FINAL

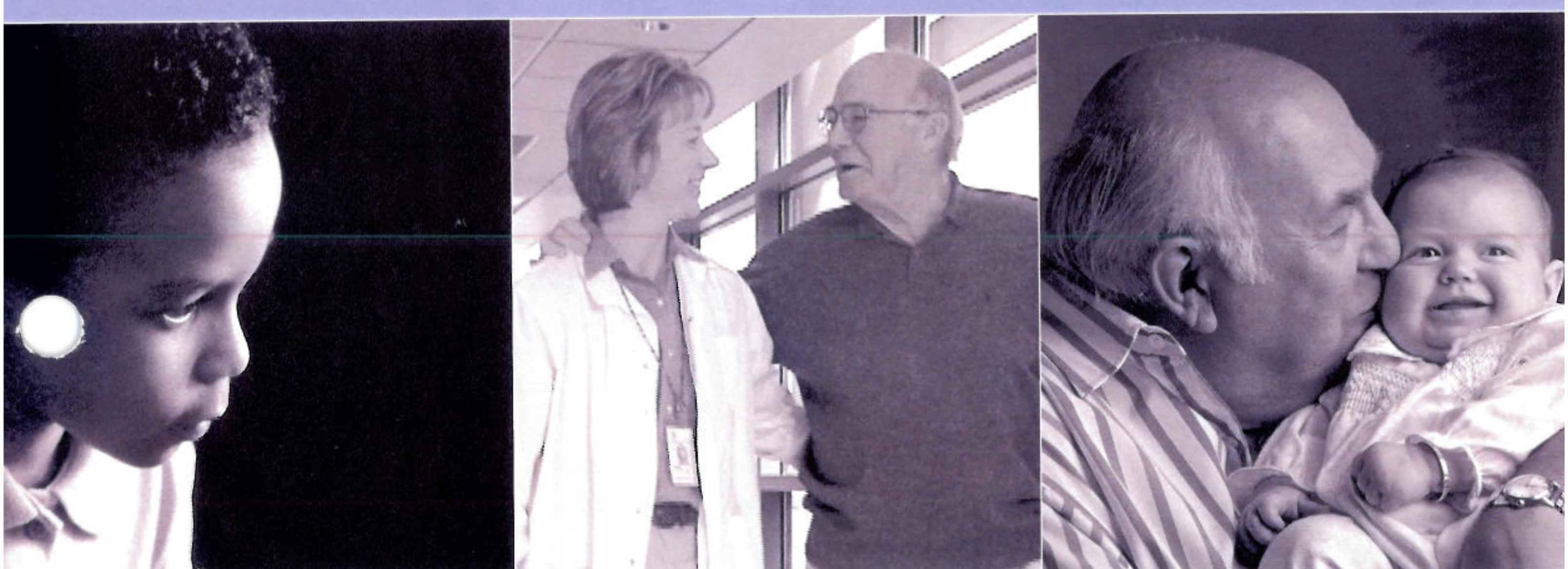
ENVIRONMENTAL IMPACT STATEMENT

14 MARCH 2005

SWEDISH MEDICAL CENTER

FIRST HILL CAMPUS

City of Seattle
Department of Planning
and Development



SWEDISH MEDICAL CENTER
FIRST HILL CAMPUS

FINAL

ENVIRONMENTAL IMPACT STATEMENT
(FINAL EIS)

FOR THE MAJOR INSTITUTION MASTER PLAN
14 MARCH 2005

Prepared consistent with City of Seattle SMC Chapter 23.69, and 23.12.120, 23.54.016 and 23.05

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Transmittal Letter

March 14, 2005

To Whom It May Concern:

The City of Seattle is the Lead Agency responsible for environmental compliance with provisions of the State Environmental Policy Act (SEPA) associated with this project. The Director of the Department of Planning and Development (DPD) is the SEPA Responsible Official. DPD has directed the areas of research and analysis that were undertaken for the EIS and DPD has determined that the document has been prepared in a responsible manner using appropriate methodology. This Final EIS has been prepared in compliance with the State Environmental Policy Act of 1971 (Chapter 43.21C, RCW) the SEPA Rules as amended ((Chapter 197-11, WAC), and rules adopted by the City of Seattle implementing SEPA (Ordinance 114057, as amended, and SMC Chapter 25.05).

The purpose of this Final EIS is to identify and analyze impacts raised by agencies, organizations and individuals relative to the proposed Swedish First Hill campus master plan. The elements discussed are based on public scoping. This Final EIS is intended to be read in conjunction with the separate Final MIMP document.

Copies of this Final EIS and Final MIMP have been distributed to all noted in the Distribution List (see Appendix). Copies are also available for review at the Department of Planning and Development, Suite 2000, Key Tower, 700 Fifth Avenue, Seattle WA. and at the Seattle Public Library–Main Branch, 1000 4th Avenue, Seattle, WA. A limited number of copies are available at DPD at no charge and after the supply is exhausted, copies may be purchased for the cost of reproduction. The Draft EIS review and comment period was held from November 15, 2004 to December 20, 2004. A public hearing to comment on the Draft EIS and Draft MIMP was held on December 15, 2004 at 5:30pm at Key Tower, Room 2240, 700 5th Avenue, Seattle, WA.

DPD collected and responds to relevant comments in this Final EIS. Additional information and analysis is provided. Changes have been made to both the Final EIS and Final MIMP. DPD will then issue recommendations to the Seattle Hearing Examiner. The Citizen Advisory Committee (CAC) will also make recommendations to the Hearing Examiner. The Hearing Examiner will issue a report and forward findings and recommendations to the City Council for final action.

If you have any questions or concerns or would like further information about this Final EIS or Final MIMP, please contact me.

Michael Jenkins
Senior Land Use Planner
City of Seattle Department of Planning and Development
(206) 615-1331
michael.jenkins@seattle.gov

Preface

This Final Environmental Impact Statement (Final EIS) accompanies the Final Major Institution Master Plan (Final MIMP) for the Swedish Medical Center First Hill campus. The purpose of the Final EIS is to identify and evaluate potential significant adverse impacts that could result from the Proposed Action and alternatives and to identify appropriate mitigation measures. The analyzed environmental elements are based on a public scoping process conducted in May 2004 that included a public scoping meeting on May 26, 2004 as well as input from the Swedish Citizen Advisory Committee (CAC). Comments were also received in response to the circulation of the Draft MIMP and Draft EIS and from a public hearing. All comments were considered by the Department of Planning and Development (DPD), the Lead Agency that directed the research and analysis. Specific responses to comments received are included in this document.

For purposes of impact analysis, Planned Projects are assumed to occur over 15 years from the date of master plan approval. Potential Projects would occur after 15 years.

The Final EIS is organized as follows: Chapter 1 provides a summary overview of the Proposed Action and alternatives, potential impacts and mitigating measures; Chapter 2 provides a description of the proposed master plan projects and the alternatives; Chapter 3 provides an impact analysis for each element of the environment identified in the EIS scoping. The elements of the environment studied include long-term, short-term and cumulative impacts. Long-term impacts analyzed are: Earth (seismic), Air Quality/Wind, Water, Energy, Noise and Hazardous Materials, Land Use, Plans/Policies/Regulations, Population and Employment, Housing, Light/Glare/Shadows, Height/Bulk/Scale and Views, Historic and Cultural Preservation, Transportation and Parking, Public Services and Utilities. Short-term impacts related to construction that may be of long duration are: Earth, Air, and Environmental Health and Noise, Transportation and Parking and Public Services and Utilities. Cumulative impacts consider other potential development and collective impacts from nearby major institutions. Chapter 4 provides copies of all written comments and public hearing testimony and specific responses to the comments. Chapter 5 provides technical appendices. The detailed Historical Resources Assessment is included in this document as Appendix 7.

The Draft MIMP and Draft EIS were distributed by the Lead Agency per the distribution list included in the Appendix and were available for public review. A public hearing was held. Comments, concerns, and questions were received by the Lead Agency until 5:00 pm, December 20, 2004. The Lead Agency considered all input in the preparation of Final MIMP and Final EIS that are now being issued on March 14, 2005. Reports by the DPD Director and CAC will then be considered by the Hearing Examiner. Recommendations will be provided to the Seattle City Council for final action.

Fact Sheet

Project Title	Swedish Medical Center First Hill Campus Major Institution Master Plan (MIMP)
Nature and Location of Proposal	The Proposed Action is preparation, adoption and implementation of a re-newed major institution master plan for Swedish Medical Center First Hill campus. (Swedish MIMP). Proposed Planned Projects would add approximately 950,000 net new square feet of chargeable buildings (About 1.47 million SF new construction less demolition of about 520,000 SF existing) plus parking of about 1400-1500 net new spaces. Proposed Potential Projects would add about 270,000 net new square feet of chargeable building area (305,000 SF new construction less demolition of about 35,000 SF existing). Potential parking adds about 50 to 100 net new spaces. Existing building renovations are also proposed. The master plan maintains the current number of 697 licensed beds. Currently there are 566 set-up beds. No master plan term is proposed. One alley is proposed to be vacated. One tunnel and three skybridge permits will be sought. Alternatives evaluated include 1) Changes to Planned and Potential Projects, 2) No Alley Vacation, and 3) No Action. The address of Swedish Medical Center is: 747 Broadway, Seattle WA. 98114
Proponent	Swedish Health Services Darren V. Redick, Vice President
Lead Agency	City of Seattle Department of Planning and Development (DPD)

DPD Project Number	2400078
Responsible Official	Diane Sugimura, Director City of Seattle Department of Planning and Development
Date of Implementation	Seattle City Council MIMP decision late 2005 and subsequent project implementation.
Contact Person	Michael Jenkins, Senior Land Use Planner City of Seattle Department of Planning and Development 700 Fifth Avenue, Suite 2000 P.O. Box 34019 Seattle, WA. 98124-4019 (206) 615-1331 michael.jenkins@seattle.gov
Required Approvals	City of Seattle City Council MIMP approval (rezone) City Council approval of public right-of-way vacation (alley) Design Commission approvals Skybridge and tunnel permits Hearing Examiner recommendations DPD Director recommendations CAC recommendations DPD Master Use Permits (MUP's) DPD Administrative Conditional Use Permits (ACU's) DPD Demolition Permits DPD Construction Permits (shoring, building, mechanical, electrical, sewer, etc.) DPD Occupancy Permits SDOT approvals (street use/improvements, drainage control, plumbing, etc.) State of Washington Elevator permits Hazardous materials permits King County Health Department permits *And all other permits and approvals necessary to construct and occupy the proposed projects that may be identified during project review*

EIS Authors and Principal Contributors	NBBJ: lead consultant, project management, environmental analysis The TRANSPO Group: traffic and parking analysis Michael Yantis Associates: Acoustics Lund & Everton: Seismic Larry Humphreys: Utilities/energy BOLA Architects: Historical resources RWDI: Wind
Location of Background Data	City of Seattle Department of Planning and Development 700 Fifth Avenue, Suite 2000 P.O. Box 34019 Seattle, WA. 98124-4019 (Michael Jenkins) NBBJ 111 S. Jackson Street Seattle, WA. 98104 (Vincent Vergel de Dios)
Draft EIS Issuance Date	November 15, 2004
Date Comments Due	December 20, 2004 The Draft EIS was issued for a 30+day public review. Written comments were sent to the Lead Agency Contact Person and oral comments were made at the public hearing.
Public Hearing	December 15, 2004, 5:30pm Key Tower 700 5th Avenue, Room 2240 Seattle, WA
Final EIS Issuance Date	March 14, 2005
Nature and Date of Final Action	Approval of major institution master plan by City Council is estimated in late 2005.
Cost of Draft EIS	Copies of this Final EIS and accompanying Final MIMP have been distributed to agencies, organizations and citizens identified in the Distribution List (see Appendix). Copies are available for review at the Seattle Public Library main branch. A limited number of copies are available from the DPD Contact Person at no charge. After the supply is exhausted, copies are available for the cost of reproduction.

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1. Summary

Introduction/Background

The current Swedish First Hill campus master plan was adopted by Ordinance 111993 in November 1984, with subsequent amendments. Most contemplated development has been completed. Swedish initiated the new master planning process with a Notice of Intent in December 2003 and submitted the concept plan application to the City in March 2004. A Citizen Advisory Committee (CAC) was formed guided by the Department of Neighborhoods (DON). The Department of Planning and Development (DPD) determined that the proposal may have significant adverse impacts and conducted the environmental scoping process. The Draft Major Institution Master Plan (Draft MIMP) and the accompanying Draft Environmental Impact Statement (Draft EIS) were issued in November 2004. The current milestone is the issuance of the Final MIMP and the Final EIS.

Proposed Action Sponsor, Objectives, Proposal

Swedish Health Services is the proponent of the proposed Major Institution Master Plan (MIMP) for its Swedish Medical Center First Hill campus. The City of Seattle Department of Planning and Development (DPD) is the Lead Agency for environmental review. The address of the proposal is: 747 Broadway, Seattle, WA. 98114 and the DPD Project Number is: 2400078.

The mission of Swedish Medical Center is to improve the health and well-being of each person served. In order to continue to provide the highest quality and most comprehensive care to the community, Swedish must replace facilities included in the new MIMP. Swedish seeks to satisfy building and programmatic needs, to strengthen its patient centered organization and to create community-campus linkages. Swedish is re-newing the First Hill campus vision to accomplish development over the next 15 years and beyond. Development objectives are: to reinforce the Swedish brand; to replace aging facilities; to direct facility development that is highly accessible with optimum function, efficiency and flexibility; to mitigate impacts and achieve compatibility with the neighborhood.

The proposed master plan includes six Planned Projects that would add approximately 950,000 SF net new construction of chargeable building area (about 1.47 million SF new construction less demolition of about 520,000 SF existing). Net new parking amounts to approximately 1400 to 1500 spaces.

Three proposed Potential Projects would add approximately 270,000 SF net new construction of chargeable building area (305,000 SF new construction less demolition of about 35,000 SF existing). Net new parking adds approximately 50 to 100 spaces.

Other building renovations are included. The master plan maintains the current number of 697 licensed beds. No master plan term is proposed. One alley is proposed to be vacated and three skybridge and one tunnel permit are sought.

Features of Alternatives

In addition to the proposed master plan, three alternatives are evaluated in the EIS; 1) Changes to the Planned and Potential Projects, 2) No Alley Vacation, and 3) No Action. The proposed master plan projects seek to maximize allowable building envelopes but there is the possibility of project changes such as use location, building form, heights, implementation phasing and project site density. Alternative 1 provides for these changes to allow flexibility. Alternative 2 is required by the City and would eliminate the vacation of the alley between Columbia and Cherry on the block between Boren and Minor. Alternative 3 (No Action) is also required for a baseline comparison of impacts, and is a continuation of existing conditions.

A summary comparison of impacts of the Proposed Action and alternatives is given in Table 1.1. This basic comparison is generalized for brevity and the individual sections of the EIS should be reviewed for further explanation.

Long-Term Impacts

There would be impacts to the natural environment, including Earth (geology/seismic, soils and topography/excavation), Air (quality, odor, wind), Water (surface movement, quantity, quality and runoff), and Energy and Natural Resources (amount required, use, source, availability, nonrenewable resources, conservation). There would be impacts to the built environment including Environmental Health (noise, risk of explosion, hazards-asbestos and medical wastes), Land Use, Relationship to Plans and Policies, Population and Housing, Light, Glare, and Shadows, Aesthetics (height-bulk-scale and views), Recreation, Historic and Cultural Preservation, Transportation (systems, vehicular and pedestrian traffic, parking, movement of people and goods, traffic hazards), and Public Services and Utilities (fire, police, security, parks, communication, water, storm water, sewer, solid waste, other utilities).

Short-Term Construction Related Impacts

Impacts to earth (demolition and excavation), air quality, environmental health/noise and vibration, transportation and parking, and public services and utilities would occur. Timing and duration could be extended across multiple projects.

Cumulative Impacts

Cumulative impacts would occur from other First Hill major institutions (Harborview, Virginia Mason and Seattle University) and from other public and private development. In addition to land use impacts, there would be cumulative transportation and parking, air quality, energy, population and housing, and public services and utilities impacts.

Commitment of Resources

Approval and implementation of the master plan and all alternatives except No Action would commit properties to the proposed uses precluding other development. Since the Proposed Action is largely replacement of existing uses and does not significantly change the uses, the irreversible commitment has already been made. Increased consumption of natural resources and energy and increased populations would occur.

TABLE 1.1

Summary Comparison of Impacts

Long-Term Impacts	No Action	Proposed Action	Changes to Planned & Potential Projects	No Alley Vacation
Earth	Continued Seismic Risk	Reduced Seismic Risk	Varies Depending Upon Building	Same as Proposed Action
Air	No Change	Insignificant Changes to Wind Comfort and Air Quality/Odor	Similar to Proposed Action	Same as Proposed Action
Water	No Change	Increased Water Demand and Consumption	Same as Proposed Action	Same as Proposed Action
Energy	No Change	Increased Electrical Consumption 258,490 MM BTU (Planned) and 37,200 MM BTU (Potential)	Same as Proposed Action	Same as Proposed Action
Natural Resources	No Change	Renewable and Non-renewable Resource Commitments	Same as Proposed Action	Same as Proposed Action
Environmental Health/Noise	No Change. No Asbestos Remediation	No Significant Impact to Hazardous Waste and Asbestos. Increased Noise	Same Proposed Action	Same as Proposed Action
Land Use/Plans	No Change	Intensified Institutional Use Generally Consistant with Plans and Policies Rezone/ACUP Requested	Same as Proposed Action	Same as Proposed Action Consistent with Vacation Policies
Pop./Employment	No Change	Increased Swedish Populations	Same as Prop'd. Act'n.	Same as Prop'd. Act'n.
Housing	No Change	Insignificant Impact	Same as Prop'd. Act'n.	Same as Prop'd. Act'n.
Light Glare Shadows	No Change	No Shadows to Public Parks, Increased Street Shadows, More Sidewalk Lighting, Insignificant Glare Impacts	Similar to Proposed Action, Different Patterns	Same as Proposed Action
Aesthetics	No Change	Increased Campus Height/Bulk/Scale, Streetscape and View Changes	Similar to Proposed Action, Different Building Volumes	Similar to Proposed Action, Two Half-Block Physical Plant Volume
Historic Preservation	No Change	No Designated Landmarks	Same as Proposed Action	Same as Proposed Action
Transportation	No Change	Planned Projects would gen. 3,900 trips/day, incl. 226 in the AM pk. hr. & 353 in the PM pk. hr. Potential Projects would gen. an add'l 3,100 trips/day, incl. 214 in the AM pk. hr. & 317 in the PM pk. hr.	Similar to Proposed Action. Local Circul. Patterns May Change Depending on Specific Project Locations	Same as Proposed Action
Parking	No Change	Parking demand would incr. from exist. 3,300 to 4,300 spaces w/the Planned & 4,660 spaces w/the Potential Projects. Proposed parking supplies of 5,146 spaces (Planned) & 5,180 (Potential) would accommodate increased demand.	Same as Proposed Action	Same as Proposed Action
Public Services	No Change	Increased Police, Fire, Recreational Service Demands	Same as Proposed Action	Same as Proposed Action
Utilities	No Change	Increased Water, Sewer, Drainage, Power Demands and Consumption; Capacity Impacts	Same as Proposed Action	Less Utilities Impact
Short-Term Construction Related Impacts	None	Earth, Air, Noise, Emissions Traffic, Utility Impacts	Impacts May Shift Campus Location, Different Duration	Less Utilities Impacts
Cumulative Impacts	No Change	Contribution to Growth Impacts (Density, Traffic, Air Quality, Service Demands) but Insignificant	Same as Proposed Action	Same as Proposed Action

Mitigating Measures

The mitigating measures are necessarily lengthy and specific. Rather than repeating all, the mitigating measure discussion is referenced to each element of the environment.

Master Plan

The primary question is should a new major institution master plan for the Swedish First Hill campus be approved, and if so, with what conditions? The mostly replacement and functional upgrade projects would result in a total net increase of about 1.2 million SF of development and add about 1500 parking spaces over the next decade and beyond. The campus boundary remains the same as exists, defined by Boren-Madison-Broadway-James. In order to make decisions and reach major conclusions, there are a number of potential issues to consider, highlighted in the following:

Rezone/Height Changes

Height changes are proposed for two city blocks within the established Swedish Major Institution Overlay (MIO) District.

- The block bounded by Boren-Marion-Minor-Columbia has two existing institutional heights; MIO-90 on the west half and MIO-240 on the east half. Underlying zoning is NC3-160. Swedish proposes a height change to MIO-160 to match the underlying zoning allowable height. Swedish does not own the block but does identify possible future uses.

- The block bounded by Minor-Cherry-Broadway-James is designated MIO-70 and the underlying zoning is NC3-85. Swedish proposes a height change to MIO-105. Swedish owns the block and proposes re-development.

Alley Vacation

The alley on the block bounded by Boren-Columbia-Minor-Cherry is proposed to be vacated for a Swedish physical plant/materials management facility. Local service access circulation and building form would be impacted. No major utilities are located in the alley. Swedish owns the full block. Impacts must be mitigated and long-term public benefits must be provided.

Skybridges/Tunnels

Two new skybridges, one across Minor and one across Cherry plus the relocation of an existing skybridge, across Marion, are proposed. All are intended for hospital patient transport. One new tunnel below Minor is proposed to link the new physical plant/materials management facility with the hospital. Visual and utility impacts would occur and must be mitigated. Permits are requested rather than aerial or below-grade vacations, as has been the case for all other existing Swedish tunnels and skybridges.

Impact Significance and Mitigation

The significance of identified environmental impacts of the master plan projects and the adequacy of mitigation measures must be considered, particularly for:

- Traffic and Parking (Are the proposed mitigation measures and Transportation Management Program adequate?)
- Height/Bulk/Scale (Are the proposed Development Standards appropriate?)
- Development Intensity/Land Use/Cumulative Impacts (Is the proposed Development Program consistent with City plans/policies?)
- Infrastructure/Energy/Public Services (Are utility capacities and services sufficient to meet demands?)
- Short-Term Impacts (How can temporary noise, traffic, drainage, air quality, and public safety impacts be minimized?)

Significant Unavoidable Adverse and Cumulative Impacts

No significant unavoidable adverse impacts are expected with adequate impact mitigation. However, impacts from the Proposed Action and alternatives would occur and include the following:

Land Use Patterns

Medical institutional building uses and density increases would limit other commercial or residential development within the MIO District boundaries.

Relationships with Plans/Policies

The proposed action is generally consistent with relevant goals, plans and policies. Consistency with street/alley vacation policies and the sufficiency of proposed public benefits must be determined.

Height/Bulk/Scale

The massing of development will make street conditions more urban. The topographic and campus edge arterials are transitions that aide compatibility.

Transportation

Transportation impacts occur at the intersection of James Street and 7th Avenue.

Short-Term Impacts

Construction disruption to traffic, parking, noise, dust, and other emissions may be extended with multiple demolition, site preparation, and construction activities. Demolition and excavation will generate truck traffic and disposal needs.

Other Environmental Issues

Light/Glare/Shadows along local street corridors may increase.

Noise from equipment and operations may increase, but compliance with the City's noise ordinance will be required.

Energy consumption will increase but conservation measures are proposed.

Utilities/Services demands will be increased, and system capacity will be impacted.

Cumulative Impacts from major institutional development plus other public and private projects could affect air quality, traffic, energy, populations and housing and public services/utilities, but mitigation measures are proposed.

2. Project Description and Alternatives

Location

Swedish is located within the urban, medium density First Hill Neighborhood of Seattle's city center with a mixture of residential, retail/commercial, and institutional activities. The location is adjacent to the downtown Seattle core and is an employment and residential center (designated as the First Hill/Capitol Hill Urban Center in the Seattle Comprehensive Plan). The neighborhood is the home of four of Seattle's major institutions; Virginia Mason Medical Center, Seattle University, and Harborview Medical Center. All are located within a 2-block radius from Swedish Medical Center.

Swedish is located at the crest of First Hill which slopes down to the west to downtown, down to the east to the Madison valley and down to the north to the Broadway/Capitol Hill district. The interstate freeway (I-5) provides direct access via James Street and Madison Street to Swedish and also separates First Hill from downtown. Boren Avenue and Broadway are arterials bordering Swedish that provide north-south access.

Figure 2.1 is an aerial photo of First Hill identifying the Swedish campus, and Figure 2.2 is a vicinity map.

Note: A more detailed description of the proposed project and alternatives is given in the separate document, the Final Major Institution Master Plan (Final MIMP). The proposed development program, development standards and transportation management program are included.

FIGURE 2.1
Aerial Photo

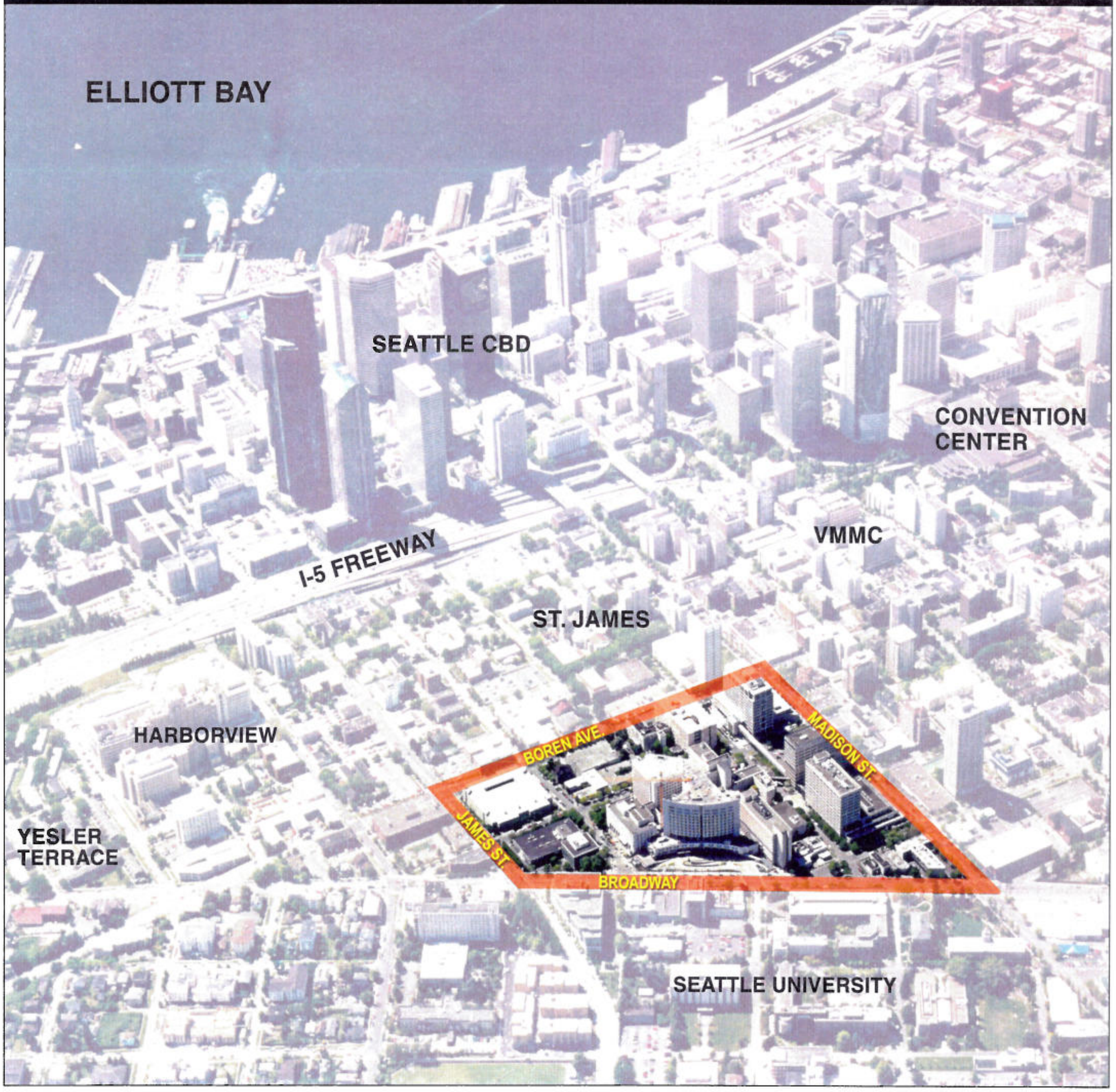
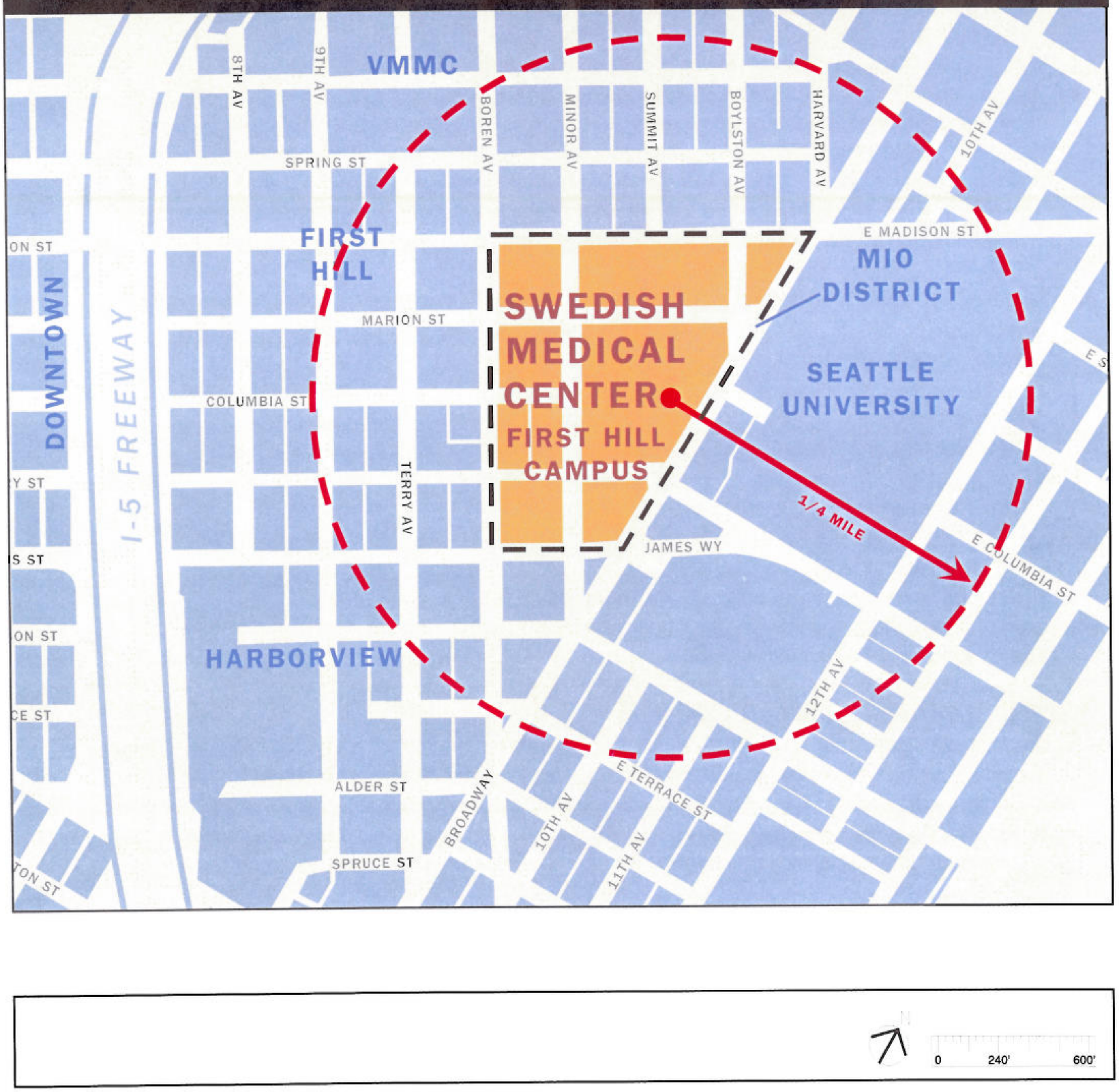


FIGURE 2.2

Vicinity Map



Proponent Objectives

The mission of Swedish Medical Center is to improve the health and well being of each person served. In order to continue to provide the highest quality and most comprehensive care to the community, Swedish must replace facilities identified in the proposed new MIMP. The purpose of the MIMP and EIS is to secure City of Seattle regulatory entitlements with appropriate conditions and community support to permit the phased improvements. Swedish seeks to fulfill its mission at the First Hill campus in coordination with other service locations. Development flexibility, process efficiency, and neighborhood compatibility are all fundamental.

Swedish objectives include four aspects: Building Needs, Programmatic Needs, Patient Centered Campus Organization, and Community-Campus Linkages. (Further details are included in the MIMP volume).

Building Needs

An assessment of the existing medical center at the First Hill Campus reveals a number of buildings that are nearing the end of their useful life with structural, mechanical and functional limitations, and increasing obsolescence.

Programmatic Needs

Current facilities need to be replaced by new buildings capable of accommodating contemporary and future medical services. The facilities must be efficient and extremely flexible to meet changing community healthcare needs.

Patient-Centered Campus Organization

Swedish Medical Center, First Hill Campus, is generally organized into zones in which one type of function (such as medical office buildings, acute-care hospital facilities, service or support, and parking) predominates. The benefits of further consolidating like or related functions in close proximity to one another would improve quality of care, patient safety, optimum function and high accessibility, and clarity of way-finding.

Community-Campus Linkages

Beyond providing state-of-the-art facilities and technologies to ensure high-quality care, Swedish strives to create a physical environment that connects with the community. Through the proposed new MIMP, Swedish will provide a place that is welcoming and appealing to patients, employees, and other community partners. Swedish seeks to mitigate growth impacts and achieve compatibility with the First Hill neighborhood and downtown urban center.

Proposed Action

The Proposed Action is preparation, adoption and implementation of a re-newed major institution master plan for Swedish Medical Center First Hill campus (Swedish MIMP). Primary projects are hospital replacement.

Proposed Planned Projects would add approximately 950,000 net new square feet of chargeable buildings (About 1.47 million SF new construction less demolition of about 520,000 SF existing) plus parking of about 1400-1500 net new spaces. The projects maintain the current number of 697 licensed beds at the First Hill campus.

Potential Projects would add about 270,000 net new square feet of chargeable building area (305,000 SF new construction less demolition of about 35,000 SF existing). Potential parking adds about 50 to 100 net new spaces. There is no change to the total 697 licensed bed count.

The Planned and Potential Projects are depicted in Figure 2.3.

The square feet measurement is chargeable building area/functional space and does not include interstitial areas, mechanical space, below grade space, circulation corridors and parking. The customary City measurement technique is typically used for density calculations and results in greater total gross building areas.

Projects are proposed to fully utilize allowable building envelopes per the MIMP development standards, including maximum heights of the MIO districts, minimum setbacks, maximum coverage, etc. Impacts are evaluated under these conditions, although actual projects may be reduced.

No master plan term is established. The development program shall remain in effect until developed or until a new master plan is adopted or the master plan is amended. The master plan development standards and Transportation Management Program will remain in effect until amended.

One alley is proposed to be vacated. One tunnel and three skybridge permits are sought.

Interior renovations and shifting locations of existing uses are also proposed given phased development sequencing. However, these changes are not subject to MIMP approval.

FIGURE 2.3

Planned and Potential Projects

KEY TO FIGURE 2.3

- Planned Medical Office Projects
- Potential Medical Office Projects
- Planned Hospital Projects
- Potential Hospital Projects
- Planned Support Projects

Planned Projects

A. Medical Office Building

B. Hospital Replacement: Building B

C. Hospital Replacement: Building C

D. Hospital Replacement: Building D

E. Central Support Facility w/ Medical Office Tower

G. Hospital Replacement: Building G

Potential Projects

F. Medical Office Building

C-1. Hospital Replacement: Building C - Future Tower Addition

E-1. Central Support Facility w/Medical Office Tower and Research

Alternatives (Including No Action)

Three alternatives are evaluated along with the Proposed Action: 1) Changes to Planned and Potential Projects, 2) No Alley Vacation, and 3) No Action.

1) Changes to Planned and Potential Projects

The proposed master plan projects seek to maximize allowable development envelopes but there is the possibility the changes would be made to specific project uses, their location, building form, heights, development sequencing/timing and site specific density. Changes may include re-development of other portions of the hospital. Additional or different street or alley vacations and skybridges/tunnels may be proposed. Such change is expected in a master plan and flexibility to allow such change must be included in the MIMP. Any change to the Planned and Potential Projects is included in this alternative as long as the change is consistent with the development standards, within the total maximum building area of the development program and the project is located within the MIO boundary. The alternative shifts/re-configures proposed development within the MIO District.

The eventual replacement of somewhat newer core hospital facilities located in the South and Southwest Wings is included in this alternative. In addition the two blocks west of Minor, between Marion and Cherry, and the one block south of Cherry, between Broadway and Minor, would be developed with mixed uses including offices, research, clinics, support, parking and other related Swedish uses.

2) No Alley Vacation

The City requires this alternative for comparison with the proposed alley vacation. The proposed alley vacation would be eliminated in this alternative.

The alley on the block bounded by Boren-Minor-Columbia-Cherry would remain and the proposed central support building, parking and upper level medical office and research would have to be re-designed to function on two city half-blocks. Proposed off-street service functions (inside buildings) for loading docks, service, and materials transfer and storage may be relocated along streets and the alley in order to function. Below grade development would be separated on the two half-blocks. Upper level development would be oriented to fit on the two half blocks.

3) No Action

This alternative is required as a baseline for comparing impacts (WAC 197-11-440 5.b.ii and SMC 25.05.440.D.2.b). No new development would occur. The distribution and location of existing uses may change and involve renovations but no net increase in building area would occur. User populations may increase demand for services but facilities would not expand to accommodate the change.

3. Affected Environment, Analysis of Probable Significant Impacts, and Mitigating Measures

Long-Term Impacts

Earth (Seismic)

1) Affected Environment

The Swedish Medical Center campus, as with all of Puget Sound region, is in an area of high seismic risk. All modern structures are designed to resist the forces of major earthquakes for the safety of occupants. The design requirements are dictated by the building codes and are dependent on the size, type and uses of the building. The requirements for seismic design have changed significantly over the past 40 years. Much has been learned about building performance in recent earthquakes and the building codes have evolved to achieve better results. Most buildings built in the Puget Sound region in the last 25 years would perform adequately in a major earthquake. Buildings built before 1980 frequently lack the strength and ductility to withstand the earthquake intensity expected in this region without significant damage. The buildings at Swedish Medical Center that are slated to be demolished as part of the planned projects would need significant seismic rehabilitation if they are not replaced.

Design of structures for earthquake resistance is regulated by the building codes. The standards for building performance vary depending on the occupancy of the building. Current seismic design practices identify four levels of building performance described in the "NEHRP Guidelines for Seismic Rehabilitation of Buildings," published by the Federal Emergency Management Agency (FEMA 273). These are:

- **Operational Level:** Damage in a major earthquake would be very light. All important systems would be operational. Back-up power and utilities would be available. This level is used for essential facilities.

- **Immediate Occupancy Level:** Light non-structural damage is expected in a moderate to severe earthquake. Structural damage would not occur or be easily repairable.

- **Life Safety Level:** Moderate damage would be expected. Gravity load-bearing system would function but lateral system would need repairs. Utility systems may be damaged. Building may be beyond economical repair. This is the level of performance required by building codes for ordinary structures; that is structures other than those with higher risk occupancy such as hospitals, jails, schools and large assembly areas, and essential facilities.

- **Collapse Prevention Level:** Damage in a major earthquake would be severe. Large movements are expected with significant non-structural damage. Some exits may be blocked. Building is near collapse. This level is only allowed for existing building renovations and is sometimes used for mandatory seismic rehabilitation ordinances enacted by municipalities to mitigate the most severe life-safety hazards at a relatively low cost.

The highest level of performance, Operational Level, is required for emergency centers that are required for regional trauma centers. Swedish Medical Center is not part of the regional emergency response plan and is not required to be an essential facility. Although general hospital areas are not required to be designed to this level it will be used for any building housing surgery and emergency departments.

The next highest level, Immediate Occupancy, is for hospitals with more than 50 patients. This would be applicable to all of the core hospital spaces on the campus. The life-safety level of building performance is required for other buildings. Buildings built to this level may not be immediately occupied after an earthquake but new buildings would be repairable. Office buildings are designed to the life-safety level. The lowest level of collapse prevention is not applicable to hospital and medical office buildings.

Soils

The ability for a building to withstand earthquakes is dependent on the condition of the soils that support it as well as the structural system. The soils in the area of Swedish Medical Center are highly consolidated glacial tills. These soils provide good foundation bearing and have minimal problems with settlements. These soils are also not subject to the potential for liquefaction that occurs in an earthquake in some of the low-lying regions. The high consolidation of the soils are very stable in normal excavations and easy to shore for deeper excavations.

2) Impacts—Proposed Action and Alternatives

Proposed Action

The impacts of the Planned and Potential Projects at Swedish Medical Center relative to the structural conditions are discussed in this section. The ratings and descriptions of building conditions in this report are the professional opinions of Lund & Everton Structural Engineering. Lund & Everton has assisted Swedish for over eight years in facility assessments, earthquake risk evaluations and renovations. After the Nisqually Earthquake of February 28, 2001, Lund & Everton provided immediate assessment of all of Swedish's facilities for immediate occupancy and damage review. Later, a more thorough review of each building was made to discover damage and design repairs.

No detailed analysis has been made on the structures for this report. The opinions expressed here are based on type of structural system, building age as it relates to code requirements and construction standards, performance of the buildings in the recent earthquake, and Lund & Everton's knowledge of the renovations that occurred in each structure.

The following Table 3.1 summarizes the relative seismic risk of the existing facilities based on criteria from FEMA 273. The table shows also which buildings are expected to be demolished to make room for the planned projects. All of the structures slated to be removed will be replaced by facilities that are designed to current seismic standards.

TABLE 3.1

Earthquake Risk of Existing Buildings

Building	Vintage				Earthquake Risk Level			Slated to be Replaced?
	1920-1950	1950-1970	1970-1990	1990-2000	Does Not Meet Life-Safety	Life-Safety Level Level	Better Than Life-Safety Level	
Old East Wing	X				X			Yes
North/Northeast Wings	X				X			Yes
Old Tumor Institute	X				X			Yes
821 &900 Boylston Bldgs	X				X			Yes
West Wing		X			X			Yes
Surgery/Doctor's Garage		X			X			Yes
North D&T Wing		X			X			Yes
Heath Bldg		X			X			Yes
Alcoa Bldg		X				X		Yes
Annex Bldg		X			X			Yes
Invex & 1120 Cherry Bldgs		X			X			Yes
Arnold Medical Office Bldg			X		X*			
Nordstrom Garage			X			X		
Arnold Annex			X			X		
Southwest Wing			X			X		
South Wing			X			X		
Invex Garage			X		X			Yes
Minor & James Garage			X			X		
Charlotte Bldg			X			X		
1101 Madison Medical Office Tower				X		X		Yes
Swedish Cancer Institute				X			X	
Southeast Addition/ East Tower				X			X	
600 Broadway Office Bldg				X		X		

Source: Lund and Everton

*Arnold Medical Office Building was designed to the 1971 UBC and therefore does not meet current FEMA 273 standards for Life Safety Level. The building is expected to perform better than the Collapse Prevention Level. See Mitigating Measures.

Structures listed in the life-safety level category do not require seismic upgrade. No major renovations are planned in the structures listed in this category. The life safety level of performance means that occupants will be able to exit the building after a major earthquake but that damage in the building is expected. The damage in an older structure will likely be more than a new structure designed to this same level and may require extensive repairs that are not economically practical.

Impacts related to existing building demolition and soils excavation are discussed under Short-Term Construction-Related Impacts later in this section.

Changes to Planned and Potential Projects

Seismic and soils impacts would be similar to the impacts from the Proposed Action. Any shifts of development would meet the same seismic and engineering standards as the Proposed Action. The alternative may change the timing or sequencing of projects that could delay replacement of seismic risks. These impacts are not expected to be significant because they would eventually be mitigated.

No Alley Vacation

Seismic and soils impacts would be similar to the impacts from the Proposed Action.

No Action

No seismic and soils impacts would occur. However, existing structures with seismic deficiencies and earthquake risks would remain.

3) Mitigating Measures

Building owners are not required to bring older buildings up to current seismic standards unless there are substantial changes to the occupancy of the building or major renovations that extend the life of the structure. Swedish Medical Center, on a voluntary basis, is planning to demolish the higher seismic risk structures (those that do not currently meet life-safety level) and replace with state-of-the-art facilities designed to current Seattle Building Code standards.

The replacement of the older structures will enhance structural and seismic safety by the following improvements:

- Replacing higher seismic risk structures with buildings built to current standards.
- Replacing structures that can not support the weight of modern diagnostic equipment and file storage systems.
- Replacing structures that do not have efficient floor plans for modern patient services.
- Develop a central plant and utility service tunnel that will be designed to the highest seismic safety level (operational level) to reduce loss of services during an earthquake. Since utilities are vital to continuing service in many of the structures and emergency services they will be designed as an essential facility. This level of design criteria is more stringent than building

code requirements but for the reasons given above is thought to be an important improvement at minimal added construction costs.

- Older utility systems will be replaced with new services that are secured by better seismic bracing. This will reduce disruption to hospital services caused by breakage of piping. Reports from recent California earthquakes have shown that water damage alone has shut down and caused evacuation of major hospitals even in a moderate earthquake, at a time of great need.

4) Significant Unavoidable Adverse Impacts

There are no significant unavoidable adverse structural/seismic impacts from the Proposed Action.

Air Quality/Wind

1) Affected Environment

Air Quality

The national measure for the quality of air is the EPA's Air Quality Index (AQI). Visibility and six ambient air quality standards (particulate matter, carbon monoxide, sulfur dioxide, nitrogen dioxide, ozone, and lead) are established and monitored in Puget Sound by the Puget Sound Clean Air Agency (PSCAA). Particulate Matter (PM, 2.5 and 10 micrometers in diameter) are fine/coarse particles from combustion and are measured in Seattle's industrial areas. Carbon Monoxide (CO) largely results from fuel combustion in vehicles. Sulfur Dioxide (SO_2) is mainly produced from combustion of fossil fuels containing sulfur compounds and includes odors. Nitrogen Dioxide (NO_2) comes from high temperature fuel combustion sources (industrial furnaces and boilers) and is not considered a problem in Puget Sound. Ozone (O_3) forms in the lower atmosphere when hydrocarbons and nitrogen oxides chemically react in sunlight and high temperatures. Lead (Pb) was due to combustion of leaded gasoline and from a chemical lead smelter, both of which were stopped, so monitoring stopped in 1999. Visibility is explained in terms of visual range and light extinction with problems caused from extended suspension of particles in the air. The PSCAA and the Washington State Department of Ecology (Ecology) operate a monitoring network with the nearest to Swedish stations in downtown Seattle, Harbor Island, the Duwamish and Beacon Hill.

In Puget Sound, the number of 'good' air quality days dominates regionally. There were no violations of national ambient air quality standards (NAAQS) in 2003*. The Air Quality Index (AQI) was developed by the EPA and is commonly used as an indicator of air quality. In 2003, King County had 73% of days ranked as "good" with the AQI criteria. The City is undertaking a number of measures to improve air quality including Seattle City Light's long-term goal of meeting Seattle electricity needs with zero net release of greenhouse gas emissions**.

* 2003 Air Quality Data Summary, Puget Sound Clean Air Agency, September 2004. www.pscleanair.org/ds03/index.htm
** Monitoring Our Progress - Seattle's Comprehensive Plan, DPD, March 2003

In King County for 2003, the AQI ratings were 'good' 73% of the year; 'moderate' 26% of the year; and 'unhealthy for sensitive groups' 1% of the year. There were no 'unhealthy' ranked days. In 2003, there was one burn ban issued in February that prohibited burning in fireplaces and older, uncertified wood stoves. There was also one smog watch issued in July 2003 when meteorological conditions were conducive to high ozone levels.

Hospital and medical related uses are not specifically regulated by PSCAA. Sources of air pollution are regulated, such as refuse burning, spray-coating operations, fuel burning and dispensing. The size of the sources are also specified such as large condensers and brofilters with capacities greater than 200 cfm. Swedish physical plant improvements would likely exceed this threshold and would be subject to regulations.

The Seattle Land Use Code includes odor standards for commercial uses (23.47.020). Venting of odors must be at least 10 feet above sidewalks and directed away from residential uses located within 50 feet. Major odor sources include boilers (greater than 10^6 British Thermal Units per hour, 10,000 pounds steam per hour or 30 boiler horsepower).

Wind*

Pedestrian wind comfort can be categorized by three typical pedestrian activities:**

- **Sitting:** Low wind speeds during which one can read a newspaper without having it blown away. These wind speeds are appropriate for outdoor cafes and other amenity spaces that promote sitting. A bench located along a sidewalk would typically not be considered in this category.

- **Standing:** Wind speeds, slightly higher than the "sitting" condition, that are strong enough to rustle leaves. These wind speeds are appropriate at major building entrances, bus stops or other areas where people may want to linger but not necessarily sit for extended periods of time. Waiting for a short period of time at an intersection for a traffic signal to change would not be considered in this category.

- **Walking:** Winds, higher than the "standing" condition, that would lift leaves, move litter, hair and loose clothing. Appropriate for sidewalks, plazas, parks or playing fields where people are more likely to be active and receptive to some wind activity.

Wind conditions are considered suitable for sitting, standing or walking if the wind speeds are expected for at least 4 out of 5 days (80% of the time). An uncomfortable designation means that the criterion for walking is not satisfied. Safety is also considered by the criteria and is associated with excessive gust wind speeds that can adversely affect a pedestrian's balance and footing. If winds sufficient to affect a person's balance occur more than three times per year, the wind conditions are considered severe.

The existing wind conditions on the site are expected to be suitable for standing or walking, depending on the season and the location.

* Source: RWDI
** The criteria used for the analysis of the pedestrian wind comfort was developed at RWDI.

2) Impacts—Proposed Action and Alternatives

Proposed Action

Air Quality

The implementation of the Swedish master plan would generate additional air quality impacts from the new physical plant, facility operations and vehicular traffic. Some 1450 to 1600 additional parking spaces are proposed with increases in vehicular trips from patients, visitors, employees and others. Particulates and carbon monoxide pollutants would be generated. Emissions are expected to increase during peak periods when traffic volumes are greatest and when facility plant generation loads are highest (peak cooling in summer). Impacts are not expected to be significant and would not affect the attainment of air quality standards. In addition, measures will be taken to reduce diesel exhaust in the area of loading docks, when possible. Diesel particulate matter (a component of diesel exhaust) does not have a specific air quality standard, but is an air toxic of high concern at the Puget Sound Clean Air Agency*. Also see short-term construction impacts.

If Swedish infrastructure and physical plant improvements trigger required thresholds for air and odor controls, then Swedish will comply with applicable standards and processes.

Wind

After completion of the proposed development, the predicted wind conditions around the development are considered satisfactory. Overall, they are suitable for standing in the summer and walking in the winter. The development has incorporated several positive design features with regards to the pedestrian wind environment. These include podiums, the grouping of towers, and the increase of massing of the Core Hospital Zone.

Changes to Planned and Potential Projects

Air impacts would be similar to the Proposed Action. Specific building design changes may modify the sitting/standing/walking wind performance. Differences in impact would not be significant.

No Alley Vacation

Air quality impacts would be basically the same as those from the Proposed Action.

No Action

Impacts would be a continuation of existing conditions.

* Final Report: Puget Sound Air Toxics Evaluation. Keill and Maykut. Puget Sound Clean Air Agency. October 2003. www.pscleanair.org/ds03/index.htm

3) Mitigating Measures

The identified air quality impacts appear likely to be adequately mitigated by compliance with existing, applicable Federal, State and Local regulations.

The predicted wind conditions for the area satisfy the RWDI pedestrian wind criteria. No mitigation measures are recommended. To further enhance the pedestrian wind conditions around the development, conceptual design guidance has been provided.

If any odor source is determined by the City at the time of project permit applications, then the City will consult with PSCAA to assure regulatory compliance.

Diesel exhaust impact mitigation, particularly associated with the proposed physical plant/ materials management facility, will be implemented by Swedish to the extent possible, such as:

- When making construction contracts, require that contractors are at the least using ultra-low-sulfer-diesel (available in Puget Sound–"biodiesel"), and ideally have equipment that has been retrofitted with diesel control technology.
- Ongoing anti-idling measures (with applications as simple as posted signboards) can be taken to reduce diesel particulate matter (DPM) near the loading docks.
- Maintaining contracts with operators who practice regular fleet maintenance will likely help to reduce DPM in the area.

4) Significant Unavoidable Adverse Impacts

There are no significant unavoidable adverse impacts with regards to air quality or the pedestrian wind conditions.

Water

Water, including public potable water and storm water drainage is discussed in the Utilities section.

Energy

This section provides an analysis of the energy usage for the planned and potential projects and the associated impacts to the affected environment. Implementation of the master plan would consume increased energy during all phases of the projects. Energy usages are based upon energy load usages of similar building types and functions at Swedish Medical Center First Hill Campus.*

1) Affected Environment

Energy sources currently used at Swedish Medical Center First Hill Campus are electricity (provided by Seattle City Light), steam (provided by Seattle Steam Corporation) and natural gas (provided by Puget Sound Energy). Total campus energy consumption is 447,039 British Thermal Units (BTU's) per year (see Table 3.2). 51% of the total is provided by electricity, 49 % by steam and a negligible amount by natural gas for laboratory use. Distribution systems are shown in Figures 3.1, 3.2, and 3.3.

Swedish Medical Center First Hill Campus has been a leader in implementing energy conservation measures since the 1970's. Ongoing conservation measure include providing variable speed drives on motors, high efficiency motors, energy saving control systems, energy efficient lighting systems and heat reclaim from exhaust air and steam condensate.

2) Impacts-Proposed Action and Alternatives

Proposed Action and Alternatives

The Swedish master plan includes campus physical plant improvements (Project E) that would impact energy and other elements of the environment. A centralized facility is envisioned but multiple campus infrastructure locations may continue during the life of the master plan. The proposed physical plant may include a boiler to generate steam (heating, hot water, sterilization, etc.). Natural gas resources would likely be consumed. The boiler capacity is estimated at 100,000 to 130,000 lb/hour. Emergency power generators, cooling towers, chillers, underground storage tanks for diesel fuel (30,000 to 50,000 gallons), and oxygen/other medical gases tanks would also be developed as part of the campus physical plant. (Also see noise, air, water, explosion risk impact sections for related impacts).

Implementation of the proposed master plan would consume energy resources during construction, renovation, demolition and operation of the proposed buildings. For planned projects, energy consumption would increase by about 56% over the energy consumption of the current campus. Potential Projects would result in an 18% increase in annual energy consumption. For both Planned and Potential Projects, energy consumption would increase by 76% over existing energy use.

* Source: Larry Humphreys and Swedish Medical Center

Planned Project construction and renovation are estimated to consume 2.87228 E+22 mmBTU's of energy from all sources. Potential Project construction would consume 5.31 E+11 BTU's. Annual operation of the Planned new buildings would consume 258,490 mmBTU's and annual operation of the potential new buildings would consume 37,200 mmBTU's from all energy sources.

No energy utilities (steam, gas, electricity) are located within the alley proposed to be vacated. No impacts are expected.

The alternatives have the same development program as the Proposed Action (except the No Action Alternative) and would have the same energy impacts.

Construction

It is estimated that construction of the Planned Projects will consume 2,872,280 mmBTU's of energy based on the U.S. Department of Energy factors for estimating energy impacts of residential and commercial building development (1979). Construction of the Potential Projects will consume approximately 531,000 mmBTU's. See Tables 3.3 and 3.4 for details.

Demolition

Buildings to be demolished as part of the planned projects will create a reduction in campus energy use. The total annual energy savings resulting from the demolition of these buildings is 75,636 mmBTU's based on energy records supplied by the Swedish Engineering Department. Details of the savings are given in Table 3.5.

Operation

The new buildings will use gas or steam as the primary energy source for heating, and electricity as the primary source for lighting, ventilation, cooling, user receptacle loads, medical equipment loads and building equipment loads. Preliminary estimates for energy consumption in the planned and proposed buildings are based on a combination of energy uses in similar facilities, usage in similar buildings on the Swedish First Hill Campus and square foot energy calculations using anticipated watts per square foot of electrical load and a diversity factor of 50%. Estimated energy usage is shown in Table 3.6 for Planned Projects and Table 3.7 for Potential Projects.

Lifetime Energy Costs

Implementation of Planned and Potential Projects would add load to Seattle City Light's energy resources and result in an increase in the average and peak electrical energy load demands. This could require Seattle City Light to seek additional resources and to make improvements to their power distribution, generation and transmission systems. Resource acquisition and expansion of facilities could result in increased costs to Seattle City Light customers and could cause environmental impacts on soil, air quality, water quality, plant and animal resources, as well as generation of hazardous and non-hazardous wastes and land impacts.

3) Mitigating Measures

The Proposed Action and the alternatives would be required to incorporate requirements of the Seattle Energy Code intended to reduce energy consumption. Consumption measures would also result in energy savings.

4) Significant Unavoidable Action Impacts

The Proposed Action will result in increased energy consumption.

TABLE 3.2

Existing Building Energy Consumption

First Hill Campus Building	Square Feet	Demolished	Annual Energy Consumption mmBTU Electricity	Annual Energy Consumption mmBTU Steam	Total Consumption mmBTU
Existing Hospital				145,000	
East Tower	441,067			61,492 Incl in Exist Hosp	
Main Surgery	62,302	yes	Incl in E Tower	18,691	
North/Northwest Wing	61,703	yes	Incl in Heath	4,936	
Old East Wing	118,448	yes	Incl in Heath	14,806	
Old Tumor Institute	12,541	yes	Incl in Heath	3,762	
South Wing	157,967		incl in SW	Incl in Exist Hosp	
Southwest Wing	285,070			57,680 Incl in Exist Hosp	
West Wing	140,255	yes	Incl in Heath	28,051	
Subtotal	1,279,353	395,249			
Other Existing					
1101 Madison	306,266	21,318			
600 Broadway	166,211	11,469			
Arnold	197,201	4,137			
Arnold Annex	9,794	yes	68		
Heath	118,297	yes	23,277	11,830	
1120 Cherry	25,205	yes	1,212		
819 Boylston	11,094	yes	1,096		
900 Boylston	8,124	yes	156		
Alcoa Building	39,634	yes	6,519		
Annex	75,165	yes	30,660		
Charlotte Building	7,826	yes	78		
Invex Building	21,284	yes	744		
Retail	8,608	60			
	994,709	316,423			
Total Consumption mmBTU's			219,963 49.2%	227,076 50.8%	447,039

Source: Larry Humphreys

TABLE 3.3

Total Energy Used in Construction Planned Projects

First Hill Campus Building	Square Feet	BTU Energy Used in Construction/SF	BTU Total Energy Used in Construction
Planned Buildings			
MOB A	156,000	1,640,000	2.5584E+11
Hospital Replacement B	486,000	1,640,000	7.9704E+11
Hospital Replacement C	155,000	1,640,000	2.542E+11
Hospital Replacement D	189,000	1,640,000	3.0996E+11
Central Support/Office E	254,000	1,640,000	4.1656E+11
Hospital Replacement G	194,000	1,640,000	3.1816E+11
	1,434,000		
Planned Parking			
A	132,000	770,000	1.0164E+11
B			
C	325,000	770,000	2.5025E+11
D	101,000	770,000	7.777E+10
E	118,000	770,000	9.086E+10
G			
			2.87228E+12

TABLE 3.4

Total Energy Used in Construction Potential Projects

First Hill Campus Building	Square Feet	BTU Energy Used in Construction/SF	BTU Total Energy Used in Construction
Potential Buildings			
MOB F	70,000	1,640,000	1.148E+11
Hospital Replacement C-1	135,000	1,640,000	2.214E+11
Central Support E-1	100,000	1,640,000	1.64E+11
	305,000		
Potential Parking			
F	40,000	770,000	3.080E+10
			5.31E+11

Source: Larry Humphreys

TABLE 3.5

Energy Consumption of Demolished Buildings

First Hill Campus Building	Square Feet	Demolished	Annual Energy Consumption mmBTU Electricity	Annual Energy Consumption mmBTU Steam	Total Consumption mmBTU
Hospital Buildings					
Main Surgery	62,302	yes		18,691	
North/Northwest Wing	61,703	yes	Incl in Heath	4,936	
Old East Wing	118,448	yes	Incl in Heath	14,806	
Old Tumor Institute	12,541	yes	Incl in Heath	3,762	
West Wing	140,255	yes	Incl in Heath	28,051	
Total	395,249			70,246	
Other Existing Bldgs					
Arnold Annex	9,794	yes	68		
Heath	118,297	yes	23,277	11,830	
1120 Cherry	25,205	yes	1,212		
819 Boylston	11,094	yes	1,096		
900 Boylston	8,124	yes	156		
Alcoa Building	39,634	yes	6,519		
Annex	75,165	yes	30,660		
Charlotte Building	7,826	yes	78		
Invex Building	21,284	yes	744		
Total	316,423		63,808	11,830	75,638

Source: Larry Humphreys

TABLE 3.6

Annual Energy Consumption and Peak Demand (mmBTU's): Planned Projects

Building	GSF	Electric Consumption in mmBTU's	Electric Peak in KW	Heating Consumption in mmBTu's	Heating Peak in mmBTu/Hr
MOB A	156,000	10,140	1,560		
Hospital Replacement B	486,000	97,200	5,832	69,984	19.4
Hospital Replacement C	155,000	31,000	1,860	22,320	6.2
Hospital Replacement D	189,000	37,800	2,268	27,216	7.6
Central Support/Office E	254,000	16,510	2,540	18,288	10.2
Hospital Replacement G	194,000	38,800	2,328	27,936	7.8
Planned Parking					
A	132,000	5,280	198		
B					
C	325,000	13,000	488		
D	101,000	4,040	152		
E	118,000	4,720	177		
G					
Totals	2,110,000	258,490	17,402	165,744	51.1

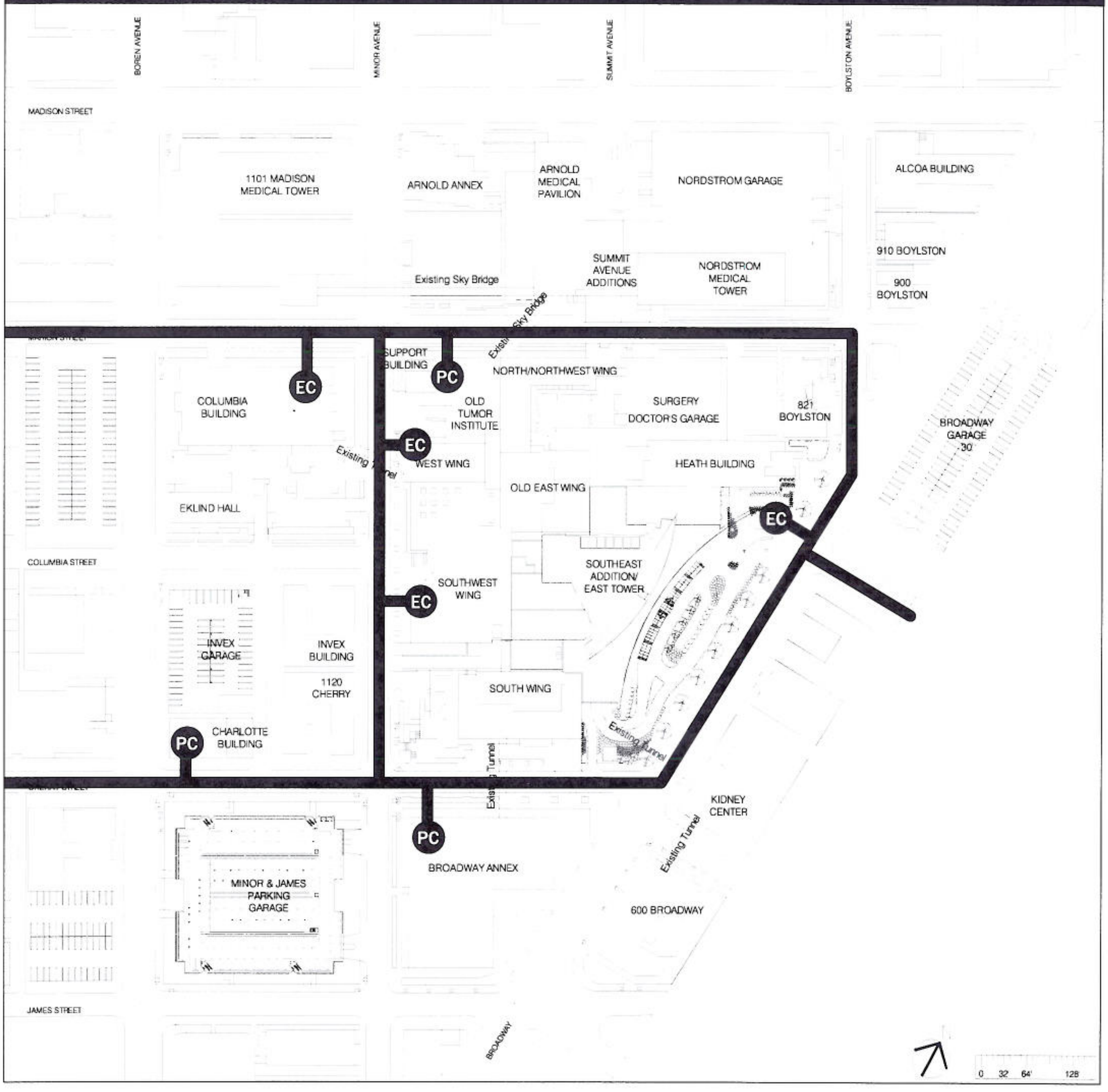
TABLE 3.7

Annual Energy Consumption and Peak Demand (mmBTU's): Potential Projects

Building	GSF	Electric Consumption in mmBTU's	Electric Peak in KW	Heating Consumption in mmBTu's	Heating Peak in mmBTu/Hr
MOB F	70,000	4,200	700		
Hospital Replacement C-1	135,000	27,000	1,620	19,440	5.4
Central Support E-1	100,000	6,000	1,000	14,400	4.0
Potential Parking					
F	40,000	60			
Totals	345,000	37,200	3,380	33,840	9.4

Source: Larry Humphreys

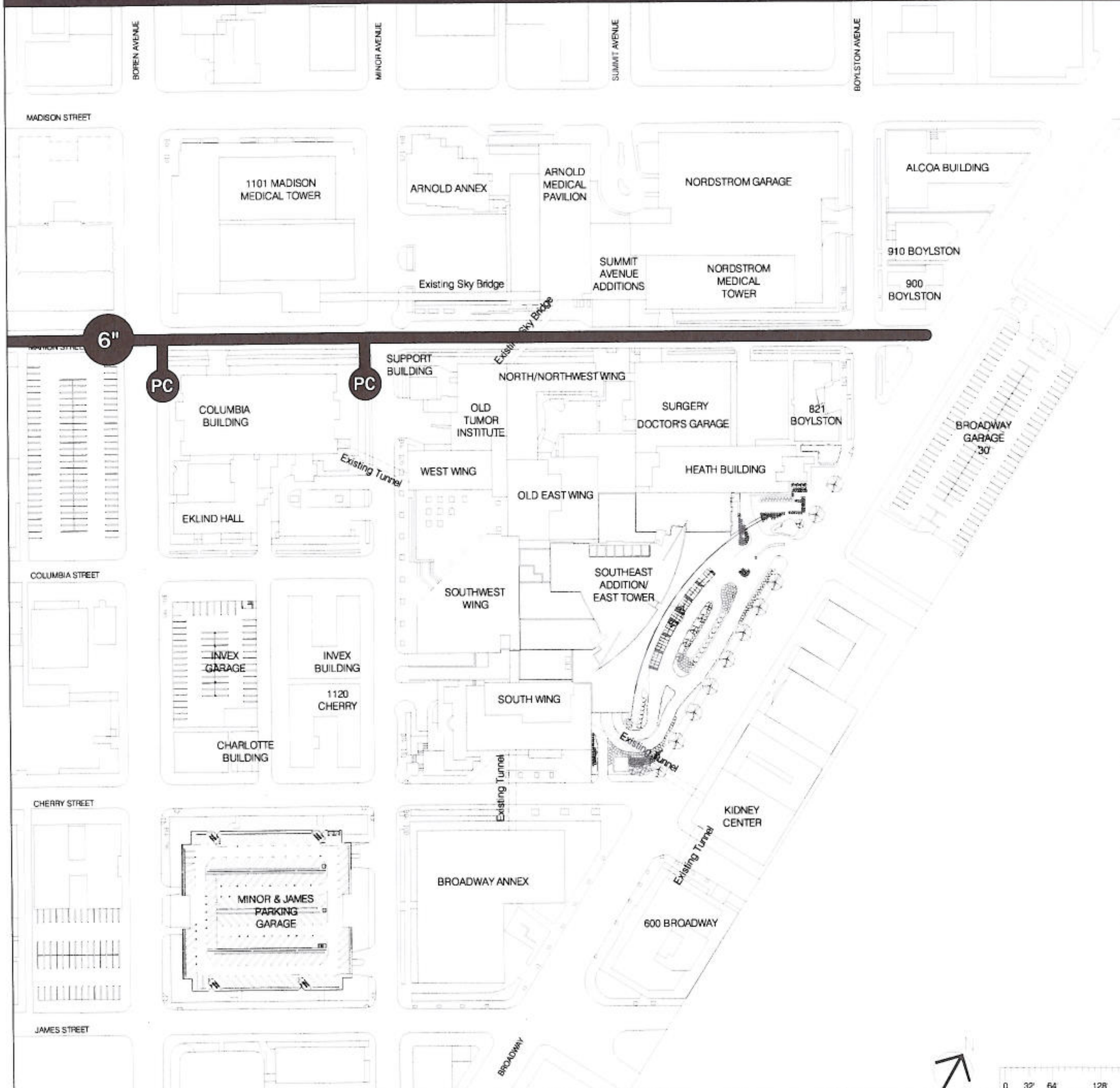
FIGURE 3.1
Steam



EC = Existing Connection
PC = Potential Connection

FIGURE 3.2

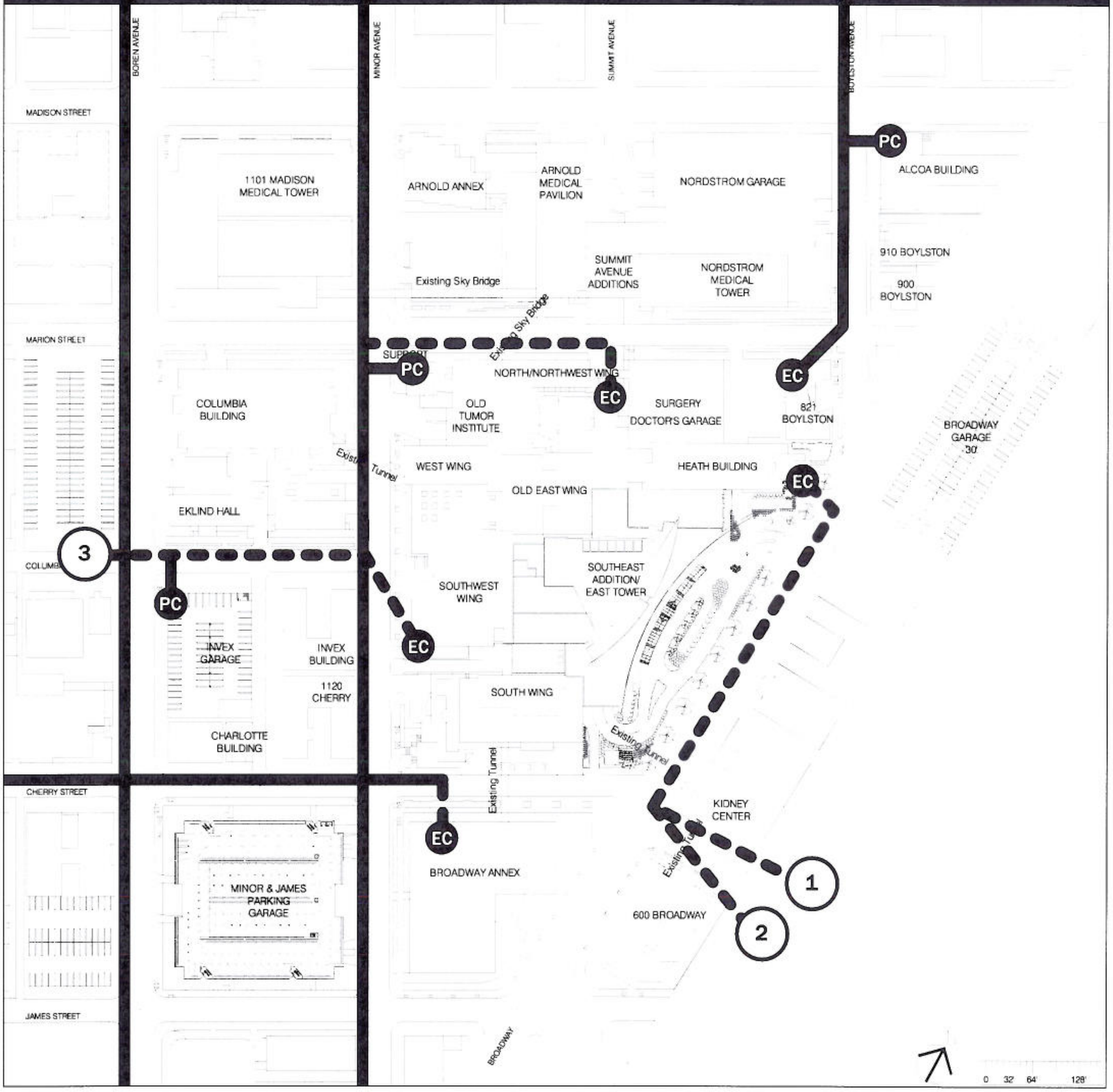
Natural Gas



PC = Potential Connection

FIGURE 3.3

Electricity



EC = Existing Connection
PC = Potential Connection

1) Affected Environment

There are no recognized or significant natural resources at the Swedish First Hill campus. Both renewable and non-renewable resources are consumed by the construction and operation of facilities.

2) Impacts-Proposed Action and Alternatives

Swedish will continue to use natural resources with the proposed construction and operation of the First Hill facilities. Both renewable and non-renewable resources will be impacted, but not significantly. The Swedish 24/7 operations, intensive energy and water usage, chemical use, and infection control requirements all impact sustainable practices.

Swedish proposes to consider the Green Guidelines for Healthcare Construction (GGHC)* with the implementation of Proposed Action. General criteria typically more suitable for other building types have been customized to fit healthcare institutions (hospitals, clinics, medical office buildings, etc.) as defined by building code occupancies. The particular structural, usage and regulatory factors of healthcare are addressed by emphasizing environmental and public health issues.

The GGHC seek to improve environmental quality and health at three scales:

- Protecting the immediate health of building occupants
- Protecting the health of the surrounding community
- Protecting the health of the global community and natural resources

Prevention is an important approach in healthcare and can also apply to environmental decisions regarding material selection, design features, mechanical systems, infrastructure, operations and maintenance practices.

* December 2003 Version 1.0 PC, draft for public comment, sponsored by the American Society for Healthcare Engineering, (a metric tool for evaluating health and sustainability of building design, construction, maintenance, and operations for the healthcare industry). Public comment period is over and the revised draft (Version 2.0 Pilot) was released in November, 2004.

The GGHC follows criteria and a procedure similar to LEED. Most documentation can be completed at the end of construction but some on-going one-year operational data is required. A checklist includes 106 specific measures within seven broad categories:

- Sustainable sites
- Water efficiency
- Energy and atmosphere
- Materials and resources
- Environmental quality
- Integrated design and operations
- Innovation

Swedish will utilize the guidelines to the extent feasible in renovation, rehabilitation, adaptive reuse and new construction. In addition Swedish will consider during demolition and site preparation phases, material segregation and recycling. The sustainable environmental considerations such as in the selection of materials, construction techniques, maintenance and operation programs may contribute to reduced natural resource consumptions. (Also see waste management discussion in following Environmental Health section).

Impacts of the alternatives would be similar to the Proposed Action, except No Action may reduce natural resource consumption significantly. There would be no development but also no resource mnagement by sustainable programs.

3) Mitigating Measures

None are required. Swedish will continue its consumption reduction and recycling programs as well as consider applicable sustainable design criteria (including LEED and GGHC) with the Proposed Action.

4) Significant Unavoidable Adverse Impacts

The Proposed Action will continue consumption of natural resources by Swedish, but the impacts are not significant.

Environmental Health (Noise/Toxic-Hazardous Materials/Risk of Explosion)

1) Affected Environment

Hazardous Materials and Waste

Swedish Medical Center/First Hill generates and manages hazardous wastes including chemical waste, regulated blood borne pathogen waste (biomedical waste) and radioactive waste. Use, handling, storage, transport and disposal are all strictly monitored and controlled.

Swedish Medical Center/First Hill normally generates several dangerous waste streams each year that are disposed of by TSD (Treatment-Storage-Disposal facility) vendors. These waste streams include chemotherapy drug waste, spent paint and paint cleaning solvents, waste photographic fixer from "zero discharge" x-ray film processing units, mercury debris from broken thermometers and sphygmomanometers, waste methanol, Soda Sorb, Aerosols, waste pharmaceuticals and lab packs.

A labpack is a drum that contains any number of smaller chemically compatible wastes and containers. Soda Sorb is managed under Washington State regulations as a Special Waste. Waste pharmaceuticals include waste selenium pharmaceuticals, collodian dressing sealant and waste silver nitrate applicators.

Swedish Medical Center/First Hill has an annual average of 5,646 pounds of dangerous waste (DW) disposal based upon averaging actual quantities of the last two years (2002 and 2003.)

Onyx Environmental Services is the contractor Swedish Medical Center/First Hill currently uses for its dangerous waste streams. The use of this contractor ensures that wastes are properly managed and disposed of to protect the environment and to comply with all regulatory standards and regulations.

Swedish Medical Center/First Hill aggressively recycles its spent lamps, lamp ballast, electronic wastes and batteries as Universal Waste. Batteries recycled include lead acid, nickel cadmium, silver oxide, mercury oxide, alkaline, carbon zinc and lithium. Swedish Medical Center/First Hill has recycled 16,380 spent lamps, 2,343 pounds of lamp ballast, 35,053 pounds of electronic wastes and 10,455 pounds of batteries of all types in 2002 and 2003.

Swedish Medical Center/First Hill has generated an annual average of 212,311 pounds of regulated blood borne pathogen waste (RBBPW) biomedical waste, based on averaging these actual wastes over the last two years (2002 and 2003).

Swedish Medical Center/First Hill now contracts with Stericycle Inc. for the transportation, processing and disposal of regulated blood borne pathogen waste. Regulated blood borne pathogen wastes are collected by Swedish Medical Center/First Hill Environmental Services Department personnel and are packaged in DOT approved plastic containers (Steritubs.) These are picked up from a secure, locked container and are transported by Stericycle to its plant in Morton, WA. Non-pathological waste is ground up and subject to radio frequency sterilization that causes the waste to reach a temperature of at least 204 degrees F. Sterilized waste is transferred to landfill in Arlington OR. Steritubs are cleaned, sterilized and returned for re-use. Pathological waste is packaged in DOT approved plastic containers and is shipped to the incinerator in Utah.

The Hazardous Materials & Waste Management Plan is an integral portion of Swedish Medical Center/First Hill's commitment to the environmental health and safety of patients, visitors, staff and the community we serve. Its utility is enhanced by the multidisciplinary team that assures the Plan and its day to day operations and implementation meet those needs. The Plan includes the establishment of procedures for identification, packaging, storage, transportation and disposal of waste generated within the confines of the facility. It is the policy of Swedish Medical Center/First Hill to assure compliance with laws, regulations and procedures as well as provide appropriate training for any employees handling waste within the facility. The Plan is congruent with all applicable City, County, State and Federal regulations. The Plan is reviewed by the Washington State Department of Health and the Joint Commission for Accreditation of Hospital Organizations (JCAHO) yearly reports are filed with the Washington State Department of Ecology. (Medium Quantity Generator status RCRA site # WAD 079 264 420.) Specific programs are established, organizational responsibilities are defined, emergency procedures are outlined, and annual effectiveness evaluations per performance indicators are conducted. Results serve to update/ modify the Plan.

Regulations define regulated wastes and identify proper management and disposal of these wastes. These include federal regulations such as the Resource Conservation and Recovery Act (RCRA) of 1976, 40 CFR 260-281, Hazardous Material Regulations (HMR) 49 CFR 171-180, and Toxic Substance Control Act of 1976, 40CFR 700-799 and state and local regulations such as the Washington State Department of Ecology Dangerous Waste Regulations Chapter 173-303 WAC and City of Seattle Stormwater, Grading and Drainage Code (SMC 22.800).

Risk of explosion would primarily be related to medical gas storage, physical plant fuels for emergency generators and gasoline in parked cars in garages. No unusual circumstances or conditions exist. Swedish provides security on the campus grounds and within the facilities.

Asbestos Hazards

Asbestos was a common building material used in buildings built between the 1940's and early 1980's. Buildings at SMC's First Hill campus are no exception. There is a wide range of materials that were used and are still present in First Hill campus buildings. It is important to remember that asbestos does not present a hazard unless it is damaged or disturbed in such a manner as to release fibers into the air. Often times, the best practice is to leave asbestos in place until there is an activity that may disturb it. At this point in time, proper procedures in accordance with local, state and federal law are followed to ensure that the asbestos is removed properly prior to it becoming disturbed.

Known Asbestos Containing Building Materials at Swedish Medical Center First Hill Campus include:

- Pipe fitting insulation
- Pipe lagging
- Floor tile
- Floor tile mastic
- Sheet vinyl
- HVAC duct insulation
- Roofing materials
- Spray-on fire-proofing
- Sink undercoating
- Window putty
- Cement asbestos exterior panels
- Plaster skim coats
- Ceiling and wall panel mastic
- Carpet mastic
- Vessel insulation
- Leveling compound

Noise*

Noise within the Swedish Medical Center campus and in its immediate vicinity is due to sources that are commonly found in an urban environment. Namely these sources are; vehicular traffic activities on major arterials (such as Broadway, James, Madison, and Boren) and on minor streets (such as Minor, Marion, Cherry, and Columbia), small and commercial plane flyover, buildings' ventilation equipment, concentration of people activities, and emergency vehicles accessing the Medical Center. Noise from distant Interstate 5 (I-5) was also audible at certain locations and during lulls in local traffic.

Short[1]- and long[2]- term noise were monitored at several locations on and off the medical center campus. Figure 3.4 presents the measurement locations and Table 3.8 presents the range of the surveyed noise levels (L_{eq}[3]).

* Source: Michael Yantis Associates
1 Short term measurements were one hour long and were attended by an acoustician
2 Long term measurements collected hourly average of sound levels over a period of 24 hours
3 Leq means the constant sound level that, in a given situation and time period, conveys the same sound energy as the actual time-varying A-weighted sound.

TABLE 3.8

Range of Existing Noise Levels

Site Location	Location	Type of Measurement	Min.[4] L_{eq}	Max.[5] L_{eq}
1	First Hill Plaza, 14th floor balcony	24 hour	59 dBA	66 dBA
2	Seattle University Garage, top level	24 hour	57 dBA	72 dBA
3	Invex Building, rooftop	24 hour	63 dBA	67 dBA
4	Marion & James Garage, top level	24 hour	59 dBA	76 dBA
			Hourly L_{eq}	
5	Parking lot at Terry north of Madison	1 hour	60 dBA	
6	US Bank at Madison	1 hour	64 dBA	
7	Bank of America at Minor	1 hour	63 dBA	
8	Seattle University Garage, top level	1 hour	70 dBA	
9	O'Dea HS Parking lot at Boren	1 hour	63 dBA	
10	South Wing Courtyard @ Minor & Cherry	1 hour	63 dBA	
11	Parking Lot at Boren and James	1 hour	65 dBA	

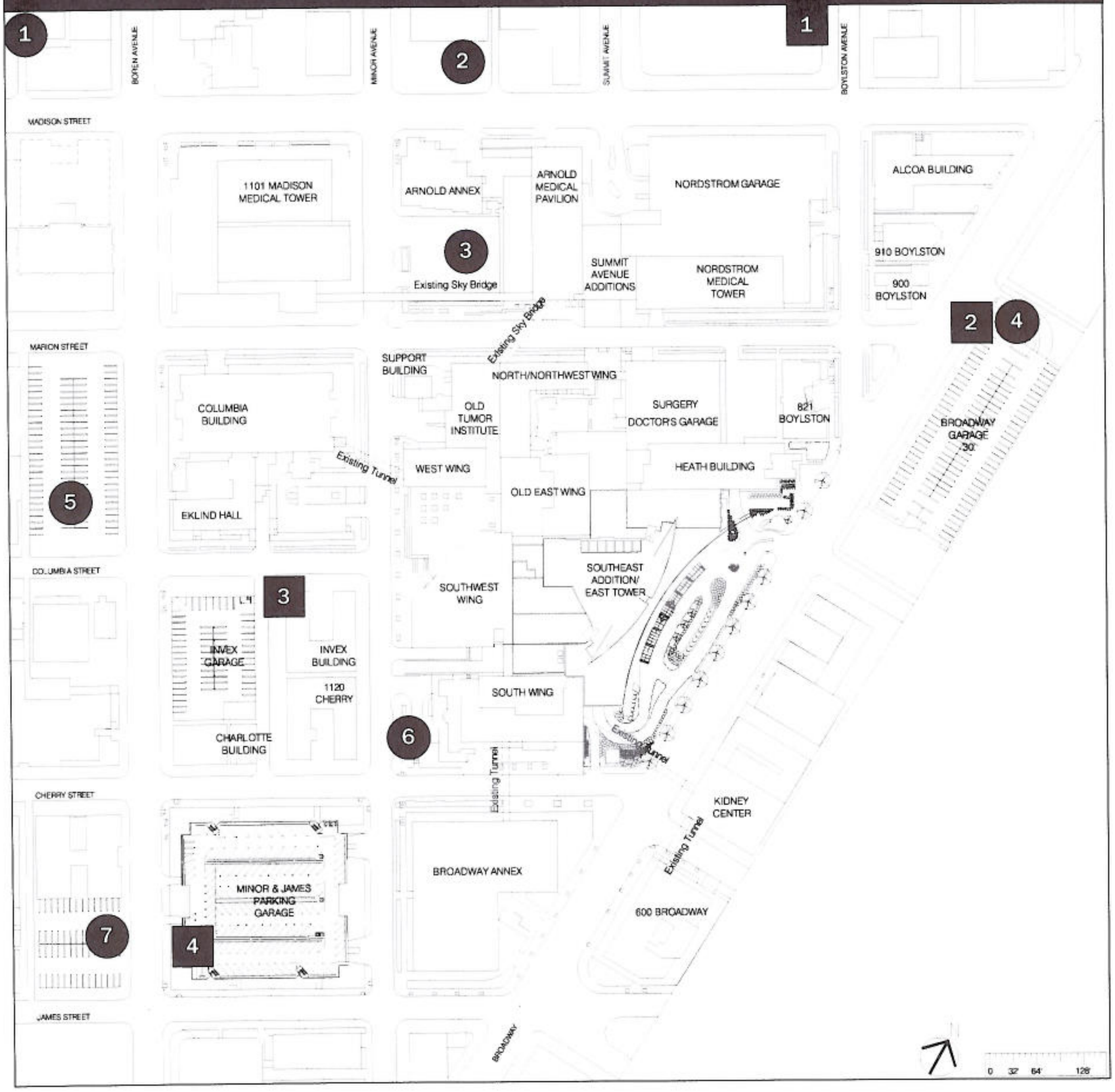
Seattle Municipal Code Chapter 25.08 on Noise Control establishes noise limits for each land use zone. The four zones identified under this Chapter are; Rural, Residential, Commercial, and Industrial. The medical center is located within a Major Institution Overlay (MIO) District. The underlying zones in the MIO are Commercial (NC3) and Multifamily Residential (MR/HR). Across Marion Street to the north the land use is zoned NC3. Across Broadway to the east the land use is commercially zoned with MIO and NC3 designation. Across James to the south the land use zone is commercial with NC3 designation. East of the campus across from Boren Avenue the land is zoned HR. Major noise generators are also regulated by the Land Use Code (commercial uses, 23.47.018). Exterior heat exchangers and other similar devices (ventilation, air-conditioning, refrigeration), are included and require an acoustical report with permit applications.

