveries usually occur early in the overall construction schedule and decline in frequency as the construction process continues. For purposes of this EIS analysis, it has been assumed that all of these activities may at times cause inconvenience to properties and public rights-of-way adjacent to the site, but that such impacts would be temporary in nature.

As individual projects are planned and Master Use Permits applied for, project-specific impacts on nearby streets would need to be evaluated to determine the need for a construction management plan and/or street use permits.

Temporary lane closures could occur that may require the temporary relocation or closure of transit stops. Closure of arterials is not anticipated.

The presence of temporary construction work forces on-campus would increase the demand for parking. To address potential parking impacts associated with construction activity, a parking provision could be included in construction contracts between VMMC and the general contractor and between the general contractor and subcontractors.

Public sidewalks adjacent to construction sites would experience temporary closures to accommodate construction activity. These closures would be due to the need to ensure public safety and/or to repair/replace the sidewalk.

No Action Alternative

The ***No Action Alternative*** would involve no expansion of VMMC's existing Major Institution Overlay boundary, no new building construction on-campus, no modifications or additions to open space, and no modifications to on-site pedestrian and vehicular circulation or parking.

[2] Without specifics associated with new construction (e.g., area and depth of excavation), it is not possible at this time to estimate the amount of earthwork necessary in conjunction with the ***Proposed Action*** or ***Alternative 5a***.

Limited building remodeling would still occur, conceivably. No traffic-related construction impacts would be anticipated.

Public Services

Proposed Action and Alternative 5a

Fire

During construction activities under the ***Proposed Action*** and ***Alternative 5a***, there could be an increase in demand for fire services. Fire Department service calls related to inspection of specific construction projects onsite and to respond to potential construction-related accidents and injuries. Existing Fire Department staffing and equipment are expected to be sufficient to handle any increase service needed for onsite construction activities.

Police

During construction activities under the ***Proposed Action*** and ***Alternative 5a***, there could be an increase in demand for police services. Police Department service calls could increase due to construction site theft and vandalism. Existing Police Department staffing and equipment would be expected to be sufficient to handle any increased service needed for construction activities.

Solid Waste

During redevelopment of the VMMC campus under the ***Proposed Action*** and ***Alternative 5a***, solid waste would be generated by both demolition and construction activities. To the extent feasible, construction-generated solid waste would be diverted from landfills and sent to recycling or composting facilities via the South Recycling and Disposal Station (SRDS). Other means of reducing the solid waste generated by redevelopment of the VMMC campus include: on-site source separated recycling; potential reuse of demolition materials on-site, and, salvage and reuse of building components.

Building materials would be tested as part of demolition activities in order to determine the potential levels of contamination present, such as lead or asbestos. The test results would be used to determine whether building materials would be sent to a landfill or to a specialized facility that handles hazardous waste.

No Action Alternative

The ***No Action Alternative*** would involve no expansion of VMMC's existing Major Institution Overlay boundary, no new building construction on-campus, no modifications or additions to open space, and no modifications to on-site pedestrian and vehicular circulation or parking. Limited building remodeling would still occur, conceivably. No public service-related construction impacts would be anticipated.

3.11.3 Mitigation Measures

To mitigate for potential construction-related impacts, VMMC would develop a Construction Management Plan (CMP) in conjunction with site-specific developments. The intent of the CMP is to anticipate and reduce the potential noise impacts from demolition and construction activities on adjacent properties and minimize impacts on traffic. Management practices shall be established and at a minimum include the following: technological and operational noise control measures to reduce the amount of sound generation; reduce the transmission of demolition and construction noise to off-site receivers through sound-containment measures; limits to construction hours depending on distance from sensitive receivers; and, coordinate with Seattle Department of Transportation (SDOT) on haul routes and street use permits.

This plan would be coordinated with the DPD Noise Abatement Office (DPD), SDOT and VMMC.

The plan would include the following elements:

1. Construction Communication – including a Contact and Community Liaison.
2. Construction Hours and Sensitive Receivers – identifying demolition and construction activities within permissible construction hours.
3. Construction Noise Requirements – all demolition and construction activities shall conform to the Noise Ordinance, except as approved through the variance process.
4. Measures to Minimize Noise Impacts – list of measures to be implemented to reduce or prevent noise impacts during demolition and construction activities during standard and non-standard working hours.
5. Construction Milestones – a description of the various phases of demolition and construction, including a description of noise and traffic generators, and anticipated construction hours for each phase.
6. Construction Noise Management – identify techniques to minimize demolition and construction noise including: timing restrictions, noise reduction construction technologies, process modifications. These techniques may go beyond code requirements and could include the following:

    - Using properly sized and maintained mufflers, engine intake silencers, engine enclosures, and turning off idle equipment. Construction contracts can specify that mufflers be in good working order and that engine enclosures be used on equipment when the engine is the dominant source of noise.

    - Stationary equipment could be placed as far away from sensitive receiving locations as possible. Where this is infeasible, or where noise impacts are still significant, portable noise barriers could be placed around the equipment with the opening directed away from the sensitive receiving property. These measures are especially effective for engines used in pumps, compressors, welding machines, and similar equipment that operate continuously and contribute to high, steady background noise levels. In addition to providing about a 10-dBA reduction in equivalent sound levels, the portable barriers demonstrate to the public the contractor's commitment to minimizing noise impacts during construction.

- Substituting hydraulic or electric models for welding and impact tools such as jack hammers, rock drills and pavement breakers where feasible could reduce construction and demolition noise. Electric pumps could be specified if pumps are required.

- Although, as safety warning devices back-up alarms are exempt from noise ordinances, these devices emit some of the most annoying sounds from a construction site. One potential mitigation measure would be to ensure that all equipment required to use backup alarms utilize ambient-sensing alarms that broadcast a warning sound loud enough to be heard over background noise -- but without having to use a preset, maximum volume. An even better alternative would be to use fixed volume or ambient-sensing broadband backup alarms instead of typical pure tone alarms. Broadband alarms have been found to be very effective in reducing annoying noise from construction sites. Requiring operators to lift rather than drag materials wherever feasible can also minimize noise from material handling.

- Construction staging areas expected to be in use for more than a few weeks should be placed as far as possible from sensitive receivers, particularly residences. Likewise, in areas where construction would occur within about 200 ft. of existing uses (such as residences, schools/classrooms, and noise-sensitive businesses), effective noise control measures (possibly outlined in a construction noise management plan) should be employed to minimize the potential for noise impacts. In addition to placing noise-producing equipment as far as possible from homes and businesses, such control could include using quiet equipment and temporary noise barriers to shield sensitive uses, and orienting the work areas to minimize noise transmission to sensitive off-site locations. Although the overall construction sound levels will vary with the type of equipment used, common sense distance attenuation should be applied. Additionally, effort could be made by VMMC to plan the construction schedule to the extent feasible with nearby sensitive receivers to avoid the loudest activities (e.g., demolition or jack-hammering) during the most sensitive time periods (10 PM to 7 AM weekdays, 10 PM to 9 AM weekends). A construction noise management plan would again be an appropriate location to identify these types of conflicts and establish less-intrusive construction schedules.

7. Construction Parking Management – construction workers will be encouraged to park in designated on-site parking areas.
8. Construction Traffic/Street and Sidewalk Closures – demolition, earthwork excavating, concrete and other truck routing plans will be developed and submitted for approval through SDOT for site-specific development. Truck routing plans may include limitations on hauling of debris, earth and construction materials during peak hours. Traffic and pedestrian control signage and flaggers will be used as necessary to facilitate traffic and pedestrian flow per the requirements of any street use permit issued by SDOT. Sidewalk Closures with phasing and timing if necessary. Other mitigation measures could include:

    - The proponent would coordinate with Metro transit relative to construction activity that could affect transit service proximate to the project site.

- Where existing sidewalks or walkways are temporarily closed during construction, alternative routes would be developed by VMMC and approved by SDOT to maintain pedestrian circulation patterns.

- For pedestrian safety, construction sites would be enclosed with a cyclone fence. In addition, a covered walkway with staging could be provided adjacent to construction sites.

- A parking provision could be included in construction contracts between VMMC and the general contractor and between the general contractor and subcontractors, such as specifying where construction workers should park, shuttles, etc.

9. Construction Air Quality – Site development would adhere to Puget Sound Clean Air Agency's regulations and the City's construction best practices regarding demolition activity and fugitive dust emissions, including the following:

    - as necessary during demolition, excavation, and construction, sprinkle debris and exposed areas to control dust;
    - as necessary, cover or wet transported earth material;
    - provide quarry spall areas on-site prior to construction vehicles exiting the site;
    - wash truck tires and undercarriages prior to trucks traveling on City streets;
    - promptly sweep earth tracked or spilled onto City streets;
    - monitor truck loads and routes to minimize dust-related impacts;
    - use well-maintained construction equipment and vehicles to reduce emissions from such equipment and construction-related trucks;
    - avoid prolonged periods of vehicle idling; and,
    - schedule the delivery and removal of construction materials and heavy equipment to minimize congestion during peak travel time associated with adjacent streets.

10. Historic Resources – The following mitigation measures could be implemented as necessary to address potential impacts to historic resources resulting from redevelopment activities

    - Care should be taken in order to avoid structural damage to nearby buildings that could occur due to construction-related vibrations and/or earthwork. Excavation, earthwork, pile driving etc. could be designed and/or monitored to minimize and/or immediately address any such impacts to historic properties. Monitoring could include crack monitors, periodic observation, and photography to document the structural integrity of historic buildings and determine whether there was resulting damage of interior or exterior finishes, or exterior masonry and/or framing. If such damage occurred, repairs should be made to the affected buildings.

    - Care should be taken in order to avoid or limit the introduction of atmospheric elements that could alter and/or potentially damage historic building fabric or architectural features of historic resources. Construction activity could be monitored in order to prevent and address any such impacts to historic properties. Dust control measures would be implemented.

3.11.1.4 Significant Unavoidable Adverse Impacts

While some construction-related air quality impacts would be unavoidable, due to the temporary and intermittent nature of construction impacts and with implementation of the proposed mitigation, no significant impacts are anticipated.

Construction noise has the potential to affect multiple residential and other sensitive properties in the vicinity of the VMMC. The City of Seattle has established specific noise limits for construction activities that occur during daytime hours. These limits vary depending on the zoning of the source and receiving properties and will be different for each of the proposed new or expanded buildings. Careful attention should be given to the demolition and construction plans for these facilities in order to ensure that the construction activities can comply with the applicable noise limits. With attention to these details, no significant noise impacts would be expected.