The code specifies the maximum permissible noise levels in dBA[6] for continuous noise and prescribes limits for construction noise (construction noise is discussed starting on page 192). Table 3.9 presents the maximum permissible noise generated by one property and that is received by another property. Since the Swedish Medical Center is best described as a commercial land use the permissible levels are 57 dBA during the daytime and 47 dBA during the nighttime for the residential receivers to the west and 60 dBA for the commercial receivers to the south, east, and the north.

[4] Minimum hourly Leq recorded during the 24 hour measurement.
[5] Maximum hourly Leq recorded during the 24 hour measurement.
[6] dBA is "A-weighted" sound pressure level

FIGURE 3.4

Noise Monitoring Locations Map



■ **24 Hour Noise Monitoring**
● **1 Hour Noise Monitoring**

TABLE 3.9

Seattle Noise Code Maximum Permissible Sound Levels

District of Sound Source	District of Receiving Property			
	Residential		Commercial	Industrial
	Day	Night*	Day or Night	Day or Night
Rural	52 dBA	42 dBA	55 dBA	57 dBA
Residential	55 dBA	45 dBA	57 dBA	60 dBA
Commercial	**57 dBA**	**47 dBA**	**60 dBA**	65 dBA
Industrial	60 dBA	50 dBA	65 dBA	70 dBA

* nighttime is between the hours of 10:00 pm and 7:00 am during weekdays and between the hours of 10:00 pm and 9:00 am during weekends.

Current ambient noise levels already exceed the Noise Code permissible levels. Based on the data presented in Table 3.8, the measured ambient noise levels ranged between 57 dBA and 76 dBA.

The Seattle Comprehensive Plan urban village strategy will result in people living more densely and closer to where they work, shop and play.** That could lend to more people being exposed to higher levels of noise. Reduced SOV (single occupancy vehicles) is a major strategy to reduce noise. SOV's are addressed by the Swedish TMP.

2) Impacts - Proposed Action and Alternatives

Proposed Action

Hazardous Materials and Waste

If Swedish Medical Center/First Hill develops according to the proposed master plan Planned and Potential Projects, the number of locations generating waste would increase. The increase of occupied building square footage would be directly linked to any waste volume increases. Increases in buildings and occupied square footage make paramount the need for construction based on high performance and sustainable building processes, waste minimization processes based on Life Cycle Cost Analysis and continued effort to aggressively move items from the disposal stream to the recyclable/reusable streams as legally applicable. Swedish Medical Center/First Hill's commitment to achieve the goals set forth in the Memorandum of Understanding signed by the Environmental Protection Agency and the American Hospital Association in 1998 will assist in its efforts to reduce its impact upon the environment and the public served.

Planned Projects may generate an additional 50% increase in regulated blood borne pathogen waste (biomedical waste) and an additional 1 to 5% increase in dangerous waste amounts on

** Monitoring Our Progress - Seattle's Comprehensive Plan, DPD, March 2003 the First Hill campus depending on square footage usage. The quantity estimate assumes that the ratio of current waste levels to building space remains constant and that this ratio is a reasonable measure for forecast purposes. Potential Projects would also contribute to increases in regulated and dangerous wastes.

The resultant increase in waste will necessitate an increase in transport of wastes off site. The transport system is carefully controlled, but the possibility, however remote, of a spill or leakage does exist. Swedish Medical Center/First Hill's Hazardous Materials & Waste Management Spill Response Plan provides methods and processes to safeguard the health and safety of the public. The cumulative impacts are considered manageable.

Risk of explosion would remain but may be reduced by consolidation and internal location in a proposed project (Project E). The location of medical gas and physical plant fuel storage would increase security and provide new state of the art facilities in compliance with all current regulations.

Asbestos

Buildings, or portions thereof being renovated would have an asbestos inspection preformed in accordance with WAC 296-62-07721 to determine the presence of asbestos containing building materials (ACBM) or presumed asbestos containing materials (PACM). A copy of this inspection report is provided to all contractors and employees working on the project and a copy is posted at the work-site. Materials that are identified as ACBM or PACM, which may be impacted by the renovation, are abated in accordance with the WAC 296-62 and Regulation III of the Puget Sound Clean Air Agency by Washington licensed abatement contractors. An independent consultant conducts air monitoring and ensures that all the ACBM or PACM have been properly abated.

Buildings that are going to be demolished would have an asbestos inspection done in accordance with WAC 296-62-07721 as well as Regulation III of the Puget Sound Clean Air Agency. Prior to demolition, in accordance with 296-155-775 all asbestos containing materials, where feasible will be removed in accordance with WAC 296-62 and WAC 296-65 and Regulation III of the Puget Sound Clean Air Agency.

Noise

Long-term noise impacts can be grouped in two categories; vehicular traffic and building equipment. (Also see noise under Short-Term Construction-Related Impacts).

Changes in vehicular traffic patterns and volumes are expected to contribute to the ambient noise levels. The highest predicted traffic volume increase is 17.7% on Marion and Minor. This is a percent increase of the project traffic volumes as compared to 2020 No Action traffic volumes. The resulting traffic noise increase is on the order of 1 to 3 dB. This increase in noise level is expected to be slightly noticeable. Sirens from emergency vehicles are exempt from the noise ordinance requirements. The policy for emergency vehicles is to turn off sirens within two blocks of the medical center. However, drivers may feel the need for the sirens within this limit depending on the traffic conditions.

If there is an increase of the number of emergency vehicles using the medical center, an impact due to the usage of sirens is expected. Although the siren turn-off policy is expected to reduce the impacts on residential neighbors, the extent of the siren usage depends on the judgment of the driver based on traffic safety.

The addition of building equipment under the proposed action is expected to impact the ambient noise on campus and in the immediate vicinity of the campus. To minimize this impact, all future building equipment used for heating, refrigeration, air conditioning, ventilation, medical support and power generation, among other noise generating equipment would be designed to meet the maximum permissible noise levels set forth by the City of Seattle Noise Ordinance. This will include the noise generated by the proposed central plant. The Ordinance limits the noise received at the nearest residential property to 57 dBA during the daytime and to 47 dBA during the night and to 60 dBA where the nearest receiving property is commercially zoned.

Changes to Planned and Potential Projects

Impacts to hazardous materials, waste and noise would be similar to the impacts of the Proposed Action.

No Alley Vacation

Impacts to hazardous materials, waste and noise would be similar to the impacts of the Proposed Action.

No Action

No change in current conditions would result from this alternative.

3) Mitigating Measures

Hazardous Materials and Waste

- Continue to rigorously manage and comply with all applicable Federal, State, and local regulations for hazardous materials, spill response and waste management.

- Continue training and education programs for emergency response to hazardous materials and spill incidents with protocols for 1) recognition and information, 2) evaluation and safety, 3) control, 4) disposal and 5) record keeping and notification.

- Assemble and maintain Spill Response Cart with materials and supplies, personal protection equipment, and reference documents needed to respond to typical hazardous substance release.

- Continue to cooperate, participate in compliance inspections and report waste streams in the Dangerous Waste Annual Report (DWAR) as required by the Washington State Department of Ecology.

- Strive for high performance healthcare facilities as directed by the Green Guidelines for Healthcare Construction–GGHC (Draft Version 1.0 PC December 2003).

Asbestos

- Perform inspections and complete asbestos abatement consistent with state and PSCAA regulations.

Noise/Building Operation

- Comply with the requirements of the Seattle Municipal Code (SMC) Chapter 25.08 Noise Control.
- Prepare designs for all noise generating equipment for all buildings including the central plant to ensure compliance with SMC Chapter 25.08.
- Consider orienting loading areas, waste facilities, parking structures, away from residential receivers.
- Use acoustic barriers and other noise control measures to control rooftop equipment noise.
- Continue to implement policy of "shutting-down" emergency vehicles within two blocks of the hospital, except when prevented by safety and traffic conditions.
- Acoustical reprints will be completed with permit applications if any major noise operations are proposed.

4) Significant Unavoidable Adverse Impacts

No significant impacts are expected if mitigation is provided.

Land Use and Plans/Policies/Regulations

1) Affected Environment*

Community Land Uses

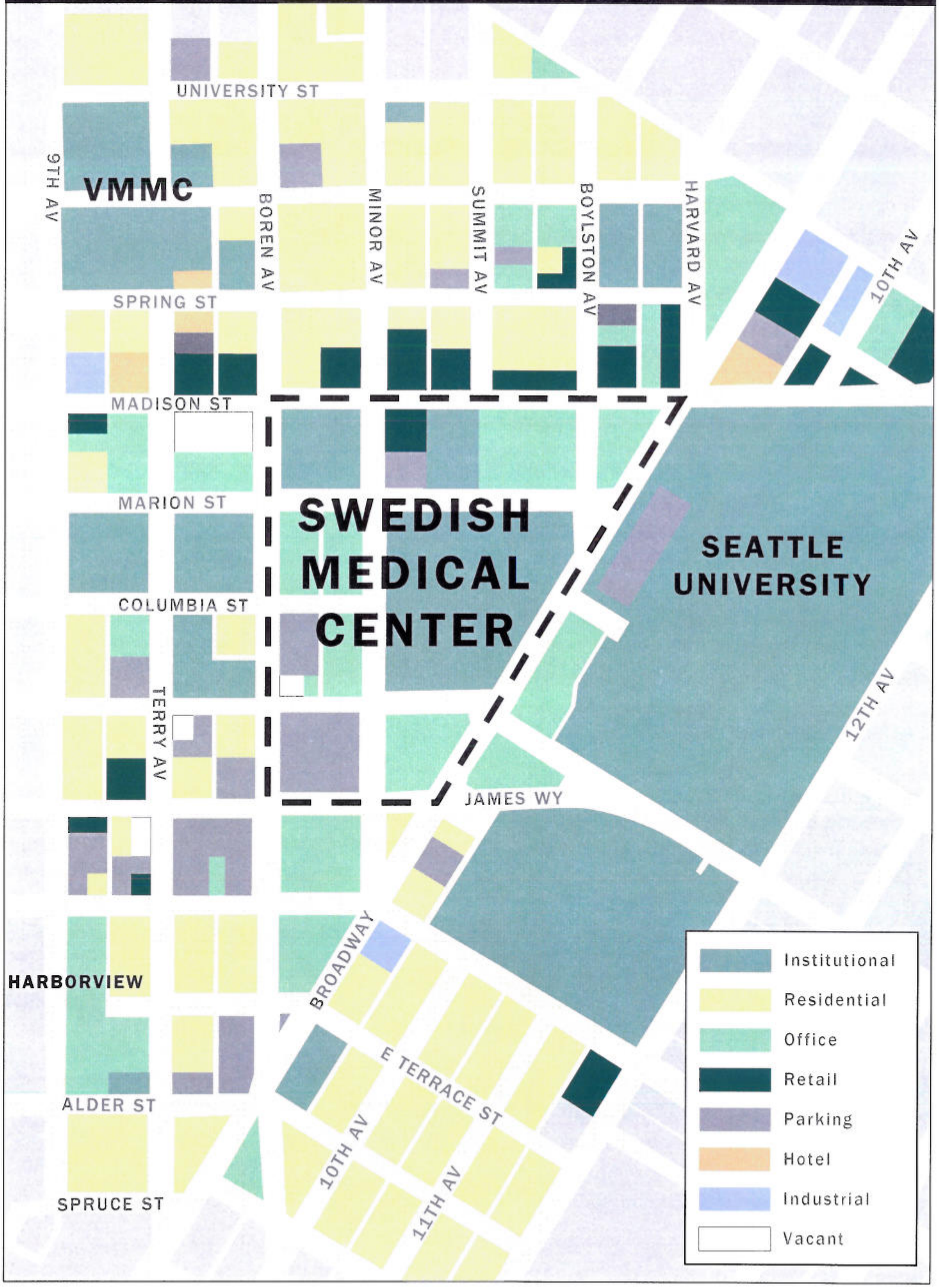
The Swedish Medical Center campus is one of three large hospitals within the urban, medium density First Hill Neighborhood, also designated as the First Hill Urban Center Village by the City of Seattle. Figure 3.5 illustrates the campus location; Virginia Mason Medical Center is one block to the northwest and Harborview Medical Center is located one block to the southwest. Other surrounding land uses include a variety of residential, commercial and medical-related buildings as well as several institutions.

Medical office buildings, support retail and educational or cultural institutions dominate the campus perimeter. Ground level or single story retail uses line East Madison Street, with multi-family residential uses either above or to the north, facing Spring Street. Seattle University is immediately east of the Swedish campus on Broadway; the Frye Art Museum and O'Dea High School are situated immediately west of Boren Avenue. St. James Cathedral and related buildings are one block further west. Multi-family residential uses are predominant away from the immediate perimeter of Swedish and the other medical campuses.

* Source: NBBJ

FIGURE 3.5

Community Land Use



Two additional Urban Center Villages have been identified in the surrounding area most immediate to the Swedish campus: 1) the 12th Avenue Urban Center Village begins on the eastern edge of Broadway and 2) the Pike/Pine Urban Center Village lies north of Union Street. West of the Swedish campus and the First Hill neighborhood, beyond the Interstate is Seattle's commercial core, which includes high-density office and retail space. South of Swedish, the Yesler Terrace neighborhood hosts a mixture of low and medium density housing and south of that is a portion of the International District with its high concentration of Asian restaurants and businesses.

Existing Campus Land Uses

The entire existing campus, comprising of approximately twelve City blocks or about 14.92 acres of land area, serves institutional functions. Identification of the primary functions subdivides the campus into three zones:

Core Hospital Zone - 1,472,216 SF (48% of campus facilities)
- Inpatient care nursing units
- Hospital-based diagnostic and treatment services
- Hospital-based / patient care – related support functions

Medical Office Zone - 1,239,753 SF (41%)
- Physician office suites
- Ambulatory care services
- Outpatient parking
- Outpatient and neighborhood retail amenities
- Research

Support/Parking Zone - 336,317 SF (11%)
- Central plant services
- Central materials management services
- Parking

An assessment of the existing medical center reveals a number of buildings that are nearing the end of their useful life with structural, mechanical and functional limitations. As none of the property is truly "vacant" future campus needs will require redevelopment of existing properties.

Development Activity

Other development in the First Hill neighborhood is part of the changing land use conditions and may impact future plans for Swedish Medical Center. For example, traffic mitigation plans and costs associated with the increased cumulative development density must be considered. The following summarizes development activity in the area. Table 3.10 includes both ongoing/ recently completed projects, plus other projects in varying states of implementation. Together the development activity amounts to over 640,000 square feet of new projects.

FIGURE 3.6
Development Activity

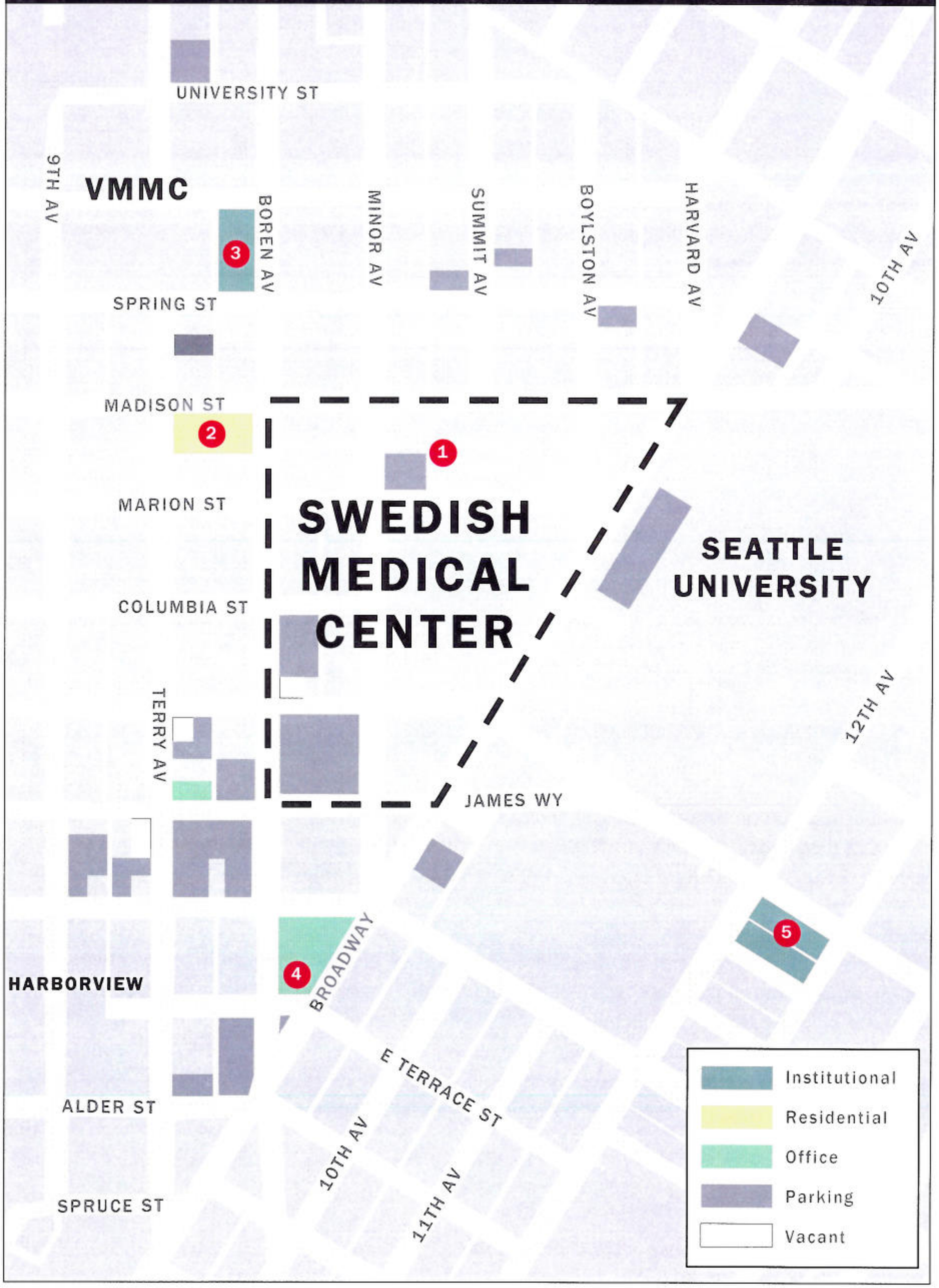


TABLE 3.10

Development Activity

Ongoing/Recently Completed Projects	Map Reference	Size of Development	Status
Swedish Campus	1	Swedish Cancer Center 92,000 SF	Completed
Surrounding Area	2	1001 Madison 6-story mixed use building 47,000 SF including 8000 SF ground floor retail 50 units low income, elderly housing	Construction
	3	1100 9th Avenue 7-story, East Campus Addition Virginia Mason hospital/ bed replacement 180,000 SF	Planning
	4	Patricia Bracelin Steel Memorial Building (Harborview) 401 Broadway 5-story mixed use building 158,000 SF ground floor retail, offices, 300 underground stalls	Completed
	5	1221 E Cherry Street (12th Avenue UCV) 5-story, mixed use building 167,372 SF retail, office & residential building Seattle University MIMP	Planning
Total Ongoing/ Recently Completed		644,372 SF	

Source: DPD Permit Records

Comprehensive Plan Land Use

The Seattle Comprehensive Plan Future Land Use Map designates the Swedish First Hill campus as "Major Institutions" (bounded by Boren/Madison/Broadway/James). The proposed uses and development of the Swedish master plan are consistent with this designation.

The Seattle University area east of Broadway is similarly designated "Major Institutions." The remainder of the Broadway frontage, the James frontage, and the Madison frontage are designated "Commercial/Mixed Use Areas Inside Urban Centers/Villages." The area west of Boren is designated "Multi-Family Residential Areas."

The entire area is located within the First Hill/Capitol Hill Urban Center, one of five such centers of the Comprehensive Plan. The goal of the Urban Centers (G20) is to "Identify and reinforce concentrations of employment and housing in locations that would support and have direct access to the regional high capacity transit system." The further intensification of the Swedish Master plan is consistent with the goal. Note that one alignment of the proposed light-rail transit system passes under First Hill/Capitol Hill with a potential station at Madison between Summit and Boylston. (See Figure 3.7, First Hill Urban Center Village).

Note: Also see the Final MIMP for discussion of relationship of Proposed Action with Major Institution Policies and Comprehensive Plan Health Goals/Policies.

The updated Comprehensive Plan for the next 20 years (to 2024) was adopted by the City Council in December 2004. The new city wide goal is to add 47,000 households and 84,000 jobs to the city for a ratio of 1.8 jobs/household. Other goals include monitoring low income housing, reducing single occupancy vehicle trips, regulating on-street parking and encouraging public transportation, regulating cell towers, protecting creeks and preserving industrial-zoned land.

First Hill Neighborhood Plan

The neighborhood plan implements the Seattle Comprehensive Plan goal of 'urban villages' by integrating citizen's values with overall growth targets. A two phased process initially developed a vision and issues (Phase 1) and recommended strategies (Phase 2) to guide the neighborhood's future. A Draft Plan went through a review and community validation process. The Final Plan, approved by the Seattle City Council, was completed in November 1998. (Adopted by Resolution #29869, 3/22/99 and Comprehensive Plan Ordinance #11942, 3/22/99).

First Hill's estimated growth in households would increase from the existing 4,657 by 438 (6 years) and 2,400 (20 years). The number of existing jobs, 20,626 would grow by 1,993 (6 years) and 6,100 (20 years). The First Hill neighborhood has a land area of 225 acres with open space amounting to 1.62 acres/1000 households. Plan goals are for four sites of ¼ acre open space and three sites for community gardens. The zoned development capacity of First Hill allows 4,900 housing units, 2,700 jobs, and 811,000 SF of commercial space. The affordable housing in the neighborhood is 56% (total units affordable to households below 50% of median income). City monitoring at progress shows that from 1995-2002, First Hill met 17% of the housing growth target (412 net units built of 2,400 units). For the same period, 63% of the employment target was achieved.*

* Monitoring Our Progress - Seattle Comprehensive Plan, Appendix 1 and Appendix 2, DPD, March 2003

FIGURE 3.7

First Hill Urban Center Village

The First Hill Neighborhood Plan expresses a vision and goals for the area:

First Hill Vision

- A home to people with a full range of incomes, abilities and interests.
- A regional center for state-of-the-art health services.
- A dynamic neighborhood ready to meet the challenges of the future.
- A community that celebrates its rich history and cultural heritage.
- A premier business and employment center with opportunities to grow.

First Hill Goals

- Economic Development: Continue to promote First Hill as a regional center for stat-of-the-art health services.
- Develop the small business market.
- Public Safety: Improve public safety on First Hill.
- Transportation: Improve the existing infrastructure for car, bus, bike and pedestrian travel on First Hill.
- Open Space: Increase the amount of open space on First Hill.
- Housing: Develop housing opportunities that retain the economic mix of First Hill residents and are compatible with other neighborhood goals.

The Swedish Proposed Action furthers the vision for the regional health services vision and employment center. The Swedish plan also supports goals for economic development, public safety and transportation improvements. The Swedish plan also recognizes the First Hill shortage of public open space and seeks to contribute to neighborhood connections with streetscape improvements. Specifically, the Boylston open space with the street vacation would create a pocket park. Marion Street and Minor Avenue improvements improve cross-campus pedestrian movement.

The First Hill Neighborhood Plan includes a 'Master Plan' graphic that identifies broader improvements relevant to the Swedish campus:

- The Madison Street commercial district is a 'key activity area'. Well-lit, pedestrian friendly businesses with possible light rail station connections are envisioned. The plan recommends safety and mobility improvements at cross streets. The segment of Minor from Madison to Marion is included so a linkage to the Swedish campus may be reinforced (particularly with Project A).
- Cherry is identified as a 'key pedestrian street' linking First Hill with downtown. The streetscape frontage of Project E can respond to this urban connection.

Further First Hill Neighborhood Plan recommendations relevant to Swedish are: stop bars for traffic at Madison intersections, lighting, sidewalk maintenance, crossings, underground utility wires and maintenance of street trees. Street patrols, surveillance at bus stops, noise, and litter and traffic/parking enforcement are included.

Central Puget Sound Regional Transit Authority/Sound Transit Planning

The Central Puget Sound Regional Transit Authority (Sound Transit) is developing an electric light rail system connecting Seattle, Tukwila, and SeaTac. Environmental review of the project was documented in a December 1998 Draft EIS and a November 1999 Final EIS. Construction has begun on the first phase of the light-rail line between downtown Seattle and Tukwila. The Seattle end of the first phase will terminate near Westlake Center. A future phase would extend the line north to Northgate.

Three route alignment alternatives were identified for the segment of the north extension that would run between downtown and the University District. One alternative is the route adopted in 1999 that extends the line from the Westlake Station in a tunnel to Madison Street and then north on Broadway Avenue to the Ship Canal and beyond the University District. This alternative includes a First Hill station on the north side of Madison Street between Minor Avenue and Boylston Avenue, across from the Swedish campus. A second alternative routes the line under Union Street instead of Madison Street and would not include a First Hill Station. The third alternative routes the line under Eastlake Avenue, bypassing First Hill and Capitol Hill.

A preferred alternative for the north extension was recently announced. The preferred alternative is the one that would route the line through First Hill with a station on the north side of Madison between Minor and Boylston, across from the Swedish campus. The November 2003 Draft SEIS of the Central Link project that indicates that construction of the north extension would start in 2006/2007 with completion in 2013/2015. In October 2004, the Sound Transit Board voted to buy a First Hill site (1901 Spring Street) for the future line/station construction staging.

The light rail system is one element of Sound Transit. Other existing and planned elements include commuter rail service, HOV expressway access and regional bus routes. The City of Seattle is working with Sound Transit on station planning to assure that local land use policies and regulations are considered. The City is also considering transit-oriented development and compatibility with neighborhoods.

Street Vacation Policies

The City of Seattle has adopted comprehensive street vacation policies and procedures (Resolution 30702, adopted October 18, 2004) intended to promote consistency, equity and predictability in determining actions in the best public interest. Land dedicated for streets and other public right-of-ways are held in trust by the City. Petitions to vacate the public right-of-ways are evaluated by a series of policies. Swedish proposes one alley vacation as part of the Master Plan. Swedish intends to initiate the alley vacation petition process concurrent with the MIMP process.

Additional sky bridge and tunnel permits are also required. The sky bridges are necessary for functional linkages for non-ambulatory patient movement. The City regulates skybridges and tunnels and has established procedures and criteria for their approval intended to assure the public interest is served. Skybridge permits are governed by SMC 15.64. Petitions for skybridge permits may be submitted to the City for a special permit to construct, maintain and operate pedestrian skybridges. SDOT and the Seattle Design Commission make recommendations to the City Council. Construction plans are required for final approval by ordinance.

Application for tunnel permits are processed by SDOT and are the same process as for skybridges. Swedish would comply with all applicable skybridge and tunnel application and procedural requirements when specific projects are designed.

Potential Impacts of Skybridges

The proposed relocated skybridge over Marion will not significantly change existing conditions. The alignment would be perpendicular to the street rather than an angle crossing and it would be located further east than the present location. The change would align with Summit Avenue and provide a direct connection, intended to improve and simplify circulation. The proposed skybridge over Minor would affect street corridor views but there is an existing skybridge a half-block to the north that already limits street corridor views. The proposed skybridge across Cherry may affect westerly views. The potential view impacts would not be significant due to the top of the hill location. No protected views or established view corridors would be impacted. Minimum clearances (minimum vertical clearance is 16.5 feet per Seattle Street Improvement Manual 3-22) as required by the City over the streets would be maintained by all skybridges.

Tunnel permits would also be required for proposed Swedish below-grade crossings of public right-of-ways. Tunnels, including the one proposed tunnel under Minor, would be designed and constructed in a manner that they did not adversely affect below-grade utilities.

SDOT will evaluate the proposed skybridges/tunnel per established criteria (SMC 15.64.050 B): That horizontal and vertical clearance is adequate; That structural adequacy is insured; Potential conflict with existing or proposed utilities, street lighting or traffic control devices; View blockage; Interruption or interference with existing streetscape; Reduction of natural light; Reduction of pedestrian activity at street level; The number of pedestrians projected to use the skybridges; Effect on commerce and enjoyment of neighboring land use; Availability of reasonable alternatives; Effect on traffic and pedestrian safety; and Accessibility for elderly and handicapped. The specific impacts of the skybridges/tunnel are evaluated in this EIS. See specific sections including light/glare, aesthetics, land use, transportation, utilities and the Appendix 4 wind analysis. No significant adverse impacts for all topics are expected.

2) Impacts-Proposed Action and Alternatives

Proposed Action

Land Use

The Proposed Action largely replaces existing facilities with replacement structures that maintain the same mix of land uses. Within the Swedish campus boundaries, medical office land uses would increase and there is potential for retail uses to decrease slightly unless retail uses are incorporated into the first floor of new office buildings.

As shown in the previous Table 3.10, Virginia Mason, Seattle University and private developers have on-going and planned projects outside of the campus limits. The specific timing is uncertain, but the cumulative growth contributes to land use intensification, which in turn, has an increased cumulative impact on residential, retail and small business land uses. The increase of major institutional uses may reduce the mix of other land uses in the First Hill neighborhood. Because the sustainability of residential neighborhoods is dependent in part on the ability to provide necessary services within the community (grocery, retail, small business), the intensification of institutional uses within the First Hill Urban Center Village reduces the viability of residential neighborhoods as people have to travel farther and farther from home to meet their basic needs.

The phased development of Swedish projects may require interim use relocations off-campus to allow demolition and new construction. Space may be leased within the First Hill campus vicinity or elsewhere that would impact land use and development activity. Occupancy may be extended depending on project timing.

Plans and Policies

The relationship of the Swedish master plan with the Seattle comprehensive plan goals and policies, including the human development element is detailed in the accompanying Draft MIMP document. It is incorporated by reference as part of the EIS.

The City of Seattle updated Comprehensive Plan retains the urban village strategy. It directs most growth and investments in public services to jobs and housing concentrations called urban centers and urban villages.

Statistics and supporting data have been updated. Plan elements, goals, and policy revisions and re-organizations have been made. For example, one land use element policy change for new development in urban centers and villages is to require less parking than now required to reduce dependence upon cars.

The prior plan noted quite high residential and employment growth estimates for First Hill and Capitol Hill and less than half of the target has been achieved. Expectations are now for a slower pace of growth. Future growth may be constrained by development capacities. The new estimate for First Hill housing growth is 1,200 units (33 units/acre). The new job estimate is 2,000 jobs (105 jobs/acre). The ratio of jobs to housing will remain constant for the First Hill/Capitol Hill Urban Center at 1.6 in 1994, 2004 and 2024 and is close to the citywide total of 1.7 (2024).*

The Swedish Proposed Action is consistent with the updated Comprehensive Plan in that it contributes to the planned job increases in a designated urban center where housing is nearby and public services are already available.

Seattle Land Use Code (Zoning)

The probable impacts of the proposed development standards and height changes are discussed in this section. The relationship with underlying zoning is analyzed and rezone criteria are identified. Figure 3.8 depicts the MIO Districts, the proposed rezones and the underlying zones.

Major institutions are required to comply with the provisions of the underlying zoning unless those standards are modified by an adopted major institution master plan. The prior Swedish master plan included approved, modified standards. The current Swedish master plan details tailored development standards consistent with requirements (SMC 23.69.030 C), including height, setbacks, lot coverage, density, and open space and landscaping. Certain modifications are also proposed from other provisions of the Land Use Code.

* City of Seattle Comprehensive Plan Recommended Amendments, DPD Director's Report and Mayor's Recommended Amendments, August 2, 2004

No change to the existing Major Institution Overlay (MIO) district boundary is proposed. No change of the underlying zoning districts is proposed. However, two changes to the current MIO height designations are proposed that require a rezone:

- Block bounded by Marion-Minor-Columbia-Boren
  Existing: west block half MIO-90 east block half MIO-240;
  Proposed change: full block to MIO-160
  Underlying zoning NC3-160 (no change)
- Block bounded by Cherry-Broadway-James-Minor
  Existing: MIO-70
  Proposed change: MIO-105
  Underlying zoning NC-3 85 (no change)

The Land Use Code includes height criteria for considering MIO district height designations (SMC 23.34.124):

- "Increases to height limits may be considered where it is desirable to limit MIO district boundary by expansion"
- "Height limits at the district boundary shall be compatible with those in the adjacent areas"
- 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"
- Height limits should generally not be lower than existing development to avoid creating non-conforming structure"
- "Obstruction of public scenic or landmark views to, from or across a major institution campus should be avoided where possible"

Analysis of the rezone criteria for the two proposed MIO height changes is summarized as follows:

- Two heights are proposed to be increased (MIO 90 to MIO 160 and MIO 70 to MIO 105) and one is proposed to be reduced (MIO 240 to MIO 160). No boundary change is proposed. The height changes are necessary to accommodate proposed development and maintain the well established boundaries formed by major arterials.
- The allowable heights of adjacent districts are comparable to the proposed height changes. The adjacent HR zone allows 160 foot height and 240 foot height with certain bonuses and the underlying NC zone allows 160 foot height (proposed MIO 160). The adjacent and underlying NC zone allows 85 foot height (proposed MIO 105).
- Transitions of zoning heights at the Swedish campus are maintained with highest heights (240 feet) at the core and lower heights at campus edges.
- Height limits are consistent with heights of existing development so there are no non-conforming structures
- There are no designated scenic routes and landmarks on or adjacent to the Swedish campus so views are not impacted.

In addition, general rezone criteria must be considered (SMC 23.34.008) that consider Urban Village capacity, neighborhood plans, zoning principles, district boundaries, impacts, services, changed conditions and critical areas. DPD will complete a full rezone analysis as part of the evaluation of the master plan in the Director's Report.

The underlying zoning at the Swedish First Hill campus includes both residential and commercial zones (see zoning map in master plan). Specifically, zoning is Multi-Family Residential (SMC 23.45) Highrise (HR) and Midrise (MR) generally within the core and southwest portion of the campus. Zoning is Neighborhood Commercial (NC3-85' and NC3-160', SMC 23.47) generally along Broadway and Madison. In addition, there is a pedestrian overlay (P-1, 23.47) along the half-block wide Madison Street frontage. The underlying zoning districts are not proposed to be changed, other than replacement of development standards by the MIMP's development standards (see Table 3.11).

Impacts are addressed in terms of standards for height, setbacks, density, and lot coverage, landscaping/open space, modulation/width/depth and street level uses. Table 3.11 summarizes a comparison of the zoning development standards. The proposed Swedish master plan standards that in some cases change the underlying zoning standards, are included in the table.

a) Height

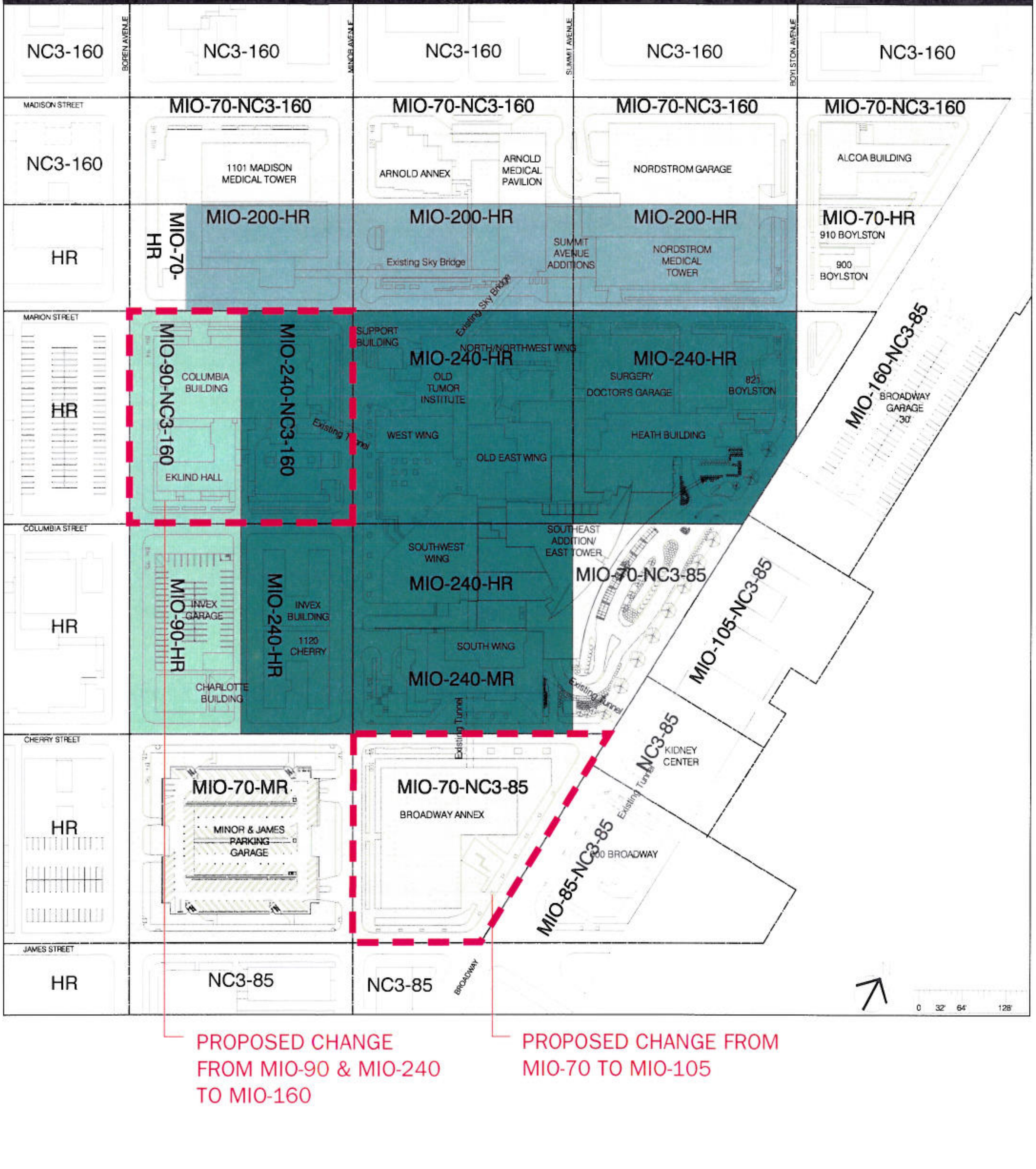
The HR zone has a maximum height of 160 feet except there are bonus provisions to increase the height to a maximum of 240 feet. The maximum height in the MR zone is 60 feet. The NC zones have maximum heights of 85 and 160 feet. Two proposed changes to the height limits may cause impacts.

The first proposed change would replace the split half-block 90/240 foot heights with 160 feet for the entire block. The proposed 160 foot height is the same as the underlying zoning height limit. The location is across Boren where the Highrise zone has height limits of 160 feet that may be increased to 240 feet. Highrise zones are also located to the north and south where the MIO overlay heights are actually less than the underlying zoning (70 feet and 90 feet respectively). Impacts of this height change are insignificant and may be more consistent with underlying zoning and improve compatibility.

The second proposed height change would increase the MIO height limit from 70 feet to 105 feet where the underlying zoning allows 85 feet. NC zones to the south and east also have an 85 foot height limit. The established Swedish garage to the west has MIO 70 foot and MR 60 foot height limits. To the north, is the established Swedish South Wing that also has the MR underlying zone but has a 240 foot MIO overly height limit. Development on these sites would be unchanged by the Proposed Action. Impacts may occur due to lower surrounding allowable heights. The higher height would result in a minor difference in scale with the properties zoned NC3-85' to the south and east. However, established Swedish development, including the 600 Broadway Building to the east is compatible institutional development. Height/bulk/scale differences are also mitigated by the two major arterial separations created by James and Broadway. Impacts of the height change are not expected to be significant and primarily impact Swedish. The circumstances of the continuing institutional development and major street separations effectively reduce any potential adverse impacts.

FIGURE 3.8

MIO Districts and Underlying Zoning



KEY TO FIGURE 3.8

PROPOSED CHANGE TO DEVELOPMENT STANDARD (REZONE)

MIO-240

MIO-200

MIO-90

MIO-70

HR Highrise Multi-Family Residential
MR Midrise Multi-Family Residential
NC3 Neighborhood Commercial 3
MIO Major Institution Overlay District

*Building heights are approximate and vary by measurement location due to grade differences

MIO-240

East Tower
Height: 182'
Area: 441.067 sf

Main Surgery
Height: 31'
Area: 62,302 sf

821 Boylston
Height: 21'
Area: 61,703 sf

Heath Building
Height: 121'
Area: 118,297 sf

North/Northwest Wing
Height: 77'
Area: 61,703 sf

Old Tumor Institute
Height: 26'
Area: 12,541 sf

West Wing
Height: 125'
Area: 140,255 sf

Old East Wing
Height: 160'/168'-6"
Area: 118,448 sf

Southwest Wing
Height: 164'
Area: 285,070 sf

South Wing
Height: 87'
Area: 157,967 sf

Columbia Building
Height: 103'
Area: 285,070 sf

MIO-200

Nordstrom Medical Tower
Height: 174'
Area: 201,764 sf

1101 Madison Medical Tower
Height: Base 60'
Tower 120'
Area: 306,266 sf

Arnold
Height: 179'
Area: 197,201 sf

MIO-90

Columbia Building
Height: 103'
Area: 285,070 sf

Eklind Hall
Height: 63'
Area: 18,000 sf

Invex Garage
Height: 14'
Area: 21,284 sf

Charlotte Building
Height: 47'
Area: 7,826 sf

MIO-70

Alcoa Building
Height: 30'
Area: 39,634 sf

900 Boylston
Height: 16'
Area: 8,124 sf

910 Boylston
Height: 21'
Area: 9,332 sf

Nordstrom Garage
Height: 59'
Area: 153,078 sf

Arnold Medical Pavillion
Height: 179'
Area: 197,201 sq

Arnold Annex
Height: 26'
Area: 21,284 sf

1101 Madison Medical Tower
Height: 60'
Area: 306,266 sf

Minor & James Parking Garage
Height: 40'
Area: 307,207 sf

Broadway Annex
Height: 51'
Area: 75,165 sf

b) Setbacks

The proposed setbacks are depicted in the graphic, Figure 3.9. They may be compared with the current setbacks of the underlying zoning described as follows.

Highrise Zone Setbacks (23.45.096)
The setback standards for institutions within a Highrise zone are:

Front
- Average of structures on adjoining lots but not to exceed 20 feet.

Rear
- 20 feet.

Side
- 5 feet, except 10 feet minimum side street or abut residential zone
- 14 feet setback for structures 91-120' height
- 16 feet setback for structures greater than 120' height
- additional side setbacks on sliding scale if greater than 65' depth.

Midrise Zone Setbacks (23.45.096)
The Midrise zone setbacks are generally as follows. Certain exceptions and special provisions apply (see cited code section for specifics):

Front
- Average of adjoining structure setbacks and not more than 20 feet

Rear
- 10 feet.

Side
- 5 feet, except 10 feet minimum side street or abut residential zone
- additional side setbacks on sliding scale if greater than 65' depth.

FIGURE 3.9

Setbacks

KEY

- 10 Foot Landscape Setback
- 10 Foot Setback
- 5 Foot Setback
- No Setback

TABLE 3.11

Comparison of Zoning Development Standards

	Highrise (HR)	Midrise (MR)	NC-3 85	NC-3 160	P-1 Ped. Overlay	Current Swedish Master Plan Standards (Ordinance #111993)	Proposed Swedish Master Plan Standards
Maximum Height	160 feet; 240 feet w/ public benefits	60 feet	85 feet	160 feet	NA	70 feet; 90 feet; 200 feet; 240 feet	70 feet; 90 feet; 105 feet; 200 feet; 240 feet
Setbacks	Front: Average of structs. on adjoining lots; but not to exceed 20 feet Rear: 20 feet Side: 5 feet, except 10 feet min. side street or abut res. zone; 14 feet setback for struct. 91-120' height; 16 feet setback for struct. >120' height; additional side setbacks on sliding scale if >65' depth	Front: Average of structs. on adjoining lots; but not to exceed 20 feet Rear: 10 feet Side: 5 feet except 10 feet min. side street or abut res. zone; additional side setbacks on sliding scale if >65'depth	15 feet triangular setback where NC lot abuts side/front lot line of res. zone; Rear & Side: req. if NC zone lot abuts res. zone; 0 feet setback where <13' ht, 10 feet setback 10'-65' ht, 1 foot setback for every 10'> 65' ht;	15 feet triangular setback where NC lot abuts side/front lot line of of res. zone; Rear & Side: req. if NC zone lot abuts res. zone; 0 feet setback where <13' ht, 10 feet setback 10'-65' ht, 1 foot setback for every 10'> 65' ht;	NA	Based on façade height and zone across street, lot or alley; None on Madison, James and Broadway; 0-20 feet along Boren; 0-20 feet along internal streets Exceptions: Block 95: 12 feet for garage; No setbacks for Blocks 119, 121, 130, or 134 for Marion Garage step-backs 10 feet/story along Madison, James, Broadway, and Boren	10 feet along Boren, Madison, James; 5 feet along Broadway; none along internal campus streets
Maximum density (FAR)	None	None	FAR 6 mixed use; FAR 4.5 single use	FAR 7 mixed use; FAR 5 single use	NA	None	FAR 5.5 for total campus
Maximum Lot Coverage	None but open space controls; effective 50-75%	None but open space controls; effective 60-90%	None;	None;	NA	None	80% for total campus

	Highrise (HR)	Midrise (MR)	NC-3 85	NC-3 160	P-1 Ped. Overlay	Current Swedish Master Plan Standards (Ordinance #111993)	Proposed Swedish Master Plan Standards
Open Space	50% lot area; may be reduced to 25% at grade	25% to 40% of lot area; minimum 10% at grade	None	None	NA	Street trees along Madison and Boren and other perimeter streets; per landscape plan (Exhibit G)	Minimum 5% of total campus 0.5 acre designated open space along Broadway
Modu-lations & Width/ Depth Limits	Max. 90 feet width for facades < 37' height w/o modulation; Max. 100' width for facades >37' w/o modulation No max. width and mod. only for first 60' of facade for facades > 37' height w/ modulation Maximum depth = 65% lot depth	Max. 60 feet width w/o modulation; Max. 150 feet width w/ modulation Maximum depth = 65% lot depth	None	None	Maximum 30 foot blank façade length	None	None
Street Level Uses	NA	NA	NA	NA	Retail/ comm-ercial along Madison and corner at Broadway Restricts parking and curbcuts	Retail/commercial along Madison	Retail/commercial along Madison
Other							
Location of ED Access	Only on an arterial	Only on an arterial	-	-	-	Any new ER entrance need not be on arterial	Any new ER entrance need not be on arterial
Light/ Glare	Standards apply	Standards apply	Standards apply	Standards apply	NA	Per code: No glare analysis required if materials used <20% reflectance	As proposed in MIMP

Parking Access and Location	Standards apply	Standards apply	Standards apply	Standards apply	Standards apply	No entrances or exits for new parking garages on James, Boren Broadway & Madison	As proposed in MIMP
Odor	Standards apply	Standards apply	Standards apply	Standards apply	NA	NA	Code provisions apply
Noise	Standards apply	Standards apply	Standards apply	Standards apply	NA	Per code	Code provisions apply
Loading	Standards apply	Standards apply	Standards apply	Standards apply	Standards apply	Based on actual utilization as determined by SED	As proposed in MIMP
Signage	Standards apply	Standards apply	Standards apply	Standards apply	NA	NA	As proposed in MIMP
Land-scaping	Standards apply	Standards apply	5% at grade for new construction on vacant lots	5% at grade for new construction on vacant lots	NA	Per MIMP Landscaping Plan (Exhibit G)	As proposed in MIMP

Commercial Zone Setbacks (23.47.014)
Setbacks are required only if lots abut a residential zone lot or if street trees cannot be provided. A 15 foot triangular setback is required where a commercially zoned lot abuts the side or front lot lines of a residential zone. Rear and side setbacks range from 0 to 10 feet for structures up to 65 feet in height (plus 1 foot setback/10 feet height over 65 feet height). This setback is required only if the NC zone lot abuts a residentially zoned lot (such as along the Madison corridor).

There is 0 foot setback required along Madison, Broadway and James based on the adjacent and underlying zones. The proposed master plan standards are greater with larger setbacks (10 feet along James and Madison and 5 feet along Broadway). The impact is that the proposed Swedish development standard exceeds the minimum setback requirement of the underlying zone along the campus boundaries. Internal campus setbacks along local streets (Cherry, Columbia, Marion, Minor, Summit, Boylston) are all proposed to be 0 feet. Depending upon which yard (front/rear/side), the proposed setback standard is less than the setback of the Highrise and Midrise zones. An Administrative Conditional Use Permit (per 23.45.122) will be sought to provide for certain setbacks requested in the MIMP. The residential setbacks are proposed to be replaced by new institutional setbacks defined in the development standards component of the MIMP. No significant impacts would occur because all adjacent development is compatible as Swedish and/or institutional use.

c) Density

No density (floor area ratio–FAR) standards apply to the Highrise and Midrise zones. A maximum density of the NC3-85 zone is FAR 6 for mixed use and FAR 4.5 for single purpose use and any single use in a mixed use structure. The maximum density of the NC3-160 zone is FAR 7 for mixed use and FAR 5 for single purpose use and any single use in a mixed use structure.

The Swedish master plan proposes a maximum campus wide density limit of FAR 5.5. The standard is comparable to the commercial zones so resulting density would be similar. No significant impacts are expected.

d) Lot Coverage

The residential and commercial zones do not have specific lot coverage standards. However, open space and setback requirements effectively restrict lot coverage. The Highrise zone lot coverage amounts to 50 to 75% when required open space and setbacks are applied. The Midrise coverage amounts to about 75-90% coverage, again, due to open space and setback provisions. The commercial zone coverage effectively is 95% due to the 5% ground level open space requirement for new construction on vacant lots.

The Swedish master plan proposes maximum campus wide lot coverage of 80%. The amount of structure footprint is comparable to the applicable underlying and adjacent zone's effective coverage. No significant impacts are expected.

e) Landscaping/Open Space

The open space varies in the residential zones by housing type. The Highrise zone requires open space and landscaping at 50% the lot area and the amount at ground level may be reduced to 25%. Screening must amount to an area equal to three times the property line lengths. Open space for the Midrise zone must be provided at 25 to 40% of the lot area with a minimum of 10% at ground level. The amount is also related to the number of housing units. The commercial zone requires 5% of the lot area be ground level opens space for new construction.

Swedish proposes a minimum campus wide open space amount of 5%. This is greater than the commercial zone standard and less than the residential zone standards. 'Designated Open Space' is identified at the main hospital Broadway entrance and amounts to about 0.5 acres. The underlying and adjacent zones have no designated open space requirement. The lack of residential development and primarily institutional and commercial development contributes to the existing pattern of open space. The landscaping and open space standard impacts would likely not be significant.

Director's Rule 13-92 specifies landscape requirements for Land Use Code and SEPA compliance. Planting specifications, tree size and number, irrigation, and process requirements are noted. Swedish would comply with applicable landscape requirements at the time of specific project permit application.

f) Modulations/Width/Depth Limits

Modulation of facades in the Highrise zone must be at least 5 feet wide and 4 feet deep. The Highrise zone limits structure width and depth to a maximum of 100 feet when the structure is greater than 37 feet in height. Modulation of the Midrise zone must be a minimum of 10 feet and maximum of 40 feet and minimum 8 feet deep. The Midrise zone limits structure maximum width to 40 to 150 feet, depending upon whether modulation is provided. Maximum depth ranges from 25% to 65% of lot depth depending upon housing type to a maximum of 150 feet. The commercial zone has no width/depth/modulation requirements.

Swedish proposes no development standards for modulation and maximum facade width and depth. The combination of height, setback coverage and open space are sufficient to mitigate height/bulk/scale impacts. Characteristics of the location also reduce the need for modulation and facade standards. The platting pattern with angled intersections from different street grids reduces apparent building massing. The development concept with most intensive uses at the center of the Swedish campus and reduced intensity toward campus edges improves compatibility. The nature of institutional uses and necessary functional building footprints cannot be easily modulated. The pedestrian overlay zone also mitigates campus edge transitions with pedestrian oriented street level uses (see following).

g) Street Level Uses

The P-1 pedestrian overlay zone applies to the half-block deep Madison Street frontage of the Swedish campus and extends to a portion of the Broadway frontage. It requires pedestrian active uses at street level including retail, customer service office, entertainment and food and beverage establishments. Parking and vehicle access are restricted. Required parking may also be reduced (no parking for the first 25,000 SF of the noted retail in the NC-3 zone).

Swedish proposes to comply with the overlay zone provisions so there is no significant adverse impact. A 10 foot setback is proposed along Madison Street (0 foot setback is required) in order to provide wider sidewalks and other streetscape amenities to improve the pedestrian environment.

Changes to Planned and Potential Projects

If similar replacement projects were developed to fulfill hospital, medical office and support functions the resulting impacts would be the same. The distribution of land uses within the campus may shift but the overall land use mix on campus and within the First Hill neighborhood would be similar to the Proposed Action. Impacts of this alternative would likely not be significantly different than those from the Proposed Action.

No Alley Vacation

This alternative would not necessarily impact the mix and distribution of land uses proposed for the Swedish campus. Impacts of this alternative would likely not be significantly different than those from the Proposed Action.

No Action

As described above, other significant development projects are planned in the surrounding area. The No Action Alternative would not impact current land uses within the campus, but without replacement hospital projects or additional medical office uses these functions would have to be located outside the MIO.

3) Mitigating Measures

The First Hill Neighborhood Plan identifies the preference for ground floor uses that encourage pedestrian activity. Land use impacts of the Proposed Action may be mitigated by including such amenities that serve the needs of the campus and the community, such as restaurants and convenience retail.

Swedish should coordinate with the ongoing First Hill park planning of the Seattle Parks and Recreation Department. Campus open space, landscaping and other pedestrian amenities should be planned within the neighborhood context.

The proposed development standards of the master plan would mitigate land use impacts.

4) Significant Unavoidable Adverse Impacts

Institutional building area and density will increase. However, this increase is generally consistent with adopted City plans and policies. There are no significant unavoidable adverse impacts from the Proposed Action.

Population and Employment

1) Affected Environment

Community Population and Employment

The First Hill Urban Center Village is both a medium density residential neighborhood and a major employment center, due to the three regional medical centers and neighboring Seattle University. Census 2000 data registered 8,032 individuals living within the First Hill neighborhood, representing 1.4% of the total Seattle population. Minors under eighteen years of age comprise only 4.9% of the First Hill neighborhood, compared to 15.6% throughout the city. In contrast, the urban center village has a more significant 65 and over population: nearly 20% of First Hill residents fit this description compared to 12% overall. Table 3.12 on the following page compares the First Hill demographics to the City of Seattle information.

In terms of educational background, fewer First Hill neighbors have attained a bachelor's degree or higher than the city-wide population. The percent of those who have acquired high school graduation is very similar.

Median income reported by the First Hill neighborhood is significantly less than city-wide figures with First Hill families making only 67% of the median Seattle family income. In addition, 21.9% of First Hill residents lived below the poverty line compared to the Seattle average of 12.4%. Yesler Terrace and Jefferson Terrace are Seattle Housing Authority complexes housing the majority of low-income residents in the neighborhood.

Swedish Campus Population and Employment

Existing Swedish First Hill populations include physicians, staff and outpatient visitors. In 2003, there were 36,725 emergency department visits. Inpatient admissions amounted to 31,370 and the number of inpatient days was 138,088 in 2003. Thus the average length of stay was 4.4 days. Numbers of existing Swedish populations are given in Table 3.13.

TABLE 3.12

First Hill Demographics: 2000

	First Hill	Seattle
Total Population	8,032	563,374
Under 18 years	394	87,827
16 years and over (labor force)	7,698	485,170
65 years and over	1,575	67,807
Median Age	37.1	35.4
Percent High School Graduate or Higher (25 years and older)	87.7%	89.5%
Percent Bachelor's Degree or Higher (25 years and older)	41.9%	47.2%
Total Population 16 years and over in Labor Force (percent working)	4,641 (60.3%)	339,956 (70.1%)
Median Income		
Male	$22,447	$40,929
Female	$21,807	$35,134
Family	$41,544	$62,195
Percent of Population Living Below Poverty Level	21.9%	11.8%

Source: Census 2000, compiled by DPD

2) Impacts-Proposed Action and Alternatives;

Proposed Action

The Proposed Action does not displace or develop any residential uses and would therefore not directly impact the resident First Hill population.

The employment population of the campus varies slightly by type of use: hospital and hospital support uses are 24-hour operations; medical office uses are typically open during daytime hours; and supporting retail are primarily open during daytime hours with some early evening activity. The increased square footage of hospital, medical office and support uses implies that additional jobs would be generated. The campus population impacts would be based on the mix of uses and the hours of operation. The increased day population would likely result in increases in both retail activity and commute traffic.

Estimated changes to Swedish populations for Planned and Potential Projects are given in the following Table 3.13. The hospital replacement would impact activity levels with the noted increases. The impact is not expected to be significant.

TABLE 3.13

Approximate Swedish First Hill Campus Populations

	Existing	Future
Hospital Based MD's	40	50
Staff MD's (Non-Tenant)	550	630
Staff	3800	4400
Beds	566	697
Hospital Based Outpatient Visits*	570/Day	740/Day

Source: Swedish Medical Center

* Total existing outpatient visits including MOB based amount to 1,070/day. The annual number may be calculated by multiplying the daily numbers by 250.

Changes to Planned and Potential Projects

As in the Proposed Action Alternative, this alternative would not impact the resident population. If the same hospital replacement projects were developed, then some increase to campus employment could be anticipated. Changes to projects not involving hospital or hospital support functions would impact the campus population during daytime hours. This alternative would yield employment and population impacts similar to those of the Proposed Action. The distribution of Swedish populations on the First Hill campus may differ. The timing of the populations being on campus may also vary.

No Alley Vacation

This alternative would not result in different impacts than those of the Proposed Action.

No Action

Without the hospital replacement, hospital support and medical office projects, the No Action Alternative would not increase the campus population. No increase in retail activity would be anticipated. Patient and medical staff trips between the hospital and supporting medical offices may increase in distance if the demand for increased medical office space is not met within the MIO boundaries. Daytime traffic could increase as a result.

3) Mitigating Measures

Employment population impacts could be mitigated by varying shift schedules where possible, to prevent all employees from arriving or departing at similar times. Encouraging retail uses to have longer or later hours would vary the timing of retail employees arriving and departing work and would give all visitors and employees reason to lengthen their stay on campus.

4) Significant Unavoidable Adverse Impacts

Unavoidable impacts include an increase in the campus population which will likely result in increased traffic. Mitigation measures such as variable shift schedules have been proposed and would help distribute traffic demand. The population impacts are not expected to be significnt.

Housing

1) Affected Environment

The First Hill Urban Center Village surrounding the Swedish Medical Center campus includes a wide range of residential development types. Multi–family housing dominates, particularly in the north and south ends of the neighborhood, as well as near Seattle University in the neighboring 12^{th} Avenue Urban Center Village.

Eighty-six percent of the units are renter-occupied (the City's average renter occupancy rate is 52%). Census 2000 data reports the median gross rent in First Hill at $639 compared to the city-wide rent of $721 (see Table 3.14). The housing stock in the neighborhood is relatively older and includes fewer owner-occupied dwellings than other neighborhoods throughout Seattle. Pre-1940 housing makes up 44.3% of the housing stock while 16.3% was constructed after 1980.

TABLE 3.14

First Hill Housing Characteristics: 2000

	First Hill	Seattle
Housing Characteristics		
Total Number of Units	5,549	270,536
Persons per Unit	1.4	1.8/2.3[1]
% of Pre-1940 Housing	35.1%	32.4%
% of 1940 - 1979 Housing	48.6%	48.6%
% of Post-1980 Housing	16.3%	19.0%
Total Occupied Housing Units (% Vacant)	5,121 7.7%	258,510 4.4%
% Renter Occupied	86.4%	48.4%
% Owner Occupied	13.6%	51.6%
Median Gross Rent	$639	$721
Median Value for Specified Housing Units[2]	$227,7771	$259,600

Source: Census 2000, compiled by DPD

[1] Rental occupied/owner occupied

[2] Only nine units are represented in the Census 2000 First Hill data; all fell in the range of $200,000 to $249,999.

There are no multiple-family residences or any housing within the Swedish campus. However, approximately 670 residences are located within a one-block distance. These units are almost exclusively north, between Madison and Spring Streets. The First Hill Neighborhood provides housing for special populations in transitional housing; a new development is currently under construction immediately west of the campus at the southwest corner of Madison and Boren Avenue. Table 3.15 identifies the number of housing units in the neighborhood around Swedish Medical Center. Housing locations are illustrated in Figure 3.10, Existing Housing Inventory.

TABLE 3.15

First Hill Housing Inventory: 2000

Map Location	Description	Address	Number of Housing Units
1	Chassleton Court Apartments	1017 Boren Avenue	63
2	Decatur Apartments	1105 Spring Street	150
3	Gainsborough	101 Minor Avenue	65
4	San Marco Apartments	1207 Spring Street	24
5	Condominium Building	1223 Spring Street	21
6	First Hill Plaza	1301 Spring Street	130
7	New Mixed-use building with low income elderly apartments (construction)	1001 Madison Street	50
8	Old Colony Condominiums	615 Boren Avenue	39
9	Three-plex	610 Terry Avenue	3
10	San Juan Apartments	504 Terry Avenue	46
11	Broadway Apartments	1203 James Street	23
12	Mixed-use building with apartments over retail	524 Broadway	4
13	Fenimore Hotel apartments over retail	506 Broadway	48
14	Mixed-use building with apartments over retail	500 Broadway	4
			670

Source: Census 2000, compiled by DPD and NBBJ

1) Affected Environment

Light and Glare

The major sources of existing artificial illumination in the First Hill vicinity of Swedish are street lights and vehicle headlights. The lighting environment also includes building lighting, signage and security lighting, such as in parking areas. In some locations, sidewalk illumination from tall streetlights is restricted by street trees. There are no significant or unusually bright artificial light sources such as for industry or sports field illumination. Rather the area lighting is typical of an active, high density urban area. The 24-hour nature of the medical activity does contribute to continuous ambient lighting. The primarily commercial mix of uses does include some nearby residential uses. Nighttime sensitivities to light exposure are not significant. Impacts do occur from the four major arterials that cross the area (Madison, Broadway, Boren, James). The nearby freeway (four blocks to the west) is not affected by Swedish lighting or glare.

Natural daylight is also typical of an urbanized area with filtration by mature vegetation and street trees, and tall buildings. The elevated First Hill topography may make upper level illuminations more visible to the surroundings. The mixture of commercial, institutional and residential uses is typical of the center city.

There are no highly reflective surfaces, window glazing, mirrored glass, or building materials in the area. There is no significant reflective solar glare or artificial glare. There are no apparent light or glare hazards to traffic corridors or pedestrian activity. No natural topographic or building development conditions contribute to any unusual glare patterns.

Shadows

The block platting pattern and existing mid-rise and high-rise development create shadows on adjacent streets and local areas. There are no public parks or shadow protected places (SMC 23.05.675 Q) in the Swedish vicinity. Private property is not protected from shadow impacts by Seattle environmental policies although there is consideration of project height/bulk/scale in zoning standards.

2) Impacts-Proposed Action and Alternatives

Proposed Action

A light, glare and shadow analysis was completed for the Proposed Action, including all Planned and Potential Projects.* The maximum allowable heights and bulk were modeled to identify 'worst case' impacts. The following series of figures (Figures 3.11-3.28) depict existing shadow conditions compared with future shadow conditions at critical times of the year (summer and winter solstices and equinoxes) and critical times of the day (morning, noon, afternoon). The next set of figures (Figures 3.29-3.34) analyzes future glare impact conditions from the Proposed Action at the most critical times.

* Source: NBBJ

The analysis found that light, glare and shadow impacts will likely not be significant. No public parks are impacted. No hazardous conditions to traffic corridors are created.

Observations are offered from review of the analysis. Shadows are longest during the winter afternoons at a time when the sun is less likely to be out under clear skies. Comparison of the shadow diagrams reveals no significant change in conditions particularly with the shadowing of local streets in the vicinity of Swedish. At winter noon when sunlight may be most precious, there may be somewhat more shadows along the Minor Avenue and Marion Street corridors. At Spring morning and noon and Summer morning, shadow impacts would also be somewhat increased along these corridors. However, the impacts are not expected to be significant. At Summer noon, a key time for sunlight, there is no significant change to shadow impacts. Regarding glare, the 'worst case' impact may be at Winter morning for northbound Boren and Broadway traffic and Winter afternoon for eastbound Madison and James traffic. The sun is low in the horizon and any possible glare would be oriented along the streets. However, the change in impact from existing conditions is not significant. Existing development largely obstructs direct lines of sight between buildings and vehicles. The number of sunny days at this time of the year is limited as well.

City SEPA policies protect private schools that allow 'public use of schoolyards during non-school hours' (25.05.675Q.2.a.iii). O'Dea High School located west of Swedish and Seattle University (which is a university, not a school) located east of Swedish have no 'schoolyards'. O'Dea has a private surface parking lot, shared with St. James Cathedral, along the west side of Boren between Columbia and Marion. SU has campus open spaces including one at Broadway and Madison. None of these spaces involves public use of a schoolyard as contemplated in the City's SEPA policies. Furthermore, the shadow analysis shows that neither location is significantly impacted by the Swedish Proposed Action. In the Spring AM the parking lot's Boren frontage may be shadowed along the sidewalk and street. In the Winter PM and Spring PM there is no significant increase in shadows to the SU open space at Broadway and Madison.

Other light and glare impacts from the Swedish Proposed Action may occur from building/site lighting and vehicles associated with the institution. Lighting spill-over impacts may occur at the entry/exit doors of the physical plant (Project E) and at the emergency department (Project B) but impacts would likely not be significant. No highly reflective materials or mirrored glass is proposed. Glare would be minimal but ambient light would continue to be emitted from the campus. Impacts would not be significant.

Changes to Planned and Potential Projects

Change to building heights would be reductions to the maximum heights of the Proposed Action and modeled in the impact analysis. Resulting shadow impacts would be shortened as well. Other changes to building massing, configuration and façade orientation would also modify the shadow and glare impacts but the difference is not expected to be significant.

No Alley Vacation

Impacts from this alternative would essentially be the same as the Proposed Action. While building massing would be different without an alley vacation, the overall bulk contributing to shadow and glare impacts would be similar and not significantly change the expected impacts.

No Action

No action would result in a continuation of existing shadow, light, and glare conditions.

3) Mitigating Measures

- Shield exterior lighting fixtures and direct site security lighting away from any nearby residential or other sensitive receivers.
- Utilize low-reflectivity building glazing and building materials throughout the campus
- Install screening or shielding to minimize spillover lighting impacts, particularly across from sensitive receivers
- Provide landscape features and street trees to diffuse or obscure direct light and glare impacts
- Use materials and surface design details to minimize glare impacts, including skybridges crossing over streets
- Consider timers and other lighting controls to minimize spillover illumination impacts and generally reduce ambient light levels
- Include pedestrian oriented lighting for safety along sidewalks, parking areas, street crossings, and building access points

4) Significant Unavoidable Adverse Impacts

None are expected that cannot be mitigated.