With implementation of appropriate mitigation measures, no significant unavoidable adverse impacts to historic resources, public services or transportation resources would be anticipated.

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REFERENCES

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ACRONYMS

ACRONYMS

A

ACS	American Community Survey
ALS	Advanced Life Services

B

BLS	Basic Life Services
BMPs	Best Management Practices

C

CAA	Clean Air Act
CAC	Citizen's Advisory Committee
CHPO	City Historic Preservation Officer
CIG	Climate Impacts Group
CO	Carbon monoxide
CPTED	Crime Prevention Through Environmental Design
CTR	Commute Trip Reduction
CY	Cubic Yards

D

DAHP	Department of Archaeology and Historic Preservation
dB	decibel
DOE	Department of Ecology

E

Ecology	Washington Department of Ecology
EDNA	Environmental Designation for Noise Abatement
EIS	Environmental Impact Statement
EMS	Emergency Medical Services
EMT	Emergency Medical Technicians
EPA	Environmental Protection Agency

F

FAR	Floor Area Ratio

G

GHG	Greenhouse Gas Emissions
GMA	Growth Management Act
GPD	Gallons Per Day
GPM	Gallons Per Minute
GSI	Green Stormwater Infrastructure

H

HVAC	Heating, Ventilation, and Air Conditioning

I

IPCC	Intergovernmental Panel on Climate Change

L

Ldn	Day-night Sound Level
LEED	Leadership in Energy & Environmental Design
Leq	Equivalent Sound Level
LID	Low Impact Development
LOS	Level of Service

M

MIMP	Major Institution Master Plan
MSA	Metropolitan Statistical Area
$MTCO_2e$	Metric Tons Carbon Dioxide Equivalent
MUP	Master Use Permit

N

NAAQS	National Ambient Air Quality Standard
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places

P

PM	Particulate Matter
PSCAA	Puget Sound Clean Air Agency
PSE	Puget Sound Energy
PSRC	Puget Sound Regional Council

R

RCW	Revised Code of Washington
RPZ	Restricted Parking Zone

S

SDOT	Seattle Department of Transportation
SEPA	State Environmental Policy Act
SHPO	State Historical Preservation Officer
SLM	Sound Level Measurement
SMC	Seattle Municipal Code
SPU	Seattle Public Utilities
SRDS	South Recycling and Disposal Station
SOV	single occupant vehicle

T

TMP	Transportation Management Plan

V

VMMC	Virginia Mason Medical Center
VMT	Vehicle Miles Traveled

W

WAC	Washington Administrative Code
WSDOT	Washington Department of Transportation

Appendix A

DISTRIBUTION LIST

Appendix A

DISTRIBUTION LIST
Virginia Mason Medical Center

Tribes

United Indians of All Tribes

State Agencies

Office of the Governor
Department of Community Development Historic Preservation Office
Department of Ecology, Environmental Review Section
Department of Transportation (WSDOT)

Regional Agencies

Puget Sound Clean Air Agency
Puget Sound Regional Council
Sound Transit

Local Agencies

KingCounty
King County Department of Transportation/Metro Transit, Attn: Mr. Gary Kriedt, Environmental Planner

City of Seattle
Department of Planning and Development, Attn: Ms. Stephanie Haines
Department of Neighborhoods, Landmarks Preservation Board, Attn: Ms. Karen Gordon, Seattle Historic Preservation Officer
Department of Neighborhoods, Attn: Steve Sheppard
Fire Department
Office of Housing
Parks Department
Police Department
Seattle Public Utilities, Environmental Review Section
Seattle Department of Transportation

Libraries

Seattle Public Library – Central Library
Seattle Public Library – Douglas Truth Branch
Seattle Public Library – International District/Chinatown Branch

Newspapers

Seattle Daily Journal of Commerce
Seattle Times

Other Organizations and Individuals

Virginia Mason Medical Center, Citizens Advisory Committee
- Matt Fankhaeuser
- Larry Brouse, c/o St. James Cathedral
- Terry Miller, Kellerher House
- Bob Anderson, Horizon House
- EvyanAbookire
- Jim Erickson
- Albert Shen
- Ray Crerand
- Chris Balisky, Panorama House
- Samuel (Sam) Cameron
- Dr. Sharon Sutton
- Katlin Jackson, The Decatur
- Samuel Gerszonowicz, Kellerher House
- James Kirkpatrick
- Tyler Tonkin
- Ted Klainer, Harborview Medical Center

Capitol Hill Community Council
First Hill Community Council
First Hill Improvement Association
Squire Park Community Council

Appendix B

Greenhouse Gas Emissions Worksheets

Proposed Action (Alternative 6b)
VMMC

Section I: Buildings

Type (Residential) or Principal Activity (Commercial)	# Units	Square Feet (in thousands of square feet)	Emissions Per Unit or Per Thousand Square Feet (MTCO2e) Embodied	Energy	Transportation	Lifespan Emissions (MTCO2e)
Single-Family Home.....	0		98	672	792	**0**
Multi-Family Unit in Large Building	0		33	357	766	**0**
Multi-Family Unit in Small Building	0		54	681	766	**0**
Mobile Home.....	0		41	475	709	**0**
Education		0.0	39	646	361	**0**
Food Sales		0.0	39	1,541	282	**0**
Food Service		0.0	39	1,994	561	**0**
Health Care Inpatient		2,539.9	39	1,938	582	**6498590**
Health Care Outpatient		0.0	39	737	571	**0**
Lodging		0.0	39	777	117	**0**
Retail (Other Than Mall).....		24.6	39	577	247	**21224**
Office		0.0	39	723	588	**0**
Public Assembly		0.0	39	733	150	**0**
Public Order and Safety		0.0	39	899	374	**0**
Religious Worship		0.0	39	339	129	**0**
Service		0.0	39	599	266	**0**
Warehouse and Storage		0.0	39	352	181	**0**
Other		0.0	39	1,278	257	**0**
Vacant		0.0	39	162	47	**0**

Section II: Pavement.....

Pavement.....		0.00				**0**

Total Project Emissions: **6519814**

Version 1.7 12/26/07

Alternative 5a
VMMC

Section I: Buildings

Type (Residential) or Principal Activity (Commercial)	# Units	Square Feet (in thousands of square feet)	Emissions Per Unit or Per Thousand Square Feet (MTCO2e) Embodied	Energy	Transportation	Lifespan Emissions (MTCO2e)
Single-Family Home.....	0		98	672	792	**0**
Multi-Family Unit in Large Building	0		33	357	766	**0**
Multi-Family Unit in Small Building	0		54	681	766	**0**
Mobile Home.....	0		41	475	709	**0**
Education		0.0	39	646	361	**0**
Food Sales		0.0	39	1,541	282	**0**
Food Service		0.0	39	1,994	561	**0**
Health Care Inpatient		2,569.0	39	1,938	582	**6573046**
Health Care Outpatient		0.0	39	737	571	**0**
Lodging		0.0	39	777	117	**0**
Retail (Other Than Mall).....		0.0	39	577	247	**0**
Office		0.0	39	723	588	**0**
Public Assembly		0.0	39	733	150	**0**
Public Order and Safety		0.0	39	899	374	**0**
Religious Worship		0.0	39	339	129	**0**
Service		0.0	39	599	266	**0**
Warehouse and Storage		0.0	39	352	181	**0**
Other		0.0	39	1,278	257	**0**
Vacant		0.0	39	162	47	**0**

Section II: Pavement.....

Pavement.....		0.00				**0**

Total Project Emissions: **6573046**

Version 1.7 12/26/07

King County Department of Development and Environmental Services
SEPA GHG Emissions Worksheet
Version 1.7 12/26/07

Introduction

The Washington State Environmental Policy Act (SEPA) requires environmental review of development proposals that may have a significant adverse impact on the environment. If a proposed development is subject to SEPA, the project proponent is required to complete the SEPA Checklist. The Checklist includes questions relating to the development's air emissions. The emissions that have traditionally been considered cover smoke, dust, and industrial and automobile emissions. With our understanding of the climate change impacts of GHG emissions, King County requires the applicant to also estimate these emissions.

Emissions created by Development

GHG emissions associated with development come from multiple sources:

- The extraction, processing, transportation, construction and disposal of materials and landscape disturbance (Embodied Emissions)
- Energy demands created by the development after it is completed (Energy Emissions)
- Transportation demands created by the development after it is completed (Transportation Emissions)

GHG Emissions Worksheet

King County has developed a GHG Emissions Worksheet that can assist applicants in answering the SEPA Checklist question relating to GHG emissions.

The SEPA GHG Emissions worksheet estimates all GHG emissions that will be created over the life span of a project. This includes emissions associated with obtaining construction materials, fuel used during construction, energy consumed during a buildings operation, and transportation by building occupants.

Using the Worksheet

1. Descriptions of the different residential and commercial building types can be found on the second tabbed worksheet ("Definition of Building Types"). If a development proposal consists of multiple projects, e.g. both single family and multi-family residential structures or a commercial development that consists of more than on type of commercial activity, the appropriate information should be estimated for each type of building or activity.

2. For paving, estimate the total amount of paving (in thousands of square feet) of the project.

3. The Worksheet will calculate the amount of GHG emissions associated with the project and display the amount in the "Total Emissions" column on the worksheet. The applicant should use this information when completing the SEPA checklist.

4. The last three worksheets in the Excel file provide the background information that is used to calculate the total GHG emissions.

5. The methodology of creating the estimates is transparent; if there is reason to believe that a better estimate can be obtained by changing specific values, this can and should be done. Changes to the values should be documented with an explanation of why and the sources relied upon.

6. Print out the “Total Emissions” worksheet and attach it to the SEPA checklist. If the applicant has made changes to the calculations or the values, the documentation supporting those changes should also be attached to the SEPA checklist.

Definition of Building Types

Type (Residential) or Principal Activity (Commercial)	Description
Single-Family Home	Unless otherwise specified, this includes both attached and detached buildings
Multi-Family Unit in Large Building	Apartments in buildings with more than 5 units
Multi-Family Unit in Small Building	Apartments in building with 2-4 units
Mobile Home	
Education	Buildings used for academic or technical classroom instruction, such as elementary, middle, or high schools, and classroom buildings on college or university campuses. Buildings on education campuses for which the main use is not classroom are included in the category relating to their use. For example, administration buildings are part of "Office," dormitories are "Lodging," and libraries are "Public Assembly."
Food Sales	Buildings used for retail or wholesale of food.
Food Service	Buildings used for preparation and sale of food and beverages for consumption.
Health Care Inpatient	Buildings used as diagnostic and treatment facilities for inpatient care.
Health Care Outpatient	Buildings used as diagnostic and treatment facilities for outpatient care. Doctor's or dentist's office are included here if they use any type of diagnostic medical equipment (if they do not, they are categorized as an office building).
Lodging	Buildings used to offer multiple accommodations for short-term or long-term residents, including skilled nursing and other residential care buildings.
Retail (Other Than Mall)	Buildings used for the sale and display of goods other than food.
Office	Buildings used for general office space, professional office, or administrative offices. Doctor's or dentist's office are included here if they do not use any type of diagnostic medical equipment (if they do, they are categorized as an outpatient health care building).
Public Assembly	Buildings in which people gather for social or recreational activities, whether in private or non-private meeting halls.
Public Order and Safety	Buildings used for the preservation of law and order or public safety.
Religious Worship	Buildings in which people gather for religious activities, (such as chapels, churches, mosques, synagogues, and temples).
Service	Buildings in which some type of service is provided, other than food service or retail sales of goods
Warehouse and Storage	Buildings used to store goods, manufactured products, merchandise, raw materials, or personal belongings (such as self-storage).
Other	Buildings that are industrial or agricultural with some retail space; buildings having several different commercial activities that, together, comprise 50 percent or more of the floorspace, but whose largest single activity is agricultural, industrial/ manufacturing, or residential; and all other miscellaneous buildings that do not fit into any other category.
Vacant	Buildings in which more floorspace was vacant than was used for any single commercial activity at the time of interview. Therefore, a vacant building may have some occupied floorspace.

Sources: .....

Residential 2001 Residential Energy Consumption Survey
Square footage measurements and comparisons
http://www.eia.doe.gov/emeu/recs/sqft-measure.html

Commercial Commercial Buildings Energy Consumption Survey (CBECS),
Description of CBECS Building Types
http://www.eia.doe.gov/emeu/cbecs/pba99/bldgtypes.html

Embodied Emissions Worksheet

Section I: Buildings

Type (Residential) or Principal Activity (Commercial)	# thousand sq feet/ unit or building	Life span related embodied GHG missions (MTCO2e/ unit)	Life span related embodied GHG missions (MTCO2e/ thousand square feet) - See calculations in table below
Single-Family Home	2.53	98	39
Multi-Family Unit in Large Building	0.85	33	39
Multi-Family Unit in Small Building	1.39	54	39
Mobile Home	1.06	41	39
Education	25.6	991	39
Food Sales	5.6	217	39
Food Service	5.6	217	39
Health Care Inpatient	241.4	9,346	39
Health Care Outpatient	10.4	403	39
Lodging	35.8	1,386	39
Retail (Other Than Mall)	9.7	376	39
Office	14.8	573	39
Public Assembly	14.2	550	39
Public Order and Safety	15.5	600	39
Religious Worship	10.1	391	39
Service	6.5	252	39
Warehouse and Storage	16.9	654	39
Other	21.9	848	39
Vacant	14.1	546	39

Section II: Pavement

All Types of Pavement			50

	Columns and Beams	Intermediate Floors	Exterior Walls	Windows	Interior Walls	Roofs		
Average GWP (lbs CO2e/sq ft): Vancouver, Low Rise Building	5.3	7.8	19.1	51.2	5.7	21.3		
Average Materials in a 2,272-square foot single family home	0.0	2269.0	3206.0	285.0	6050.0	3103.0	Total Embodied Emissions (MTCO2e)	Total Embodied Emissions (MTCO2e/ thousand sq feet)
MTCO2e	0.0	8.0	27.8	6.6	15.6	30.0	88.0	38.7

Sources

All data in black text — King County, DNRP. Contact: Matt Kuharic, matt.kuharic@kingcounty.gov

Residential floorspace per unit
2001 Residential Energy Consumption Survey (National Average, 2001)
Square footage measurements and comparisons
http://www.eia.doe.gov/emeu/recs/sqft-measure.html

Floorspace per building
EIA, 2003 Commercial Buildings Energy Consumption Survey (National Average, 2003)
Table C3. Consumption and Gross Energy Intensity for Sum of Major Fuels for Non-Mall Buildings, 2003
http://www.eia.doe.gov/emeu/cbecs/cbecs2003/detailed_tables_2003/2003set9/2003excel/c3.xls

Average GWP (lbs CO2e/sq ft): Vancouver, Low Rise Building
Athena EcoCalculator
Athena Assembly Evaluation Tool v2.3- Vancouver Low Rise Building
Assembly Average GWP (kg) per square meter
http://www.athenasmi.ca/tools/ecoCalculator/index.html
Lbs per kg 2.20
Square feet per square meter 10.76

Average Materials in a 2,272-square foot single family home
Buildings Energy Data Book: 7.3 Typical/Average Household
Materials Used in the Construction of a 2,272-Square-Foot Single-Family Home, 2000
http://buildingsdatabook.eren.doe.gov/?id=view_book_table&TableID=2036&t=xls
See also: NAHB, 2004 Housing Facts, Figures and Trends, Feb. 2004, p. 7.

Average window size
Energy Information Administration/Housing Characteristics 1993
Appendix B, Quality of the Data. Pg. 5.
ftp://ftp.eia.doe.gov/pub/consumption/residential/rx93hcf.pdf

Pavement Emissions Factors
MTCO2e/thousand square feet of asphalt
or concrete pavement 50 (see below)

Embodied GHG Emissions……Worksheet Background Information

Buildings
Embodied GHG emissions are emissions that are created through the extraction, processing, transportation, construction and disposal of building materials as well as emissions created through landscape disturbance (by both soil disturbance and changes in above ground biomass).

Estimating embodied GHG emissions is new field of analysis; the estimates are rapidly improving and becoming more inclusive of all elements of construction and development.

The estimate included in this worksheet is calculated using average values for the main construction materials that are used to create a typical family home. In 2004, the National Association of Home Builders calculated the average materials that are used in a typical 2,272 square foot single-family household. The quantity of materials used is then multiplied by the average GHG emissions associated with the life-cycle GHG emissions for each material.

This estimate is a rough and conservative estimate; the actual embodied emissions for a project are likely to be higher. For example, at this stage, due to a lack of comprehensive data, the estimate does not include important factors such as landscape disturbance or the emissions associated with the interior components of a building (such as furniture).

King County realizes that the calculations for embodied emissions in this worksheet are rough. For example, the emissions associated with building 1,000 square feet of a residential building will not be the same as 1,000 square feet of a commercial building. However, discussions with the construction community indicate that while there are significant differences between the different types of structures, this method of estimation is reasonable; it will be improved as more data become available.

Additionally, if more specific information about the project is known, King County recommends two online embodied emissions calculators that can be used to obtain a more tailored estimate for embodied emissions: www.buildcarbonneutral.org and www.athenasmi.ca/tools/ecoCalculator/.

Pavement
Four recent life cycle assessments of the environmental impacts of roads form the basis for the per unit embodied emissions of pavement. Each study is constructed in slightly different ways; however, the aggregate results of the reports represent a reasonable estimate of the GHG emissions that are created from the manufacture of paving materials, construction related emissions, and maintenance of the pavement over its expected life cycle. For specifics, see the worksheet.

Special Section: Estimating the Embodied Emissions for Pavement

Four recent life cycle assessments of the environmental impacts of roads form the basis for the per unit embodied emissions of pavement. Each study is constructed in slightly different ways; however, the aggregate results of the reports represent a reasonable estimate of the GHG emissions that are created from the manufacture of paving materials, construction related emissions, and maintenance of the pavement over its expected life cycle.

The results of the studies are presented in different units and measures; considerable effort was undertaken to be able to compare the results of the studies in a reasonable way. For more details about the below methodology, contact matt.kuharic@kingcounty.gov.

The four studies, Meil (2001), Park (2003), Stripple (2001) and Treolar (2001) produced total GHG emissions of 4-34 MTCO2e per thousand square feet of finished paving (for similar asphalt and concrete based pavements). This estimate does not including downstream maintenance and repair of the highway. The average (for all concrete and asphalt pavements in the studies, assuming each study gets one data point) is ~17 MTCO2e/thousand square feet.

Three of the studies attempted to thoroughly account for the emissions associated with long term maintenance (40 years) of the roads. Stripple (2001), Park et al. (2003) and Treolar (2001) report 17, 81, and 68 MTCO2e/thousand square feet, respectively, after accounting for maintenance of the roads.

Based on the above discussion, King County makes the conservative estimate that 50 MTCO2e/thousand square feet of pavement (over the development's life cycle) will be used as the embodied emission factor for pavement until better estimates can be obtained. This is roughly equivalent to 3,500 MTCO2e per lane mile of road (assuming the lane is 13 feet wide).

It is important to note that these studies estimate the embodied emissions for roads. Paving that does not need to stand up to the rigors of heavy use (such as parking lots or driveways) would likely use less materials and hence have lower embodied emissions.

Sources:

Meil, J. A Life Cycle Perspective on Concrete and Asphalt Roadways: Embodied Primary Energy and Global Warming Potential. 2006. Available: http://www.cement.ca/cement.nsf/eee9ec7bbd630126852566c40052107b/6ec79dc8ae03a782852572b90061b914/$FILE/ATTK0WE3/athena%20report%20Feb.%202%202007.pdf

Park, K, Hwang, Y., Seo, S., M.ASCE, and Seo, H. , "Quantitative Assessment of Environmental Impacts on Life Cycle of Highways," Journal of Construction Engineering and Management , Vol 129, January/February 2003, pp 25-31, (DOI: 10.1061/(ASCE)0733-9364(2003)129:1(25)).

Stripple, H. Life Cycle Assessment of Road. A Pilot Study for Inventory Analysis. Second Revised Edition. IVL Swedish Environmental Research Institute Ltd. 2001. Available: http://www.ivl.se/rapporter/pdf/B1210E.pdf

Treloar, G., Love, P.E.D., and Crawford, R.H. Hybrid Life-Cycle Inventory for Road Construction and Use. Journal of Construction Engineering and Management. P. 43-49. January/February 2004.