FIGURE 3.11 **Shadows: Existing, Winter AM**

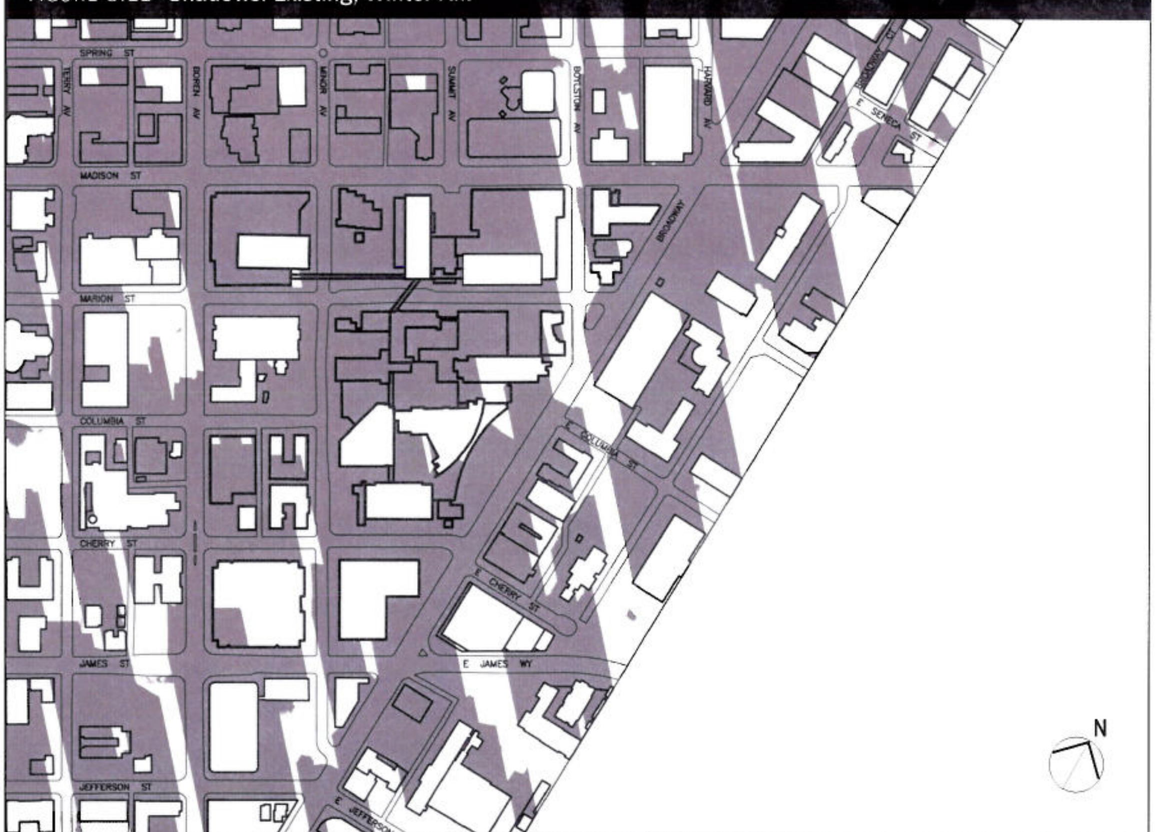


FIGURE 3.12 **Shadows: Proposed, Winter AM**

FIGURE 3.13 Shadows: Existing, Winter Noon

FIGURE 3.14 Shadows: Proposed, Winter Noon

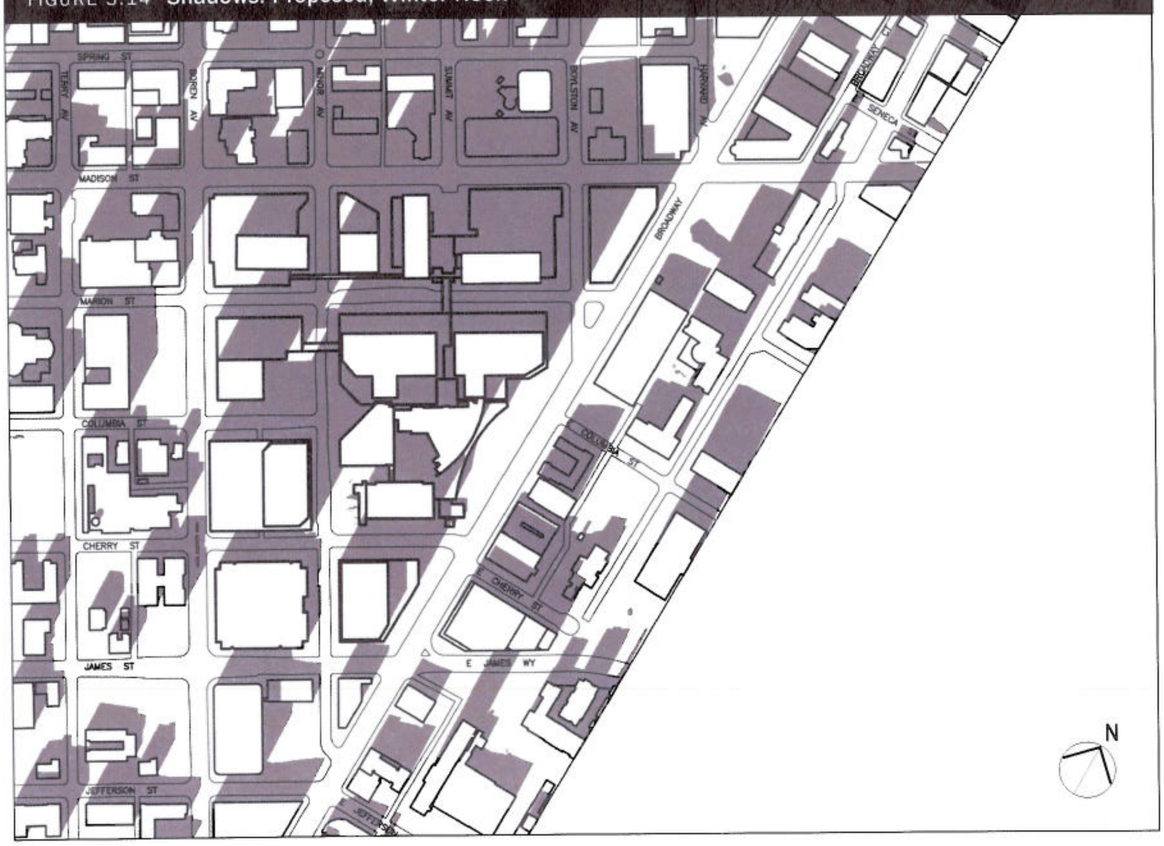


FIGURE 3.15 **Shadows: Existing, Winter PM**

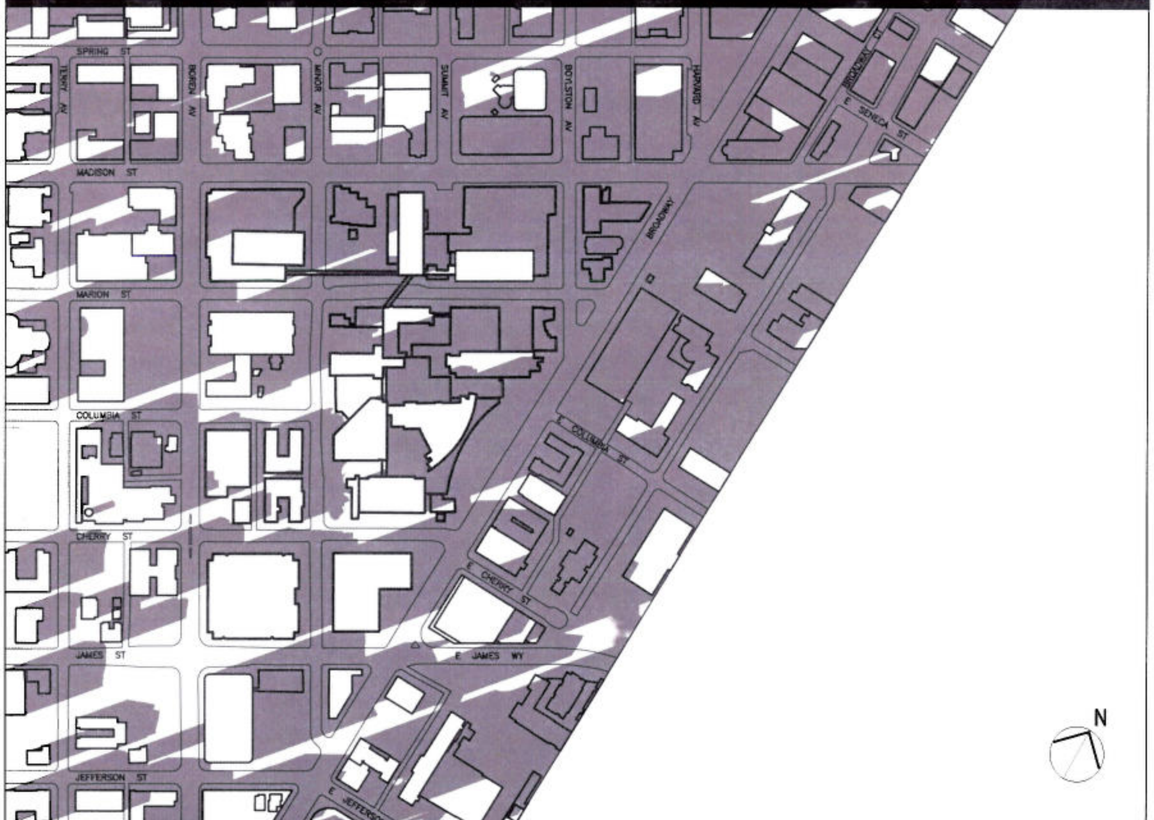


FIGURE 3.16 **Shadows: Proposed, Winter PM**

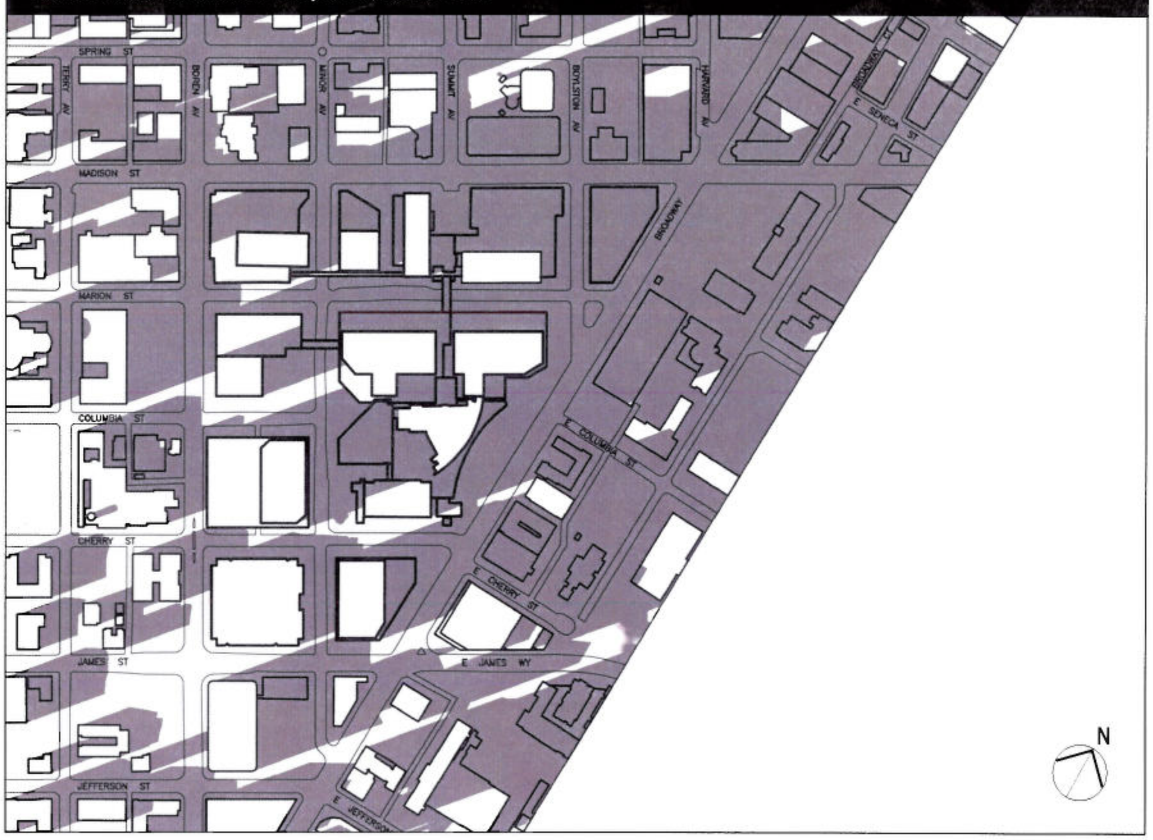


FIGURE 3.17 **Shadows: Existing, Spring AM**

FIGURE 3.18 **Shadows: Proposed, Spring AM**

FIGURE 3.19 Shadows: Existing, Spring Noon

FIGURE 3.20 Shadows: Proposed, Spring Noon

FIGURE 3.21 Shadows: Existing, Spring PM

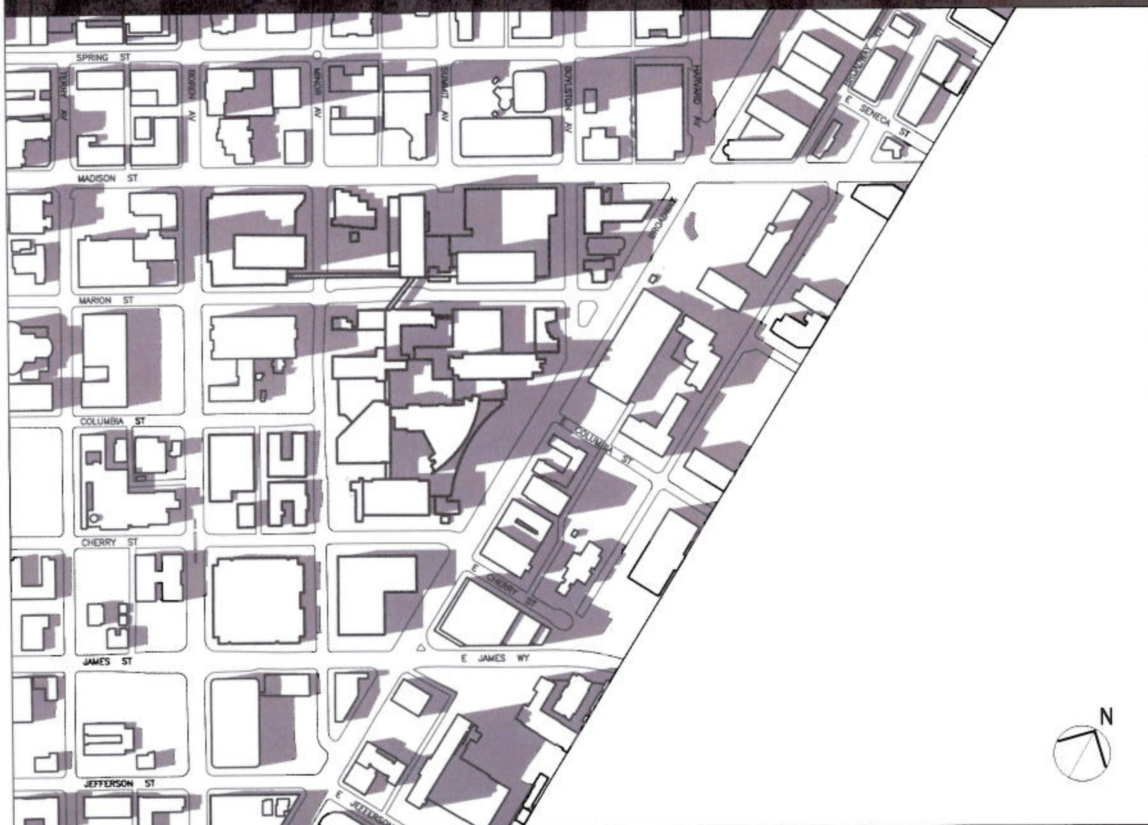


FIGURE 3.22 Shadows: Proposed, Spring PM

FIGURE 3.23 **Shadows: Existing, Summer AM**

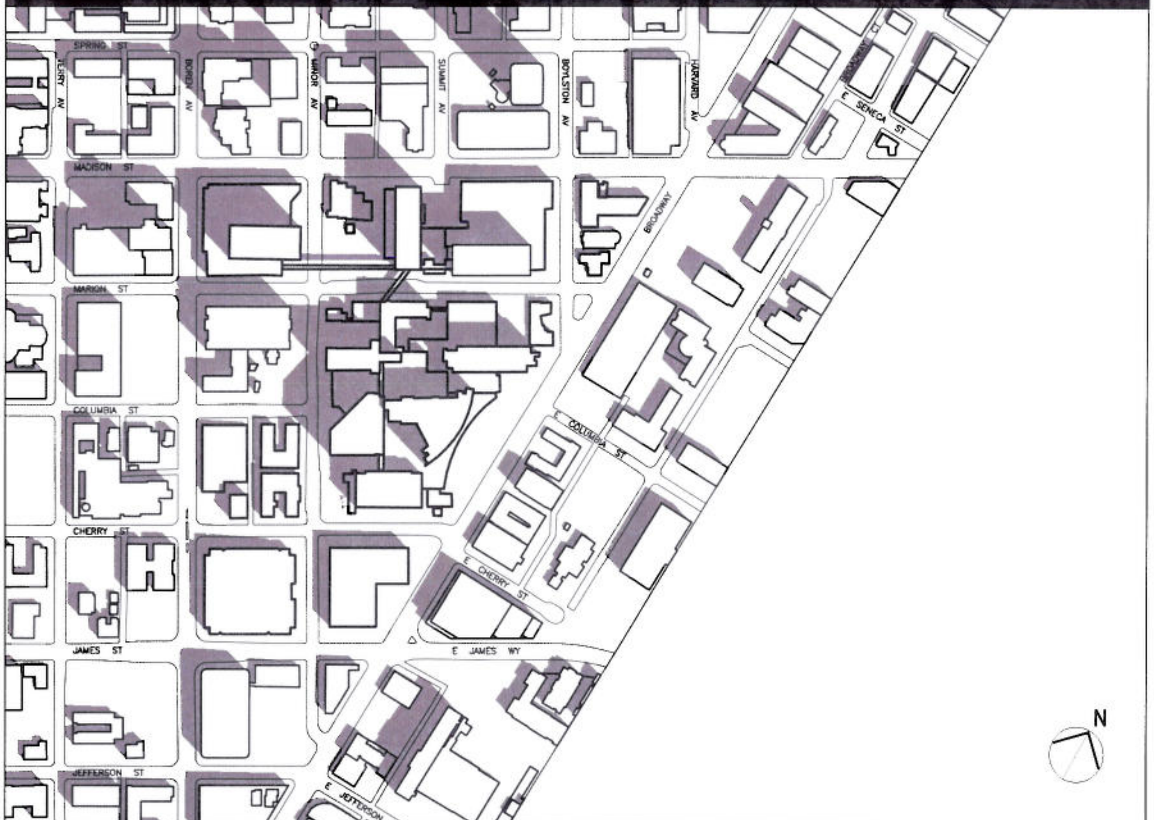


FIGURE 3.24 **Shadows: Proposed, Summer AM**

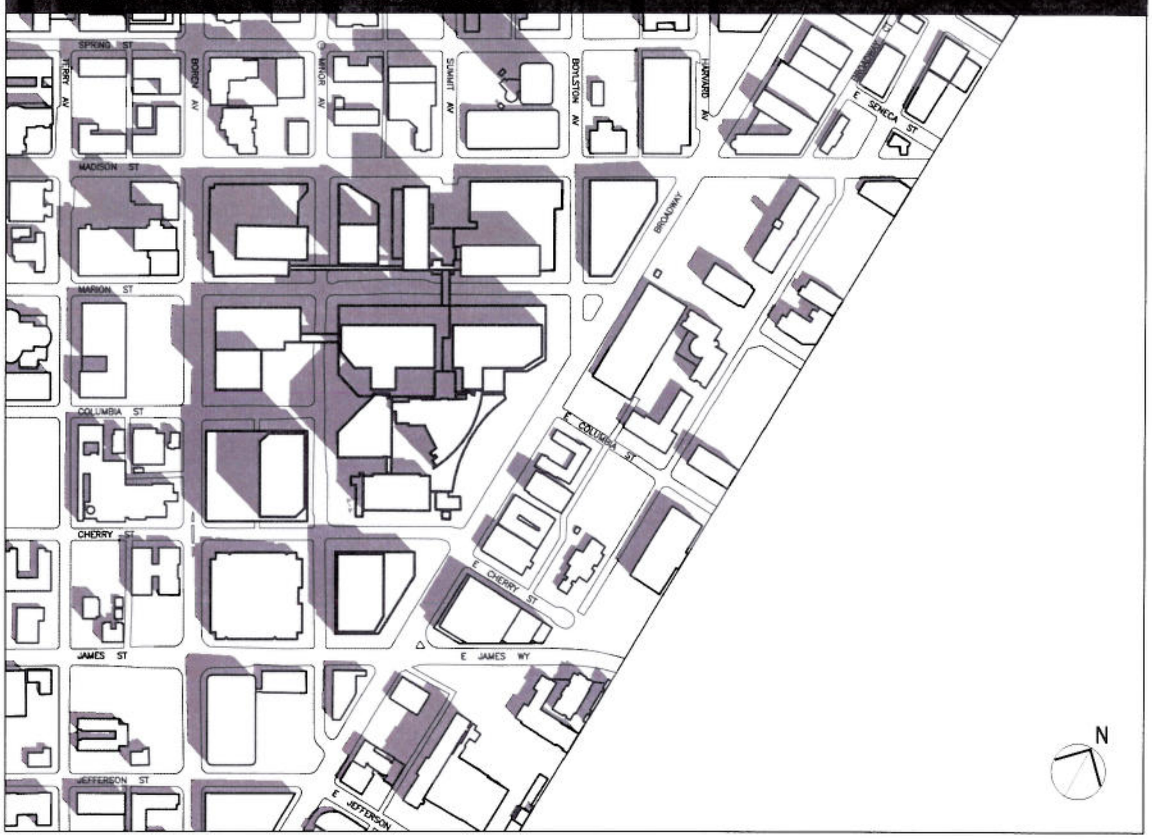


FIGURE 3.25 Shadows: Existing, Summer Noon

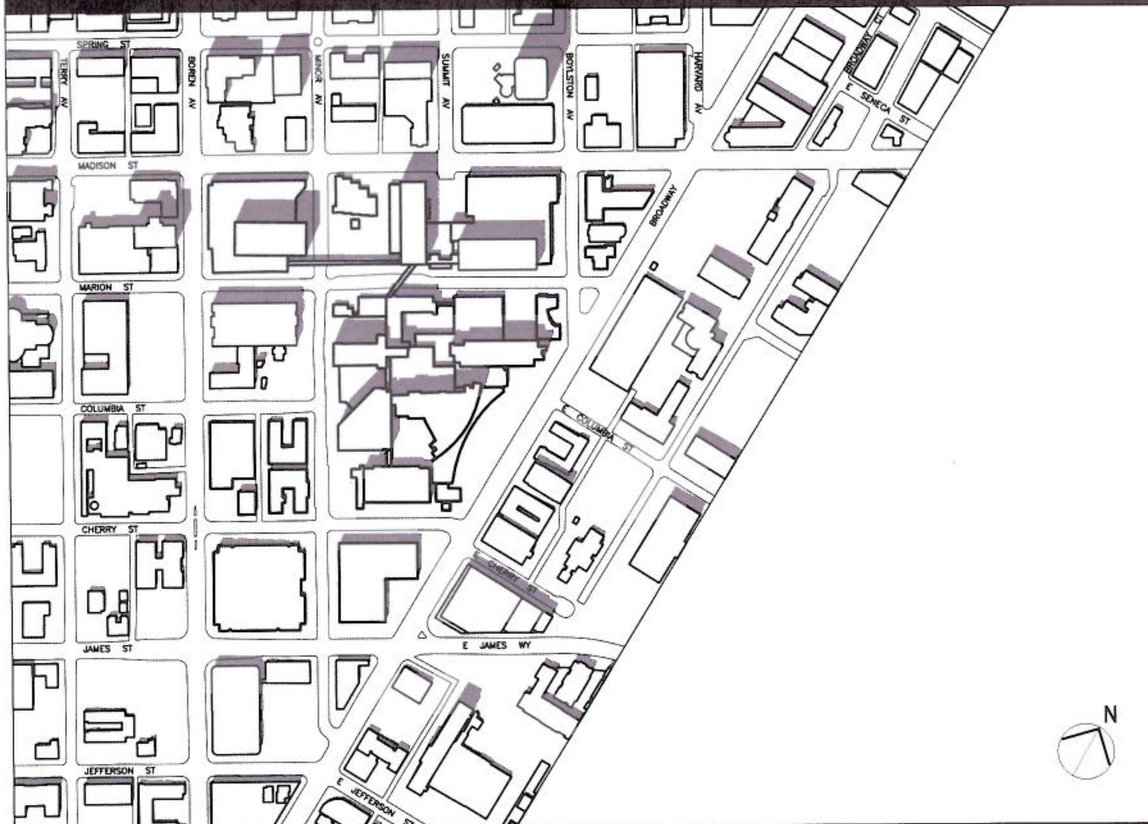


FIGURE 3.26 Shadows: Proposed, Summer Noon

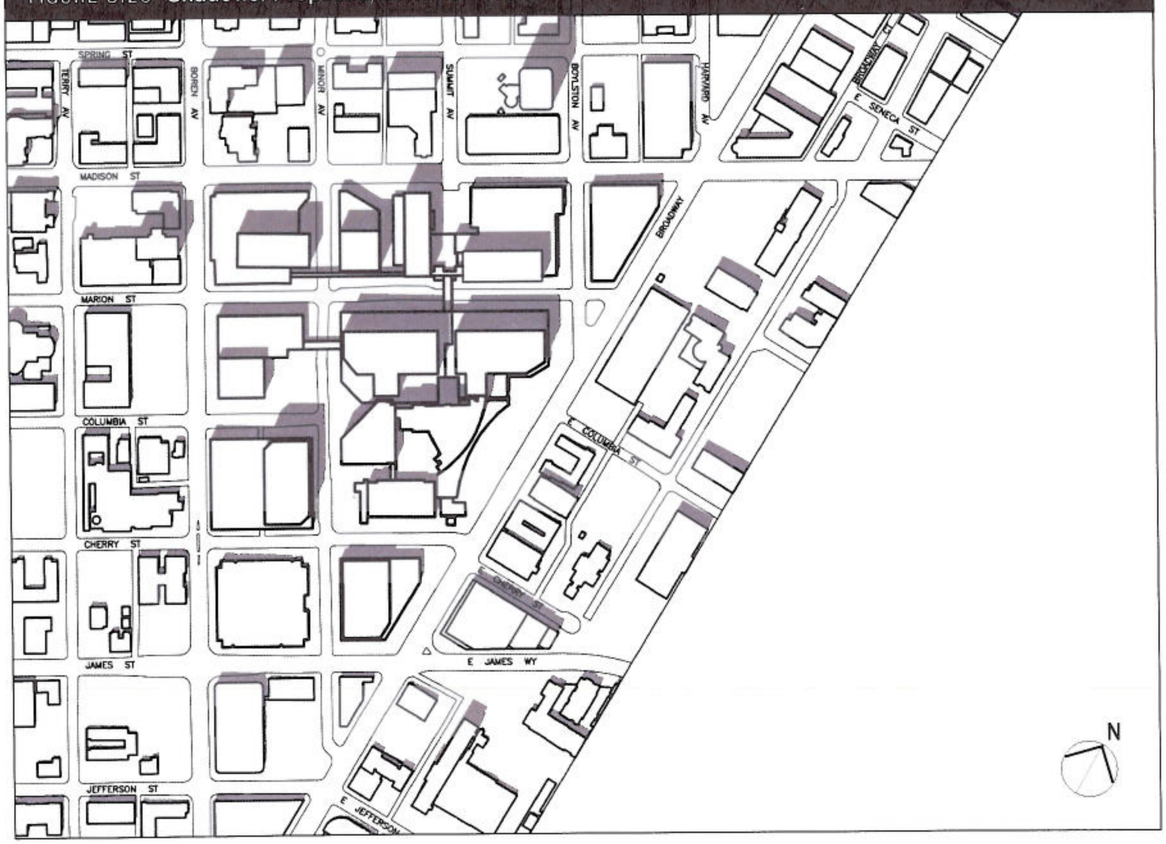


FIGURE 3.27 **Shadows: Existing, Summer PM**

FIGURE 3.28 **Shadows: Proposed, Summer PM**

FIGURE 3.29 **Glare: Winter AM**

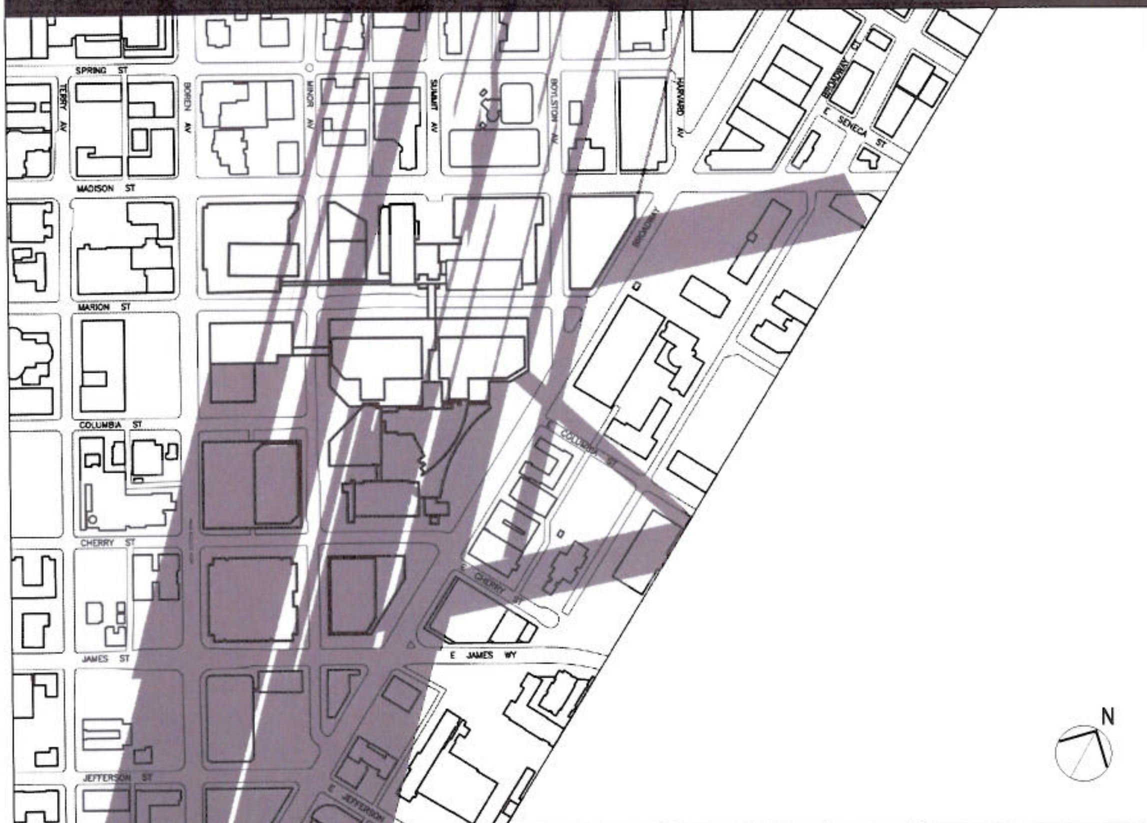


FIGURE 3.30 **Glare: Winter PM**

FIGURE 3.31 **Glare: Spring/Fall AM**

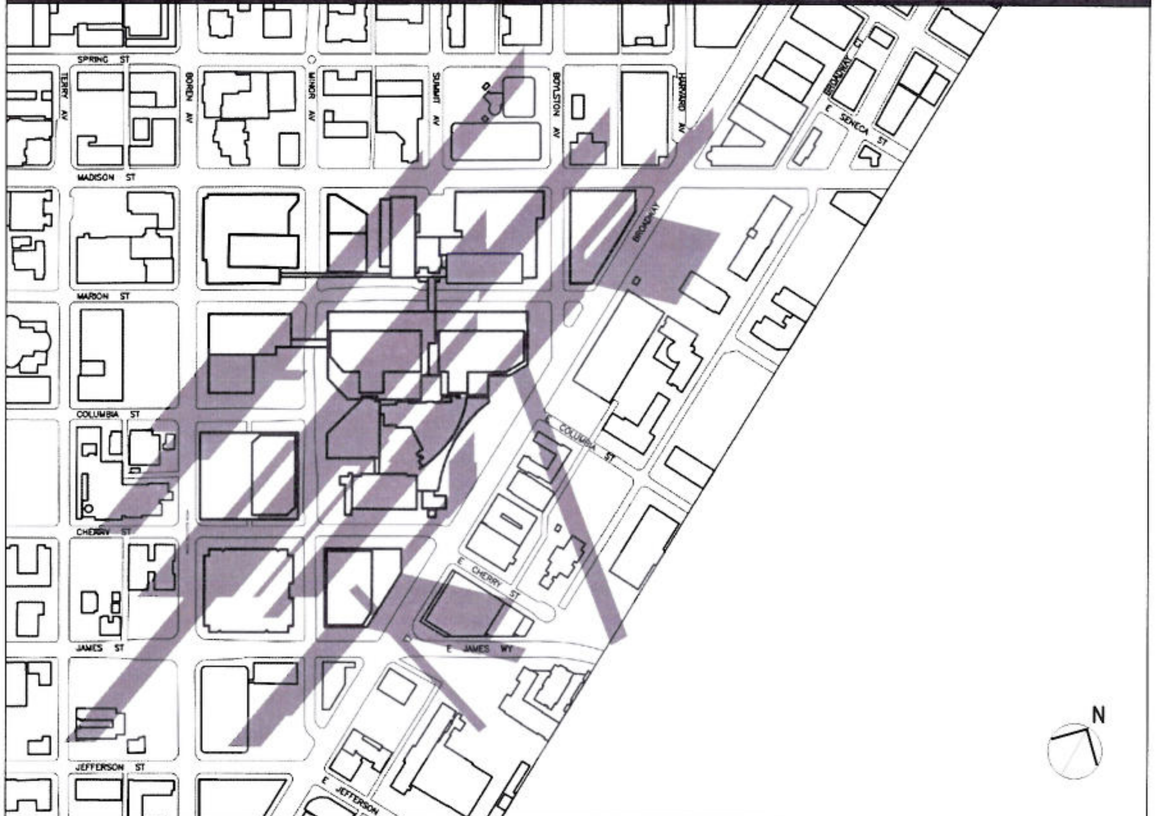


FIGURE 3.32 **Glare: Spring/Fall PM**

FIGURE 3.33 Glare: Summer AM

FIGURE 3.34 Glare: Summer PM

1) Affected Environment

The Swedish First Hill campus is geographically comprised of about a dozen city blocks developed with multiple buildings of varying scale, vintage and character. A trapezoidal area is defined by four major arterials: Boren, Madison, Broadway and James that corresponds with the MIO District. The location is at the top of First Hill topography, sloping down to downtown and the freeway westward, the Madison valley to the east, toward Capitol Hill to the north and to the Yesler Terrace to the south. The Madison commercial corridor connects downtown with Lake Washington and is developed with mixed building scales and uses, including pedestrian oriented retail, commercial, medical services, highrise residential and the Seattle University campus to the east of Broadway. Recognizable large structures include the curved Swedish East Tower (about 182 feet), that is mostly visible from the east, and First Hill Plaza, a residential condominium on Madison and the tallest structure in the area (about 327 feet). Other nearby recognizable buildings are St James Cathedral, O'Dea High School, Cabrini Medical Tower and Frye Art Museum all located west of Swedish.

The regular block platting grid extends from downtown and changes at Broadway to align with true north. Several blocks at Swedish have been combined (past street and alley vacations) to form super-blocks that are developed with connected, multiple, massive structures that form the medical core complex. Generally, the tallest and most massive buildings are at the center of Swedish with reduced scales transitioning to the campus edges. The character and scale of Swedish campus edges along the bordering arterials varies. Madison is active urban and pedestrian oriented with base structures and setback towers. Boren and James are more auto-oriented where landscaped setbacks and street tress seek to soften traffic exposures. The Broadway edge has the greatest setbacks that distinguish the main Swedish entrance and respond to the change in street grid alignment and building orientations.

There are no designated view corridors in the vicinity of Swedish. No public parks with protected views are located near Swedish. Distant views are territorial and are primarily along street corridors from upper building elevations. Street level views are more localized. City policies do not protect private views but do consider height/bulk/scale impacts in environmental review and zoning compliance.

2) Impacts-Proposed Action and Alternatives

Proposed Action

Approval and implementation of the Swedish master plan would result in a greater concentration and density of development at the First Hill campus. There would be increased height/bulk/scale impacts from the buildings. Views would be changed from existing conditions.

A 3-dimensional computer model was constructed to analyze the height/bulk/scale and view impacts from the Proposed Action.* Figures 3.35, 3.36 and 3.37 depict the individual projects and cumulative campus height/bulk/scale impact by comparing existing conditions, Planned Projects and Planned/Potential Projects respectively. The overall massing of the campus will become denser as shown. The concentration remains toward the center of the First Hill campus and the core infill is intensified, particularly along Marion Street and Minor Avenue. The amount of landscaped and paved open space would not significantly change but the increased building coverage and scales would appear to reduce the openness of the streetscapes.

A series of eleven views were taken within and around the Swedish campus as indicated in the key map (Figure 3.38). The focus is upon locations where projects are proposed and their development would impact views and building massing. The following series of figures pairs photos of existing conditions with simulations of future conditions.* Impacts are depicted. Note that detailed design of projects is not known at this time and the graphics are intended only to show general visual impacts. Future façade designs and architectural details will likely differ but the overall height/bulk/scale and views are accurate. Each development site and its context will be aesthetically impacted. Visual impacts of the proposed skybridges and the street/alley vacations are included in the selected views. Building volumes are depicted to the maximum allowable heights and massing of the MIO development standards to show 'worst case' impact. Actual building designs may be less massive and certainly more architecturally articulated. Note that the number of stories depicted may differ from actual future design. The number is dependent upon the floor to floor heights of specific uses. A typical floor height is shown to provide a sense of scale. However, the maximum total height is depicted and would not be exceeded.

View 1, from the corner of Madison and Boren, shows impacts from development of Project G (up to 160 feet) and Project E (160 foot base and 240 foot tower) with the existing 1101 Madison Medical Tower in the foreground. The vertical building walls along Boren become more prominent and continuous.

View 2, looking eastward along Madison, shows Project A in the foreground of the existing Arnold Medical Pavilion. The lower portion of the building is along Madison and the taller portion (up to 200 feet) is along Marion. The step-down in scale at this campus edge can be seen.

View 3 is looking south along Minor and shows the skybridges and shows Projects B, E and D.

View 4, at the corner of Minor and Marion, depicts impacts from Projects B and C and the relocated skybridge. The bases are up to 120 feet and the towers rise up to 240 feet. The new emergency department is at the corner and the base structure with the hospital bed tower above can be seen.

View 5 shows Project E and a service vehicle portal into the central support/materials management facility. The location approximates where the proposed alley vacation would occur. The view shows conceptually how the appearance of an alley access corridor would be maintained if the vacation is approved.

* Source: NBBJ

View 6 shows Project E at the corner of Boren and Cherry. The lower portion of the building is along the Boren frontage (up to 160 feet) and the building rises along Minor (up to 240 feet). Project G can be seen in the background.

View 7 at the corner of Minor and Cherry depicts the taller portion of Project E. Project B and A can be seen in the distance on the right beyond the Southwest Wing.

View 8 at Broadway and James, shows impacts of Project D with the existing East Tower in the background. This is the location of a proposed MIO zoning height increase from 70 to 105 feet. Height/bulk/scale impacts would occur due to building massing rising at property lines to allowable heights. The angled alignment of Broadway relative to the regular street grid to the west may accent the facade exposure.

View 9 looks west along Marion at Broadway showing impacts of Project C and Project B in the background. The lower base structure along Marion (up to 120 feet) and stepped back bed tower (up to 240 feet) are shown.

View 10 also shows Project C at Broadway where the segment of Boylston would be vacated and the landscaped public open space would be expanded. The existing Heath Building is demolished.

View 11 is at the corner of Madison and Broadway and shows Project F. This project would be up to 70 feet in height.

No distant views would be impacted. Distant views of the First Hill campus would change and appear denser. Local views would also be impacted at street level and from upper building levels.

An analysis of height/bulk/scale streetscape impacts was also conducted.* Existing right-of-way improvements, including curbs, sidewalk widths, lanes and building facades relative to property lines were documented and compared with proposed setbacks of the master plan development standards. The resulting changes in street spatial volumes can be seen in Figures 3.61 through 3.66. The Proposed Action would define the street edges by building facades at or near property lines. The street volumes would appear more confined and urban, particularly along internal campus streets where no setbacks are proposed. There would be impacts to the streetscape spatial volumes, but the impacts are not significant

Changes to Planned and Potential Projects

Changes to the massing of the projects would directly change their visual height/bulk/scale impacts. Changes may include reduced heights, greater step-backs, and/or façade surface modulations all reflecting program changes. Maximum building volume impacts are disclosed in the analysis of the Proposed Action. Impacts from this changed alternative would be reduced.

Re-development of the South and Southwest Wings for hospital replacement would likely result in similar building forms of a base structure and bed tower. Mixed use development west of Minor Avenue may result in more massive development if the segment of Columbia Street were vacated. Height/bulk/scale impacts would be different but impacts would likely not be significant.

* Source: NBBJ and The TRANSPO Group

No Alley Vacation

No vacation of the alley associated with Project E would likely divide the massing of the building into two half-blocks with service functions directly from the retained alley (rather than internal to a full block building). Other aesthetic impacts would be the same as the Proposed Action.

No Action

Height/bulk/scale and view impacts would remain as depicted under the existing conditions photos and diagrams. There would be no change to current conditions.

3) Mitigating Measures

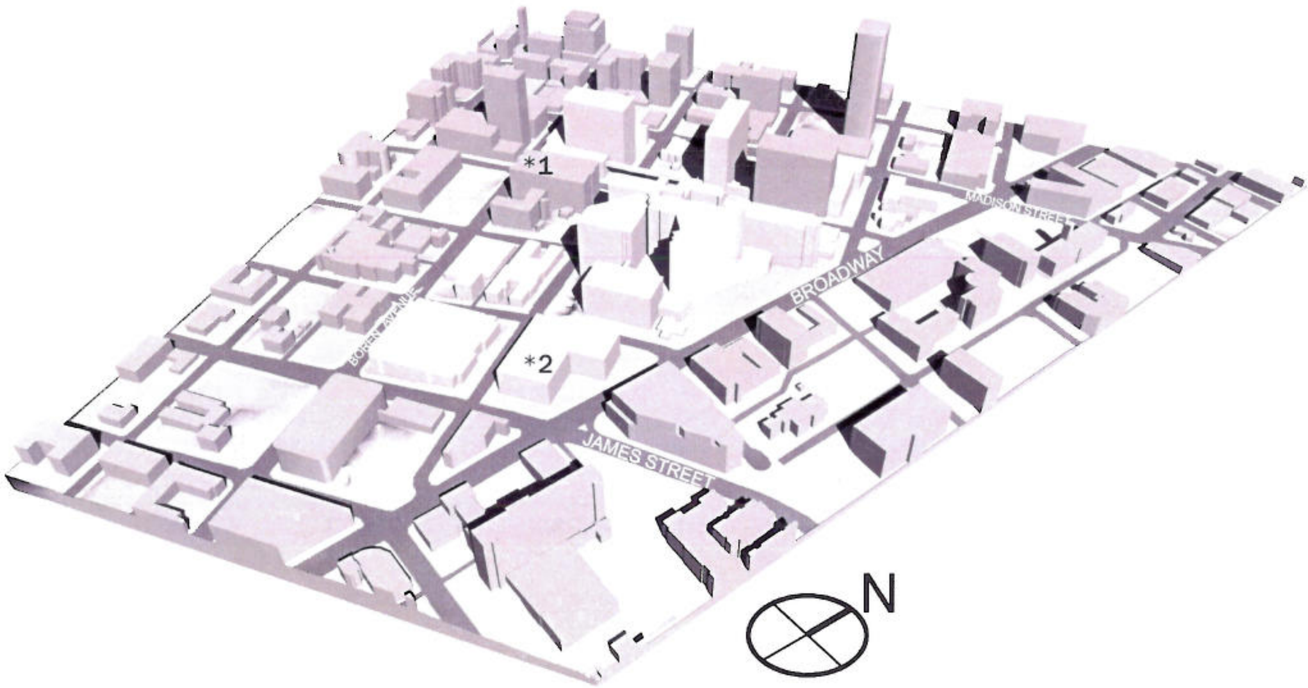
Proposed mitigation may include:

- Architectural designs that use scale-reducing techniques such as detailing, modulation, material changes, and fenestration, particularly at the corners of Broadway at James and at Cherry.
- Modified ground-level building configurations, facade alignments, massing and architectural detailing and landscape pockets, for project A along Madison/Minor and for Project D along the Broadway/James frontages to reduce apparent bulk and improve the campus edge transition.
- Pedestrian level building and streetscape improvements that enhance the pedestrian experience, safety and appearance.
- Artworks, lighting, signage, landscaping and other graphics that reduce apparent building scale and bulk.
- Compliance with the pedestrian zone overlay requirements along the campus Madison Street frontage.
- Test buildings that are less than the maximum allowed building envelope when specific projects are proposed.
- Streetscape designs for the Minor and Madison corridors that create inviting pedestrian gateways to the campus at major arterial intersections, with signage, landscaping, lighting and other improvements.
- Light and transparent design of pedestrian skybridges to minimize visual and other impacts upon the streetscape.
- A standing Citizen Advisory Committee to review and comment on specific project designs during the MUP process.

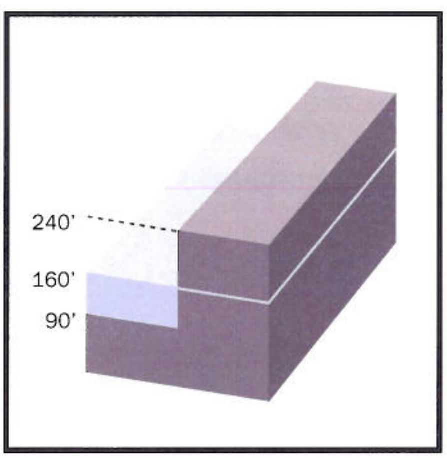
4) Significant Unavoidable Adverse Impacts

Development of the Swedish campus would result in intensification of buildings and less open local views. Skybridges would also reduce views along street corridors. Streetscapes would become more urban.

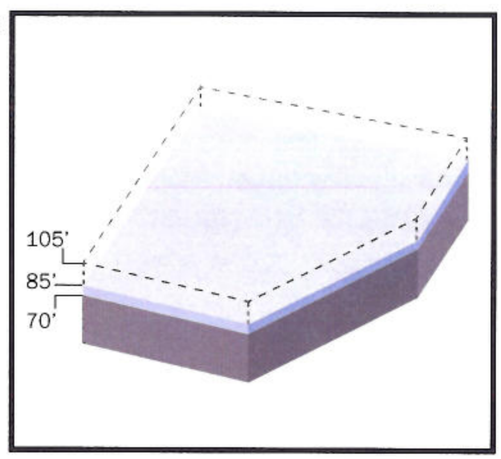
FIGURE 3.35
Existing Building Massing



Rezone proposed on two blocks:



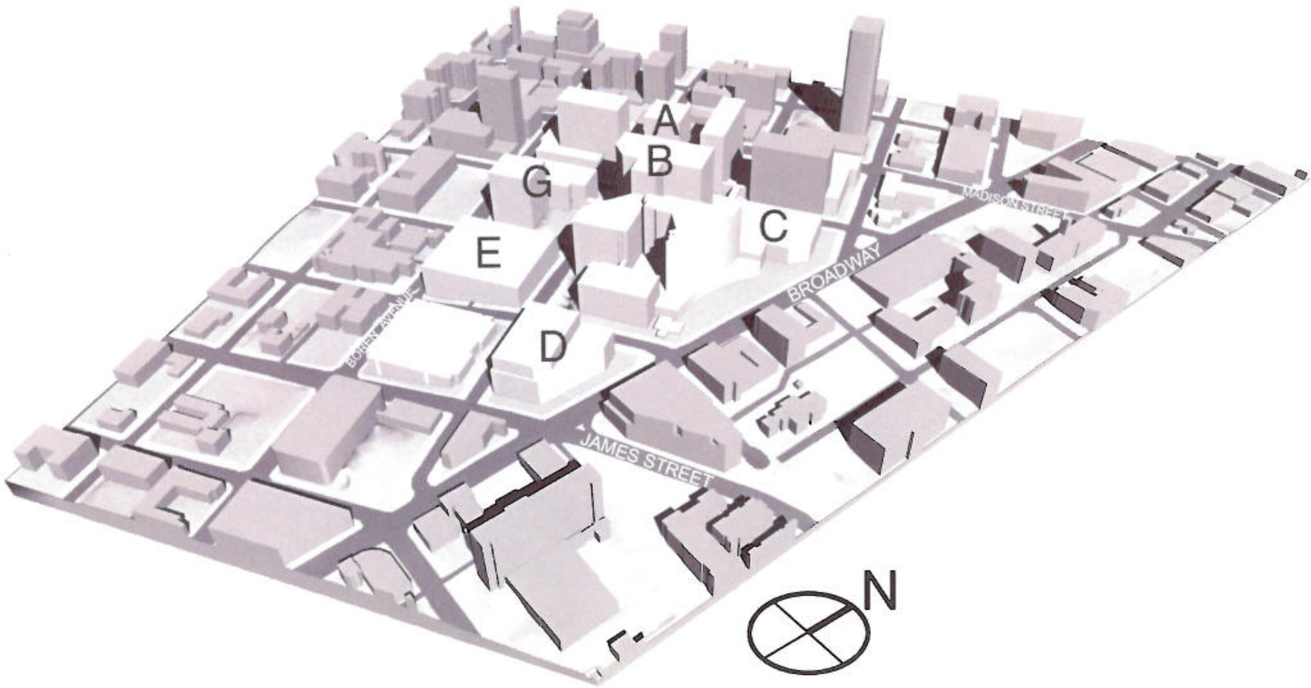
Maximum 90 feet and 240 feet currently allowed (MIO). Underlying zoning allows 160 feet. Proposed rezone to 160 feet (MIO).



Maximum 70 feet currently allowed (MIO). Underlying zoning allows 85 feet. Proposed rezone to 105 feet (MIO).

FIGURE 3.36

Planned Projects Massing



KEY

Planned Projects

A. Medical Office Building

B. Hospital Replacement: Building B

C. Hospital Replacement: Building C

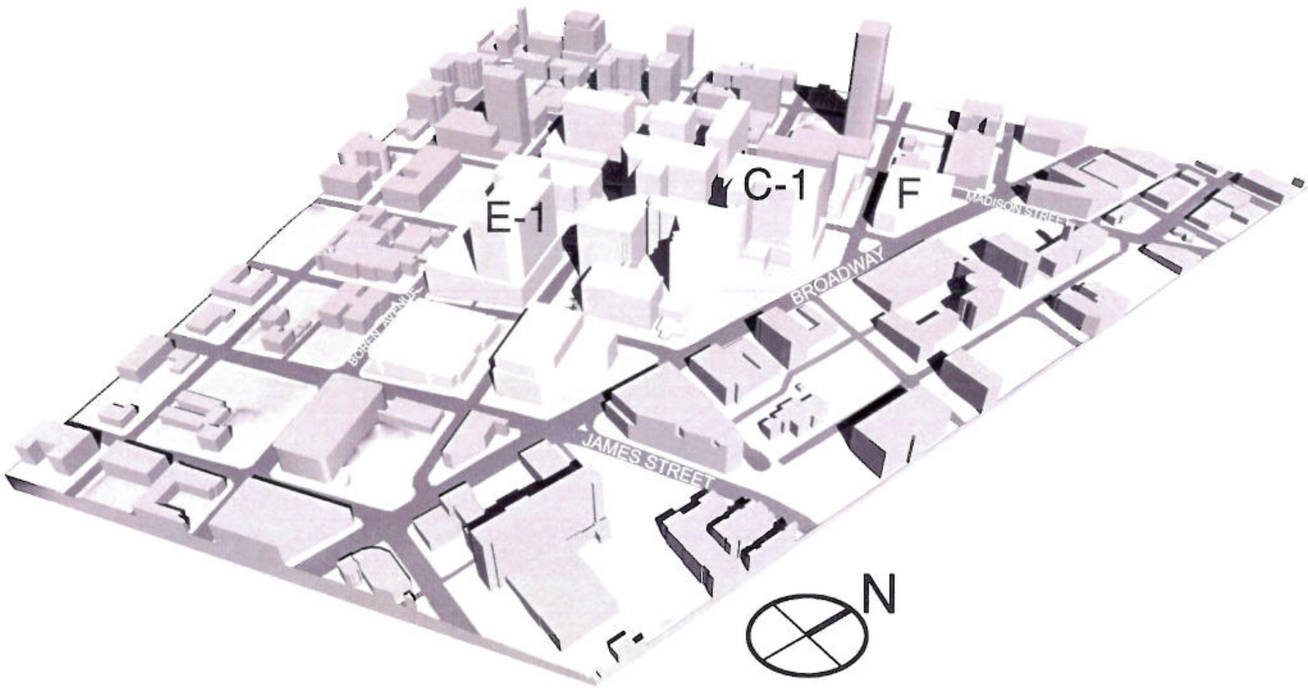
D. Hospital Replacement: Building D

E. Central Support Facility w/Medical Office Tower

G. Hospital Replacement: Building G

FIGURE 3.37

Potential Projects Massing



KEY

Potential Projects

F. Medical Office Building

C-1. Hospital Replacement: Building C - Future Tower Addition

E-1. Central Support Facility w/Medical Office Tower and Research

FIGURE 3.38
Key for Height/Bulk/Scale Views

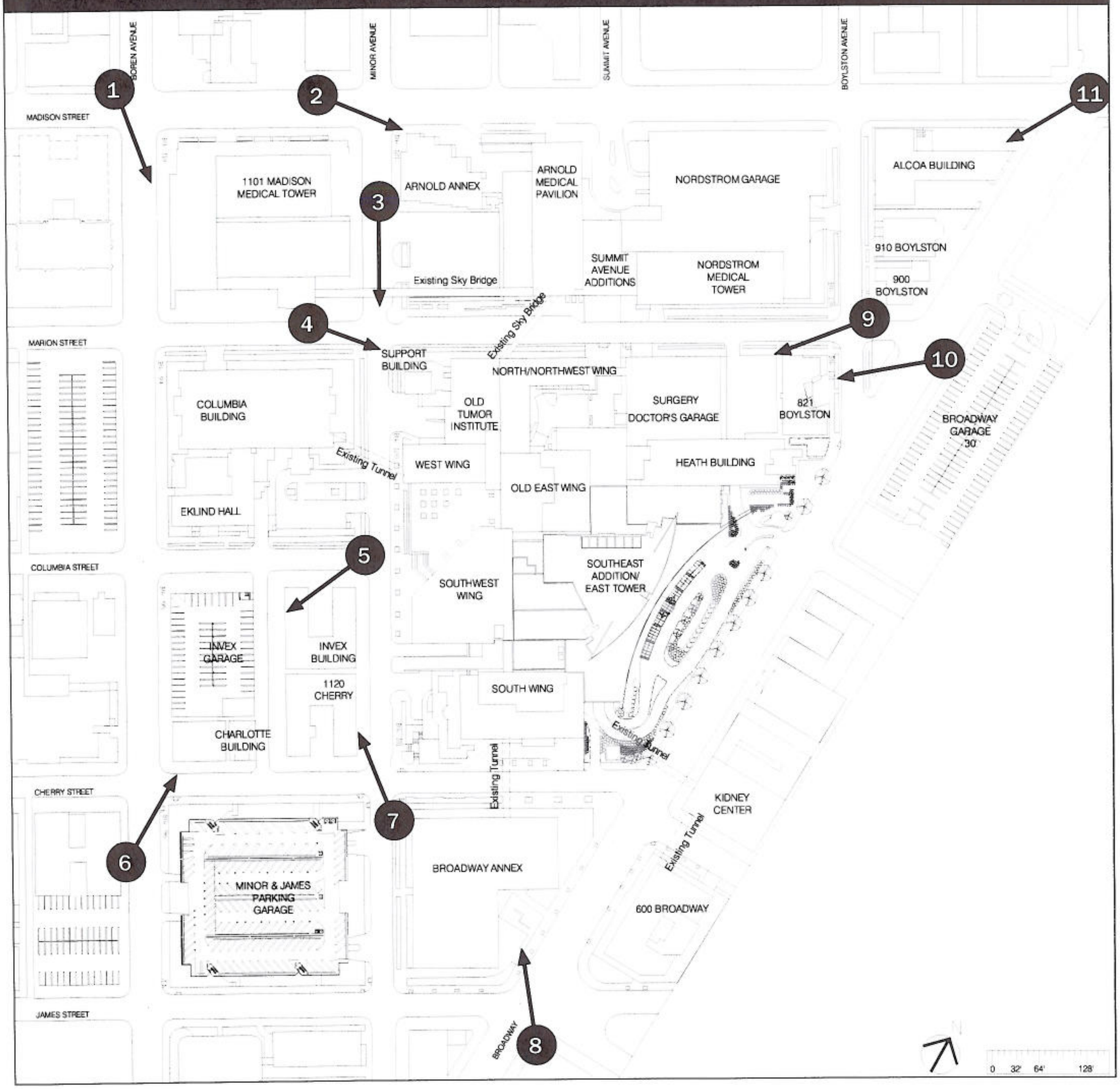


FIGURE 3.39 **Height/Bulk/Scale Views: Existing View 1**

FIGURE 3.40 **Height/Bulk/Scale Views: Proposed View 1**

FIGURE 3.41 **Height/Bulk/Scale Views: Existing View 2**

FIGURE 3.42 **Height/Bulk/Scale Views: Proposed View 2**

FIGURE 3.43 **Height/Bulk/Scale Views: Existing View 3**

FIGURE 3.44 **Height/Bulk/Scale Views: Proposed View 3**

FIGURE 3.45 **Height/Bulk/Scale Views: Existing View 4**

FIGURE 3.46 **Height/Bulk/Scale Views: Proposed View 4**

FIGURE 3.47 **Height/Bulk/Scale Views: Existing View 5**

FIGURE 3.48 **Height/Bulk/Scale Views: Proposed View 5**

FIGURE 3.49 **Height/Bulk/Scale Views: Existing View 6**

FIGURE 3.50 **Height/Bulk/Scale Views: Proposed View 6**

FIGURE 3.51 **Height/Bulk/Scale Views: Existing View 7**

FIGURE 3.52 **Height/Bulk/Scale Views: Proposed View 7**

FIGURE 3.53 **Height/Bulk/Scale Views: Existing View 8**

FIGURE 3.54 **Height/Bulk/Scale Views: Proposed View 8**

FIGURE 3.55 **Height/Bulk/Scale Views: Existing View 9**

FIGURE 3.56 **Height/Bulk/Scale Views: Proposed View 9**

FIGURE 3.57 **Height/Bulk/Scale Views: Existing View 10**

FIGURE 3.58 **Height/Bulk/Scale Views: Proposed View 10**

FIGURE 3.59 **Height/Bulk/Scale Views: Existing View 11**

FIGURE 3.60 **Height/Bulk/Scale Views: Proposed View 11**

FIGURE 3.61

Key for Street Sections

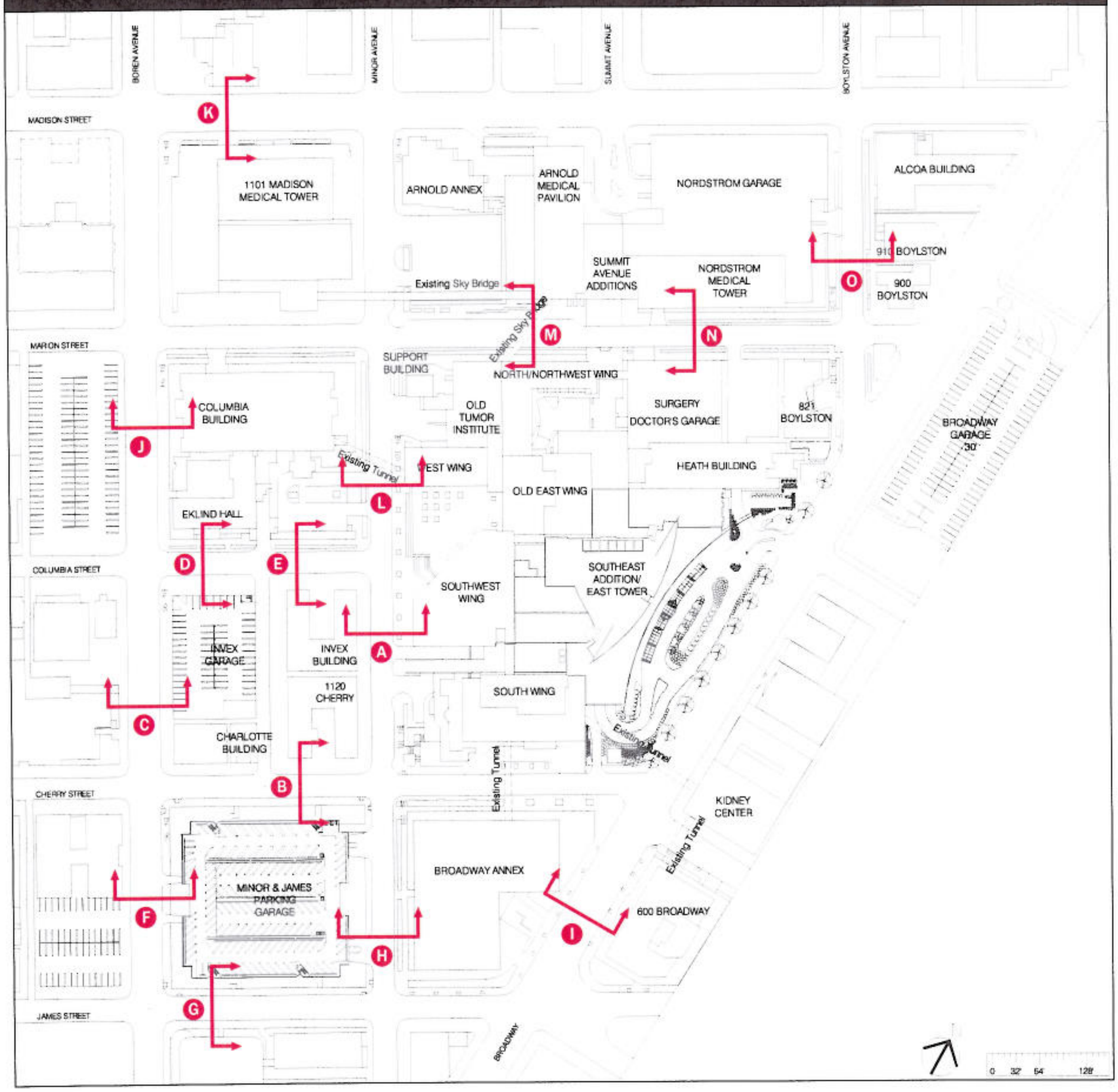
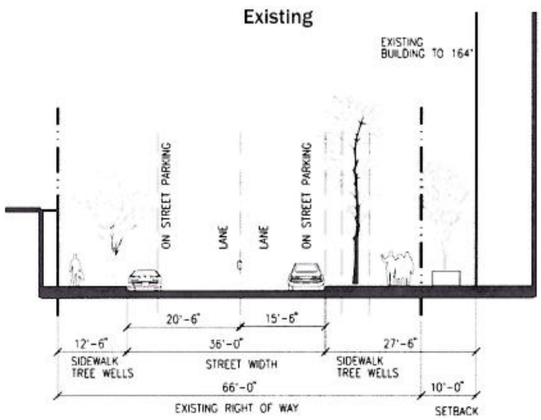
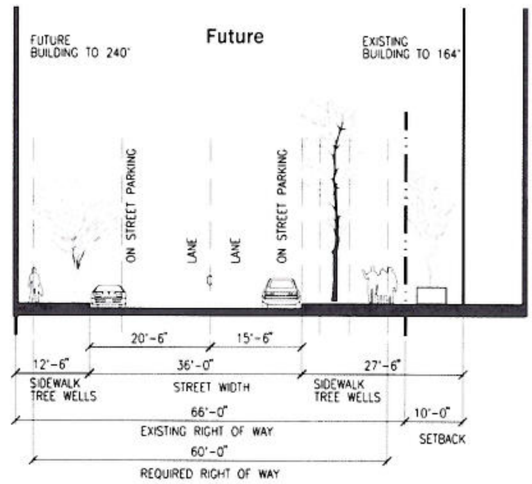


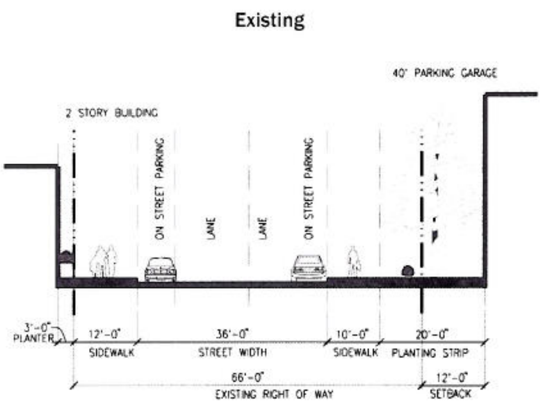
FIGURE 3.62
Street Sections

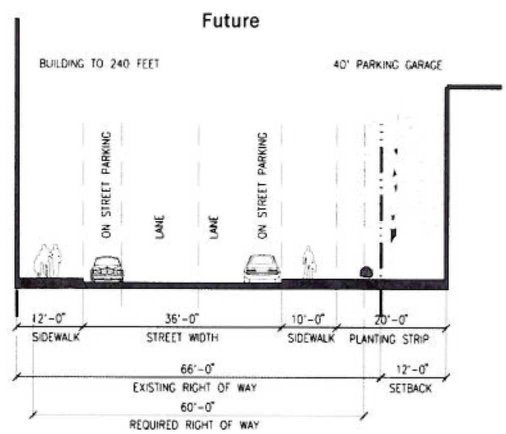
A Minor between Cherry and Columbia looking North



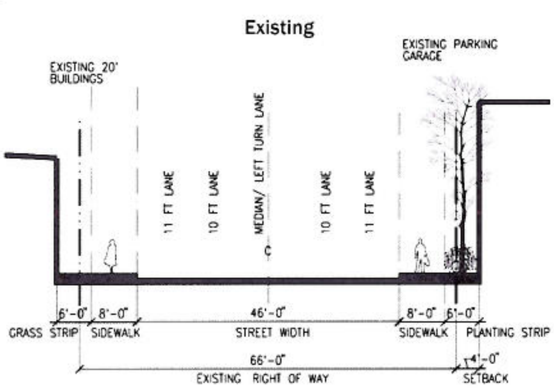


B Cherry between Boren and Minor–East of Alley–Looking East





C Boren between Cherry and Columbia looking North



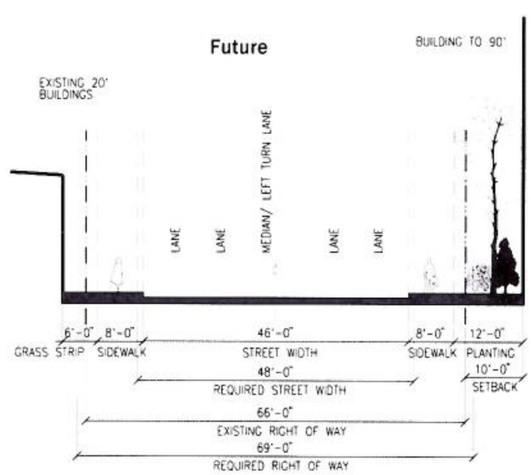
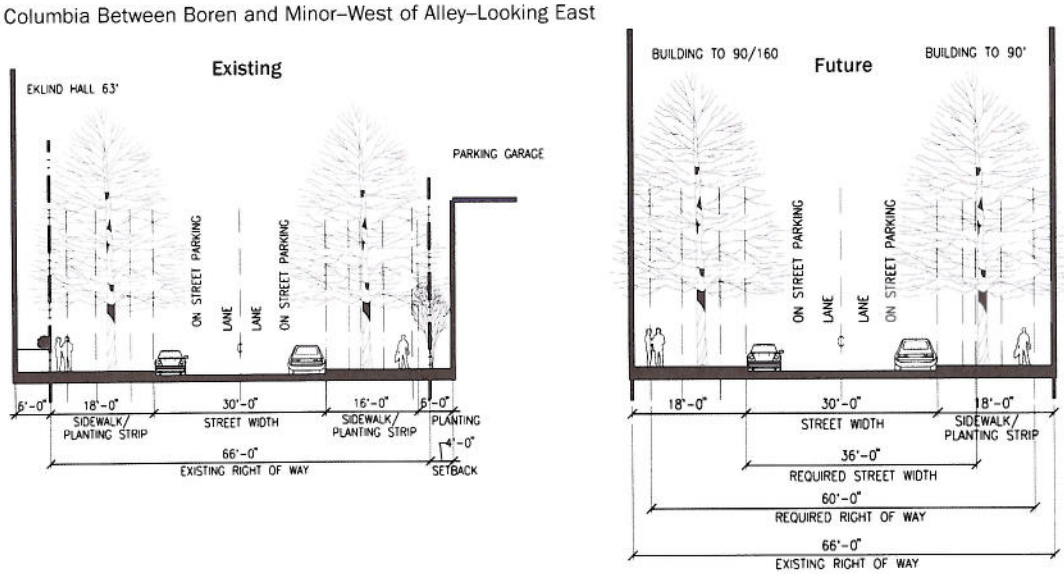
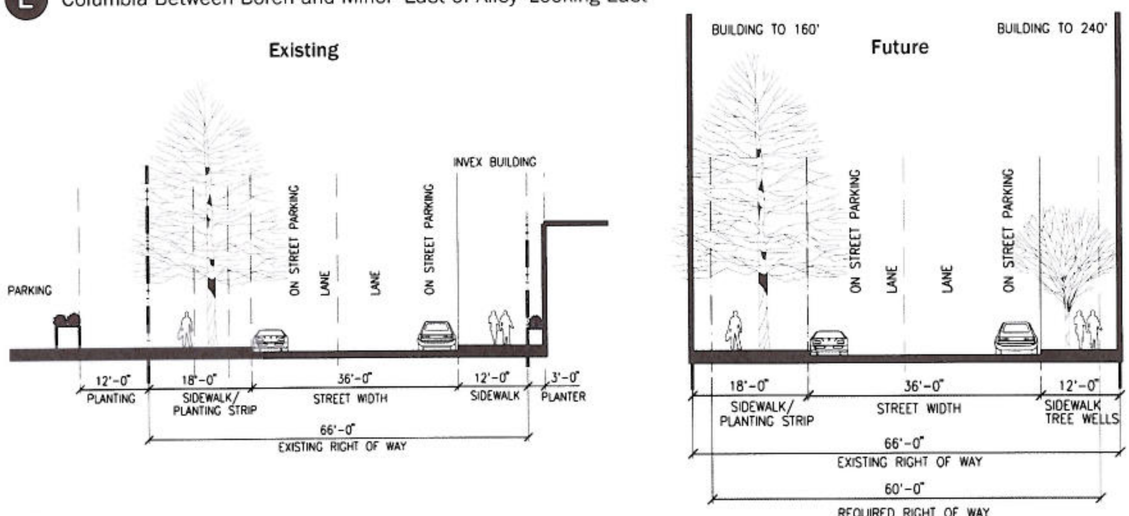


FIGURE 3.63
Street Sections

D Columbia Between Boren and Minor–West of Alley–Looking East



E Columbia Between Boren and Minor–East of Alley–Looking East



F Boren Between Jmaes and Cherry Looking North

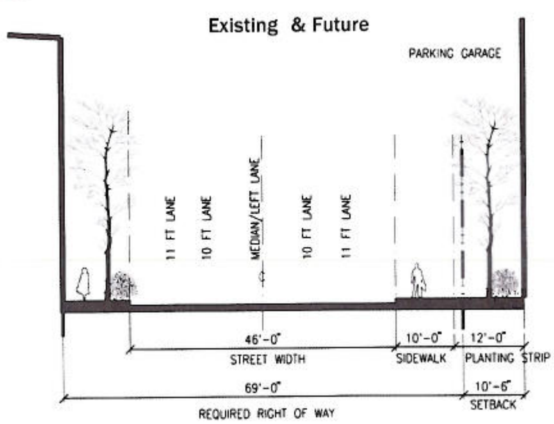
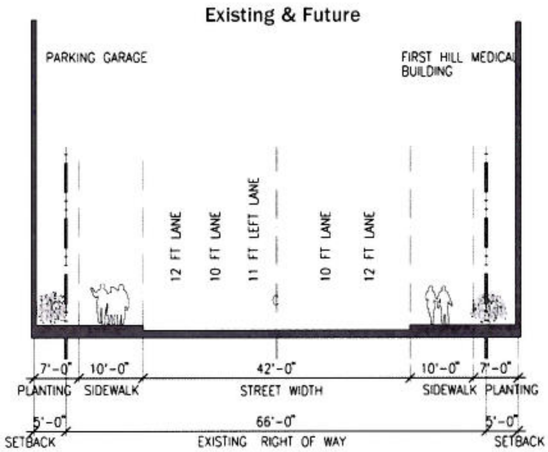


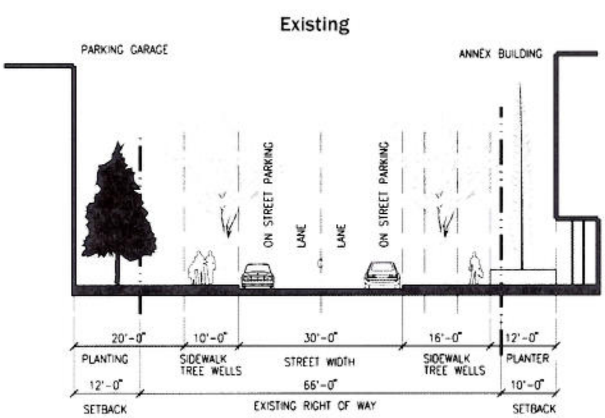
FIGURE 3.64

Street Sections

G James Between Boren and Minor–West End of Block–Looking East



H Minor Between James and Cherry Looking North



I Broadway Between James and Cherry Looking North

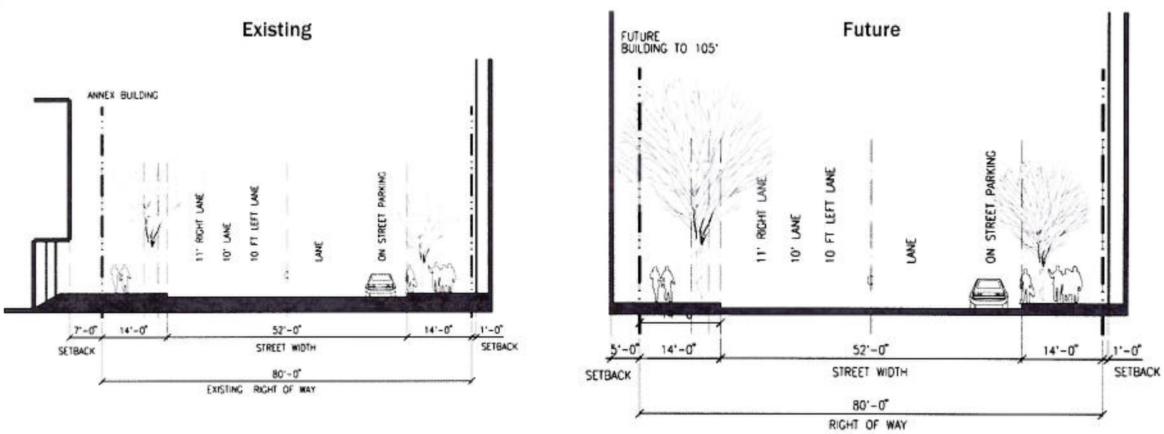
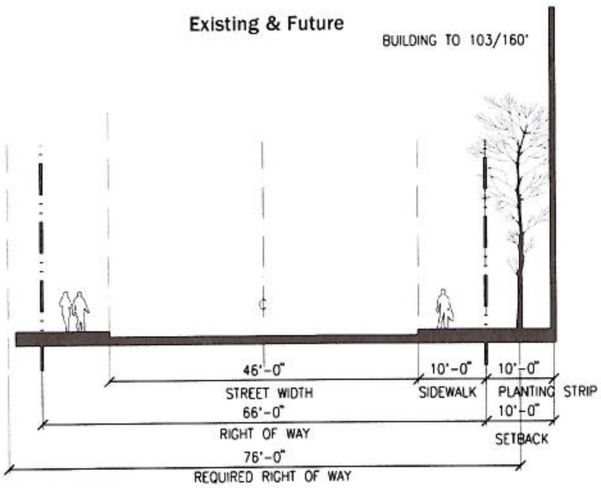
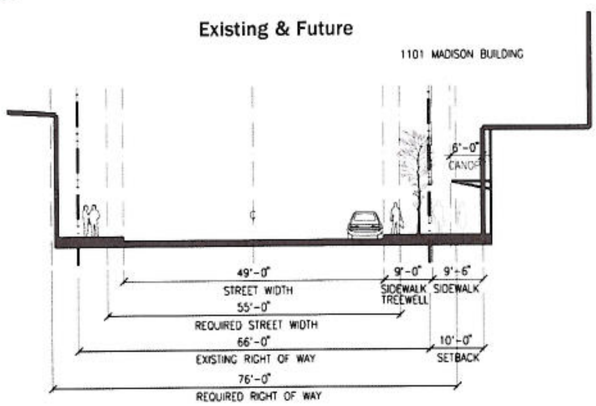


FIGURE 3.65
Street Sections

J Boren Between Columbia and Marion Looking North



K Madison Between Boren and Minor Looking East



L Minor Between Columbia and Marion Looking North

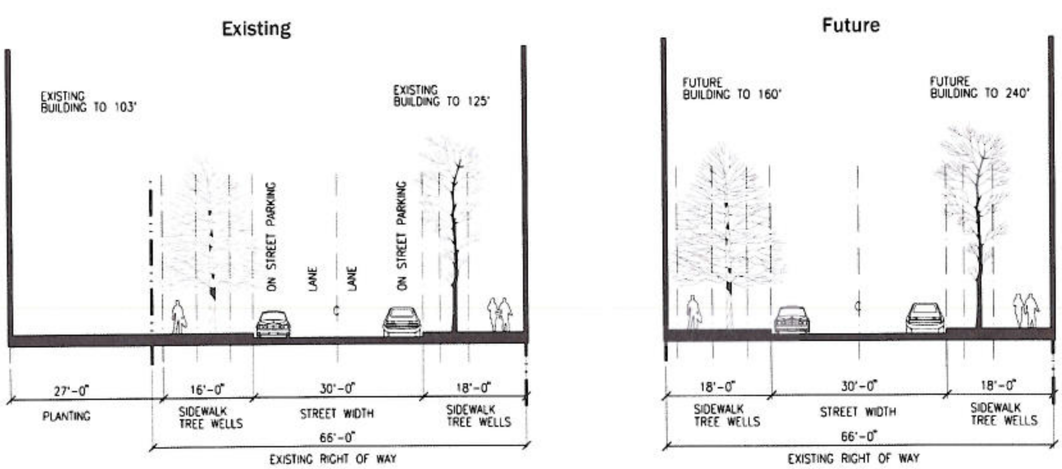
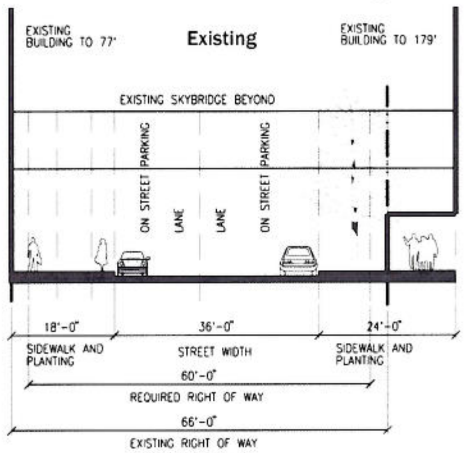
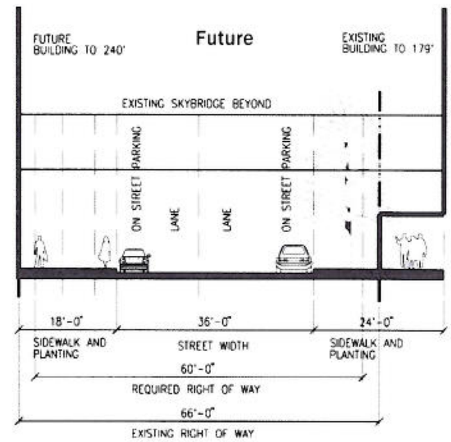


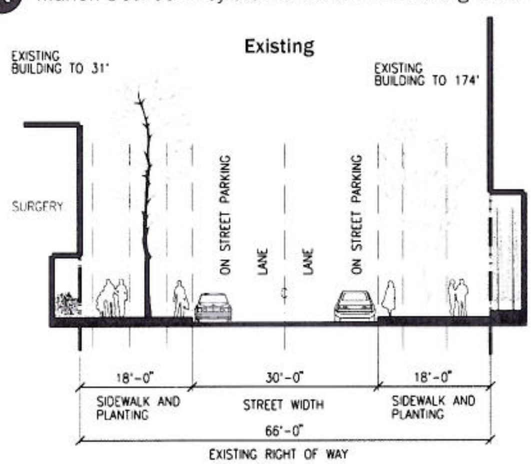
FIGURE 3.66
Street Sections

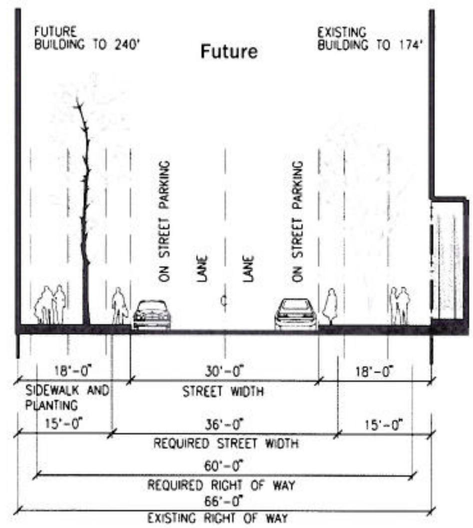
M Marion Between Summit and Minor Looking West



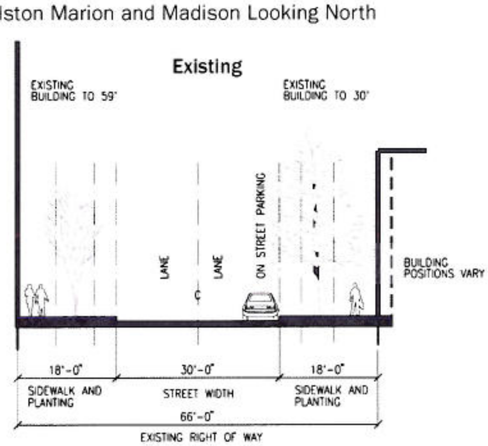


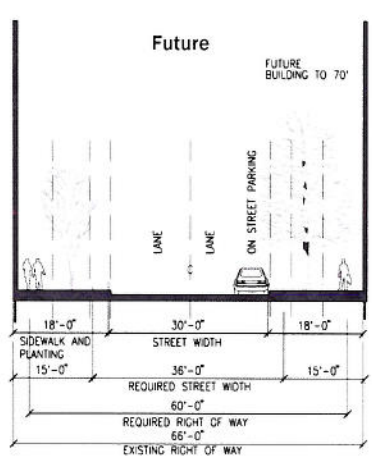
N Marion Between Boylston and Summit Looking West





O Boylston Marion and Madison Looking North





1) Affected Environment

This section of the EIS provides a review and preliminary analysis of the pre-1970 era properties within the MIMP project boundaries in response to their potential historic and architectural significance. It was prepared by BOLA Architecture + Planning, Seattle, serving as a historic preservation consultant to NBBJ. This section focuses on the buildings scheduled for demolition and replacement by new development by the Swedish Medical Center (SMC). These properties are analyzed in response to local landmark designation criteria and the criteria for listing on National Register of Historic Places. No archaeological analysis or review of pioneer-era archaeological resources has been provided in this section.

The properties include the following buildings that were designed by Naramore Bain Brady and Johanson (NBBJ) and constructed by Swedish Hospital in 1923 – 1969. These six buildings are internally linked, and have encapsulated other portions of the hospital or are encapsulated by them. Thus, in this document the following buildings are treated as a single hospital assembly:

- The North-Northwest Wing, made up by portions of buildings from 1923, 1925, 1926 and 1933
- The Old Tumor Institute, with building components constructed in 1930 – 1953
- The Old East Wing, which date from 1936 and 1941 – 1945, and 1961
- The West Wing, which date from 1954 – 1955, and 1961
- The Surgery Doctors Garage, 1963
- The Heath Building, 1969

Other buildings included this review of historic resources are those which were not constructed originally by Swedish Hospital, but which are currently owned by SMC or are within the MIMP project impact area and an assembly of two hospital buildings. They include the following seven post-war Modern-era buildings, which are listed chronologically with their historic name (if known), current name, construction date, and original architect:

- Clinic / St. Joseph's Baby Center, 900 – 903 Boylston Avenue (1946, NBBJ)
- The Marion Clinic, 819 – 821 Boylston Avenue (1947, NBBJ)
- The Invex Building (Even-So-Inc.) / Swedish Health Services, 1119 Columbia Street (1955 – 1956 and 1963, NBBJ)
- Cherry and Minor Medical Center (Even-More-So-Inc.) / Cherry Building, 1120 Cherry Street 1958, Arnold Gangnes
- Blue Cross Building / SMC Annex Building, 601 Broadway (1959 and 1967, John Maloney)
- The Alcoa Building / 1402 Madison Street (1962 – 1963, Klontz & Wrede)
- Seattle Clinic of Medicine / Joslin Center for Diabetes, 910 Boylston Avenue (1966, Kirk, Wallace & McKinley)

FIGURE 3.67

Existing Building Ages

KEY

1920 - 1950	Existing Non-Swedish Building
1950 - 1970	
1970 - 1990	
1990 - 2000's	

Note: 9th floor and above of Arnold Building not owned by Swedish

Figure 3.67 shows the existing buildings of the Swedish Medical Center campus and their age. Colors indicate the various phases of construction.

This section of the EIS is organized with the following subsections:

1) **Affected Environment.** This introduction of the affected environment; A description of the regulatory framework for evaluating historic resources; A historic overview of the First Hill neighborhood; and A summary of each building's historic and architectural significance

2) **Impacts–Proposed Action and Alternatives.** An analysis of the potential historic landmark status of each property.

3) **Mitigating Measures.** A description of potential mitigation measures.

4) **Significant Unavoidable Adverse Impacts.**

The following information is provided in the Historical Resources Assessment included in Appendix 7 of this EIS:

- Description of research methodology.
- Historic context information about First Hill and its development.
- A historic overview of Swedish Hospital.
- A description of hospital building design and typology.
- An overview of post-war Modern architecture in Seattle.
- Brief biographies of the original architects – Sommervell and Cote (original Swedish Hospital designers), NBBJ (subsequent hospital designers), and Arnold Ganges, John Maloney, Klontz and Wrede, and Kirk Wallace McKinley (designers of other buildings).
- A list of source material and bibliography.
- Individual inventory sheets with additional information about the properties, including an analysis of each building's physical integrity, and a preliminary evaluation of each in response to the National Register listing criteria and the City of Seattle landmark designation criteria. Contemporary photos are provided in each inventory.

Regulatory Framework

The National Register of Historic Places

Designated landmarks are those properties that have been recognized locally, regionally or nationally as important resources to the community, city, state or nation. Historic recognition may be provided by listing a property in the State or National Register of Historic Places through a nomination process managed by the Washington State Office of Archaeology and Historic Preservation (OAHP). Such nominations require a review by the State Advisory Council and, in the case of the National Register, certification by OAHP staff and acceptance by the Keeper of the Register.

The National Register of Historic Places is the official federal list of districts, sites, buildings, structures and objects significant in American history, architecture, archaeology, engineering and culture. The National Park Service administers the register. Nomination to the National Register may come from state and federal preservation offices. Individuals, organizations and local governments may also initiate the nomination process.

The Washington State Advisory Council, which is organized and staffed by OAHP, considers each National Register nomination and makes a recommendation on its eligibility.

Properties listed in the National Register must possess historic significance and integrity. Generally, the property must typically be 50 years old to be considered, and must be significant when evaluated in relationship to major trends of history in their community, state or the nation.

The criteria for listing in the National Register include the following:

A. The property is associated with events that have made a significant contribution to the broad patterns of our history.
B. The property is associated with the lives of persons significant in our past.
C. The property embodies the distinctive characteristics of a type, period or method of construction or represents the work of a master, or possesses high artistic values, or presents a significant and distinguishable entity whose components lack individual distinction.
D. The property has yielded, or is likely to yield, information important in prehistory or history.

City of Seattle Landmark Process

Local historic recognition in Seattle is provided through the process of designation of the property as a landmark. The City of Seattle's landmark process is a multi-part proceeding of three sequential steps undertaken by the Landmarks Preservation Board:

1. submission of a nomination and its review and approval by the Landmarks Board
2. a designation by the Board
3. negotiation of controls and incentives by the property owner and the Board staff, the City's Historic Preservation Officer

A final step in this process is action by the City Council, with passage of designation ordinance. All of these steps occur with public hearings for input from the owner and/or applicant, members of the public, and other interested parties. Seattle's landmark process is quasi-judicial, with the Board making a ruling, rather than serving as an advisory body to another commission, department or agency. There is no city ordinance that requires an owner to nominate its property, or to preserve, maintain or restore it if it is designated. However, the city's ordinance recognizes that changes may be made to a property. The Board provides design reviews of proposed changes to the property's designated features through the Certificate of Approval (COA) process.

Under its ordinance more than 245 individual properties have become designated landmarks in the City of Seattle. Several hundred other properties are designated by their presence within one of the city's six special review districts or historic districts, including the Harvard Belmont, Ballard, Pioneer Square, Columbia City, Pike Place Market, and International Special Review Districts. Designated landmark properties in Seattle include individual buildings and structures, building assemblies, landscapes, and objects. In contrast to the National Register or landmark designation in some other jurisdictions, Seattle's process does not require owner consent.

In Seattle, a landmark nomination may be prepared by a property owner, the city's Historic Preservation Office, or by an interested party or individual. The ordinance requires that the Board consider a nomination if it provides adequate information and documentation.

The City's Preservation Ordinance No. SMC 25.12 has a threshold requirement that a potential landmark must meet. This requires a property to be more than 25 years old and "have significant character, interest or value, as part of the development, heritage or cultural characteristics of the City, State or Nation." The term, significant character, may be described as a standard of integrity. Integrity is a term used to indicate that sufficient original building fabric is present to convey the historic and architectural significance of the property.

Seattle's landmark ordinance also requires a property meet one or more of its six designation criteria:

Criterion A It is associated in a significant way with an historic event, which has had a significant effect on the community, city, state or nation.

Criterion B It is associated in a significant way with the life of a person important in the history of the city, state, or nation.

Criterion C 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.

Criterion D It embodies the distinctive visible characteristics of an architectural style, period or method of construction.

Criterion E It is an outstanding work of a designer or builder.

Criterion F It is an easily identifiable feature of its neighborhood or the city due to the prominence of its spatial location; contrasts of siting, age or scale; and it contributes to the distinctive quality or identity of its neighborhood or the city.

Historic Overview of the First Hill Neighborhood

Historic Development of First Hill

The First Hill neighborhood is officially identified by the city as the area between the I-5 Interstate Highway and 12th Avenue, Pike Street to Union and Jefferson Streets. This area is defined by its topography, and by structured borders. First Hill was the site of several natural springs, and building development followed the creation of infrastructure improvements by private companies to serve the growing city. The neighborhood is also one of Seattle's oldest residential areas, and was settled early by wealthy and socially prominent families who built residences on the hill beginning in the 1880s and 1890s. These included the Terry, Minor, Hanford, Burke, Lowman, Frye, Pigott, and Denny families (Steinbrueck and Nyberg, 1975, non-paginated.) The Stimson Green House (1899 - 1901, 1204 Minor Avenue), W. D. Hafins House / Catholic Archbishop's Residence (1902, 1104 Spring Street), and Dearborn House (1909, 1117 Minor Avenue), which are all located north of Madison Street, are extant examples of this early development pattern.

In the early 20th century a number of hospitals were located on the slope or at the top of the 344' tall hill to take advantage of natural ventilation – a physical condition necessary for medical treatment. Early hospitals include the former Grace Hospital in the late 1900s, the predecessor of the present-day Swedish Hospital (beginning in 1908), Cabrini Hospital (1915, at Summit and Union in the old Perry Hotel, demolished in 1996), the original Swedish Hospital (1910) and Virginia Mason Hospital (beginning in 1920 at Spring and Terry Avenue). These institutions were joined by Doctor's Hospital, the Palmer Hospital, and later by Harborview Hospital (1931, at 325 - 9th Avenue). Nearby, the Providence Hospital of ca. 1900, and the Seattle General Hospital had been located in a part of downtown which is currently west of the I-5 Freeway. On the north end of Beacon Hill, there is the US Public Health Hospital / former Marine Hospital / Amazon HQ (1934, 1131 - 14th Avenue South).

A number of other institutions were sited on the hill, above the city center, beginning in the late nineteenth century. These include designated landmarks buildings: Trinity Episcopal Church (1891, and 1903, 609 - 8th Avenue), St. James Cathedral (1907, remodeled 1917), and First Baptist Church (1912), the Summit School (1905, currently the Northwest School), Firehouse No. 25 (1908), Fourth Church of Christ Scientist / Town Hall (1922). The Seattle University campus was established in 1891 and O'Dea High School was built in 1923. The Frye Museum was constructed in 1952 and expanded in ca. 1998.

The First Hill neighborhood remains a mixed-use neighborhood of institutional, commercial, and residential buildings. Commercial buildings and storefronts proliferate along Madison Street and Broadway. Historically, First Hill was made up of two sections. The northern part was above the city's financial and cultural center, and evolved as a neighborhood of residences, hotels, churches, hospitals, and apartments. The southern part, originally known as Yesler Hill or "Profanity Hill," was located above the courthouse and railroad depots, and adjacent to the area that became the city's multi-ethnic International District.

The Hotel Sorrento (1908) and the former Perry Hotel (1906, converted in 1915 to the Columbia/ Cabrini Hospital), were both built on Madison Street. They represent the distinctive revival-style early 20th century hotels and apartment hotels constructed on the northern and western part of the hill. These and other apartment buildings featured large flats with servant quarters, refined public spaces, distinct revival styles and decorative features. Such buildings include 1223 Spring Street, the Gainsborough, Maroborough and Exeter Apartments, and the Lowell and the Baroness Apartment Hotels. (Crowley, p. 130 – 141.) These buildings are presently intermingled with numerous three to six-story buildings that contain smaller units for middle-income and working-class residents. Most of these older apartment buildings were constructed in the decades leading up to the nationwide economic Depression of the early 1930s.

Development of the Yesler area diverged from the upscale development that occurred on the northern parts of First Hill. Early buildings in the southern area, up to the 1940s, included Victorian-era houses, boarding and apartment houses, and small-scale commercial and service facilities, such as garages. Many of the older buildings have been replaced by other low-scale structures, such as the Yesler Terrace housing complex (1943), and by more contemporary mixed-use and institutional development. (Woodbridge, p. 144 – 149.)

The many older apartment buildings on the hill, include tall buildings that date from the 1950s and 1960s: the 14-story, 351-unit Nettleton Apartments at 1000 - 8th Avenue, the nine-story, 450-unit Horizon House at 900 University Street, and in 1967 the high-rise Jefferson Terrace at 800 Jefferson Street. These and more recent structures respond to zoning in some areas of the hill, which currently allow for construction up to 240' in height.

In the late 1950s and early 1960s First Hill was physically divorced from the city center by construction of the I-5 Interstate. Official planning for the freeway began in the 1950s, and envisioned few of the real impacts of traffic, noise or dislocation. During its construction, however, many large old homes and other buildings, such as the 1890-era Fire Department Headquarters at 7th and Columbia Street, were removed. Several of the houses were relocated, but most buildings were demolished. After the highway, many others suffered deterioration and many were removed and replaced by surface parking lots. While activists suggested an extensive lid over the highway, the double-height, eight-lane structure has remained an open concrete scar on the neighborhood for over four decades.

Years later, a portion of the freeway was lidded by Freeway Park (1976, designed by landscape architects Lawrence Halprin and Angela Danadjieva). Upon its completion this park was described as "an inviting gateway to the once grand residential First Hill, which is now an area of smaller homes, commerce, apartments and the medical center of our city." (Steinbrueck and Nyberg, n.p.)

Present day First Hill is a vital urban neighborhood characterized by its urbane mix of uses – housing, institutions, offices and commercial shops and offices – and by its range of building scales, types, sizes and history. The physical character of First Hill emphasizes its sloped topography and close relationship to downtown Seattle.

There are a number of individual historic properties on the hill which have been designated as local landmarks or are listed on the National Register of Historic Places. They include:

- The Archbishop's Residence / Haflins House (1903, 1104 Spring Street)
- Fourth Church of Christ Scientist / Town Hall (1916 – 1922, 1119 9th Avenue)
- Saint James Cathedral (1907, 804 – 9th Avenue)
- Fire Station No. 25 (1908, 1400 Harvard Avenue)
- The Sorrento Hotel (1908, 900 Madison Street)
- Stimson Green Mansion / Washington Trust Headquarters (ca. 1908, 1204 Minor Avenue)
- Trinity Church (1891, 609 – 8th Avenue)
- The Assay Office / German House (1886, 613 – 9th Avenue)
- First Baptist Church (1910, Harvard Avenue and Seneca Street)
- The Ward House (1883, previously on Boren Avenue has been moved to 520 East Denny Way)

The Swedish Hospital campus currently contains no designated landmark properties, and there are none present within the MIMP Project area.

Building Summary

A brief summary of each building's historic and architectural significance is provided in the following descriptions:

Swedish Hospital / Swedish Medical Center Buildings, 701 to 805 Summit Avenue and 1211 - 1215 Marion Street (historic addresses), and 801 Broadway
Six building components, which date from 1923 to 1969, make up the older portion of the Core Hospital property. Because of their interior integration and use, they are treated as a single assembly in this report. All but the 1923 - 1933 era sections were designed by NBBJ.

The oldest section is identified as the North-Northwest Wing, and is made up by portions of buildings that date from 1923, 1925, 1926 and 1933, located at 701 - 703 Summit Avenue. The oldest, three-bay section is located along Marion Street, near the center of the multi-block property. It is currently impacted by an enclosed pedestrian bridge from the north side of Marion Street, which forcefully connects to the older building's primary north facade. Later sections were constructed to the east, making up an "L" shaped hospital assembly. (This assembly gradually became identified as the North-Northwest Wing as the hospital complex grew.)

The Old Tumor Institute to the west, between the North-Northwest Wing and the enclosed Equipment Structure, was constructed in 1930 - 1931 and expanded in 1953, with a two-story, 25' by 67' addition, with a building address of 1211 - 1215 Marion Street.

The Old East Wing, which dates from 1936 and 1941 – 1945, was built to the east and north of the North-Northwest Wing, and forms an internal courtyard and current vehicle entry, accessed off Marion Street. The initial construction, in 1936, was a two-story, 31' by 47' structure, at 803 Summit Avenue. In 1941 the three-story, 40' by 80' Orthopedic Wing was constructed. In 1961 a three-story section of 33,017 square feet was added to the East Wing, and a two-story, 36' by 102', 6,200 square foot section was added to the West Wing. (In 1948 a Nurse's Residence, dating from 1916, at 1205 Marion Street, was demolished.)

The Old West Wing is a tall, nine-story post-war era hospital component, with a footprint of 171' by 130', which was constructed in 1954 - 1955. Earlier lab and laundry buildings were demolished for its construction. The Old West Wing is located to the south of the existing Equipment Structure, and north of the 1972 Southwest Wing addition, which abuts its south wall and links internally to its lower floors.

In 1961 a three-story section of 33,017 square feet was added to the East Wing, and a two-story, 36' by 102', 6,200 square foot section was added to the West Wing. (Permit records indicate a four-story addition to create a nine-story building was permitted in 1966. It is unclear which section of the hospital this refers to however.)

Two other buildings make up the assembly: The Surgery Doctors Garage and Heath Building. While these structures may appear somewhat freestanding, they are internally linked and abutting, and are considered a single parcel. The 1963 Surgery Doctors Garage is located east of the Old East Wing. The tall Heath Building, which faces east toward Broadway, dates from 1969. This structure is located south of the Boylston Medical Clinic at 819 – 821 Boylston Avenue. Part of the Heath Building is integrated with the southern portion of the Surgery Doctors Garage.

Medical Clinic / St. Joseph's Baby Center, 900 – 903 Boylston Avenue

The building currently known as the St. Joseph's Baby Center, is owned by Health Services. Its original owner and contractor, Paul N. Carlson, constructed it on the site of a former 1903-era, two-story wood frame duplex. Designed by NBBJ, it was built in 1946 - 1947 for an estimated $50,000. Current building occupants include the Baby Center, a clinic at the main and upper levels, and two retail shops at the lower level.

The building is located on a corner lot at the intersection of Marion Street and Boylston Avenue on the south end of a wedge-shaped block. The Joslin Center for Diabetes, at 910 Boylston, is located on the parcel to the north. A small, triangular-shaped open parcel, owned by the city of Seattle Parks Department, is located across Marion Street to the south.

The building is an irregular shaped wood frame structure of 8,124 square feet. It is characterized by one-to three-story massing, flat roofs, and Roman brick veneer cladding. The building design is integrated with its site, which slopes down to the east toward Broadway, with three box-like sections. The primary facade faces west while the largest, two-story rectangular section is at the north end. The slightly shorter two-story center section is setback to form a shallow entry courtyard. The narrow, single-story south section projects forward from the main two-story mass and borders the entry court. The building's primary entry, at the center section of the west facade, features a glazed foyer announced by a two-story, aluminum-framed entry assembly of glazed doors and tripartite windows. Horizontal brick banding at the sill lines emphasizes the windows and subtle recessed wall planes frame them. The horizontal massing is emphasized by low planters, which extend from the south facade to define the grade change, and also border the entry court.

The Medical Clinic at 900 - 903 Boylston was designed as a Modern building, as indicated by its massing and flat roofs, but it is a very simple, transitional application of the International style. The building's masonry has been painted a beige color, to identify it with SMC, but retains its original massing, plan configuration, foundation materials, cladding and windows.

The Marion Clinic / Swedish Health Services, 819 – 821 Boylston Avenue

This building is located at the northeast corner of the block that contains the hospital core, on a parcel bounded by Marion Street and Boylston Avenue. It is very similar to the 900 – 903 Boylston Building. Both were designed by NBBJ Architects for owner / contractor Paul N. Carlson, and both contain doctors offices and medical clinic spaces. A small paved parking lot situated at the back (west) of the Marion Clinic. The entry area to the Heath Building is to the south of this clinic.

This one and two-story building was designed in simple, transitional International style. Similar to the 900 - 903 Boylston Avenue Building it has a flat roof, and a Roman brick-clad boxy mass resting on a concrete foundation. It is horizontal in appearance and somewhat U-shaped in plan with a slightly recessed courtyard entry. The double-height entry bay is distinguished by a two-story window wall treatment. To the north of the main entry, there is a small single-story section. Typical aluminum framed windows are set singly or in paired groups. They consist of three horizontal panes per frame, each with a wider fixed central pane and narrow operable upper and lower sash.

The Marion Clinic was constructed at the estimated cost of $90,000 for use as a doctor's office/ clinic. It was located immediately east of the former Palmer's Hospital, at 1317 Marion Street. In 1947, the Palmer's Hospital building was remodeled by NBBJ as part of the Marion Medical Center, which included the subject property. The Palmer's Hospital building was demolished at a later date and replaced by the existing a parking lot. The existing building was purchased by Swedish Hospital in 1966 for $340,000. It currently houses the Spiritual Care Offices of Swedish Health Services.

Invex Building / Swedish Health Services, 1119 Columbia Street
This building is located in the Support/Parking Zone in the Swedish MIMP, west of the Core Hospital Zone. It was designed and constructed as an inpatient medical clinic by NBBJ and constructed in 1955 - 1956, with an addition in 1963. The 14,400 square foot, flat roof building is a wood frame and reinforced concrete structure with roman brick cladding and curtain wall exterior over a concrete foundation. The footprint is a U-shape around a central, north-facing courtyard that opens to Columbia Street. The building consists of a two-story wing on the west side of the courtyard, with three-story wings on the east and south sides. The courtyard provides access to ground floor offices. An open corridor leads from a second entry off Minor Avenue on the west to a balcony at the second floor. The top floor is accessed via a stairwell and elevator and another open-air balcony corridor.

Primary facades of each wing contain curtain walls of vertical aluminum-framed glass and cemestos (asbestos/cement) panels, with the exception of the 1963 top floor addition on the east wing, which is an aluminum framed curtain wall. The corner or end facades of each wing are clad with Roman brick masonry. The east entry off Minor Avenue is distinguished by a perforated brick wall screen, which obscures two service entry doors from the street. The original building provided medical offices off the courtyard level and on the upper floor off Minor Avenue. The third floor above the south wing was a penthouse apartment. This section, a 1963 addition, is distinctive from the original design, but complements the original design.

The property was originally owned by the Continental Land Company and was sold to William D. Perkins sometime before 1955. The lot remained unimproved until the construction of the existing building, for the owner Even-So-Inc., at the estimated cost of $150,000. Robert Coe purchased the property in 1970. The building is currently owned by Swedish Health Services which operates it as the Invex Medical Clinic for inpatient treatment services.

Cherry and Minor Medical Center / Swedish Health Services, 1120 Cherry Street
The Cherry and Minor Medical Center/Cherry Building is located directly south of the Invex Building, on the southeast corner of the block bound by Columbia and Cherry Streets and Boren and Minor Avenues. It contains 25,205 square feet.

The wood-frame and reinforced concrete structure is very similar to the earlier Invex Building with U-shaped massing, mirrored footprints, similar cladding and generally similar configuration despite original designs by different architects.

The Cherry and Minor Medical Center has central three-story wing on the north flanked by two two-story wings, which enclose a landscaped, south-facing entry courtyard. A partial daylight basement is below the central and west wings. A three-story interior stairwell projects into the courtyard from the west wing. This element is a 1963 addition, but is clad with the same brick and curtain wall materials. A stepped-up retaining wall and planters along the Cherry Street sidewalk help integrate the building with its site. An open corridor with a ramp from sidewalk provides access to the second floor from Minor Avenue.

A large tile mosaic, which may be a restoration, is located on the east facade near the Minor Avenue entry. A smaller mosaic panel, in poorer condition, is on the west facade near a basement entry. As previously noted, the layout and materials are similar to the Invex Building, but the Cherry and Minor Medical Clinic appears to be a lesser design because of the proportions of its narrow and deep courtyard and details.

The building was constructed on the former site of a three-story, ca. 1890 residential building. It served as a large boarding house and was known as "The Guest House." The former building was demolished sometime between 1940 and 1958. The present building, designed by Arnold Ganges as an outpatient medical clinic for Even-More-So-Inc., was constructed in 1958 for the estimated cost of $425,000. It was originally known as the Cherry and Minor Medical Center until ca. 1970. It presently houses the Cherry Street pharmacy and other medical offices, including offices associated with the Swedish Organ Transplant Program.

Blue Cross Building / SMC Annex Building, 601 Broadway
(Washington Hospital Service Corp. / Swedish Health Services)
This 75,165-square-foot building is located at the corner of a wedge-shaped site bound by Cherry and James Streets, Marion and Broadway Avenues. The visually prominent four-story, International Style glass curtain wall building was designed by John W. Maloney and Maloney, Herrington, Freesz & Lund with Pacific Car & Foundry and Isaacson Structural Steel Companies, and constructed by John H. Sellen Construction initially in 1959 as a two-story structure. The taller portion on the east is an addition dating from 1967.

Flat roofs and simple geometric forms make up the massing, with top floors placed on columns (piloti) above grade-level parking and recessed first-floor areas. The building is L-shaped in plan with a covered parking area located on the southwest corner of the first floor. The curtainwall cladding features blue-colored obscure glass spandrel. The building is constructed of structural steel and reinforced concrete framing on a concrete foundation, with marblecrete panel cladding on exposed portions of the first floor facades. Metal sunscreens were provided on the west facade, but presently they are obscured from view by a tall hedge. Additional landscaping along the south and north edges provides additional screening that obscures other views of the building.

The 1967 addition on the west is a taller mass, but very similar to the original building design, and does not appear to alter the original design intent.

The building site was an unimproved lot purchased by the Washington Hospital Service Corp. in 1956 for the construction of a regional office for the Blue Cross Hospital Insurance Plan that served Washington and Alaska. The organization had operated previously from leased downtown offices. The new building was intended as a larger space to accommodate 100 employees. The building was designed by Seattle architect John W. Maloney and constructed for the estimated cost of $600,000 in 1958 - 1959. It was designed and sited to accommodate for future expansion. In 1967, the firm of Maloney, Herrington, Freesz and Lund designed the eastern addition consisting of two additional floors for an estimated cost of $1,005,000. Herrington was the project architect for the addition. Blue Cross occupied the building up until sometime in the 1970s. In 1980 the building was occupied by First Bank Master Charge. By 1985, the property had been purchased by Swedish Health Services and designated as the Annex.

The Alcoa Building / Swedish Health Services, 1402 Madison Street

The Alcoa Building, at 1401 Madison Street, was constructed by the Aluminum Company of America, and is presently owned and occupied by Swedish Health Services. The building was constructed on a through-block site at the southwest corner of Madison Street and Broadway.

The 39,634 square-foot building is horizontal in form and is T-shaped in plan. It is constructed of reinforced concrete and aluminum frame curtain walls, designed in the International Style, with two floors of offices situated over a lower-level parking garage. It has a flat roof and sits on a concrete foundation, with concrete pilings supporting the second and third-floor office spaces above the first floor, parking garage. The vehicular entrance to the garage is located on Broadway at the narrow end of the "T". Little is distinctive about this entrance to identify it from the street on Broadway. Instead, the building is oriented with a parking lot and set-back entry facing to the north toward Madison Street. The second floor main entrance is located at the junction of the two wings that form the "T". This entrance is connected to the street by a wide ramp extending the full width of the entry bay.

The building was built on the site of a former two-and-a-half-story residential building (c.1906), which was demolished in 1953. In 1963 the site was purchased from the estate of Emma Schmitz for $130,000 by the Aluminum Corp. of America (ALCOA) for the construction of its regional sales office. The ALCOA Building was designed by the Seattle firm of Klontz and Wrede, with James M. Klontz serving as the project supervisor. The building served as the offices for ALCOA on the second floor with additional leased office space on the third floor. The building is currently occupied by the Swedish Health Services Family Medicine Clinic.

Seattle Clinic of Medicine / Joslin Center for Diabetes, 910 Boylston Avenue

The 7,795 square-foot Seattle Clinic of Medicine / Joslin Center for Diabetes is located on a mid-block, through-lot parcel, at 910 Boylston Avenue. It was constructed as a Medical Clinic in 1966 and continues to be used for this purpose.

The Northwest Modern-style building is a flat-roofed, two-story frame structure with beige stucco and brown brick cladding. It is primarily rectangular in form with a projecting half cylinder on the back (east facade), built above a lower-level parking and vehicle entry off Broadway. The half-cylinder form is set on posts, recalling the pilot details of post-war Modernism, as a typical, lower-level garage configuration for the time. The main floor of the clinic and offices is accessed from the parking level by stairs or via an entrance on the west facade, facing onto Boylston Avenue. A landscaped entry with built-up planters leads to a recessed entry bay. The primary east facade is solid, with no window openings, composed with two square walls flanking a square void as the entry.

The building was constructed on the site of a former residential frame building of ca. 1893, which was demolished in 1953. The clinic was designed by the firm of Kirk, Wallace and McKinley, with Paul Hayden Kirk as the project supervisor, and was occupied by the Seattle Clinic of Medicine as late as 1990.

2) Impacts–Proposed Action and Alternatives

For purposes of this report, the older buildings within the MIMP project site are categorized in one of three groups:

Group 1 properties which are designated landmarks or properties which, because of their historic or architectural significance, appear to meet the criteria for listing on the National Register or designation by the City of Seattle.

Group 2 properties that may meet these criteria, for which further review is recommended.

Group 3 properties, which are not likely to meet National or local designation criteria.

Group 1 Properties

The buildings that make up the hospital assembly lack individual distinction. Furthermore, the changes made to them over time have resulted in a loss of integrity. It does not appear that any of the SMC buildings can be categorized as Group No. 1 or 2.

As previously noted, there are no current designated landmarks within the project area. All but two of the subject properties are less than 50 years old and do not meet the age threshold of the National Register.

Two individual buildings were constructed before 1954: the 1946 Clinic / St. Joseph's Baby Center at 900 – 903 Boylston Avenue, and the 1947 Marion Clinic at 819 – 821 Boylston Avenue. However, it appears that neither of these buildings meets the listing criteria required by the National Register. Thus it appears that none of individual buildings in the MIMP project area are in Group No. 1. No significant adverse impacts from the Proposed Action and Alternatives are expected.

Group 2 Properties

The City of Seattle ordinance allows for buildings of 25 years or older to be considered. It appeared that two of the individual buildings might be in Group No. 2: the 1955 - 1956 Invex Building, and the 1959 and 1967 Blue Cross / Annex Building. The City's Historic Preservation Officer determined that both buildings did not meet the City's criteria for local landmark legislation.

The Invex Building and the Blue Cross / SMC Annex are proposed to be demolished and thus would be impacted. Only the No Action Alternative would not cause impacts.

Group 3 Properties

Buildings in Group No. 3 include those that make up the hospital assembly: the North-Northwest Wing, Old Tumor Institute, Old East Wing, and West Wing. The following individual buildings are also in Group No. 3: the Medical Clinic at 900 – 903 Boylston Avenue; the Marion Clinic at 819 – 821 Boylston Avenue; the Cherry and Minor Medical Center at 1120 Cherry Street; the Alcoa Building at 1402 Madison Street; the Seattle Clinic of Medicine at 910 Boylston Avenue; and the Surgery Doctors Garage and Heath Building at 801 Broadway. No significant adverse impacts are expected.

3) Mitigating Measures

None proposed

4) Significant Unavoidable Adverse Impacts

None are expected.

Transportation, Circulation and Parking*

This section of the EIS identifies and analyzes transportation environmental impacts associated with the Swedish Medical Center Major Institution Master Plan (MIMP). The analysis of traffic impacts associated with the development alternatives are conducted according to City of Seattle procedures for impact review under its Major Institutions policies and the State Environmental Policy Act (SEPA). Traffic impacts are defined as the conditions that would occur with development under the proposed Master Plan, as compared with the conditions without the Master Plan development. This condition – without the Master Plan – is referred to as the No Action Alternative. The traffic analysis focuses on the traffic impacts occurring during the peak morning and afternoon commute periods, also known as the AM and PM peak hours. These analysis conditions were selected since they reflect times when the combined effect of project and background traffic volumes is highest.

The Transportation section is organized to include the following sub-sections:

1) **Affected Environment.** The existing transportation system within the Affected Environment is documented for use as a frame of reference in the transportation evaluation process.

2A) **Impacts of the No Action Alternative.** Conditions associated with the No Action Alternative are characterized based on forecast conditions in 2006, assuming no development were to occur on site and the existing land uses were to remain. The No Action Alternative also establishes the basic groundwork to which the impacts of the Preferred Alternative and the South Tower Alternative are compared.

2B) **Impacts of the Proposed Action.** Traffic conditions that are expected to occur under the Proposed Action are identified and compared to those described for the No Action Alternative. Impacts are measured by significant changes in transportation operations that are identified through this comparison.

2C) **Impacts of the Changes to Planned and Potential Projects Alternative.** Traffic conditions under the Changes to Planned and Potential Project Alternative are compared to the impacts of the Proposed Action.

2D) **Impacts of the No Alley Vacation Alternative.** Traffic conditions under the No Alley Vacation Alternative are compared to the impacts of the Proposed Action.

3) **Mitigating Measures.** Physical or programmatic measures that would offset the effect of transportation impacts are identified where appropriate.

4) **Significant Unavoidable Adverse Impacts.**

* Source: The TRANSPO Group

1) Affected Environment

This section documents the existing transportation system near the Swedish Medical Center campus, including AM and PM peak hour traffic volumes, intersection operations, transit service, non-motorized facilities, transportation safety, and parking conditions.

Street System

The study area for analysis was determined based on proximity to the project site and the anticipated influence area of the development alternatives. The intersections within close proximity of the site would experience the greatest impact by the development alternatives. Key intersections along the major travel routes to and from the project site were also included in the analysis. In total, 23 study intersections were identified for analysis during the peak hours in the affected environment analysis. These same study intersections were evaluated for each of the alternatives. The I-5 ramp intersections at Spring, Seneca, and University Streets were evaluated for only the peak hour of peak flow on the ramps (AM peak hour for inbound ramps and PM peak hour for outbound ramps). A list of the study intersections that were evaluated is provided below.

1. Madison Street / Broadway
2. Columbia Street / Broadway
3. Cherry Street / Broadway
4. James Street / Broadway
5. James Street / Boren Avenue
6. Marion Street / Minor Avenue
7. Marion Street / Boren Avenue
8. Madison Street / Boylston Avenue
9. Madison Street / Summit Avenue
10. Madison Street / Minor Avenue
11. Madison Street / Boren Avenue
12. Broadway / Boren Avenue
13. James Street / 9th Avenue
14. James Street / 7th Avenue
15. James Street / 6th Avenue
16. Madison Street / 9th Avenue
17. Madison Street/ 7th Avenue
18. Madison Street / 6th Avenue
19. Spring Street / 6th Avenue (PM Peak)
20. Seneca Street / 6th Avenue (AM Peak)
21. University Street / 6th Avenue (PM Peak)
22. Seneca Street / Boren Avenue
23. University Street / Boren Avenue

The street system in the First Hill area of Seattle is an urban grid network. In the immediate vicinity of the Medical Center, there are sidewalks located on both sides of all streets. Most of the streets have on-street parking on both sides that is time-restricted by parking meters. The individual characteristics of the roadways adjacent to the project site are summarized in Table 3.16. Diagrams of the study intersections are shown in Figure 3.68.

TABLE 3.16

Existing Roadway Characteristics

Roadway	Classification[1]	Travel Lanes
Madison Street	Principal Arterial	3-4
James Street	Principal Arterial	4
Boren Avenue	Principal Arterial	4
Broadway	Minor Arterial	4
Marion Street	Local Non-Arterial	2
Columbia Street	Local Non-Arterial	2
Cherry Street	Local Non-Arterial	2
Boylston Avenue	Local Non-Arterial	2
Minor Avenue	Local Non-Arterial	2

Four arterial streets surround the Swedish Medical Center campus and serve as the primary access routes for the site. Madison Street and James Street are principal arterials that bound the north and south edges of the campus. They provide access to and from I-5 via ramps at James, Cherry, Spring, Seneca, and University Streets and they connect First Hill with the Downtown. Boren Avenue is a principal arterial and forms the western boundary of the campus. It connects the project site to the Westlake and Southlake Union area to the north, and the Rainier Valley to the south. Broadway forms the east boundary of the campus and is a minor arterial. To the north, it connects the site with the Capitol Hill neighborhood. To the south, Broadway terminates at Yesler Way, approximately a half mile to the south.

Direct access to two of the Medical Center's parking garages is provided from the arterial streets – from Madison Street at Summit Avenue and from Broadway at Columbia Street (see Parking section for location and description of the parking facilities). Both these intersections are signalized.

Boylston Avenue, Minor Avenue, Marion Street, Columbia Street, and Cherry Street are local streets that provide circulation within the site boundaries and access to other Swedish parking facilities. The intersection of Marion Street and Minor Avenue is controlled by an all-way Stop. Raised curbs in the center of Boren Avenue limits access to and from Columbia and Cherry Streets to right-turns only. Similarly, a raised curb on James Street limits access to and from Minor Avenue to right-turns only.

Traffic Volumes

Traffic volume data was collected for the study area to characterize weekday traffic conditions during the AM and PM peak hours. The peak hours were chosen for review and analysis to document traffic conditions during the hours of highest traffic volume in the study area. Peak hour traffic counts were conducted in July 2004 for the study intersections. Figures 3.69 and 3.70 summarize existing traffic volumes within the study area, on a typical weekday during the AM and PM peak hours.

Traffic Operations

The operational characteristics of an intersection are determined by calculating the intersection's level of service (LOS). The intersection as a whole and its individual turning movements can be described with a range of levels of service (A-F), with LOS A indicating free-flowing traffic and LOS F indicating extreme congestion and long vehicle delays. At signalized intersections, LOS is measured in average total delay per vehicle and is typically reported for the intersection as a whole.

Levels of service for the study intersections were calculated based on the methodology published in the Highway Capacity Manual (HCM), 2000 Edition. The 2000 HCM represents the most current methodology published and provides the ability to account for total vehicle delay, a measure that quantifies several intangible factors, including driver discomfort, frustration, and lost travel time. Table 3.17 summarizes existing levels of service, average vehicle delays, and volume-to-capacity (v/c) ratio for each of the study intersections.

TABLE 3.17

Existing Peak Hour Levels of Service

	AM Peak Hour			PM Peak Hour		
Intersection	**LOS[1]**	**Delay[2]**	**V/C[3]**	**LOS[1]**	**Delay[2]**	**V/C[3]**
Madison/Broadway	C	24.0	0.42	C	27.0	0.49
Columbia/Broadway	A	2.5	0.37	A	7.7	0.44
Cherry/Broadway	A	4.3	0.44	A	8.2	0.44
James/Broadway	D	41.1	0.80	D	47.0	0.81
James/Boren	D	46.1	0.67	C	33.1	0.67
Marion/Minor	A	8.5	NA[4]	A	8.9	NA[4]
Marion/Boren	A	9.0	0.44	C	31.6	0.52
Madison/Boylston	A	4.3	0.31	A	9.3	0.58
Madison/Summit	A	5.5	0.24	B	10.5	0.33
Madison/Minor	A	8.6	0.28	A	9.1	0.36
Madison/Boren	C	33.4	0.67	C	29.0	0.67
Broadway/Boren	B	10.9	0.50	C	29.4	0.51
James/9th	B	15.2	0.71	C	25.6	0.65
James/7th	B	19.6	0.58	E	69.7	1.03
James/6th	C	24.8	0.62	D	37.5	0.89
Madison/9th	A	7.5	0.38	B	11.8	0.48
Madison/7th	B	18.4	0.77	B	18.1	0.62
Madison/6th	A	8.7	0.45	B	13.4	0.44
Spring/6th	—[54]	—[54]	—[54]	C	22.0	0.71
Seneca/6th	C	32.6	0.70	—[54]	—[54]	—[54]
University/6th	—[54]	—[54]	—[54]	B	16.9	0.43
Seneca/Boren	A	8.9	0.34	C	22.2	0.37
University/Boren	A	3.8	0.38	C	26.5	0.51

1 Level of service.
2 Average delay in seconds per vehicle.
3 Volume-to-capacity ratio.
4 All-Way Stop intersection - V/C not applicable for unsignalized intersections.
5 Freeway Ramp - Analysis only for highest volume peak hour - AM for inbound ramp or PM for outbound ramp.

As shown in the table, level of service calculations indicate that all study intersections operate at LOS D or better except for the James/7th intersection, which operates at LOS E in the PM peak hour. Delays at this intersection are a result of high volumes of outbound traffic going to the nearby northbound and southbound I-5 freeway ramps.

While all but one of the study area intersections are calculated to operate at LOS D or better, it is noted that actual street system operations along arterial corridors can result in more travel route delay than suggested by the LOS results. This specifically occurs on James and Madison streets, and to a lesser extent along Boren Avenue. A number of factors contribute to this. In some cases, added route "friction" results from parking and or site access maneuvers. At locations where on-site queuing spills back into the adjacent street, street operations are affected beyond the calculated LOS results shown above. In all of these corridors, it is noted that corridor traffic signal timing and coordination could result in improved progression between intersections, and a reduction in overall delay and travel time to traverse the corridors. The City of Seattle Department of Transportation has recognized the value of corridor-focused traffic signal coordination and has implemented improved signal coordination on a number of corridors in the City, experiencing improved traffic flow through these corridors as a result.

The City's Comprehensive Plan does not define an LOS standard for individual intersections. Instead, operational standards focus on characteristics of the overall transportation system over which the City has some influence and control. Specifically, the City defines arterial levels of service to be the v/c ratio at designated screenlines, each of which encompasses one or more arterial routes. The operational standard measures the PM peak hour directional traffic volumes on the arterials crossing each screenline to calculate the screenline LOS. To evaluate the performance of the arterial system, the calculated LOS for each screenline is compared with the LOS standard for a particular screenline, as defined by the City. The LOS standard is typically a v/c ratio of 1.0 to 1.2 for each screenline. The performance of the transportation system based on the screenline standards is analyzed in the Transportation Concurrency subsection associated with each of the development alternatives.

Local Circulation and Access

The following describes circulation and access on the local street system immediately adjacent to and within the project site.

Garage Access

The four primary on-site garages are the Marion & Minor Garage, the Nordstrom Garage, the Broadway Garage, and the Minor & James Garage (a list, Table 3.20 and map, Figure 3.71, of all existing on-site parking garages and lots are included in the Parking section). The Marion & Minor Garage has a driveway on Marion Street and an inbound-only driveway on Minor Avenue. The Nordstrom Garage's primary access is on Madison Street at the signalized intersection with Summit Avenue, with a second access on Boylston Avenue. Access for the Broadway Garage is from Broadway at the signalized intersection with Columbia Street. An outbound-only driveway also serves the Broadway Garage, exiting onto Cherry Street where only right-turns are allowed. The Minor & James Garage has two driveways on Minor Avenue.

Of the four garages, the Nordstrom Garage access on Madison Street at Summit Avenue experiences the most congestion. The garage serves the Arnold Pavilion and Nordstrom Tower, which are heavily used facilities on the Swedish Hospital campus. In addition to providing the primary parking for the two busy medical offices, the Nordstrom garage's convenience from Interstate 5 for unfamiliar inbound travelers to the Swedish Medical Center campus contributes to the popularity of the Nordstrom garage for parking by users of other portions of the complex. Users in the Nordstrom Garage have access to the main hospital complex to the south via a sky bridge across Marion Street.

FIGURE 3.68

Existing Intersection Geometry and Control

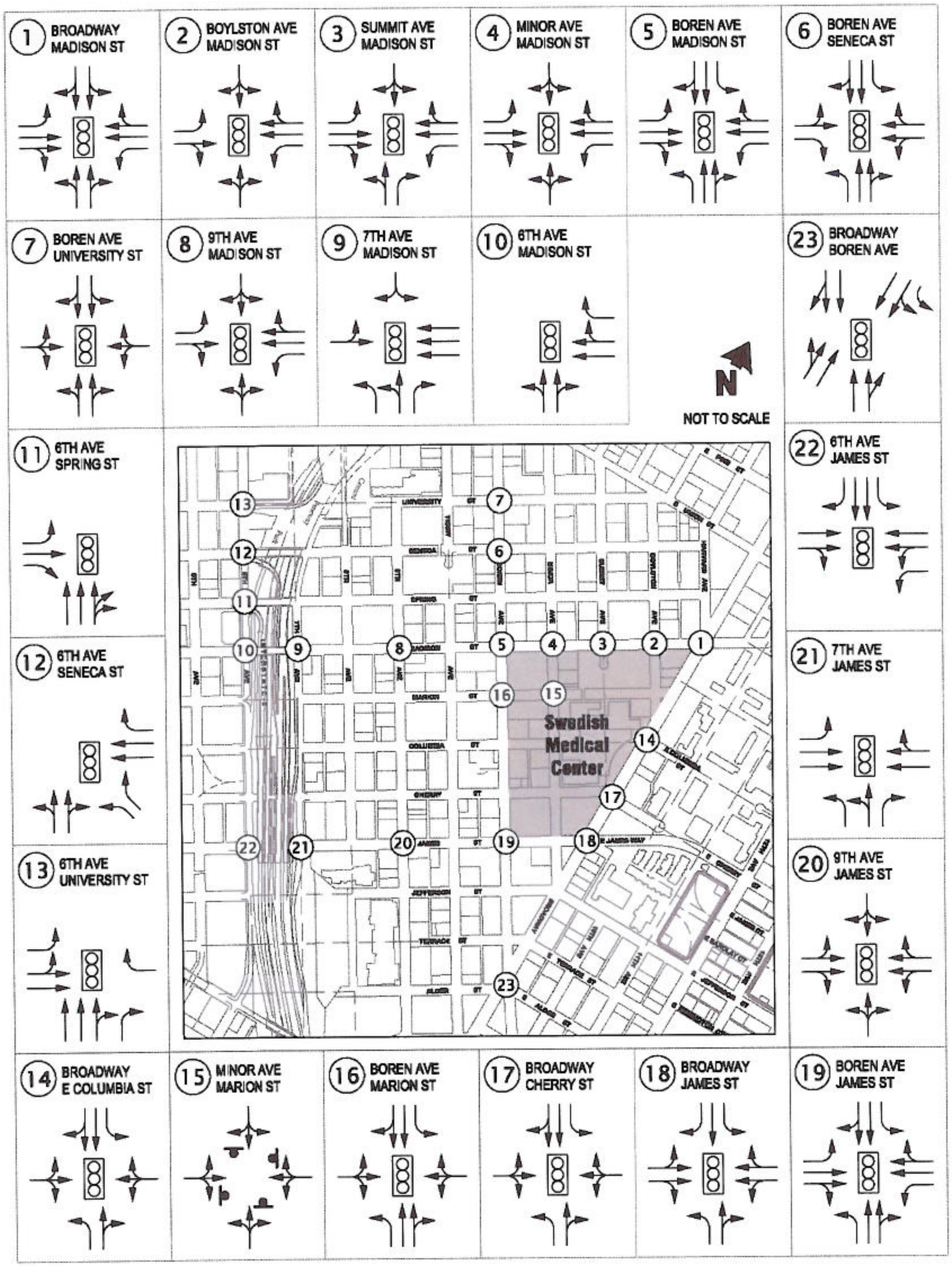


FIGURE 3.69

Existing AM Peak Hour Traffic Volumes

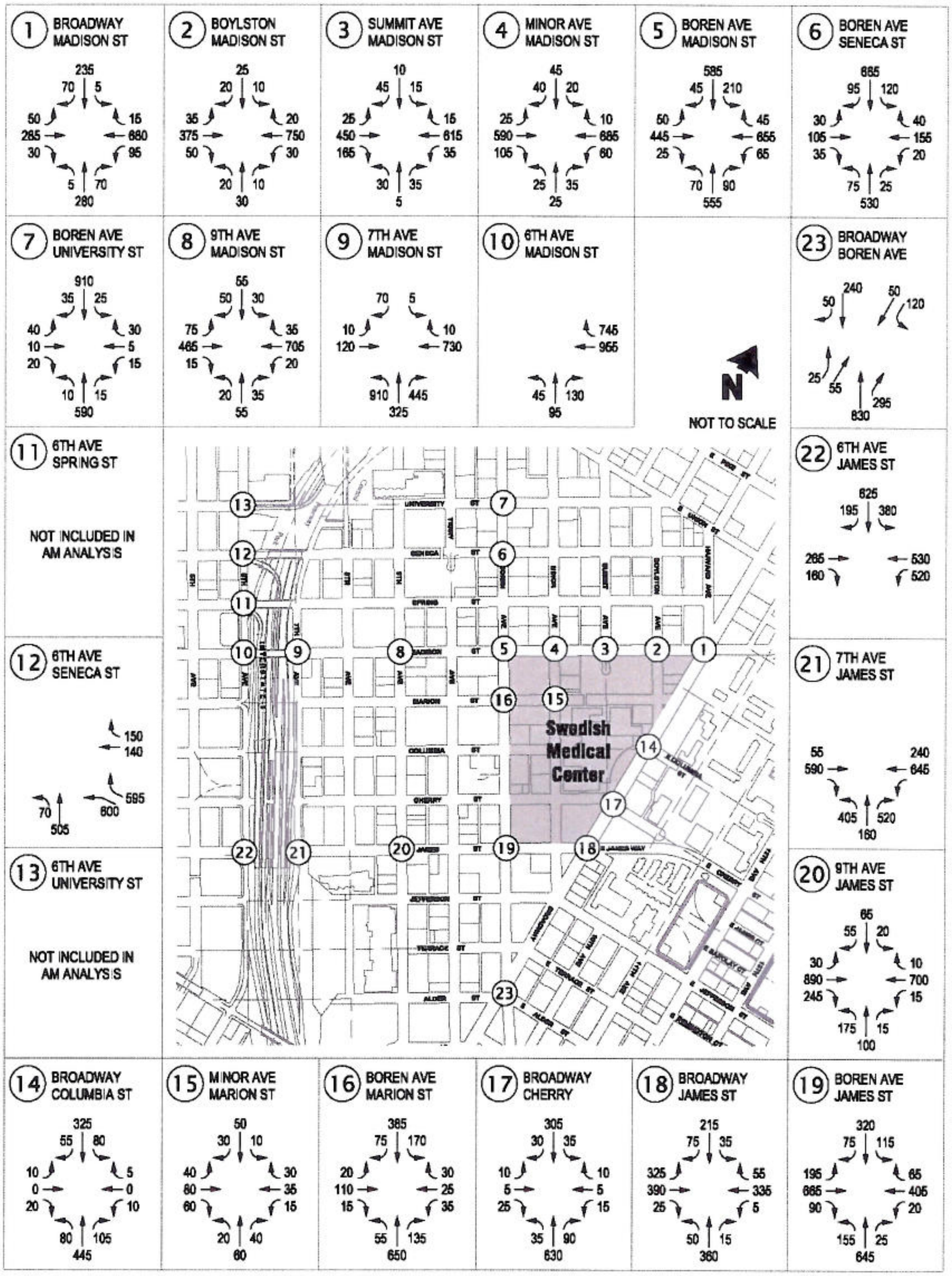
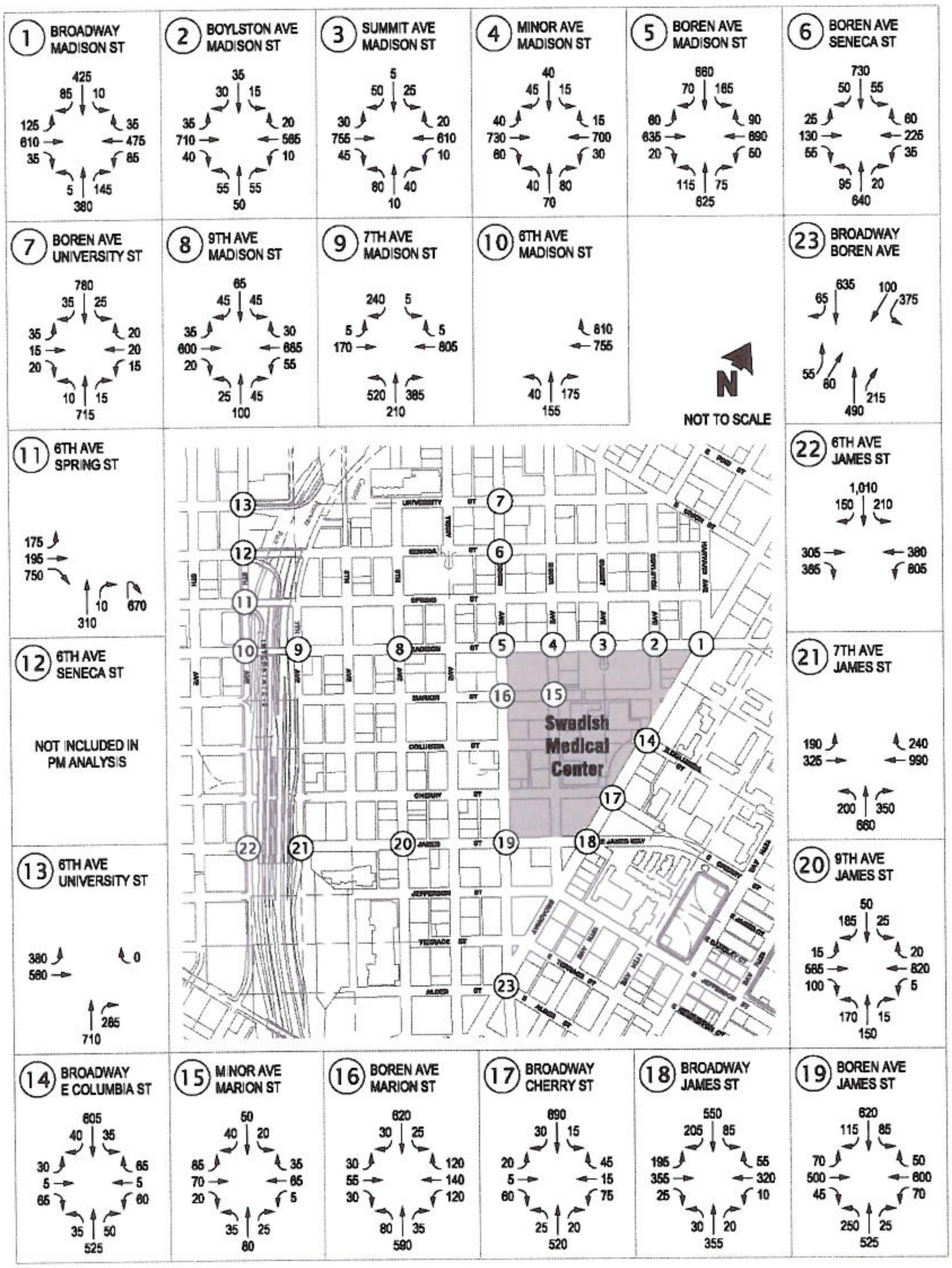


FIGURE 3.70

Existing PM Peak Hour Traffic Volumes



Access into the Nordstrom garage occurs off a U-shaped turnaround area. Inbound garage traffic must circulate past the Arnold Pavilion pedestrian entrance and vehicle drop-off/valet area, to enter the Nordstrom garage, whose entrance is along the east face of the U-drive. The combination of volume of vehicle demand, geometric and spatial limits, and multiple driveway user types (direct garage access, passenger drop off and access garage, and drop off/valet parking) contributes to observable congestion occurring sporadically throughout the day. Traffic queues can extend, at times, into Madison Street because of delays in inbound access to the garage/drop-off area. These instances are often caused by temporary overloads in the demand for drop-off and an inability of the valet service to clear the cars waiting to be parked fast enough to create usable drop-off space. This is exacerbated by delays to valet staff in returning cars from the garage caused by internal garage queuing which affects self-parkers and valet.

Pick-Up/Drop-Off

There are four existing locations for curbside pick-up and drop-off of patients and visitors. A drop-off area on Madison Street between Minor and Summit Avenues is separated from the street by a raised sidewalk. As described above, a drop-off area is located at the main access to the Nordstrom Garage at Madison and Summit. The entry drive in front of the main hospital building on Broadway provides an extended curbside drop-off area. The entry drive also provides access to the Broadway Garage. The fourth curbside drop-off area is located adjacent to the South Wing on Cherry Street between Broadway and Minor Avenue.

Emergency

The existing emergency room is located on the northeast corner of Minor Avenue and Cherry Street. A driveway on Minor Avenue provides access to the facility for emergency vehicles. Because left turns are not allowed at nearby intersections on Boren Avenue at Cherry Street and at Columbia Street, inbound emergency vehicles use Minor Avenue and Cherry Street when coming from the north. Note that the existing emergency access is not located along an arterial.

Service/Loading

Four loading dock locations, two on Minor Avenue and two on Marion Street currently serve the core hospital facility. Three additional loading dock areas on Marion Street serve the Columbia Building, Madison Tower, Arnold Pavilion, and the Nordstrom Tower. Minor Avenue and Marion Street are the primary routes for truck and service vehicle access. Trucks usually back into the docks from the adjacent streets, which can cause brief delays to traffic on the street while the truck completes its back-in maneuver.

Transit

Transit service in the study area is provided by King County Metro Transit, which operates several routes serving the site, including Routes 3, 4, 9, 12, 60, 64, 205, 303, 941, and 942. Transit stops for these routes are located adjacent to the Medical Center on Broadway, Madison Street, Boren Avenue, James Street and Jefferson Street. Destinations, headways, and operating days for these routes are listed in Table 3.18.

TABLE 3.18
Transit Service

Route No	Destinations	Operating Days	Peak Hour Headways
3	Downtown, Madrona, Judkins Park to Queen Anne Hill	Every Day	5-15 mins
4	Downtown, Madrona, Judkins Park to Queen Anne Hill	Every Day	5-15 mins
9	Rainier Beach to University District	Mon-Fri	25-30 mins
12	Interlaken Park to Downtown Seattle	Every Day	10-30 mins
60	Georgetown, White Center to Broadway	Every Day	30 mins
64	Downtown, Lake City	Mon-Fri (peak hours only)	25 mins
205	South Mercer Island to University District	Mon-Fri (peak hours only)	30 mins
303	Shoreline Park and Ride	Mon-Fri (peak hours only)	25-30 mins
941	Kent-Des Moines Freeway Station	Mon-Fri (peak hours only)	30 mins
942	Eastgate Park and Ride	Mon-Fri (peak hours only)	30 mins

The First Hill Express (Routes 941 and 942) is sponsored by Swedish and other institutions on First Hill, including Providence Medical Center, Harborview Medical Center, Virginia Mason Medical Center, and Seattle University. These routes operate between approximately 6:00-9:00 am and 3:30-6:30 p.m. with service between the participating institutions and Metro Park & Ride facilities to the east and south. The Metro routes traveling through Downtown Seattle provide opportunities for transfers and connections to routes serving most of the region, including areas served by Sound Transit, Community Transit, and Pierce Transit. In general, the Swedish Medical Center site is well served by transit, with route connections to destinations throughout the region.

To encourage transit use, Swedish provides all employees with a free bus pass as part of the Medical Center's Transportation Management Program.

Non-Motorized Facilities

The mix of high-density development in the First Hill community encourages non-motorized mode choices such as walking and bicycling. Walking and biking are important elements of the transportation system, especially as they relate to mode choice and the effort to reduce vehicular travel. The Seattle Land Use and Zoning Code indicates that Madison Street between 9th Avenue and 13th Avenue and Broadway north of Boylston Street are located within a P1 Pedestrian Zones. Code provisions for P1 Zones include land use regulations that encourage pedestrian-oriented uses and design standards that accommodate pedestrian travel such as limiting driveways that disrupt continuous pedestrian flow.

Sidewalks are provided on all streets in the study area and are generally in good condition. Crosswalks and pedestrian signal heads are provided at all intersections that are signalized. Crosswalk and overhead "Crosswalk" signs are provided at the unsignalized intersection of James Street and Minor Avenue. A crosswalk and sidewalk mounted pedestrian crossing signs are provided at the unsignalized intersection of Columbia Street and Boren Avenue.

There are two sky bridges and three tunnels that provide pedestrian connections between buildings on the project site. One of the sky bridges crosses over Minor Avenue, north of Marion Street, linking the Arnold Medical Pavilion with the 1101 Madison Tower. The other sky bridge is located over Marion Street, east of Minor Avenue, and connects the hospital's northwest wing with the Arnold Medical Pavilion. One tunnel crosses under Minor Avenue, between Columbia and Marion Streets, connecting the hospital's West Wing with the Columbia Building. A second tunnel crosses under Cherry Street, between Minor Avenue and Broadway, and connects the hospital's South Wing with the Broadway Annex. The third tunnel crosses under Broadway, just to the north of Cherry Street, connecting the hospital's South Wing with the Kidney Center.

There are no designated bicycle facilities in the immediate project site vicinity. Typically, bicyclists use the vehicle travel lanes for travel in the area. Secured bicycle storage/parking facilities are provided in the four primary on-site garages (Marion & Minor Garage, Nordstrom Garage, Broadway Garage, and Minor & James Garage).

Safety

A review of current safety conditions near the project site was conducted to document existing known safety issues in the study area. A historic review of the frequency and type of accidents that occurred during the three-year period from January 1, 2001, through December 31, 2003, was conducted at the study intersections and is summarized in Table 3.19.

TABLE 3.19

Three-Year Accident History

Intersection	2001	2002	2003	Total	Annual Average
Madison/Broadway	4	6	4	14	1.33
Columbia/Broadway	1	2	2	5	1.67
Cherry/Broadway	1	1	2	4	1.33
James/Broadway	2	1	5	8	2.67
James/Boren	3	4	5	12	4.00
Marion/Minor	0	0	0	0	0.00
Marion/Boren	0	3	3	6	2.00
Madison/Boylston	3	0	0	3	1.00
Madison/Summit	0	0	6	6	2.00
Madison/Minor	1	4	1	6	2.00
Madison/Boren	3	5	7	15	5.00
Broadway/Boren	1	1	2	4	1.33
James/9th	8	8	11	27	9.00
James/7th	4	2	3	9	3.00
James/6th	12	12	32	56	18.67
Madison/9th	0	2	2	4	1.33
Madison/7th	4	2	3	9	3.00
Madison/6th	5	7	9	21	7.00
Spring/6th	3	2	4	9	3.00
Seneca/6th	1	1	2	4	1.33
University/6th	6	2	7	15	5.00
Seneca/Boren	4	6	2	12	4.00
University/Boren	3	3	2	8	2.67

The City of Seattle has adopted criteria for assigning High Accident Location (HAL) status to those intersections that experience above-average accident rates. Intersections designated as HALs would be targeted for future safety improvements in an effort to reduce the accident occurrence at this location. These criteria state that all unsignalized intersections with five or more accidents per year, and all signalized intersections with ten or more accidents per year, are to be classified as HALs.

Based the accident histories shown in the table, the intersection of James Street and 6th Avenue meet the criteria to be classified as an HAL. All other study intersections do not fall under the HAL classification.

Existing Site Trip Generation

Trip generation associated with the existing facilities on the project site was determined from traffic counts collected on the four arterial streets that surround the site - Madison Street, Broadway, James Street, and Boren Avenue. The traffic counts were collected in 2004 during the AM and the PM peak hours at the following intersections:

Madison Street / Minor Avenue
Madison Street / Summit Avenue (Nordstrom garage driveway)
Madison Street / Boylston Avenue
Broadway / Marion Street
Broadway / Boylston Avenue
Broadway / Columbia Street (main hospital driveway)
Broadway / Cherry Street
James Street / Minor Avenue
Boren Avenue / Cherry Street
Boren Avenue / Columbia Street
Boren Avenue / Marion Street

Traffic entering and leaving the project site at these intersections represents almost all traffic generated by the existing facilities on project site. All parking garages and lots for the project site are accessed via one of these intersections. The time-restricted metered parking on the surrounding streets, the restrictions of the surrounding Residential Parking Zones (RPZs), and the barrier presented by the bordering arterial streets combine to make it unlikely that any noticeable amount of parking for the Swedish campus is taking place outside of the project site boundaries.

Conversely, almost all the traffic entering or leaving the project site at these intersections are likely associated with the project facilities. All the streets that form the internal road system of the project site either terminate at the arterial streets at the project boundary or have turn restrictions at the boundaries that make them unlikely streets that are used by through traffic.

The traffic counts from the intersections that surround the project site indicate that existing trip generation for the site is 2,100 trips in the AM peak hour and 2,250 trips during the PM peak hour.

Parking

Parking Supply

Figure 3.69 shows the location of existing off-street parking facilities within the project site. Table 3.20 summarizes the number of spaces provided in each of the parking facilities. 3,743 off-street parking spaces are currently provided within the Swedish campus.

TABLE 3.20

Existing On-Site Parking Supply

Map No	Facility	Spaces
1	Marion & Minor Garage	1,025
2	Madison / Nordstrom Garage	597
3	Alcoa Building	50
4	Doctors' Garage	115
5	Heath Lot	12
6	Invex Garage	190
7	Invex Alley Lot	20
8	Broadway Garage	540
9	Minor & James Garage	1,043
10	Annex Lot	53
11	Arnold Valet Parking	14
12	Main Lobby Valet Parking	19
13	Arnold Retail Lot	37
14	910 Boylston (Josling Building)	16
15	East Wing (Rehabilitation) Lot	5
16	Columbia Lot	7
	Total	3,743

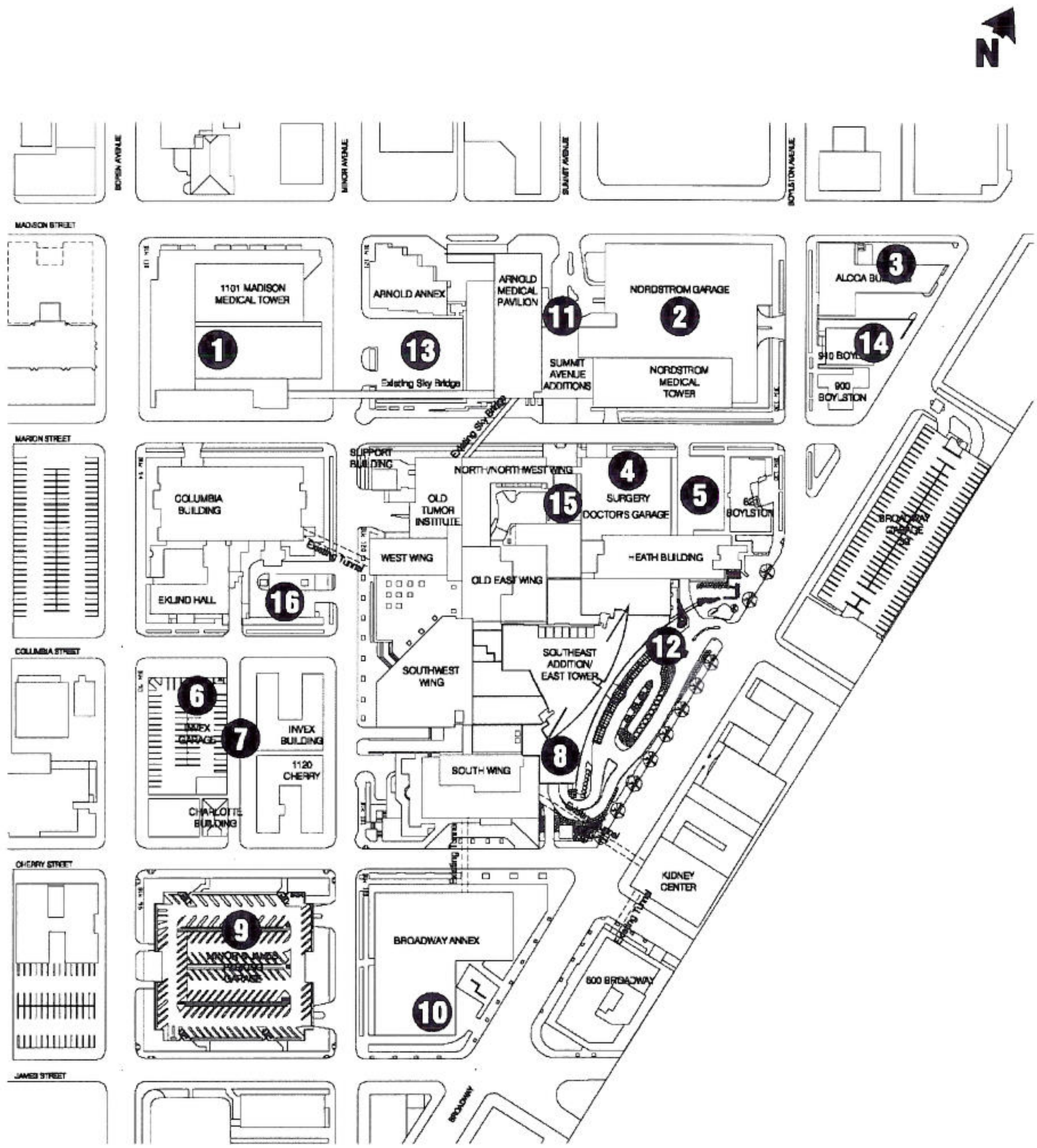
Parking Code Requirements

Code requirements for off-street parking for the existing campus are summarized in Table T-6. The parking code requirements are found in the Seattle Land Use and Zoning Code. Section 23.54.016 of the code identifies parking requirements for Major Institutions. For medical institutions, the minimum number of long-term parking stalls is equal to 80 percent of hospital-based doctors plus 25 percent of staff doctors plus 30 percent of all other employees present at peak hour. The minimum number of short-term parking stalls is equal to one stall per 6 beds plus one stall per 5 average daily outpatients. The Code also establishes a maximum limit for parking not to exceed 135 percent of the minimum requirement.

The resulting parking required by code for the existing project site ranges from a minimum of 3,413 stalls to a maximum of 4,608 stalls. The existing on-site parking supply of 3,743 stalls is within the code-required range.

FIGURE 3.71

Existing On-Site Parking Garages and Lots



See "Existing On-Site Parking Supply" table in text.

TABLE 3.21

Parking Code Requirements for Existing Swedish Medical Center

	Number Basis for Hospital	Number Basis for MOB[1]	Minimum Stalls	Maximum Stalls
Long-Term Parking				
1 space per 80% of project-based MDs	40 MDs	495 MDs	428	578
1 space per 25% of staff MDs	550 MDs	---	138	186
1 space per 30% of peak hour employees	1,650 emp	1,270 emp	876	1,183
Total Long-Term Parking Spaces			1,442	1,947
Short-Term Parking				
1 stall per 6 beds	566 beds	---	94	127
1 stall per 5 outpatients	570 patients	8,740 patients	1,862	2,514
1 stall per 10 seats in auditorium	150 seats	---	15	20
Total Short-Term Parking Spaces			1,971	2,661
Total Parking Stalls Required			3,413	4,608

1 Medical office buildings, including research and lab space.

Parking Demand

Parking demand for existing facilities on the project site was estimated using transaction records generated by the cashier system and the automated vehicle counters for the seven on-site parking garages. These garages contain almost all (95%) the existing project site's off-street parking. The cashier and count data indicates that average peak occupancy for the garages ranged from 77% at the Broadway Garage to 103% at the Minor and James Garage (the greater than 100% occupancy is due to cars parking in non-parking areas on drive aisles and walkways). The average occupancy for all seven garages is 88%. Applying this average peak occupancy to the project site's total supply of 3,743 parking spaces (including the 5% of on-site parking stalls not located in one of the seven garages) results in a total peak parking demand of approximately 3,300 cars. The data from the garages indicate that the peak demand for parking generally occurs at 11:00 AM.

On-Street Parking

In the immediate vicinity of the project site, most on-street parking, where allowed, is controlled by parking meters. Adjacent to the project site, on-street parking is allowed on the south side of Madison Street and on both sides of Broadway. No on-street parking is allowed on Boren Avenue or on James Street. Within the boundaries of the project site, on-street parking is generally allowed on both sides of the local streets. This on-street parking is also controlled by parking meters.

Transportation Management Program
Swedish Medical Center has an existing Transportation Management Program (TMP), which was entered into with the City of Seattle, Seattle Engineering Department (SED) and Department of Construction and Land Use (DCLU), in 1993. The goal of the TMP is to maintain or reduce the percentage of employees commuting by Single Occupant Vehicles (SOV) to fifty percent (50%) or less. The goal percentage is to apply only to employees and tenants who regularly commute during the weekday PM peak hour occurring between 3 and 6 p.m. The TMP has been effective in reducing overall SOV travel to and from the site. Ongoing survey results show that the program is meeting the overall TMP goal of 50% or less SOV travel. A detailed description of the TMP is included in the Major Institution Master Plan (MIMP) document

2A) Impacts of the No Action Alternative

This section of the EIS describes expected traffic conditions within the study area if no development were to occur on the project site. This alternative, referred to as the No Action Alternative, assumes that the existing Swedish Medical Center facilities would remain in their existing configurations and that no new development would occur on the project site.

Traffic analysis for the No Action Alternative was conducted under AM and PM peak hour conditions for 2020, consistent with the approximate 15-year time frame for build out of the Planned Projects identified in the Master Plan. This section also provides a baseline for comparison to the development alternatives, by which transportation impacts can be measured.

Street System
Planned transportation improvements within the study area are outlined in the following paragraphs, and are categorized into Roadway, Transit and Rail, and Non-Motorized Improvements. The review of potential transportation improvements provides an overview of what the street system will look and feel like to drivers, pedestrians, and bicyclists within the horizon timeline.

Roadway Improvements
The City of Seattle 2003–2008 Capital Investment Program (CIP) was reviewed to identify transportation improvement projects planned for the study area. The CIP lists improvement projects that have been approved by the City of Seattle and, for which funding sources (within the next six years) have been identified. Within the study area, there are no specific transportation improvements listed for implementation.

Because no transportation capacity improvements are identified for the project vicinity, the intersection geometry and control characteristics identified in the Affected Environment section have been applied to the development alternatives analysis.

Traffic Volumes

The 2020 forecasted traffic volumes used in the analysis of the No Action Alternative are comprised of existing traffic, background traffic growth, and traffic generated from proposed "pipeline" developments. Background traffic growth was accounted for by applying a growth rate of 0.5 percent per year to existing peak hour traffic volumes to reflect general traffic growth in the First Hill area.

In addition to the general background traffic growth, traffic that would be generated by proposed development was also added to existing traffic volumes. For this analysis, nine projects have been identified as pipeline projects; all of these projects either have an approved Master Use Permit (MUP) and they are either undeveloped at this time or were not occupied at the time of the traffic counts, or they are have an active application with the Seattle Department of Planning and Development (DPD). Traffic that would be generated by the following pipeline projects have been included the traffic forecasts for the analysis:

- Frye Museum (701 Terry Street)
- 7th & Madison (904 7th Avenue)
- 8th & Madison (900 8th Avenue)
- First United Methodist Church (811 5th Avenue)
- Warshal's (1000 First Avenue)
- 401 Broadway
- Harborview Medical Center Master Plan (325 9th Avenue)
- Virginia Mason Master Plan (1100 9th Avenue)
- Seattle University Master Plan (901 12th Avenue)

The combination of pipeline project traffic growth, and the 0.5 percent growth rate result in 2015 traffic forecasts which are conservative and may somewhat exceed actual conditions. The resulting analysis may thus reflect congestion levels somewhat above actual conditions. The pipeline project volumes, added together with the background growth and existing traffic, result in estimated 2020 No Action Alternative traffic volumes. Figures 3.72 and 3.73 summarize 2020 AM and PM peak hour traffic volumes for the No Action Alternative.

Traffic Operations

Peak hour levels of service under the No Action Alternative were calculated for each of the study intersections. Since there are no planned transportation improvements identified for the study area, the same intersection variables (signal timing, number of lanes, etc.) as were generally used for the operational analysis of existing conditions were used in the No Action Alternative. Table 3.22 provides a summary of No Action Alternative AM and PM peak hour levels of service, delays, and v/c ratios at the study intersections. The table also shows existing levels of service for comparison.

FIGURE 3.72

2020 No-Action AM Peak Hour Traffic Volumes

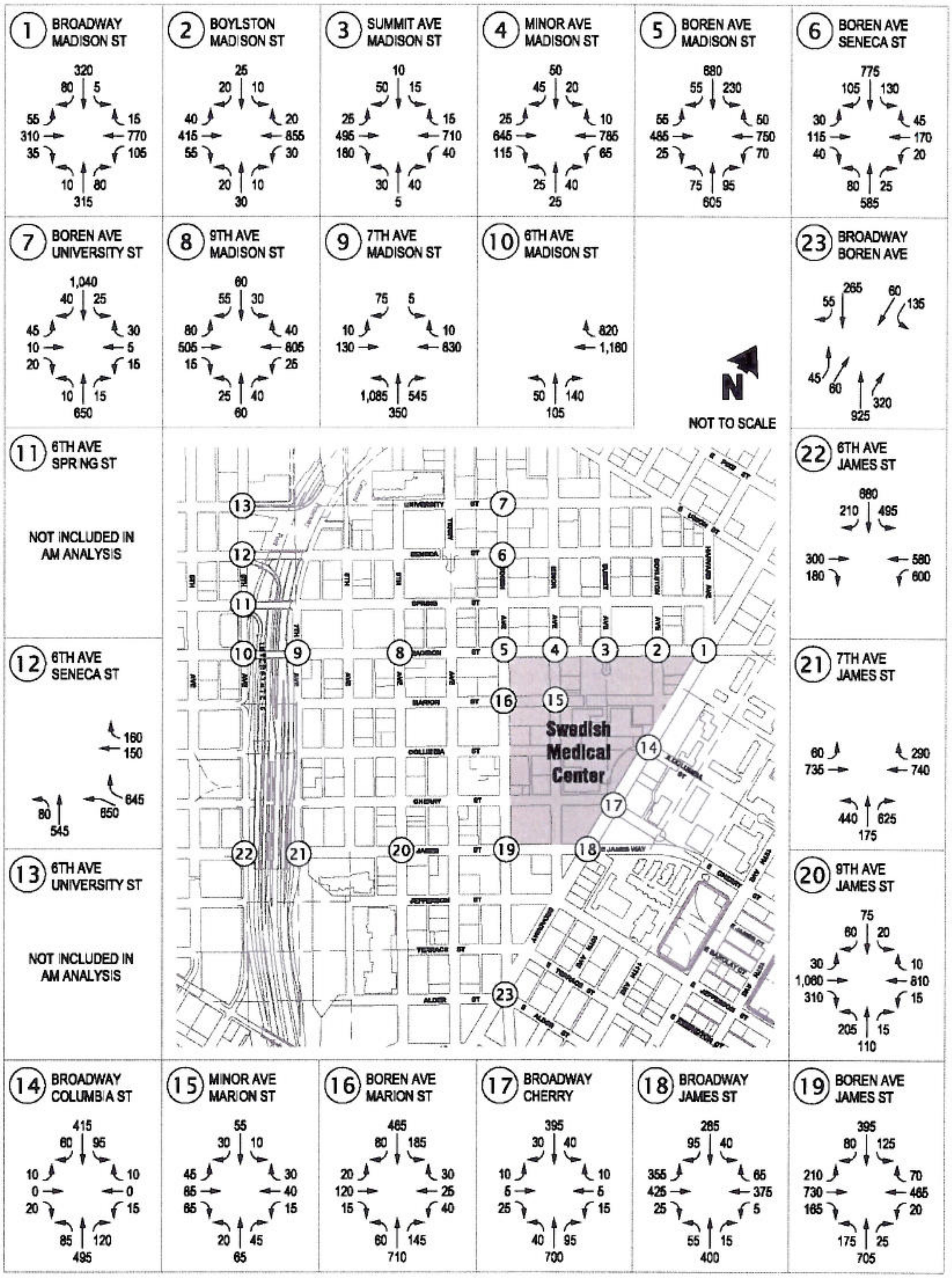


FIGURE 3.73

2020 No-Action PM Peak Hour Traffic Volumes

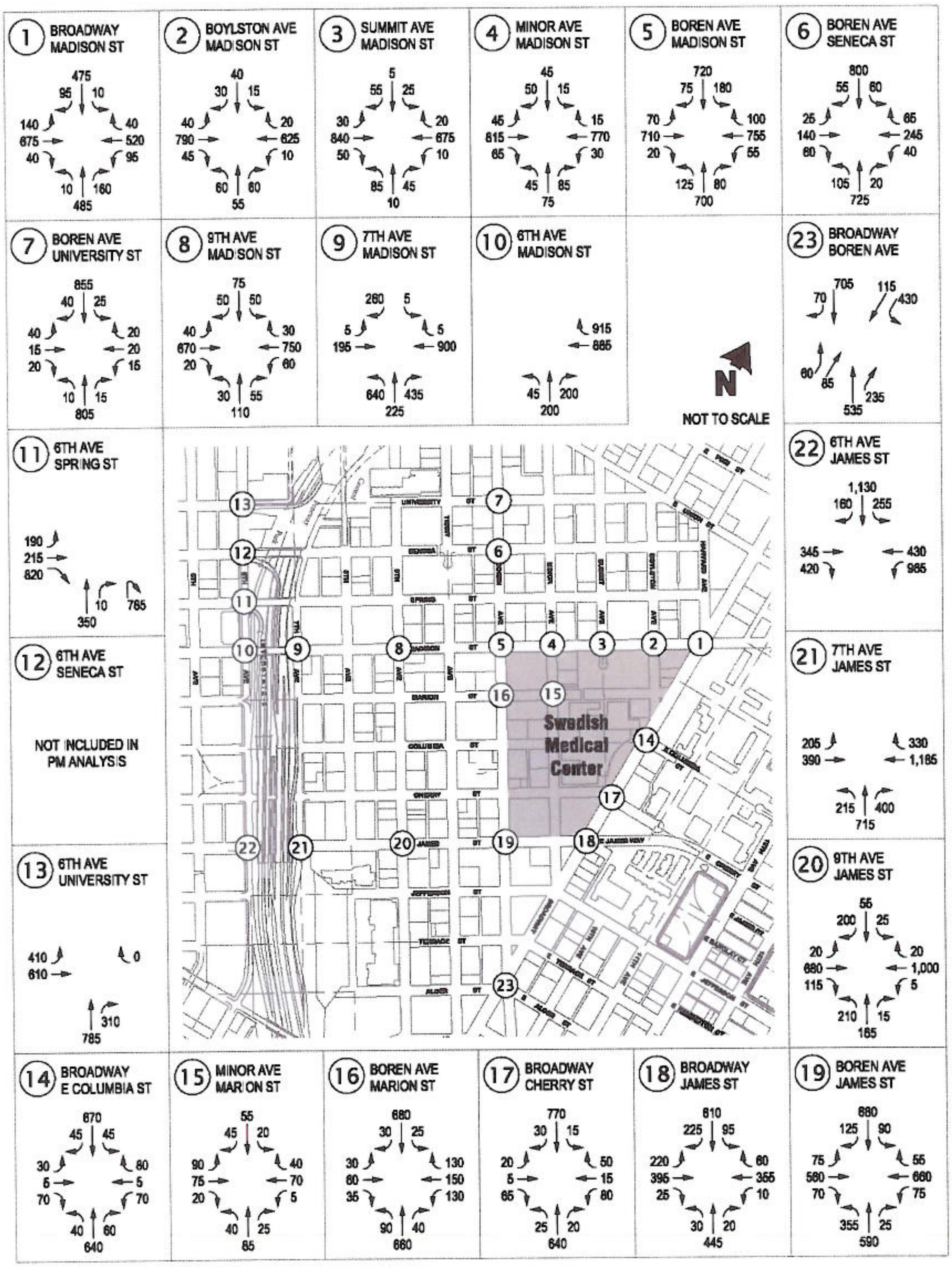


TABLE 3.22

Peak Hour Levels of Service - No Action Alternative

	2004 Existing						2020 No-Action Alternative					
	AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
Intersection	LOS[1]	Delay[2]	V/C[3]	LOS[1]	Delay[2]	V/C[3]	LOS[1]	Delay[2]	V/C[3]	LOS[1]	Delay[2]	V/C[3]
Madison/Broadway	C	24.0	0.42	C	27.0	0.49	C	21.8	0.48	C	27.0	0.56
Columbia/Broadway	A	2.5	0.37	A	7.7	0.44	A	2.9	0.41	A	8.4	0.55
Cherry/Broadway	A	4.3	0.44	A	8.2	0.44	A	4.0	0.49	A	8.2	0.53
James/Broadway	D	41.1	0.80	D	47.0	0.81	D	48.1	0.89	D	36.3	0.91
James/Boren	D	46.1	0.67	C	33.1	0.67	D	37.3	0.70	D	35.6	0.83
Marion/Minor	A	8.5	NA[4]	A	8.9	NA[4]	A	8.7	NA[4]	A	9.1	NA[4]
Marion/Boren	A	9.0	0.44	C	31.6	0.52	A	9.3	0.51	B	18.7	0.55
Madison/Boylston	A	4.3	0.31	A	9.3	0.58	A	4.3	0.34	B	13.8	0.64
Madison/Summit	A	5.5	0.24	B	10.5	0.33	B	15.4	0.28	B	12.5	0.36
Madison/Minor	A	8.6	0.28	A	9.1	0.36	B	12.3	0.32	C	22.4	0.40
Madison/Boren	C	33.4	0.67	C	29.0	0.67	D	36.4	0.73	C	32.2	0.72
Broadway/Boren	B	10.9	0.50	C	29.4	0.51	B	12.6	0.57	C	22.6	0.57
James/9th	B	15.2	0.71	C	25.6	0.65	B	19.3	0.84	C	25.6	0.76
James/7th	B	19.6	0.58	E	69.7	1.03	C	26.1	0.78	F	125.3	1.18
James/6th	C	24.8	0.62	D	37.5	0.89	C	26.0	0.80	D	53.4	1.02
Madison/9th	A	7.5	0.38	B	11.8	0.48	B	13.7	0.41	B	13.2	0.54
Madison/7th	B	18.4	0.77	B	18.1	0.62	C	24.4	0.91	C	20.1	0.75
Madison/6th	A	8.7	0.45	B	13.4	0.44	A	9.3	0.52	B	12.9	0.52
Spring/6th	–[5]	–[5]	–[5]	C	22.0	0.71	–[5]	–[5]	–[5]	C	24.1	0.86
Seneca/6th	C	32.6	0.70	–[5]	–[5]	–[5]	D	38.6	0.77	–[5]	–[5]	–[5]
University/6th	–[5]	–[5]	–[5]	B	16.9	0.43	–[5]	–[5]	–[5]	B	17.7	0.47
Seneca/Boren	A	8.9	0.34	C	22.2	0.37	B	10.4	0.39	B	16.8	0.41
University/Boren	A	3.8	0.38	C	26.5	0.51	A	4.0	0.42	A	5.8	0.37

1 Level of service.
2 Average delay in seconds per vehicle.
3 Volume-to-capacity ratio.
4 All-Way Stop intersection - V/C not applicable for unsignalized intersections.
5 Freeway Ramp - Analysis only for highest volume peak hour - AM for inbound ramp or PM for outbound ramp.

As shown in the table, the combined effect of background growth and pipeline projects causes levels of service at several study intersections to degrade by one grade. However, the level of service calculations indicate that all study intersections would continue to operate at LOS D or better except for the intersection of James Street and 7th Avenue.

As noted in existing conditions, actual traffic flow across arterial corridors such as James Street, Madison Street, and Boren Avenue experience somewhat greater levels of actual congestions and delay than reflected in the LOS results at intersections above. This condition can be caused by a number of factors, and could be improved through improved signal coordination between traffic signals along the corridor.

At the James Street and 7th Avenue intersection, increases in traffic accessing the I-5 on-ramps on 6th and 7th Avenues would degrade the existing LOS E conditions to LOS F conditions under the No Action Alternative. The Seattle Transportation Department will shortly begin a study of the James Street corridor to identify potential measures to improve traffic flow and safety. Potential measures that may be examined in the study include improvements to signal timing along the corridor and possible restrictions on left turns at the 7th Avenue intersection.

Local Access and Circulation

Access and circulation on the local street system within the project site would remain unchanged under the No Action Alternative.

Transit Service

The first phase of Sound Transit's planned light-rail line between downtown Seattle and Tukwila will terminate near Westlake Center. A future phase would extend the line north to as far as Northgate. Three route alignment alternatives were identified for the section of this north extension between downtown and the University District. One alternative is the route adopted in 1999 that extends the line from the Westlake Station in a tunnel to Madison Street and then north on Broadway Avenue to the Ship Canal. This alternative includes a First Hill station on the north side of Madison Street between Minor Avenue and Boylston Avenue, across from the Swedish campus. A second alternative routes the line under Union Street instead of Madison Street and would not include a First Hill Station. The third alternative routes the line under Eastlake Avenue, bypassing First Hill and Capitol Hill.

A preferred alternative for the north extension was recently announced. The preferred alternative is the one that would route the line through First Hill with a station on the north side of Madison between Minor and Boylston, across from the Swedish campus. The November 2003 Draft SEIS of the Central Link project that indicates that construction of the north extension would start in 2006/2007 with completion in 2013/2015.

King County Metro is currently evaluating several corridors for new transit lanes and other transit priority measures to address the increased bus demand on surface streets. The intent is to maintain transit speed and reliability within downtown, so that service will not be compromised by the Tunnel closure. Specific measures within the study area have not been identified or are known at this time.

Non-Motorized Facilities

Based on a review of the City's 2004-2009 CIP, there are no specific improvements to non-motorized facilities identified for the study area. The pedestrian and bicycle facilities would remain consistent with the summary provided in the Affected Environment section.

Safety

There would be an increase in the potential for traffic accidents at the study intersections. It is anticipated that this increase would be proportionate to the increase in traffic due to the background growth and pipeline traffic that is expected to occur by 2020.

Parking

Parking supply in the project vicinity is expected to remain relatively unchanged. No changes to on-street parking supply have been identified by the Seattle Department of Transportation. The No Action Alternative would maintain current on-site parking supply for the Swedish Medical Center campus.

2B) Impacts of the Proposed Action

This section of the EIS analyzes traffic conditions within the study area if development on occurs according the Proposed Action as described in the Swedish Medical Center Major Institution Master Plan. These conditions are compared to those for the No Action Alternative in order to determine impacts of the Proposed Action.

Development identified in the Master Plan for the Proposed Action would occur over a long time frame. The Master Plan categorizes proposed development as Planned Projects or as Potential Projects. Planned Projects are projects that are more definite and, for the purposes of this analysis, are assumed to be likely constructed over the next 15 years. A project-level transportation analysis is provided for the Planned Projects.

Potential Projects are projects that are less certain and less defined. These projects would likely be constructed after 15 years or beyond. Due to the uncertainty in timing, the less specific conceptual level of design, and the uncertainty of detailed background traffic forecasts for a horizon year greater than 15 years, a programmatic-level transportation analysis is provided for the Potential Projects.

Impacts of the Proposed Action – Planned Projects

The following identifies impacts associated with the Planned Projects under the Proposed Action. References to "project" include only the Planned Projects. Impacts associated with the Potential Projects are identified in a separate section (see Impacts of the Proposed Action – Potential Projects).

Street System

The Proposed Action includes one modification to the street system within the project site. The existing alley between Columbia and Cherry Streets in the block bounded by Boren and Marion Avenues would be vacated. The alley currently provides access to the Invex Garage on the west side of the alley and 20 parking stalls located on the east side of the alley, adjacent to the Invex Building and the 1120 Cherry Building.

Vacation of the alley is not expected to have a noticeable impact. Since the alley is only one block long and both adjoining properties are Swedish facilities, there is little or no non-Swedish traffic using the alley that would be impacted by the vacation. Alleys of adjacent blocks to the north and south have already been vacated so there is no continuity of alleys. The Invex Garage and the 20 surface parking stalls that are currently served by the alley would be removed with the Proposed Action.

Traffic Volumes

Project traffic volumes were identified by first determining the trip generation (how many trips?) and then trip distribution and assignment are developed (Where will they go? What routes will they take?). Finally, the impact of these volumes on the transportation system is assessed.

Trip Generation

Project trip generation for the Planned Projects under the Proposed Action was developed using a two-step process. First, preliminary estimates of trip generation were identified using trip generation rates published by the Institute of Transportation Engineers' (ITE) in their publication, Trip Generation (7th Edition, 2003). The ITE rates are based on case studies compiled by ITE for hospitals (ITE Land Use # 610), medical office buildings (ITE Land Use #720) and research and development facilities (ITE Land Use #760). The case studies are from sites located throughout the United States.

ITE trip generation rates for hospitals are based on the number of employees. As shown in Table 3.23, the anticipated increase in employees under the Master Plan is relatively low when compared to the increase in building floor area as identified in the MIMP. The proposed increase in building areas in the Master Plan reflect functional space needs necessary to meet current and future hospital space standards. However, Swedish does not anticipate significant service or staff increases.

The second step of the process to develop project trip generation was to take the preliminary estimates based on ITE's national data and adjust them to account for local conditions and for travel characteristics that are specific to the staff and patients at Swedish. To determine the appropriate adjustment, a theoretical trip generation for existing site was estimated by applying the national ITE trip generation rates to the project site's existing facilities. The results were compared to existing trip generation for the current Swedish Master Plan project site as determined from traffic counts collected at the cordon surrounding the site (see "Existing Site Trip Generation" section for a detailed description of the cordon traffic counts). The cordon counts at the project site indicate that existing trip generation for the site is approximately 68% of the theoretical ITE-calculated trip generation in the AM peak hour and 55% in the PM peak hour. The differences between actual counted trip generation and the theoretical calculated trip generation reflect the specific characteristics of the project including a site location that is well served by transit. Another characteristic reflected is the "linked" trips of patients and visitors when visits to both hospital and medical office facilities are accounted for with a single trip to the campus instead of two separate trips as would be the case for stand-alone hospital and medical office facilities.

For the purposes of the transportation analysis, an adjustment factor of 75% (higher than 55%-68% observed range) was applied to the ITE-based estimates of trip for the Planned Projects in order to not underestimate project impacts. By applying a factor higher than the measured level, the resulting estimated trip generation is higher than would otherwise be estimated, thus conservative. The resulting project trip generation is summarized in Table 3.23.

TABLE 3.23

Project Trip Generation - Planned Projects[1]

Component	Amount[2]	Daily Trips	AM Peak Hour Trips			PM Peak Hour Trips		
			In	Out	Total	In	Out	Total
Hospital	220 emp	860	40	16	56	16	38	54
Medical Office	128,900 sf	3,490	190	50	240	97	263	360
Research/Laboratory	-75,887 sf	-460	-58	-12	-70	-9	-52	-61
Total		3,890	172	54	226	104	249	353

[1] See Appendix for detailed trip generation calculation worksheet.
[2] Amount is net increase in employees for the Hospital component and square feet of building area for the Medical Office and Research/Laboratory components (new construction less demolition).

As shown in the table, the project site would generate 3,890 new trips per day, including 226 trips in the AM peak hour and 353 trips in the PM peak hour. New trips associated the proposed increase in floor area for the medical office component of the project would account for the majority of project trip generation. Trip generation associated with the research/laboratory component would actually decrease with the planned demolition and conversion of existing space would result in a net decrease in research/laboratory space. Compared to existing trip generation for the project site, trip generation for the site with the Planned Projects would represent an 11% increase in trips in the AM peak hour and a 16% increase in the PM peak hour.

FIGURE 3.74

Inbound Project Trip Distribution

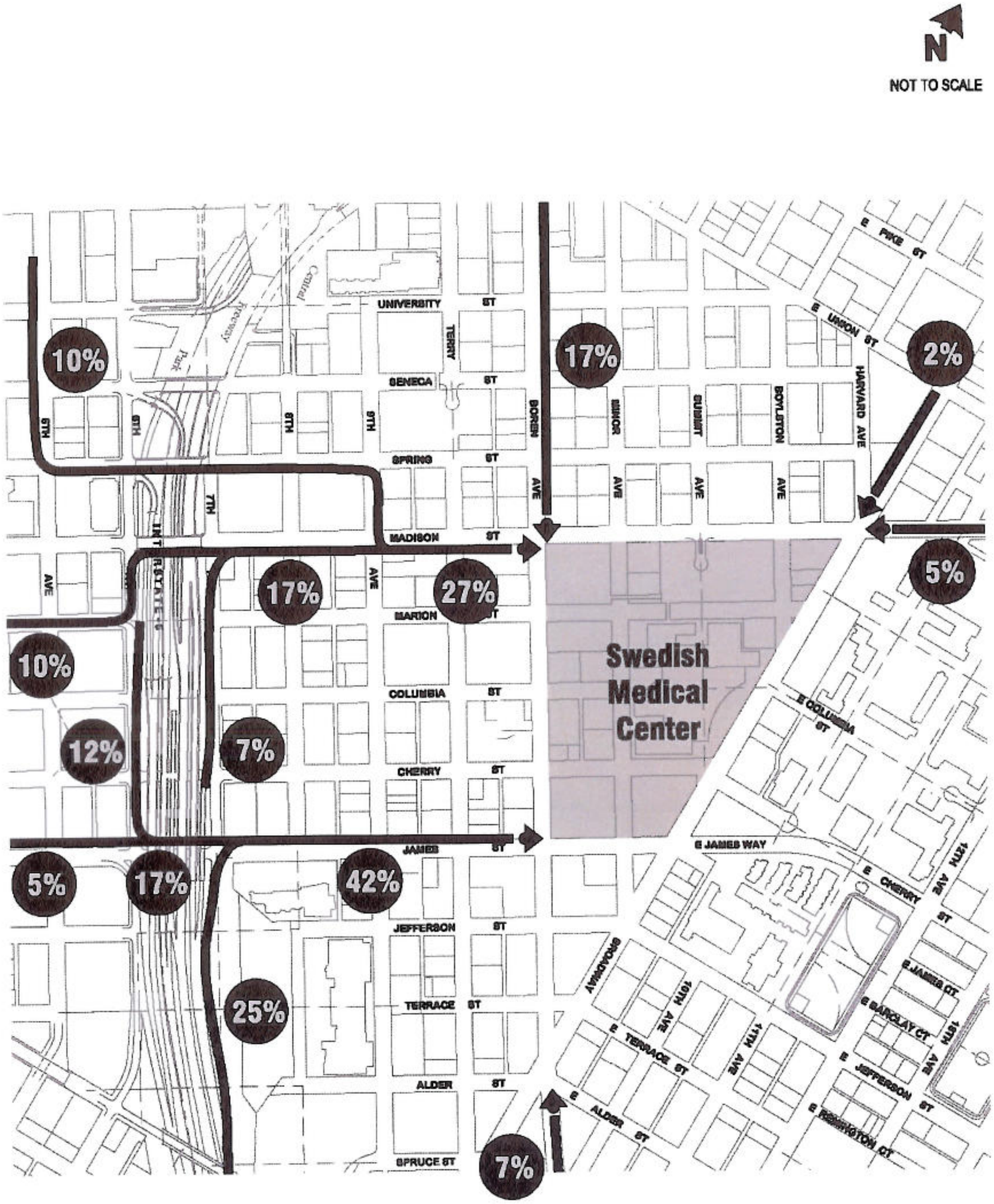
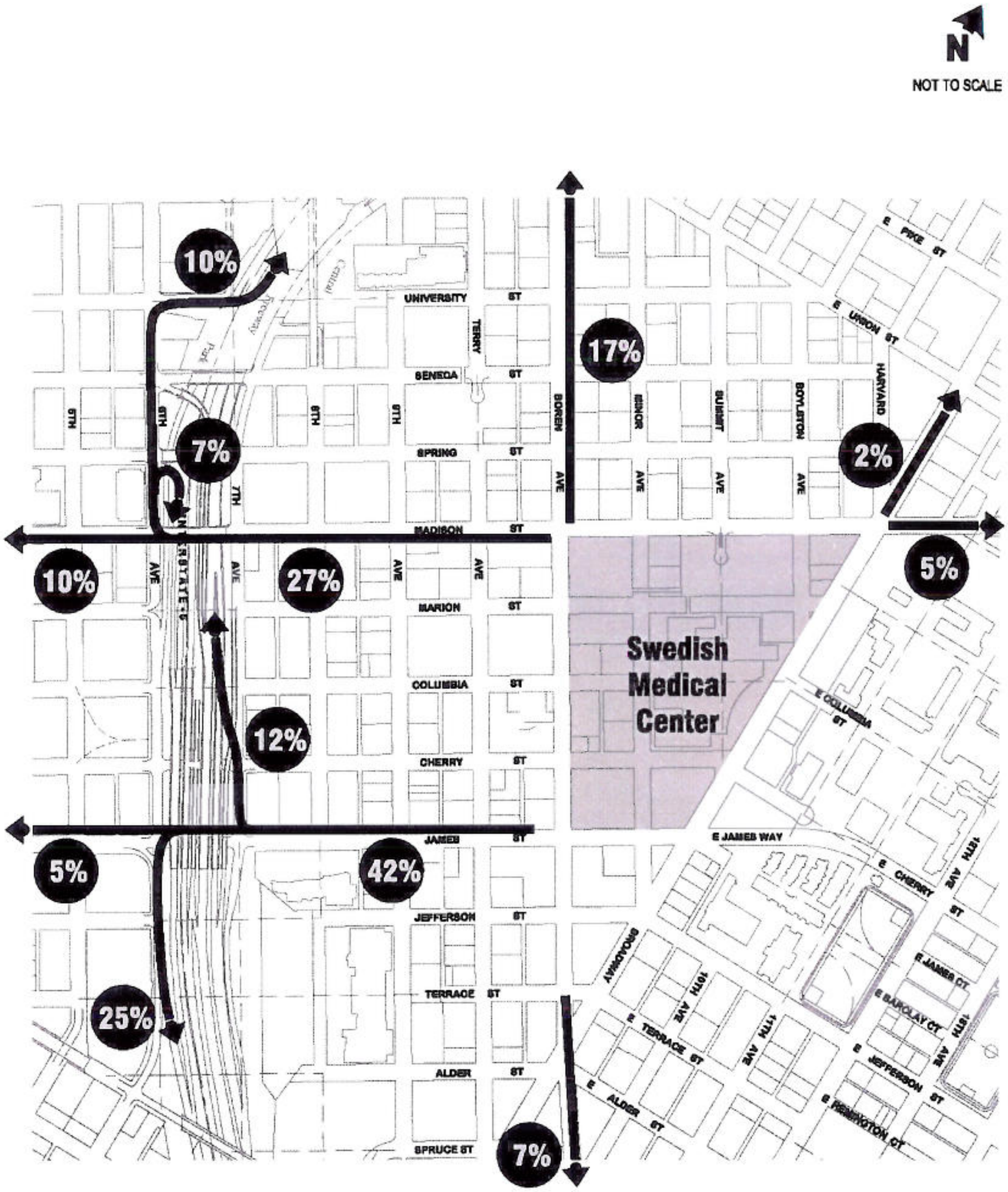


FIGURE 3.75

Oubound Project Trip Distribution



Distribution and Assignment

Project-generated traffic is expected to distribute to the surrounding local and regional street network in the percentages shown in Table 3.24 and as shown in Figures 3.74 and 3.75.

TABLE 3.24

Project Trip Distribution

Route (to/from)	Percent
I-5 North	29%
I-5 South	32%
Downtown CBD (including ferry)	15%
Local Trips North	10%
Local Trips South	7%
Local Trips East	7%
TOTAL	100%

These distribution patterns were developed from zip code data from Swedish staff and patient records. A single distribution pattern was used for both staff and patients as the zip code data indicated that the two groups had nearly identical distribution patterns.

The distribution patterns were used to assign project-generated traffic to the study area roadways and intersections. The AM and PM peak hour assignment of traffic generated by the Planned Projects is shown in Figures 3.76 and 3.77.

Proportional Traffic Volume Impacts

The project-generated traffic volumes were added to the 2020 No Action Alternative traffic volumes at the study intersections. The resulting 2020 AM peak hour traffic volumes with the Proposed Action are shown in Figure 3.78 and the resulting PM peak hour traffic volumes are shown in Figure 3.79. These volumes were then compared to the No Action Alternative traffic volumes in order to identify the traffic volume impacts of the Proposed Action. Table 3.25 summarizes the percent increase in peak hour traffic at the study intersections due to the project.

FIGURE 3.76

Project-Generated AM Peak Hour Traffic Volumes - Planned Projects

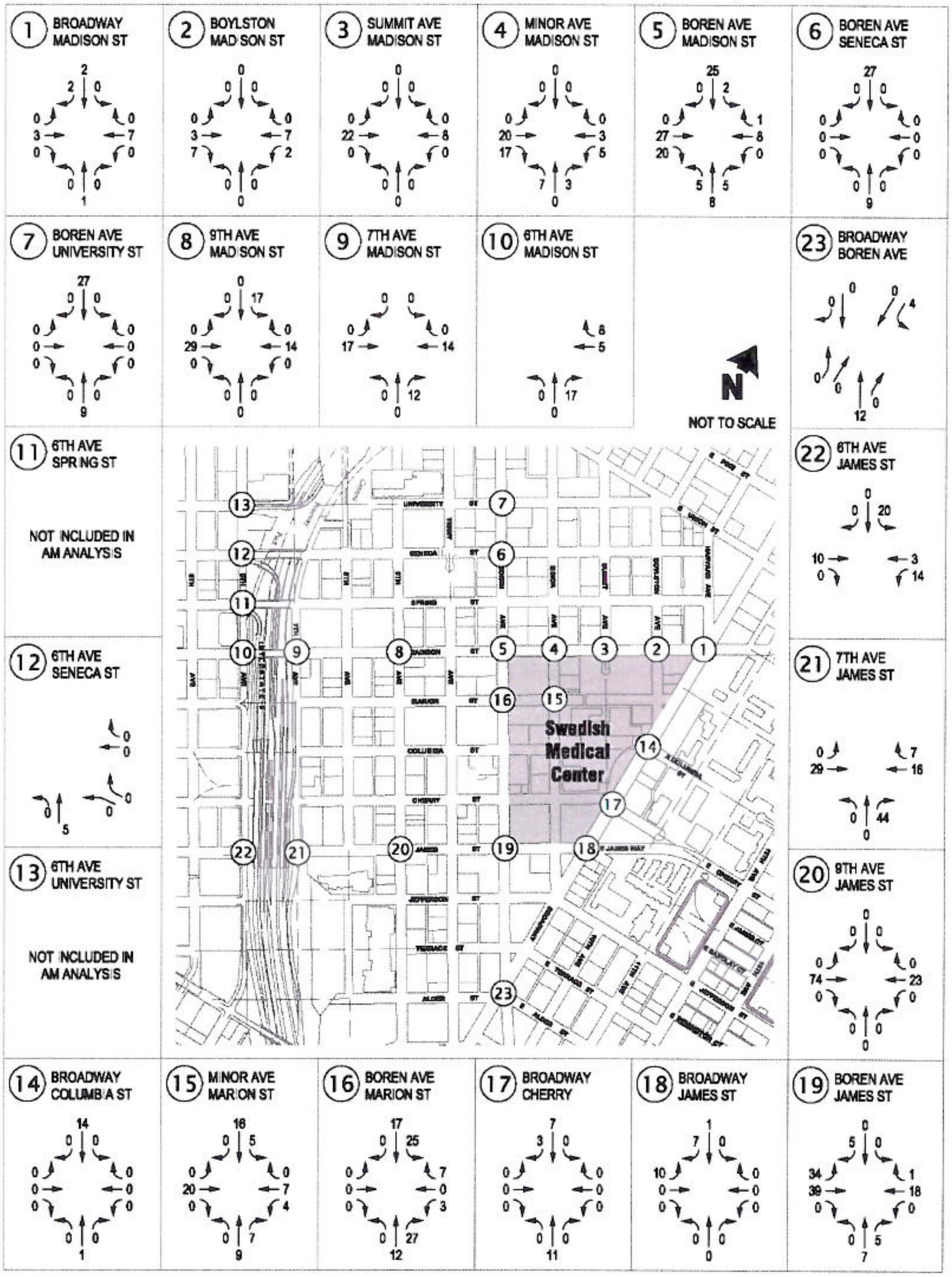


FIGURE 3.77

Project-Generated PM Peak Hour Traffic Volumes - Planned Projects

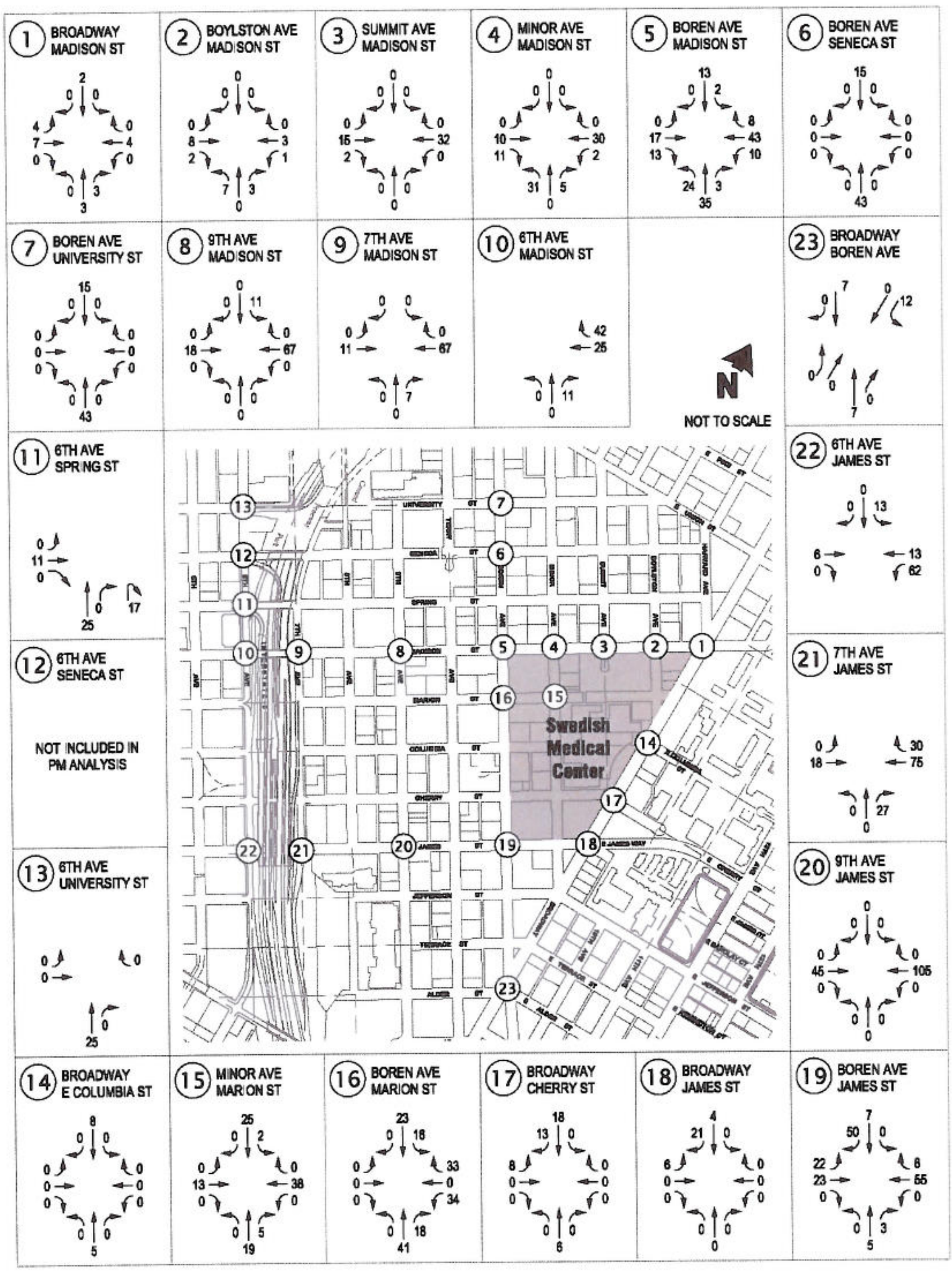


FIGURE 3.78

2020 Proposed Action AM Peak Hour Traffic Volumes - Planned Projects

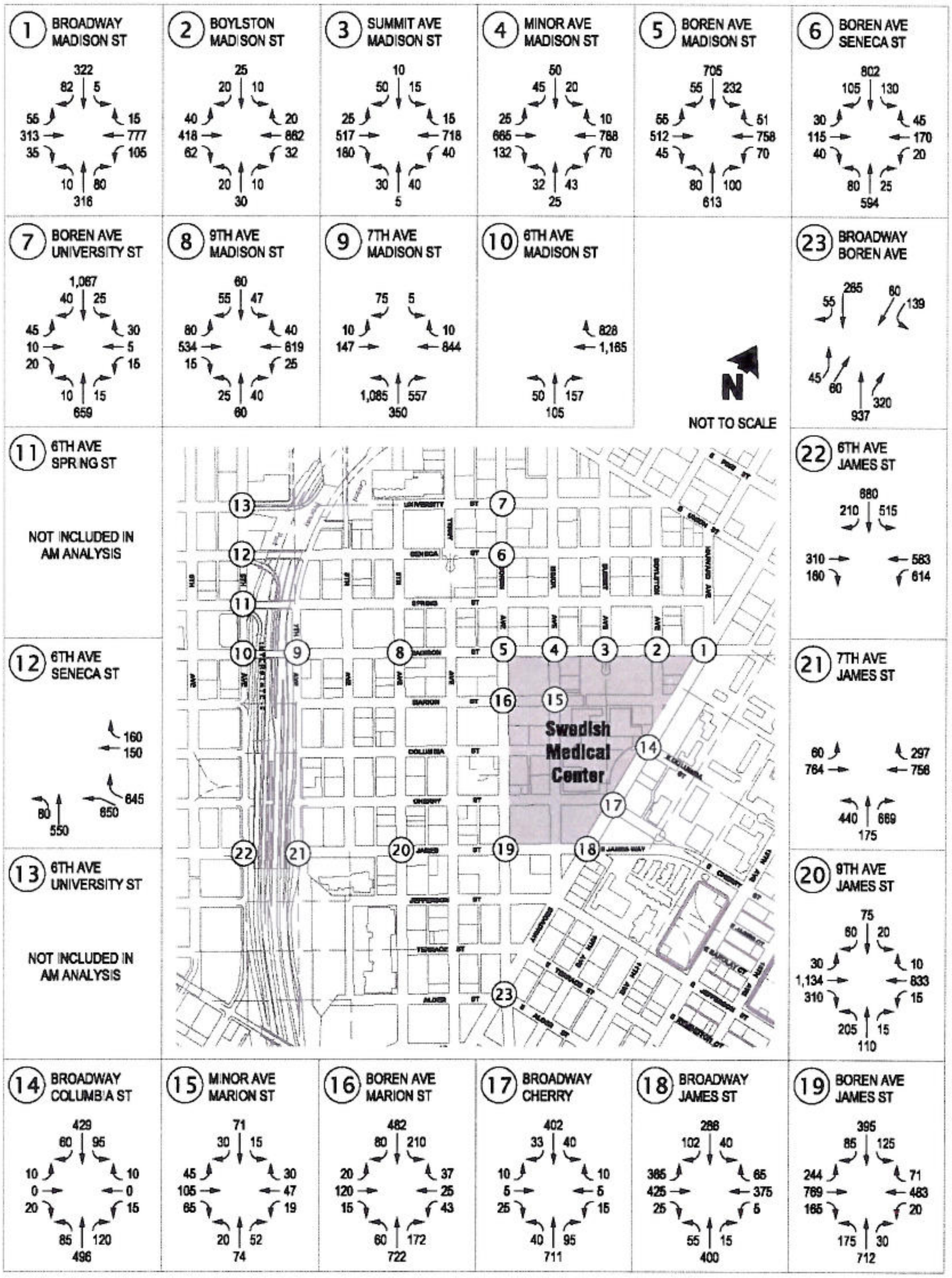


FIGURE 3.79

2020 Proposed Action PM Peak Hour Traffic Volumes - Planned Projects

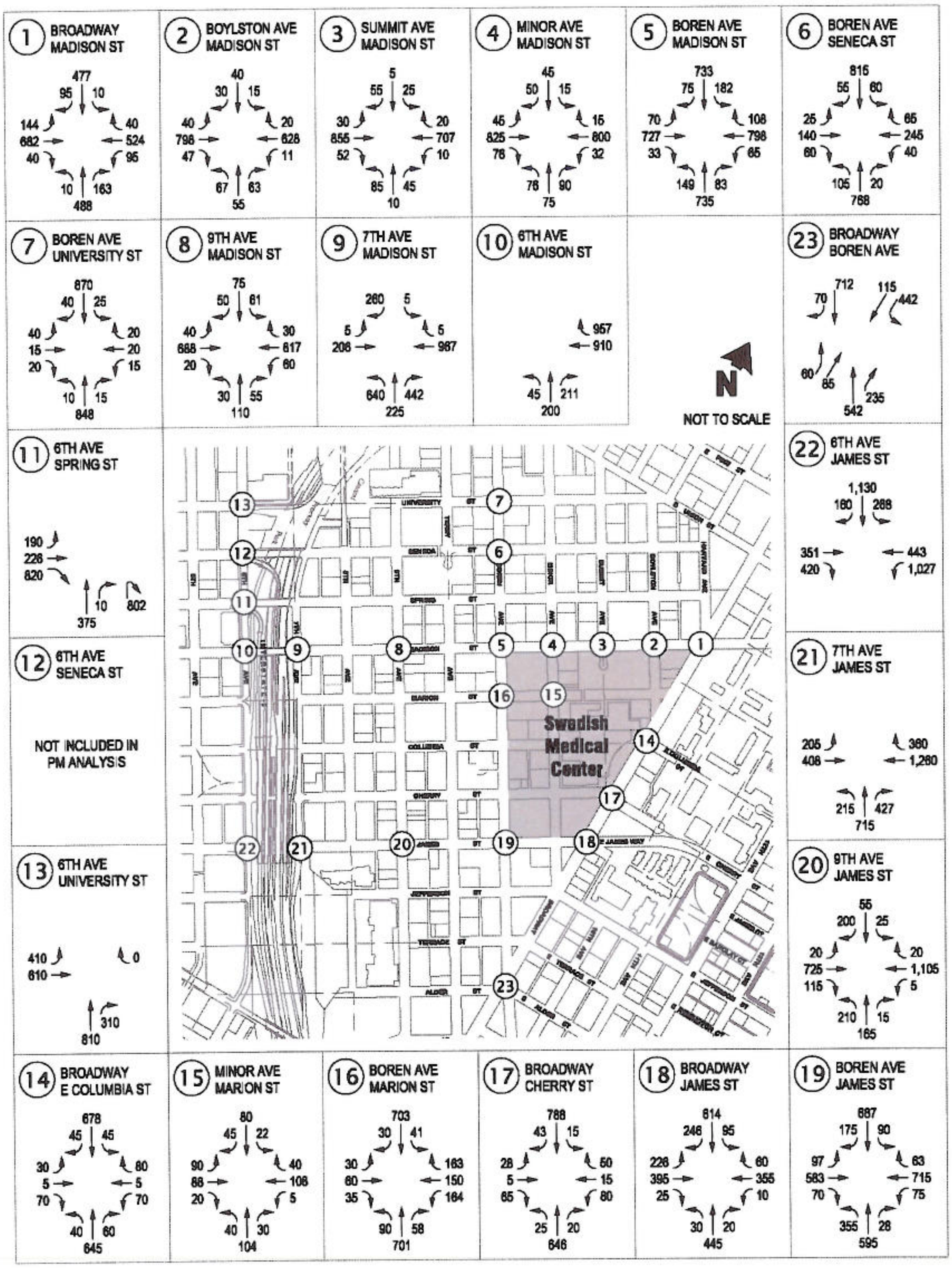


TABLE 3.25

Traffic Volume Impacts - Planned Projects

	AM Peak Hour			PM Peak Hour		
Intersection	**No Action**	**Project Traffic**	**% Increase**	**No Action**	**Project Traffic**	**% Increase**
Madison/Broadway	2,100	16	0.8	2,745	21	0.8
Columbia/Broadway	1,325	15	1.1	1,760	13	0.7
Cherry/Broadway	1,370	21	1.5	1,735	45	2.6
James/Broadway	2,140	18	0.8	2,490	30	1.2
James/Boren	3,165	110	3.5	3,360	172	5.1
Marion/Minor	505	68	13.5	570	101	17.7
Marion/Boren	1,895	90	4.7	2,060	164	8.0
Madison/Boylston	1,530	20	1.3	1,790	23	1.3
Madison/Summit	1,615	30	1.9	1,850	49	2.6
Madison/Minor	1,850	54	2.9	2,055	90	4.4
Madison/Boren	3,175	102	3.2	3,590	168	4.7
Broadway/Boren	1,865	16	0.9	2,235	26	1.2
James/9th	2,720	97	3.6	2,510	150	6.0
James/7th	3,065	97	3.2	3,440	150	4.4
James/6th	3,045	46	1.5	3,705	93	2.5
Madison/9th	1,740	60	3.4	1,940	96	4.9
Madison/7th	3,040	43	1.4	2,670	85	3.2
Madison/6th	2,275	31	1.4	2,245	78	3.5
Spring/6th				2,370	53	2.2
Seneca/6th	2,230	5	0.2			
University/6th				2,115	25	1.2
Seneca/Boren	2,120	36	1.7	2,340	58	2.5
University/Boren	1,905	36	1.9	1,880	58	3.1

The largest increases in traffic would occur at intersections on Madison Street, Boren Avenue, and James Street. Traffic volumes at most study intersections on those three arterials would increase by 100 to 170 trips during the AM and/or PM peak hour. Increases on Broadway, the remaining arterial street serving the project site, would be less at fewer than 50 trips in the peak hours.