Energy Emissions Worksheet

Type (Residential) or Principal Activity (Commercial)	Energy consumption per building per year (million Btu)	Carbon Coefficient for Buildings	MTCO2e per building per year	Floorspace per Building (thousand square feet)	MTCE per thousand square feet per year	MTCO2e per thousand square feet per year	Average Building Life Span	Lifespan Energy Related MTCO2e emissions per unit	Lifespan Energy Related MTCO2e emissions per thousand square feet
Single-Family Home	107.3	0.108	11.61	2.53	4.6	16.8	57.9	672	266
Multi-Family Unit in Large Building	41.0	0.108	4.44	0.85	5.2	19.2	80.5	357	422
Multi-Family Unit in Small Building	78.1	0.108	8.45	1.39	6.1	22.2	80.5	681	489
Mobile Home	75.9	0.108	8.21	1.06	7.7	28.4	57.9	475	448
Education	2,125.0	0.124	264.2	25.6	10.3	37.8	62.5	16,526	646
Food Sales	1,110.0	0.124	138.0	5.6	24.6	90.4	62.5	8,632	1,541
Food Service	1,436.0	0.124	178.5	5.6	31.9	116.9	62.5	11,168	1,994
Health Care Inpatient	60,152.0	0.124	7,479.1	241.4	31.0	113.6	62.5	467,794	1,938
Health Care Outpatient	985.0	0.124	122.5	10.4	11.8	43.2	62.5	7,660	737
Lodging	3,578.0	0.124	444.9	35.8	12.4	45.6	62.5	27,826	777
Retail (Other Than Mall)	720.0	0.124	89.5	9.7	9.2	33.8	62.5	5,599	577
Office	1,376.0	0.124	171.1	14.8	11.6	42.4	62.5	10,701	723
Public Assembly	1,338.0	0.124	166.4	14.2	11.7	43.0	62.5	10,405	733
Public Order and Safety	1,791.0	0.124	222.7	15.5	14.4	52.7	62.5	13,928	899
Religious Worship	440.0	0.124	54.7	10.1	5.4	19.9	62.5	3,422	339
Service	501.0	0.124	62.3	6.5	9.6	35.1	62.5	3,896	599
Warehouse and Storage	764.0	0.124	95.0	16.9	5.6	20.6	62.5	5,942	352
Other	3,600.0	0.124	447.6	21.9	20.4	74.9	62.5	27,997	1,278
Vacant	294.0	0.124	36.6	14.1	2.6	9.5	62.5	2,286	162

Sources

All data in black text — King County, DNRP. Contact: Matt Kuharic, matt.kuharic@kingcounty.gov

Energy consumption for residential buildings

2007 Buildings Energy Data Book: 6.1 Quad Definitions and Comparisons (National Average, 2001)
Table 6.1.4: Average Annual Carbon Dioxide Emissions for Various Functions
http://buildingsdatabook.eren.doe.gov/
Data also at: http://www.eia.doe.gov/emeu/recs/recs2001_ce/ce1-4c_housingunits2001.html

Energy consumption for commercial buildings
and
Floorspace per building

EIA, 2003 Commercial Buildings Energy Consumption Survey (National Average, 2003)
Table C3. Consumption and Gross Energy Intensity for Sum of Major Fuels for Non-Mall Buildings, 2003
http://www.eia.doe.gov/emeu/cbecs/cbecs2003/detailed_tables_2003/2003set9/2003excel/c3.xls

Note: Data in plum color is found in both of the above sources (buildings energy data book and commercial buildings energy consumption survey).

Carbon Coefficient for Buildings

Buildings Energy Data Book (National average, 2005)
Table 3.1.7. 2005 Carbon Dioxide Emission Coefficients for Buildings (MMTCE per Quadrillion Btu)
http://buildingsdatabook.eere.energy.gov/?id=view_book_table&TableID=2057
Note: Carbon coefficient in the Energy Data book is in MTCE per Quadrillion Btu.
To convert to MTCO2e per million Btu, this factor was divided by 1000 and multiplied by 44/12.

Residential floorspace per unit

2001 Residential Energy Consumption Survey (National Average, 2001)
Square footage measurements and comparisons
http://www.eia.doe.gov/emeu/recs/sqft-measure.html

average lief span of buildings,
estimated by replacement time method

	Single Family Homes	Multi-Family Units in Large and Small Buildings	All Residential Buildings	
New Housing Construction, 2001	1,273,000	329,000	1,602,000	
Existing Housing Stock, 2001	73,700,000	26,500,000	100,200,000	
Replacement time:	57.9	80.5	62.5	(national average, 2001)

Note: Single family homes calculation is used for mobile homes as a best estimate life span.
Note: At this time, KC staff could find no reliable data for the average life span of commercial buildings.
Therefore, the average life span of residential buildings is being used until a better approximation can be ascertained.

Sources:

New Housing Construction, 2001
Quarterly Starts and Completions by Purpose and Design - US and Regions (Excel)
http://www.census.gov/const/quarterly_starts_completions_cust.xls
See also: http://www.census.gov/const/www/newresconstindex.html

Existing Housing Stock, 2001
Residential Energy Consumption Survey (RECS) 2001
Tables HC1:Housing Unit Characteristics, Million U.S. Households 2001
Table HC1-4a. Housing Unit Characteristics by Type of Housing Unit, Million U.S. Households, 2001
Million U.S. Households, 2001
http://www.eia.doe.gov/emeu/recs/recs2001/hc_pdf/housunits/hc1-4a_housingunits2001.pdf

Transportation Emissions Worksheet

Type (Residential) or Principal Activity (Commercial)	# people/ unit or building	# thousand sq feet/ unit or building	# people or employees/ thousand square feet	vehicle related GHG emissions (metric tonnes CO2e per person per year)	MTCO2e/ year/ unit	MTCO2e/ year/ thousand square feet	Average Building Life Span	Life span transportation related GHG emissions (MTCO2e/ per unit)	Life span transportation related GHG emissions (MTCO2e/ thousand sq feet)
Single-Family Home	2.8	2.53	1.1	4.9	13.7	5.4	57.9	792	313
Multi-Family Unit in Large Building	1.9	0.85	2.3	4.9	9.5	11.2	80.5	766	904
Multi-Family Unit in Small Building	1.9	1.39	1.4	4.9	9.5	6.8	80.5	766	550
Mobile Home	2.5	1.06	2.3	4.9	12.2	11.5	57.9	709	668
Education	30.0	25.6	1.2	4.9	147.8	5.8	62.5	9247	361
Food Sales	5.1	5.6	0.9	4.9	25.2	4.5	62.5	1579	282
Food Service	10.2	5.6	1.8	4.9	50.2	9.0	62.5	3141	561
Health Care Inpatient	455.5	241.4	1.9	4.9	2246.4	9.3	62.5	140506	582
Health Care Outpatient	19.3	10.4	1.9	4.9	95.0	9.1	62.5	5941	571
Lodging	13.6	35.8	0.4	4.9	67.1	1.9	62.5	4194	117
Retail (Other Than Mall)	7.8	9.7	0.8	4.9	38.3	3.9	62.5	2394	247
Office	28.2	14.8	1.9	4.9	139.0	9.4	62.5	8696	588
Public Assembly	6.9	14.2	0.5	4.9	34.2	2.4	62.5	2137	150
Public Order and Safety	18.8	15.5	1.2	4.9	92.7	6.0	62.5	5796	374
Religious Worship	4.2	10.1	0.4	4.9	20.8	2.1	62.5	1298	129
Service	5.6	6.5	0.9	4.9	27.6	4.3	62.5	1729	266
Warehouse and Storage	9.9	16.9	0.6	4.9	49.0	2.9	62.5	3067	181
Other	18.3	21.9	0.8	4.9	90.0	4.1	62.5	5630	257
Vacant	2.1	14.1	0.2	4.9	10.5	0.7	62.5	657	47

Sources

All data in black text — King County, DNRP. Contact: Matt Kuharic, matt.kuharic@kingcounty.gov

people/ unit — Estimating Household Size for Use in Population Estimates (WA state, 2000 average)
Washington State Office of Financial Management
Kimpel, T. and Lowe, T. Research Brief No. 47. August 2007
http://www.ofm.wa.gov/researchbriefs/brief047.pdf
Note: This analysis combines Multi Unit Structures in both large and small units into one category; the average is used in this case although there is likely a difference

Residential floorspace per unit — 2001 Residential Energy Consumption Survey (National Average, 2001)
Square footage measurements and comparisons
http://www.eia.doe.gov/emeu/recs/sqft-measure.html

employees/thousand square feet — Commercial Buildings Energy Consumption Survey commercial energy uses and costs (National Median, 2003)
Table B2 Totals and Medians of Floorspace, Number of Workers, and Hours of Operation for Non-Mall Buildings, 2003
http://www.eia.doe.gov/emeu/cbecs/cbecs2003/detailed_tables_2003/2003set1/2003excel/b2.xls

Note: Data for # employees/thousand square feet is presented by CBECS as square feet/employee.
In this analysis employees/thousand square feet is calculated by taking the inverse of the CBECS number and multiplying by 1000.

vehicle related GHG emissions

Estimate calculated as follows (Washington state, 2006)_

56,531,930,000	2006 Annual WA State Vehicle Miles Traveled	
		Data was daily VMT. Annual VMT was 365*daily VMT.
		http://www.wsdot.wa.gov/mapsdata/tdo/annualmileage.htm
6,395,798	2006 WA state population	
		http://quickfacts.census.gov/qfd/states/53000.html
8839	vehicle miles per person per year	
0.0506	gallon gasoline/mile	
		This is the weighted national average fuel efficiency for all cars and 2 axle, 4 wheel light trucks in 2005. This includes pickup trucks, vans and SUVs. The 0.051 gallons/mile used here is the inverse of the more commonly known term “miles/per gallon” (which is 19.75 for these cars and light trucks).
		Transportation Energy Data Book. 26th Edition. 2006. Chapter 4: Light Vehicles and Characteristics. Calculations based on weighted average MPG efficiency of cars and light trucks.
		http://cta.ornl.gov/data/tedb26/Edition26_Chapter04.pdf
		Note: This report states that in 2005, 92.3% of all highway VMT were driven by the above described vehicles.
		http://cta.ornl.gov/data/tedb26/Spreadsheets/Table3_04.xls
24.3	lbs CO2e/gallon gasoline	
		The CO2 emissions estimates for gasoline and diesel include the extraction, transport, and refinement of petroleum as well as their combustion.
		Life-Cycle CO2 Emissions for Various New Vehicles. RENew Northfield.
		Available: http://renewnorthfield.org/wpcontent/uploads/2006/04/CO2%20emissions.pdf
		Note: This is a conservative estimate of emissions by fuel consumption because diesel fuel,
2205		with a emissions factor of 26.55 lbs CO2e/gallon was not estimated.
4.93	lbs/metric tonne	
	vehicle related GHG emissions (metric tonnes CO2e per person per year)	

average lief span of buildings, estimated by replacement time method — See Energy Emissions Worksheet for Calculations

Commercial floorspace per unit — EIA, 2003 Commercial Buildings Energy Consumption Survey (National Average, 2003)
Table C3. Consumption and Gross Energy Intensity for Sum of Major Fuels for Non-Mall Buildings, 2003
http://www.eia.doe.gov/emeu/cbecs/cbecs2003/detailed_tables_2003/2003set9/2003excel/c3.xls

Appendix C

General Rezone Criteria

Appendix C

ANALYSIS – GENERAL REZONE CRITERIA

The code sections below are highlighted in bold, with analysis following:

SMC 23.34.008 General rezone criteria.