The largest relative increase would be at the Marion Street and Minor Avenue intersection within the project site. Volumes would increase at that intersection by 13.5 percent in the AM peak hour and 17.7 percent in the PM peak hour. Study intersections that would experience increases of five percent to ten percent include James Street / Boren Avenue, Marion Street / Boren Avenue, and James Street / 9th Avenue. Relative increases at all other study intersections would be less than five percent. Peak hour traffic volumes typically vary on a daily basis by as much as 5 percent, yet the fluctuation is usually unnoticeable from a driver's perspective.

Traffic Operations Impacts

Traffic operations impacts include consideration of changes in levels of service at study intersections, area-wide concurrency based on the City's screenline analysis, and local circulation on the streets internal to the project site.

Intersection Level of Service

Peak hour levels of service with the Planned Projects under the Proposed Action were calculated and compared to levels of service under the No Action Alternative for each of the study intersections. Table 3.26 provides a summary of AM and PM peak hour levels of service for the two conditions.

TABLE 3.26

Peak Hour Levels of Service - Planned Projects

	2020 No-Action Alternative						2020 Proposed Action					
	AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
Intersection	**LOS[1]**	**Delay[2]**	**V/C[3]**	**LOS[1]**	**Delay[2]**	**V/C[3]**	**LOS[1]**	**Delay[2]**	**V/C[3]**	**LOS[1]**	**Delay[2]**	**V/C[3]**
Madison/Broadway	C	21.8	0.48	C	27.0	0.56	C	22.1	0.49	C	27.4	0.57
Columbia/Broadway	A	2.9	0.41	A	8.4	0.55	A	2.8	0.51	A	8.2	0.55
Cherry/Broadway	A	4.0	0.49	A	8.2	0.53	A	4.0	0.50	A	8.2	0.53
James/Broadway	D	48.1	0.89	D	36.3	0.91	D	48.4	0.90	D	36.9	0.92
James/Boren	D	37.3	0.70	D	35.6	0.83	D	38.3	0.73	D	38.0	0.88
Marion/Minor	A	8.7	-	A	9.1	-	A	9.2	-	A	9.7	-
Marion/Boren	A	9.3	0.51	B	18.7	0.55	B	10.2	0.59	C	20.4	0.63
Madison/Boylston	A	4.3	0.34	B	13.8	0.64	A	4.2	0.35	B	14.1	0.66
Madison/Summit	B	15.4	0.28	B	12.5	0.36	B	15.0	0.28	B	13.0	0.36
Madison/Minor	B	12.3	0.32	C	22.4	0.40	B	13.2	0.32	C	22.5	0.44
Madison/Boren	D	36.4	0.73	C	32.2	0.72	D	37.1	0.74	C	33.8	0.76
Broadway/Boren	B	12.6	0.57	C	22.6	0.57	B	12.7	0.57	C	22.6	0.58
James/9th	B	19.3	0.84	C	25.6	0.76	C	20.4	0.87	C	25.3	0.80
James/7th	C	26.1	0.78	F	125.3	1.18	C	32.7	0.84	F	144.8	1.22
James/6th	C	26.0	0.80	D	53.4	1.02	C	26.8	0.82	E	56.6	1.05
Madison/9th	B	13.7	0.41	B	13.2	0.54	B	14.0	0.45	B	13.6	0.55
Madison/7th	C	24.4	0.91	C	20.1	0.75	C	24.5	0.91	C	20.6	0.76
Madison/6th	A	9.3	0.52	B	12.9	0.52	A	9.4	0.52	B	13.6	0.54
Spring/6th				C	24.1	0.86	D			C	24.6	0.87
Seneca/6th	D	38.6	0.77				D	38.9	0.77			
University/6th				B	17.7	0.47				B	18.1	0.47
Seneca/Boren	B	10.4	0.39	B	16.8	0.41	B	10.5	0.40	B	17.1	0.41
University/Boren	A	4.0	0.42	A	5.8	0.37	A	4.0	0.43	A	5.7	0.37

1 Level of service.
2 Average delay in seconds per vehicle.
3 Volume-to-capacity ratio.
4 All-Way Stop intersection - V/C not applicable for unsignalized intersections.
5 Freeway Ramp - Analysis only for highest volume peak hour - AM for inbound ramp or PM for outbound ramp.

The addition of project traffic generated by the Proposed Action would degrade levels of service at three intersections. The intersection of Marion Street and Boren Avenue would degrade form LOS A to LOS B in the AM peak hour and from LOS B to LOS C in the PM peak hour. The intersection of James Street and 9th Avenue would degrade from LOS B to C in the AM peak hour.

The intersection of James Street and 7th Avenue, which would operate at LOS F in the PM peak hour under the No Action Alternative, would continue to operate at LOS F with under the Proposed Action. The addition of traffic generated by the Planned Projects would increase average PM peak hour delays at the intersection by approximately 20 seconds, from 125.3 seconds to 144.8 seconds. Calculated intersection delay is very sensitive when the level of service reaches the LOS F category. In these cases, the v/c ratio can be used an alternate variable to measure development impacts. As shown, the v/c ratio would increase by three percent from 1.18 to 1.22, which is reflective of project traffic that would account for approximately four percent of total traffic at the intersection in the PM peak hour.

The Seattle Transportation Department will shortly begin a study of the James Street corridor to identify potential measures to improve traffic flow and safety. Potential measures that may be examined in the study include improvements to signal timing along the corridor and possible restrictions on left turns at the 7th Avenue intersection.

As noted for Existing and the No Action Alternative conditions, actual travel times through corridors such as James and Madison Streets, as well as Boren Avenue, are periodically worse than reflected in the intersection LOS results above. Nevertheless, the proportional change in intersection LOS attributable to the proposed action is a reasonable reflection of the level of impact that is anticipated.

Transportation Concurrency

The City has implemented a Transportation Concurrency Project Review System to comply with one of the requirements of the Washington State Growth Management Act (GMA). The system, as described in DCLU Directors Rule 4-99 and the City's Land Use and Zoning Code, is designed to provide a mechanism that would determine whether adequate transportation facilities would be available "concurrent" with proposed development projects.

Three screenlines were chosen for review, based on their location in relation to the project site and anticipated influence area. The screenlines that were analyzed for concurrency include Ship Canal (University and Montlake Bridges), south of S Jackson Street (12th Avenue S to Lakeside Avenue S), and east of CBD. The analysis indicates that with the Planned Projects of the Proposed Action, the screenlines would maintain the v/c ratio and LOS standards, thus the proposed development would meet City concurrency requirements as shown in Table 3.27.

TABLE 3.27

Concurrency Analysis - Planned Projects

Screenline Number	Location	Direction[1]	Capacity	1998 Volume	Project Traffic	Pref. Alt V/C Ratio	LOS Standard
5.16	Ship Canal (University and Montlake Bridges)	NB	4,300	3,820	10	0.89	1.20
		SB	4,300	3,630	25	0.85	1.20
10.12	South of S Jackson St (12th Ave S to Lakeside Ave S)	NB	7,400	3,420	7	0.46	1.20
		SB	7,400	4,570	19	0.62	1.20
12.12	East of CBD	EB	16,290	8,760	17	0.54	1.20
		WB	12,540	6,580	38	0.53	1.20

[1] NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound.

Local Access and Circulation

Garage Access

Five new garages are proposed with the Planned Projects. A list of the new garages and the existing parking facilities that would remain can be found in the Parking section for the Proposed Action. The largest of the new garages (780 stalls) would be located under Building C and would be accessed from Marion Street. Marion Street would also provide access for a large garage (320 spaces) under Building A. Minor Avenue would serve as the primary access route to the remaining three new garages that would have driveways on Columbia and Cherry Streets. Driveways for the new garages would be located on the internal local streets. No new garage access is proposed for any of the arterial streets bordering the site (Madison, Broadway, James, and Boren). Future parking and vehicular access is shown in the Final MIMP, Figure 2.15).

Existing parking lots and garages containing 430 spaces would be removed under the Proposed Action. The largest of these are the Invex Garage with 190 stalls and the Doctor's Garage with 115 stalls. Existing traffic on the adjacent streets associated with these garages would be replaced by traffic associated with the new garages for Buildings C and E, which would occupy the locations vacated by the two existing garages. Access for the four remaining existing garages (Marion/Minor Garage, Nordstrom Garage, Broadway Garage, and Minor/James Garage) would be unchanged from their current location. The existing Nordstrom Garage would not directly serve any of the new buildings of the Proposed Action. However, the general increase in patient visits to the project site would likely result in some increase in traffic and activity at the garage access at the Madison Street / Summit Avenue intersection, exacerbating the existing congestion at that location as described in the Affected Environment section. Existing and future vehicular access for inpatient, outpatient, emergency, and service functions are shown in the Final MIMP, Figures 2.3 through 2.10.

FIGURE 3.80

Local Circulation

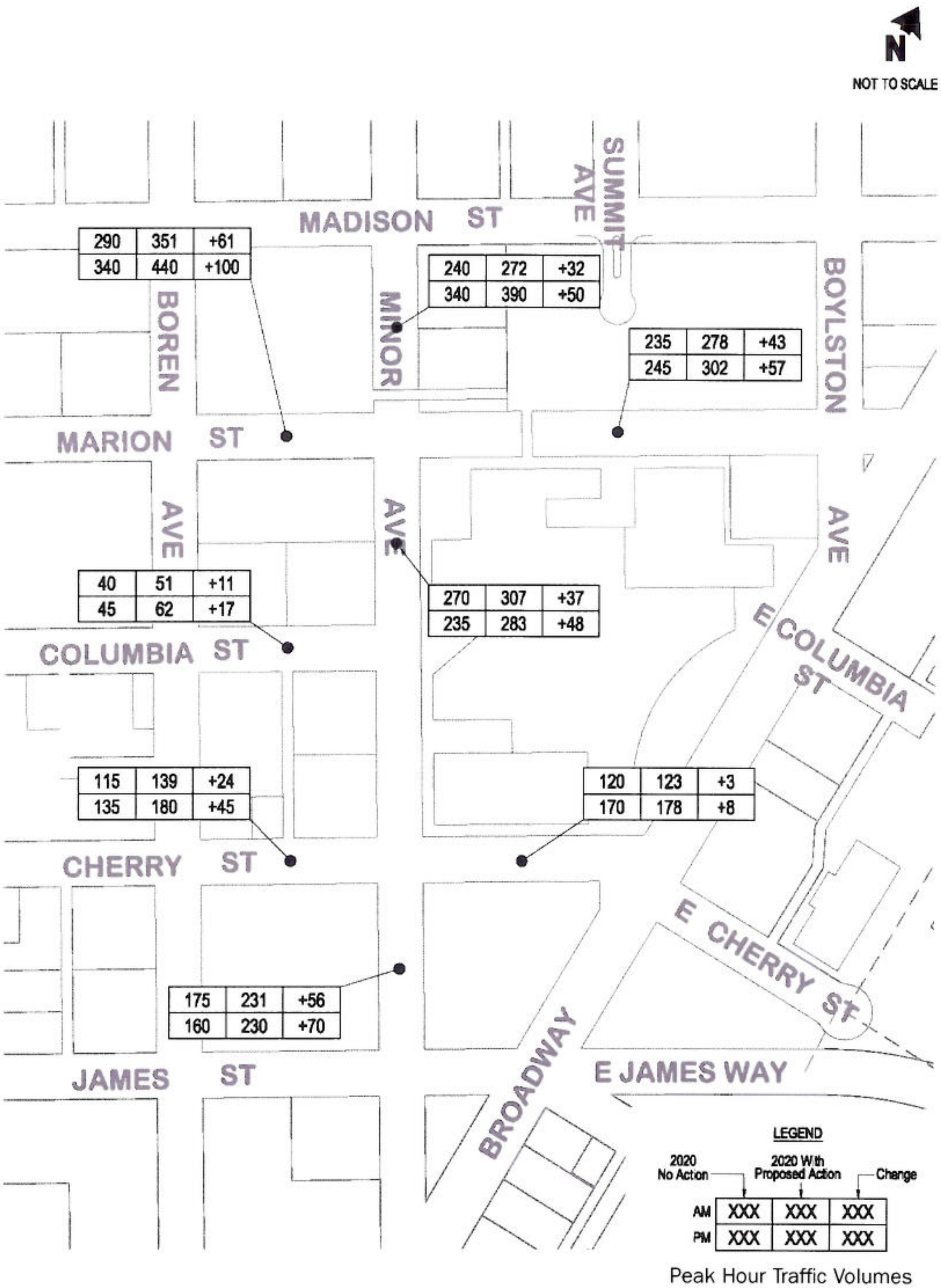


Figure 3.80 summarizes expected peak hour traffic increases on the local street system within the project site with the Planned Projects. The largest increases of up to 100 cars would occur on Marion Street, which would serve as the primary access route for the new garages under Buildings A and C. Traffic on Minor Avenue would increase by 50 cars or more in the peak hours. With the Planned Projects, traffic volumes on Marion Street and on Minor Avenue would be near or over 400 cars in the peak hours. To accommodate the increased volumes, it may be desirable to eliminate on-street parking on one side of these streets. The existing 30-foot street widths do not allow opposing traffic to easily pass with parking on both sides of the street.

Pick-Up/Drop-Off

A new pick-up/drop off area will be located on Cherry Street to serve the new hospital building that is proposed for the south side of the street. All new buildings under the Proposed Action have frontage on one of the local internal streets. If new pick-up/drop-off areas are identified in subsequent design of the buildings (possibly hospital projects D and G, for example), they should be located on the local street rather than on the arterials that border the project site.

Emergency Vehicles

The hospital's emergency entrance would be moved from its current location on the east side of Minor Avenue north of Cherry Street to a new facility at the southeast corner of Minor Avenue and Marion Street. Two driveways would be provided for the new emergency facility – one on Marion Street and one on Minor Avenue. Traffic queues at the intersection, which is controlled by an all-way stop, could impact the driveways, depending on how far they are located from the corner. The intersection is expected to operate at LOS A during the peak hours with minimal delays. Calculations indicate that queues would usually be two cars or less under most circumstances. Locating the driveways a minimum of 40 feet from the stop-bar at corner would prevent their blockage by most traffic queues. Restricting on-street parking to only one side of both streets would allow emergency vehicles to bypass any queues by using the opposing lane to get to the driveway.

The new location would noticeably increase the number emergency vehicles on Marion Street, which does not currently serve as a primary access route to the existing emergency facility. Ambulances currently use Minor Avenue as an access route for the existing emergency entrance. The emergency facility currently generates 10 to 15 emergency vehicle trips per day. Although the emergency facility will be located in a new building, no expansion of the current emergency program is planned. As a result, no large increases in total emergency vehicle traffic are anticipated. Note that the proposed emergency access location is not along an arterial.

Service Vehicles / Loading

A new loading dock facility would be included in the proposed Central Plant Building to be located on the block bounded by Boren, Columbia, Minor, and Cherry. A tunnel under Minor Avenue would connect the loading dock with the main hospital buildings. Service and loading functions for the main hospital buildings would be centralized at these loading docks. The new loading dock facility would include about four full-size truck bays, two dumpster bays, and a hazardous materials bay. The facility would have a drive-through configuration, eliminating the need to back in from the street, as is the case with the existing docks. Trucks would enter the new loading area from Cherry Street. Median curbs on Boren prevent left turns to or from Cherry Street and to or from Columbia Street. Outbound trucks from the loading dock would exit on Columbia Street and make right turns to Boren Avenue. Some trucks and service vehicles may use Minor Avenue but that would not be a change since some of the existing loading docks that the new facility is replacing are currently located on Minor Avenue. Minor Avenue truck use is expected to be reduced.

Four existing service areas that currently serve the core hospital buildings would be removed and their functions would be consolidated at the new Central Plant loading dock facility. The existing Columbia Building loading dock on Marion Street would be replaced by a new loading dock for the new Building G that would be constructed on the same block. Two existing loading docks on Marion Street that serve 1001 Madison Tower, Arnold Medical Pavilion, and the Nordstrom Tower would continue to operate under the Proposed Action.

Transit Service Impacts

The Transit mode currently accounts for approximately 30% of hospital employee trips based on surveys conducted for the commute trip reduction program. Applying this percentage to the projected employee estimates indicates that the Planned Projects would generate approximately 65 new daily transit trips.

The project site is well served by transit. Bus stops are located adjacent to the site on Madison Street, Broadway, James Street, and Boren Avenue. The existing transit service is expected to accommodate the additional demand that would be generated.

Sound Transit's light rail system with a stop on Madison Street, across from the project site would provide additional transit capacity and opportunities for the site. Current schedules call for completion of this portion of the system in 2013/2015. For the purposes of the transportation analysis, transit use assumptions for the project did not include the availability of light rail in order not to underestimate project impacts.

Non-Motorized Travel Impacts

Conceptual design for the Planned Projects include widening of sidewalks on some sections of Minor Avenue, Columbia Street, and Marion Street within the project site. The sidewalks would be widened by an additional two to five feet.

Two new sky bridges and a new tunnel are proposed with the Planned Projects to provide pedestrian connections between new buildings and the core hospital facilities. One new sky bridge would cross over Cherry Street between Minor Avenue and Broadway, connecting Building D with the main hospital. A second skybridge would cross over Minor Avenue between Marion and Cherry Streets and connect hospital Buildings B and G. The new tunnel would cross under Minor Avenue between Columbia and Cherry Streets. It would connect the new loading docks in the Central Plant Facility (Building E) with the main hospital.

The existing sky bridge across Marion Street would be relocated about a half block to the east of its current location.

The skybridges and tunnel would impact the local pedestrian network by reducing pedestrian movement along street-level sidewalks. Skybridges are proposed to link movements between hospital functions that would not be appropriate outside. The tunnel would remove service functions from the street (supplies to the hospital and wastes out). Impacts to pedestrian activity are not expected to be significant.

Safety Impacts

The addition of traffic generated by the Planned Projects to the study intersections and roadways there would likely result in a proportionate increase in the potential of traffic accidents. The intersection of James Street and 6th Avenue currently falls under the classification of a High Accident Location based on the latest accident history records. The high number of accidents at the intersection are due in large part to the high traffic volumes, the high number of turning movements from James Street to 6th Avenue and the I-5 freeway ramp. The Planned Projects would increase traffic volumes at the intersection by approximately four percent in the PM peak hour. No other study intersection meets the criteria to be classified as a High Accident Location.

At the project site, new curb cuts, and the associated potential conflict points, would be added to the local internal street system. There would also be removals of existing curb cuts that would likely offset or reduce the impact of new curb cuts. No new curb cuts are proposed on the higher volume arterial streets that border the project site.

Parking Impacts

Parking Supply

The on-site parking supply with the Planned Projects is summarized in Table 3.28. Five new parking garages would be constructed under proposed buildings. A total of 1,835 parking stalls would be located in the new garages. 432 of the existing 3,743 stalls on the project site would be removed with construction of the Planned Projects, resulting in a net increase of 1,403 stalls. Total on-site parking supply with the Planned Projects would be 5,146 stalls.

TABLE 3.28

On-Site Parking Supply with Planned Projects

Facility	Spaces
Marion & Minor Garage (existing)	1,025
Madison / Nordstrom Garage (existing)	597
Alcoa Building (existing)	50
Broadway Garage (existing)	540
Minor & James Garage (existing)	1,043
Arnold Valet Parking (existing)	14
Main Lobby Valet Parking (existing)	19
910 Boylston (Joslin Building) (existing)	16
Columbia Lot (existing)	7
Building A (new)	320
Building C (new)	780
Building D (new)	240
Building E (new)	395
Building G (new)	100
Total	5,146

Parking Code Requirements

Code requirements for off-street parking for the project site with the Planned Projects are summarized in Table 3.29. The parking code requirements are found in the Seattle Land Use and Zoning Code and are described in detail under Affected Environment. The resulting parking required by code with the Planned Projects would range from a minimum of 3,923 stalls to a maximum of 5,296 stalls. The proposed on-site parking supply of 5,146 stalls would be within the code-required range.

TABLE 3.29

Parking Code Requirements with Planned Projects

	Number Basis for Hospital	Number Basis for MOB[1]	Minimum Stalls	Maximum Stalls
Long-Term Parking:				
1 stall per 80% of project-based MDs	50 MDs	565 MDs	492	664
1 stall per 25% of staff MDs	620 MDs	---	155	209
1 stall per 30% of peak hour employees	1,870 emp	1,455 emp	998	1,347
Total Long-Term Parking Stalls			1,645	2,220
Short-Term Parking:				
1 stall per 6 beds	680 beds	---	113	153
1 stall per 5 outpatients	720 patients	10,030 patients	2,150	2,903
1 stall per 10 seats in auditorium	150 seats	---	15	20
Total Short-Term Parking Stalls			2,278	3,076
Total Parking Stalls Required			**3,923**	**5,296**

[1] Medical office buildings, including research and lab space.

Parking Demand

Parking code requirements do not always reflect actual parking demand for a specific development. Code requirements for parking are generally intended to be guidelines to ensure that all parking demand is accommodated for a variety of facility types within broader categories of land uses. Code requirements also often reflect policy goals of encouraging alternative transportation modes by limiting the amount of available parking. As a result, it is difficult to assess parking impacts by comparing parking supplied to the parking required by code. In order to assess project impacts, it is often necessary to compare parking supplied to estimates of actual parking demand based on specific characteristics of a proposed development.

Parking demand with the Planned Projects under the Proposed Action was developed using the same two-step process that was used to estimate project trip generation. First, preliminary estimates of parking demand were calculated using parking generation rates published by the Institute of Transportation Engineers' (ITE) in their publication, Parking Generation (2nd Edition).

The ITE rates are based on case studies compiled by ITE for hospitals (ITE Land Use # 610), medical office buildings (ITE Land Use #630) and research and development facilities (ITE Land Use #760). The case studies are from sites located throughout the United States.

The second step of the process was to take the preliminary estimates based on ITE's national data and adjust them to account for local characteristics that are specific to the Swedish campus. To determine the appropriate adjustment, a theoretical trip generation for existing site was estimated by applying the national ITE parking generation rates to the project site's existing facilities. The results were compared to the existing parking demand for the current campus that was identified from cashier and counters data from the on-site garages (see Affected Environment). The existing parking demand at the project site is approximately 65% of the theoretical ITE-calculated parking demand. The differences between actual demand and the theoretical calculated demand reflect the specific characteristics of the project. For the purposes of the transportation analysis, an adjustment factor of 75% (higher than the 65% observed range) was applied to the ITE-based estimates of parking demand for the Planned Projects in order to not underestimate project parking demand.

Based on this analysis, peak parking demand with the Planned Projects would be 4,300 parking stalls. The proposed on-site parking supply of 5,146 stalls would be 20 percent greater than the estimated demand. While the proposed supply is higher than the demand estimates, it represents a reasonable value for preliminary design at the master planning level.

On-Street Parking

In order to increase lane widths on some of the local internal streets, on-street parking on one side of some of the streets may be removed. The existing 30-foot street widths do not allow opposing traffic to easily pass with parking on both sides of the street. The on-street parking currently taking place on the internal streets is mostly patients and visitors to the project site. Approximately 30-40 on-street parking spaces would potentially be removed. The proposed increase in off-street parking supply would have sufficient capacity to accommodate the parking displaced by removal of on-street parking.

Impacts of the Proposed Action – Potential Projects

Potential Projects identified under the Proposed Action are projects that are less certain and less defined. These projects would likely be constructed after 15 years. Due to the uncertainty in timing, the less specific conceptual level of design, and the uncertainty of detailed background traffic forecasts for a horizon year greater than 15 years, a programmatic-level transportation analysis is provided for the Potential Projects, including disclosure of trip generation and parking demand.

Trip Generation

Trip generation for the Potential Projects was estimated using the same methodology as for the Planned Projects. Table 3.30 summarizes the resulting trip generation for the Potential Projects. Also shown for reference are the trip generation estimates for the Planned Projects.

TABLE 3.30

Project Trip Generation - Planned and Potential Projects[1]

Component	Amount[2]	Daily Trips	AM Peak Hour Trips			PM Peak Hour Trips		
			In	Out	Total	In	Out	Total
Planned Projects:								
Hospital	220 emp	860	40	16	56	16	38	54
Medical Office	128,900 sf	3,490	190	50	240	97	263	360
Research/Laboratory	-75,887 sf	-460	-58	-12	-70	-9	-52	-61
Total Planned		3,890	172	54	226	104	249	353
Potential Projects:								
Hospital	30 emp	120	5	2	7	3	5	8
Medical Office	110,700 sf	3,000	163	44	207	84	226	310
Research/Laboratory	0 sf	0	0	0	0	0	0	0
Total Potential		3,120	168	46	214	87	231	318
Total Planned + Potential Projects		7,010	340	100	440	191	480	671

1 See Appendix for detailed trip generation calculation worksheet.
2 Amount is net increase in employees for the Hospital component and square feet of building area for the Medical Office and Research/Laboratory components (new construction less demolition).

The Potential Projects would generate an additional 3,120 trips per day, including 214 in the AM peak hour and 318 in the PM peak hour. Together, the Planned and Potential Projects would generate 7,010 trips per day, including 440 trips in the AM peak hour and 671 trips in the PM peak hour. These trips would represent increases of approximately 20 to 25 percent over the number of trips generated by the existing project site.

Parking

Parking Supply

A 100-stall parking garage would be constructed under Building F of the Potential Projects. Construction of Building F would remove 50 existing stalls at the Alcoa Building and 16 stalls at the Joslin Building, resulting in a net increase of 34 stalls. Total on-site parking supply with the Potential Projects would be 5,180 stalls.

Parking Code Requirements

Code requirements for off-street parking for the project site with the Potential Projects are summarized in Table 3.31. The parking code requirements are found in the Seattle Land Use and Zoning Code and are described in detail under Affected Environment. The resulting parking required by code with the Potential Projects would range from a minimum of 4,262 stalls to a maximum of 5,753 stalls. The proposed on-site parking supply of 5,180 stalls would be within the code-required range.

TABLE 3.31

Parking Code Requirements with Planned and Potential Projects

	Number Basis for Hospital	Number Basis for MOB[1]	Minimum Stalls	Maximum Stalls
Long-Term Parking:				
1 stall per 80% of project-based MDs	50 MDs	630 MDs	544	734
1 stall per 25% of staff MDs	620 MDs	---	158	213
1 stall per 30% of peak hour employees	1,900 emp	1,615 emp	1,055	1,424
Total Long-Term Parking Stalls			1,757	2,371
Short-Term Parking:				
1 stall per 6 beds	697 beds	---	116	157
1 stall per 5 outpatients	720 patients	11,130 patients	2,374	3,205
1 stall per 10 seats in auditorium	150 seats	---	15	20
Total Short-Term Parking Stalls			2,505	3,382
Total Parking Stalls Required			4,262	5,753

[1] Medical office buildings, including research and lab space.

Parking Demand

As noted previously in for the Planned Projects, parking code requirements do not always reflect actual parking demand for a specific development. In order to assess project impacts, it is often necessary to compare parking supplied to estimates of actual parking demand based on specific characteristics of a proposed development.

Parking demand with the Potential Projects under the Proposed Action was developed using the same two-step process that was used to estimate demand for the Planned Projects. First, preliminary estimates of parking demand were calculated using parking generation rates published by the Institute of Transportation Engineers' (ITE) in their publication, Parking Generation (2nd Edition). The second step of the process was to take the preliminary estimates based on ITE's national data and adjust them to account for local characteristics that are specific to the Swedish campus. A detailed description of the parking demand methodology can be found under the Planned Projects section.

Based on this analysis, peak parking demand with the Potential Projects would be 4,660 parking stalls. The proposed on-site parking supply of 5,180 stalls would be approximately 10 percent greater than the estimated demand. While the proposed supply is higher than the demand estimates, it represents a reasonable value for preliminary design at the master planning level.

2C) Impacts of the Changes to Planned and Potential Projects Alternative

Impacts would be similar to those described for the Proposed Action. Changes to location, size, and configuration of specific projects would shift traffic patterns within the internal local street system and at adjacent intersections bordering the site. However, if the overall total development for the site remains unchanged, then the off-site transportation impacts would be similar to those described for the Proposed Action.

2D) Impacts of the No Alley Vacation Alternative

Impacts would be similar to those described for the Proposed Action. Retention of the alley would require that the Building E project, including the new service/loading dock, be reconfigured to fit to half blocks. There would likely be curb cuts to accommodate parking and service access in addition to the ones for the alley. The curb cuts would be potential conflict points for traffic and pedestrians.

Impacts at off-site intersections and streets would be the same as those described for the Proposed Action.

3) Mitigating Measures

The Proposed Action and the two build alternatives are expected to result in a proportional impact on overall traffic operations at study intersections and roadways near the project site. Traffic operations would continue to degrade at the primary access points to I-5 from pre-existing LOS E and F conditions, including the 7th Avenue and 6th Avenue intersections on James Street, with or without the Proposed Action. SDOT is undertaking a study of the James Street corridor to identify potential measures to improve traffic flow and safety. Potential measures that may be examined in the study include improvements to signal timing along the corridor and possible restrictions on left turns at the 7th Avenue intersection.

Other study intersections are expected to operate at LOS D or better with the Proposed Action. As a result, no intersection-specific mitigation measures are identified to mitigate project impacts.

Site-specific measures to mitigate impacts may include the following:

- Remove on-street parking on one side of Marion Street and Minor Avenue within the project site. Limiting on-street parking to one side of the street will provide adequate lane widths for opposing vehicles to pass within the existing 30-foot street widths. The proposed parking garages would have sufficient capacity to accommodate the displaced parking.
- Improve operations at the Nordstrom Garage access on Madison Street to avoid impacting traffic flow at the Madison Street / Summit Avenue intersection. Potential improvements include: Enhanced way-finding signing to other on-site garage locations to reduce demand at the Nordstrom Garage including directing hospital visitors to the Broadway garage; Allow pre-paying parking tickets before returning to cars in the garage to enable faster

exiting; Provide an express exit for valet operations so they would not be subject to waiting in line with other exiting vehicles; Increased staffing during periods of peak demand on weekdays; Provide multiple reversable entry and exit lanes corresponding with peak flows; Improve visibility and use of the existing Boylston Avenue garage entry/exit; have garage users pay their parking fees at a central location before returning to their cars in order to reduce delays at the garage exit lanes; provide a separate exit line for monthly parking card holders; and consider directing only visitors of the Nordstrom and Arnold Buildings to this garage.

- Explore a full range of Madison/Summit access improvements, including garage changes, external changes, and programmatic changes.
- Implement a comprehensive campus wayfinding plan. Traffic management and pedestrian access should be addressed. Directing and parking cars and pedestrian convenience and safety may be improved by physical and operational actions. Phased implementation would occur with each building project contributing to the comprehensive campus improvement.

Transportation Management Program

Modifications to the current Transportation Management Program (TMP) are proposed to enhance the existing TMP in order to reduce the number of vehicle trips to and from the project site. The proposed TMP is described in detail in the Draft Major Institution Master Plan document. The major changes proposed in the TMP include:

- Fully subsidized transit passes
- Fully subsidized ferry walk-on
- Annual renewal of SOV permit rate
- Discount of at least 80% per person per month for carpool permit
- Fully subsidized vanpool parking
- Bike parks, lockers, showers provided
- Guaranteed ride home benefit
- Accommodate telecommuting where applicable

4) Significant Unavoidable Adverse Impacts

The James Street and 7th Avenue intersection is forecast to operate at LOS F in the PM peak hour in 2020 under the No Action Alternative. The Seattle Department of Transportation (SDOT) will shortly begin a study of the James Street corridor to identify potential measures to improve traffic flow and safety. Potential measures that may be examined in the study include improvements to signal timing along the corridor and possible restrictions on left turns at the 7th Avenue intersection.

Traffic generated by the Proposed Action and the two build alternatives would increase traffic at the James Street / 7th Avenue intersection by approximately four percent in the PM peak hour. If the SDOT study does not result in any measures to improve the operations at the intersection, the added traffic from the Proposed Action and the build alternatives would result in significant adverse impacts by adding to the delays associated with the baseline LOS F conditions.

1) Affected Environment

Police/Public Safety and Security

Swedish is located within First Hill Census Tracts 83, 84, and 85 and Police Sectors G1 and G2 for which crime statistics are compiled by the Seattle Police Department (SPD). The geographic area is bound generally by Pike, Broadway, Yesler, and the I-5 freeway. This area is within the SPD East Precinct with a station located at 1519 12th Avenue. Table 3.32 profiles the most serious offenses (Part I) and compares the Swedish vicinity (approximately the area bounded by I-5, Pine St., Yesler Way and Broadway) with the entire City of Seattle.

TABLE 3.32

Crime Statistical Profile of Swedish Vicinity and City of Seattle*

	2001		2002	
	Swedish Vicinity	**City**	**Swedish Vicinity**	**City**
Murder	0	25	0	27
Rape	12	164	10	152
Robbery	56	1,594	45	1,576
Aggravated Assaults	83	2,367	102	2,338
Burglary	152	6,684	564	7,290
Total Thefts	878	26,502	939	26,742
Auto Theft	205	8,755	210	8,308
Arson	5		6	
Crime Index** (Total Part I)	1391	46,091	1724	46,433

* Source: Seattle Police Department Annual Reports: 2001 and 2002. 'Swedish Vicinity' is Census Tracts 83, 84, and 85 and Police East Precinct Sectors G1 and G2

** Does not include non-aggravated assault, negligent manslaughter, and arson

Crime trends include the lowest murder rates in 40 years and decrease in all violent crimes in 2002. According to FBI's Uniform Crime Reports, Seattle had the 21^{st} lowest violent crime index of the 25 largest cities in the United States. There was a small increase (0.7% in 2002) of property crimes. Auto theft decreased by 5.1% in 2002. The Swedish Vicinity had an 'average occurrence' of violent crimes in 2002 compared with the entire City. Property crimes were 'average occurrence' for Census tracts 83 and 85 but 'considerably above the median' for Census Tract 84 (area near Broadway/Pike). In 2002, there were 13,169 calls to 911 dispatched in the Swedish Vicinity compared with 290,478 calls city-wide.

Swedish Security

The purpose of the Security Management Plan is to ensure a safe and secure environment for patients, visitors, staff, volunteers, medical staff, tenants and Swedish Medical Center property.

The Security Management Plan consists of a number of processes, policies, and guidelines that directly and indirectly support patient care at Swedish Medical Center. The scope includes: access to Swedish Medical Center campuses and associated properties, property and patient valuables management, surveillance and security patrols, sensitive area/unit management, workplace violence prevention and response, alarm monitoring, emergency response, hazardous materials responder training, personnel identification program, and coordination with local police and community groups.

Customer service is a priority for Swedish. A visible security presence in and around the hospital helps reduce crime and increase feelings of security by patients, visitors, staff, volunteers, medical staff, and tenants. This presence is provided by uniformed security personnel on patrol, visible video monitoring equipment, and other physical criminal activity deterrence measures (access control systems, infant protection systems, etc).

Active risk assessment of potential problems is crucial to reducing crime, injury and other incidents. The layout of the facility is regularly reviewed for potential security concerns. Security incidents are recorded in a computer database. Analysis of security incidents provides information to predict and prevent crime, injury, and other incidents.

Training hospital staff is critical to their performance. Hospital personnel are trained to recognize and report either potential or actual incidents to ensure a timely response. Personnel are instructed to refer to the Swedish Administrative Procedure, "Reporting a Security Incident:. Staff in sensitive areas are trained about the protective measures designed for those areas and their responsibilities to assist in protection of patients, visitors, volunteers, medical staff, tenants, staff and property.

The Swedish Medical Center workplace violence prevention program includes physical risk assessment based on unit/department facility location, function, staff education and awareness of potential dangerous situations or behaviors and appropriate staff responses. The program is defined in the Swedish Administrative Policy, "Workplace Violence Prevention." The Security Manager manages the security incident reporting program. Security incidents are documented on a Security Incident Report. If outside agencies are involved in the investigation of an incident, additional reports may be generated.

Fire

The Seattle Fire Department provides fire fighting, fire prevention/code inspection services, specialized hazardous materials response, and emergency aid to the Swedish First Hill campus. Emergency response would be provided by a combination of nearby fire stations and equipment, including from 2nd and Main (Pioneer Square Station # 10- Headquarters), from the 23rd and Yesler (Station #6), 13th and Pine (Station #25) and the central waterfront station on Alaskan Way downtown (Station #5). Medic One is located at Harborview Medical Center, three blocks away. Emergency response times vary by time of day and traffic conditions but is generally within 2 to 5 minutes.

Many of the current buildings were constructed before computer networking and other technologies were a consideration. New construction will allow a better integration of security systems, including access control and surveillance. Advances in building design and construction create more secure environments, reducing blind areas and increasing visibility. Better building design and more complete security technology coverage creates an environment that discourages criminal activity.

The increased flow of people to the facility will also create an environment in which there are fewer opportunities for criminals to do their work unobserved. This creates a safer environment in the immediate neighborhood.

Parks/Recreation

Public parks and recreation activity is limited in the First Hill vicinity of Swedish. Nearest the Swedish campus are the First Hill Park (0.2 acres), the Boren-Pine Park (0.6 acres), the Freeway Park (5.2 acres) and the Harborview Viewpoint (3.63 acres). The Bobby Morris Playfield (1635 11th Ave) is located to the north in Capitol Hill. The nearest community centers include: the Yesler Community Center (835 E. Yesler), the Langston Hughes Performing Arts Center (104 17th Ave. S.), the Garfield Community Center (2323E. Cherry St.), and the Miller Community Center (330 19th Ave. E.). Nearby Seattle University includes landscaped open spaces but the campus is not a public park.

The Seattle Parks and Recreation Department is currently working with the First Hill community to identify a location for a new park. The Pro Parks Levy includes funding to acquire property ($16 million for land purchase for 18 new neighborhood parks). Project specific planning is scheduled to begin in 2007.*

2) Impacts-Proposed Action and Alternatives

Proposed Action

Police/Public Safety

Increases in daytime and evening populations at the Swedish First Hill campus would require additional police services. Security patrols, crime prevention, parking and traffic control demands would increase. Since the proposal is primarily replacement space, the increased police service

* Source: Seattle Parks and Recreation, First Hill Park Development, Pro Parks Project Status.

demands are not expected to be significant. However, increase in crime rates is not necessarily connected with the proposed physical development. Population is linked with crime statistics to compile indices. Permanent resident populations would not be changed by the proposal and population increases would be transitory including patients, employees and visitors. The increased activity with more people present at varied time periods may actually be a deterrent of crime. It could also increase the risk of traffic–pedestrian conflicts. Generally, Part I offenses have been declining and there has been a slight increase in property crimes. It is unknown if the trends will continue into the future. Many factors contribute to the occurrence of crime.

The Swedish Proposed Action may impact public safety in the Swedish Vicinity and beyond. On the First Hill campus, specific master plan proposals seek to improve safety and security including:

- New emergency department with covered off-street loading and short-term parking for emergency vehicles and patients.
- Consolidation of multiple service docks and with maneuvering off-street and internal to a building.
- Location of medical gas storage, emergency generator and fuel storage and physical plant/ materials management in centralized, secure facility.
- Traffic calming, pedestrian lighting, landscaping, amenity improvements and selective on-street parking removal to improve visibility along Marion and Minor.
- Operational change to the Summit garage entry/exit/valet to reduce pedestrian-vehicle conflicts.

It is not likely the Proposed Action would significantly impact crime rates in the Swedish vicinity.

Fire

The intensification of facilities and population may increase demands for fire safety and protection. An increase in Fire Department workloads due to inspections and fire prevention services may result from the Proposed Action. Impacts are not expected to be significant and the increased service demands will likely not trigger the need for more service personnel or equipment.

The vacation of the alley may reduce an access route for emergency vehicles. Alternative routes are available so the impact is not expected to be significant. Temporary closures of streets due to construction would also restrict access from multiple master plan projects. The duration may be extended for many years over the implementation of the plan. Short-term re-routing would affect the Fire Department. The impact would likely not be significant.

Parks/Recreation

Increased Swedish populations, particularly in the daytime, would increase demands from public open space use. Proposed landscaped and paved campus areas may become more actively used. The existing parks/recreation facilities on First Hill would likely not be significantly impacted because of their distance from the Swedish campus.

Changes to Planned and Potential Projects
Impacts would be similar to those from the Proposed Action.

No Alley Vacation
Impacts would be similar to those from the Proposed Action.

No Action
There would be no change to existing public service conditions.

3) Mitigating Measures

None appear necessary except continued implementation of safety programs and coordination with SPD and SFD. Swedish proposes to work with the Seattle Parks and Recreation Department to assure coordination of campus open space with the on-going First Hill park planning.

4) Significant Unavoidable Adverse Impacts

None are expected.

Utilities (Water/Storm Water/Solid Waste/Maintenance/Communications/Power)

1) Affected Environment

Water Plans
The Washington State Department of Health (DOH) requires water utilities to produce a water system plan (WSP) every six years. Seattle submitted a plan in 1993 and it was approved by DOH in 1995. The most recent plan of 2001 plan is an update focusing upon the retail distribution system. Water demand management through conservation and public education is underway so that projections expect a decline in demand over the next decade. The greatest investments are maintenance and replacement of the water system. The capital facilities plan focuses spending upon just a few most critical projects, primarily water infrastructure, water quality and water supply/conservation. Another six year planning period is about to begin.

Seattle Public Utilities (SPU) has a systematic approach to identify, prioritize and implement capital projects. Two plans reflect future capital requirements. The Capital Improvement Program (CIP) is a relatively short-term, 6-year program. It is part of the long-term, 25-year Capital Facilities Plan (CFP). The CIP is updated every two years as part of the City's budget process. The most recent update of the CFP was in 1995 for the period from 2001-2025. The categories of projects that respond to system needs include water infrastructure, water quality, supply and conservation, other agency projects and technology. From 2001 through 2020, the Capital Facilities Plan projects total more than 1,010 million dollars. (Source: *2001 Water System Plan*, April 2001, Adopted by Ordinance No. 120633 (November 2001), Seattle Public Utilities/Economic & Engineering Services, Inc./HDR Engineering, Inc./Adolphson & Associates/ Norton-Arnold & Janeway.

Water Distribution

The Swedish First Hill Campus is in a 650-water pressure zone. The Swedish campus along with the surrounding area contains a grid of water mains as shown in figure (not yet numbered). The grid consists of 8" and 12" mains and is capable of supplying more water than the campus and surrounding area currently use (see Figure 3.81). The grid was flow tested at two fire hydrant locations for both flow and pressure prior to the East Tower expansion and found to be capable of supplying 2000 gallons per minute at 70 pounds per square inch of residual pressure.

Future water flow requirements of planned and potential projects are given in Table 3.33. Very conservative engineering asumptions were used in the calculations (see response to public hearing comments).

Sewer Plans

SPU provides sewer services in Seattle with King County providing wholesale wastewater treatment services. There is a regional approach to water quality and sewer issues, long-range capital facility plans, rate policies, and facilities siting. The King County Council's Regional Water Quality Committee develops, reviews and recommends countywide policies and plans. The physical system includes 3 treatment plants, 42 pump stations, about 355 miles of King County sewer lines, and $1.8 billion expenditure for new facilities by 2030. (Source Seattle Public Utilities and King County Wastewater Treatment Division)

Sanitary Sewer

The Swedish First Hill Campus is served by 5 sewer lines: an 8" line that runs north on Broadway and then east on East Marion, an 8" line that runs west on Cherry from Broadway, an 8" line that runs west on Columbia from Minor, a 12" line that runs north on Minor to Marion and then west on Marion and an 8" line that runs west on Marion to Minor, north on Minor to Madison and then west on Madison (see Figure 3.82). All sewer lines eventually outfall to King County Metro sewage treatment facilities.

Full flow capacity of the existing system is Approximately 2500 Gallons per minute GPM. Again, very conservative engineering asumptions were used.

Drainage Plans

Surface water management in Seattle comprehensively addresses infrastructure needs, public safety and mobility, and aquatic resource protection. The Comprehensive Drainage Plan (CDP) of 1998 and 1995 are updated by the proposed 2004 Comprehensive Drainage Plan (Volume I, May 12, 2004). SPU's drainage program includes four major program areas: storm water and flood control, landslide mitigation, aquatic resource protection-water quality and aquatic resource protection-habitat. The plan focuses on drainage needs, policies and services for each program. An implementation plan for 2005-2010 makes incremental progress toward meeting the service levels in Seattle's 10 major drainage basins. Spending in the four major program areas is projected to increase from $11.9 million in 2004 to an average of $16.5 million from 2005 to 2010 due in large part to expansion of the water quality program. The Capital Improvement Program (CIP) expenditures are projected to increase from $12.5 million in 2004 to $19.4 million from 2005 to 2010. (Source: *Proposed 2004 Comprehensive Drainage Plan*, Volume I, May 2004, Seattle Public Utilities/Herrera Environmental Consultants/RW Beck/Shannon & Wilson)

Storm Water Drainage

The Swedish First Hill Campus is by three storm drain lines, a 12" line on Marion Summit and Minor that joins with a 15" from Minor and Columbia to become an 18" line running west on Marion, a twelve inch line running from Cherry and Broadway north on Broadway to Madison and then turning east and a 12" line on Cherry and Minor that runs west to Boren and joins with an 18" line on Boren running north one block to Columbia and then running west on Columbia (see Figure 3.83). All of these lines join trunks that discharge to Lake Union.

Flow capacities of the existing pipes are as follows:

TABLE 3.33

Water Flow Capacities

Size	Flow Capacity (GPM**)
12" concrete pipe	344 gallons per minute
18" concrete pipe	744 gallons per minute

Source: Larry Humphreys

** Flow rates based on 75% of pipe capacity.

Other Utilities

King County Metro's electric trolley service extends along Broadway in the north-south direction and along Madison in the east-west direction.

Numerous mechanical, electrical and communications utilities exist in and/or above the alleys and streets affected by the planned and proposed projects. Among these are steam and gas. See the energy section for discussion.

Solid Waste

The Swedish First Hill campus generates 3,143,550 pounds of solid waste annually, based on averaging actual solid waste quantities over the past two years (2002 and 2003). All annual waste amounts to about 4.2 million pounds including biological and hazardous wastes. Recycling reduces this amount by about 900,000 pounds annually (average of 2002 and 2003). Thus the total annual solid and hazardous waste less the recycled material is about 3.3 million pounds.

Current solid waste disposal collection traffic includes pick-ups of hazardous materials, 'red bag' (RBBPW) biological waste and solid waste, including recycled materials. The hazardous material pick-up occurs 1 to 2 times/month by an 8-foot bed truck of 55/30/15 gallon sealed drums. The biological 'red bag' waste collection occurs 3 times/week by semi-trailer truck of 48/28/21 gallon sealed tubs (labpacks). Material is transported to Salt Lake City for incineration. Solid waste collection is in a 30-yard container every 2-1/2 to 3 days.

2) Impacts-Proposed Action and Alternatives

Proposed Action

Each new development, planned or potential, would require storm drain connections, sewer connections and domestic and fire water connections. Discussions with Seattle Public Utilities confirm system capacities are adequate for Swedish First Hill Campus' future planned and potential projects. The Swedish projects are generally consistent with the utility provider plans and policies in that services are located where infrastructure exists. Plans and capital budgets anticipate urban growth in Seattle.

Water

The existing system has the capability to handle some of the Planned Projects, but may be overloaded by the time all Planned and Potential Projects are completed (see Table 3.34 compared with Table 3.33).

Swedish will incorporate discussions with Seattle Public Utilities into planning of each new project to determine if capacity is available. Capacity tests and determination of system improvements are typically a part of specific project design.

Swedish will monitor water consumption on the existing campus to better understand the current and potential impacts to the current water grid. A series of tests may be run on individual buildings to examine water flow for each building and use type.

Additionally, water saving alternatives will be explored for both the existing and new buildings.

The alley vacation would not impact the water system.

TABLE 3.34

Water Flow Requirements of Planned and Potential Projects

	Maximum Flow Gallons per Minute
Planned Project	
MOB A	312
Hospital Replacement B	1,215
Hospital Replacement C	387.5
Hospital Replacement D	472.5
Central Support/Office E	508
Hospital Replacement G	485
Potential Project	
MOB F	140
Hospital Replacement C-1	337.5
Central Support E-1	200

Sanitary Sewer

The sanitary sewer system additions will also be monitored and planned in conjunction with the Seattle Public Utilities. Sewer consumption is directly related to water consumption so savings in water consumption will also result in sewer use savings. Table 3.35 shows estimated sewer flows for Planned and Potential Projects. No impacts would result from the alley vacation because no sanitary sewers are located in the alley. Capacity tests would be a part of project design.

TABLE 3.35

Sanitary Sewer Flow from Planned and Potential Projects

	Flow in Gallons per Minute
Planned Projects	
MOB A	343.2
Hospital Replacement B	874.8
Hospital Replacement C	279
Hospital Replacement D	340.2
Central Support/Office E	508
Hospital Replacement G	349.2
Potential Projects	
MOB F	154
Hospital Replacement C-1	243
Central Support E-1	200

Storm Water Drainage

The parts of the campus that will have planned and potential projects constructed on them already drain into the storm water system. For this reason storm drainage may not increase beyond the current capacity, particularly if new setback and green areas are considered. However, retention of storm water may be necessary on some of the projects. This will be coordinated with Seattle Public Utilities for each project. Impacts from the alley vacation would not be significant. Only catch basins associated with existing buildings would be displaced.

Solid Waste

Solid waste quantity is not expected to significantly increase because of aggressive waste minimization, reduction and recycling programs. A new compacter is also reducing the volume of disposal material. Swedish plans to reduce solid waste pick-up by 1 pick-up/week which would amount to a reduction of 5 to 8 tons of solid waste. Increases in hazardous materials and biological wastes will likely not increase the number and/or frequency of truck trips. More containers would be collected at each pick-up (also see hazardous waste section). The alley vacation would relocate waste collection from the alley to inside the proposed building.

Public Right-of Way Vacation

Vacation of the alley on block bounded by Boren Avenue/Cherry Street/Minor Avenue/Columbia Street is proposed. There are only local services to existing buildings in this alley. These services would be capped back in the public street and new services made to the new building in cooperation with utility officials. Swedish located a telecommunications fiber along alley power poles and would be responsible for its reloction. There are no major utility or power services located in the alley. There would be no significant impacts to utilities from the proposed alley vacation.

Skybridges/Tunnel

The relocation of existing skybridge across Marion Street is proposed. All utilities were relocated when the skybridge was originally installed.

The construction of skybridge across Minor Avenue between Marion Street and Columbia Street is proposed. Overhead electrical service may be impacted and require relocation and short disruptions of service.

The construction of skybridge across Cherry Street between Minor Avenue and Broadway (is proposed). There are no overhead services currently in this location.

The construction of tunnel under Minor Avenue between Columbia and Cherry is proposed. Storm sewer, sanitary sewer and water lines may need to be relocated depending on the location and elevation of the tunnel. Other underground mechanical, electrical and communication systems may be impacted. Swedish would be responsible for any required relocations.

Changes to Planned and Potential Projects

Impacts would be similar to those from the Proposed Action.

No Alley Vacation

Impacts would be similar to those from the Proposed Action.

No Action

No change in existing conditions would occur.

3) Mitigating Measures

Increase waste minimization and recycling programs through aggressive application of the Swedish waste management program. Current recycling is at about 27% of the solid waste. The 2004 goal is 33% although Swedish is projected to achieve 30%. The year 2010 goal is 50% recycling. Minimization programs are also operational for hazardous and biological wastes/ dangerous wastes (see hazardous materials and wastes section).

Swedish would be responsible for utility relocations associated with the proposed alley vacation.

Swedish will continue with other conservation measures to reduce utility consumption.

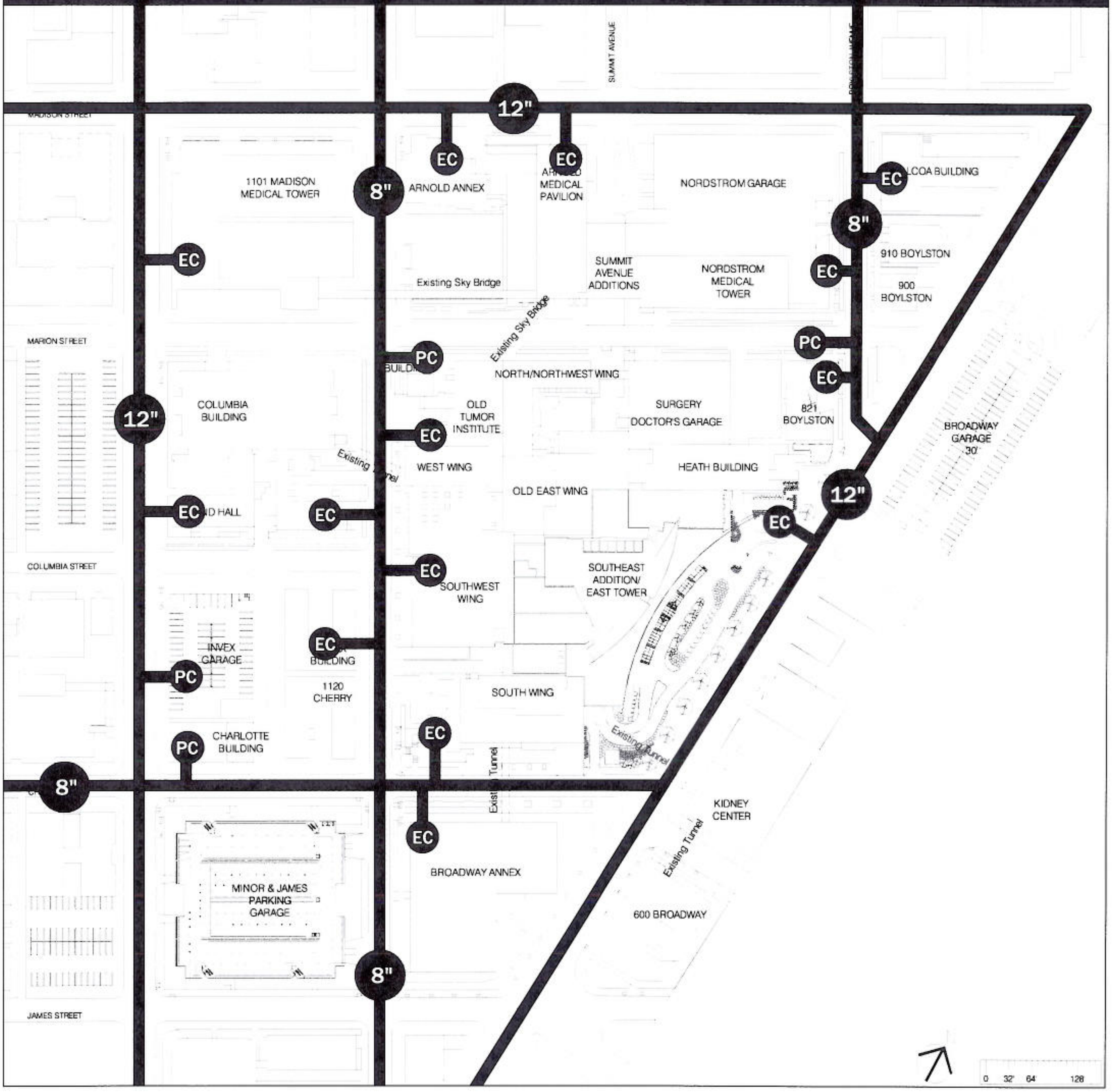
Swedish will work with Seattle Public Utilities in the design of service improvements to mitigate capacity impacts.

4) Significant Unavoidable Adverse Impacts

Water, sewer, and drainage loads may exceed capacities unless appropriately mitigated. Swedish will coordinate the specific utility impact mitigation for projects to avoid adverse impacts with Seattle Public Utilities. None are anticipated.

FIGURE 3.81

Water



EC = Existing Connection
PC = Potential Connection

FIGURE 3.82

Sanitary Sewer

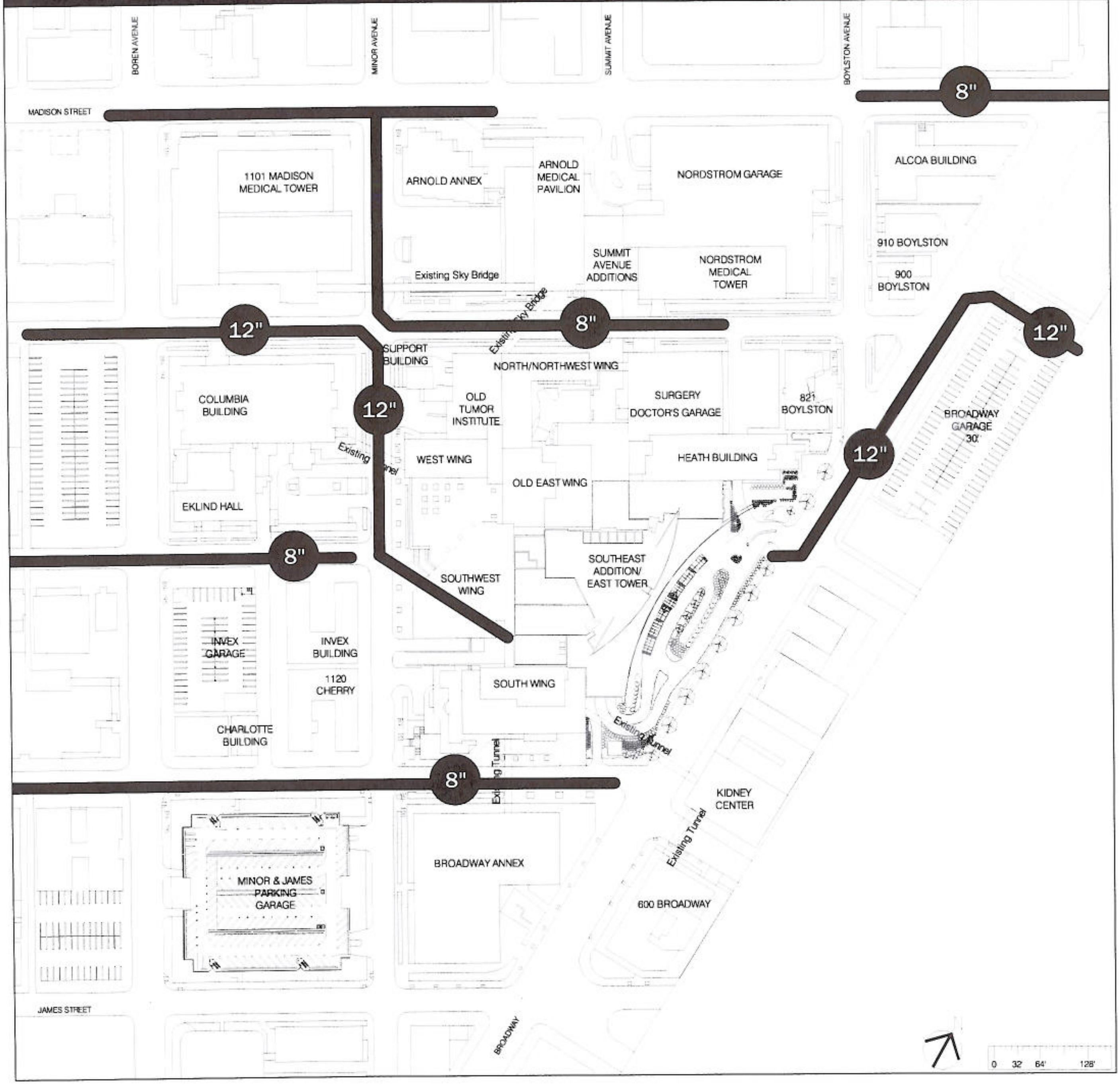
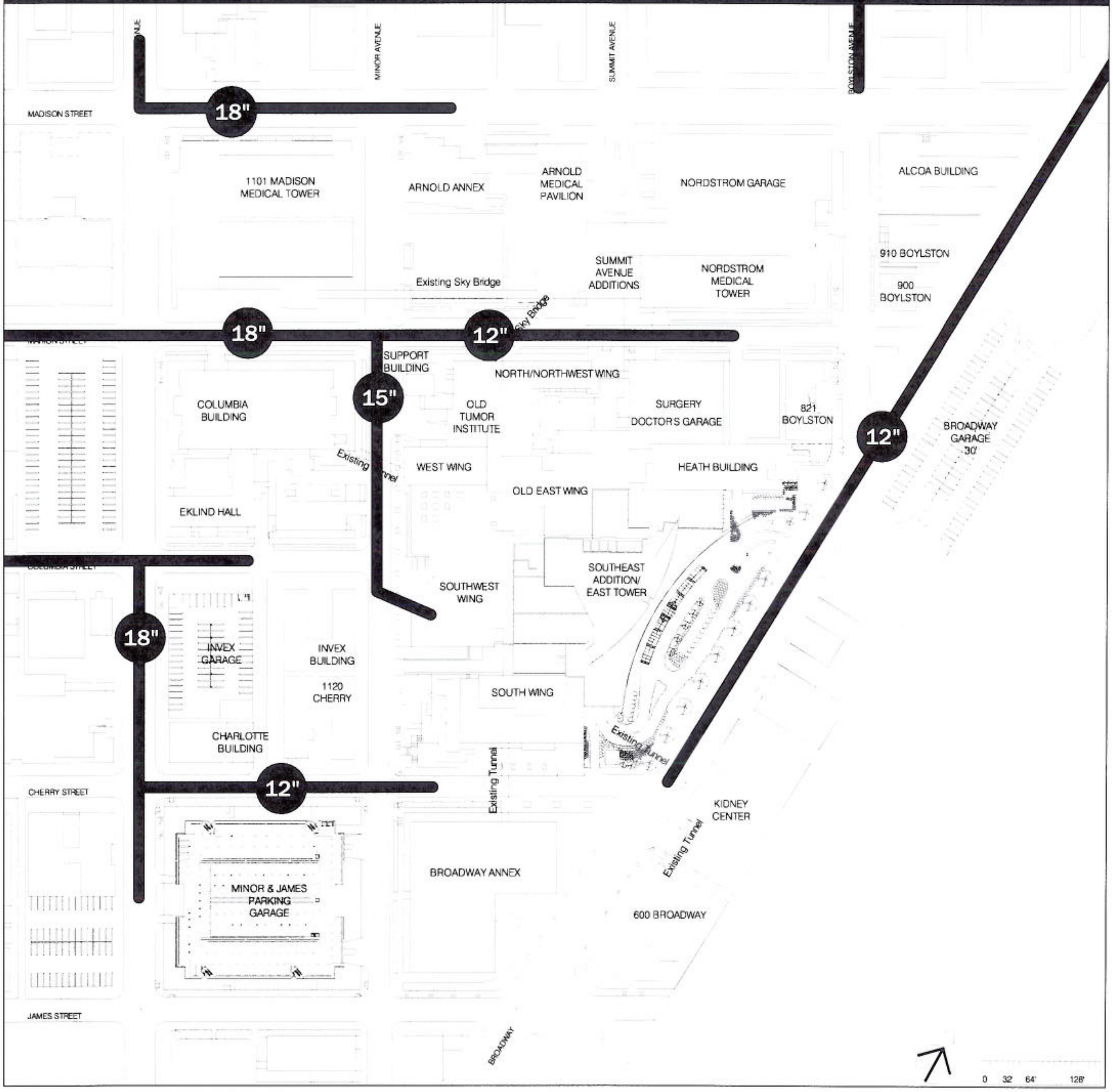


FIGURE 3.83

Storm Water Drainage



Short-Term Construction-Related Impacts

Earth

1) Affected Environment

The affected environment for earth short-term impacts includes the sites where Swedish proposes demolition, excavation, renovation and/or new construction. The sequencing and phasing of projects may extend the time of these impacts.

2) Impacts-Proposed Action and Alternatives

Proposed Action

Proposed demolition of existing buildings will result is debris requiring removal from the First Hill campus and disposal. The demolition impact is listed in the following Table 3.36. Excavations for foundations and below-grade structures will also generate soils impacts. The excavation impact is listed in Table 3.37.

Duration of impacts related to demolition is estimated at about 6 to 8 months per project. Abatement of any hazardous materials, separation of debris and recycling of materials requires more time for demolition. Material separation will be done off-site to the extent possible to expedite the process and to minimize disruption.

Excavation timing is estimated at an additional 4 months per project. Projects that are adjacent to other existing buildings that would be retained (Projects B, C and G) may have extended timing if there are complications with shoring stabilization and building under pinning.

Construction related impacts may be of longer, extended duration depending upon the phased development and sequencing of multiple projects. The development of other First Hill projects concurrent with Swedish projects may compound cumulative impacts.

Other related impacts may also occur, such as noise, vibration, traffic and air quality impacts.

(See following transportation section for discussion of short term impacts from truck traffic related to demolition and excavation activity).

TABLE 3.36

Demolition Impact from Planned and Potential Projects

	Concrete (cubic yards)	Masonry (cubic yards)	Brick (cubic yards)	Steel (tons)
Building A				
(Arnold Annex)	700			
Building B				
N/NE	2,530	400	400	
Old Tumor	1,150			
Old East	5,040		500	
West	6,000	550	550	
Subtotal	14,700	950	1,450	
Building C				
Surgery	9,600		130	
Heath	1,700	350	350	900
Boylston	140		70	
Subtotal	12,700	350	550	900
Building D				
Annex	1,200			500
Building E				
1120 Cherry/Invex	1,500		120	
Invex Garage	600			
Charlotte	20			
Subtotal	2,100		120	
Building F				
Alcoa	1,300			
Boylston	200			
Subtotal	1,500			
Building G				
Eklind	800			350
Total	33,700	1,300	2,120	1,750

Source: Lund and Everton

TABLE 3.37

Excavation Impact from Planned and Potential Projects

	Excavation (cubic yards)
Building A	51,000
Building B	44,000
Building C	115,000
Building D	50,000
Building E	55,000
Building F	16,000
Building G	31,000
Total	**362,000**

Source: Lund and Everton

Changes to Planned and Potential Projects

If the same replacement projects were developed, demolition impacts would be the same. Excavation impacts could be greater than the Proposed Action if more below-grade development occurred. Above-grade project changes would have no affect upon short-term earth impacts unless the changes required different below-grade improvements. Other changes to projects may shift impacts to different blocks within the Swedish campus, but cumulative impacts would be similar to the Proposed Action. Impacts of this alternative would likely not be significantly different than those from the Proposed Action.

No Alley Vacation

Short-term earth impacts would be similar to the Proposed Action. Demolition impacts would be the same. Excavation would be the same or slightly greater on the block with the proposed alley vacation because buildings would have smaller floorplates, would be less efficient, so may require deeper excavation for more below-grade levels to meet the same program.

No Action

None of the demolition and excavation impacts would occur. Existing building would remain. There would be no short-term impacts to the earth environment.

3) Mitigating Measures

Mitigating measures would be consistent with City of Seattle Construction Stormwater Control Technical Requirements Manual (DR 16-2000), including:

- Temporary sediment catchment basins would be constructed near site drainage exit points to catch sediment runoff.
- Construction would be done during the drier parts of the year, when possible, and disturbed area would be re-paved or re-planted as soon as possible.
- Conduct further geotechnical investigations as part of project design to engineer the appropriate demolition, excavation and shoring techniques.
- Silt fences would be placed at the lower side of construction sites to reduce the amount of sediment transport.
- When possible, construction vehicle wheels would be washed before leaving the site to minimize the amount of soil tracked on to nearby streets.
- Cover truck loads when possible, to minimize spillage and wind blown dust.
- Streets impacted by construction traffic would be cleaned regularly by the contractor.
- Identify material disposal sites and coordinate route planning with SDOT, SPD, and SFD.
- Post construction conditions on site.

4) Significant Unavoidable Adverse Impacts

No significant unavoidable adverse impacts are expected with implementation of the proposed mitigation.

Air

1) Affected Environment

See prior Air Quality/Wind Affected Environment section for discussion of existing conditions.

2) Impacts-Proposed Action and Alternatives

Proposed Action

Demolition, excavation, other site preparation and construction activity would generate air pollutants during construction. Fugitive dust from demolition debris and disturbed soils and emissions from construction equipment/vehicles would occur at each Planned and Potential Project site. Gasoline or diesel powered machines would emit carbon monoxide and hydrocarbons. Odor emissions may be detectable by some at the site or in the vicinity. The emissions would be temporary in nature and concentrated at the construction activity location and along access routes. Renovation projects are not expected to create any significant short-term air quality impacts. No construction activity is expected to exceed applicable ambient air quality standards. Impacts may be extended over time depending upon the timing and sequencing of individual projects.

Changes to Planned and Potential Projects

Construction related air impacts would be similar to the Proposed Action. The specific site locations and the timing/duration of impacts may differ.

No Alley Vacation

Construction related air impacts would be similar to the Proposed Action.

No Action

No construction related air impacts would result from No Action.

3) Mitigating Measures

Short-term air impacts can be effectively mitigated by Swedish compliance with The Puget Sound Clean Air Agency's (PSCAA) Regulation I, Section 9.15 regarding reasonable precautions to avoid fugitive dust and odor emissions such as washing of truck wheels and frames prior to travel on public streets, wetting of exposed soils and debris, and prompt clean-up of any spilled materials tracked on to public streets. Efforts will also be taken to minimize diesel exhaust fumes from construction equipment and vehicles. "Biodiesel" fuel use will be encouraged.

4) Significant Unavoidable Adverse Impacts

None are expected. Short-term air quality impacts would occur but mitigation would reduce the significance.

1) Affected Environment

Environmental Health

Noise*

Noise impacts during the project's construction are expected. The Proposed Action consists of a total of six possible projects over a period of 15 years. The construction time for each project would typically last between 18 months to 2 years. In the event where all six projects were built successively, the total construction period is expected to last 12 years. There are five consecutive phases in buildings construction. These phases are:

1. ground clearing, including demolition and removal of prior structures, trees, rocks
2. excavation
3. placing of foundation, including reconditioning of old roadbeds and compacting of trench floors
4. erection, including framing, placing of walls, floors, and windows, and pipe installation
5. finishing, including filling, paving and clean-up

Typical ranges of sound levels** (Leq) on construction sites for these phases are shown in Table 3.38. The minimum level shown in the table represent the site noise when the minimum required equipment present at site whereas the maximum levels represent the noise associated with all pertinent equipment present on site.

* Source: Michael Yanti's Associates
** May, Daryl; Hand Book of Noise Assessment; Chapter 9 "Construction Site Noise," Page 211.

TABLE 3.38
Noise Levels at Construction Sites

Phase	Ranges of L_{eq}, dBA
Ground Clearing	84 dBA
Excavation	79 to 89 dBA
Foundations	78 dBA
Erection	75 to 87 dBA
Finishing	75 to 89 dBA

Construction noise is addressed under the Seattle Municipal Code Chapter 25.08. During construction, the maximum permissible sound levels presented in Table 3.9 as measured from the real property of another person may be exceeded between the hours of 7:00 AM and 10:00 PM on weekdays and between the hours of 9:00 AM and 10:00 PM on weekends by no more than the following dBA's for the following types of equipment:

1. Twenty-five (25) dBA for equipment on construction sites, including but not limited to crawlers, tractors, dozers, rotary drills and augers, loaders, power shovels

2. Twenty (20) dBA for portable powered equipment used in temporary locations in support of construction activities or used in the maintenance of public facilities, including but not limited to chainsaws, log chippers, lawn and garden maintenance equipment, and powered hand tools; or

3. Fifteen (15) dBA for powered equipment used in temporary or periodic maintenance or repair of the grounds and appurtenances of residential property, including but not limited to lawnmowers, powered hand tools, snow-removal equipment, and composters.

Sounds created by impact types of construction equipment, including but not limited to pavement breakers, pile drivers, jackhammers, sandblasting tools, or by other types of equipment or devices which create impulse noise or impact noise or are used as impact equipment, as measured at the property line or fifty feet (50') from the equipment, whichever is greater, may exceed the maximum permissible sound levels presented in Table 2 in any one (1) hour period between the hours of eight a.m. (8:00 a.m.) and five p.m. (5:00 p.m.) on weekdays only, but in no event to exceed the following:

1. L_{eq} ninety (90) dBA continuously;
2. L_{eq} ninety-three (93) dBA for thirty (30) minutes;
3. L_{eq} ninety-six (96) dBA for fifteen (15) minutes; or
4. L_{eq} ninety-nine (99) dBA for seven and one-half (7-1/2) minutes;

Provided that sound levels in excess of L_{eq} ninety-nine (99) dBA are prohibited unless authorized by variance.

Vibration

No unusual vibration conditions exist in the Swedish vicinity. Traffic and construction activities are the primary existing source of vibration. The proposed Sound Transit tunnel under First Hill may cause future vibration impacts during its construction.

2) Impacts-Proposed Action and Alternatives

Proposed Action

Noise

During construction phases noise impacts are expected due to activities on site and due to construction trucks traveling to and from the site. Impacts may shift depending on the location of the construction on campus and on the duration of each construction project.

Vibration

During construction, as well as during demolitions and site preparation work, vibration impacts may occur. Sensitive receivers such as other Swedish medical functions and nearby residential uses would be impacted.

Changes to Planned and Potential Projects

Impacts would be similar to those from the Proposed Action. Impacts may shift location on the Swedish campus. If projects increased in size, impacts may be somewhat increased and if projects were reduced in size, impact would be less. The difference would not be significant.

No Alley Vacation

Impacts would be basically the same as the Proposed Action.

No Action

No construction related impacts related to environmental health and noise would occur.

3) Mitigating Measures

Construction

- Comply with the requirements of the Seattle Municipal Code (SMC) Chapter 25.08 Noise Control.
- Implement a construction noise monitoring program.
- Publish a periodical news letter to share construction news and noise monitoring results.
- To the extent possible, re-route construction truck traffic away from residential areas.
- To the extent feasible, noise from the site will be reduced through the use of temporary walls or other sound barriers.
- Locate noisy equipment on site as far away from noise-sensitive receivers as possible.
- Combine noise operations in the same time period. The overall noise produced will not be significantly higher than the level produces by the individual operations.
- To the extent possible, avoid noise generating construction activities at night.
- Consider mixing concrete off site and consider prefabricated building components.
- Turn off all unnecessary idling equipment
- Use electric rather than diesel equipment where possible.
- Avoid impact pile driving. Drilled piles or the use of a sonic or vibratory pile driver are quieter alternatives.

- Use specially quieted equipment, such as quieted and enclosed air compressors and power generators,
- Use efficient mufflers on all engines.
- Select quieter demolition methods, where possible. For example, sawing slabs into sections that can be loaded on trucks is a quieter process than demolition by pavement breakers.
- Equip portable pneumatic drills and pavement breakers with exhaust mufflers, when possible.

4) Significant Unavoidable Adverse Impacts

For each construction project on site, short term noise impacts are expected from construction activities. The duration of noise impacts are expected if all projects were built successively. The significance of the impacts can be reduced by mitigation measures so that no significant adverse impact is expected.

Transportation and Parking

1) Affected Environment*

See prior Transportation section for description of the transportation system in the project site vicinity.

2) Impacts – Proposed Action and Alternatives

Proposed Action

Transportation impacts associated with construction activity would be generated as each element or phase of the Master Plan is developed over the 15-year and greater period of the Master Plan. Although specific impacts would depend on final design details and construction schedules for the various elements of the Master Plan, short-term construction impacts would likely include those described below.

Trip Generation

Vehicle trips generated by the construction activity would include the following:

- Arrival and departure of construction workers.
- Delivery of construction materials.
- Delivery of construction vehicles and equipment.
- Delivery and removal of material associated with fill or excavation activity.
- Removal of debris from demolition activity.

* Source: The TRANSPO Group

The first category of construction trips listed above, construction worker trips, generally occur before or right at the beginning of the morning and evening peak commute times. They generally do not have a noticeable impact on peak hour traffic operations at adjacent streets and intersections.

The remaining categories of construction-related trips are primarily truck trips. A large proportion of these would be associated with excavation and demolition activities. Approximately 380,000 cubic yards of excavation and demolition material would be removed from the site during construction of the Planned Projects. Based on a 22-yard capacity for a tandem truck, the amount of material to be removed would be equivalent to 17,300 truckloads. Each load would generate two truck trips (one trip for the empty truck traveling to the site and one trip for the full truck traveling away from the site), resulting in a total of 34,600 truck trips. Similarly, construction of the Potential Projects would require removal of an additional 17,500 cubic yards of material, generating 1,600 truck trips.

The number of truck trips on any given day would vary depending on the level of construction activity. The greatest number of trips would likely occur with excavation for the Building C project when 115,000 cubic yard of would be removed, requiring 10,500 truck trips. Assuming a 4-month period for the excavation activity, there would be an average of 130 trips per day.

Parking

Construction associated with the Master Plan developments would generate temporary decreases in the on-site parking supply and temporary increases in parking demand. The temporary decreases in parking supply would occur between the time existing parking garages and surface lots on building sites are closed at the start of construction until completion of the new building and its associated parking garage. The capacities of the garages and lots to be replaced are relatively small, with the largest being the Invex Garage with 190 spaces and the doctor's garage with 115 spaces. Use of existing parking areas for construction staging would also displace parking and temporarily decrease the parking supply. On-sreet parking may also be reduced or eliminated by construction activity.

Impacts to parking demand would occur in the form of short-term increases due to the demand generated by construction workers. If no specific arrangements were made to accommodate the additional demand, construction worker parking would likely displace existing parking due to their early arrival times. As indicated above in providing replacement parking closed surface lots, any off-site parking arrangements for construction parking in the immediate vicinity should focus on facilities with existing unused capacity in order to minimize displacement of existing parking.

Temporary Lane and Street Closures

Due to the constricted site conditions of the hospital, it is anticipated that temporary lane/street closures would likely be required during some of the construction stages. Any lane closures on the arterial streets bordering the project site (Madison Street, Broadway, James Street, and Boren Avenue) would have significant impacts on area traffic operations due to the high traffic volumes on those streets.

Changes to Planned and Potential Projects Alternative

Total development under this Alternative would be the same as that under the Proposed Action. Depending on the specific changes to configuration and location of the projects, construction requirements, including excavation may vary from the Proposed Action, but the overall impacts would be similar to that of the Proposed Action.

No Alley Vacation

Construction-related transportation impacts under the No Alley Vacation Alternative would not be noticeably different from those for the Proposed Action.

No Action

No construction would occur under the No Action Alternative. As a result, there would be no construction-related impacts.

3) Mitigating Measures

The following measures could serve to reduce traffic impacts during construction of the Master Plan projects:

- Construction Traffic Management Plans should be developed for each development phase in coordination with the Seattle Department of Transportation. The objective of the plans would be to ensure that movement of construction workers, equipment, and materials to and from the site is done in a safe and efficient manner and to minimize potential disruptions to background traffic and pedestrians. Multiple, concurrent First Hill projects should consider coordinated mitigation.
- Lane closures should be minimized on Madison Street, Broadway, James Street, and Boren Avenue in order to avoid disruption on the heavily traveled arterial streets.
- When possible, construction trucks should be staged within the construction site.
- Safe pedestrian and vehicular circulation should be maintained adjacent to the construction site through the use of temporary walkways, signs, and manual traffic control.
- Construction material deliveries should be scheduled and coordinated to and from the site to minimize congestion during peak travel times.
- Provide designated parking areas for construction worker parking in order to minimize impacts to other parking facilities in and around the site and to minimize unnecessary circulation associated with searching for parking. On-site and off-site parking arrangements for construction parking should focus on facilities with existing unused capacity in order to minimize displacement of existing parking.
- Phase development to minimize temporary decreases in parking supply during construction. Development could be phased to construct elements or phases of the Master Plan that provide additional parking supply

4) Significant Unavoidable Adverse Impacts

No significant unavoidable adverse impacts are expected during construction.

1) Affected Environment*

The affected environment for utilities will be each building site and the utilities passing near or serving the sites.

2) Impacts - Proposed Action and Alternatives

As demolition and construction occurs there may be short term, less than a day, disruption of utility service when existing services to buildings are removed or when new services are installed. Overhead services can also be disrupted when relocated underground or temporarily moved to avoid cranes. Underground services can be disrupted when temporarily relocated during excavations.

Proposed Action

All of the major utilities in the campus area are sectionalized with valves to limit disruption. Also, the utilities are installed in grids so that service can come from many directions. Planning for shutdowns allows the utilities to be rerouted through other portions of the grid so that service is uninterrupted in most cases.

Potential impacts on utilities from the various projects are as follows:

Water: Temporary shut down of localized mains while new service connections are made.

Sanitary Sewer: No shutdowns anticipated.

Storm Sewer: No shutdowns anticipated.

Electricity: Temporary shutdown for new service connections. Temporary shutdowns if lines are relocated around construction sites.

Communications: Temporary shutdowns if lines are relocated around construction sites.

Public Services: Construction activities may disrupt traffic and access and cause safety impacts. Swedish will assure that the Seattle Police Department (SPD) and the Seattle Fire Department (SFD) are advised and consulted to minimize impacts.

Changes to Planned and Potential Projects

The impacts will be similar for each site regardless of the final configuration of the projects. Design details on each site may change the effects of the planned and potential projects.

* Source: Larry Humphreys

No Alley Vacation

Impact to the utilities will remain the same.

No Action

No impacts would occur.

3) Mitigating Measures

- Coordinate with utility providers to minimize shutdown frequency and duration.
- Coordinate construction disruption to traffic, access, or safety with SPD and SFD
- Develop projects to minimize interference with existing utilities.
- Notify neighbors of impending shutdowns.
- Make utility connections at times that least impact neighbors.

4) Significant Unavoidable Adverse Impacts

None anticipated.

Cumulative Impacts

The Proposed Action and Changes to the Planned and Potential Projects Alternative and No Alley Vacation Alternative all have the same total development program. Comparable cumulative impacts would occur. The timing of development may differ so timing of impacts may also vary from the Proposed Action. The No Action Alternative would not appreciably contribute to or cause cumulative impacts.

The First Hill location includes other major institutions with approved master plans that will contribute to cumulative impacts. Harborview Medical Center, Virginia Mason Medical Center and Seattle University are all located within a half-mile of Swedish Medical Center.

Harborview Medical Center

Harborview's master plan was approved by the City Council in August 2000 (Ordinance #120073). Construction permits are pending for two current projects, the Inpatient Expansion Building (IEB) with 251,000 SF and the Ninth and Jefferson Building (NJB) with 167,000 SF plus 500 parking spaces. The existing (year 2000) campus building area was about 1.3 million square feet in 11 buildings and about 1100 parking spaces. Approved Planned Projects will add 442,900 SF of new construction (172,154 net new SF subtracting demolitions) and 1000 parking spaces. Approved Potential Projects add 526,000 SF of building and no more parking. The total resulting campus building area would be 2,034,407 SF and 2,164 parking spaces. Timing was assumed in the EIS to be that Planned Projects would be over the next decade and Potential Projects would be beyond the next decade. (Source Compiled Major Institution Master Plan, October 2000).

Virginia Mason Medical Center

Virginia Mason's master plan dates to May 1994 and the development program recently expired. Master plan projects added 879,000 SF of building area and 900 parking spaces. One pending project, the East Campus Tower, adds about 180,000 SF of building area. Future development would require a new master plan. (Source: Approved Final Major Institution Master Plan, May 1994).

Seattle University

The master plan, as amended, includes new construction of 625,000 SF of building area and 1,025 parking spaces. A 15-year time frame is noted from master plan approval. A chapel, law school, student housing and university center projects have all been completed. (Source; Final Major Institution Master Plan, October 1996).

Other

Note that other recent and current development activity is included in the Land Use section and would contribute to cumulative conditions. The major institutions identified above are a dominant contributor to development impacts given their proximity.

There have been discussions about possible long-term redevelopment of the Yesler Terrace housing site by the Seattle Housing Authority. Specific plans are unknown. Sound Transit has a pending proposal for the light rail train alignment under First Hill with a station located below

Madison Street near Summit and Boylston. The implementation is uncertain. There is continuing mixed use development along the Pike and Pine corridors to the north.

Sound transit development of the tunnel under First Hill and the station at Madison would contribute to construction impacts in the area. Other public and private projects would also create short-term impacts. The timing and overlap of the impact is uncertain.

Transportation and Parking

Cumulative impacts of the surrounding development was considered as part of the background analysis and the forecasts of future traffic conditions. Growth rates based on trends and planned development activity are included in the impact analysis. The analysis incorporated estimates of the specific traffic that would be generated by the following proposed developments:

- Frye Museum (701 Terry Street)
- 7th & Madison (904 7th Avenue)
- 8th & Madison (900 8th Avenue)
- First United Methodist Church (811 5th Avenue)
- Warshal's (100 First Avenue)
- 401 Broadway
- Harborview Medical Center Master Plan (325 9th Avenue)
- Virginia Mason Master Plan (1100 9th Avenue)
- Seattle University Master Plan (901 12th Avenue)

The above projects either have an approved Master Use Permit (MUP) and they are either undeveloped at this time or are unoccupied, or they are have an active application with the Seattle Department of Planning and Development (DPD).

Air Quality

The proposed development will cumulatively impact ambient air quality. Impacts include increased concentration levels of carbon monoxide and particulates from development, on-going operations and traffic associated with Swedish First Hill activity. Cumulative impacts are not expected to be significant or exceed Puget Sound Clean Air Agency (PSCAA) standards. All of the identified major institutions have transportation management programs (TMP's) intended to reduce single occupant vehicle trips and promote alternative transportation modes. Stricter federal vehicle emission standards and vehicle emission testing will also contribute to reduced risk of any violation of motor-vehicle related ambient air quality standards.

Energy

Fabrication and transport of building materials, building construction and operation of facilities will consume additional energy resources. Energy resources include electricity (provided by Seattle City Light), steam (provided by Seattle Steam Corporation), natural gas (provided by Washington Natural Gas Company), and petroleum fuels.

Population and Housing

Increased populations of employees, patients, visitors and others may be attracted to the Swedish campus. Seattle comprehensive planning anticipated the increased residential and employment growth in 'planning estimates' that were distributed throughout Seattle urban centers and villages. Impacts are not significant and the increases are consistent with planned growth. The Swedish Proposed Action would not directly impact housing. It may contribute to increased pressures for affordable and conveniently located housing near the major employer.

Public Services and Utilities

Major Institution and other public and private developments would contribute to additional demands placed upon utility and public service providers. Aging utility infrastructure and maintenance are concerns in the First Hill area. The condition and capacity of utilities must be concurrent to meet demands placed by new as well as existing development. Proposed development may include upgrades and improvements to utilities to mitigate any significant impacts. Cumulative Impacts on public services, e.g. police, fire and parks/recreation are not significant (also see Public Services and Utilities section).

Commitment of Resources

Approval and implementation of the master plan and construction of projects of all alternatives except "No Action" would commit the properties to the proposed uses for the life of development, thereby precluding other uses permitted in the zoning district. Thus the proposed development is basically an irreversible commitment of the land resource. Because the Proposed Action is largely replacement (and upgrading) of existing uses, the resource commitment already has been made.

Natural resources would be used to construct the proposed development and fabricate building materials. Resources include steel, aluminum, glass, stone, sand and gravel and wood (only wood is a renewable resource). Some materials may be recyclable but would essentially be irretrievably committed to the Proposed Action.

Energy spent in construction and fabrication of building materials is a commitment of a natural resource. Significant quantities of hydroelectric energy and fossil fuels would be required for heating, cooling and lighting over the life of the project. Energy is not a renewable resource and its commitment to the Proposed Action would preclude its use in other ways.

The increased populations at Swedish, including patients, visitors, employees and others would create demands for public resources and services. The demands would include police and fire protection, waste disposal, neighborhood amenities and parks, and public streets. The demand is not unusual and was anticipated in the growth planning estimates of the Seattle Comprehensive Plan and First Hill Neighborhood.

4. Public Comments and Responses

Written Comments and Responses

The City of Seattle Lead Agency, the Department of Planning and Development (DPD), circulated the Draft MIMP and Draft EIS and conducted a public hearing to obtain comments. The Swedish Citizen Advisory Committee (CAC) also reviewed and commented on the documents.

This section of the Final EIS provides responses to the comments received consistent with SEPA provisions (25.05.560). Each letter is included and comments are identified in the margin with corresponding responses following. Additional information/analysis has been provided and/or changes have been made to the Final MIMP and Final EIS in response to the comments as noted.

Comments from public agencies and private parties and responses are organized by date of comment as follows:

Written Comments and Responses

- Seattle Department of Transportation (SDOT)
- State of Washington Office of Archaeology and Historic Preservation
- First Hill Dental Healthcare
- Orthopedic Physician Associates
- Seattle & King County Public Health, Environmental Health Services Division
- Puget Sound Clean Air Agency
- City of Seattle Department of Planning and Development (DPD)
- Swedish Master Plan Citizens Advisory Committee (CAC)
- Seattle Landmarks Preservation Board

Public Hearing Testimony and Responses

- Deborah Gibby

From: Urania Perez
To: Jenkins, Michael
Date: 12/1/04 9:31AM
Subject: Fwd: Swedish Draft Master Plan and EIS - comments

Hi Michael,
I'm the SEPA coordinator in SDOT for all SEPA documents received from DPD and other agencies. I distributed the DEIS for the Swedish Medical Center Master Plan (DPD Project # 240078) and I got comments from Charles Bookman, Street Maintenance.
Please see attachment for his comments. If I get additional comments from the other 2 reviewers I'll follow them to you.
Let me know if you have any questions. Thanks! 1

Urania Perez
Seattle Department of Transportation
Capital Projects & Roadway Structures Division
700 Fifth Avenue, Suite 3900
P O Box 34996
Seattle, WA 98124-4996

206-684-5150
Fax: 206-615-1237
urania.perez@seattle.gov

CC: Bookman, Charles; Perez, Urania

From: Charles Bookman
To: Perez, Urania
Date: 11/30/04 4:20PM
Subject: Swedish Draft Master Plan and EIS

The growth in patient visits and facilities use that is projected means more wear and tear on the streets in the area. In addition to addressing traffic circulation and parking impacts, the transportation sections of these documents also need to address the impact of projected growth on the life of the streets that will be affected.

Seattle currently has a backlog of over $300 million of deferred major maintenance on arterial streets. Some of this backlog is on First Hill (Boren is an example). Information about current street major maintenance need and the projected impacts of increased traffic needs to be addressed in the report. Mitigating measures should also be discussed if and where appropriate. 2

The above comments are most applicable to P. 143 of the DEIS, the sub-section titled, "Roadway Improvements". The extent of identified maintenance need on the street segments identified in the report and the impacts of planned growth could be added to this section.

Charles A. Bookman
SDOT/Street Maintenance
700 Fifth Ave., Suite 3900
PO Box 34996
Seattle, WA 98124-4996
206-233-0044

Responses to Seattle Department of Transportation Email

(Urania Perez and Charles Bookman)

1. Comments acknowledged. Only one reviewer's comments were apparently received (see items below).

2. Heavy trucks and buses are responsible for the majority pavement damage that occurs on streets. Widely used and accepted pavement design methodologies based on the concept of Equivalent Single-Axle Loads (EASLs) do not include passenger cars in calculations due to their negligible loads and associated impacts on the pavement. The vehicle trips generated by the proposed Master Plan developments would consist primarily of passenger vehicles. The resulting impacts to the adjacent street pavements would be negligible and is not anticipated to an impact on scheduled street maintenance and resurfacing.

While more resurfacing work remains, SDOT set a paving and resurfacing record in 2004 with the highest level of lane-miles paved since 1998; about 64 lane miles. Seattle allocates funds annually for street resurfacing. SDOT manages the resurfacing programs, monitoring street conditions, and selecting streets to be paved. SDOT is aiming for similar results in 2005. (Source: SDOT Director Grace Crunican).

STATE OF WASHINGTON

Office of Archaeology and Historic Preservation

1063 S. Capitol Way, Suite 106 • Olympia, Washington 98501
(Mailing Address) PO Box 48343 • Olympia, Washington 98504-8343
(360) 586-3065 Fax Number (360) 586-3067

December 3, 2004

Mr. Michael Jenkins
City of Seattle Department of Planning & Dev.
700 5th Avenue, Suite 2000
PO Box 34019
Seattle, WA 98104-1703

In future correspondence please refer to:
Log: 120304-03-KI
Property: Swedish Medical Center EIS & Master Plan
Re: Draft EIS

Dear Mr. Jenkins:

Thank you for contacting the Washington State Office of Archaeology and Historic Preservation (OAHP). The above referenced project has been reviewed on behalf of the State Historic Preservation Officer under provisions of Section 106 of the National Historic Preservation Act of 1966 (as amended) and 36 CFR Part 800. My review is based upon documentation contained in your communication. **1**

My review comments are based specifically on the "Historic and Cultural Preservation Section" of the draft EIS for the Swedish Medical Center (pgs 112-125). The level of historic review for the various resources in my opinion is inadequate for a correct assumption of historical significance, either pro or con, specifically the 900-903 Boylston Ave, 819-821 Boylston Avenue, and the 910 Boylston Avenue properties. **2**

Within the text it notes that all three of these resources are intact with little alteration. Potential historical significance for these resources was not discussed at all. Perhaps the 819-821 and 900-903 Boylston Buildings (which are over 50 year sold) are good examples of small medical facilities built during the immediate post war period. They might be good examples of the work of NBBJ during the late 1940s. Neither of these questions have been answered in the draft EIS. **3**

Additionally the 910 Boylston Avenue property was designed by noted northwest architect Paul Hayden Kirk. While it is clearly newer than 50 years old, the draft EIS offers no discussion of this resource in its historical context, comparing it to other works by the architect, or other medical facilities built during this time frame. **4**

You should also be aware that the 900-903 Boylston Ave, 819-821 Boylston Avenue structures are found in Group 1 & 3, within the "Impacts Section". This is confusing to the reader. I would agree with the author that the Invex Building and Blue Cross/Annex Building are most likely eligible for the National Register of Historic Places. **5**

ADMINISTERED BY DEPARTMENT OF COMMUNITY, TRADE & ECONOMIC DEVELOPMENT

At a bare minimum, I would suggest that State Historical Inventory forms be completed for all of the structures within the project area. Additionally a thorough discussion should be developed for each of these resources explaining why they do or do not meet the local, state or national register criteria. 6

Thank you for the opportunity to review and comment. Should you have any questions, please contact me.

Sincerely,

Michael Houser
Architectural Historian
(360) 586-3076
MichaelH@cted.wa.gov

Responses to State of Washington Office of Archaeology and Historic Preservation Letter

1. With regard to consideration of Section 106 of the NHPA, the applicant has verified that there is no Federal agency action, i.e. no Federal licensing, permitting or funding decisions associated with the projects.

2. The more detailed and separate Historical Preservation Appendix on file with DPD was subsequently sent to Mr. Houser (see following transmittal). This document (with about 55 pages) was referenced on page 114 of the Draft EIS but a copy was not originally sent to the State. It was incorporated by reference to the EIS and is available to the public from DPD. It is included in this Final EIS as Appendix 7.

3. The three referenced buildings were assessed and the historical consultant found that they are within "Group 3: Properties which are not likely to meet national or local designation criteria" (see Draft EIS page 125). The three building inventories from the Historical Preservation Appendix are identified as Inventory #1-900-903 Boylston, Inventory #2-819-821 Boylston and Inventory #7-910 Boylston. These inventories are included in this document–see Appendix 7. Also see the last letter in this section from the Seattle Landmarks Preservation Board that indicates that they believe none of the buildings are eligible for local landmark designation.

4. An individual building inventory for 910 Boylston and a brief biography of Paul Hayden Kirk were completed in the Historical Preservation Appendix. The relevant sections for Mr. Kirk are on pages 328-329 of this document. Inventory #7 is on pages 352-354.

5. Both 900-903 Boylston and 819-821 Boylston were found by the historic consultant to be within "Group 3: Properties which are not likely to meet national or local designation criteria" (see Draft EIS page 125). The buildings were mentioned in the Group 1 discussion only because they met the age threshold.

The City's Landmark Preservation Officer determined that the Invex Building and Blue Cross Annex Building are not eligible for landmark designations. The author found that they would likely NOT be eligible for the National Register of Historic Places even if the do meet the 50-year age threshold.

6. Comments acknowledged. Eight Individual Building Inventories were completed for the key buildings within the project area and were documented in the Historical Preservation Appendix available from DPD. Each includes a preliminary evaluation of historical significance. That entire appendix is included in this EIS as Appendix 7, page 313.

From: Michael Jenkins
To: MichaelH@cted.wa.gov
Date: 12/10/04 3:23PM
Subject: DEIS for Swedish Medical Center

Dear Mr Houser:

This is a follow up to your December 3, 2004 letter from Office of Archaeology and Historic Preservation concerning the referenced project, your Log #120304-03-KI.

After reviewing your letter it appears that you did not get a copy of an Appendix that was prepared by Susan Boyle of BOLA. The appendix covers much of the detail that I believe you are requesting in your comments. I will forward a copy of this on to you in today's mail. This document may answer many of your questions. We will be happy to consider revised comments past the December 20 due date to assist in your review.

I apologize for any confusion.

Michael Jenkins

Michael Jenkins
Senior Land Use Planner
Dept of Planning and Development
PO Box 34019
700 - 5th Ave, #2100
Seattle, WA 98104-5070
(206) 615-1331 - tel
(206) 386-4039 - fax

CC: Chave, Beth; vince@nbbj.com

From: "Bettina" <bettina@firsthilldental.com>
To: <michael.jenkins@seattle.gov>
Date: 12/8/04 1:18PM
Subject: Swed.Med.Center First Hill Campus MIMP - Parking

Mr. Jenkins,
As a tenant of the Nordstrom Medical Tower we were encouraged by our Building Management Company to express any thoughts relating to the MIMP directly to you.

It sounds like changes to the Madison Garage that serves the Nordstrom Medical Tower are considered in the plan. Currently the situation in
that garage is less than desirable. We have a suggestion that we have 1
expressed to CPS Parking before. Visitors should pre-pay their parking tickets either in the lobby or somewhere central in the garage before returning to their car. This would greatly reduce the enormous line-up at the exit, which often amounts to a 20 minute wait. This line-up usually winds around several floors, often blocking cars trying to enter the garage.

In case structural changes would be considered as well, it would be good to include a separate exit line for monthly park card holders. And of
course anything that can be done to re-direct traffic, so only visitors 2
to the Nordstrom Medical Tower and Arnold Pavilion are allowed to use the Madison Garage.

Thank you for considering our suggestions in the planning process.

Bettina E. Brown
Office Manager
First Hill Dental Healthcare
General & Cosmetic Dentistry
(206)622-2999
www.firsthilldental.com
bettina@firsthilldental.com

CC: <jmyrter@wrightrunstad.com>

Responses to First Hill Dental Healthcare Email

1. Thank you for the suggestion. It has been added to the list of potential mitigating measures to improve garage operation (see Final EIS pages 174-175).

2. Thank you for the additional suggestions that are added to the potential mitigating measures (see Final EIS pages 174-175). Swedish also will prepare a Wayfinding Plan with Design Guidelines to improve campus pedestrian movement and traffic/parking management. Phased implementation of the improvements is proposed by Swedish with each development project.

Orthopedic Physician Associates

Nordstrom Medical Tower • 1229 Madison Street • Suite 1600 • Seattle, WA 98104 • (206) 386-2600 • (800) 262-3435 • Fax (206) 622-1644
Seattle Spine Group • 1229 Madison Street • Suite 1650 • Seattle, WA 98104 • (206) 622-1800 • (888) 622-4344 • Fax (206) 622-1832
Jefferson Medical Tower • 1600 E. Jefferson Street • Suite 600 • Seattle, WA 98122 • (206) 325-4464 • (866) 325-4464 • Fax (206) 322-8745
MRI Suite • 900 Terry Avenue • Suite 100 • Seattle, WA 98104 • (206) 694-6665

December 9, 2004

Michael Jenkins, Sr. Land Use Planner
City of Seattle
700 Fifth Ave, Suite 2000
PO Box 34019
Seattle, WA 98124-4019

Dear Mr. Jenkins,

I've recently become aware that you are reviewing Swedish Medical Center's Master Plan. I run a large medical practice on First Hill, Orthopedic Physician Associates. I have concerns over SMC's growth in a couple of areas. Mostly this is based on previous growth, and the issues it has caused.

First is the issue of parking. I don't think SMC has ever planned sufficient parking for its many employees, patients and visitors. In addition, what parking there is has a signing issue. Our office parking for Nordstrom Tower is often confused for either the hospital, 1101 Madison building or for Physician parking. SMC can and should be made to improve this by building more parking, limiting use of lots, and better signage. To date I have found the hospital uninterested in addressing this matter with our building management. 1

Second, SMC has created sky bridges to connect buildings but they have not invested in access to the bridges from their own properties. Instead, they direct patients through the Nordstrom Tower to access their bridge. As a result, our elevators are very overtaxed, leading to excessive wait times. In addition, our employees and security personnel have been inundated with more and more lost or confused patents asking for directions. Moreover, since the 1101 building is understaffed in security, involvement of our own building security is frequently necessary. Swedish Medical Center should build its own elevators or operate the escalators they have, fully staff for safety and directions, and not rely on those of other buildings and businesses. 2

I encourage you to not approve any future plans of SMC that do not include much better parking, signage, restricted use of parking, fully staffed security and independent access to their buildings and walkways.

Sincerely,

Susan Pursell

Susan M. Pursell
Administrator

Responses to Orthopedic Physician Associates Letter

1. Comments acknowledged. Parking supply, parking demand, and code required parking are the types of parking numbers that must be balanced along with the City's required Transportation Management Program (TMP) that seeks to discourage car usage, particularly single-occupant vehicle trips. The analysis found that the proposed parking is within the minimum/maximum code required range and sufficient to meet demand (see Draft EIS pages 170-171). The Swedish off-street parking supply would increase from 3,743 existing spaces to 5,180 spaces; a 38% increase over the life of the master plan. The master plan standard for the maximum number of off-street campus parking is 6,000 spaces (see Draft MIMP page 45). The proposed TMP includes substantial measures to promote multiple travel modes to reduce future parking demand (see Draft MIMP pages 63-65 and Final MIMP pages 65-71).

The problem of hospital and medical office/clinics user parking conflicts at the Nordstrom garage is acknowledged. Swedish, in coordination with the Nordstrom Building management has made physical and operational changes to the Summit/Madison access. Parking signage can be improved, adequate parking can be provided, and parking operations can be made more efficient. Swedish will prepare a Wayfinding Plan and Design Guidelines that will address both pedestrian and vehicle movements. The plan will be implemented in phases with building projects. For example, hospital visitors traveling eastbound on Madison could be directed to turn right on Minor or Boylston to access hospital parking (rather than Summit). Proposed physical changes would make this route clear and free-flowing. Swedish currently directs Swedish visitors to the main hospital entrance and below-grade garage.

Swedish is committed to work with the City and building managers to create acceptable solutions that are in the best interests of all concerned. Swedish is directing Swedish visitors to the main hospital entrance and below-grade garage. The current web site map directions guide visitors from all directions to I-5, to James and to Broadway. Swedish will take additional steps to direct visitors to the appropriate locations.

2. Swedish is trying to resolve problems of pedestrian movements along with traffic management. In response to comments, Swedish will prepare a Wayfinding Plan and related Design Guidelines as noted above. In addition, mitigating measures to reduce impacts are proposed specifically for the Nordstrom Building /Summit access (see Final EIS pages 174-175). For example, Swedish proposes improvements to the escalator that would improve pedestrian movements from Madison to the Swedish skybridges to the hospital and avoid use of the Nordstrom Building elevators.

Continuing campus security is a part of the master plan proposal (see Draft EIS pages 174-179). Swedish will coordinate with SPD and SFD as well as building management.

Public Health
Seattle & King County
HEALTHY PEOPLE. HEALTHY COMMUNITIES.
Alonzo L. Plough, Ph.D., MPH, *Director and Health Officer*

RECEIVED
DEC 27 2004
DPD

December 16, 2004

Michael Jenkins
Department of Planning and Development
700 - 5th Avenue, Suite 2000
Seattle, WA 98104-1703

RE: Draft Environmental Impact Statement for the Swedish Medical Center Master Plan

Dear Mr. Jenkins:

Thank you for the opportunity to review and comment on the above referenced document. We have the following comment:

Air Quality: Effective measures need to be taken to avoid any increase in traffic generated air pollutants as these pollutants specifically affect the population served by the facility as well as the surrounding community. Effective measures include proper traffic control during construction. 1

If you have any questions regarding this comment, please contact Paul Shallow at (206) 296-4784.

Sincerely,

Ngozi T. Oleru, PH.D., Director
Environmental Health Services Division

cc: Bill Lawrence, Manager, Environmental Health Hazards Section
Paul Shallow, Acting Supervisor, Special Projects

Environmental Health Services Division
999 Third Avenue, Suite 700 · Seattle, WA 98104-4039
T 206-205-4394 F 206-296-0189 TTY Relay: 711
www.metrokc.gov/health

City of Seattle
Gregory J. Nickels, *Mayor*

King County
Ron Sims, *Executive*

Response to Seattle & King County Public Health Letter

1. The Swedish Transportation Management Program (TMP) reduces traffic and subsequent traffic generated air pollutants. Swedish will comply with PSCAA air quality standards. In addition, mitigation to the extent possible will be taken related to diesel exhaust as recommended by PSCAA (see following letter and responses). Construction related air impact mitigation is also proposed (see Draft EIS page 191 and Final EIS pages 24 and 193).

PUGET SOUND
Clean Air Agency

Working Together For

www.pscleanair.org

Ph 206 343 8800
1 800 552 3565
Fax 206 343 7522

110 Union Street
Suite 500
Seattle, WA 98101-2038

December 20, 2004

Dear Michael Jenkins,

Thank you for the opportunity to comment on the Draft Environmental Impact Statement for Swedish Medical Center (Project #24000078, dated November 18, 2004). Puget Sound Clean Air Agency (PSCAA) has two comments to provide on this report. 1

First, we can provide more recent data to update the Air Quality section beginning on page 23. Data for 2002 presented on pages 23 and 24 can be replaced with 2003 data (see Attachment A).

Secondly, we would like to suggest that, to the extent possible, diesel exhaust should be controlled in the area of the First Hill Campus. Diesel particulate matter (DPM), a component of diesel exhaust and subset of fine particulate matter ($PM_{2.5}$), is associated with various adverse health effects. Sensitive populations such as children, the elderly, and people with compromised immune systems are more adversely affected. The four loading docks located near the four drop-off and pick-up sites (page 135 of report) present the
potential for elevated exposures to DPM. Patients being dropped off or 2
picked up are more likely to be included in the sensitive populations group. We conducted a regional air toxics evaluation and estimated that approximately 85% of cancer risk from air pollution comes from diesel exhaust. Additional studies have associated a variety of adverse health effects with DPM and $PM_{2.5}$ exposure, primarily lung and cardiovascular. A list of these studies is provided in Attachment B.

Stricter federal vehicle emissions standards will contribute to reduced risk of any violation of motor-vehicle related ambient air quality standards, as stated on Page 201 of the draft EIS report. However, the benefits of these stricter standards won't be widespread for 20 years because of the durability of diesel engines. PSCAA's Diesel Solutions Program® was developed to begin some of these risk reductions before federally mandated, and to further reduce risk beyond federal standards. We encourage you to incorporate diesel reduction 3
measures at the First Hill Campus. Please visit http://www.pscleanair.org/dieselsolutions/ds_overview.shtml for more information, and do not hesitate to contact Paul Carr at (206)689-4085 for more information. Example strategies that could be easily implemented at the First Hill Campus include:

- When making construction contracts, require that contractors are at the least using ultra-low-sulfur-diesel (available in Puget Sound), and ideally have equipment that has been retrofitted with diesel control technology.

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- Ongoing anti-idling measures (with applications as simple as posted signboards) can be taken to reduce DPM near the loading docks.
- Maintaining contracts with operators who practice regular fleet maintenance will likely help to reduce DPM in the area.

3 CONT

The mission of Swedish Medical Center is "to improve the health and well-being of each person served". We believe that protecting patients and others from harmful diesel exhaust and particulate matter is an important means to fulfill that mission. Thank you for your consideration of these comments.

Sincerely,

Kathy Himes

cc:
John Anderson
Paul Carr
Central Files

Attachments:
A Updated Air Quality Information for Swedish Environmental Impact Statement
B Health Effects of Diesel Particulate Matter (DPM) and Fine Particulate Matter ($PM_{2.5}$)
C Final Report: Puget Sound Air Toxics Evaluation, Executive Summary. Puget Sound Clean Air Agency. October 2003

Attachment A

Updated Air Quality Information for Swedish Draft Environmental Impact Statement

2003 Data

Bottom of Page 23: Sentence can be replaced with:

In Puget Sound, the number of 'good' air quality days dominates regionally. There were no violations of national ambient air quality standards (NAAQS) in 2003[a]. The Air Quality Index (AQI) was developed by the EPA and is commonly used as an indicator of air quality. In 2003, King County had 73% of days ranked as "good" with the AQI criteria.

[a]2003 Air Quality Data Summary. Puget Sound Clean Air Agency. September 2004. http://www.pscleanair.org/ds03/index.htm

Top of Page 24: Sentence can be replaced with:

In King County for 2003, the AQI ratings were 'good' 73% of the year; 'moderate' 26% of the year; and 'unhealthy for sensitive groups' 1% of the year. There were no 'unhealthy' ranked days. In 2003, there was one burn ban issued in February that prohibited burning in fireplaces and older, uncertified wood stoves. There was also one smog watch issued in July 2003 when meteorological conditions were conducive to high ozone levels.

Inclusion of Diesel Exhaust (Optional, relates to Diesel Solutions comments)

Top of Page 25:

After sentence "Impacts are not expected to be significant and would not affect the attainment of air quality standards". Insert:

In addition, measures will be taken to reduce diesel exhaust in the area of loading docks, when possible. Diesel particulate matter (a component of diesel exhaust) does not have a specific air quality standard, but is an air toxic of high concern at the Puget Sound Clean Air Agency.[b]

[b] Final Report: Puget Sound Air Toxics Evaluation. Keill and Maykut. Puget Sound Clean Air Agency. October 2003.
http://www.pscleanair.org/news/other/psate_final.pdf

Attachment B

Health Effects of Diesel Particulate Matter (DPM) and Fine Particulate Matter ($PM_{2.5}$)

A regional air toxics evaluation estimated that approximately 85% of cancer risk from air pollution comes from diesel exhaust, a component of fine particulate matter. Up to 95% of cancer risk from air pollution comes from mobile sources.
Keill and Maykut. Final Report: Puget Sound Air Toxics Evaluation. Puget Sound Clean Air Agency in conjunction with Washington State Department of Ecology. October 2003.

Numerous human and animal cancer and non-cancer studies are referenced in California EPA's diesel exhaust risk assessment, which shows multiple health endpoints associated with diesel exhaust. These endpoints include deleterious effects on lung function, exacerbation of asthma and allergies, and lung cancer.
Dawson et al. Health Risk Assessment for Diesel Exhaust: Part B. Office of Environmental Health Hazard Assessment, California Environmental Protection Agency. May 1998.

A U.S. EPA School Bus Idling Fact Sheet states that diesel exhaust is among air pollutants that pose the greatest health risk. Diesel exhaust is linked with lung damage, respiratory problems, exacerbation of asthma and allergies, and likely long-term increase in risk of lung cancer. The fact sheet also comments on the particular vulnerability of children, who breathe 50% more air per pound of body weight than adults.
U.S. EPA. What You Should Know About Diesel Exhaust and School Bus Idling. Air Pollution and Kids. April 2003.

A study of patients with cardiovascular disease showed a statistically significant association with transient exposure to traffic and the onset of a myocardial infarction within one hour afterward.
Peters, et al. Exposure to Traffic and the Onset of Myocardial Infarction. The New England Journal of Medicine. Volume 351: 1721-1730. Number 17. October 21, 2004.

A study of cystic fibrosis patients showed that exposures to elevated particulate matter levels were associated with reduced lung function and an increase in the odds of a patient having two or more exacerbations.
Goss et al. Effect of Ambient Air Pollution on Pulmonary Exacerbations and Lung Function in Cystic Fibrosis. American Journal of Respiratory Critical Care Medicine. Volume 169: pp 816-821. January 12, 2004.

A study of children showed that exposures to elevated concentrations of fine particulate matter between the ages of 10 and 18 was associated with clinically and statistically significant reduction of lung function.
Gauderman et al. The Effect of Air Pollution on Lung Development from 10 to 18 Years of Age. The New England Journal of Medicine. Volume 351: 1057 – 1067. Number 11. September 9, 2004.

PUGET SOUND
Clean Air Agency

Final Report: Puget Sound Air Toxics Evaluation

Executive Summary

October 2003

Leslie Keill and
Naydene Maykut

Puget Sound Clean Air Agency
in conjunction with
Washington State
Department of Ecology

For more information about this report, call Leslie Keill at (206) 689-4022

Puget Sound Clean Air Agency
110 Union Street, Suite 500
Seattle, WA 98101-2038
(206) 343-8800 or
(800) 552-3565
www.pscleanair.org

Printed on recycled paper, October 2003

This report was released as a draft in 2002 and we received comments on the draft from a variety of reviewers. These reviewers include Dr. Sally Liu from the University of Washington, Dr. Jane Koenig from the University of Washington, Dr. David Solet from the Metro King County Public Health Department, Dr. Matt Kadlec from the Washington Department of Ecology, Dr. Harriet Ammann from the Washington Department of Health, Ms. Julie Wroble from the US Environmental Protection Agency, and Dr. Kay Jones from Zephyr Consulting Company. We also received comments from Dr. Houck of Omni Consulting on behalf of the Hearth Products Association.

The authors addressed many of these comments in this final report. We would like to thank our reviewers, and appreciate the time they took to provide valuable feedback on our draft.

Executive Summary

The Puget Sound Clean Air Agency conducted this screening study to identify chemicals and emission sources that pose the greatest potential health risks to citizens in the Puget Sound region. We also hope to better characterize the potential health risks to our three million residents from a group of air contaminants referred to as air toxics. This study is intended to assist the Agency in focusing resources on those emissions and sources that may pose the highest risks. The results should also help improve air toxics regulations and voluntary programs. The estimates of cancer and non-cancer health effects should not be viewed as actual cancer or non-cancer cases resulting from air pollution but as an estimate of relative impact of the evaluated toxic-air pollutants so the Agency can prioritize its efforts to reduce air pollution.

Defining Air Toxics

Air toxics are different from the 6 traditional air pollutants or "criteria pollutants" that have been regulated by environmental regulatory agencies for a number of years. Our agency defines "air toxics" as a broad category of chemicals that covers over 400 air pollutants along with woodsmoke and diesel particles. Similarly, the United States Environmental Protection Agency (USEPA) commonly refers to "air toxics" as a synonym for the 189 hazardous air pollutants listed in the 1990 amendments to the federal Clean Air Act. Because resources are not available to evaluate every chemical, this study evaluates a short list of 17 to 30 air toxics. We hope to expand the list of toxics when more resources become available.

Persistent, Bioaccumulative Toxics (PBTs)

Some persistent, bioaccumulative toxics (PBTs) such as mercury, polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), cadmium, and arsenic were included in our study. However, we evaluate potential health risks only from the inhalation pathway, as the ingestion pathway was considered to be beyond the scope of this study.

Methods

This study uses basic risk assessment concepts and models, such as toxicity and exposure assessment, to provide a general overview of the potential health impacts that could be due to air toxics. Because of limited resources, this report does not perform a comprehensive risk

assessment, which would include more detailed analyses and discussion of toxicity and exposure parameters, as well as a more in-depth risk characterization section. More comprehensive information on various details of this study can be found in the technical support documents referenced throughout this report.

Toxicity

The toxicity chapter includes dose-response information on the variety of air toxics evaluated in the Puget Sound region. The majority of this information is based on toxicity analyses performed by USEPA and included in their Integrated Risk Information System (IRIS). For some chemicals and mixtures, such as diesel particulate matter, chromium, and woodsmoke, we depart from recommended USEPA IRIS toxicity values. For example, for diesel particulate matter, we use the California Environmental Protection Agency's toxicity evaluation. Our rationale for this and other departures is described in the toxicity chapter.

Exposure

The toxicity values described above are combined with exposure assessment information to estimate both cancer and non-cancer potential health risks. We use results from three different exposure assessments to characterize air emissions and to estimate potential exposure concentrations for the residents of the Puget Sound area. These three exposure assessments include a monitoring study conducted in the greater Seattle/King County area, and two modeling assessments conducted as part of USEPA National-scale Air Toxics Assessment (NATA) in the four counties in the Puget Sound Clean Air Agency jurisdiction (King, Kitsap, Pierce, and Snohomish counties).

The monitoring study, which was conducted by the Washington State Department of Ecology in partnership with the Puget Sound Clean Air Agency and USEPA, sampled outdoor air at six different locations throughout the greater Seattle/King County area during 2000 and 2001. These six locations include areas near or in Beacon Hill, Georgetown, Lake Sammamish, Lake Forest Park, the Maple Leaf reservoir in north Seattle, and the city of SeaTac.

In addition to the monitoring study, we used exposure estimates from two models used by USEPA in their nationwide air toxics study entitled the National-scale Air Toxics Assessment (NATA). In this study, USEPA predicts outdoor air concentrations using the ASPEN model for 32 air toxics in counties across the country. We obtained the outdoor air concentrations for the four Puget Sound counties, compared them to monitored concentrations, and calculated potential health risks associated with those concentrations.

The third model used to predict exposure concentrations is also part of the NATA study. This model, entitled the Hazardous Air Pollutant Exposure Model4 (HAPEM4), predicts human exposures to the outdoor air pollutants by considering typical human behaviors and micro-environments where these outdoor pollutants might accumulate or dissipate. For example, this model uses average commute time estimates for a variety of individuals to estimate potential exposures to vehicle exhaust while riding in cars or waiting in traffic. Exposures such as these are combined for multiple activities and locations to estimate an average exposure concentration for each of the 32 air toxics for different population groups.

All exposure concentrations are based on annual averages or medians (the 50^{th} percentile), and residents are assumed to be exposed for 70 years, an average lifetime for an individual. We also assumed that these residents are healthy adults. Because of limited resources, we did not include exposure or toxicity adjustments specific to children, such as changes to body weight. Some health-protective assumptions (e.g., assuming a 70-year exposure period) are included in the toxicity estimates to protect sensitive people such as the elderly or diseased individuals. The health risk estimates are based on a combination of average and reasonably conservative or health-protective assumptions. *This is expected to lead to risk estimates that are reasonably high for the chemicals included in the analysis, but not worst case.*

Results

The primary health effect of concern from the chemicals evaluated in this study is cancer. More specifically, lung cancer is associated with both diesel soot and woodsmoke, although it is also associated with 1,3-butadiene, a mobile source-related contaminant. In addition to lung cancer, leukemia, nasal, and liver cancers are associated with chemicals that ranked high (e.g., benzene, formaldehyde) in our study. The majority of the cancer risk estimated in our study is due to diesel soot. On average, diesel soot accounts for somewhere between 70% to 85% of the total cancer risk from air toxics in our area. Of the PBTs, arsenic is the only single compound to appear among the top ranking toxics, however, DPM and woodsmoke include numerous PAHs, so we conclude that these mixtures also contribute PBTs to the air in the Puget Sound region.

Our study found that the significant non-cancer health effects from air toxics in our area are primarily due to acrolein. This chemical is associated with upper respiratory irritation.

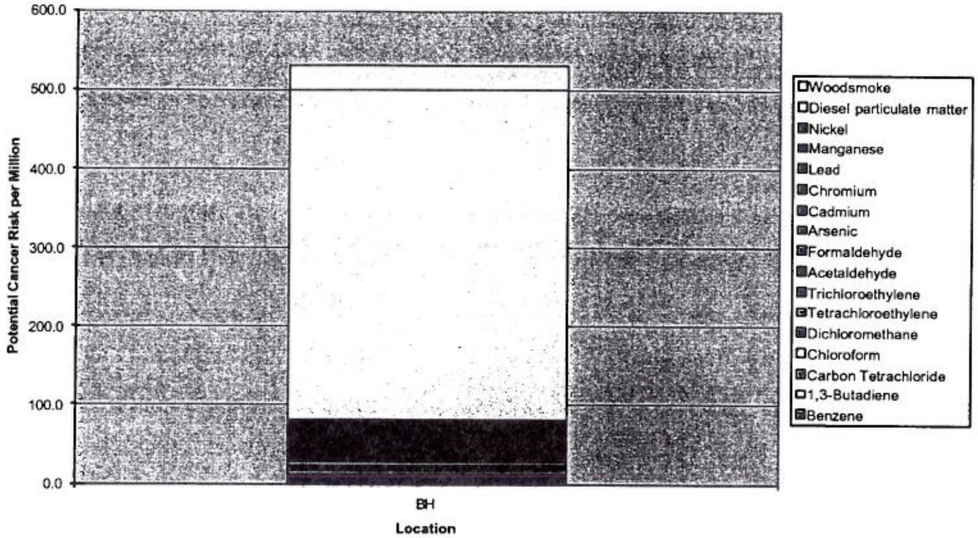
It is important to note, however, that our study does *not* include the serious non-cancer health effects associated with the particle fraction of 2 air toxics: diesel soot and woodsmoke. Non-cancer health effects associated with these particles have been extensively studied and documented in the scientific literature, and a full analysis is beyond the scope of this study.

Potential Cancer Risks

The average cancer risk estimates, even when human and pollutant movement/penetration are considered, are similar among the different methods of calculating exposure concentrations, and across different areas of the Puget Sound region. For example, average cancer risk estimates for King County alone range from approximately 400 to 700 in a million, based on 32 air toxics from the human exposure model and outdoor model data, respectively.

The average cancer risk estimates for the monitored data are approximately 550 in a million for the Beacon Hill area (see Figure ES-1). As described above, the monitoring study only looked at a total of 17 air toxics. The total cancer risks associated with the King County modeled estimates are higher because they include more chemicals, not because the estimates of each chemical are higher.

Figure ES-1: Potential Cancer Risks at Beacon Hill including Diesel Particulate Matter and Woodsmoke



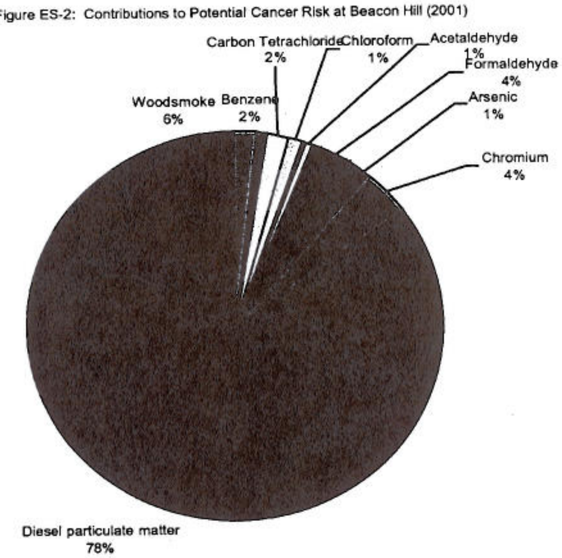
The average cancer risk estimates are also similar in the remaining three counties in the Puget Sound jurisdiction (Kitsap, Pierce, and Snohomish counties), although we do not have monitored information to confirm our findings. The estimated cancer risks range from 400 in a million for all air toxics included in the HAPEM4 model in Snohomish County, including diesel soot, to a high of 600 in a million as an average for 32 ASPEN-modeled ambient concentrations in King County, including diesel soot. All risk estimates reflect a 70-year exposure period. Upper 95th percentile risk estimates based on the modeled ambient concentrations are approximately 980 in a million for King County.

The air toxics that contribute most to the cancer risks are also consistent across the different methods of analysis. **The top toxics for all 3 methods include diesel soot, benzene, formaldehyde, and carbon tetrachloride**. **Woodsmoke** also contributes to the risk estimates based on the monitored data.

In addition, the percent contribution of the top air toxics is also very similar across the different methods of analysis. For example, at Beacon Hill, diesel soot accounts for over 75% of the potential cancer risks (see Figure ES-2) with another 10% or so coming from volatile organic compounds (VOCs) associated with mobile sources. The King County results from the outdoor

NATA model estimate diesel particulate matter at 86%, with other mobile-source-related chemicals at about 8%, and stationary-source-related chemicals at about 6%. Similarly, the NATA human exposure results indicate a diesel soot contribution of 86%, with other mobile-source-related chemicals at 7%, and stationary sources at about 4%. ***This indicates that mobile sources are likely to account for approximately 85% to 95% of the potential cancer risks among outdoor air toxics.***

Figure ES-2: Contributions to Potential Cancer Risk at Beacon Hill (2001)



The only emission source that ranks high in the monitoring data but not in the modeled data is woodsmoke. This is because woodsmoke emissions are estimated differently. The modeled concentrations associated with woodsmoke reflect very few chemicals in the woodsmoke mixture, while the concentrations based on monitored data reflect a greater number of chemicals present in woodsmoke.

Uncertainties

The large number of assumptions necessary in our study reflects the amount of uncertainty and variability associated with the health risk estimates. It is possible that risk is underestimated because (1) not all air toxics are considered in this analysis, and (2) many chemicals have been shown to accumulate in indoor micro-environments, which could increase exposure. In addition, potential cancer estimates will underestimate risk for those individuals living near large point sources or "hot spots". Alternatively, risk may be underestimated or overestimated by assuming that the concentration at the monitor accurately reflects lifetime exposure to ambient pollutants. Obviously, chemical concentrations could increase or decrease throughout the lifetime exposure period.

It is important to note that this analysis does not evaluate indoor sources of air pollution (i.e., from paints, home furnishings, cleaning products, building materials, and other indoor sources). Uncertainties in the toxicity information could also serve to over- or underestimate potential risk estimates. These are only a few of the uncertainties associated with this study. A more detailed discussion can be found in Chapter 5.

In summary, we use screening risk estimates as a tool to focus Clean Air Agency attention on those compounds and mixtures that are likely to present the greatest risk of cancer and some non-cancer effects. Concentrations, and corresponding risks, were relatively consistent among areas measured and modeled throughout the Puget Sound region. Although some differences were apparent, overall it is clear that the sites and the region as a whole have similar emission sources of concern (e.g., diesel particulate matter, mobile-source-related VOCs, and probably woodsmoke).

Diesel soot ranks high in potential contributions to cancer risk, higher than other air toxics measured in this study. However, volatile organics associated with mobile sources, such as benzene and formaldehyde, contribute significantly to the potential cancer risks from air toxics. Diesel soot, benzene, 1,3-butadiene, and formaldehyde are classified as class A or B carcinogens under the USEPA cancer rating system. This indicates that USEPA is relatively confident that these chemicals probably cause cancer in humans. These chemicals should have high priority during development of an air toxics reduction program for the Puget Sound area. Finally, acrolein appears to present a potential non-cancer risk as well. As stated earlier, the non-cancer health effects associated with the particulate-matter-related combustion mixtures (e.g., woodsmoke and diesel soot) are not evaluated here, but present serious non-cancer health risks

Responses to Puget Sound Clean Air Agency (PSCAA) Letter

1. Thank you for the more recent air quality data. This section in the Final EIS is updated with the new 2003 data per your Attachment A (see Final EIS pages 21-22).

2. Swedish agrees with the need to mitigate diesel exhaust and includes the recommended mitigating measures (long-term and short-term) with the master plan proposed projects (see Final EIS pages 24 and 193).

3. Comments acknowledged. The example strategies are included in the Final EIS as mitigating measures.

City of Seattle

Gregory J. Nickels, Mayor

Department of Planning & Development

Diane M. Sugimura, Director

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NBBJ

DEC 21 2004

December 20, 2004

Vince Vergel de Dios
NBBJ
111 S Jackson St
Seattle, WA 98101

Re: Comments on Draft MIMP for Swedish Medical Center

Dear Vince:

The following comments concern the Department of Planning and Development's review concerning the draft Major Institution Master Plan for Swedish Hospital dated November 15, 2004. These comments are provided per SMC 23.69.032D9.

1. SMC 23.69.030C4 requires a pedestrian circulation plan, which should also include an analysis of the impacts of the sky bridges on the pedestrian network. The MIMP does not provide a specific plan expressed either graphically or in narrative and should be updated accordingly. 1
2. SMC 23.69.030E5 requires disclosing properties that are within 2500 feet of the Major Institution Overlay (MIO) that are owned or leased by Swedish Medical Center. There is some discussion in the MIMP about the 600 Broadway property. This information should be more fully stated, to include Swedish Providence, the Downtown Clinic, etc., and be shown in a map format. 2
3. SMC 23.69.030E11 requires an analysis of how the proposed MIMP is consistent with the purpose and intent of the Major Institution code, including those provisions stated in SMC 23.69.006. 3
4. SMC 23.69.030E13(b) requires a statement of purpose of the development proposed in the Master Plan, including what the public benefits are of the new development and how its serves the public purpose mission of Swedish Medical Center. This does not appear to be in the document. 4
5. SMC 23.69.030H allows for an analysis in the MIMP of the land use, transportation and parking impacts when 2 or more institutions are located in close proximity. This should be included in the MIMP. 5
6. There does not appear to be any analysis on the rezones that are included with the MIMP. SMC 23.69.030C anticipates an analysis to be included in the MIMP, to support the requests under SMC 23.34.008-009 and 23.34.124, including an analysis of the proposed zoning change and height limits. In addition, will the underlying MR and HR zoning be modified as part of the rezone analysis? 6
7. On Page 9, a series of Design Precepts have been proposed. What is missing from this list is how these will be implemented. These precepts should include a series of goals, how they will be implemented and the time frame for implementation, where appropriate. 7
8. A chart should be included that shows the code related development standards, the current MIMP standards and the proposed standard under this MIMP. 8

City of Seattle, Department of Planning & Development
700 Fifth Avenue, Suite 2000, Seattle, WA 98104-5070

9. Where appropriate, development standards for setbacks, landscaping, open space, etc should be expressed graphically. 9
10. The amount of FAR should be expressed not only as a gross figure but shown on a block by block basis, where possible. Also, this should be expressed in massing diagrams. 10
11. The proposed 10 foot setback with landscaping is consistent with the code but SMC 23.45.096 allows for up to 25% of landscaping to be in decorative pavings. This and other related standards should be included in the setback information and shown in text and graphically. 11
12. Any setback and use requirements due to the P zone along Madison and Broadway should be disclosed and provided for in the development standards. 12
13. The ACU cannot be included with the MIMP, unless a complete application is on file and is reviewed concurrently with this MIMP, per review by the City's Law Department. 13
14. The Historic Preservation research by Susan Boyle should be referenced in the MIMP and included in the body fo the MIMP or as an attached Appendix. 14
15. For the Transportation Management Plan, the section should be updated to reflect DR 14-2002, as well providing more explicit analysis based on requirements in SMC 23.54.016. 15
16. Wayfinding as it pertains to traffic management has been an ongoing issue. A specific plan that deals with this should be included in the MIMP, with a plan for short and long range implementation. 16
17. The MIMP does not include any proposed development conditions that will need to be fulfilled during construction or over the life of the use. Such conditions will be reviewed and approved as part of the MIMP. Typical conditions from other MIMP's include:

    - Conditions related to construction or operation of a specific building or use
    - Requiring a standing DR committee for certain projects, required prior to MUP approval 17
    - Construction traffic management plans
    - Conditions related to approval of sky bridges and or tunnels
    - Conditions for uses as part of new development, in particular on Broadway or Madison
    - Conditions resulting from additional bulk and scale as a result of the rezone
    - General conditions related the development on blocks where rezones are approved
    - Conditions related to the new development on the site of the alley vacation

Sincerely,

Michael Jenkins
Senior Land Use Planner

cc: Steve Sheppard
Jim Rothwell

Responses to DPD letter

1. A pedestrian circulation plan is added to the Final MIMP (page 27). Additional analysis of skybridge impacts to the pedestrian circulation is added to the Final EIS (page 168).

2. Properties owned by Swedish that are outside but located within 2500 feet of the First Hill MIO District include the 600 Broadway medical office building (noted on page 11 of the Draft MIMP) and the Providence campus (500 17th Avenue, noted on page 39 of the Draft EIS). Swedish leases a clinic in downtown space (1001 4th Avenue). Swedish recently leased about 60,000SF of space at the Metropolitan Park office in downtown for administrative functions. No other properties are owned or leased by Swedish outside its campus boundaries and within 2500 feet. Swedish recently sold several buildings on the First Hill campus but retained ownership of the property (including sale of the 600 Broadway office building and parking garage). All information is further detailed and added in the Final MIMP (see pages 11-13).

3. The analysis of the relationship of the Swedish master plan with the Seattle Comprehensive Plan Major Institution Goals and Policies has been expanded to include analysis of the 'purpose and intent' and 'application of regulations' of the Major Institution code (see Final MIMP Table 2.3).

4. The development purpose and public benefits are discussed in a section of the MIMP with that same title (page 26 of the Draft MIMP). Further public benefits from Swedish are included in the analysis of the relationship of the master plan with the Seattle Comprehensive Plan Health Goals/Policies (see Draft MIMP Table 2.4). The information is repeated in the Final MIMP.

5. The cumulative impact analysis was included in the Draft EIS. Specifically, the land use and development activity included other First Hill major institutions (see Draft EIS pages 46-50). The impact area of the map coverage extends over First Hill and notes the nearby major institutions (Final EIS Figures 3.5 and 3.6, corrected to note Harborview). Specific project impacts are listed (including Virginia Mason, Harborview and Seattle University projects in Final EIS Table 3.10). The transportation and parking analysis also accounted for the other major institutions. See pages 200-202 of the Draft EIS that specifically names the major institutions and analyzes transportation, parking, air quality, energy, population and housing and public services and utilities cumulative impacts. The information is repeated in the Final EIS (see pages 202-204).

6. Page 57 of the Draft EIS lists the MIO district height criteria and general rezone criteria. An analysis of the two proposed MIO height district rezones is added to the Final EIS (see page 56).

The master plan proposes to replace the underlying zoning by master plan development standards (Draft MIMP pages 51-60). A specific comparison of the standards of the underlying zones, the proposed master plan and the prior master plan is given in Table 3.11, Draft EIS page 59-61. This table is added to the Final MIMP as Appendix D.

7. Additional information on proposed implementation of the Design Precepts is added to the Final MIMP. Swedish proposes phased, incremental implementation of campus improvements with each master plan project. Specifically, each project would implement its block frontages portion of the campus.

The goal is stated as "renewing the First Hill campus development vision to reflect what Swedish seeks to accomplish over the next 15 years and beyond." More specific objectives are also listed (Draft MIMP page 8).

8. A detailed chart comparing code related development standards was included in the Draft EIS (page 59-61) and it is repeated in the Final MIMP as Appendix D. The proposed master plan development standards would replace underlying zoning and prior master plan standards as detailed in the chart and explained in the MIMP (Draft MIMP pages 51-60).

9. Setbacks and height are graphically expressed in the series of street section diagrams (Draft EIS pages 106-111). Open spaces, including the 'designated open space' and street trees are graphically shown on Draft MIMP Figure 2.15, page 49. Other campus patterns, such as inpatient/outpatient/emergency/service circulation (Draft MIMP Figure 2.3-2.10, pages 18-25) and parking and vehicular access (Draft MIMP Figure 2.14, page 47) are shown graphics. A new pedestrian circulation graphic is added to the Final MIMP (page 27). The campus development vision is depicted in a 3-dimensional diagram (Draft MIMP Figure 1.3, page 9). A new setback graphic is added to both the Final MIMP and Final EIS. Other standards and design guidelines are less appropriate for graphic representation.

10. The development density (FAR standard) is proposed consistent with code requirements for the total MIO District (23.69.030E2). Swedish proposes no density standard by individual project. However, the EIS estimated maximum allowable building envelopes by site (i.e., maximum heights, minimum setbacks, maximum coverage, etc.), as depicted in the 3-dimentsional drawings (including Draft EIS Figures 3.33-3.35, pages 91-93) to analyze 'worst case' impacts. Other massing diagrams describing Planned and Potential Projects (Draft MIMP Figure 2.12, page 44 and Figure 2.16, page 51) also show the maximum allowable building envelope. Additional explanation is added to the Final MIMP (page 58).

11. Additional information related to permitting decorative paving within structure setback areas is added to the Final MIMP. Modifications to the underlying zoning standards are expressed in the proposed master plan development standards.

12. The P-1 Overlay Zone along Madison Street is particularly relevant to street level uses as noted on page 63 of the Draft EIS. Other development standards of the P-1 zone, including setbacks (none required) are included in Table 3.11, pages 59-61 of the Draft EIS. For clarity, this table is repeated in Appendix D of the Final MIMP.

13. Comment acknowledged.

14. The reference is noted in the Final MIMP (page 62) and the entire appendix is included in this document (see Appendix 7).

15. The list of TMP elements has been re-organized and expanded to be consistent with DR 14-2002.

16. A new Wayfinding Plan will be prepared by Swedish.

17. No conditions are proposed by Swedish. Potential mitigating measures are included in the EIS. It is expected that appropriate conditions would be included in the DPD Director's Report following review of the Final MIMP and Final EIS.

SWEDISH MASTER PLAN CITIZENS ADVISORY COMMITTEE

December 20, 2004

Michael Jenkins
Senior Land Use Planner
City of Seattle Department of Planning and Development
Seattle Municipal Tower - 21st Floor
700 5th Avenue
Seattle, WA 98104

RE: Swedish Medical Center Master Plan Citizens Advisory Committee Comments on the Draft Major Institution Master Plan and Draft Environmental Impact Statement

Dear Mr. Jenkins,

The Swedish Medical Center Master Plan Citizens Advisory Committee has completed its initial review of the Draft Major Institution Master Plan and Draft Environmental Impact Statement for the proposed new master plan for the Swedish Medical Center First Hill Campus. The Swedish Medical Center Master Plan Citizens Advisory Committee hereby forwards the following comments concerning these documents:

Comments concerning the overall level of proposed development, open 1
spaces and connections to the community

1. The amount and type of uses of the proposed master plan development program are appropriate. Hospital, clinical, medical office, research and other support uses are all consistent with the medical major institution

2. The CAC supports the two MIO height rezones. However, height/bulk/scale
impact mitigation is needed along Boren and at James/Broadway. (See 2
comments concerning the orientation and design of specific sites as noted in
items 6-9)

3. A campus-friendly environment that fits into the surrounding community is
proposed by Swedish and supported by the CAC. This should include
creating clearly defined campus boundaries, design elements that clearly
indicate when one has entered the campus, removal of all impediments to 3
vehicular or pedestrian entry to the campus, provision of adequate green
space near sidewalks, first floor building designs that emphasize interest at
street level and lighting levels great enough to assure pedestrian safety.

4. The final Plan and EIS should contain a more detailed analysis of potential
connections between the Swedish Campus' open spaces and pedestrian
systems with potential park and open space development in surrounding 4
areas.

5. An open and accessible campus with clear 'gateways' is desirable. More
attention should be given as to how to specifically improve the campus 5
entrances.

Comments concerning the orientation and design of development on specific sites identified in the Swedish Medical Center Major Institutions Master Plan

6. The corners of the campus should avoid being too massive, particularly at Site D at James / Broadway and Site F at Madison / Broadway (as shown on page 42 – figure 2.11 of the Swedish Medical Center Draft Major Institution Master Plan). Setbacks or other height bulk and scale appearance reducing measures should be considered for any building constructed. 6

7. The design of any building constructed on on Site D (shown on page 42 – figure 2.11 of the Swedish Medical Center Draft Major Institution Master Plan) should include a significant amount of transparency at the corner of James Street and Broadway. 7

8. The design of any building constructed on Site F (shown on page 42 – figure 2.11 of the Swedish Medical Center Draft Major Institution Master Plan) should be done in a way that emphasizes vehicular traffic turning on Boylston Avenue. 8

9. The design of any building constructed on Site A (shown on page 42 – figure 2.11 of the Swedish Medical Center Draft Major Institution Master Plan) should be done in a way that emphasizes to the maximum extent feasible a sense of entry to Minor Avenue from Madison Street. This should include consideration of street-level transparency, greater than mandated setbacks, façade orientation and other measures to promote this goal. 9

Comments concerning pedestrian and vehicular transportation

10. The flows of people and cars at Madison/Summit needs special attention. Improvements that make the Nordstrom garage more accessible are needed. 10

11. The MOB's and outpatient clinics generate the most traffic and more emphasis on policy measures in the EIS and MIMP are needed to reduce trips and parking impacts to these uses. 11

12. The MIMP should contain a specific detailed way finding plan that deals with pedestrian and vehicular traffic as it relates to the entire perimeter of the Swedish Campus, with a special emphasis in the initial phases of development on the development of strategies and methods to intercept traffic on Madison before it reaches Summit and direct it to both Minor and Boylston. 12

13. Both existing and new entrances to parking garages on the Swedish Medical Center Campus should be either re-engineered or designed to allow efficient and unimpeded entry and avoid back-ups to the public streets including consideration of payment upon exit. 13

14. In recognition of the planed function of Minor, Boylston and Marion Avenues as a major vehicular and pedestrian access streets, The MIMP should include consideration of options that would remove on-street parking from one side of each of these streets. 14

Recommendations concerning vacations, skybridges and tunnels

15. The CAC generally supports the development of skybridges and tunnels as necessary to promote logical circulation so long as the need for each is fully evaluated during the permitting and environmental review processes. At this time the CAC does not support Skybridges or tunnels in addition to those shown in this MIMP. 15

16. The alley vacation proposed between Columbia and cherry is reasonable and is supported by the CAC. The previously proposed Boylston street segment vacation is not supported and the CAC agrees with its elimination from the master plan. **16**

Recommendation concerning historic designations

17. It is the opinion of the members of the Swedish Medical Center Master Plan Citizens Advisory Committee that the Invex and Annex building likely have no historical significance. Some terra cotta details on the North/northeast building are of interest and efforts should be taken to remove/preserve/display the artifacts before their demolition. **17**

Recommendation concerning construction impacts

18. The CAC is concerned with construction impacts, especially if multiple First Hill projects occur simultaneously or are extended over time. When project phasing is determined, the City needs to mitigate the short-term impacts. **18**

Recommendation concerning utilities

19. The final EIS should contain additional and more definitive information concerning possible deficiencies in area utilities service (with particular emphasis on the provision of water and sewer services) related to the cumulative development associated with the Swedish Medical Center Major Institutions Master Plan's planned and potential projects. This analysis should include a full and comprehensive identification of measures to address and mitigate potential deficiencies **19**

Thank you for the opportunity to comment on these documents at this early phase in their development.

Sincerely

James P Rothwell (Chair)
Swedish Medical Center Master Plan Citizens Advisory Committee

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Responses to CAC Letter

1. Comment acknowledged.

2. Height/bulk/scale impact mitigation is included in the Draft EIS (page 90) and is expanded in the Final EIS (page 93). The design precepts in the Final MIMP have also been revised to add more design mitigation. The massing diagrams and photo-simulations of the Draft EIS depict 'worst case' impacts without height/bulk/scale mitigation.

3. Comments acknowledged. The campus design suggestions are added to the revised design precepts in the Final MIMP (pages 8-9).

4. Further analysis of connecting Swedish open spaces and pedestrian systems with the context is reflected in a new Pedestrian Circulation Plan included in the Final MIMP (page 27). Both Minor Avenue and Marion Street are identified as major cross-campus pedestrian routes. Madison Street is identified as an active pedestrian street to reinforce the designation (key commercial activity area) in the First Hill Neighborhood Plan. Swedish is coordinating with the Seattle Parks and Recreation Department.

5. Comment acknowledged. Swedish commits to preparing a Wayfinding Plan and Design Guidelines that will address improvement of campus gateways.

6. Comments acknowledged. Height/bulk/scale impacts from proposed development at the First Hill campus corners can be mitigated by appearance reducing measures. The diagrams in the Draft EIS show 'worst case' impacts without impact mitigation. Swedish will consider such measures when projects are designed.

7. Comment acknowledged.

8. Comment acknowledged.

9. Comment acknowledged.

10. Comment acknowledged. Potential measures to improve circulation at Madison and Summit are described in the DEIS under Mitigating Measures (page 172). An additional measure of having garage users pay their parking fees at a central location before returning to their cars has been added to the Mitigating Measures section in the Final EIS (pages 174-175).

11. Comment acknowledged. Tenants and employees in the MOBs and clinics will participate in the proposed TMP, which includes subsidies, incentives and other measures to reduce commute trips.

12. A Wayfinding Plan will be prepared by Swedish.

13. Physical and operational measures will be considered by Swedish to improve traffic flow at the garage entries and exits. Comment acknowledged. Potential measures to improve circulation

at the Nordstrom Garage access and minimize impacts to the Madison/Summit intersection are described in the DEIS under Mitigating Measures (pages 174-175). Access to the proposed new garages would be from the local street system instead of the adjacent arterial streets (DEIS page 163) in order to minimize impacts to the non-hospital traffic flows.

14. Comment acknowledged. The removal of on-street parking on Marion Street and Minor Avenue is included as a mitigating measure in the DEIS (pages 171-172).

15. Comment acknowledged.

16. Comment acknowledged.

17. Comment acknowledged. Also see following letter from the City Historic Preservation Officer. Swedish will take efforts to remove and preserve building artifacts from the North/Northeast Wing.

18. Comment acknowledged. Swedish will work with the City to mitigate construction impacts.

19. Additional information is provided in the Final EIS. The utility capacity was analyzed and Seattle Public Utilities (SPU) was contacted about longer-term planning. Also see responses to public hearing comments–Deborah Gibby (Final EIS, pages 253-254).

The City of Seattle
Landmarks Preservation Board
700 Third Avenue · 4th floor · Seattle, Washington 98104 · (206) 684-0228

January 21, 2005

LPB 43/05

Michael Jenkins
Senior Land Use Planner
Department of Planning and Development
700 Fifth Avenue, Suite 2000
P.O. Box 34019
Seattle, WA 98124-4019

Re: Swedish Medical Center Draft EIS

Dear Mr. Jenkins:

Thank you for the opportunity to review the Draft Environmental Impact Statement (EIS) for the Swedish Medical Center and the Historic Resources Appendix prepared by BOLA Architecture and Planning. Our office has reviewed both documents. Based on our review of the documents and our professional judgment, we do not believe that any of the buildings listed below are eligible for local landmark designation at this time. The buildings evaluated are as follows:

Clinic/St. Joseph's Baby Center, 800-903 Boylston Avenue 1
Marion Clinic, 819-821 Boylston Avenue
The Invex Building/Swedish Health Services, 1115 Columbia Street
Cherry and Minor Medical Center/Cherry Building, 1120 Cherry Street
Blue Cross Building/SMC Annex Building, 601 Broadway
The Alcoa Building, 1401 Madison Street
Seattle Clinic of Medicine/Joslin Center for Diabetes, 910 Boylston Avenue
The Surgery Doctors Garage and Health Building, 801 Broadway

If you have any questions, please feel free to contact me at karen.gordon@seattle.gov or at 684-0381.

Sincerely,

Karen Gordon
City Historic Preservation Officer

Administered by The Historic Preservation Program, The Seattle Department of Neighborhoods
"Printed on Recycled Paper"

Response to Landmarks Preservation Board Letter

1. Comment acknowledged.

IN REGARD TO PUBLIC HEARING

SWEDISH MEDICAL CENTER MASTER PLAN

Taken at 700 5th Avenue, Suite 2240

Seattle, Washington

DATE TAKEN: DECEMBER 15, 2004

REPORTED BY: CATHLENE A. EVANS, RPR, CCR No. 2990

APPEARANCES

MICHAEL JENKINS,
Senior Land Use Planner
City of Seattle
Department of Planning and Development
700 5th Avenue, Suite 2000
Seattle, Washington 98104-5070

LAUREN HIRT,
Land Use Planner
City of Seattle
Department of Design, Construction and Land Use
700 5th Avenue, suite 2000
Seattle, Washington 98104-5070
VINCENT VERGEL DE DIOS, Principal NBBJ
Urban Planning and Design
111 South Jackson Street
Seattle, Washington 98104

DALE A. GRANDLIC, Deputy Alliance Director
Trammell Crow Company
1115 Columbia Street
Seattle, Washington 98104
DEBORAH M. GIBBY,
Resident, Chair First Hill Community Council
CAC Vice Chairperson
1222 Summit Avenue, Unit 104
Seattle, Washington 98101

-o0o-

SEATTLE, WASHINGTON; WEDNESDAY, DECEMBER 15, 2004

5:32 P.M.

-oOo-

MR. JENKINS: My name is Michael Jenkins. I'm a senior land use planner of the City of Seattle Department of Planning and Development.

My address is 700 5th Avenue, Post Office Box 34019, Seattle, 98124.

This is a public hearing called for the draft Environmental Impact Statement and draft Major Institution Master Plan concerning Swedish Medical Center's First Hill campus.

The project number -- the project number for Department of Planning and Development is No. 2400078.

Before we proceed with the hearing, I'd like others in the room that are here to introduce themselves for the record and to give their name and address.

MR. VERGEL DE DIOS: I'm Vince Vergel de Dios. I'm a planner with NBBJ. And my address is 111 South Jackson Street, Seattle, Washington, 98104.

MR. GRANDLIC: Dale Grandlic with the Trammell Crow Company. The address is 1115 Columbia Street, Seattle, Washington, 98104. And I'm the assistant alliance director for the Swedish Health Care -- Medical Center account.

MS. HIRT: I'm Lauren Hirt. I'm a land use planner for the Department of Planning and Development. My address is 700 5th Avenue, the same address as Mr. Jenkins.

MS. GIBBY: I'm Deborah Gibby. I sit on the Swedish CAC Committee. I'm the current chair of the First Hill Community Committee, First Hill resident. Address, 1222 Summit Avenue, two "M"s, one "T," Unit 104, Seattle, 98101.

MR. JENKINS: The hearing tonight is required for the draft EIS under Seattle Municipal Code 25.05.535.

Public notice of the hearing for tonight's meeting was sent pursuant to that code section as well as Seattle Municipal Code 23.76.

The notice of availability of the draft Major Institution Master Plan or MIMP, M-I-M-P, which is also the subject of this public hearing was also mailed per requirements of Seattle Municipal Code 23.69.032.

The comment period for these proceedings closes on December 20th, 2004 at 5:00 p.m.

Comments can be mailed to me at 700 5th Avenue, Post Office Box 34019, Seattle, Washington, 98124 or sent to me via e-mail at michael.jenkins@seattle.gov

As a result of tonight's meeting, a final EIS and final Major Institution Master Plan will be developed incorporating comments from citizens and interested parties who participated in the process.

What I'll do is maybe we can close the record now and wait to see if any other members of the public show up, and then we'll open first with the hearing for the draft Environmental Impact Statement, and then close that proceeding, and then open up the proceeding for the draft Major Institution Master Plan and close that. So if we can suspend the record for a moment.

MR. JENKINS: We're back on the record.

I'd like to open the hearing concerning public comments on the draft Environmental Impact Statement.

The Department of Planning and Development published a determination of significance on May 6th, 2004 citing, amongst other issues, that the project was determined to have a significant adverse impact on traffic and transportation.

Again, that determination of significance was published on May 6th, 2004.

Having said that, we'll go ahead and open the floor to public comments concerning any comments around the draft Environmental Impact Statement.

MS. GIBBY: I guess that leads me up to the line 1 here.

I'm coming as a citizen representing the property -- some property owners and other citizens that have been in the community in regards to the section regarding the sewer and the water lines.

MR. JENKINS: Could you introduce yourself again for the record?

MS. GIBBY: Sure. Deborah Gibby, G-i-b-b-y.

The comments that have been coming to me is that they're concerned that there's inadequate provisions to include the impact area for the study on the effects of the sewer and the water lines.

And looking at the EIS document, there's actually some instances where the capacity will be over what is currently allowed. **1 CONT**

And there was some preliminary comments that there might be a need to replace those water lines and possibly looking at replacing sewer lines. And that could lead into a cost factor for property owners in the immediate areas that might be possibly affected by those lines.

The comments that I've gotten from property owners are this: Our water needs and our sewer needs have not changed. Our sewer lines are failing. Our water mains are breaking down. And to ask us to even consider the possibility of paying out more money when we're already being taxed to the max is an unfair situation. 1 CONT

And they would like to have further investigation of that impact and any potential mitigation for those property owners.

MR. JENKINS: Did you have any other comments concerning the Environmental Impact Statement?

MS. GIBBY: Well, on a personal level, when I took a look at all the impacts and stuff, I questioned the need for even having that steam plant in the master plan.

And I don't know if anybody else is aware of this, not double-checking my facts, but I had heard that Virginia Mason was also considering having a steam plant, too. And that's a major source of water and sewer line usage. And we already are being served by Seattle Steam within this community. So it's not like it's someplace where they would have to have this thing brought in extra from the Seattle Steam. It's already there. And if it's something that gets down to the wire on the water usage and the sewer lines, then maybe they should consider scrapping the idea of having that steam plant. 2

And other comments that have come back to me have been concerns about traffic. And they do like the idea of Swedish trying to mitigate and get people moving a little more smoothly along Madison so that they're not stopping in front of Summit because that seems to be a problem 3 that's leading into the community and also the problems with the parking in the immediate vicinity.

And I don't know how many people are aware of this, but there are a high number of apartment buildings in the vicinity that do not have parking because they were built during a timeframe where there was no requirement for parking spaces. It wasn't such a bad idea at the time. But now, in this day and age, people want to have cars, and they are parking them on the streets, and there is no other place for them to park. **3 CONT**

That's it.

MR. JENKINS: With that, since -- it's 5:45, and there are no other members of the public who are attending this evening. So based on that, I'd like to close the hearing for the draft Environmental Impact Statement.

Then having said that, as I indicated earlier in the opening statement, a hearing on the draft Major Institution Master Plan is also required pursuant to 23.69.032 of the Seattle Municipal Code.

Having said that, the draft Major Institution Master Plan or MIMP was -- its availability was published on or around November 22nd, 2004.

The MIMP includes approximately 80 pages of information including an introduction, an overview of the development program for First Hill campus, an overview of planned projects as well as potential projects.

Also included in the plan are development standards, both concerning height limits, structure setbacks and a variety of other issues. But there's also a transportation management program published as part of the draft MIMP, and then finally a series of appendices.

Having said that, I'd like to open for public comment on the draft Major Institution Master Plan.

MS. GIBBY: No comments.

MR. JENKINS: Being as those are -- there's only one member of the public here this evening, we will go ahead and close the hearing on the draft MIMP. And it's 5:48.

Having said that, since no other member of the public is here this evening, we will go ahead and close the proceedings for the hearing for the evening.

I'd like to thank everyone for showing up. And a transcript of the meeting tonight will be available, I imagine, in the next few weeks after the transcription has been prepared and approved by all parties.

Thank you.

(The hearing concluded at 5:51 p.m.)

-oOo-

CERTIFICATE

STATE OF WASHINGTON)
) SS.
COUNTY OF KING)

I, the undersigned Registered Professional Reporter, Certified Court Reporter and an officer of the Court under my commission as a Notary Public for the State of Washington, hereby certify that the foregoing hearing was taken before me on December 15, 2004, and transcribed under my direction;

That the transcript of the hearing is a full, true and correct transcript to the best of my ability; that I am neither attorney for, nor a relative or employee of, any of the parties to the action, or any attorney or counsel employed by [illegible] hereto, nor financially interested in its [illegible].

CATHLENE A. EVANS
NOTARY PUBLIC
COMMISSION EXPIRES SEPT. 08, 2008
STATE OF WASHINGTON

IN WITNESS WHEREOF, [illegible]unto set my hand and seal this date: December 20, 2004

NOTARY PUBLIC, in and for the State of Washington, residing at Sammamish. Commission expires September 8, 2008.

Responses to Public Hearing Comments - Deborah Gibby

1. Thank you for your comments. Additional information is provided in the Final EIS regarding utility infrastructure plans, project prioritization, and capital budgets (see pages 177-178).

Regarding sewer flows, the flow rates listed in the Draft EIS for different sized sewer pipes are very conservative. For example, a 12" sewer will carry different amounts of flow depending on the slope of the pipe. The value given is for a very flat pipe with a very rough interior surface. In all likelihood the flow rate in the pipe ¾ full will be much closer to the rate at ¼" per foot slope or 2036 gallons per minute. The 18" pipe will also have a much larger flow rate.

Regarding water conservation, Swedish Medical Center is looking at several ways to conserve water. At the present time Swedish expects to save as much as 4,000,000 gallons per year through conservation of water used in cooling towers. Water would also be saved through the use of low flow fixtures, decreased process water needs and reuse of condensate as appropriate to the application.

The City of Seattle DPD was contacted and confirmed that there are no immediate plans to upgrade sewer or water in the First Hill area (telephone conversation with Karen McGraw, January 2005).

The City indicated that the appropriate time to discuss impacts of individual projects was in the permit process for that project. If Swedish projects consume more water and sewer utility, then Swedish will have to negotiate the increased needs for each project and pay for necessary improvements. The City indicated that no single customer would be allowed to use all of the available capacity in the water and sewer system to the detriment of other customers.

2. Swedish Medical First Hill Campus, like Harborview Medical Center and Virginia Mason Medical Center, currently receives all building and process heating from steam supplied by Seattle Steam Corporation. Swedish and the other hospitals have relied on the multiple boilers at Seattle Steam and the redundant looped piping system on First Hill to meet the requirements for primary and secondary sources of heating required in hospitals.

Recently there have been several interruptions in the steam supply to Swedish. These interruptions have caused Swedish to curtail services normally provided. Additionally, they have the potential in severe weather to impact patient safety. When combined with the need for self-sufficiency in the event of natural disasters such as earthquakes and the need for security in the event of terrorist threats, the need for redundant reliable heating sources requires that Swedish add heating capacity on-site.

Adding this capacity at a central location in one physical plant would allow Swedish to take advantage of the energy conservation inherent in campus load diversity. Swedish would be better able to control and reduce the use of both electricity and natural gas for the campus. Additionally, there would be a large savings in water consumption since Swedish would return condensate for reuse in the system.

The new physical plant would serve all of the hospital use buildings on the campus with steam for building heating and processes such as sterilization, chilled water, oxygen, normal power and emergency power.

A combined single plant would also have the following benefits over plants in individual buildings.

- Greater security.
- Noise issues concentrated so they can be addressed comprehensively.
- Air contamination confined to a single location for better control.

Block 95 is the only location on the Swedish campus that has potential utility access to all existing planned and potential hospital buildings. Other potential sites on campus require piping and electrical runs that greatly reduce energy efficiency compared to this site.

The proposed physical plant would include and provide the following utility systems:

- Emergency Generator farm.
- Electrical Transformer Room: A main electrical service to the hospital would come in to the physical plant to serve the western portion of the campus and provide redundancy to the east service
- Boilers and Chillers: 3 or 4 chillers and approximately 5 boilers are required. Co-location makes the idea of co-generation more feasible and will be studied.
- Cooling towers: 3 will be needed to serve the chiller plant and generators.
- Oxygen tanks: The hospital oxygen tank(s), currently located at Minor and Marion would be relocated to this facility. This will improve service access and clear up traffic blocking issues at the current location.

3. Comment acknowledged. Potential measures to improve circulation at Madison and Summit are described in the DEIS under Mitigating Measures (page 172). An additional measure of having garage users pay their parking fees at a central location before returning to their cars has been added to the Mitigating Measures section in the Final EIS.

The proposed parking supply would accommodate the anticipated parking demand for the campus. As a result, no overflow parking is expected that would impact on-street parking in the neighborhood surrounding the campus.

5. Appendices

Appendix 1: Distribution List

Metro
Environmental Planning
201 S Jackson St. MS KSC-TR-0431
Seattle, WA 98104

Office Of The Governor
Legislative Building
Seattle, WA 98504

Puget Sound Clean Air Agency
110 Union St. - Suite 500
Seattle, WA 98101-2038

Puget Sound Regional Council Of Governments
1011 Western Ave #500
Seattle, WA 98104

United Indians Of All Tribes
P.O. Box 99100
Seattle, WA 98199

Washington State Dept Of Transportation
P.O. Box 330310
Seattle, WA 98133-9710

Dept Of Ecology (2)
Environmental Review Section
P.O. Box 47703
Olympia, WA 98504-7703

Dept Of Health
Office Of Program Services
P.O. Box 47820
Olympia, WA 98504-7820

Dept Of Community Development
State Historic Preservation Office
111 W 21st Ave KL-11
Olympia, WA 98504-5411

Dept Of Natural Resources
Sepa Center
P.O. Box 47015
Olympia, WA 98504-7015

Economic Development Admin
US Dept Of Commerce
915 2nd Ave - Rm 1856
Seattle, WA 98174

Environmental Protection Agency
EIS Coordinator
1200 6th Ave - MS ECO-088
Seattle, WA 98101

Housing & Urban Development
Environmental/Community Planning
909 1st Ave - Suite 200 (MS OAD)
Seattle, WA 98104

League Of Women Voters
Land Use Chair
1402 18th Ave
Seattle, WA 98122

Allied Arts Of Seattle
216 1st S
Seattle, WA 98104-3441

Daily Journal Of Commerce
P.O. Box 11050
Seattle, WA 98111

Seattle Times
Mark Watanabe
P.O. Box 70
Seattle, WA 98111

Seattle Post Intelligencer
101 Elliott Ave W
Seattle, WA 98119

National Marine Fisheries Service
7600 Sand Point Way NE
Seattle, WA 98115-0070

Seattle Library (3)
Governmental Publications
LB-03-01

Housing Dept
SMT-57-00

Gordon Clowers
19th Floor
DPD

City Council
CH-02-10

Director (3)
Seattle Transportation
SMT-39-00

Law Dept
CH-04-01

Lynn Sullivan
City Light
SMT-28-22

Director
Parks Dept
PK-01-01

Chief
Police Dept
JC-05-01

Director (3)
Dept Of Neighborhoods
AR-04-02

Chief
Fire Dept
FD-44-01

SEPA/PIC
20th Floor
DPD

Design Commission
19th Floor
DPD

Director
Health Dept
FI-15-20

Urania Perez
Senior Environmental Specialist
Seattle Department Of Transportation
SMT-39-00

Steve Sheppard
City of Seattle, Department of Neighborhoods
700 3rd Ave Suite 400, Arctic Building
Seattle, WA 98104-1848

Swedish Citizen Advisory Committee
(Beverly Baker, James Rothwell, Greg Harris, Jeff Myrter, Jerry O'Leary, Eric Bultemeier, Robert Fenn, Deborah Gibby, Kristi Drebick Brown, Dr. Stephen Jones, Betsy Mickel, Bill Clancy, Anne Parry, Hal Steiner, Donald Moody)

Office of Archaeology and Historic Preservation
1063 Capitol Way, Suite 106
Olympia, WA 98501

Bettina E. Brown, Office Manager
First Hill Dental Healthcare
General & Cosmetic Dentistry
Seattle, WA

Susan M. Pursell, Administrator
Orthopedic Physican Associates
Nordstrom Medical Tower
1229 Madison St., Suite 1600
Seattle, WA 98104

Ngozi T. Oleru, PH. D., Director
Environmental Health Services Division
Seattle and King County Public Health
999 Third Avenue, Suite 700
Seattle, WA 98104-4039

Kathy Himes
Puget Sound Clean Air Agency
110 Union St., Suite 500
Seattle, WA 98101-2036

Appendix 2: EIS Scoping: Elements of the Environment

The Lead Agency conducted public scoping of the EIS in May 2004, including a public scoping meeting held on May 25, 2004. The results to focus the EIS analysis are summarized below. Items noted 'Reviewed' are analyzed in section III of this Draft EIS.

	Reviewed or Not Applicable (NA)
Natural Environment	
Earth	
Geology	Reviewed (Seismic)
Soils	Reviewed
Topography	Reviewed
Unique Physical Features	NA
Erosion/Accretion	NA
Air	
Air Quality	Reviewed
Odor	Reviewed
Climate	Reviewed (Wind)
Water	Reviewed
Surface Water movement/Quantity/Quality	Reviewed
Runoff/Absorption	Reviewed
Floods	NA
Groundwater Movement/Quantity/Quality	Reviewed
Public Water Supplies	Reviewed
Plants and Animals	
Habitats	NA
Unique Species	NA
Fish and Wildlife Migration Routes	NA
Energy and Natural Resources	
Amount Required/Rate of Use/Efficiency	Reviewed
Source/Availability	Reviewed
Nonrenewable Resources	Reviewed
Conservation and Renewable Resources	Reviewed
Scenic Resources	NA

Built Environment

Environmental Health	
Noise	Reviewed
Risk of Explosion	Reviewed
Releases Affecting Public Health/Toxic-Hazardous Materials	Reviewed
Land and Shoreline Use	
Relationship to Existing Land Use Plans and Population	Reviewed
Housing	Reviewed
Light and Glare	Reviewed
Aesthetics	Reviewed
Recreation	Reviewed
Historic and Cultural Preservation	Reviewed
Agricultural Crops	NA
Transportation	
Transportation Systems	Reviewed
Vehicular Traffic	Reviewed
Waterborne, Rail, and Air traffic	NA
Parking	Reviewed
Movement/Circulation of People and Goods	Reviewed
Traffic Hazards	Reviewed
Public Services and Utilities	
Fire	Reviewed
Police	Reviewed
Schools	NA
Parks and Other Recreational Facilities	Reviewed
Maintenance	
Communications	Reviewed
Water/Storm Water	Reviewed
Sewer/Solid Waste	Reviewed
Other Governmental Services or Utilities	Reviewed

Appendix 3: Existing Building Structural Summary

The following analysis of building structural conditions was completed by Lund & Everton, Structural Engineering.

1920–1950 Buildings

The conditions of these structures vary but they all pre-date major seismic engineering developments. The buildings are of good quality construction but lack the detailing and ductility that will allow them to take the energy of a major earthquake.

Old East Wing

The East Wing was constructed in 1940 with a small section of 1936 construction remaining from the original hospital. An additional floor was added in 1945. Structure is cast-in-place slabs and beams with a concrete stair shaft and masonry infill walls resisting lateral loads. Clay tile walls exist at many of the interior partitions. This building is classified as a URM (un-reinforced masonry lateral system). Large displacements of the structure are expected and are detrimental to the brick exterior. Most of the old exterior is up against newer buildings. Large displacements can also cause structural failure and partial collapse of concrete members since reinforcing is not adequate. Large displacements can cause structures to pound adjacent structures causing uncontrolled stresses and damage at joints.

The floor structure has been evaluated for carrying the weights of new diagnostic equipment and has been found to be inadequate. Some floor strengthening has occurred and in some cases treatment areas were moved to other parts of the hospital due to lack of capacity in this structure.

Many utilities serving Main Surgery and other areas of the hospital pass through the East Wing. Damage would cause major disruption in the event of an earthquake.

North/ Northeast Wings

These are the oldest buildings remaining in the core hospital zone. As such they are the most divergent from current seismic design practices. Designed in 1925 and 1937 with various additions they are classic URM buildings. Major damage is typical in URM buildings in past earthquakes. The L-shape of the two structures adds to torsional problems that increase damage.

The floor loading capacities of these structures is low for hospital occupancies and can only be considered for offices.

Old Tumor Institute

The three story concrete structure was constructed in the 1930's with additions in 1953. This building has a low risk of seismic damage due to the extent of concrete walls originally used as radiation shielding. The possible uses of this building are limited because the concrete walls make it difficult to remodel for a change in use and they are not likely to be adequate shielding for modern radiography treatment.

821 Boylston & 900 Boylston Buildings

There is a two-story building at 821 Boylston and the three-story building at 900 Boylston, both built in the 1940s. The constructions of both are wood framing with some concrete walls and brick veneer exterior. In both buildings the lateral systems are inadequate. The exterior brick veneer shows signs of cracking and mortar deterioration that will cause moisture damage. Past roof leakage is also evident. Floor system capacities are low and only adequate for lightly loaded office occupancies.

1950–1970 Buildings

The buildings built between 1950 and 1970 were designed to the early versions of Seattle Building Code seismic provisions. In the 1952 code the seismic design criteria was increased due to the performance of buildings in the 1949 Olympia Earthquake. Again in 1961 major increases were made to the seismic design requirements. However the most significant changes to the building codes, and the requirement for special provisions for essential facilities, occurred in 1974 after the 1971 San Fernando Earthquake. The structures in this group were all constructed before that time and although they had intended lateral systems they do not have the level of seismic safety required of current buildings.