The proposed Major Institution Master Plan (*MIMP*) contains one proposal for achieving the development capacity necessary to replace aging facilities and respond to growing hospital functional needs - a Major Institution Overlay (MIO) boundary expansion that encompasses the **1000 Madison Block**. The Draft EIS associated with the *Draft MIMP* includes an alternative – ***Alternative 5a*** -- that analyzes a no-boundary-expansion scenario that contains an MIO height limit increase within a portion of the existing MIO in place of the MIO boundary expansion.

MIMP ***Proposed Action (6b)*** - MIO Boundary Expansion

The proposed MIO Boundary expansion area encompasses the block immediately southeast of the existing campus boundary and is referred to as the **1000 Madison Block**. This block is bounded by Spring Street on the north, Boren Avenue on the east, Madison Street on the south and Terry Avenue on the west. The block contains a mid-block, north-south alley. The area associated with this proposed boundary expansion (including the alley) approximates 1.4 acres.

Draft EIS ***Alternative 5a*** – No Boundary Expansion, Revised MIO Height Limits

Under this Draft EIS alternative, the MIO height is proposed to be increased from MIO-240 to MIO-300 on the central hospital block. This is the location of the Hospital East Wing, the Original Hospital, the Hospital West Addition, the Inn at Virginia Mason, and the Buck Pavilion. The area is bounded by Seneca Street to the north, Spring Street to the south, 9th Avenue to the west and the Floyd and Delores Jones Pavilion to the east.

A. To be approved, a rezone shall meet the following standards:

1. In urban centers and urban villages the zoned capacity for the center or village taken as a whole shall be no less than one hundred twenty-five percent (125%) of the growth targets adopted in the Comprehensive Plan for that center or village.

The City of Seattle Comprehensive Plan (2005) establishes a goal of adding 47,000 new households within the City by 2024, with Urban Centers targeted to handle the bulk of this growth. The VMMC campus is located within the First Hill/Capitol Hill Urban Center, which is comprised of four urban villages - 12th Avenue, Capitol Hill, First Hill and Pike/Pine; VMMC is located within the First Hill Urban Village. In 2004, according to the Comprehensive Plan, there were 6,020 households within the First Hill Urban Village: the 2024 growth target for this area is 1,200 new households. As of 2011, approximately 299 new units had been built in the First Hill Urban Village, and 25 percent of this goal has been met.

Redevelopment under the ***Proposed Action*** would intensify development on the **1000 Madison Block** by permanently displacing existing low-rise residential and retail buildings and replacing them with new mid- to high-rise hospital and medical buildings. Under the ***Proposed Action***, the existing MIO boundary would be expanded to include the **1000 Madison Block** and it is expected that the Chasselton Court Apartments would be demolished and replaced with a major medical building. The proposed boundary expansion is intended to accommodate space required for replacement of core hospital functions

without the need for new buildings on the existing campus to exceed the existing MIO-240 height limit. Such redevelopment would be consistent with the goals and policies of the City's Comprehensive Plan that call for urban infill development with the greatest densities and widest range of land uses to be accommodated within Urban Centers, of which First Hill is one. Redevelopment on the VMMC campus would also be consistent with and represent a continuation of the current trend of intensification in the First Hill neighborhood. VMMC will develop a proposal for the replacement of the 62 units proposed for demolition should the City Council approve the requested expansion of VMMC's MIO boundaries to include the **1000 Madison Block**.

The proposed zoning changes under either the ***Proposed Action*** or ***Alternative 5a*** allow for greater zoned capacity, not less. Therefore, they will not result in a reduction of zoned capacity below this minimum.

2. For the area within the urban village boundary of hub urban villages and for residential urban villages taken as a whole the zoned capacity shall not be less than the densities established in the Urban Village Element of the Comprehensive Plan.

As is stated in **Section A.1**. above, the proposed zoning changes under either the ***Proposed Action*** or ***Alternative 5a*** allow for greater zoned capacity, not less. Therefore, they will not result in a reduction of zoned capacity below densities established in the Urban Village Element of the Comprehensive Plan.

B. Match Between Zone Criteria and Area Characteristics. The most appropriate zone designation shall be that for which the provisions for designation of the zone type and the locational criteria for the specific zone match the characteristics of the area to be rezoned better than any other zone designation.

MIMP ***Proposed Action (6b)*** - MIO Boundary Expansion

The area proposed for boundary expansion is contiguous with the existing VMMC MIO boundary to the north. The existing HR-160 and NC3-160 zoning on the expansion block is proposed to be rezoned to MIO-240 to accommodate a proposed patient tower. The existing Baroness Hotel in the northwest portion of the block would be retained in its entirety. The areas to the east, west, and south of the expansion block are primarily zoned High-rise Residential (HR) with the exception of parcels directly adjacent to both sides of Madison Street, where the zoning is Neighborhood Commercial 3 Pedestrian 160 (NC3P-160).

The proposed zoning on the expansion block would, therefore, be 80 ft. taller than the underlying NC3P-160 zoning that is on the south half of the block, and would be 60 ft. shorter than the underlying HR-300 zoning on the north half of the block. The proposed MIO-240 zone for the expansion block is consistent with the existing MIO-240 zone on the VMMC campus to the north, and would be consistent with adjacent HR-300 zoning in the vicinity of the campus. Street level retail uses would be replaced in the newly proposed buildings under the new *MIMP* on the southern portion of the expansion block, which would be consistent with the underlying NC3P-160 zoning.

Draft EIS ***Alternative 5a*** – No Boundary Expansion, Revised MIO Height Limits

The proposed zoning change within the existing MIO boundary (i.e. the increase from MIO-240 to MIO-300) is appropriate in that the proposed height is consistent with both the underlying and HR-300 zoning that immediately surrounds the VMMC campus. This zoning change would also require a code amendment to the City's Major Institution Code.

C. Zoning History and Precedential Effect. Previous and potential zoning changes both in and around the area proposed for rezone shall be examined.

While Virginia Mason has had several campus master plans since its inception in 1920, the currently proposed *MIMP* represents the second *Major Institution Master Plan* that has been prepared for VMMC to satisfy requirements of the City's Major Institution Code,[1] as well as to fulfill VMMC's need for a comprehensive campus development plan. VMMC's existing *MIMP* was completed in November 1992 and formally adopted by the City of Seattle in 1994.[2] That *MIMP* proposed phased development on the 7.05-ac. campus, which included approximately 879,000 sq. ft. of new construction, demolition of 174,300 sq.ft., and the addition of 930 parking spaces.[3] The *MIMP* also included vacation of an alley[4] and establishment of a Transportation Management Plan (TMP). The existing *MIMP*, which was adopted under previous Major Institution Code requirements, expired in 2004.

MIMP ***Proposed Action (6b)*** - MIO Boundary Expansion

In the current proposed *MIMP*, VMMC is proposing its first boundary expansion to accommodate expected growth. No zoning changes are expected in the immediate area surrounding the proposed MIO boundary expansion area (**1000 Madison Block**).

Draft EIS ***Alternative 5a*** – No Boundary Expansion, Revised MIO Height Limits

A height increase in the central portion of the existing VMMC MIO would be necessary to accommodate expected growth under this alternative as it does not include an expansion area. This zoning change would also require a code amendment to the City's Major Institution Code.

D. Neighborhood Plans.

1. For purposes of this title, the effect of a neighborhood plan, adopted or amended by the City Council after January 1, 1995, shall be as expressly established by the City Council for each such neighborhood plan.

The VMMC campus is located within the boundary of the First Hill Neighborhood Planning Area, which was adopted and incorporated as part of the City's *Comprehensive Plan*.

2. Council adopted neighborhood plans that apply to the area proposed for rezone shall be taken into consideration.

The following goals and policies from the First Hill Neighborhood Plan are the most applicable to proposed development of the VMMC campus:

Goal FH-G1 – A community with a culturally and economically diverse residential population that is also a major employment center, home to many of the region's state of the art medical centers and related facilities.

Goal FH-G2 – An active, pedestrian-friendly Urban Center Village that integrates residential, commercial, and institutional uses, and maintains strong connections to surrounding neighborhoods and the Urban Center.

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1 SMC 23.69
2 Ord. #117106
3 30 spaces were identified as temporary
4 This was an alley that extended between Seneca St. and Spring St. in the location of the present Floyd & Delores Jones Pavilion.

Policy FH-P3 – Seek opportunities to provide additional community facilities to serve the existing diverse population and the new residents and employees projected to move into the neighborhood within the next 15 years.

Policy FH-P5 – Encourage major institutions and public projects to work to preserve, maintain, and enhance the important qualities of the neighborhood plan, i.e. open space, housing, and pedestrian environment.

Goal FH-G5 – A neighborhood which provides a variety of housing opportunities that are compatible with other neighborhood goals, and maintains the economic mix of First Hill residents.

Goal FH-G7 – A neighborhood with safe, accessible, and well-maintained parks, open space, and community facilities that meet the current and future needs of a growing community.

Policy FH-P19 – Seek new opportunities for the creation of useable and safe parks and open space.

Goal FH-G8 – A neighborhood which provides for the safe and efficient local- and through-traffic circulation of automobiles, transit, bicycles, and pedestrians.

Redevelopment under either the ***Proposed Action*** or ***Alternative 5a*** would include replacement of aging facilities to meet the demands of regional growth within the medical community and would increase the amount of employment on the campus. Such redevelopment would be consistent with many of the goals and policies of the First Hill Neighborhood Planning Area. Redevelopment under the ***Proposed Action*** would replace displaced housing and existing street-level retail uses currently located on the **1000 Madison Block**.

Existing and proposed open space areas and enhancements to the pedestrian streetscape on the campus and along campus boundaries would serve not only the employees of and visitors to the campus, but the surrounding community as well, including the First Hill area.