West Wing

Due to the size, height, and irregular shape of the structure, the West Wing would be expected to sustain major damage in a major earthquake. The West Wing was originally constructed in 1954 with additions in 1962, 1966, and 1973. It appears that an additional floor was added to the top that was not considered in the original documents. The concrete walls at the elevator block and the west stair are not enough to adequately resist seismic forces and large lateral displacements are expected. Large displacements of the structure are detrimental to rigid cladding such as the brick exterior. Falling bricks would be expected. Large displacements can also cause structural failure and partial collapse of concrete members since reinforcing is not adequate.

Damage to the West Wing would damage many vital utility connections. These include the only oxygen supply to the entire hospital, the main telephone trunk entrance, steam, water, chilled water, natural gas, and sewer.

Development of an extensive seismic upgrade was started in 1999 but was put on hold to evaluate the adequacy of the space for the needed occupancies. It was determined that to bring the building to current standards there would need to be added concrete walls and diaphragm struts. In addition, the design included removal of all exterior brick veneer and windows and complete cladding replacement. This expense exceeded realistic costs for the limitations of the useable floor space.

Surgery/Doctor's Garage

The Doctor's Garage and Surgery building were designed in 1961 with the Heath Professional tower added above in 1968. The structure was designed for forces less than current code levels but the system appears to have reasonable lengths of walls in both directions for lateral resistance. The irregular size and shape of the Heath Tower supported above the Surgery/Doctor's Garage is expected to cause significant damage to this structure in a large earthquake.

Structural and non-structural damages are expected at a moderate earthquake. The facility would likely not be operational until repairs are made.

Current building code standards would require this facility (and those providing services to it) to be operational after an earthquake if it is to be considered an essential facility. The current structure does not meet these standards.

North D&T Wing

Constructed in 1973 of cast-in-place concrete shear walls and moment frames, this addition was designed as two parts with a separation joint aligning with the south end of the old East Wing. The structure south of this joint was attached to the new Southeast Addition (East Tower) that included new shear walls for seismic upgrade. The north section has not been upgraded.

Heath Building

Constructed in 1969, the Heath office building is steel floor framing with the upper levels supported by steel moment frames and the lower levels with concrete shear walls. This building experienced large displacements in the recent Nisqually Earthquake due to the flexibility of the moment frame. The damage was more than expected for the intensity of the earthquake. Given this information and the developments in engineering of steel frames that has occurred in the last 20 years, the Heath Building would require significant modifications to bring it up to current seismic design standards.

Alcoa Building

The three-story cast-in-place concrete structure constructed in 1963 is at low risk of seismic damage in a major earthquake. Very minor non-structural damage occurred as a result of the Nisqually Earthquake.

Annex Building

The Annex Building consists of two structures with a seismic joint. One structure was built in 1956 of two levels and an addition was added in 1967 of 4 levels. The structures are steel framing and some concrete shear walls. The lateral systems do not meet current seismic design standards and the structures are at high risk of damage in a major earthquake due to the flexibility of the steel frames.

Invex & 1120 Cherry Buildings

These buildings, constructed in 1956 and 1959, are cast-in-place concrete with shear walls of 3 and 4 stories. Although their lateral systems do not meet current seismic design standards the stiffness of the concrete systems prevent damage in a low intensity earthquake, such as the Nisqually Earthquake, but would not be adequate in a larger event. The concrete walls and stairwell locations make these buildings difficult to remodel for anything other than offices.

1970–1990 Buildings

The conditions of these structures vary but they all predate the major seismic engineering developments. The buildings are of good quality construction but lack the detailing and ductility that will allow them to take the energy of a major earthquake without some structural damage.

Arnold Medical Pavilion

The 14-story office building was built as 8 floors in 1974 with an addition on top in 1980. Drawings indicate that it was designed to the 1971 Uniform Building Code. The upper floors are supported with only moment-resisting frames for the lateral system. These frames are more flexible than concrete wall or brace frame systems and more damage is expected in this structure than the other office towers due to this flexibility. This was confirmed in the results of the Nisqually Earthquake.

Nordstrom Garage

This structure under the Nordstrom Medical Office Tower was designed to the 1983 UBC and is expected to meet life-safety level seismic performance.

Arnold Annex

This one-story cast-in-place concrete structure built in 1974 is of low seismic risk due to it's size.

Southwest Wing

This 13-story cast-in-place concrete and steel structure built in 1974 and 1984 is in good condition. Due to its shape and height it is at risk for more earthquake damage than the South Wing but is expected to perform at the life-safety level.

South Wing

This 10-story cast-in-place concrete structure built in 1979 is in good condition and meets life-safety level of seismic performance.

Invex Garage

The two-story precast concrete garage structure has signs of connection deterioration and water damage. The structure suffered minor structural damage in the Nisqually Earthquake. It would soon need significant repairs to remain in service.

Minor & James Garage

The 5-level concrete garage structure was constructed in 1979 and 1986 and is in good condition. Water damage has occurred and minor repairs are planned.

Charlotte Building

This 4-story converted residential building was renovated in 1982 with improvements to the lateral force resisting system. It is wood construction.

1990–2000 Buildings

These structures are all in good condition and are capable of withstanding major seismic events with minor damage. These structures are all designed to relatively current seismic standards.

1101 Madison Medical Tower

This structure was designed to the 1991 Seattle Building Code. It has floor load capabilities for many of the modern equipment weights in standard offices. It is steel frame construction in the tower and concrete in the below grade garage.

Swedish Cancer Institute

The Cancer Institute addition is a free standing structure adjacent to the Arnold building. The structure was designed to the 1997 Seattle Building Code that is equivalent to current design standards. The Cancer Institute Department extends with-in the Arnold building floor plate. The addition is steel frame construction.

Southeast Addition/East Tower

This structure encompasses the main entrance to the hospital and also houses surgeries, diagnostic services and patient rooms. It was designed to the 1991 Uniform Building Code with Seattle Amendments as an essential facility. It is a steel frame construction in the tower and below grade garage.

600 Broadway

The garage and tower building at 600 Broadway was designed to the 1988 Seattle Building Code and is adequate for medical office occupancy. It is of concrete construction in the garage and steel frame in the tower.

RWDI

QUALITATIVE ASSESSMENT OF
PEDESTRIAN WIND CONDITIONS FOR
SWEDISH MEDICAL CENTER/FIRST HILL CAMPUS
SEATTLE, WASHINGTON

Project Number:	04-1662
Date:	September 24, 2004
Project Team:	Rowan Williams Davies & Irwin, Inc.
	Project Coordinator - Tahrana Lovlin, E.I.T.
	Project Manager - Frank Hochstenbach, M.Eng., P.Eng.
	Project Director - Bill F. Waechter, C.E.T.

Submitted To:	Swedish Medical Center - Seattle, Washington
	NBBJ - Seattle, Washington

Rowan Williams Davies & Irwin Inc.
Consulting Engineers
650 Woodlawn Road West
Guelph, Ontario
Canada N1K 1B8
Tel: (519) 823-1311
Fax: (519) 823-1316
Email: info@rwdi.com
Website: http://www.rwdi.com

Other Locations of RWDI Group Inc.:
- Sudbury (705) 523-4535
- Montreal (450) 776-6877
- Windsor (519) 728-2702
- Calgary (403) 232-6771
- Vancouver (604) 730-5688
- Ottawa (613) 225-5648

U.S. Contacts:
RWDI LLC
- California (909) 793-7080

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1. INTRODUCTION

Rowan Williams Davies & Irwin Inc. (RWDI) was retained by Swedish Medical Center to assess the wind effects on pedestrian areas around the proposed redevelopment of the Swedish Medical Center - First Hill Campus in Seattle, Washington. This assessment of the Concept Plan of March 2004 is based on local wind climate, site information, design drawings[1], and our experience of wind tunnel modelling of buildings and structures, including recent projects in the City of Seattle.

Numerical analysis, using software developed by RWDI to evaluate wind flow around general building forms, was conducted in combination with local wind data, to estimate the potential pedestrian wind conditions. Although this specific development was not modeled in a wind tunnel, the numerical analysis was developed from our extensive experience of wind tunnel modelling of similar developments.

2. SITE INFORMATION

The current Swedish Medical Center - First Hill Campus is comprised of 10 city blocks, consisting of numerous buildings of various heights and usages. The campus is surrounded by four arterial roads: Boren Avenue, Broadway, Madison Street and James Street. The proposed redevelopment consists of alterations to the Core Hospital Zone with two 24-storey towers along Marion Street, as well as various additional towers, with podiums, along Minor Avenue. The Core Hospital Zone is bounded by Marion Street, Minor Avenue, Broadway and Cherry Street. Figures 1a and 1b provide orientation plans of the current and proposed campus, respectively, including the approximate heights of buildings. An aerial view of the study site and surroundings is provided in Figure 2. True north is parallel to Broadway, as shown in Figures 1a and 1b. When describing the wind directions and site references, reference is made to true north. When describing the proposed buildings, facades are referenced to construction north (parallel to Boren Avenue), as shown in Figures 1a and 1b.

[1] Drawings prepared by NBBJ and received by RWDI on June 30, 2004.

Surroundings buildings on the city blocks directly adjacent to the Swedish Medical Center - First Hill Campus are mostly lower than the buildings on the study site. Seattle University is located to the northeast of the site, on the opposite side of Broadway, with building heights lower than the study site. The downtown core of Seattle is located to the west of the campus, and has a number of tall towers. To the north of the campus the buildings are of similar height, with lower buildings further away. To the south, the buildings are shorter, as it is a typically suburban area. The wind/terrain exposure in this area can be categorized as a typical city setting, with small to medium size buildings densely distributed within a few blocks for most directions. The greatest number of high-rise buildings are located to the northwest, west and southwest of the development site. All of these surrounding features were considered in the analysis.

Long-term wind data gathered at the Seattle-Tacoma International Airport were analysed to determine the wind directions that prevail in this region. Figure 3 graphically depicts the directional distribution of wind frequency for the Summer (May through October) and Winter (November through April) seasons, based on data collected over the period of 1948 through 2003.

The frequency of occurrence of wind that blows from each direction can be obtained from the wind roses. For example, during the summer (top left wind rose) wind occurs from the south direction 13% of the time, and 12% of the time from the south-southwest direction. These directions occur most frequently and would be considered prevailing winds in the summertime, followed by winds from the north and southwest. During the winter season (bottom left wind rose) prevailing winds also blow from the south and the south-southwest directions for 18% and 13% of the time, respectively, and from the north and southwest 8% of the time.

Mean wind speeds over 20 mph measured at the airport have also been considered (right hand wind roses), as the gust level typically associated with these stronger mean wind speeds has the potential to create uncomfortable or severe conditions on the study site. During the summer, these stronger winds occur for 1.3% of the time and primarily from the southwest. During the winter, strong winds occur for 5.4% of the time, with south through southwest winds are predominant.

The prevailing wind directions and those associated with stronger wind events are considered to be most important in the analysis of pedestrian wind conditions. Based on the above analysis of wind data and the potential for local wind acceleration around the development, winds from the **south through southwest** and **north** directions are considered to be most important for the following discussion, although winds from all directions have been considered in the analysis of pedestrian wind conditions.

3. WIND COMFORT CRITERIA

The pedestrian wind comfort criteria used in this review have been developed at RWDI and they are categorized by three typical pedestrian activities:

- **Sitting:** Low wind speeds during which one can read a newspaper without having it blown away. These wind speeds are appropriate for outdoor cafes and other amenity spaces that promote sitting. A bench located along a sidewalk would typically not be considered in this category.

- **Standing:** Wind speeds, slightly higher than the "sitting" condition, that are strong enough to rustle leaves. These wind speeds are appropriate at major building entrances, bus stops or other areas where people may want to linger but not necessarily sit for extended periods of time. Waiting for a short period of time at an intersection for a traffic signal to change would not be considered in this category.

- **Walking:** Winds, higher than the "standing" condition, that would lift leaves, move litter, hair and loose clothing. Appropriate for sidewalks, plazas, parks or playing fields where people are more likely to be active and receptive to some wind activity.

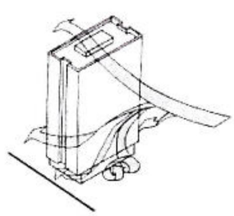
Wind conditions are considered suitable for sitting, standing or walking if the wind speeds are expected for at least 4 out of 5 days (80% of the time). An **uncomfortable** designation means that the criterion for walking is not satisfied. **Safety** is also considered by the criteria and is associated with excessive gust wind speeds that can adversely affect a pedestrian's balance and footing. If winds sufficient to affect a person's balance occur more than three times per year, the wind conditions are considered severe. Wind control measures are typically required at locations where winds are rated as uncomfortable or severe.

4. ASSESSMENT OF WIND CONDITIONS

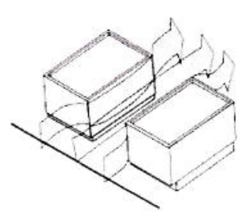
4.1 General

Predicting wind speeds and occurrence frequencies is complicated, involving building geometry, dimensions, orientation, surrounding buildings, upstream terrain and local wind climate. Over the years, RWDI has conducted more than 1000 wind tunnel model studies on pedestrian wind conditions around buildings, yielding a broad knowledge base. This knowledge allows for a screening-level estimation of pedestrian wind conditions without wind tunnel testing.

In our discussion of anticipated wind conditions, reference will be made to the following generalized wind flows. Large (tall) buildings tend to intercept the stronger winds at higher elevations and redirect them down to the ground level. Such a *Downwashing Flow* is the main cause for the pedestrian-level wind acceleration around tall buildings. Also, when two buildings are situated side by side, wind flow tends to accelerate through the gap between the buildings due to the *Channelling Effect*. If these building/wind combinations occur for prevailing winds, there is an increased potential for even higher, less comfortable, wind activity.



Downwashing Flow



Channelling Effect

When describing the wind directions and site references, reference is made to true north. When describing the proposed buildings, the facades are referenced to construction north for simplicity. Please note that construction north differs from true north by 30 degrees. Site plans included in this report include both north arrows.

4.2 Predicted Wind Comfort - Existing Site Condition

Wind conditions suitable for walking are considered appropriate for sidewalks and wind speeds comfortable for standing are preferred for building entrances. Lower wind speeds, comfortable for sitting, are typically desired for amenity areas (e.g., seating areas, green spaces, etc.) depending upon the use of the amenity space.

Given the local wind climate and the building massing in the area, the wind conditions that currently exist around the study site are predicted to be comfortable for pedestrians sitting or standing in most areas during the summer and rated suitable for either standing or walking during the winter season (see Figures 4a and 5a).

In the summer, the wind conditions around the low-rise (i.e., less than 10 storeys) buildings were predicted to be suitable for sitting, particularly where there was a large mass of buildings upwind. Also, sitting conditions were predicted in areas where wind flows were not constricted by the surrounding buildings. An example of this can be observed around the Alcoa Building, as well as 900 and 910 Boylston. Additionally, Boren Avenue, Cherry Street, James Street and the majority of Madison Street were predicted to have wind conditions suitable for sitting (see Figure 4a). The raised pedestrian walkways above Marion Street and Minor Street were predicted to create localized areas of increased wind flows, where wind conditions would be suitable for walking.

In the winter, some areas will experience increased wind speeds, as the prevailing southwesterly wind (see Figure 3) will be deflected down to street level due to a downwashing wind flow from the existing towers. This downwashing creates wind conditions predicted to be suitable for walking around the corners of towers, particularly at the intersection of Marion Street and Broadway with Boylston Avenue. Localized areas of increased wind flows are predicted in the vicinity of the raised pedestrian walkways (see Figure 5a).

With regards to wind safety, the lack of tall towers in the area, combined with the grade level setbacks of the buildings from the street edges, result in the prediction that the currently existing wind conditions in the area meet the safety requirement.

4.3 Predicted Wind Comfort - With Proposed Development

The following summarizes the assessment of potential wind conditions of the proposed development site shown in Figures 4b and 5b. The following sections include a discussion of the pedestrian wind conditions predicted to occur in the study area in terms of wind comfort (i.e., excluding thermal effects and wind chill). Analysis of the wind safety was also conducted and no wind safety issues were predicted.

The influence of existing landscaping (trees, planters with shrubs, etc.) that may exist in the development area have not been considered in this assessment, and will have a beneficial effect on the summertime wind comfort conditions.

4.3.1 Marion Street

Winds conditions comfortable for standing are predicted to currently exist during the summer along a majority of the street (see Figure 4a). At the intersection of Marion Street with Boren Avenue wind conditions suitable for sitting are predicted to currently exist, in the vicinity of the existing Columbia Building. The proposed development will increase the height of the buildings along the street, by introducing Buildings B, C and G (see 17, 18 and 19 in Figure 4b) along the south side, and the Medical Office Building on the north side. This change in massing was predicted to have minimal impact on the wind conditions along the street, as wind comfort conditions are predicted to remain suitable for standing or better, with the exception of localized accelerations below the raised pedestrian walkway.

In the winter, wind conditions are predicted to be suitable for standing along the length of Marion Street (see Figure 5b) with the proposed development in place, an improvement from the currently existing wind conditions (see Figure 5a). With the proposed towers in place, the intersection of Marion Street and Boylston Avenue is sheltered, creating an area with wind conditions suitable for standing. This massing of proposed towers along Marion Street is a positive design feature and should be included in the final design.

The raised pedestrian walkway across Marion Street is expected to create a localized area of increased wind speeds throughout the year (see Figures 4b and 5b). Wind conditions in the vicinity of the raised pedestrian walkway are predicted to be suitable for walking. However, as the prevailing winds are from the southwest, the higher wind speeds are expected on the east side; these wind conditions are not expected to be a safety concern due to the sheltering provided by the Core Hospital Zone. If more comfortable wind speeds are desired in these areas (e.g., for entrances), mitigation measures, such as landscaping and/or wind screens could be investigated to reduce the wind speeds.

It is our understanding that the design team intends for Marion Street to be the main east-west pedestrian walkway through the development. The predicted wind conditions are suitable for this pedestrian usage.

4.3.2 Minor Avenue

Wind conditions comfortable for sitting or standing are predicted to currently exist during the summer along Minor Avenue. With the proposed development in place, there is a larger potential for downwashing wind flows to be directed onto the sidewalks, specifically in the vicinity of Buildings D and G, as well as the Central Support Facility with the Future Medical Tower. As a result, wind conditions along the majority of Minor Avenue are predicted to be comfortable for standing during the summer (see Figure 4b), slightly windier than the wind conditions that currently exist (see Figure 4a). Wind conditions suitable for sitting are still predicted at the intersection with James Street.

In the winter, wind conditions suitable for standing are predicted to currently exist along Minor Avenue. With the proposed development in place, wind conditions comfortable for walking are expected at the intersection of Minor Avenue and Cherry Street (see 20 in Figure 5b), as southwesterly winds create downwashing flows on these facades. If enhanced wind conditions are desired for building entrances in the vicinity, we suggest setting the tower of the Future Medical Tower of the Central Support Facility back from the edge of the podium, one or two bays, on the south and east facades so that downwashing wind flows will be directed down on the podium, rather than onto the street.

As Minor Avenue is more exposed to the prevailing southerly and southwesterly winds, the existing and future raised pedestrian walkways along the street could create localized wind accelerations on the downwind side (see Figures 4b and 5b). These accelerations are expected to be more pronounced where the walkway is located near the corner of a building, such as proposed Building G (see 17 in Figure 4b). If lower wind speeds are desired in this local area, we suggest installing wind control features (e.g., landscaping, wind screens, etc.) to reduce the wind speeds.

It is our understanding that the design team intends for Minor Avenue to be the main north-south pedestrian walkway through the development. The predicted wind conditions are suitable for the expected pedestrian usage.

4.3.3 Broadway

The wind activity that currently exists on this street, especially in the northern portion of the block towards Marion Avenue, is influenced mainly by the large mass of buildings that forms the Core Hospital Zone (see Figures 4a and 5a). This large mass of buildings provides shelter at the north end of Broadway from the prevailing southwesterly winds. As the proposed development plan will increase the mass of buildings in the area, this sheltered effect along the street will be maintained (see Figures 4b and 5b), with wind conditions suitable for standing or better throughout the year. Areas of reduced wind speeds, such as the north and south ends of Broadway, would be suitable for locating entrances to the appropriate proposed buildings. We recommend locating entrances on the east facade of the proposed Future Medical Office Building and Building D, as they are sheltered areas. However, we recommend that entrances not be located near the corners of buildings, as accelerated wind flows typically occur near corners.

The predicted wind conditions along Broadway are generally suitable for the expected pedestrian usage.

4.3.4 Madison Street

Madison Street is predicted to have wind conditions suitable for standing or better in the summer, with and without the proposed development in place. In the winter, with the proposed development in place, wind conditions are predicted to be suitable for standing along the length of Madison Street, with the exception of the west end, where wind conditions are predicted to be comfortable for sitting. Building entrances should be located near the center of the facade, rather than near the corners where localized wind flow accelerations are expected. The predicted wind conditions along Madison Street are suitable for the expected pedestrian usage.

4.3.5 Boren Avenue

Wind conditions along Boren Avenue are predicted to be suitable for standing or better throughout the year, with and without the proposed development in place. The predicted wind conditions along Boren Avenue are suitable for the expected pedestrian usage.

4.3.6 James Street

James Street is predicted to have wind conditions suitable for standing or better throughout the year, with and without the proposed development in place (see Figures 4b and 5b). The predicted wind conditions along James Street are suitable for the expected pedestrian usage.

4.3.7 Cherry Street

Cherry Street is predicted to have existing wind conditions suitable for standing or better throughout the year. Localized wind speeds at the intersection of Cherry Street and Minor Avenue are predicted to increase (i.e., walking category) with the construction of the Central Support Facility Tower and Building D (see 20 and 21 in Figures 4b and 5b). The increase in wind speeds will result from the downwashing of wind flows from the surrounding proposed towers. We recommend that building entrances are located away from this intersection. Localized wind accelerations are also expected in the vicinity of the raised pedestrian walkway, as shown in Figures 4b and 5b. The predicted wind conditions along Cherry Street are suitable for the expected pedestrian usage.

4.3.8 Columbia Street

Columbia Street is predicted to have wind conditions suitable for standing or better throughout the year, with and without the proposed development in place (see Figures 4b and 5b). The amenity space on the north side of the street could experience increased wind speeds when the winds are from the southwest, as there is a potential for wind gusts to channel between the proposed Building G and the Central Suppose Facility with Future Medical Tower (see 17 and 20 in Figures 4b and 5b). If lower wind speeds are desired in the amenity space, we suggest installing wind control features, such as landscaping and/or wind screens, to reduce the wind speeds. The predicted wind conditions along Columbia Street are suitable for the expected pedestrian usage.

4.3.9 Boylston Avenue

Wind conditions along Boylston Avenue are predicted to be suitable for sitting or standing throughout the year, with and without the proposed development in place (see Figures 4b and 5b). The wind activity along Boylston is influenced by the large mass of buildings upwind that form the Core Hospital Zone. This large mass of buildings provides shelter for the sidewalks along Boylston from the prevailing southwesterly winds. In the winter, wind conditions are predicted to be comfortable for standing. The predicted wind conditions along Boylston Avenue are typically suitable for the expected pedestrian usage.

5. SUMMARY

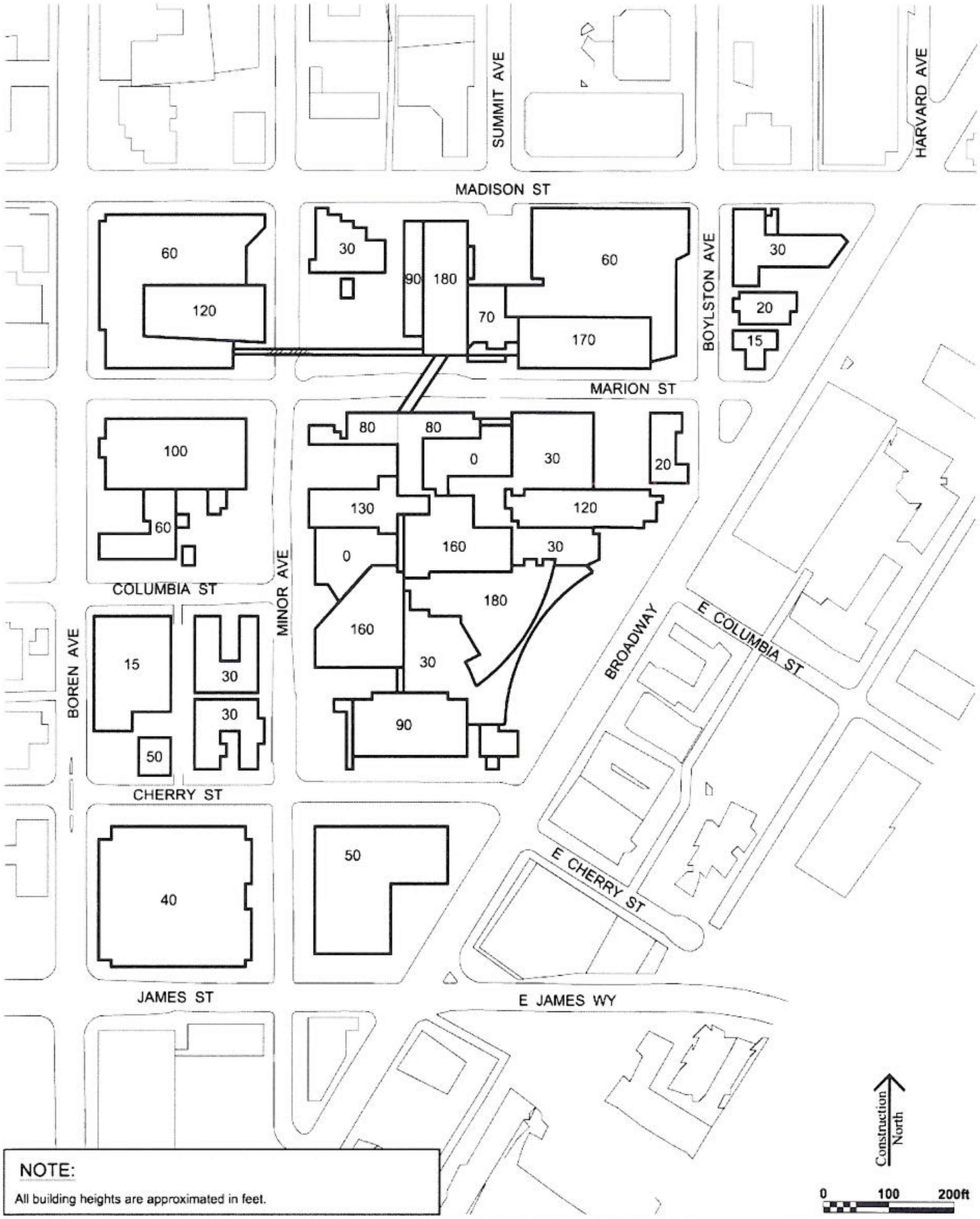
Overall, the level of wind comfort anticipated to occur both with and without the proposed development present is expected to be suitable for sidewalks during the winter and summer seasons. Areas where wind conditions suitable for walking are anticipated may not be desirable for entrances and measures to protect the entrances, or re-locating the entrances, should be considered.

Periodically, the prevailing winds may accelerate beneath the raised pedestrian walkways, resulting in increased wind speeds locally. This would be of a particular concern along Minor Avenue, which is exposed to the prevailing southwesterly winter winds. Suggestions have been made for design measures that can reduce wind activity in these areas.

The development has incorporated several positive design features with regards to the pedestrian wind environment. These include incorporating a podium in the design of the various tower; locating towers downwind across the street from other towers, thereby providing shelter to both sides of the street; and increasing the massing of the Core Hospital Zone, thus providing shelter for the main east-west pedestrian route of Marion Street. The above features are desirable in terms of wind comfort and we recommend that they be retained in any further development of this design.

In certain instances, it may be desirable to reduce wind speeds through architectural or landscaping design considerations. It would be appropriate to assess these issues during the detailed design and permitting stage for individual buildings of interest.

FIGURES



NOTE:
All building heights are approximated in feet.

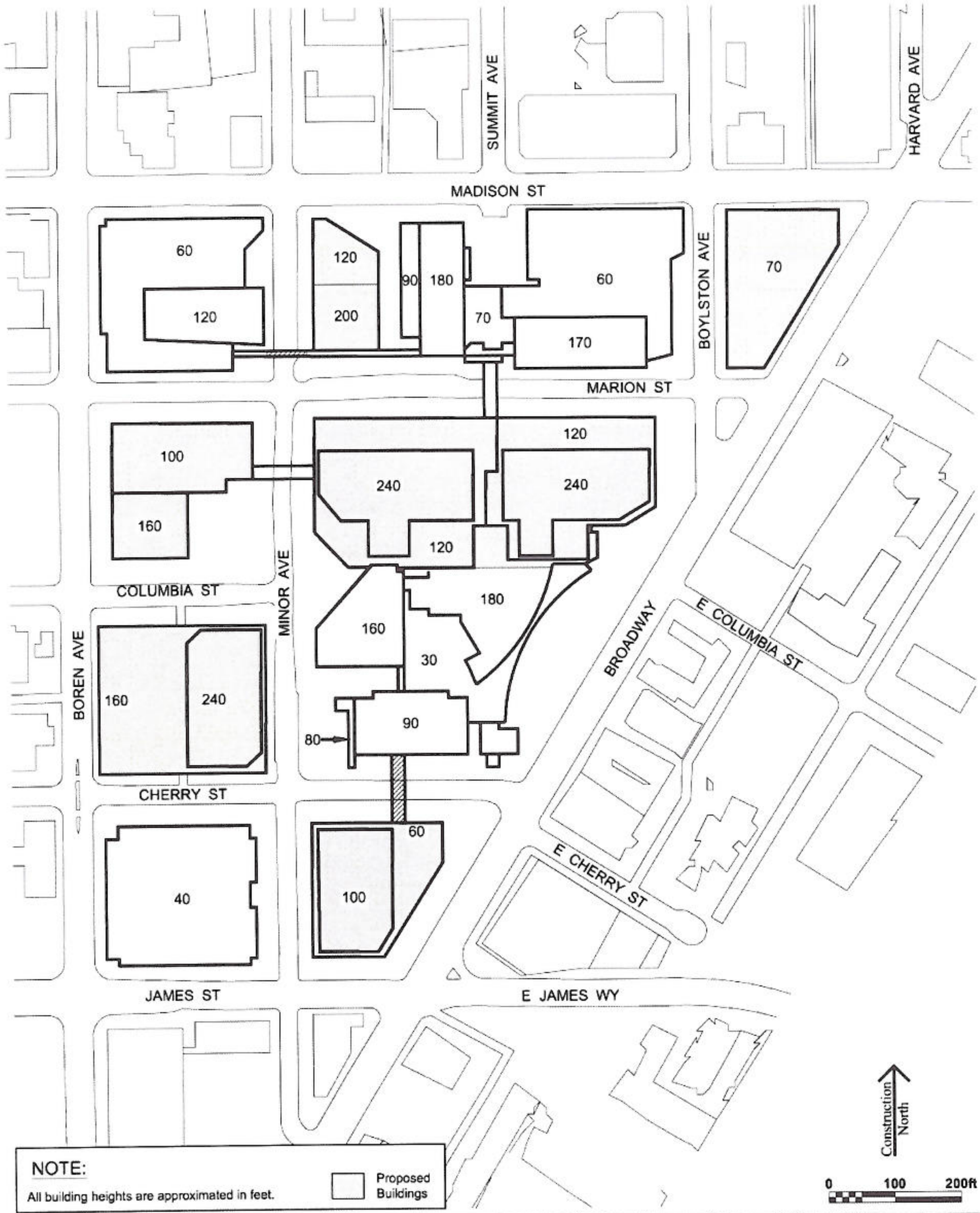
Orientation Plan
Existing Configuration

Swedish Medical Center/First Hill Campus - Seattle, Washington

True North

Project #04-1662

Drawn by: KO	Figure: **1a**	**RWDI**
Approx. Scale: 1"=200'		
Date Revised: Sept 15, 2004		



Orientation Plan
Future Configuration

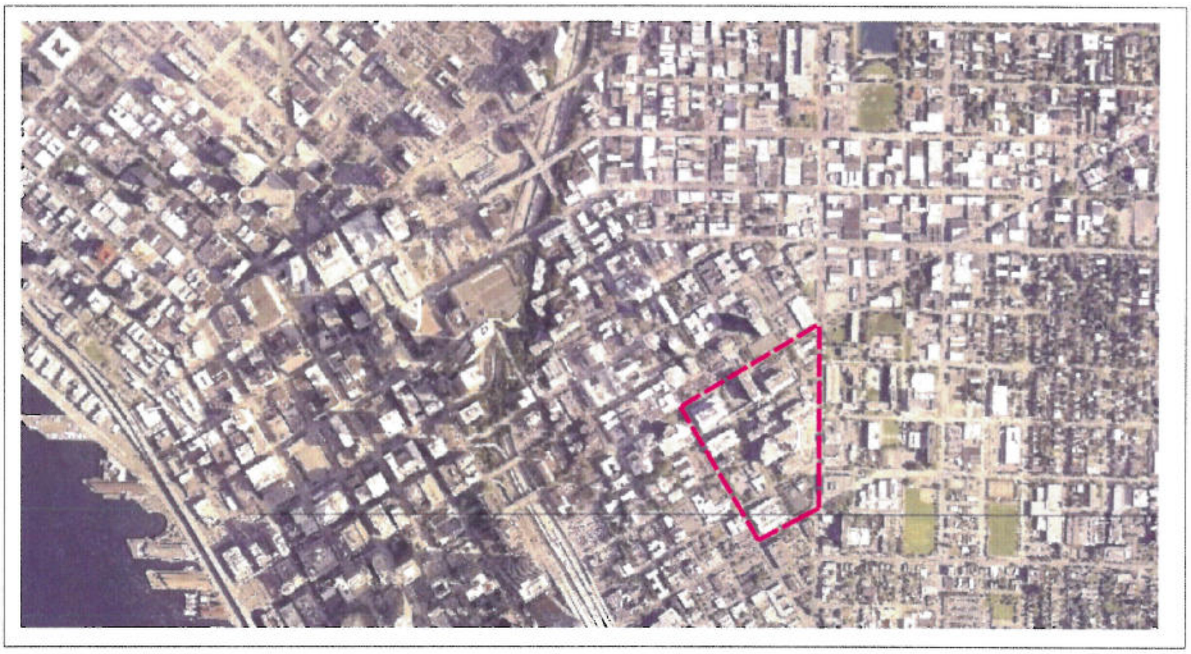
True North

Drawn by: KO	Figure: **1b**
Approx. Scale:	1"=200'
Date Revised:	Sept 15, 2004

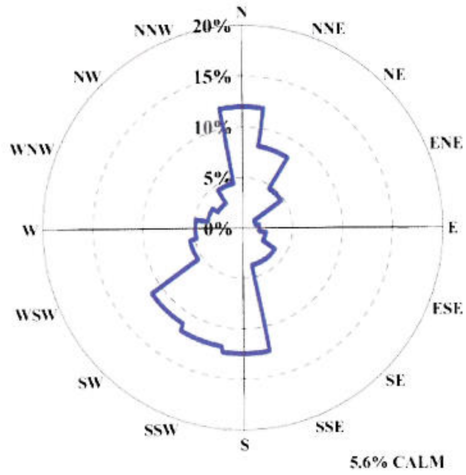
RWDI

Swedish Medical Center/First Hill Campus - Seattle, Washington

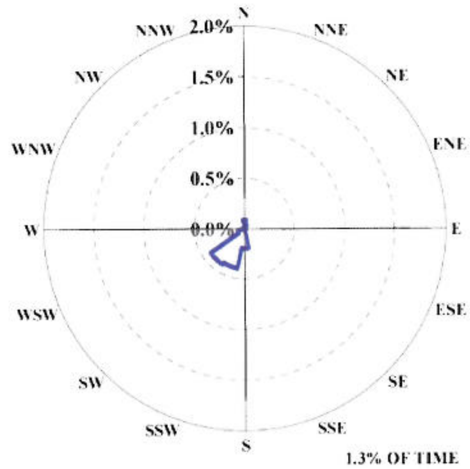
Project #04-1662



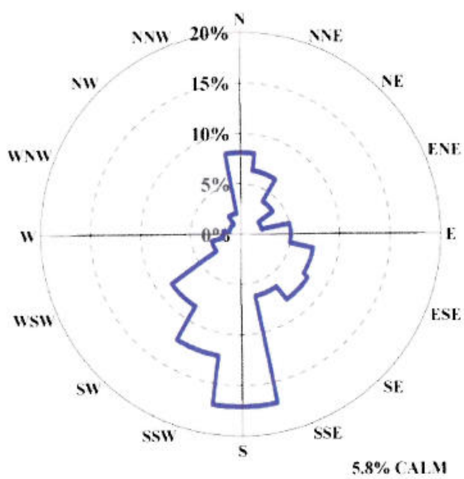
Aerial View of Study Area	True North	Figure:	2	RWDI
Swedish Medical Center/First Hill Campus - Seattle, Washington	Project #04-1662	Date:	July 29, 2004	



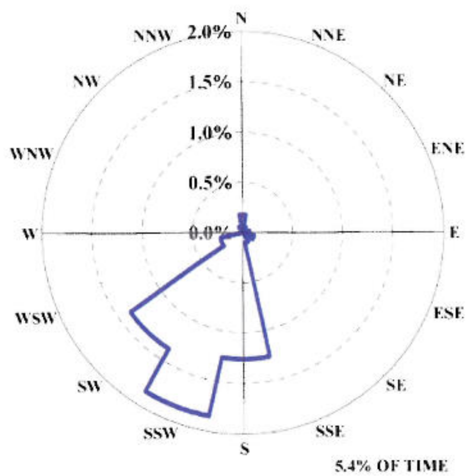
ALL SUMMER WINDS



SUMMER WINDS > 20 mph

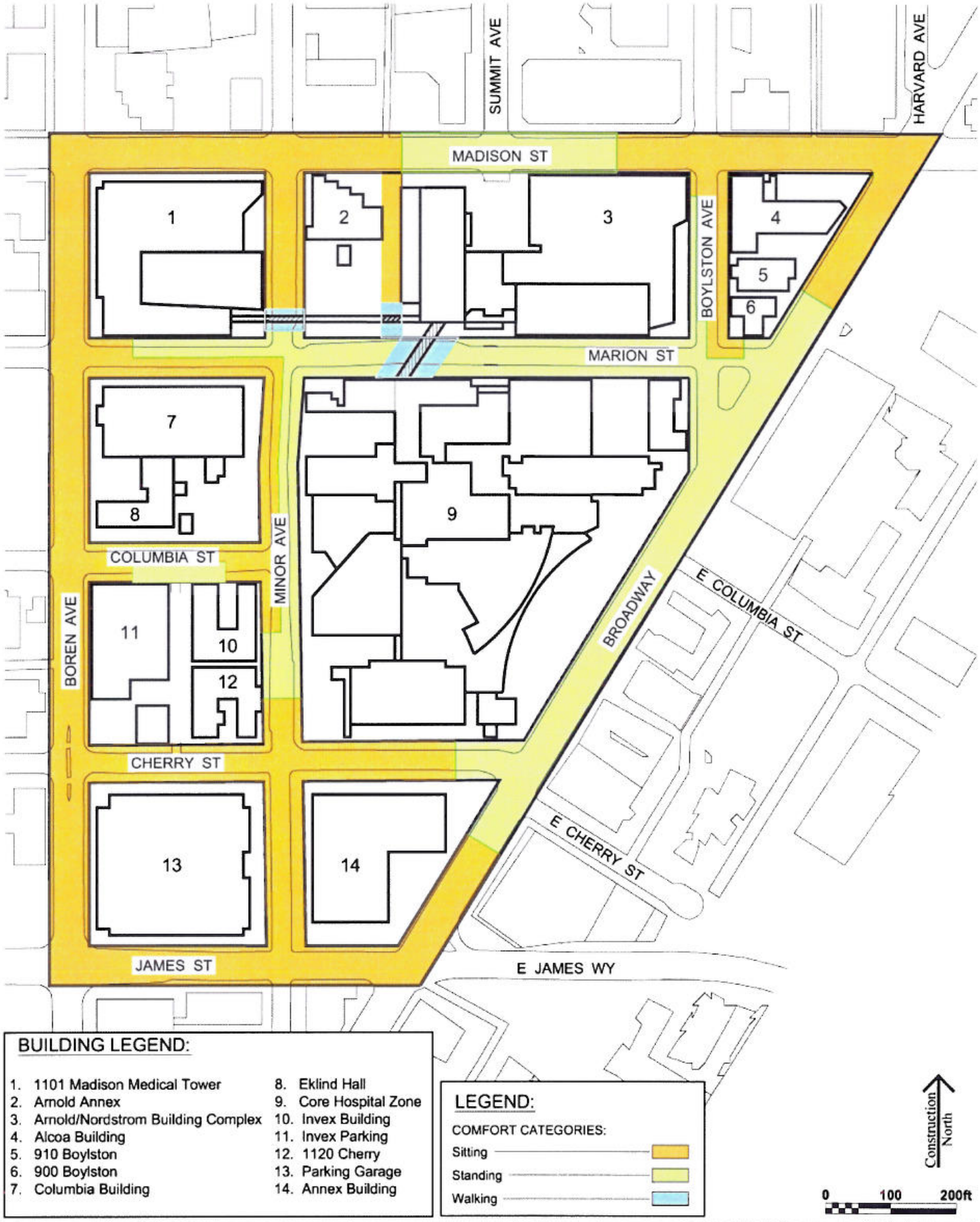


ALL WINTER WINDS



WINTER WINDS > 20 mph

Directional Distribution (%) of Winds (Blowing From) **Station: Seattle-Tacoma Int'l Airport, WA (1948 - 2003)**	Figure No. **3**	RWDI
Swedish Medical Center/First Hill Campus - Seattle, Washington Project #: 041-1662	Date: July 7, 2004	



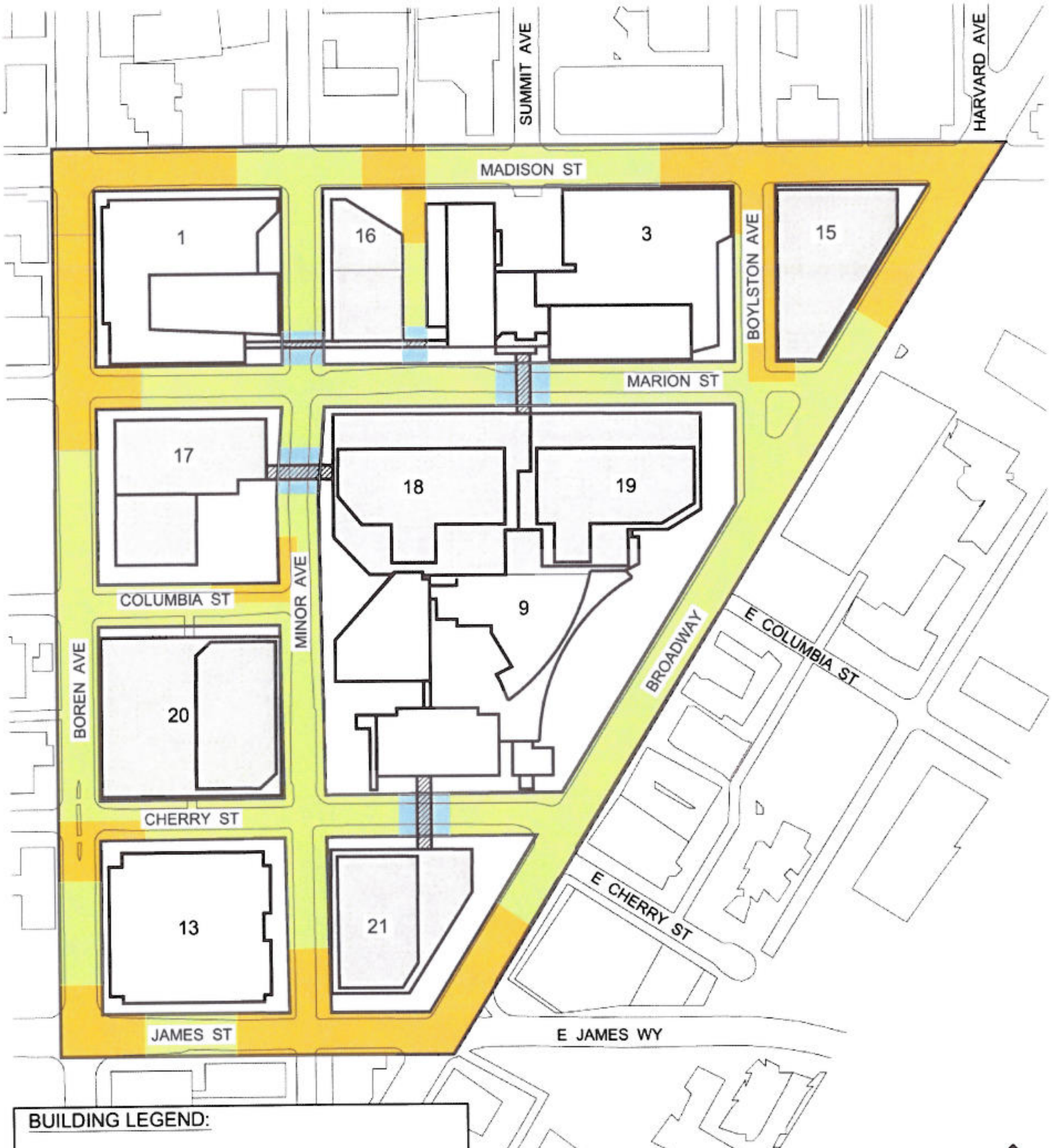
Predicted Wind Conditions
Existing Configuration
Summer (May to October)

Swedish Medical Center/First Hill Campus - Seattle, Washington

Project #04-1662

True North

Drawn by: KO	Figure: **4a**	**RWDI**
Approx. Scale: 1"=200'		
Date Revised: Sept. 15, 2004		



BUILDING LEGEND:

1. 1101 Madison Medical Tower
3. Arnold/Nordstrom Building Complex
9. Core Hospital Zone
13. Parking Garage
15. Future Medical Office Building
16. Medical Office Building
17. Building G
18. Building B
19. Building C with Future Tower
20. Central Support Facility with Future Medical Tower
21. Building D

LEGEND:

COMFORT CATEGORIES:

- Sitting
- Standing
- Walking

Predicted Wind Conditions
Future Configuration
Summer (May to October)

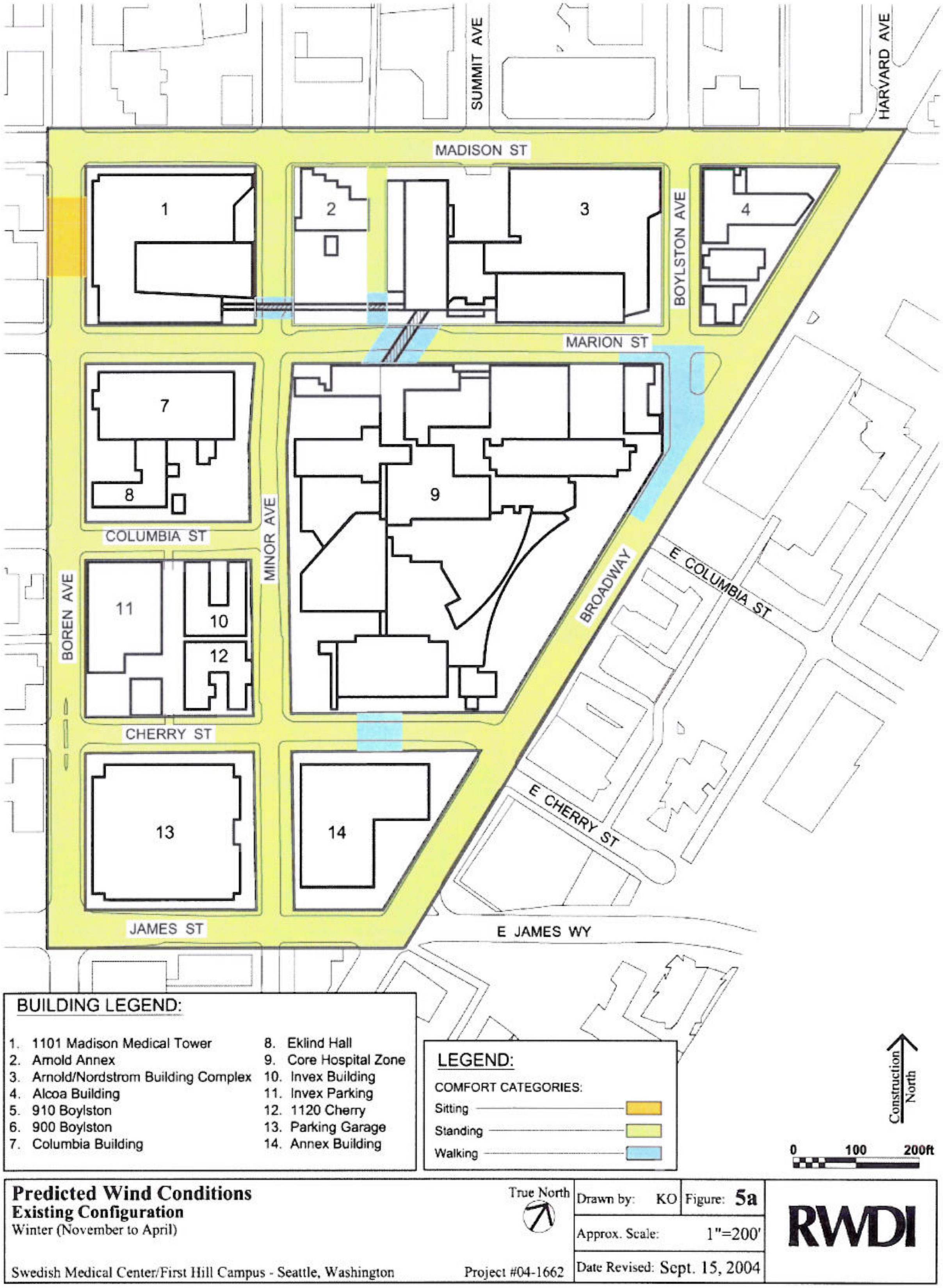
Swedish Medical Center/First Hill Campus - Seattle, Washington

Project #04-1662

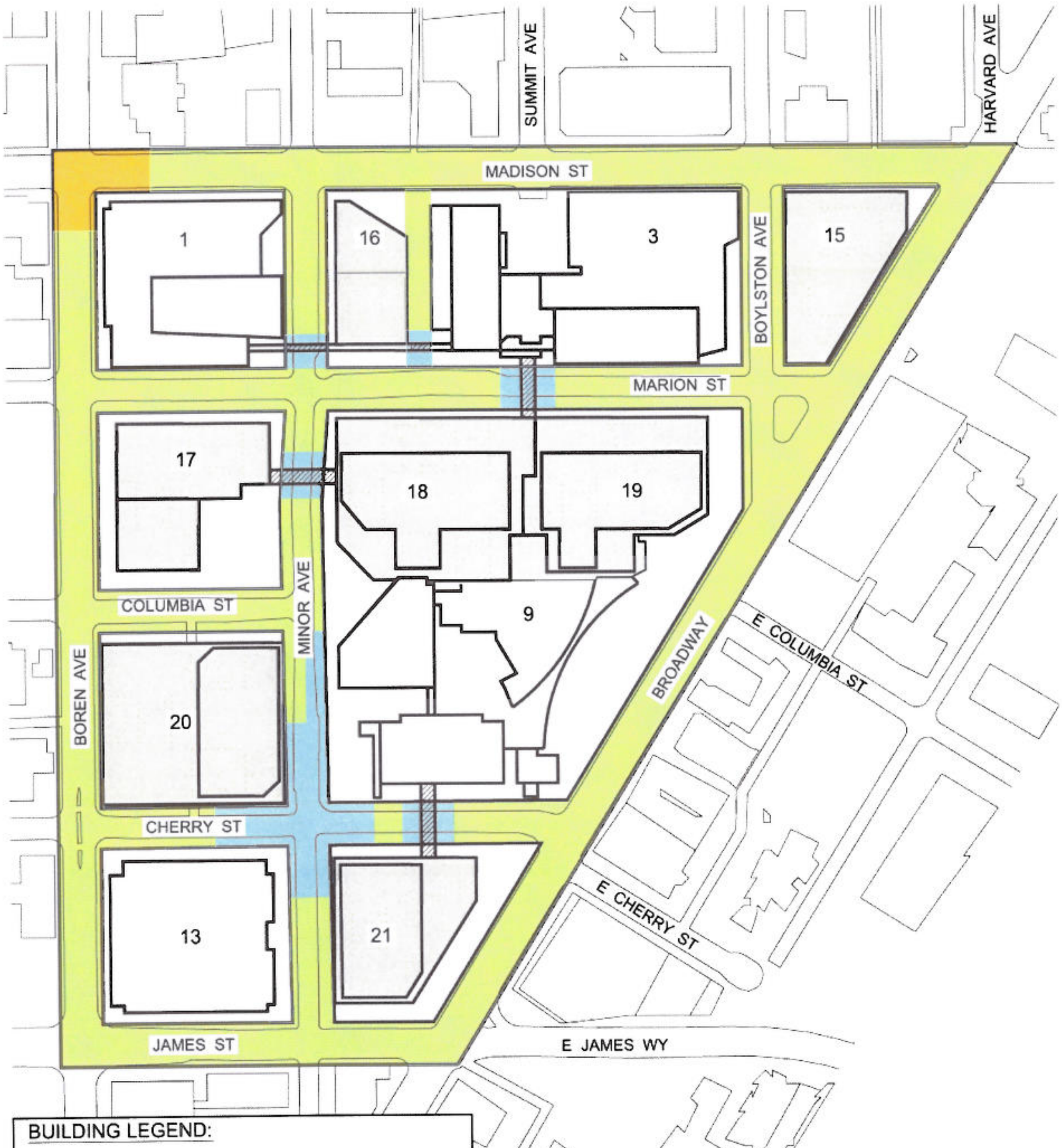
True North

Drawn by:	KO	Figure:	4b
Approx. Scale:	1"=200'		
Date Revised:	Sept. 15, 2004		

RWDI



MADISON ST
SUMMIT AVE
HARVARD AVE
BOYLSTON AVE
MARION ST
COLUMBIA ST
MINOR AVE
BOREN AVE
CHERRY ST
JAMES ST
BROADWAY
E COLUMBIA ST
E CHERRY ST
E JAMES WY
1
2
3
4
7
8
9
10
11
12
13
14
BUILDING LEGEND:
1. 1101 Madison Medical Tower
2. Arnold Annex
3. Arnold/Nordstrom Building Complex
4. Alcoa Building
5. 910 Boylston
6. 900 Boylston
7. Columbia Building
8. Eklind Hall
9. Core Hospital Zone
10. Invex Building
11. Invex Parking
12. 1120 Cherry
13. Parking Garage
14. Annex Building
LEGEND:
COMFORT CATEGORIES:
Sitting
Standing
Walking
Construction North
0 100 200ft
Predicted Wind Conditions
Existing Configuration
Winter (November to April)
Swedish Medical Center/First Hill Campus - Seattle, Washington
True North
Project #04-1662
Drawn by: KO
Figure: 5a
Approx. Scale: 1"=200'
Date Revised: Sept. 15, 2004
RWDI



BUILDING LEGEND:

1. 1101 Madison Medical Tower
3. Arnold/Nordstrom Building Complex
9. Core Hospital Zone
13. Parking Garage
15. Future Medical Office Building
16. Medical Office Building
17. Building G
18. Building B
19. Building C with Future Tower
20. Central Support Facility with Future Medical Tower
21. Building D

LEGEND:

COMFORT CATEGORIES:

- Sitting
- Standing
- Walking

Predicted Wind Conditions
Future Configuration
Winter (November to April)

Swedish Medical Center/First Hill Campus - Seattle, Washington

True North

Project #04-1662

Drawn by: KO	Figure: **5b**
Approx. Scale:	1"=200'
Date Revised:	Sept. 15, 2004

RWDI

Project Name: ______________________

Project Address: ______________________

Project No.: __________ Application Date: __________

OFFICES A
(Four or more Stories)

Gross Area: (Conditioned + Unconditioned) 156,000 sq.ft. (A)

ENERGY USE		kwh/sq.ft./year
STEP 1:	Lighting Energy Use	7.6
STEP 2:	Fan Energy Use	2.4
STEP 3:	Heating Energy Use	2.2
STEP 4:	Cooling Energy Use	1.7
STEP 5:	Miscellaneous Energy Use If the building will contain a large main frame computer or a large amount of studio equipment, use 10.0. If not, use 4.2.	4.2
STEP 6:	ENERGY USE INDEX (EUI) Add 1 through 5 to obtain the Total Energy Use Index.	18.1 (B)

PEAK DEMAND		Watts./sq.ft.
STEP 7:	Winter Peak Demand	4.1 (C)
STEP 8:	Summer Peak Demand	4.0 (D)

- W18 -

Project Name: ______	HOSPITALS B
Project Address: ______	
Project No.: ______ Application Date: ______	

Gross Area: (Conditioned + Unconditioned) 486,000 sq.ft. (A)

Lighting Power Density 2.0 watts/sq.ft.
If the lighting power density is not known, use 2.0.

ENERGY USE		kwh/sq.ft./year
STEP 1:	Lighting Energy Use If the lighting power density is less than 1.51 watts/sq.ft., use 8.4. If it is 1.51 to 1.75 watts/sq. ft., use 11.4. If it is more than 1.75 watts/sq.ft., use 16.2.	16.2
STEP 2:	Fan Energy Use	13.5
STEP 3:	Cooling Energy Use If the lighting power density is less than 1.51 watts/sq.ft., use 3.1. If it is 1.51 to 1.75 watts/sq.ft., use 3.4. If it is more than 1.75 watts/sq.ft., use 3.7.	3.7
STEP 4:	Miscellaneous Energy Use If there is a kitchen, use 3.7. If there is no kitchen, use 2.0.	3.7
STEP 5:	ENERGY USE INDEX (EUI) Add 1 through 4 to obtain the Total Energy Use Index.	37.1 (B)

PEAK DEMAND		Watts./sq.ft.
STEP 6:	Winter Peak Demand	3.9 (C)
STEP 7:	Summer Peak Demand	5.2 (D)

Project Name: ______________________	HOSPITALS C
Project Address: ______________________	
Project No.: __________ Application Date: __________	

Gross Area: (Conditioned + Unconditioned) 155,000 sq.ft. (A)

Lighting Power Density 2.0 watts/sq.ft.
If the lighting power density is not known, use 2.0.

ENERGY USE		kwh/sq.ft./year
STEP 1:	Lighting Energy Use If the lighting power density is less than 1.51 watts/sq.ft., use 8.4. If it is 1.51 to 1.75 watts/sq. ft., use 11.4. If it is more than 1.75 watts/sq.ft., use 16.2.	16.2
STEP 2:	Fan Energy Use	13.5
STEP 3:	Cooling Energy Use If the lighting power density is less than 1.51 watts/sq.ft., use 3.1. If it is 1.51 to 1.75 watts/sq.ft., use 3.4. If it is more than 1.75 watts/sq.ft., use 3.7.	3.7
STEP 4:	Miscellaneous Energy Use If there is a kitchen, use 3.7. If there is no kitchen, use 2.0.	2.0
STEP 5:	ENERGY USE INDEX (EUI) Add 1 through 4 to obtain the Total Energy Use Index.	35.4 (B)

PEAK DEMAND		Watts./sq.ft.
STEP 6:	Winter Peak Demand	3.9 (C)
STEP 7:	Summer Peak Demand	5.2 (D)

- W12 -

Project Name: ______	HOSPITALS D
Project Address: ______	
Project No.: ______ Application Date: ______	

Gross Area: (Conditioned + Unconditioned) 149,000 sq.ft. (A)

Lighting Power Density 2.0 watts/sq.ft.
If the lighting power density is not known, use 2.0.

ENERGY USE		kwh/sq.ft./year
STEP 1:	Lighting Energy Use If the lighting power density is less than 1.51 watts/sq.ft., use 8.4. If it is 1.51 to 1.75 watts/sq. ft., use 11.4. If it is more than 1.75 watts/sq.ft., use 16.2.	16.2
STEP 2:	Fan Energy Use	13.5
STEP 3:	Cooling Energy Use If the lighting power density is less than 1.51 watts/sq.ft., use 3.1. If it is 1.51 to 1.75 watts/sq.ft., use 3.4. If it is more than 1.75 watts/sq.ft., use 3.7.	3.7
STEP 4:	Miscellaneous Energy Use If there is a kitchen, use 3.7. If there is no kitchen, use 2.0.	2.0
STEP 5:	ENERGY USE INDEX (EUI) Add 1 through 4 to obtain the Total Energy Use Index.	35.4 (B)

PEAK DEMAND		Watts./sq.ft.
STEP 6:	Winter Peak Demand	3.9 (C)
STEP 7:	Summer Peak Demand	5.2 (D)

- W12 -

Project Name: ______________________	OFFICES (Four or more Stories) E
Project Address: ______________________	
Project No.: __________ Application Date: __________	

Gross Area: (Conditioned + Unconditioned) 254,000 sq.ft. (A)

ENERGY USE		kwh/sq.ft./year	
STEP 1:	Lighting Energy Use	7.6	
STEP 2:	Fan Energy Use	2.4	
STEP 3:	Heating Energy Use	2.2	
STEP 4:	Cooling Energy Use	1.7	
STEP 5:	Miscellaneous Energy Use If the building will contain a large main frame computer or a large amount of studio equipment, use 10.0. If not, use 4.2.	4.2	
STEP 6:	ENERGY USE INDEX (EUI) Add 1 through 5 to obtain the Total Energy Use Index.	18.1	(B)
PEAK DEMAND		Watts./sq.ft.	
STEP 7:	Winter Peak Demand	4.1	(C)
STEP 8:	Summer Peak Demand	4.0	(D)

- W18 -

Project Name: ______	OFFICES (Four or more Stories) F
Project Address: ______	
Project No.: ______ Application Date: ______	

Gross Area: (Conditioned + Unconditioned) 70,000 sq.ft. (A)

ENERGY USE		kwh/sq.ft./year	
STEP 1:	Lighting Energy Use	7.6	
STEP 2:	Fan Energy Use	2.4	
STEP 3:	Heating Energy Use	2.2	
STEP 4:	Cooling Energy Use	1.7	
STEP 5:	Miscellaneous Energy Use If the building will contain a large main frame computer or a large amount of studio equipment, use 10.0. If not, use 4.2.	4.2	
STEP 6:	ENERGY USE INDEX (EUI) Add 1 through 5 to obtain the Total Energy Use Index.	18.1	(B)
PEAK DEMAND		Watts./sq.ft.	
STEP 7:	Winter Peak Demand	4.1	(C)
STEP 8:	Summer Peak Demand	4.0	(D)

- W18 -

Project Name: ______________________	
Project Address: ______________________	HOSPITALS G
Project No.: __________ Application Date: __________	

Gross Area: (Conditioned + Unconditioned) 194,000 sq.ft. (A)

Lighting Power Density 2.0 watts/sq.ft.
If the lighting power density is not known, use 2.0.

ENERGY USE		kwh/sq.ft./year	
STEP 1:	Lighting Energy Use If the lighting power density is less than 1.51 watts/sq.ft., use 8.4. If it is 1.51 to 1.75 watts/sq. ft., use 11.4. If it is more than 1.75 watts/sq.ft., use 16.2.	16.2	
STEP 2:	Fan Energy Use	13.5	
STEP 3:	Cooling Energy Use If the lighting power density is less than 1.51 watts/sq.ft., use 3.1. If it is 1.51 to 1.75 watts/sq.ft., use 3.4. If it is more than 1.75 watts/sq.ft., use 3.7.	3.7	
STEP 4:	Miscellaneous Energy Use If there is a kitchen, use 3.7. If there is no kitchen, use 2.0.	2.0	
STEP 5:	ENERGY USE INDEX (EUI) Add 1 through 4 to obtain the Total Energy Use Index.	35.4	(B)
PEAK DEMAND		**Watts./sq.ft.**	
STEP 6:	Winter Peak Demand	3.9	(C)
STEP 7:	Summer Peak Demand	5.2	(D)

- W12 -

Project Name: ______________________	
Project Address: ______________________	
Project No.: __________ Application Date: __________	

HOSPITALS C-1

Gross Area: (Conditioned + Unconditioned) 135,000 sq.ft. (A)

Lighting Power Density 2.0 watts/sq.ft.
If the lighting power density is not known, use 2.0.

ENERGY USE		kwh/sq.ft./year
STEP 1:	Lighting Energy Use If the lighting power density is less than 1.51 watts/sq.ft., use 8.4. If it is 1.51 to 1.75 watts/sq. ft., use 11.4. If it is more than 1.75 watts/sq.ft., use 16.2.	16.2
STEP 2:	Fan Energy Use	13.5
STEP 3:	Cooling Energy Use If the lighting power density is less than 1.51 watts/sq.ft., use 3.1. If it is 1.51 to 1.75 watts/sq.ft., use 3.4. If it is more than 1.75 watts/sq.ft., use 3.7.	3.7
STEP 4:	Miscellaneous Energy Use If there is a kitchen, use 3.7. If there is no kitchen, use 2.0.	2.0
STEP 5:	ENERGY USE INDEX (EUI) Add 1 through 4 to obtain the Total Energy Use Index.	35.4 (B)

PEAK DEMAND		Watts./sq.ft.
STEP 6:	Winter Peak Demand	3.9 (C)
STEP 7:	Summer Peak Demand	5.2 (D)

- W12 -

Project Name: ______________	OFFICES (Four or more Stories)
Project Address: ______________	
Project No.: ________ Application Date: ________	

Gross Area: (Conditioned + Unconditioned) 100,000 sq.ft. (A)

ENERGY USE		kwh/sq.ft./year	
STEP 1:	Lighting Energy Use	7.6	
STEP 2:	Fan Energy Use	2.4	
STEP 3:	Heating Energy Use	2.2	
STEP 4:	Cooling Energy Use	1.7	
STEP 5:	Miscellaneous Energy Use If the building will contain a large main frame computer or a large amount of studio equipment, use 10.0. If not, use 4.2.	4.2	
STEP 6:	ENERGY USE INDEX (EUI) Add 1 through 5 to obtain the Total Energy Use Index.	18.1	(B)
PEAK DEMAND		**Watts./sq.ft.**	
STEP 7:	Winter Peak Demand	4.1	(C)
STEP 8:	Summer Peak Demand	4.0	(D)

- W18 -

Project Name: ______________________	PARKING GARAGE A
Project Address: ______________________	
Project No.: __________ Application Date: __________	

Gross Area: (Conditioned + Unconditioned) 132,000 sq.ft. (A)

Number of Floors 6

Is garage above ground? (Yes or No) No

ENERGY USE kwh/sq.ft./year

STEP 1: Lighting Energy Use 1.3

STEP 2: Fan Energy Use 0.3

If parking is above ground, enter 0.
If parking is below ground, enter 0.3.

STEP 3: Miscellaneous Energy Use 0.1

If parking area is less than 3 floors, enter 0.
If parking area is 3 floors or more, enter 0.1.

STEP 4: ENERGY USE INDEX (EUI) 1.7 (B)

Add 1 through 3 to obtain the Total Energy Use Index.

PEAK DEMAND Watts./sq.ft.

STEP 5: Winter Peak Demand 0.5 (C)

STEP 6: Summer Peak Demand 0.5 (D)

Project Name: ____________	
Project Address: ____________	PARKING GARAGE C
Project No.: ________ Application Date: ________	

Gross Area: (Conditioned + Unconditioned) 325,000 sq.ft. (A)

Number of Floors 6

Is garage above ground? (Yes or No) No

ENERGY USE		kwh/sq.ft./year	
STEP 1:	Lighting Energy Use	1.3	
STEP 2:	Fan Energy Use	0.3	
	If parking is above ground, enter 0. If parking is below ground, enter 0.3.		
STEP 3:	Miscellaneous Energy Use	0.1	
	If parking area is less than 3 floors, enter 0. If parking area is 3 floors or more, enter 0.1.		
STEP 4:	ENERGY USE INDEX (EUI)	1.7	(B)
	Add 1 through 3 to obtain the Total Energy Use Index.		
PEAK DEMAND		Watts./sq.ft.	
STEP 5:	Winter Peak Demand	0.5	(C)
STEP 6:	Summer Peak Demand	0.5	(D)

- W21 -

Project Name: ______	
Project Address: ______	PARKING GARAGE D
Project No.: ______ Application Date: ______	

Gross Area: (Conditioned + Unconditioned) 101,000 sq.ft. (A)

Number of Floors 3

Is garage above ground? (Yes or No) No

ENERGY USE		kwh/sq.ft./year
STEP 1:	Lighting Energy Use	1.3
STEP 2:	Fan Energy Use	0.3
	If parking is above ground, enter 0. If parking is below ground, enter 0.3.	
STEP 3:	Miscellaneous Energy Use	0.1
	If parking area is less than 3 floors, enter 0. If parking area is 3 floors or more, enter 0.1.	
STEP 4:	ENERGY USE INDEX (EUI)	1.7 (B)
	Add 1 through 3 to obtain the Total Energy Use Index.	

PEAK DEMAND		Watts./sq.ft.
STEP 5:	Winter Peak Demand	0.5 (C)
STEP 6:	Summer Peak Demand	0.5 (D)

- W21 -

Project Name: ______________________	PARKING GARAGE E
Project Address: ______________________	
Project No.: __________ Application Date: __________	

Gross Area: (Conditioned + Unconditioned) 113,000 sq.ft. (A)

Number of Floors 4

Is garage above ground? (Yes or No) No

ENERGY USE kwh/sq.ft./year

STEP 1: Lighting Energy Use 1.3

STEP 2: Fan Energy Use 0.3

If parking is above ground, enter 0.
If parking is below ground, enter 0.3.

STEP 3: Miscellaneous Energy Use 0.1

If parking area is less than 3 floors, enter 0.
If parking area is 3 floors or more, enter 0.1.

STEP 4: ENERGY USE INDEX (EUI) 1.7 (B)

Add 1 through 3 to obtain the Total Energy Use Index.

PEAK DEMAND Watts./sq.ft.

STEP 5: Winter Peak Demand 0.5 (C)

STEP 6: Summer Peak Demand 0.5 (D)

- W21 -

Project Name: ______	PARKING GARAGE F
Project Address: ______	
Project No.: ______ Application Date: ______	

Gross Area: (Conditioned + Unconditioned) 40,000 sq.ft. (A)

Number of Floors 2

Is garage above ground? (Yes or No) No

ENERGY USE — kwh/sq.ft./year

STEP 1: Lighting Energy Use 1.3

STEP 2: Fan Energy Use 0.3

If parking is above ground, enter 0.
If parking is below ground, enter 0.3.

STEP 3: Miscellaneous Energy Use 0

If parking area is less than 3 floors, enter 0.
If parking area is 3 floors or more, enter 0.1.

STEP 4: ENERGY USE INDEX (EUI) 1.6 (B)

Add 1 through 3 to obtain the Total Energy Use Index.

PEAK DEMAND — Watts./sq.ft.

STEP 5: Winter Peak Demand 0.5 (C)

STEP 6: Summer Peak Demand 0.5 (D)

DCLU

Director's Rule 3-87

Applicant	Page of	Supersedes
CITY OF SEATTLE DEPARTMENT OF CONSTRUCTION AND LAND USE	1 2	15-85
	Publication: Jan. 26, 1987	Effective: March 2, 1987
	Code and Section Reference: Section 25.05 SMC (SEPA)	
Subject: ENERGY CONSUMPTION AND PEAK DEMAND INFORMATION FOR ENVIRONMENTAL REVIEW	Type of Rule: Code Interpretation	
	Ordinance Authority: Section 3.06.040 SMC	
Index: SEPA/ENERGY - TECHNICAL REQUIREMENTS	Approved: Holly Miller	Date: 2-19-87

Rule: Building projects with 50,000 or more square feet of new gross conditioned floor area are required to provide an estimate of energy consumption as part of the energy section of the environmental checklist or environmental impact statement. These estimates are not intended to project actual building performance, but only to disclose an approximate level of consumption and peak demand that might be reasonably expected. The energy estimates prepared pursuant to this rule are to cover the entire building project, both conditioned and unconditioned space. The information is required for an application to be considered complete and accepted for processing by the Department.

For fuels other than electricity, the applicant is responsible for obtaining estimates of energy consumption.

For electric energy consumption, applicant may use either of the following two options:

OPTION I: WORKSHEETS

The applicant may use the electric energy consumption and peak load worksheets for different building types provided in the attachment. These worksheets are designed to help applicants provide estimates for the annual consumption and peak load demand based on the average usage per square foot per year of similar buildings.

The applicant only needs to use the worksheet(s) that apply to their project. For buildings with mixed use occupancy, worksheets are provided to determine usage on a proportional basis.

Definitions:

1. Energy Use Index and Total Energy Use. The method used in the worksheet to estimate the annual electrical consumption for the proposed building projects. This number helps Seattle City Light plan programs and forecast electrical requirements.

2. Winter Peak Demand. The maximum electrical energy used in any fifteen minute period during the winter. The winter peak demand occurs at the time when the load on Seattle City Light's system approaches or exceeds the generating capacity.

3. Summer Peak Demand. The maximum electrical energy used in any fifteen minute period during the summer. In many buildings, the maximum energy used in the summer will exceed that in the winter due to air conditioning or refrigeration loads. In these buildings, the summer peak demand is an indication of the maximum load placed on the system by the proposed building.

OPTION II: COMPUTER MODELING

The applicant may perform computer modeling in accordance with the systems analysis chapter of the Seattle Energy Code. For the purpose of this analysis only, the ASHRAE TC 4.7 method or equivalent is acceptable. The analysis must be submitted to the building official for approval and must provide enough detail for a decision to be made by the building official and Superintendent of City Light. The building official may request meeting(s) with, or additional information from, the applicant as necessary to establish the reasonableness of any proposal to the satisfaction of the building official and the Superintendent.

For both options, calculations based on schematic building designs as used in the environmental review process are acceptable.

SWEDISH MEDICAL CENTER MASTER PLAN -- TRIP GENERATION WORKSHEET

Master Plan	Units	Existing	With Planned Projects: Total	With Planned Projects: Increase	With Planned+Potential Projects: Total	With Planned+Potential Projects: Increase
Hospital	Employee (FTE)	1,650	1,870	220	1,900	30
MOB	sf	877,540	1,006,449	128,909	1,117,167	110,718
Research/Lab	sf	286,020	210,133	-75,887	210,133	0

Preliminary Trip Gen Using ITE		Existing			With Planned Projects						With Planned+Potential Projects					
					Total			Increase			Total			Increase		
	ITE Rate	Inbound	Outbound	Total	Inbound	Outbound	Total	Inbound	Outbound	Total	Inbound	Outbound	Total	Inbound	Outbound	Total
Daily																
Hospital	5.20	4,290	4,290	8,580	4,860	4,860	9,720	570	570	1,140	4,940	4,940	9,880	80	80	160
MOB	36.13	15,855	15,855	31,710	18,180	18,180	36,360	2,325	2,325	4,650	20,180	20,180	40,360	2,000	2,000	4,000
Research/Lab	6.11	1,160	1,160	2,320	850	850	1,700	-310	-310	-620	850	850	1,700	0	0	0
		21,305	21,305	42,610	23,890	23,890	47,780	2,585	2,585	5,170	25,970	25,970	51,940	2,080	2,080	4,160
AM Peak Hour																
Hospital	0.34	398	163	561	452	184	636	54	21	75	459	187	646	7	3	10
MOB	2.48	1,719	457	2,176	1,972	524	2,496	253	67	320	2,189	582	2,771	217	58	275
Research/Lab	1.24	295	60	355	217	44	261	-78	-16	-94	217	44	261	0	0	0
		2,412	680	3,092	2,641	752	3,393	229	72	301	2,865	813	3,678	224	61	285
PM Peak Hour																
Hospital	0.33	169	376	545	191	426	617	22	50	72	194	433	627	3	7	10
MOB	3.72	881	2,383	3,264	1,011	2,733	3,744	130	350	480	1,122	3,034	4,156	111	301	412
Research/Lab	1.08	46	263	309	34	193	227	-12	-70	-82	34	193	227	0	0	0
		1,096	3,022	4,118	1,236	3,252	4,588	140	330	470	1,350	3,660	5,010	114	308	422

Adjustment Factor	AM Peak	PM Peak
Theoretical Existing Based on ITE	3,092	4,118
Existing From Counts	2,094	2,225
Factor (Counts divide by ITE)	68%	54%
Final Adjustment Factor to Apply	75%	

Adjusted Trip Generation	Planned Projects			Planned+Potential Proj		
	Inbound	Outbound	Total	Inbound	Outbound	Total
Daily						
Hospital	430	430	860	60	60	120
MOB	1,740	1,740	3,480	1,500	1,500	3,000
Research/Lab	-230	-230	-460	0	0	0
	1,940	1,940	3,880	1,560	1,560	3,120
AM Peak Hour						
Hospital	41	16	57	5	2	7
MOB	190	50	240	163	44	207
Research/Lab	-59	-12	-71	0	0	0
	172	54	226	168	46	214
PM Peak Hour						
Hospital	17	38	55	2	5	7
MOB	98	263	361	83	226	309
Research/Lab	-9	-53	-62	0	0	0
	106	248	354	85	231	316

Note: Building areas shown in this appendix may not correspond with those listed in the MIMP. Non-Swedish owned buildings within the MIO boundary were not included in the MIMP, but were included for the purposes of calculating site trip generation. Additionally, some existing buildings were also classified differently for the purposes of the MIMP document, which were not the most appropriate functional category for the purposes of developing trip generation.

INTRODUCTION

This appendix to the Swedish Final EIS provides additional information about the pre-1970 era properties within the MIMP project boundaries, and inventory sheets for each of the individual buildings. It was prepared in January 2005 by BOLA Architecture + Planning.

The following information is provided in the appendix:

A. Description of research methodology
B. A construction history of Swedish Hospital and its present components
C. An overview of hospital building designs
D. A summary of Modernism and post-war Modern architecture in Seattle
E. Brief biographies of the original architects – Sommervell and Coté (original Swedish Hospital designers), NBBJ (subsequent hospital designers, and designers of several clinic buildings), and Arnold Gangnes, John Maloney, Klontz and Wrede, and Kirk Wallace McKinley (designers of other buildings)
F. A list of source material and bibliography
G. Inventories for the individual buildings

Historic context information about First Hill and its development is included in the DEIS document. No information about archaeology or archaeological resources has been provided.

A. METHODOLOGY

BOLA Architecture + Planning undertook research and developed the DEIS Section on Historic Preservation, and this appendix with the inventory forms for older buildings that are currently owned and/or occupied by Swedish Medical Center or are likely to be in the near future. These include remnants of the early hospital buildings of the 1920s and 1930s, and relatively intact examples of post-war Modern-era buildings from the 1960s.

The report is based on historic research relating to a number of historic and architectural themes. They include the historic development of Swedish Hospital, the precursor to SMC, the First Hill neighborhood and its historic current character, and the development of the hospital as a distinct building type. The work of the primary designers is a related theme, as are the design features and history of the hospital assembly and the individual buildings. Research was undertaken by Susan Boyle and Beth Dodrill in the early fall of 2004 using available historic documents noted from the following sources:

- Seattle Public Library: publications and newspaper articles on Swedish Hospital, and scrapbooks with clippings about the original architects
- City of Seattle Department of Planning and Design, drawings/permit files to identify construction dates, original designs and changes to the buildings
- UW Suzzallo Library Special Collections on-line digital historic photo collection, including the Dearborn Massar photo collection, and Architecture and Urban Planning Library for publications and periodical articles
- City of Seattle Clerk's Municipal Archives on-line digital historic photo collection
- City of Seattle Dept. of Neighborhoods (DON), First Hill Neighborhood Plan, and Historic Preservation Program survey forms, and the landmark nomination of a Modern, curtainwall style building, the Neptune Building (Mimi Sheridan, 2000)

- Swedish Hospital historic materials, and the current Master Use Permit and Draft Environmental Impact Statement documents (DEIS), by NBBJ Architects, 2004
- History.Link.Org, on-line essays on First Hill and Swedish Hospital
- Kroll Map Company, historic real estate maps
- Museum of History and Industry, on-line digital photo collection
- Original drawings and information about the hospital building from NBBJ Architects

Several on-site tours were taken to view the buildings, confirm changes that have occurred through time, and examine their physical integrity. The result of the research was summarized in the report and individual building inventory sheets. The report was finalized in January 2005.

A preliminary evaluation is provided for each property, based on National Register criteria and the City of Seattle landmark designation criteria. The analysis of eligibility categorized the buildings in one of three groups: Category 1 Buildings (likely to meet National Register Criteria or Local Landmark Criteria), Category 2 Buildings (potential to meet National Register or Local Landmark Criteria), or Category 3 (building of community value but unlikely to meet National Register or Local Landmark Criteria).

B. CONSTRUCTION HISTORY OF SWEDISH HOSPITAL

The roots of Seattle's Swedish Hospital began with plans by Dr. Nils Johanson in 1908. He proposed a new hospital at the corner of Belmont and Olive Streets, which was rejected by neighbors. Meanwhile, a colleague of Dr. Johanson, Dr. E. M. Rininger developed a nearby site, at Summit and Olive, with construction of the 40-bed Summit Hospital. The design of Rininger's hospital was attributed to Sommervell and Coté.

A month before the hospital opened, however, Dr. Rininger was killed when his auto collided with a streetcar. (Rininger's was the first fatal car accident in the city.) In response, Dr. Johanson and his investors quickly raised $91,000 and purchased the new building, renaming it Swedish Hospital. They opened it in 1910. (Crowley, p. 138 - 139).

By 1920, plans for a larger hospital were made. Eventually, the new building was constructed in 1923, at 701 Summit Avenue. Within three years, the original three-bay, six-story building had received a subsequent addition to its east side. The two buildings were integrated internally and have become known as the North/Northeast Wing. The site of the hospital was near the top of First Hill. This location may have provided natural ventilation from up-lifting wind and sun, which were important site conditions for early hospitals. The site was near other hospitals and medical service facilities, such as pharmacies and it was also near streetcar lines on Madison Street, providing easy access for patients.

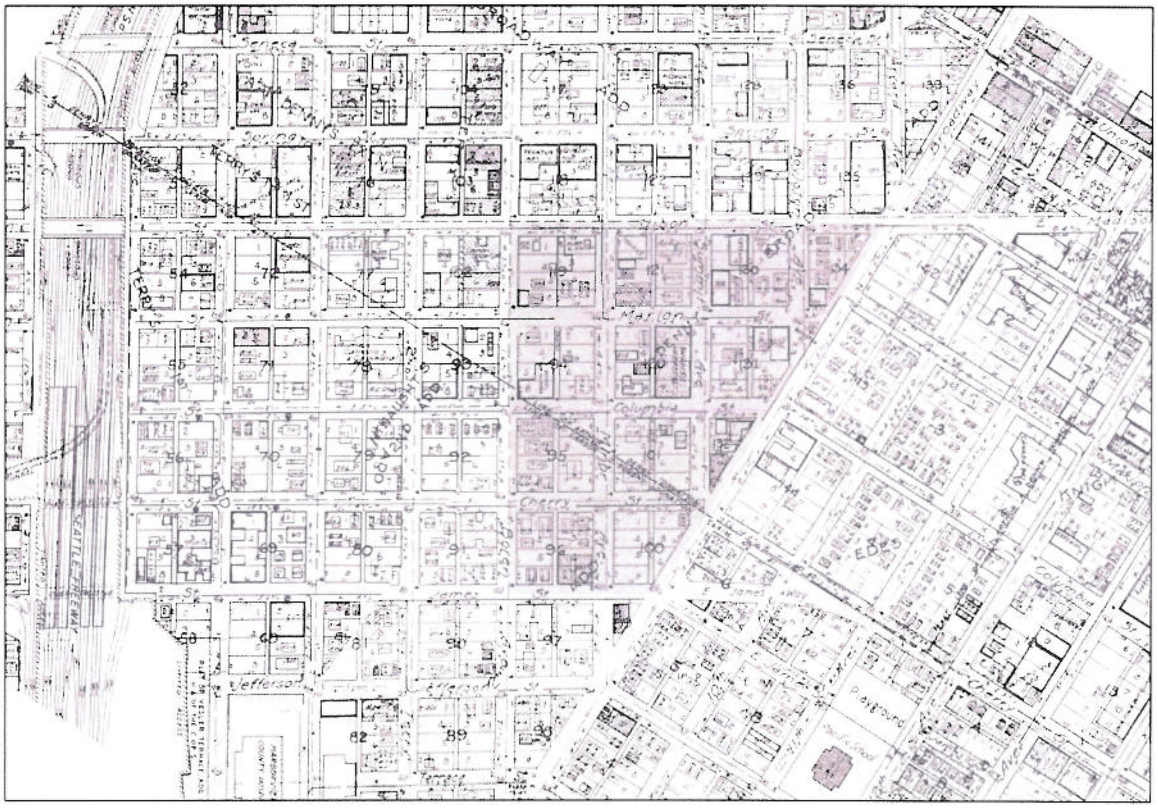
Construction of other hospital sections followed. Buildings presently known as the Old Tumor Institute, the North/Northeast Wing, West Wing and Old East Wing of Swedish Hospital were constructed in the period of the early 1930s to the mid 1950s. In the 1960s, the Surgery Doctors Garage, which contains offices as well as parking spaces, and the high-rise Heath Building were constructed to the east of the earlier hospital buildings. The Swedish Hospital has evolved over time, through additions and remodeling, to form an integrated whole, known presently known as the Swedish Medical Center (SMC).

Reviews of architectural drawings, property records and permits provide the following chronology of construction, on Block 120, lots 1 - 8, at 801 - 821 Summit Avenue.

1923 - 1926	Hospital Building and Northeast Wing Addition @ 701 Summit Avenue
ca. 1930	The Tumor Institute, constructed to the west of the original 1923 hospital building
1936	Additions and alterations to building @ 803 Summit Avenue (lot 5) Building will be two-stories, 31' by 47' (NBBJ/Teufel & Carlson) Permit # 319904
1940 - 1941	Three-story addition to existing three-story Orthopedic Wing, 40' by 80', @ 803 Summit Avenue (Smith, Carroll & Johanson/Paul Carlson) Permit # 340555
1948	Nurse's Residence Building of ca.1916, @ 1205 Marion Street, demolished (Per PRC)
1953	Two-story 25' by 67' addition to Tumor Institute Building, @ 1211 - 1215 Marion Street (NBBJ/Yale-Sommers Construction/Bruce Olsen, Engineer)
1954	Lab & laundry buildings demolished for new construction Permit # 428998
1954 - 1955	Construction of nine-story addition to hospital building, the 171' by 130' West Wing (NBBJ/H.S. Wright & Co.) Permit # 429024
1961	Construction of three-story addition, the East Wing (33,017 sq. ft.), and a two-story 36' by 102', 6,200 sq. ft. addition to West Wing (NBBJ/Sellen Construction) Permit # 492325
1963	Construction of a parking garage and hospital wing, the Surgery Doctors Garage (NBBJ)
1966	Four-story addition to create nine-story bldg.
1969	Construction of a hospital building, the Heath Building

The older buildings, known currently as the Old Tumor Institute, the North/Northeast Wing, West Wing and Old East Wing of Swedish Hospital, which date from 1923 to 1961, have all evolved over time to form a conglomeration of abutting and integrated structures. Their construction over many decades and integration of systems, internal circulation and shared exit system make distinction of the "original" core buildings difficult. Preliminary reviews of architectural drawings, property record cards and construction permits, and on-site reviews provide some clarification of the details of this evolution. However, as the building sections appear integrated, they are treated as a single assembly. The Surgery Doctors Garage and Heath Building are separate buildings, with most of their exterior walls distinct from other hospital components, with exception of pedestrian skybridges and covered walkways. Thus they are treated as individual buildings in this report and are described in separate inventories in this appendix.