In an effort to reduce the number of trips to the campus, the proposed *Draft MIMP* includes a Transportation Management Plan (TMP) that would encourage the use of transit, bicycling and walking as a means to access the campus. Proposed development under the *Draft MIMP* would also include an increase in the amount of underground parking provided on campus.

3. Where a neighborhood plan adopted or amended by the City Council after January 1, 1995 establishes policies expressly adopted for the purpose of guiding future rezones, but does not provide for rezones of particular sites or areas, rezones shall be in conformance with the rezone policies of such neighborhood plan.

The First Hill Neighborhood Plan as adopted by the City Council does not include policies expressly adopted for the purpose of guiding future rezones -- other than the policies discussed above.

4. **If it is intended that rezones of particular sites or areas identified in a Council adopted neighborhood plan are to be required, then the rezones shall be approved simultaneously with the approval of the pertinent parts of the neighborhood plan.**

   Not applicable.

E. Zoning Principles. The following zoning principles shall be considered:

1. **The impact of more intensive zones on less intensive zones or industrial and commercial zones on other zones shall be minimized by the use of transitions or buffers, if possible. A gradual transition between zoning categories, including height limits, is preferred.**

   MIMP ***Proposed Action (6b)*** - MIO Boundary Expansion

   The northern half of the **1000 Madison Block** (proposed MIO expansion area) is zoned as HR, and the southern half is zoned as NC3P-160. The areas to the east, west, and south of the expansion block are primarily zoned HR with the exception of parcels directly adjacent to both sides of Madison Street, where the zoning is NC3P-160. The expansion block is proposed to be rezoned to MIO-240. This zoning would be consistent with the current VMMC campus MIO-240 zoning to the south of the expansion block (on the north side of Spring Street). The proposed MIO-240 zoning would be 80 ft. taller than the NC3P-160 zoning to the east, west and south of the southern-half of the block, and would be 60 ft. shorter than the HR 300 zoning to the east and west of the north half of the block. Street level and upper level setbacks would be utilized to provide a transition between the proposed MIO-240 zoning and offsite uses. These setbacks would exceed the setback requirements of the underlying zoning and would include: 10 ft. street level setbacks on Boren Avenue, Madison Street and Terry Avenue; 20 ft. upper level setbacks on portions of the building above 45 ft. on Boren Avenue and Terry Avenue, and a 40 ft. upper level setback on portions of the building above 45 ft. on Madison Street.

   Draft EIS ***Alternative 5a*** – No Boundary Expansion, Revised MIO Height Limits

   Under this alternative, the zoning change within the existing MIO boundary (i.e. increase from MIO-240 to MIO-300) would be appropriate because the proposed height of 300 feet is consistent with both the underlying zoning and the HR-300 zoning in the vicinity of the VMMC campus. The proposed MIO-300 area is bordered by the existing VMMC MIO-240 campus to the north, east and west and by HR-300 zoning to the south.

2. **Physical buffers may provide an effective separation between different uses and intensities of development. The following elements may be considered as buffers:**

   a. **Natural features such as topographic breaks, lakes, rivers, streams, ravines and shorelines;**

      Not applicable. No such features exist here.

   b. **Freeways, expressways, other major traffic arterials, and railroad tracks;**

      Madison Street and Boren Avenue, which the City has designated as Principal Arterials, serve as effective separations between the different zoning heights on either side of those arterials.

c. Distinct change in street layout and block orientation;

Not applicable.

d. Open space and greenspaces.

There are currently landscaped areas and setbacks, as well as street trees that provide limited separation and transition between different zone intensities.

3. Zone Boundaries.

a. In establishing boundaries the following elements shall be considered:

(1) Physical buffers as described in subsection E2 above;

See above.

(2) Platted lot lines.

The boundary of the proposed MIO expansion area follows streets and/or platted lot lines.

b. Boundaries between commercial and residential areas shall generally be established so that commercial uses face each other across the street on which they are located, and face away from adjacent residential areas. An exception may be made when physical buffers can provide a more effective separation between uses.

MIMP ***Proposed Action (6b)*** - MIO Boundary Expansion

The **1000 Madison Block** boundary expansion area is across the street from commercial, hotel and residential areas to the east, south and west. If the proposed expansion to the **1000 Madison Block** is approved, VMMC intends to consider any of the following uses for potential location at street level along Madison Street and portions of Boren Avenue: medical services, such as optical; eating and drinking establishments; retail sales and services; indoor sports and recreation; lodging uses; or, additional open space. Such uses would be in compliance with the underlying zoning.

Draft EIS ***Alternative 5a*** – No Boundary Expansion, Revised MIO Height Limits

Under this alternative, existing uses would continue.

4. In general, height limits greater than forty (40) feet should be limited to urban villages. Height limits greater than forty (40) feet may be considered outside of urban villages where higher height limits would be consistent with an adopted neighborhood plan, a major institution's adopted master plan, or where the designation would be consistent with the existing built character of the area.

The VMMC campus, including the proposed boundary expansion area, is located within an urban village.

F. Impact Evaluation. The evaluation of a proposed rezone shall consider the possible negative and positive impacts on the area proposed for rezone and its surroundings.

1. Factors to be examined include, but are not limited to, the following:

a. Housing, particularly low-income housing;

MIMP ***Proposed Action (6b)*** - MIO Boundary Expansion

The **1000 Madison Block** boundary expansion area contains one apartment building (Chasselton Court Apartments) which is proposed to be demolished. This is a 6-story brick building with 62 rental units - 56 studio units, 6 one-bedroom units. Although there is housing in the boundary expansion area, VMMC is proposing comparable replacement housing or paying to maintain the housing stock of the City. As noted, in order to accommodate proposed development under this alternative, the existing uses could be permanently displaced, which would result in the permanent removal of the potential for housing development on this block in the future.

Draft EIS ***Alternative 5a*** – No Boundary Expansion, Revised MIO Height Limits

No housing would be proposed or located within the MIO height increase area.

b. Public services;

An expanded population of doctors, staff, patients and visitors would increase the potential for calls to fire and police, increase water supply and discharge needs, and increase solid waste disposal. DPD has determined that these impacts are not likely to be significant.

c. Environmental factors, such as noise, air and water quality, terrestrial and aquatic flora and fauna, glare, odor, shadows, and energy conservation;

DPD has prepared a Draft EIS that considers potential impacts of the VMMC *MIMP* including the proposed MIO boundary expansion (***Proposed Action***) - and MIO height increases (***Alternative 5a***). With proposed mitigation measures contained with the Draft EIS, these alternatives are not likely to cause significant impacts to these environmental factors. If the zoning changes encourage new development, there could be minimal impacts relating to the construction including noise, air and water quality, and traffic, but these construction-related impacts would be temporary and regulated by Seattle's Land Use Code.

d. Pedestrian safety;

Section 3.9, Transportation, Circulation and Parking of this Draft EIS discusses pedestrian safety and notes that the increase in vehicular and pedestrian traffic could result in increased potential for conflicts at road crossings and even mid-block locations. No mitigation is identified.

e. Manufacturing activity;

Not applicable.

f. Employment activity;

The aim of the *Draft MIMP* is to achieve several goals, including replacing aging infrastructure and providing growth of medical services. Staffing levels could incrementally increase over current levels with each new or replacement development project that is implemented under the *MIMP*. The expansion in employment could be anticipated to support secondary employment opportunities at nearby businesses.

g. Character of areas recognized for architectural or historic value;

The Draft EIS discusses in **Section 3.8** the potential impacts of *MIMP* development on properties with potential historic value. This section of the Draft EIS lists the buildings over a certain age that are proposed for redevelopment or demolition as a result of planned or potential projects associated with the ***Proposed Action*** or potential development in conjunction with ***Alternative 5a***. Based on the City's current procedures, at the time a Master Use Permit application is submitted for a project that would affect any of these buildings, an analysis would be required by the City to determine the historical significance of the building. At that time, the City's Historic Preservation Officer can request supplemental information and, if appropriate, can recommend that the structure be reviewed by the City's Landmark Preservation Board for possible designation as a landmark subject to controls.

The proposed expansion block also contains one City-designated Landmark (Baroness Hotel). This building would be retained and setbacks would be maintained between the Landmark building and proposed new hospital development on the expansion block.

h. Shoreline view, public access and recreation.

Not applicable. The *Draft MIMP* would not affect any shoreline areas.

2. Service Capacities. Development which can reasonably be anticipated based on the proposed development potential shall not exceed the service capacities which can reasonably be anticipated in the area, including:

a. Street access to the area;

The existing street network provides adequate access to the VMMC campus. Increased development capacity associated with the *Draft MIMP* would not have a significant impact on street access.

b. Street capacity in the area;

The Draft EIS evaluates the potential impact on the street capacity in the vicinity of the VMMC campus from the development proposed in the *MIMP*. Based on expected trip generation from the development, the Draft EIS predicts the level of service at approximately 33 intersections in the vicinity. The *Draft MIMP* includes a draft Transportation Management Program that is intended to encourage commuting to campus by means other than single occupant vehicles (SOV). VMMC is currently exceeding its SOV goals.

c. Transit service;

The number of patients, visitors and staff travelling to and from the VMMC campus would be anticipated to increase with implementation of the *MIMP* over time. A TMP would be implemented; one goal identified in the TMP is increasing transit ridership through subsidies, improved access, and the marketing of program benefits. The following actions are among those that would be taken in order to improve transit access and utilization:

a. Continue financial support for Metro Bus routes where they benefit VMMC employees.
b. Continue participation in Transit Now Agreement along with Swedish and Harborview Medical Centers to increase service to the King Street Station and the Ferry terminal.

As well, the First Hill Streetcar will be operational in 2014. The streetcar will provide access to the new Sound Transit Link light rail, with stations on Capitol Hill and Downtown. The presence of light rail and the streetcar will help increase opportunities for VMMC staff that now commute by single occupancy vehicle (SOV) or bus to shift to light rail and street car.

d. Parking capacity;

The Draft EIS describes in **Section 3.9** the existing campus parking supply and predicts potentially significant increases in outpatient services that will drive the need for increased parking supplies, since outpatients generate a much greater demand for parking than support for inpatient uses. However, it is not anticipated that the Proposed Action or Alternative 5a would have a significant effect on parking supply or demand. A comparison of the calculated maximum number of allowed spaces and the number of recommended spaces shows that the recommended supply falls within the code requirements in either case.

e. Utility and sewer capacity;

The VMMC campus is adequately served with utilities including sewers. It is not anticipated that either alternative would have a significant effect on utility and sewer capacity or demand.

f. Shoreline navigation.

Not applicable.

G. Changed Circumstances. Evidence of changed circumstances shall be taken into consideration in reviewing proposed rezones, but is not required to demonstrate the appropriateness of a proposed rezone. Consideration of changed circumstances shall be limited to elements or conditions included in the criteria for the relevant zone and/or overlay designations in this chapter.

Many of VMMC's existing campus buildings are aging and need to be replaced in order to meet modern health care requirements. For example, larger care teams need more support space, additional and more complex equipment is needed at patient bedsides, patient privacy and disease control require single-patient rooms, and seismic, fire and life safety codes have expanded. Overall, the spaces needed to provide medical services are larger than they were in

the past. This, in combination with regional population growth and an aging population, means that the demand for health care services will steadily increase in the coming years. To support the expected growth and to address significant current deficiencies in space, new facilities need to be added to the VMMC campus.

H. Overlay Districts. If the area is located in an overlay district, the purpose and boundaries of the overlay district shall be considered.

The entire existing VMMC campus is included in the Major Institution Overlay (MIO) District. The City is considering the proposed MIO boundary expansion under the ***Proposed Action*** **(6b)** identified in the *Draft MIMP*. An additional alternative (***Alternative*** **5a**), which includes height increases within the existing MIO District, is also analyzed by the City in this Draft EIS. .

The northern half of the proposed expansion area (**1000 Madison Block**) is zoned HR and the south half is zoned NC3P-160. P (pedestrian) designations are applied to NC zones along pedestrian-oriented streets, but they are not overlay districts. Nevertheless, the street level uses proposed in the boundary expansion area are consistent with the purpose and boundaries of the pedestrian area, which are intended to promote pedestrian-friendly uses and development.

I. Critical Areas. If the area is located in or adjacent to a critical area (SMC Chapter 25.09), the effect of the rezone on the critical area shall be considered.

A steep slope area and a potential slide area have been identified in the northwest portion of the VMMC campus as part of the City's GIS Environmental Critical Areas mapping. Neither of the areas is located in the proposed MIO expansion area under the ***Proposed Action*** nor are they within the increased MIO zoned height limit area that is under consideration in conjunction with ***Alternative 5a***. Any development in a steep slope or potential slide area would be subject to the City's critical area regulations (SMC 25.09).

ANALYSIS – SMC 23.34.124 (MIO CRITERIA)

The Land Use Code addresses criteria specific to designation of MIO districts or changes in allowed heights in MIO districts. This report states the criteria in **bold**, with analyses below.

- **Public Purpose. The applicant shall submit a statement which documents the reasons the rezone is being requested, including a discussion of the public benefits resulting from the proposed expansion, the way in which the proposed expansion will serve the public purpose mission of the major institution, and the extent to which the proposed expansion may affect the livability of the surrounding neighborhood. Review and comment on the statement shall be requested from the appropriate Advisory Committee as well as relevant state and local regulatory and advisory groups. In considering rezones, the objective shall be to achieve a better relationship between residential or commercial uses and the Major Institution uses, and to reduce or eliminate major land use conflicts in the area.**

  In the *Draft MIMP*, VMMC describes the area of the proposed MIO boundary expansion (***Proposed Action***). The MIO-zoned height increase (***Alternative 5a***) is described in the Draft EIS. In the *MIMP*, VMMC addresses the reasons for seeking the boundary expansion, and also addresses other required factors listed above. This discussion is found in the following locations in the *MIMP*:

  A. Introduction
  - Background and Purpose
  - Goals, Objectives and Intent of Major Institution Master Plan
  - Virginia Mason's Mission
  - Regional Growth and Demand

  B. Existing Campus
  - Programmatic Needs

  VMMC discussed the expanded clinic, specialist and research facilities that will be needed to support the region's aging population, as well as the space that is required to replace aging and outdated facilities.

  The proposed boundary expansion and height increase were presented to the VMMC CAC as part of the *MIMP* presentations and discussions. The CAC delivered comments on these proposed changes as part of their comments on the preliminary *Draft MIMP* and the preliminary Draft EIS. Public notices of the availability of the *Draft MIMP* and this Draft EIS will be issued and comments from agencies, organizations, and members of the public will be considered as part of the decision-making process on this *MIMP*.

- **Boundaries Criteria (*Proposed Action*)**

  1. ***Establishment or modification of boundaries shall take account of the holding capacity of the existing campus and the potential for new development with or without a boundary expansion.***

     MIMP ***Proposed Action (6b)*** - MIO Boundary Expansion

     One of VMMC's key goals in updating its *MIMP* is to replace the existing hospital inpatient core, which is comprised of the Original Hospital, the Hospital West Addition, the Hospital East Wing, the Buck Pavilion, and numerous small additions to each of these structures. The core hospital services include approximately 440,000 sq. ft. of area

that needs to be contiguous; needs to be located close to the Floyd & Delores Jones Pavilion, which houses the ER; and, needs 22,000 sq. ft. and, needs to remain fully functional while the replacement hospital is being built. There are no sites on the existing campus large enough to meet all of these requirements, which is why the MIO expansion block is identified as part of the *Proposed Action*.

Draft EIS ***Alternative 5a*** – No Boundary Expansion, Revised MIO Height Limits

Under this alternative, the only way to achieve the necessary, contiguous development space to replace the core hospital functions within the existing MIO boundary would be to build up to 300 ft. in height on the central hospital block, as well as require more intensive development on the Lindeman block.

2. ***Boundaries for an MIO district shall correspond with the main, contiguous major institution campus. Properties separated by only a street, alley or other public right-of-way shall be considered contiguous.***

   The proposed boundary expansion area corresponds to the main, contiguous major institution VMMC campus.

3. ***Boundaries shall provide for contiguous areas which are as compact as possible within the constraints of existing development and property ownership.***

   The proposed boundary expansion area is relatively modest. The total area within the existing MIO boundaries is 8.5 acres. The area of proposed boundary expansion is 1.4 acres (including the mid-block alley), which represents an increase of 14.1 percent in total campus area. In light of the projected 2.8% annual growth rate for clinic and specialty care demands, and the fact that many of the campus buildings are aging and need to be replaced in order to meet modern health care requirements (which require more space), VMMC indicates that the proposed boundary expansion is compact and the minimum necessary to afford relief.

4. ***Appropriate provisions of this Chapter for the underlying zoning and the surrounding areas shall be considered in the determination of boundaries.***

   In general, the proposed MIO zoning is similar to the underlying zoning it overlays and, on the edge of campus, similar to the underlying zoning in the surrounding areas. See the discussion above under *E. Zoning Principals* for more information.

5. ***Preferred locations for boundaries shall be streets, alleys or other public rights-of-way. Configuration of platted lot lines, size of parcels, block orientation and street layout shall also be considered.***

   The proposed MIO boundary expansion area follows the preferred locations: streets and platted lot lines.

6. ***Selection of boundaries should emphasize physical features that create natural edges such as topographic changes, shorelines, freeways, arterials, changes in street layout and block orientation, and large public facilities, land areas or open spaces, or greenspaces.***

   The proposed MIO boundary expansion area follows arterials, streets, alleys, and platted lot lines. There are no other significant physical features that are applicable.

7. ***New or expanded boundaries shall not be permitted where they would result in the demolition of structures with residential uses or change of use of those structures to non-residential major institution uses unless comparable replacement is proposed to maintain the housing stock of the city.***

   The proposed MIO boundary expansion area includes one building with residential uses – the 62 unit Chasselton Court Apartments. Comparable replacement housing or payment for mitigation is being proposed.

8. ***Expansion of boundaries generally shall not be justified by the need for development of professional office uses.***

   VMMC is not proposing to develop any professional office uses in the boundary expansion area; the area would be used for medical/hospital functions.

- **Height Criteria. (*Alternative 5a*)**

1. ***Increases to height limits may be considered where it is desirable to limit MIO district boundary by expansion.***

   The increase in MIO height limits from 240 ft. to 300 ft. would be requested only if the proposed MIO boundary expansion is not approved. The proposed expansion area on the **1000 Madison Block** is intended to accommodate future development without increasing building heights within the existing VMMC campus. As well, development on the **1000 Madison Block** would facilitate replacing aging facilities while maintaining full hospital operations.

2. ***Height limits at the district boundary shall be compatible with those in adjacent areas.***

   See discussion above. Proposed height limits at the MIO boundary are designed to be compatible with those in adjacent areas. Setbacks are included on the eastern boundary to maintain compatibility with existing single-family and multi-family in adjacent areas.

3. ***Transitional height limits shall be provided wherever feasible when the maximum permitted height within the overlay district is significantly higher than permitted in areas adjoining the major institution campus.***

   See discussion above. Setbacks are included on the eastern boundary to maintain compatibility with existing single-family and multi-family uses adjoining the major institution campus.

4. ***Height limits should generally not be lower than existing development to avoid creating non-conforming structures.***

   Proposed height limits are not lower than existing development.

5. ***Obstruction of public scenic or landmark views to, from or across a major institution campus should be avoided where possible.***

   Section 3.6 of this Draft EIS addresses the potential impacts of master plan development on public scenic or landmark views to, from or across the VMMC campus. The Draft EIS identifies no substantial impacts to public scenic views including those protected under the City's SEPA policies at Chapter 25.05 SMC. The Draft EIS also identifies no significant impacts to landmark views including views of the Sorrento Hotel (adjacent to

the proposed expansion block) and the Baroness Hotel (located on the **1000 Madison Block**).

- **In addition to the general rezone criteria contained in Section 23.34.008, the comments of the Major Institution Master Plan Advisory Committee for the major institution requesting the rezone shall also be considered.**

  Consistent with the provisions of Section 23.69.032 of the City's Land Use Code, VMMC has established a Citizen's Advisory Committee (CAC) for purposes of the *MIMP* update. The CAC has heard presentations regarding the *Draft MIMP* including that of the proposed boundary expansion associated with the ***Proposed Action*** and the MIO height increase that is associated with ***Alternative 5a***. The CAC has discussed issues that arose as part of the *MIMP* and associated EIS processes, and the CAC has provided comments to VMMC and the City concerning each of these issues.