Figure 1. Maps from 1940 - 1960 (above) and ca. 2000 (below) showing development of the Swedish Hospital campus (shaded), and a portion of the First Hill area. Source: Kroll Map Company, Seattle.



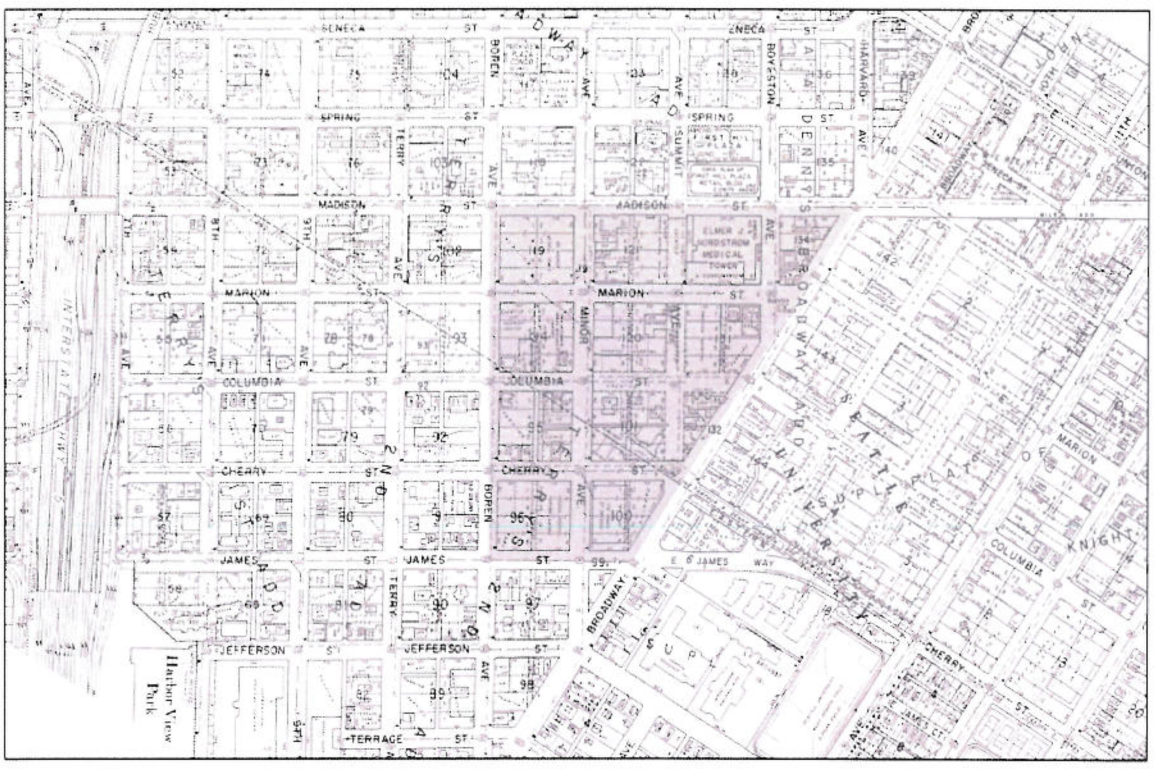


Figure 2. Below, a portion of a survey map, from *First Hill - An Inventory of Buildings and Urban Design Resources,* Steinbrueck and Nyberg, 1975. Buildings that were identified in this survey as "significant to the city - warrant further evaluation for designation as historic landmark" are shown in orange. Those that were identified as "significant to the community - special quality and character in relation to this neighborhood," are outlined in orange:

Figure 3. Above, a 1940 aerial view, looking northeast, at First Hill with construction of Yesler Terrace Housing in the foreground. Source: University of Washington Special Collections (Photo No. Sea 0127).

Figure 4. Below, view of First Hill prior to construction of the I-5, from Harborview Hospital, looking north ca. 1950. James Street is in the foreground. Source: City of Seattle Municipal Archives.

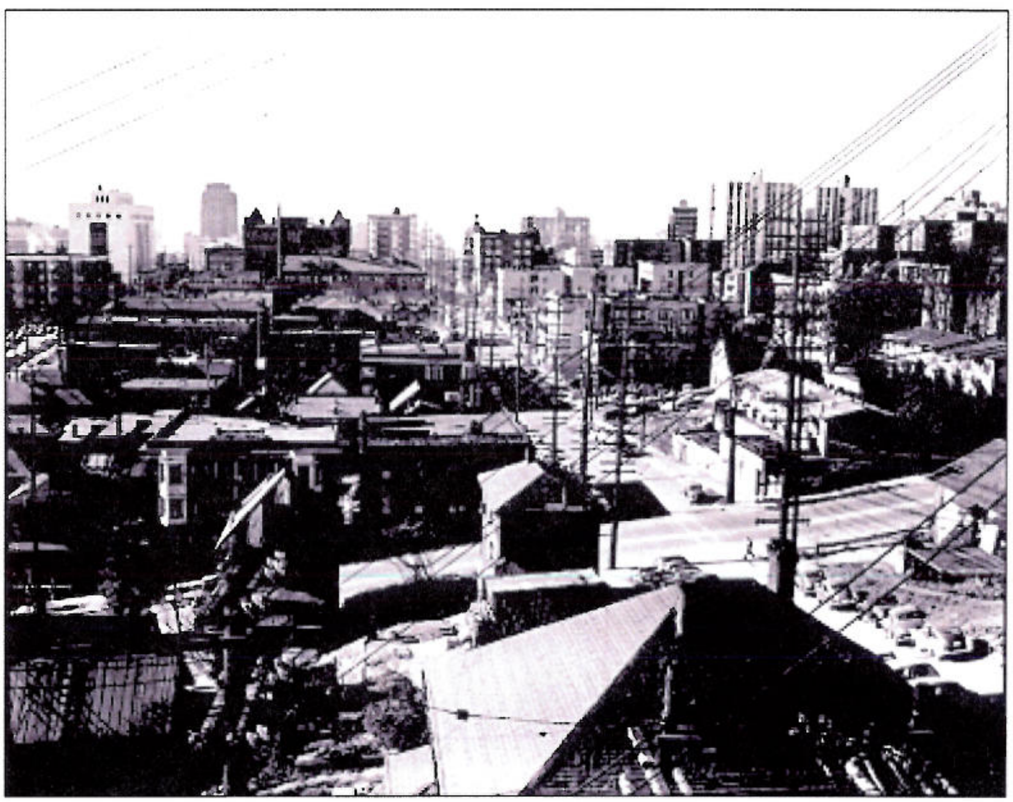
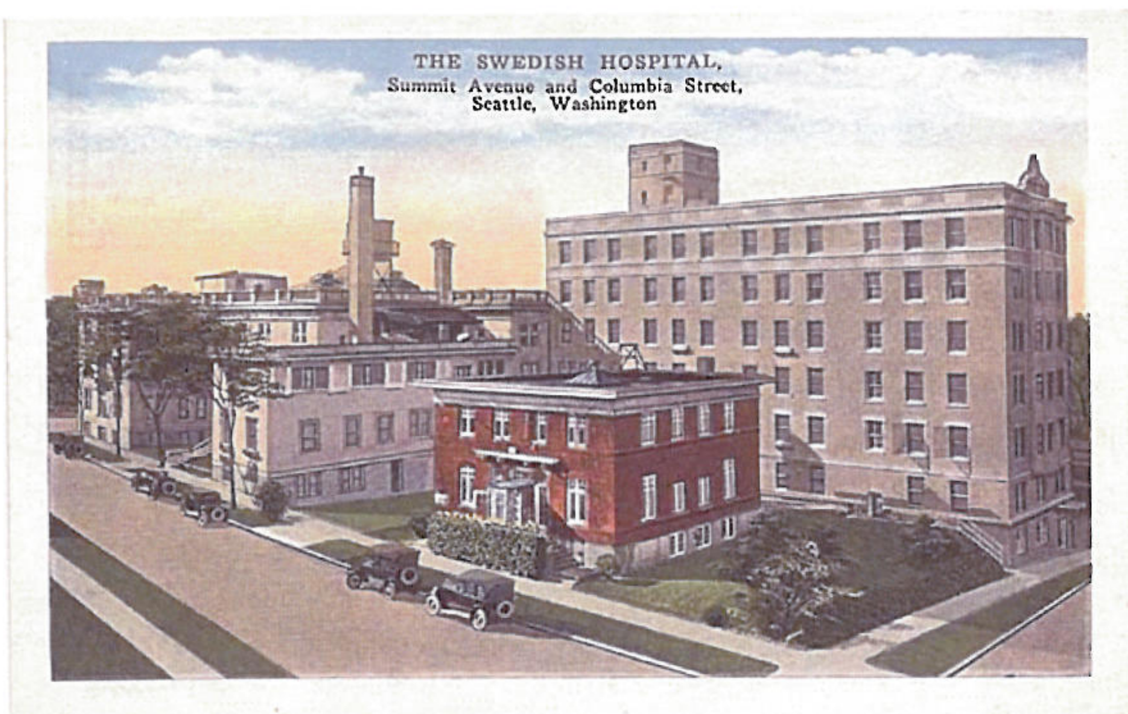


Figure 5. Above, a historic photo of nurses at the front entry of the early Swedish Hospital building. Source: Museum of History and Industry.

Figure 6. Below, a historic postcard view of the 1910 era Swedish Hospital, shown on the far left in ca. 1925. This view appears to be looking southwest from the corner of Summit Avenue, which is currently vacated, and Minor Avenue. To the far right is the 1923 - 1926 era building, which was then a freestanding structure. Source: Museum of History and Industry.

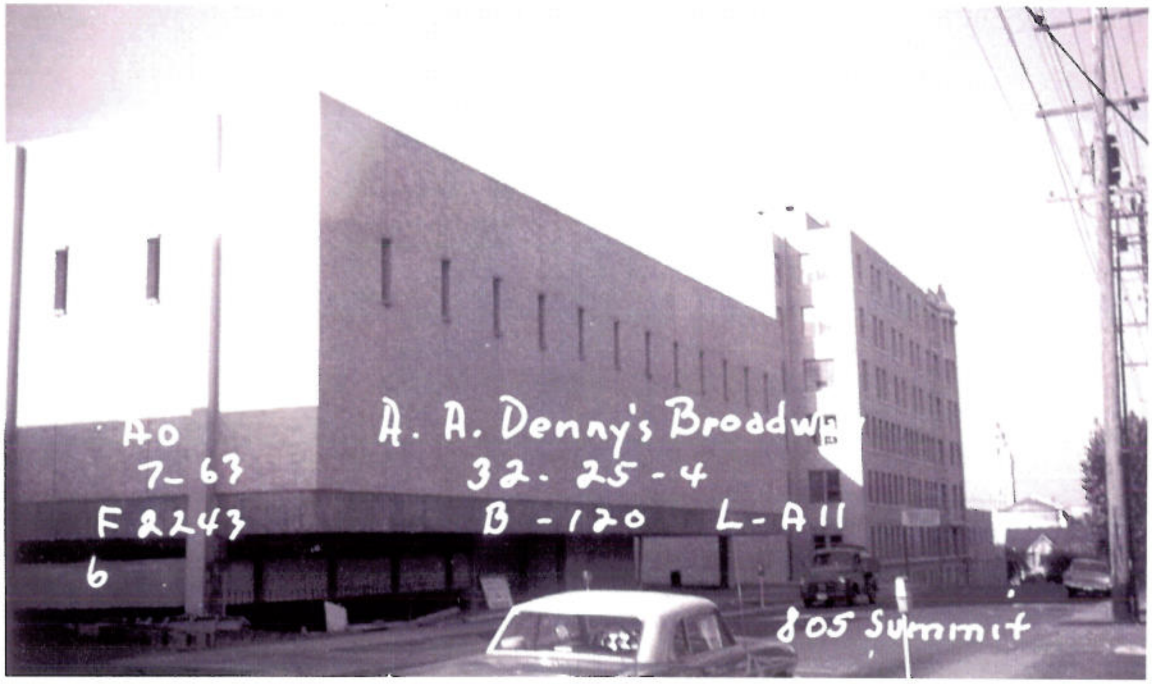


Property of Museum of History & Industry, Seattle

Figure 7. Below, Swedish Hospital, in a historic view from May 11, 1943, looking south on Summit Avenue from Marion Street. The 1923 - 1926 building sections are in center foreground, and a 1936 era building in the background, left. Source: Museum of History and Industry.

Figure 8. Below, Swedish Hospital in another photo from June 1, 1943, looking north on Summit Avenue from Columbia Street. Summit Avenue and portions of Columbia Street were vacated after the 1940s, and new hospital structures built in the former street rights of way. Source: Museum of History and Industry.

Figure 9. Below, a view looking west along Minor Street from Summit Avenue in 1963. In the foreground there is a portion of the 1941 era wing, and in the background, the north facade of the 1923 - 1926 hospital. Source: King County Tax Assessor Files, Puget Sound Branch, Washington State Regional Archives.



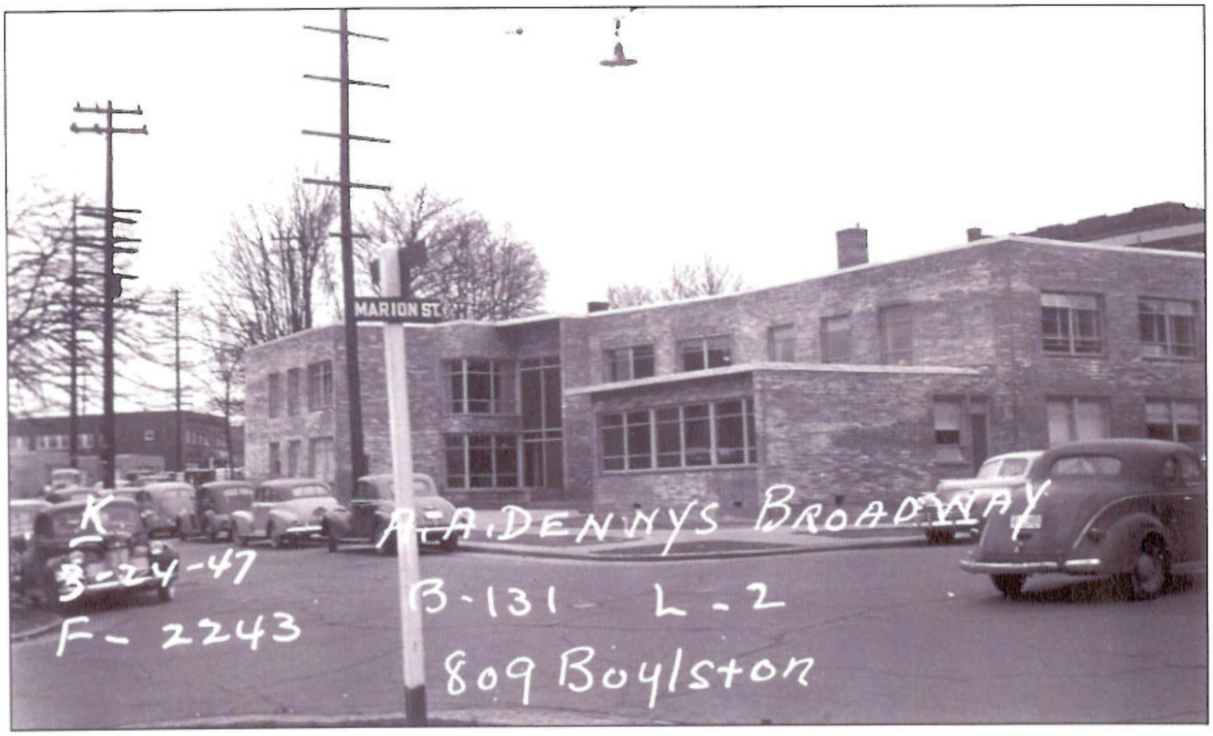


Figure 10. Above, a 1947 era photo of another building on the current SMC site, the Marion Clinic, at 819 - 821 Boylston Avenue, view looking southwest. Source: King County Tax Assessor archival files, Washington State Regional Archives, Puget Sound Branch.

Figure 11. Below, a 1946 photo of the clinic at 900 Boylston Avenue under construction, view looking northeast. (Same source as Figure 10.)

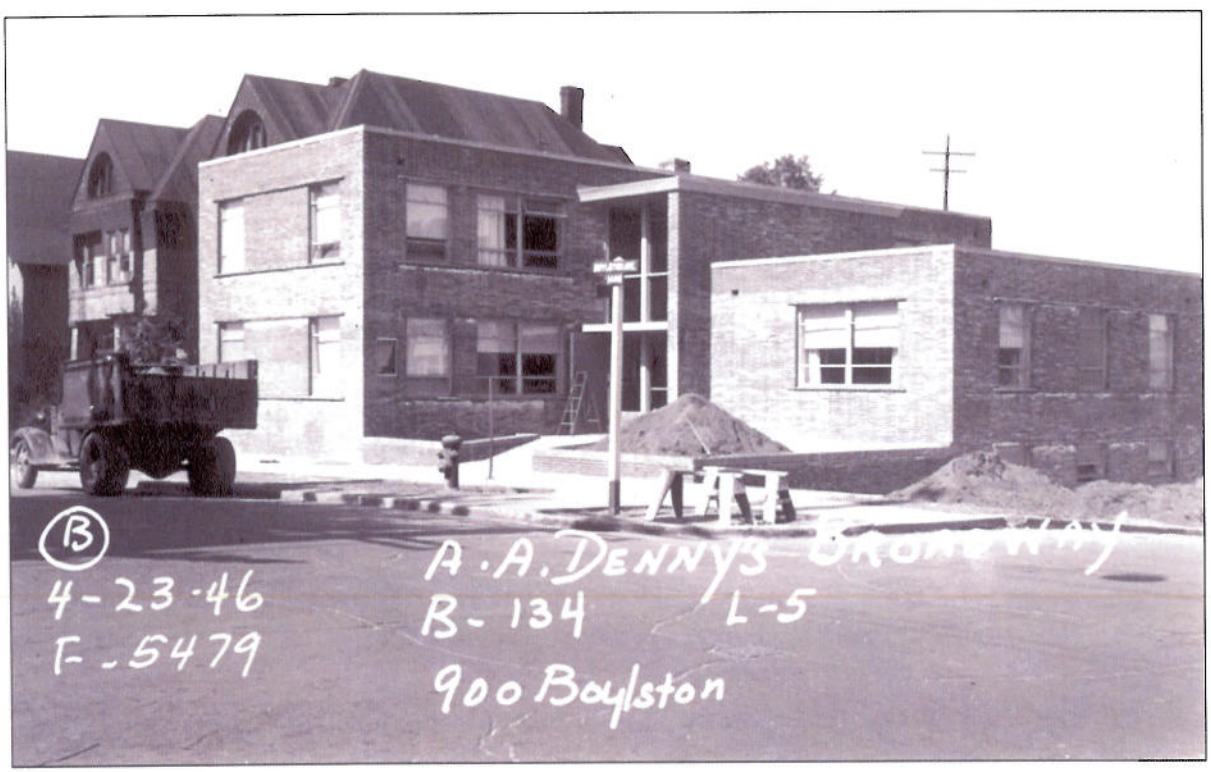


Figure 12. Above, the Invex Building, at 1119 Columbia Street, view looking north at the courtyard. Source: King County Tax Assessor archival files, WA State Regional Archives, Puget Sound Branch.

Figure 13. Below, a 1963 view of the Invex Building, and partial view of the Cherry and Minor Medical Center, at 1120 Cherry Street, beyond. (Same source as figure 12.)

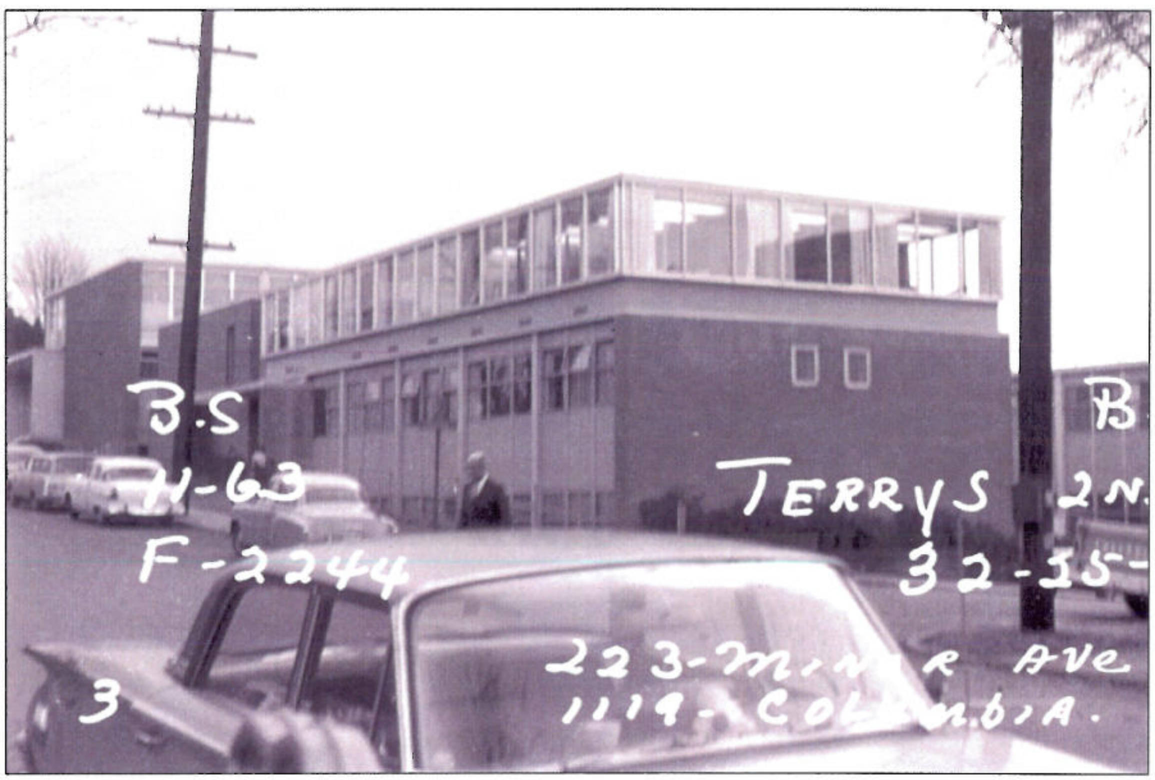


Figure 14. Below, Cherry and Minor Medical Center, at 1120 Cherry Street, view looking northwest (Same source as Figure 13.)

Figure 15. Above, a 1959 era photo of the three-story SMC Annex, originally the Blue Shield Building at 601 - 621 Broadway Avenue, view looking west. Source: King County Tax Assessor archival files, State Regional Archives, Puget Sound Branch.

Figure 16. Below, a 1967 view of the same building, also looking west, showing the four-story addition in the foreground (Same source as Figure 15.)

Figure 17. A, above left, view of the 1923 and 1926 sections, looking southwest on Marion Street at the primary north facades. 17. B, above right, a courtyard view looking southwest at the hospital sections from 1923 (right) and 1936 (left) and 1954 – 1955 (background).

Figure 18A. Below left, partial view of the north facade of the 1954-1955 West Wing addition. 18B. Below right, view of the West Wing south and partial east facades.

Figure 19. Above, north facade of the 1930 - 1953 era Tumor Institute with a partial view of the 1923 hospital section at the left and the 1954 - 1955 West Wing at the right.

Figure 20. Below, detail view of the partial north facade showing the skybridge, 1923 era hospital to the left, a portion of the Old Tumor Institute to the right, and the Old West Wing in the background.

C. HISTORIC OVERVIEW OF HOSPITAL BUILDING DESIGNS

The rise of the hospital as an institution in the late nineteenth century and its development throughout the twentieth century traces advances in western medicine and growing specialization of care. The original Swedish Hospital and the present-day Swedish Medical Center represent both of these developments, and the role that hospitals played in the City of Seattle in the 1900s.

Many advancements in patient care and the design of hospitals occurred during the Crimean War in Turkey and the American Civil War, when large mobile wards were created, aiding systemized treatment. The discoveries of Pasteur and others concurrently advanced theories about germs. Under Florence Nightingale's direction hospitals began to separate patients by their disease and levels of infection, and use mechanical systems for ventilation and temperature control. Advancements in sterilization and surgery procedures, and a growing understanding of disease and diagnostic procedures occurred later in ca. 1880 -1900.

In the nineteenth and early twentieth centuries the epidemics of cholera, influenza, and tuberculosis raised public consciousness, and helped advance practical application of treatment and immunization. The medical profession advanced also, with growing formal education for both doctors and nurses, and science-based treatment. Business practices were systemized too, with medical care aggregated in larger and larger urban institutions.

In terms of design, hospitals in the U. S. followed European and in particular English models, with pavilion plans, such as London's 588-bed St. Thomas Hospital (1866 – 1871). These buildings were made up by a series of narrow wings, organized with large open wards or small patient rooms off a double loaded corridor with exposure to air and light on one or two sides. Toilets and bathrooms were located outside the wardrooms. Building entries were centralized, as was vertical circulation. Upper floor building ends featured glazed solariums. For treatment, different floor levels or wings were organized according to the type of disease. Chimneys and piping with rooftop ventilators provided positive pressure ventilation. Basements featured utilidors with central heating and exposed piping.

Laundries, laboratories and large supply rooms were added to support treatment functions, and hospitals grew ever larger. In 1875, when Johns Hopkins Hospital was constructed in Baltimore, it covered a multi-building campus of 13 acres with separate administration buildings and residences for nurses. (Goldin, p. 186 - 208.)

In 1873, there were only 149 hospitals in the U.S. By 1923 there were 7,095 hospitals and sanatoriums in the country, with an estimated bed capacity of over 792,000. This represented an increase of 4,661% in the number of hospitals during a mere 50-year period. By this same time, there were 192 hospitals and allied institutions in Washington State providing a bed capacity for 15,328 patients. The national average size of hospitals had grown to 111 beds. The original Providence Hospital, which was reported to have had 356 beds and an additional 50 bassinets, was much larger than the average hospital. (Weber, p. 1 - 8.) Surprisingly, it provided this capacity at far less than the average of 80 square feet per bed. (Hornsby and Schmidt, p. 40.)

In 1923, a new book, *First Steps in Organizing a Hospital*, provided guidance for the design of hospitals. Presumably the ideas promoted in this book were shared by the administrators and architects who designed the 1923-era Swedish Hospital. The book noted that "barring exceptional cases, it is desirable to locate hospital a distance from the city's business center, but in or near center of residential district it is organized to serve." The hospital should be easy distance from the city center (for easy deliveries and access), with a short distance to a streetcar line, but not directly on it because of noise . . . (The) plot should be large enough to give ample light, free circulation of air irrespective of structures that may be erected nearby," (and should allow for future expansion). Recommendations suggested that the hospital building be sited with maximum southern exposure, to allow sunlight into wards. "Hospitals should avoid smoky or dusty locations . . . Plantings of trees, shrubs and lawn should surround it to intercept such air quality conditions." (Weber, p. 37 - 39.)

There was little advancement in medical care and hospital design during the Great Depression and the 1930s. During World War II the changes resulted from efficient military facility designs and treatment techniques. Military hospitals and their medical organizations set the stage for post-war systemization of healthcare.

Several trends came together in the hospitals of the 1950s and 1960s. The International style dominated the architecture while new federal legislation standardized the designs with an increasing eye toward cost efficiency and healthcare for the under served and new specialty markets. In the late 1960s and 1970s the healthcare industry underwent dramatic restructuring with increased outpatient services and clinics along with new federal initiatives to subsidize care under Medicare and Medicaid program. Traditional hospital organizations, such as Seattle's Swedish Hospital, became more provider-focused and responsive to national influences, rather than to meeting the internal goals set by medical professionals or non-profit boards of directors.

After World War II hospital buildings grew more specialized "with newly formed departmental groupings or zones, each with unique functional planning requirements for diagnosis, treatment, surgery, administration, meals and other support functions ... (They) grew exponentially in size and spatial complexity. The advent of long span structural systems and sophisticated heating, venting and air conditioning (HVAC) system encouraged the abandonment of the (old) wards in favor of large 'block hospitals' with vast windowless regions the center of each floor." The resulting "Megahospital reached its apotheosis in the large interstitial hospitals in the late 1980s, as epitomized by the 1,050-bed Veterans Medical Center in Houston and its counterpart." However, these too became anachronisms in the more recent era of a restructured healthcare, managed care, patient-focused and community based care." (Verderber, p. 14 - 15.)

Hill Burton legislation, as the U.S. Hospital Construction Act of 1946 became commonly known, initiated four decades of health facility construction. This legislation evolved form American New Deal programs of the U.S. Public Health Service in the 1930s. Its aim was to provide health services where they were lacking by mapping the nation to identify areas of need, and funding services in a series of rings around urban centers. These typically had large urban teaching institutions at the center with a network of support clinics and special hospitals, for particular treatments such as cancer, tuberculosis, psychiatry, and community health.

Hill Burton funding came with strict standards "which consisted of preset floor plans, room arrangements, bed capacities, and minimum ... for diagnostic and treatment departments. . . From 1946 and 1965 the federal government's involvement in health care was limited primarily to financing hospital construction. Thousands of facilities were built during this period, and many remain in use." The influence of Hill Burton programs diminished after the 1965 passage of Medicare and Medicaid entitlement programs as the emphasis shifted to new organized services, for example with the development of oncology departments. (Verderber, p. 22 - 23.)

Hill Burton resulted in the construction of hundreds of standardized hospital, typically in linear block or "cube" designs that provided patient services on one floor with minimum patient travel, often in hermetic, mechanically vented structures with minimum windows. During the 1960s there were also alternatives in American hospital design that with semi radial plans with extending finger like wings or fully radial cylindrical or triangular forms with separated main hospital and nursing ward units, ostensibly with greater efficiency of staffing. Other alternatives provided a sawtooth exterior profile with realignment of perimeter patient rooms to provide framed outward views. These building forms were also made possible by advancements in artificial lighting and HVAC system. (Verderber, p. 26 - 41.)

Post War hospital design was made by changes in technology, and further developments in germ theory, antisepsis and surgical procedures, accompanied by the modernist movement in architecture to resulted in "sleek, unadorned structures coupled with high-tech functionalism produced an environment some patients called dehumanizing." (Miller, p. 31.)

Contemporary post war periodicals suggest that Modernist clinics in the Northwest may have offered some new architectural ideas about the relationship of indoor space to the outdoors and the healing aspects of courtyard gardens. The Lake City Clinic, designed by Seattle architect Paul Kirk, was cited in 1960 publication for example, for unique exterior courtyard. (Hunt, p. 234 - 235.) This design feature was typical in a number of Kirk's designs for clinic, such as those for the Ravenna and Eastlake Psychiatric Clinics and Northgate Group Health facility, which dated from the late 1950s and early 1960s. Open entry courtyards are important features in two of the other clinic buildings in the SMC project area. These include the NBBJ design for the 1955 - 1956 Invex Building, and the Arnold Gangnes design for the 1958 Cherry and Minor Medical Center. Surprisingly there is no courtyard in Kirk's design for the 1965 Seattle Clinic of Medicine, at 910 Boylston Avenue.

D. POST WAR MODERN ARCHITECTURE IN SEATTLE

International Influences

"Modern Architecture" was conceived in reaction to the perceived chaos and eclecticism of the earlier 19th Century revivals of historical forms. The Modern Movement began in Europe in the 1920s as an optimistic belief that science and the new technologies of industrialization would produce a genuine "modern age architecture" of universal principles. Much of this revolutionary philosophy emanated from advocates and leaders of the Modern Movement in Europe: Walter Gropius, Mies van der Rohe and Le Corbusier. The strong influence of Frank Lloyd Wright was known through publications. The evolution of modern architecture, exemplified by the International Style, provided an architecture that dominated the five decades from early 1920 to the end of 1960 before transforming itself in a greater plurality of architectural expression.

There are many approaches to modern architecture and differences in personal design styles. However, the first use of the term "International Style" occurred with the 1932 exhibition at the new Museum of Modern Art in New York. It was to be one of the most influential exhibits in contemporary architecture, and one that set the tone of the discourse for the next three decades.

The exhibition highlighted aspects of modern architecture that represented a new direction and attitude as defined by Le Corbusier in his "Five Points." The first principle, "Architecture as Volume," dealt with the creation of space by floors supported by a columnar structure, which allowed for flexibility in plan. The second principle, concerning regularity rather than axiality, stemmed from the structural ordering of the building. The third principle, mandating the avoidance of applied decoration was seen as an attempt to eliminate superficiality.

In the years after World War II, modern architecture, particularly in the United States, became a widespread ideological approach. While Europe found itself in the midst of a general destruction, an unprecedented economical prosperity, coupled with a renewed availability of materials, new construction methods, and technical innovations sparked a building boom across America. Architectural education was also changing across the country, following the lead of German émigrés from the Bauhaus, which emphasized the creation of forms appropriate to a new industrial and technological society.

American post-war Modernism had a significant influence on popular culture in the 1950s, during the optimist period of the "American Dream." Mid-century architectural achievements of the era – the suburban house, the corporate arcadia, the glass curtainwall, the shopping mall, etc. – were specifically experimental in their goal, using design to change the environment of the everyday life. Most often Modernism was translated into economic commercial building that used only the superficial design elements of the style on low-cost office buildings and towers placed in vehicle-driven urban and suburban contexts.

American contributions to modern architecture include: Frank Lloyd Wright's Fallingwater and Usonian house concept (1937), and Guggenheim Museum (1959); Richard Neutra's Kaufman Desert House (1947); Mies van der Rohe's Farnsworth House and Lake Shore Drive Apartments (1951), and Seagram Building (1958); the steel-frame Case Study house prototypes of the Los Angeles area (1945); Skidmore Owings & Merrill's Lever House (1952); Eero Saarinen's TWA Terminal, John F. Kennedy Airport (1962); and Louis Kahn's Salk Institute (1965).

Modernism in Seattle

Modernism as an architectural style came to Seattle prior to World War II, but its development was limited by lingering provincial tastes and interest in Moderne and Art Deco designs, and the debilitating impacts of the Depression. The demand for speedy construction, functional designs manufactured off-the shelf building components rose during World War II. This cultural and economic environment proved to be welcoming to Modernism in the postwar city.

In the Northwest, Pietro Belluschi, working in Portland, and Paul Thiry, of Seattle, had already gained national recognition for significant modern work before World War II. Paul Thiry was a leader in transforming International Style modernism to fit the Northwest context. The "Northwest Style", a regional variant of Modernism, was quickly adopted by a new generation of Seattle architects who initiated their careers with suburban building projects.

Inspired by a variety of modern sources as well as traditional Japanese architecture, Seattle's architects favored a wood timber-built architecture and a design approach that complemented the Northwest qualities of its landscape. Architecture and site were inextricably tied together, offering an original direction that played an influential role in shaping Northwest architecture of the period. Architects in the area also designed buildings utilizing a variant of the International Style, Brutalism, typically created with muscular, cast-in-place concrete.

With the end of the war, there was a built-up demand for municipal services and housings. Municipal and regional governments responded with construction of numerous new schools, hospitals, libraries and government buildings in the late 1940s and early 1950s. Civic and commercial buildings in the city's downtown followed. Those that represented Modern style include the Public Safety Building, former Downtown Library and Municipal Buildings, and the Norton, Lloyd and Washington Buildings. During the same era there were many smaller scale Modern buildings, including the Susan B. Henry (Capital Hill, 1954, demolished), North East, (1954) and Southwest Libraries (1961), the Seattle Park Department Headquarters in Denny Park (1948). Architects designed mall structures for emerging professional services in many neighborhoods, including medical clinics and their own small office buildings.

In addition to small-scale regional practice, corporate architectural practices took over large commercial and business projects, mostly in the downtown area, with design influenced by national tendencies, notably the Miesian tradition and the advanced technology of the aluminum and glass curtainwall, such as the Norton Building.

In the early 1960s, the region's architecture leapt forward with the development of the Seattle World's Fair. The planning and the buildings of Seattle's World Fair of 1962 reflected the continuing powerful influence of Modernism. This event resulted in the creation of a number of exuberant, tectonic structures, such as the Weyerhaeuser Headquarters, Pacific Science Center, the Monorail and the Space Needle. The symbol of the fair, the Space Needle, embodied the era's faith in technology and progress. The fair's legacy include its grounds, which have been transformed into the multi-cultural use Seattle Center, and included new and expressive building technologies, such as thin shell concrete roofs, pre and post-tensioned and tilt-up concrete frames and prefabricated and manufactured building components. These styles were combined in buildings such as the Catherine Blaine Senior High School, UW Faculty Club, St. Demetrios Greek Orthodox Church in Montlake, and Gaffney's Lake Wilderness Lodge, a conference center near Renton.

The young generation of architects living in the northwest also produced a numerous houses in the post-war decades. Houses throughout Seattle's expanding neighborhoods, such as Ravenna and Lake City, and its surrounding suburbs expressed new ideas of the open plan, flowing exterior and interior spaces, the integration of craftwork in their interiors, and an emerging legacy of Northwest Regionalism in wood framed and post and beam buildings.

E. BIOGRAPHIES OF THE ORIGINAL ARCHITECTS

<u>The Original Swedish Hospital Designers, Joseph Coté of Sommervell and Coté, Architects</u>

Joseph Coté was born in Quebec and educated at Columbia University. He worked in the New York firm of Hines and LaFarge where he developed a close working relationship with Woodruff Marbury Sommervell. The two men traveled west to Seattle in 1904 to oversee construction of St. James Cathedral (1903 - 1907). On that project, Coté's role has been described as that of supervising architect, while Sommervell, the senior architect, appears to have been in charge of design. Coté practiced with Sommervell in a brief, four-year partnership between 1906 and 1910 or 1911. During this partnership the firm produced designs for the Perry Hotel (1906, later Cabrini Hospital, demolished), St. Joseph's Hospital in Bellingham and Seattle Fire Station No. 25 (a designated landmark at 1400 Harvard Avenue on First Hill).

After the partnership ended, Coté remained in Seattle and continued to design buildings in the Northwest. His work in Seattle included the Sunset Club and Swedish Hospital and residences for prominent families in Seattle, including the Frederick Bentley House on Federal Avenue, and the Frederick S. Hammons House on Queen Anne Hill. Many of the homes were designed in the Georgian Revival and Colonial styles. (An unusual example was a 1939, 1:12 scale Southern Colonial dollhouse for a Seattle client, Mrs. Hammons, currently in the collection of the Museum of History and Industry.

Joseph Coté's residential work included design of the Raymond-Ogden Mansion (1913), a Georgian Revival style home for Dr. Alfred Raymond, and the 1940's additions to the Ballard/Howe House (1901) for Dr. Richard Perry. These two residences are listed in the National Register. (Dr. Raymond worked at the Seattle General Hospital and was president of the King County Medical Society in 1897. Dr. Perry was associated with Harborview County Hospital and was president of the Seattle Academy of Surgeons as well as the County Medical Society. (The men may have known Coté through his hospital work.)

<u>Designers of Swedish Hospital 1936 - Present, and Other Clinic Buildings, NBBJ Architects</u>

The Seattle based architectural firm, NBBJ, designed most of the buildings on the Swedish Hospital complex. NBBJ is also responsible for the clinic buildings at 819 - 821 Boylston Avenue, to the northeast of the Heath Building and Surgery Doctors Garage, and at 900 Boylston Avenue, northeast of Marion Avenue.

The firm of NBBJ was established in 1943 by four architects Floyd Naramore (1896 – 1985), William Bain Sr. (1896 – 1985), Cliff Brady (an engineer and associate of Naramore's, 1894 - 1963), and Perry Johanson (1910 - 1981). Initially, the partnership was loosely formed to take advantage of large federal contracts commissioned by the federal government during World War II. The partnership capitalized on the individual skills of each partner: Johanson's relationship to Swedish Hospital, including the design of its buildings in the 1930s; Bain's strong residential work; and Brady and Naramore's school experience.

By the end of the war, the partnership was solidified, emphasizing a "team" approach to design and a service approach to practice. "In those years, a business style was set too: a reputation for solid functional design that would never set the architectural press on fire, but which came in satisfactorily close to schedule and budget . . ." The firm focused on institutional work in the 1940s with projects such as public schools for the Seattle School District. The 1950s were a period of evolution for NBBJ. Early that decade NBBJ finished construction of its new headquarters, at 904 Seventh Avenue, in the First Hill neighborhood. (*The Weekly*, Downey, February 16 - 22, 1982.)

A project for Swedish Hospital in the mid-1940s marked the beginning of NBBJ's medical practice, which quickly flourished. In 1950, the firm secured the commission for the design of a new hospital and medical school campus for the University of Washington, a project that continued to involve the firm for many decades. Other large-scale and early projects included facilities for the University of Washington Hospital and Swedish Hospital's Nurses quarters, and two early downtown Seattle towers -- the Public Safety Building (1950), and the Washington Building (1959 –1960). The latter was one of the first commercial office blocks built downtown after the onset of the Depression and the war years.

Bill Bain Jr. returned to Seattle in 1956 to join the firm after having attended school at Cornell and working in the East. His return marked a cultural change in the firm, and an increased focus on projects with greater design opportunities.

In 1957, NBBJ secured the winning entry in an international competition held by the World War II Pacific Theater Memorial Commission. The Corregidor - Bataan Memorial in the Philippines was never constructed, but the commission was a critical component in the firm's development. Its design was noteworthy for its expressive materiality and its integration of structure.

Other Modern style work by NBBJ during the post-war period of 1945 to the late 1950s includes designs for the Ashworth School (1957), Clyde Hill Elementary (1953), Enatai School, Bellevue (1953), King County Central Blood Bank (1951), Susan B. Henry Library (1954), University of Washington Health Science Building (1950), Veteran's Hospital (Beacon Hill, 1951), and the Crown Hill Medical Clinic (1948). NBBJ also designed three subject clinics in the MIMP project area (819 – 821 Boylston Clinic and the 900 – 903 Boylston Avenue Clinic (both in 1946) and the Invex Building in 1955-1956 and 1963. Many of these clinic builidng are attributed to NBBJ architect Theodore (Ted) Carroll.

The firm's work in the 1960s included the Battelle Institute in Seattle, the Pacific Northwest Research Lab in Richland, Washington, the Battelle Institute Headquarters in Columbus, Ohio, the Columbus Convention Center, and the U.S. Science Pavilion at the Seattle Center (1962) and the IBM Building in downtown Seattle (1964, both with Minuro Yamasaki). In the late 1960s, the firm designed the Seattle First (Seafirst) National Bank headquarters with consulting architect Pietro Belluschi. The Seafirst Building was unusual with "each exterior curtainwall was designed as a vierendiel truss tying together ... massive corner columns." (Ochsner, p. xxxiv.)

Other projects completed in the 1970s and 1980s included the South Wing of Swedish Hospital, a tall Brutalist style building, in 1972. The firm's medical work expanded to include work at the Salk Institute, Mayo Clinic in Rochester, Minnesota, and the University of Hawaii Medical Center.

By 1997, NBBJ had grown to be the sixth largest firm in the world, and the second largest in the U.S., all within 55 years of its founding. It then had a staff of 600 people and six offices -- in San Francisco, Columbus, New York, Los Angeles, and Raleigh, North Carolina, in addition to its local headquarters. The firm was by then organized into studio-like divisions, which together were capable of working on over 900 projects at any one time. Projects included interiors, commercial, healthcare, research and education buildings, sports and entertainment facilities, and retail and graphic design.

Presently, NBBJ is the fifth largest firm in the world, and has received over 300 national and international design awards. In keeping with the original partnership, NBBJ describes itself a "multi-specialty design firm." (www.NBBJ.com)

Designer of the Cherry Building (1120 Cherry) 1958, Arnold Gangnes, Architect

Arnold Gordon Gangnes was born in Port Alice, British Columbia, Canada on May 17, 1918. He completed his bachelor's degree in Architecture at the University of Washington in 1942 and married that same year. While he was a student at UW, he served as an assistant instructor and worked as a draftsman in various Seattle firms. From 1942 - 1944 he served in the U.S. Army Corps of Engineers as a second lieutenant. He received his master's degree in architecture from MIT in 1946.

Gangnes worked in several offices including Anderson & Bechwith, in 1945 – 1946, the MIT Design Staff and as an Associate with H. Brandt Gessel in Walla Walla, Washington, both in 1946. The firm of Gangnes and Draper was organized in 1947 and Gangnes opened his own firm in 1948 (AIA Directory, 1956; p. 189: University of Washington Special Collections, Architect's Reference File). He continued to practice as Arnold G. Gangnes, Architect, up until at least the late 1960s.

Gangnes served on the Seattle City Planning Commission in 1946 - 1950. He was an active member of the Seattle chapter of the AIA, and served as its treasurer from 1953 - 1954 and on its Board of Directors in 1956 - 1959. He was very active in the Association for Retarded Children during the 1950s and up until at least 1969, serving in various positions at the local, state and national levels. This included membership in the State Chapter Board of Directors from 1952 - 1955 and a similar position at the national level in 1955. In 1954 he began chairmanship of the Architectural Planning Committee of the National Association for Retarded Children where he continued to serve until 1969.

Gangnes' early work was mostly residential and included contemporary single-family homes in the Northwest Modern Style. Many of these homes were published and/or received awards locally. One project, a home in Weed, California, received national attention when it was given a 1948 Citation Award from *Progressive Architecture* magazine in 1948. That same year his own home in West Seattle was featured in the *Seattle Times*, where it was cited as representative of "the new trend in design, planning and construction." The article also called Gangnes a "proponent of Modern Architecture." The design was described as a product of the architect and his wife's collaborative philosophy that embraced the idea that form follows function, and cited its efficiency and comfortable living spaces. (*Seattle Times*, April 25, 1948).

Gangnes began designing larger-scale, non-residential and institutional projects in the late 1950s and 1960s, including the Cherry Street Clinic for Even-More-So, Inc., the corner of the property at 1120 Cherry Street, in 1958. Around this time, he also designed the regional office building for the Waterfront Employers of Washington and the Pacific Maritime Association located at Third Avenue West and West Republican Street (1959). This building was somewhat larger in scale than the Cherry Street Clinic. It was a box-like structural steel frame construction with aluminum sash and glass curtainwall, and parking below the occupied building had becoming common for office buildings at the time. (*Seattle Times*, February 1, 1959).

In ca. 1960, Gangnes designed a campus master plan for a facility for disturbed children to be located at Western State Hospital in Steilacoom. This commission was a direct result of his long-time commitment to design and planning issues for this kind of public health facility and in his involvement in the National Association for Retarded Children. This work was his predominant personal and professional focus through the 1960s. In 1965, he served as a consultant to the Division of Hospital Facilities of the U.S. Department of Health, Education and Welfare for a study on facilities for the mentally retarded. Between 1965 and 1967, he traveled to Washington, D.C., Copenhagen, Denmark, and Montpellier, France, to participate in workshops and conferences in the field. He also visited other European countries to tour their facilities. In 1969, he designed three "halfway houses" for the Fircrest Hospital Campus on Northeast 150th Street, Seattle. (Seattle Public Library, Architects Clipping Scrapbooks, Northwest Room Special Collections).

Gangnes' other non-residential work in the Puget Sound area includes a store for the Valu-Mart store chain in Richland (1967). As an associate with the Portland firm of Williams and Martin he designed a Seattle office, display and storage building for the Abbey Rents company, a national supplier of hospital equipment at Aurora Ave and North 41st Street, (1960). As principal of his own firm he also designed an expansion of the Seattle Times Building in 1967.

Designer of the Alcoa Building (1401 Madison), 1962-63, Klontz and Wrede, Architects

Architect James W. Klontz was a member of the Seattle firm of Bliss Moore and Associates prior to 1952. In 1952, he became principal of Klontz and Associates, and by 1956 had partnered with George E. Wrede to form the firm of Klontz and Wrede, Seattle. (Little has been discovered about his educational background and work prior to the early 1950s.)

Klontz and Wrede's work focuses on religious facilities, including churches, schools and convents, but it also included shopping centers, clinics and office buildings. In 1956, the firm designed an addition for Bellevue Methodist Church with classrooms, offices, storage and expansion of the social hall-sanctuary ("Church to Have $85,000 Addition," *Seattle Times*, ca. 1956, SPL, date unknown). In 1958, Klontz and Wrede designed a convent for St. Benedict's Catholic Church in Seattle's Wallingford neighborhood and in 1959, a larger scale facility for St. Monica's Parish on Mercer Island. The latter $600,00 project included a church, school and convent with additional community facilities in a design that featured reinforced concrete and steel framing with clear-span laminated beams (*Seattle Times*, November 15, 1959).

While this and other religious facilities by the firm utilized similar new materials and modern construction methods, they were typically adaptations of traditional church forms. All of their religious buildings had gabled roofs and most sanctuaries featured cathedral ceilings, including St. Patrick's Parish in Seattle at Edgar Street and Broadway North (1960). (*Seattle Times*, August 21, 1960)

Non-religious works by Klontz and Wrede embraced a somewhat more Modern style, with designs that exhibited features such as flat roofs, cubic massing and glass curtainwalls. These projects were designed to integrate with sloped sites. An early and well-executed example of this work was an eye clinic at 1601 East Pine Street, Seattle. This concrete and steel frame building has a flat roof and box-like mass with site elements such as retaining walls and a landscaped and terraced front entry. The exterior cladding features double-height, vertical window panels, white travertine stone and colored glass mosaics on the primary façade. (*Seattle Times*, December 21, 1958)

Klontz and Wrede designed the Alcoa Building in 1963. It is somewhat less distinct in character than the smaller-scale, 1958 eye clinic, but used Modern style construction methods, glass curtainwall cladding, and integration with its sloped site with the main entry at the upper level and parking below the structure. Other works by the firm include a large PX Market in Bellevue (1961). (*Seattle Times*, May

21, 1961). Klontz and Wrede also designed a Thriftway shopping center in Inglewood (1965). (*Seattle Times*, June 27, 1965.)

Designer of the Annex Building (601 Broadway), 1959/1967, John W. Maloney, Architect/Maloney, Herrington, Freesz & Lund Architects

John W. Maloney designed the original 1959 regional office for the Blue Cross Hospital Insurance Co. This building later became the Annex building for Swedish Health Services. He formed a partnership, Maloney, Herrington, Freesz & Lund in 1963. The firm designed an addition to the original Blue Cross building in 1967. The professional practice of Maloney and his firm focused primarily on institutional facilities or office buildings, many for universities or religious organizations and/or or health care-related groups.

Maloney designed a number of hospitals, schools, religious facilities and offices in 1952 until 1963. The earliest known of these is St. John's Hospital in Santa Monica, California (1952). This building later appeared in a national advertisement for Truscon Steel Company of Ohio. In the ad, Maloney provided a testimonial for the company's line of Commercial Projected Steel Windows, which were used in construction of the hospital in the June 1952 *Architectural Forum*. It seems likely that Maloney was practicing and living in California at this time, but much of his early life, training, and work remain unknown. The earliest known commission for which he was identified as a "Seattle architect" was the Rogue Valley Manor retirement home in Medford, Oregon for the First Methodist Church. (Seattle Times, February 19, 1956, SPL.)

Early works in school design by Maloney include Rainier Beach High School (1959 - 1960), Jefferson Park Junior High School (1956) in Seattle, and Lakota Junior High School (1959) in Federal Way.

Maloney designed the regional office building on the present SMC campus for the Blue Cross Insurance Plan, Washington Hospital Association, in 1958. This Modern style building is an example of a glass curtainwall building in Seattle.

In 1960, Maloney designed another office building in the Modern style, located on Eastlake Avenue in Seattle. The building was constructed to house three insurance groups. (*Seattle Times*, July 24, 1960). This smaller-scale building was somewhat simpler in style to the Blue Cross office building. That same year Maloney designed St. Anne's Catholic Church and rectory in Queen Anne. (Catholic Church, Rectory to Cost $600,00, *Seattle Times*, SPL unknown date)

Immediatley after Maloney, Herrington, Freesz & Lund was first organized in 1963, it designed St. Thomas More Catholic Church in Lynnwood, Washington. (*Seattle Times*, Oct 20, 1963). The following year, the firm designed a $3.9 million men's dorm for Seattle University. (*Seattle Times*, May 11, 1963). In 1966, the firm designed the Lemieux Library for Seattle University. The library building is composed of reinforced concrete and steel and features bronze-tinted windows and cladding of white Vermont marble and emerald green Brazilian granite. As a later Modern building, it exhibits elements of the Brutalist style. An undated pamphlet described the building as "contemporary American Gothic" (undated pamphlet, SPL.)

In 1967, the firm designed the addition to the Blue Cross Building. The original building's design and construction anticipated the later addition. The addition used the same cladding, material and details, and is difficult to distinguish it from the original.

Besides buildings Seattle University, the firm designed campus facilities for other regional colleges and universities, including some institutional buildings in Alaska. (Seattle Public Library, Architects' Scrapbook.)

Designer of the Seattle Clinic of Medicine (910 Boylston), 1965 - 1966, Paul Hayden Kirk, Kirk Wallace McKinley

Paul Hayden Kirk was born in Salt Lake City, Utah, on November 18, 1912, moving with his family to Seattle in 1922. After graduating from the University of Washington with an architectural degree in 1937, Kirk worked with various Seattle architects, including Floyd Naramore, A. M. Young, B. Dudley Stuart, and Henry Bittman, opening his own practice in 1939. Not unlike many of his peers, Kirk's early career was dominated by residential design.

Early tendencies toward simplified forms and details emerged in Kirk's early designs for a speculative housing development on Columbia Ridge where limited materials and budget necessitated a more functional solution. During World War II, Kirk joined with other architects to take advantage of war contracts, partnering with former employer Stuart, and Robert Durham. For five years after the war, Kirk practiced in partnership with architect James J. Chiarelli.

From 1950 to 1957 Kirk worked again as a sole practitioner. During this time his designs for single-family residences displayed characteristics of the International Style: flat roofs, bands of windows, and simple cubic shapes. Kirk eventually dismissed the International Style "as an architecture which has been imposed on the land by Man," (Ochsner, p. 252 - 253). However, his blending of modernist principles and Northwest vernacular first emerged during this period.

During the 1950s, Kirk's projects displayed an increasing tendency toward complex structural detailing, often with exposed layers of wood framing. This is visible in his design for both the Group Health Cooperative Northgate Clinic (1957 - 1958), and the University Unitarian Church (1955 - 1959). Both buildings are constructed with exposed wood members arranged in a bypass or layered fashion that clearly delineates primary, secondary, and tertiary elements of the structure.

Although Kirk rejected the International Style, he continued to adhere to the Miesian principle that "God is in the details." Structural complexity and attention to detail became signature elements of his work. The design of the Magnolia Library, completed in 1964, indicates an understanding of Modernism that far surpassed its standard construction method and characteristics.

Kirk's residential work during this period gained national attention. In 1957, his projects were selected by a jury for *House and Garden* magazine to receive four of five national design awards. Kirk, with the designs for the Bowman, Lakeside Evans, Putnam and Russel houses, was "the big winner." Other Northwest architects gained recognition in this competition. Paul Thiry received a special mention for his Eastern Washington vacation house, and Tacoma architect Robert Billsbrough Price for two dwellings in Tacoma, the Jack Warnick house and the T. Harbine Monroe house. (*House and Garden*, January 1958.) The awards were viewed locally with pride, with the *Seattle Times* noting, "The 1957 results ought to settle which region is leading the nation in home architecture. Kirk says, 'Of course architects around here have an advantage in interesting topography and in the climate. A fellow designing for flat land doesn't have the same inspiration.' " (*Seattle Times*, December 19, 1957,SPL Architects' Scrapbook)

Kirk's practice evolved, and by 1957 it became Paul Hayden Kirk & Associates. In 1960, Kirk promoted Donald S. Wallace and David A. McKinley as partners, thereby changing the firm's name to Kirk, Wallace, McKinley AIA and Associates. In addition to the Magnolia Library, projects from this period included the Exhibition Hall, Resident Theater (Intiman Theater) and the parking garage on the Seattle Center grounds (1959 - 1962), the Japanese Presbyterian Church (1962 - 1963), the French Administration Building at Washington State University (1965 - 1967), and Edmund S. Meany Hall at the University of Washington (1966 - 1974).

Kirk's designs for two high-rise cast concrete framed dormitories at the University of Washington (1963 and 1965, respectively), however, sparked controversy. Critics and advocates had varying responses to these buildings late in his career. They were criticized as brutal and impersonal, and as high rise structures lacking in humility.

Unlike many of his colleagues practicing in the Northwest, Kirk's work was widely published. Between 1945 and 1970, his designs were included in over sixty articles in various national architectural publications. His work was respected both locally and nationally, which contributed to Kirk's election to Fellow of the American Institute of Architects in 1959. Seattle architect and historian, Victor Steinbrueck, a contemporary and colleague, praised Paul Kirk for his "masterful spatial design and composition, and fine knowledge of wood construction as a design consideration." (Steinbrueck, *Seattle Cityscape*, p. 62.) *Architectural Forum* concurred in August 1962, commending Kirk's work for its clarity, suitability, and restraint.

Kirk was active in civic affairs in Seattle. Throughout his career he was a frequent juror of professional design competitions. He was appointed to the city's Housing Board, and served as president of the Seattle Art Museum's Contemporary Art Council and the Washington Chapter of the AIA, and was a trustee on the boards of the Arboretum Foundation and the Bloedel Reserve. With architect John Morse he authored a plan to purchase and rehabilitate buildings in the Pike Place Market as a city facility in 1969, a step that led to the Market's eventual preservation. Paul Hayden Kirk retired from practice and transferred his firm to partner David McKinley as the McKinley Architects in 1979. He died in 1995.

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G. INDIVIDUAL BUILDING INVENTORIES

The sheets that follow describe individual postwar era properties, including those that were not constructed originally by Swedish Hospital, but are currently owned by SMC or located within the MIMP project impact area. The Inventories contain additional historic and descriptive information, and include a preliminary evaluation of each property. The building are listed chronologically below.

1. Clinic / St. Joseph's Baby Center, 900 – 903 Boylston Avenue

2. Marion Clinic, 819 – 812 Boylston Avenue

3. The Invex Building / Swedish Health Services, 1119 Columbia Street

4. Cherry and Minor Medical Center / Cherry Building, 1120 Cherry Street

5. Blue Cross Building / SMC Annex Building, 601 Broadway

6. The Alcoa Building / 1402 Madison Street

7. Seattle Clinic of Medicine / Joslin Center for Diabetes, 910 Boylston Avenue

8. The Surgery Doctors Garage and Heath Building, 801 Broadway

INVENTORY 1. CLINIC, 900 - 903 BOYLSTON AVENUE

Original/Current Building Name: unknown/St. Joseph's Baby Center
Address: 900-903 Boylston Ave
Tax Parcel No: 197820-1135

Original/Current Owner: Paul N. Carlson / Swedish Health Services

Original/Current Use: Medical Clinic/Medical clinic and retail
Study Unit Themes: Health/Medicine, Commerce
Architect: NBBJ
Engineer: unknown
Builder: Paul N. Carlson
Date of Construction: 1946
Architectural Style: International
Area: 4,500 sf

Location Description: The building is located in the Medical Office Zone in the MIMP, at the intersection of Marion Street, Boylston Avenue and Broadway. It is on the south end of a wedge-shaped block bounded by Boylston Avenue to the west and Madison Street to the north, where Broadway runs diagonally along the eastern boundary. The Nordstrom Garage is located to the west across Boylston Ave, the Joslin Center for Diabetes, at 910 Boylston, is to the north. To the south, across Marion St., there is a 165 square foot, triangular-shaped median owned by the City of Seattle and maintained by the Parks Department, which serves as an open space.

Description of Physical Appearance: The building is an irregular-shaped masonry structure with a flat roof and roman brick veneer exterior that has been painted over in a beige color. The building is integrated to the site, which slopes down to the east towards Broadway. An original retaining wall of roman brick, painted the same color as the building helps define the setting and integration of the site with the slope.

The plan configuration resembles three box-like sections, with the larger rectangular two-story section to the north, a narrower mid-section with a slightly lowered roofline that is setback to provide an entry court, and a third single-story section to the south at the same setback as the entry. The mid-section serves as a foyer with double-frame, double-height windows above the door. A separate entry, presently for Mary Catherine's Apparel, is located on the east side facing Broadway. On this east side, the building is one-and-half stories in height. Doors and windows are original aluminum frame types. Windows feature tri-part divisions with a hopper on the upper unit.

The building retains its original plan configuration, windows foundation and roof materials. The paint on the original cladding is not a significant alteration, although it deters from the building's original siting to be visually prominent on Broadway.

Building History Summary: The building was constructed on the site of a former two-story frame residential duplex (c.1903), which was owned by John Dubich. The current building was designed by NBBJ for the contractor Paul N. Carlson for use as a medical clinic. It was constructed for the estimated cost of $50,000 in 1946. A year later the same architect and owner collaborated on the Marion Clinic, at 819 - 821 Boylston Avenue. This medical clinic building has many of the same characteristics as the subject building.

The St. Joseph's Baby Center is currently located in the central portion of the building, with an entry on Boylston Avenue. A retail store, Mary Catherine's Intimate Apparel, is a current tenant located on the lower level, with an entrance on Broadway.

Preliminary Evaluation: The property is less than 50 years old and therefore does not meet the minimum age threshold requirement to be considered eligible for the National Register.

The building retains most of its structural integrity and original character. Despite this it does not appear that the building meets meet criteria for local landmark designation. It is not a good example of the Modern style as it developed in post-war Seattle, nor is it distinguished by its scale or location or as a work by NBBJ. The associations between the building and the development of First Hill and with medical services in postwar Seattle appear general rather than significant.

Bibliographic References:

City of Seattle, DPD Microfilm Records
King County Property Tax Records
SMC MIMP
Architect's Reference Files, Seattle Public Library

Above, view of the south facade and nearby median between Broadway and Marion Street.

Below, view of the primary west facade and courtyard entry.

INVENTORY 2. MARION CLINIC

Original/Current Building Name: Marion Clinic/Boylston Building
Address: 819 - 821 Boylston Avenue
Tax Parcel No: 197820-1060
Original/Current Owner: Paul Carlson/Swedish Family Health Services

Descriptive Information:

Original/Current Use: Medical Clinic/Offices
Study Unit Themes: Health/Medicine
Architect: NBBJ
Engineer: Unknown
Builder: Paul Carlson
Date of Construction: 1946
Architectural Style: International

Location Description: The building is located on the southwest corner of the intersection of Boylston Avenue and Marion Street, northeast of the Core Hospital, within the Core Hospital Zone (MIMP). The site is bounded by Marion Street to the north and Boylston Avenue to the east, with a parking lot situated immediately to the back of the building to the west. The entry area to the Heath Building, at 801 Broadway, is to the south. Directly across Boylston is a small triangular-shaped green space owned by the City of Seattle, which was created by the diagonal intersection of Broadway with Boylston and Marion streets. The Nordstrom Garage is located across Marion Street to the north.

Description of Physical Appearance: The building is a flat-roofed, one and two-story frame construction resting on a concrete foundation. It is horizontal and box-like in appearance and somewhat U-shaped in plan with a slightly recessed courtyard entry. The double-height entry bay is framed by a projecting lintel and is distinguished by a two-story window wall exterior. Another distinctive window is a projecting double-height bay that faces north, to the left of the east-facing entry. The wing to the north of the main entrance projecting from the main portion of the building is a smaller single-story wing. The building is clad with Roman brick veneer and brick trim that has been painted beige.

Windows are aluminum framed and consist of three horizontal panes per frame, with the central, wider pane being fixed on the narrower upper section and lower panes being hinged. The windows are composed as single windows or in groups of two.

Building History Summary: The building was constructed in 1946 at the estimated cost of $90,000 for use as a doctor's office/clinic, the Marion Clinic. It was immediately east of the building formerly known as Palmer's Hospital, at 1317 Marion Street. (At the time it was built, the Marion Clinic address was 809 Boylston.)

The building was designed for the building contractor Paul Carlson by the Seattle firm of NBBJ with Theodore (Ted) Carroll as the project architect. In 1947, the Palmer's Hospital building to the back of the existing building was remodeled by NBBJ as part of the Marion Medical Center, which included the existing subject property. The Palmer's Hospital building was demolished at a later date and a parking lot currently exists there, to the back of 819 - 821 Boylston.

The existing building was purchased by Swedish Hospital in 1966 for $340,000. As late as the mid-1970s it still functioned as medical clinic offices, including the Paul F. Glaser

Resident's Clinic (c.1974). It currently houses the Spiritual Care Offices of Swedish Health Services. There are no apparent significant structural changes to the plan, or to the cladding, windows, roof or foundation materials and a preliminary review of permit records did not indicate any significant alterations or additions.

Preliminary Evaluation: The property is less than 50 years old and therefore does not meet the minimum age threshold requirement to be considered eligible for the National Register.

The building retains most of its structural integrity and original character, and was noted in Nyberg and Steinbrueck's 1975 First Hill neighborhood inventory as "significant to the community - special quality and character in relation to this neighborhood." Despite this it does not appear that the building meets meet criteria for local landmark designation. It is not a good example of the Modern style as it developed in post-war Seattle, nor is it distinguished by its location or as a work by NBBJ. The associations between the building and the development of First Hill and with medical services in postwar Seattle appear general rather than significant.

Bibliographic References:

City of Seattle, DPD Microfilm Records
King County Property Tax Records
SMC MIMP
Architect's Reference Files, Seattle Public Library

Above, oblique view of west and north facades with the Heath Building partially visible in the background.

Below, partial view of the back of the building (west facade) and adjacent parking lot.

INVENTORY 3. THE INVEX BUILDING

Original/Current Building Name: Unknown/Invex Building
Address: 1115 Columbia
Tax Parcel No: 859090-0685
Original/Current Owner: Even-So-Inc./Swedish Health Services
Location: Located in the Support/Parking Zone on the Swedish MIMP, west of the Core Hospital Zone.

Descriptive Information

Original/Current Use: Medical Clinic, Apartment/Inpatient Medical Clinic
Study Unit Themes: Health/Medicine
Architect: NBBJ
Engineer: Unknown
Builder: Unknown
Date of Construction: 1955 - 1956, and 1963 (addition)
Architectural Style: International vs. Modern
Area: 14,400 sq. ft.

Description of Physical Appearance: The 14,400-sq.-ft. building is a flat-roofed wood frame and reinforced concrete structure with a roman brick veneer and curtainwall facades and concrete foundation. The building is a U-shaped plan around a central, north-facing courtyard. The configuration consists of a two-story wing on the west side of the courtyard, with three-story wings on the east and south sides. The south-facing entry courtyard on Columbia Street provides access to ground floor offices. An open balcony serves as an entry on Minor Avenue and runs east-west along the north facade of the south. A stairwell/elevator, located in the southwest corner of the building, provide access to the offices on the first floor. The top floor is accessed also via the stairwell and elevator and a balcony corridor located directly above the one on the first floor.

Windows in the primary facades of each wing include groups of four aligned aluminum-framed glass and cemesto (asbestos/cement) panels, which form a curtainwall, with the exception of the top floor addition on the east wing, which is entirely a glass and aluminum frame curtainwall. Windows are typically one-over-one with upper hoppers over lower fixed units. Retractable awnings shelter some windows on the west side. The corner and end facades of each wing are brick.

The north ends of the east and west wings, which face toward Columbia Street are each punctuated by four small vertical hopper windows in a central group with two on the first floor and two on the second floor. The brick-clad southeast corner junction of the south and east wings serves as an entry from Minor Street. This entry is distinguished by a perforated brick wall screen, which obscures two service entry doors from the street. A large opening to the south provides access to the open corridor. A narrow, vertical window on the second story punctuates the brick wall of this facade.

Building History Summary: The building site was originally owned by the Continental Land Co. and was sold to William D. Perkins sometime before 1955. The lot remained unimproved until the construction of the existing building. The building was constructed for Even-So-Inc. in 1955 - 1956 at the estimated cost of $150,000. It was designed by the Seattle firm of NBBJ for use as a medical office clinic with a two-bedroom apartment. The original U-shaped layout provided offices on the two lower floors centered on the north-facing courtyard, with the penthouse at the third floor of the south wing. Theodore (Ted) Carroll was the project architect at NBBJ.

A third-floor addition was constructed in 1963 above the east wing. The addition was also designed by NBBJ. The addition features a distinctive single-story aluminum and glass curtainwall. Although its exterior is somewhat different from the original structure, its design complements and enhances the original building. Robert Coe purchased the property in 1970. The building is currently owned by Swedish Health Services and serves as the Invex Medical Clinic for inpatient treatment services.

Preliminary Evaluation: The property is less than 50 years old and therefore does not meet the minimum threshold age requirement for consideration for the National Register.

The Annex Building may meet criteria for local landmark designation. Based on its history and architecture the building may meet criteria D., and/or E. of the Seattle Landmarks ordinance.

The International style building embodies many of the architectural features of Modernism as it was interpreted in the Northwest for an emerging post-war type -- the small-scale medical clinic. It is associated with prominent design firm of NBBJ, and may be exemplary of the firm's forward-looking design work of the late 1940s, shortly after NBBJ was established. The Invex Building was noted in Nyberg and Steinbrueck's First Hill Inventory of 1975 as "significant to the community—special quality and character in relation to this neighborhood."

Bibliographic References

City of Seattle, DPD Microfilm Records
King County Property Record Cards
SMC MIMP
Architect's Reference Files, Seattle Public Library
Steinbrueck, Victor and Folke Nyberg. *First Hill - An Inventory of Buildings and Urban Design Resources.* Seattle: Historic Seattle, 1975.

Above, oblique view looking southwest at the primary east and north facades, with the East Wing at its third story addition in the foreground, and the West Wing in the background.

Below, detail at the entry off Minor Avenue.

INVENTORY 4. CHERRY AND MINOR MEDICAL CENTER

Original/Current Building Name: Cherry and Minor Medical Center/Cherry Building
Address: 1120 Cherry
Tax Parcel No: 859090-0710
Original/Current Owner: Even-More So Inc. / Swedish Health Services

Descriptive Information:

Original/Current Use: Medical Clinic/Same
Study Unit Themes: Health/Medicine
Architect: Arnold Gangnes
Engineer: Unknown
Builder: Unknown
Date of Construction: 1958
Architectural Style: International

Location Description: The 25,205-sq.-ft building is located on the southeast corner of the block bounded by Columbia Street on the north, Cherry Street on the south, Boren Avenue on the west and Minor Avenue on the east. The Invex Building, which this building closely resembles, is directly north. The SMC Charlotte Building is located to the east, across an alley that runs through the middle of the block from Cherry to Columbia Streets. The South Wing of the SMC Hospital is located across Minor Avenue to the east, and the Minor and James Garage is located across Cherry Street.

Description of Physical Appearance: The Cherry Building is very similar in design to the earlier Invex Building, which is located directly to its north. Both buildings are open U-shapes and horizontal in form. The two buildings feature similar, mirror-image footprints and courtyards open to the primary streets on the north or south. They have similar Roman brick cladding with facades composed of brick and glass curtainwalls. Although a different architect designed it, the design of the Cherry and Minor Medical Center clearly draws from the design of the Invex Building.

The structural-steel and reinforced concrete building is flat-roofed and sits on a concrete foundation. The building includes a central three-story wing, flanked by two, two-story wings that enclose a landscaped entry courtyard that opens on to Cherry Street on the south. A partial basement is located below the central and western wings of the building. A three-story central interior stairwell projects from the west wing into the courtyard. This enclosed stairwell is detailed to match the rest of the building, with the Roman brick on two sides and a full height curtainwall on the side facing the courtyard. This stairwell appears to have been a later addition. A stepped, brick-clad retaining wall and planters along the Cherry Street sidewalk help integrate the building with its site, which slopes down to the west. An open corridor through the building, from Minor Avenue to the second floor, features a ramp leading to a balcony.

Cladding includes Roman brick and aluminum-framed curtainwalls of glass and "cemesto" asbestos panels. Similar to the Invex Building, the long west facade and courtyard facades are of curtainwalls, while the end and corner portions of the three wings are clad in Roman brick.
The curtainwalls include aligned groups of three or four windows over panels. The window consists of smaller hopper units over fixed lower units. The panels are punctuated by alternating air vents between floors. These vents are also carried through on brick-faced

portions of the building. Windows on the brick-clad facades are typically set in single openings, with small rectangular hoppers arranged in groups of two or four, with the air vents below each window. Some windows on the west facades at the alley and courtyard are shaded by retractable awnings.

A relatively new, large tile mosaic, which may have recently been restored is on the east near the Minor Street entrance. A similar smaller, less decorative tile mosaic is on the west facade at the back alley entrance.

Building History Summary: The building was constructed on the former site of a three-story residential building (ca.1890). In 1940, the property was owned by Harriet McMillen and served as a large boarding house known as "The Guest House." This building was demolished sometime between 1940 and 1958.

The existing building was designed by Arnold Gangnes for use as an outpatient medical clinic for Even-More-So-Inc. It was constructed in 1958 for the estimated cost of $425,000. The plans for each floor provided reception areas, consulting rooms, exam rooms, offices and rooms for support services such as labs and x-rays. The building was originally known as the Cherry and Minor Medical Center and remained so until at least 1970. It presently houses the Cherry Street pharmacy and other medical offices, including offices associated with the Swedish Organ Transplant Program.

Some apparent changes to the interior layout are indicated in the DPD permit file. A preliminary review of the building permit file and property record card suggests that the existing interior stairwell on the east side of the (courtyard) may have been added in 1967. The courtyard is deep and narrow, and this addition seems an awkward design feature. No other significant alterations or changes to the exterior are apparent or indicated in records and materials reviewed for this report.

Preliminary Evaluation: The property is less than 50 years old and therefore does not meet the minimum age threshold requirement to be considered eligible for the National Register.

The building does not appear likely to meet criteria for local landmark designation. It is not a good example of an International Style curtainwall building style common to its era, or its Northwest Modern variants. This view is clarified by a comparison between this building and the adjacent Invex Building (Inventory 3.), which has more refined detailing and proportions but the same building materials and plan concept. Architect Arnold Gangnes was well known for his work with medical services to the disabled, but was not a prominent architect in postwar Seattle.

Bibliographic References:

City of Seattle, DPD Microfilm Records
King County Property Tax Records
SMC MIMP
Architect's Reference Files, Seattle Public Library

Above, view looking northwest toward entry courtyard.

Below, detail view of the west wall in courtyard.

INVENTORY 5. BLUE CROSS / ANNEX BUILDING

Original/Current Building Name: Blue Cross / Annex
Address: 601 Broadway
Tax Parcel No: 859090-0860

Original/Current Owner: Washington Hospital Service Corp./ Swedish Health Services

Descriptive Information:

Original/Current Use: Office, Garage/Same
Study Unit Themes: Commerce, Health/Medicine
Architect: John W. Maloney/Maloney, Herrington, Freesz & Lund
Engineer: Pacific Car & Foundry Co./Isaacson Structural Steel Co.
Builder: John H. Sellen Construction
Date of Construction: 1959 and 1967
Architectural Style: International
Area: 75,165 sf

Location description: The building is located on a wedge-shaped site and bounded by Cherry Street to the north, James Street to the south, Minor Avenue to the west, with Broadway running diagonally along the east boundary. A tunnel under Cherry Street presently connects the building to the South Wing of the SMC Hospital. The Minor and James parking garage is on the east side across Minor Avenue and the 600 Broadway Building, which houses the Swedish Hospital Foundation offices, is located across Broadway to the east/northeast.

Description of Physical Appearance: This is a visually prominent four-story International Style glass curtainwall building. The top three floors are situated on concrete columns above the ground-level floor, resulting in a recessed lower level recessed, while the upper floors appear to float above. The building is L-shaped in plan with a covered parking area on the southwest corner of the first floor. Curtainwall glazing and glass spandrel panels are blue in color, and contrast with the aluminum framing to make up a visible grid pattern. The building is flat-roofed and constructed of structural steel and reinforced concrete framing on a concrete foundation. Marblecrete panels are used as a finish material on lower facade areas. Original sunscreens on the west facade are intact, but are somewhat obscured by the tall hornbeam hedge screening.

The naturalistic landscaping of the perimeter, including a lawn and trees and shrubs along Broadway and street trees along Minor Avenue provide a distinctive character and setting for the building's mechanized aesthetic.

The 1967 addition was integrated into the original design by a firm associated with the original designer and does not alter the original design intent. The building retains its original structural and design integrity and there have been no significant exterior alterations.

Summary of Building History: The building site was an unimproved lot purchased by the Washington Hospital Service Corporation. in 1956 for the construction of a regional office for the administration of the Blue Cross hospital insurance plan in Washington and Alaska. The organization had been operating in leased downtown spaces at 2121 Third Avenue up until this time. The corporation's board of trustees identified the need for a larger space to accommodate 100 employees that staffed its services to over 200,000 members. New enrollment for Alaska began in 1957, accelerating the building's occupancy.

The Washington Hospital Service company was incorporated as a health-care service contractor on May 5, 1945. Service to Alaska was added in 1957, and expanded in 1966 after passage of the federal Medicare Act. The building was expanded to serve as one of its office facilities at that time. On March 14, 1969, the organization changed its name to Blue Cross of Washington and Alaska. In 1994, Blue Cross of Washington and Alaska affiliated with Medical Service Corporation (MSC) in Spokane, with the Blue Shield plan serving Eastern Washington. In June 1998, Blue Cross of Washington and Alaska merged with Medical Service Corporation (MSC) and changed its name to Premera Blue Cross.

The building was designed by Seattle architect John W. Maloney and constructed by Sellen Construction for the estimated cost of $600,000 in 1958. It was designed and sited to accommodate for future expansion. In 1967, the firm of Maloney, Herrington, Freesz and Lund designed the addition, a four-story, 82' – 6" by 90' – 9" on the east side of the original building, facing toward Broadway. The estimated cost of its construction was $1,005,000. Herrington was the project architect for the addition.

Blue Cross occupied the building up until sometime in the 1970s. The Premera Blue Cross Company currently serves western Washington from offices located in nearby Mountlake Terrace. In 1980, the building was occupied by First Bank Master Charge. Swedish Health Services purchased the building by 1985 and designated it as the Annex. In 1985 a tunnel was constructed to the north, under Cherry Street to provide direct access to the South Wing of the SMC hospital.

Other construction changes to the original include Metal Sunscreen along west facade, designed by architect John W. Maloney, in 1960.

Preliminary Evaluation: The property is less than 50 years old and therefore does not meet the minimum threshold age requirement for consideration for the National Register.

The Annex Building may meet criteria for local landmark designation. Based on its history and architecture the building may meet criteria C., D., and E. of the Seattle Landmarks ordinance.

The building is highly visible at a prominent corner along the Broadway corridor, and is a good example of International Style curtainwall design. It is associated with Washington Hospital Service Corp/Blue Cross, and the shifts in the medical industry and trends in mutual insurance programs in the twentieth century. The building also may be an outstanding work of architect John Maloney and the firm of Maloney, Herrington, Freesz and Lund.

Bibliographic References:

City of Seattle, DPD Microfilm Records
King County Property Tax Records
SMC MIMP
Blue Cross, Blue Shield Assoc. website, "75 Year Anniversary", http://www.bcbs.com/anniversary/bluebeginnings.html
Architect's Reference Files, Seattle Public Library

Above, view of the building's original western section, north and partial west facades.

Below, a view of the main entry at the juncture between the two sections, looking northwest.

INVENTORY 6. THE ALCOA/SMC BUILDING

Original/Current Building Name: Alcoa Building/SMC Building
Address: 1401 Madison St
Tax Parcel No: 197820-1116

Original/Current Owner: Aluminum Co. of America/Swedish Health Services

Description Information:

Original/Current Use: Commercial Office/Medical Clinic
Study Unit Themes: Commerce, Health/Medicine
Architect: Klontz & Wrede
Engineer: Unknown (Permit # 497830/1962 may provide this information)
Builder: Unknown
Date of Construction: 1962 - 1963
Architectural Style: International

Description of Physical Appearance: The 39,634-sq.-ft. building is horizontal in form and features a T-shape plan. It is constructed of reinforced concrete and aluminum frame curtainwalls. It provides two floors of offices above a small first floor and open, grade-level parking. It has a flat roof and concrete foundation, with concrete columns supporting the second and third floor office levels above the first floor parking garage.

The auto entry to the garage is located on Broadway at the narrow end of the T. There is little distinctive about this entrance and it is not noticeable from the street. Instead, the building is oriented to the north to Madison Street. The second floor main entrance is located on the north facade facing Madison Street at the inner junction of the two wings. This entrance is connected to the street by a ramp extending the full width of the entry bay. The aluminum curtainwalls features gold spandrel panels and dark bronze aluminum windows. The windows are set in horizontal bands and detailed to enhance the building's geometry and horizontality.

Building History Summary: The building was constructed in 1962 - 1963 on the site of a two-and-half-story residential building dating from (ca. 1906). This former building was demolished in 1953. The lot was paved and used for surface parking until 1963. At that time it was purchased from the estate of Emma Schmitz for $130,000 by the Aluminum Corp. of America (ALCOA) for the construction of its regional sales office. The Seattle architectural firm of Klontz and Wrede, with James M. Klontz as the project architect, designed the Alcoa Building.

The building provided offices for Alcoa on the second floor with additional leased office space on the third floor. Klontz and Wrede maintained their architectural office on the third floor. Other original tenants included Proctor and Gamble's district headquarters, State Mutual of America Insurance and the firm of McDonald and McGarry. As late as 1970, Alcoa still retained the building as its regional sales office. Klontz and Wrede, Proctor and Gamble and State Mutual of America still retained offices on the third floor. The building currently houses the Swedish Health Services Family Medicine Clinic. The original building plan has not been altered in any significant way and the original cladding, foundation and roof materials appear to be intact. It retains its physical integrity.

Preliminary Evaluation: The property is less than 50 years old and therefore does not meet the minimum age threshold requirement to be considered eligible for the National Register.

The building does not appear likely to meet criteria for local landmark designation. It is not an outstanding example of an International Style curtainwall building and has no significant associations with the original building owner. It does not appear to be an outstanding design and its siting is not permanent.

Bibliographic References:

City of Seattle, DPD Microfilm Records
King County Property Tax Records
SMC MIMP
Architect's Reference Files, Seattle Public Library

Above, an oblique view of the west facade on Boylston Street.

Above, view looking southwest at the primary north facade, from at the prominent intersection of Broadway and Madison Street.

Below, views of the main entry and parking lot on the north side of the building.

INVENTORY 7. Seattle Clinic / Joslin Center

Original/Current Building Name: Seattle Clinic of Medicine/Joslin Center for Diabetes
Address: 910 Boylston Avenue
Tax Parcel No: 197820-1130
Original/Current Owner: Frederick Casserd (Seattle Clinic of Medicine)/ Frederick & Rochelle Casserd

DESCRIPTION INFORMATION

Original/Current Use: Medical Clinic/Same
Study Unit Themes: Health/Medicine
Architect: Kirk, Wallace & McKinley
Engineer: Unknown
Builder: G. Rodney Johnson
Date of Construction: 1966
Architectural Style: Northwest Modern
Study Unit Themes: Health/Medicine

Location Description: The 7,795-sq.-ft. building is located on a through-lot on Boylston Avenue north of Marion Street. The parcel is a wedge-shaped mid-block property with Broadway to the east.

Description of Physical Appearance: The building is a flat-roofed, two-story building of wood frame construction with beige stucco and brown brick cladding. It is primarily rectangular in form with a projecting half cylinder on the rear facade on the east side, over the lower level garage entry from Broadway. The half-cylinder form is set on concrete columns, in an open garage configuration typical for the time. The upper floor offices house the medical clinic spaces and are accessed via an entry from Boylston Avenue. A landscaped entry area with planters leads to a recessed bay, which features a wide projecting lintel above the entry. The overall appearance of this west facade is geometric, opaque and boxy as two square walls flanking the entry are of solid materials and there are no windows.

Building History Summary: The building was constructed in 1966 on the site of a former two-and-a-half-story residential frame building from ca. 1893. Seattle University sold the original lot to a private owner in 1952, and the former residential building was demolished in 1953. The lot was sold to the current owner, Frederick Casserd Seattle Clinic of Medicine, in 1964. The site served as a parking lot from 1953 until the existing building was constructed. The building was designed by the firm of Kirk, Wallace and McKinley, with Paul Hayden Kirk as the designer. The building was occupied by the Seattle Clinic of Medicine as late as 1990, and is currently occupied by the Joslin Center for Diabetes. There are no apparent significant alterations to the structural plan or the window, cladding, foundation or roof materials.

Preliminary Evaluation: The property is less than 50 years old and therefore does not meet the minimum age threshold requirement to be considered eligible for the National Register.

The building retains most of its physical integrity and original character, and was noted in Nyberg and Steinbrueck's 1975 First Hill neighborhood inventory as "significant to the community - special quality and character in relation to this neighborhood." Despite this, it does not appear that the building meets meet criteria for local landmark designation. It is a late example of the Modern style and embodies few of its typical stylistic features. The building was designed by Paul Kirk, a very well known and talented architect whose designs are represented in many outstanding buildings, such as the Magnolia Library and University Unitarian Church and many residences throughout the region. However, this building does not appear an outstanding work by Kirk. The associations between this building and the development of First Hill and the medical industry in postwar Seattle appear general rather than significant.

Bibliographic References:

City of Seattle, DPD Microfilm Records
King County Property Tax Records
SMC MIMP
Architect's Reference Files, Seattle Public Library

Above, view of the vehicle entry off Broadway (east facade).

Below, view of the primary west facade and entry off Boylston Avenue.

INVENTORY 8. THE DOCTORS GARAGE AND HEATH BUILDING

Original/Current Building Name: Surgery Doctors Garage;
and Harold H. Heath Professional Building/Same
Address: 801 Broadway
Tax Parcel No: 197820-0665

Descriptive Information:

Original/Current Use: Medical Office, Garage/Same
Study Unit Themes: Health/Medicine
Architect: NBBJ
Date of Construction: 1963, 1970
Architectural Style: Modern/Brutalist

Description of Physical Appearance: The SMC Surgery Doctors Garage is a three and four-story reinforced concrete structure with light beige brick cladding and a flat roof. It is low, horizontal, and box-like in form and rectangular in plan. Above the basement level are two floors of parking, while the third floor provides operating rooms and lockers and lounges for the surgeons. A single row of small vertical windows is arranged horizontally across the upper third of the northern and eastern facades and emphasizes the horizontal form of the structure. The lower parking level is open on the north and east sides. Whereas the upper level parking areas and interior spaces are enclosed. The upper levels are supported by concrete piers, a typical structural concept for garage/buildings.

The SMC Heath Building is horizontal and rectangular in form. It is a ten-story building with a mechanical penthouse, constructed of reinforced concrete and structural steel with brick cladding. Vertical towers at both ends emphasize the height of the building. The facades feature alternating horizontal bands of brick and glass and light beige colored brick. Both buildings represent the Brutalist style, a late varient of Modernism. Together they provide 50, 482 sq. ft.

Building History Summary: The Surgery Doctors Garage was originally constructed in 1963 and integrated into the construction of the Heath Building in 1970. At that later date the legal description was changed and the two properties became a single tax parcel on Block 131 of A.A. Denny's Addition. (The Surgery Doctors Garage had previously been described as a parcel on block 120 of A.A. Denny's Addition.) The site of the two buildings had formerly been occupied by one single-family dwelling and two large rooming houses.

The Heath Building was designed for Swedish Hospital by the Seattle firm of NBBJ, with principal Perry Johanson as the project architect. It was constructed at the estimated cost of $4,200,000 in 1970. The fourth floor of the Heath building was integrated into the fourth-floor mechanical penthouse of the existing Surgery Doctors Garage. The Heath Building continues to function as a professional medical office tower with the Surgery Doctors Garage providing parking beneath the building.

Statement of Significance:
The property is less than 50 years old and therefore does not meet the minimum age threshold requirement to be considered eligible for the National Register. It does not appear to meet local designation criteria.

Bibliographic References:

City of Seattle, DPD Microfilm Records
King County Property Tax Records
SMC MIMP
Architect's Reference Files, Seattle Public Library

Above left, view looking southwest from Broadway at the north and east facades. Above right, partial views of the north and west facades of the 1963 Surgery Doctors Garage in the foreground and the 1969 Heath Building in the background.

Below, view of the north entry to the Heath Building from the parking garage.

Below, oblique views of the 1963 Surgery Doctors Garage, east and north facades.