Appendix D

Preliminary Adjacency Analysis

Appendix D

HISTORIC RESOURCES – PRELIMINARY ADJACENCY ANALYSIS

For both the ***Proposed Action*** and ***Alternative 5a***, because of the proximity of City-designated Landmark buildings to *planned* and *potential* development on the existing VMMC campus[1], as well as proposed development on the **1000 Madison Block**, a preliminary adjacency analysis has been prepared. The following provides an overview of the massing and design relationship of proposed/potential development to the Sorrento Hotel and the Baroness Hotel – the two designated Landmarks.

The proposed MIO boundary expansion area presently contains one designated Landmark, the Baroness Hotel (see **Figure 1**). The approximately 35,000 sq. ft., 6-story building (built in 1928) is located within the northwest corner of the block. This is an Art Deco style, reinforced concrete building. The **1000 Madison Block** is also across the street from another Landmark building, the Sorrento Hotel, which is located on the corner of Terry Avenue and Madison Street, next to the southwest corner of the proposed expansion block (see **Figure 1**). The approximately 76,500 sq. ft. 7-story building (built 1908/1909) is an exceptional example of Italianate design by Seattle architect Harlan Thomas.

Proposed Action

Under the ***Proposed Action***, the Baroness Hotel would be retained and new development would be constructed within the**1000 Madison Block**, to the south and east of the Landmark building. New development would also be constructed across the street (to the north), on the site of the Inn at Virginia Mason and the hospital core. Within the **1000 Madison Block**, a new 240 ft. tall building is proposed. This development would maintain a 25 ft. setback from the east façade of the Baroness Hotel, and a 40 ft. setback from the south façade of this building on portions of the structure up to 45 ft. in height. Additional setbacks would be provided above 45 ft. of 25 feet facing the east side of the Baroness Hotel and 50 ft. facing the south side of the Baroness Hotel. A new 240 ft. tall building would be constructed across the street, on the north side of Spring Street. This development would maintain 10 ft. street level and 10 ft. upper level (above 45 ft.) setbacks from Spring Street facing the Baroness Hotel. All proposed setbacks exceed the setbacks required by the underlying zoning code. **Figure 2** shows proposed building heights and setbacks under the ***Proposed Action***.

In relation to the Sorrento Hotel, the new development on the **1000 Madison Block** would maintain 10 ft. street level setbacks on Terry Avenue to a height of 45 ft., and would provide 20 ft. setbacks on portions of the structure above 45 ft.

In order to illustrate the impact of new development under the ***Proposed Action*** relative to the Baroness Hotel and the Sorrento Hotel, viewshed simulations are provided from surrounding streets. **Figure 3** is map showing the location of viewpoints described below.

[1] The planned and potential applies only to the ***Proposed Action***; development associated with ***Alternative 5a*** would be potential development.

Source: NBBJ, 2011

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Figure 1
Existing Campus and Historic Landmark Buildings

Proposed Action

Alternative 5a

Source: SRG, 2012

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Figure 2
Proposed Building Heights

Source: SRG, 2012

Figure 3

Viewpoint Location Map

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Viewpoint 3 – From Spring and Terry Avenue Looking Southeast (**Figure 4**)

The current view from this location is of the Spring Street and Terry Avenue intersection in the foreground – with the Baroness Hotel in the center. The Chasselton Court Apartments can be seen in the background, behind the Baroness. To the north (left), the Inn at Virginia Mason is visible on the existing VMMC campus.

Under the ***Proposed Action***, the view of the redeveloped site would feature a new 240 ft. tall VMMC building to the south and east of the existing Baroness Hotel (on the **1000 Madison Block**). The height and scale of the new building would be greater than the existing low-rise development, which currently borders the Baroness Hotel. In addition, the development footprint on the block would be greater than under existing conditions. The overall visual character of this viewpoint would change to a more urban development with a larger, taller building visible behind the Baroness Hotel. New, taller development with greater bulk would also be visible across the street, to the north (left), in the place of the existing Inn at Virginia Mason building.

Viewpoint 7 – From Spring Street Looking West (**Figure 5**)

The current view from this location is of the Spring Street corridor with the existing Floyd & Delores Jones Pavilion in the foreground (to the right) and the Chasselton Court Apartments in the foreground (to the left). Portions of the Baroness Hotel are visible in the background, behind the Chasselton building.

Under the ***Proposed Action***, the redeveloped view of site would feature new, taller buildings on the site of the Chasselton Court Apartments (left) and behind the Floyd & Delores Jones Pavilion. The Baroness Hotel would continue to be partially visible in the background behind the new building on the **1000 Madison Block**, although the upper portion of the building would be partially obscured by a new skybridge. The overall visual character of this viewpoint would change to a more urban development with larger, taller buildings visible surrounding the Baroness Hotel. The buildings would further vertically define the Spring Street corridor as compared to existing conditions.

Viewpoint 4 from Madison Street and Terry Avenue Looking Northeast (**Figure 6**)

The current view from this location is of the Madison Street and Terry Avenue intersection in the foreground with the existing 1-story retail buildings on the **1000 Madison Block** in the mid-field view. Portions of the Baroness Hotel are visible in the background, behind the 1-story retail buildings. Portions of the Sorrento Hotel are visible to the west (left). Existing VMMC campus development is visible in the background.

Under the ***Proposed Action***, the redeveloped view of the site would feature the new, 240 ft. tall building on the site of the 1-story retail buildings. As shown inthe figure, this building would be modulated and would contain upper level setbacks. While portions of the Baroness Hotel would be obscured by the new taller development on the **1000 Madison Block**, the majority of the view of this Landmark building would be preserved from this location. New, taller development would also be visible behind the Baroness Hotel.

Existing Conditions

Proposed Action

Alternative 5a

Source: SRG, 2012

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Figure 4
Viewpoint 3—Spring and Terry, SW corner looking East

Existing Conditions

Proposed Action

Alternative 5a

Source: SRG, 2012

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Figure 5
Viewpoint 7— Spring & Boren, looking West

Existing Conditions

Proposed Action

Alternative 5a

Source: SRG, 2012

EA | BLUMEN

Figure 6
Viewpoint 4—Madison & Terry, SW Corner looking North

The new development on the **1000 Madison Block** and the existing VMMC campus would also be visible in relation to the Sorrento Hotel. As shown, the proposed buildings would be greater in height, bulk and scale as compared to existing development. However, the Sorrento Hotel is separated from the **1000 Madison Block** by the Terry Avenue street corridor, which is 66 ft. wide. This separation, along with 10 ft. street level and 10 ft. upper level setbacks for the new building on the **1000 Madison Block**, would help to provide a visual transition between the new, taller development and the historic hotel.

Summary

Overall, as shown by the **Figures 4** through **6**, new VMMC development on the existing campus and the **1000 Madison Block** would be of a greater height, bulk and scale as compared to existing development. However, with the use of setbacks and adherence to design guidelines to ensure that new development is architecturally compatible with adjacent Landmark buildings, no significant impacts would be anticipated. For example, the current draft guidelines emphasize shaping new buildings to respond to their context and respecting historic buildings. In particular, the guidelines emphasize reflecting the character of the Sorrento Hotel and the Baroness Hotel with the use of similar materials, similar window patterns and proportions, articulated building details and/or similar building proportions or modulation. Proposed structures adjacent to the Baroness Hotel and across the street from the Sorrento Hotel will require a Certificate of Approval and be reviewed by the Department of Neighborhoods.

Alternative 5a

Under ***Alternative 5a***, the MIO boundary would not be expanded to include the **1000 Madison Block**, and no VMMC-related development would occur within the same block as the Baroness Hotel building, or across the street from the Sorrento Hotel. However, new campus development *would* occur within the existing MIO boundary, which is across the street from the Baroness Hotel (on the north side of Spring Street). At this location, a new 300 ft. tall building would be constructed (on the site of the Inn at Virginia Mason and hospital core). This development would comply with setbacks required by the underlying zoning and/or *MIMP*, and would maintain an average setback of 7 ft. from the property line, and a minimum setback of 5 ft. for portions of the building 45 ft. or less in height. A minimum 10 ft. setback for portions of the building above 45 ft. in height would also be provided. The Baroness Hotel is separated from the existing VMMC campus by Spring Street, which is 66 ft. wide. This separation, along with previously mentioned setbacks for new buildings on the central hospital block, would help to provide a visual transition between the new, taller development and the historic hotel. Additionally, proposed structures across the street from the Baroness Hotel will require a Certificate of Approval and be reviewed by the Department of Neighborhoods.

Viewpoint 3 – From Spring and Terry Avenue Looking Southeast (**Figure 4**)

Under ***Alternative 5a***, existing, low-rise development bordering the Baroness Hotel to the south and east within the same block would remain -- although based on existing zoning, new development could be built to a height of 300 ft. on the north half of the block and 160 ft. on the south half of the block. New, taller development with greater bulk would be visible across the street, to the north (left), at the site of the existing Inn at Virginia Mason building. From this viewpoint, new development would appear identical to the ***Proposed Action***; however, although not visible in the photo-simulation, the new building would be 300 ft. tall under ***Alternative 5a*** as compared to 240 ft. tall under the ***Proposed Action***. The overall visual character of this viewpoint would change to a more urban development with a larger, taller

building visible across the street from the Baroness Hotel. The new building would further vertically define the Spring Street corridor as compared to existing conditions.

Viewpoint 7 – From Spring Street Looking West (**Figure 5**)

Under ***Alternative 5a***, the existing, low-rise Chasselton Court Apartments would continue to be visible in the foreground, in front of the Baroness Hotel, while a new, taller building would be visible behind the Floyd & Delores Jones Pavilion (to the right). The overall visual character of this viewpoint would change to a more urban development with a larger, taller building further vertically defining the Spring Street corridor as compared to existing conditions.

Viewpoint 4 from Madison Street and Terry Avenue Looking Northeast (**Figure 6**)

Under ***Alternative 5a***, the existing, low-rise retail buildings on the **1000 Madison Block** would continue to be visible in the foreground, and portions of the Baroness Hotel would be visible behind these buildings. New, taller development would also be visible behind the Baroness Hotel on the existing VMMC campus.

Summary

Overall, as shown by the **Figures 4** through **6**, new VMMC development on the existing campus would be of a greater height, bulk and scale as compared to existing development. However, with the use of setbacks that comply with the underlying zoning and building modulation to lessen the perceived bulk of new buildings, no significant impacts would be anticipated. In addition, the Spring Street corridor would provide a buffer between new VMMC campus development and the off-site Baroness Hotel. Any newly proposed structures adjacent to the Baroness Hotel and across the street from the Sorrento Hotel will also require a Certificate of Approval and be reviewed by the Department of Neighborhoods.