

SUMMARY REPORT

MOUNT BAKER TOWN CENTER Future Transportation Improvements Preliminary Business Outreach Project

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For the

City of Seattle
Department of Planning and Development



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What is the purpose of this report?

A key goal of the 1999 North Rainier Neighborhood Plan was to build a vital, walkable town center adjacent to the Mount Baker light rail station. In the 2010 neighborhood plan update,



*View of Town Center area, looking north toward downtown Seattle.
Source: Mount Baker Town Center Plan, Urban Design Framework,
October 2011*

community members and other stakeholders reaffirmed this objective. Central to creating a successful town center is improving conditions for pedestrian, cyclists and transit patrons—while continuing to accommodate motor vehicles. The City is currently exploring a range of potential transportation improvements. Recognizing the importance of employment and healthy retail, the purpose of the report is to better understand the mobility and access needs of key area businesses and property owners. This report also presents relevant case studies, and assesses the advantages and disadvantages of potential urban design and transportation solutions.

If the City moves forward with any transportation changes within the Mount Baker Town Center, property owners, business owners and other community members will have additional opportunities to provide input and guidance.

Where is the Mount Baker Town Center?

Figure 1 shows the boundaries of the Mount Baker Town Center, which is located at the north end of the floor of the Rainier Valley, about three miles south of downtown Seattle. It is surrounded by the primarily single family neighborhoods of Beacon Hill and Mount Baker. The Mount Baker Light Rail Station is located northwest of the intersection of Rainier Avenue S and Martin Luther King Jr. Way S (Rainier/MLK). Two historic Olmsted boulevards, Cheasty and Mount Baker Boulevards, converge just south of the Rainier/MLK intersection. These two roadways link the Town Center area to significant open spaces and recreational resources including Mount Baker Park to the northeast, Jefferson Park to the southwest, and the steeply-sloped Cheasty Greenbelt that bounds the west edge of the Town Center area.

Since 1999, many members of the North Rainier community have worked together to create the vision for this area. Planning efforts (described later in this report) have occurred under different names, and have covered slightly different study areas. All, however, have included the Mount Baker Town Center. In previous plans, the area has been called the North Rainier Town Center, McClellan Town Center, and the McClellan Station Area Overlay District.

The City intends to change the name of the zoning district surrounding the Mount Baker station to the Mount Baker Station Area Overlay District. For the purposes of this report, as well as for ongoing community involvement efforts, the Mount Baker Town Center and the Mount Baker Station Area Overlay District are considered the same area.

MOUNT BAKER TOWN CENTER – FUTURE TRANSPORTATION IMPROVEMENTS
PRELIMINARY BUSINESS OUTREACH PROJECT



Source: Mount Baker Town Center Plan, Urban Design Framework, October 2011

Figure 1. Mount Baker Town Center Boundaries

What development is in the area now, and how is it expected to change?

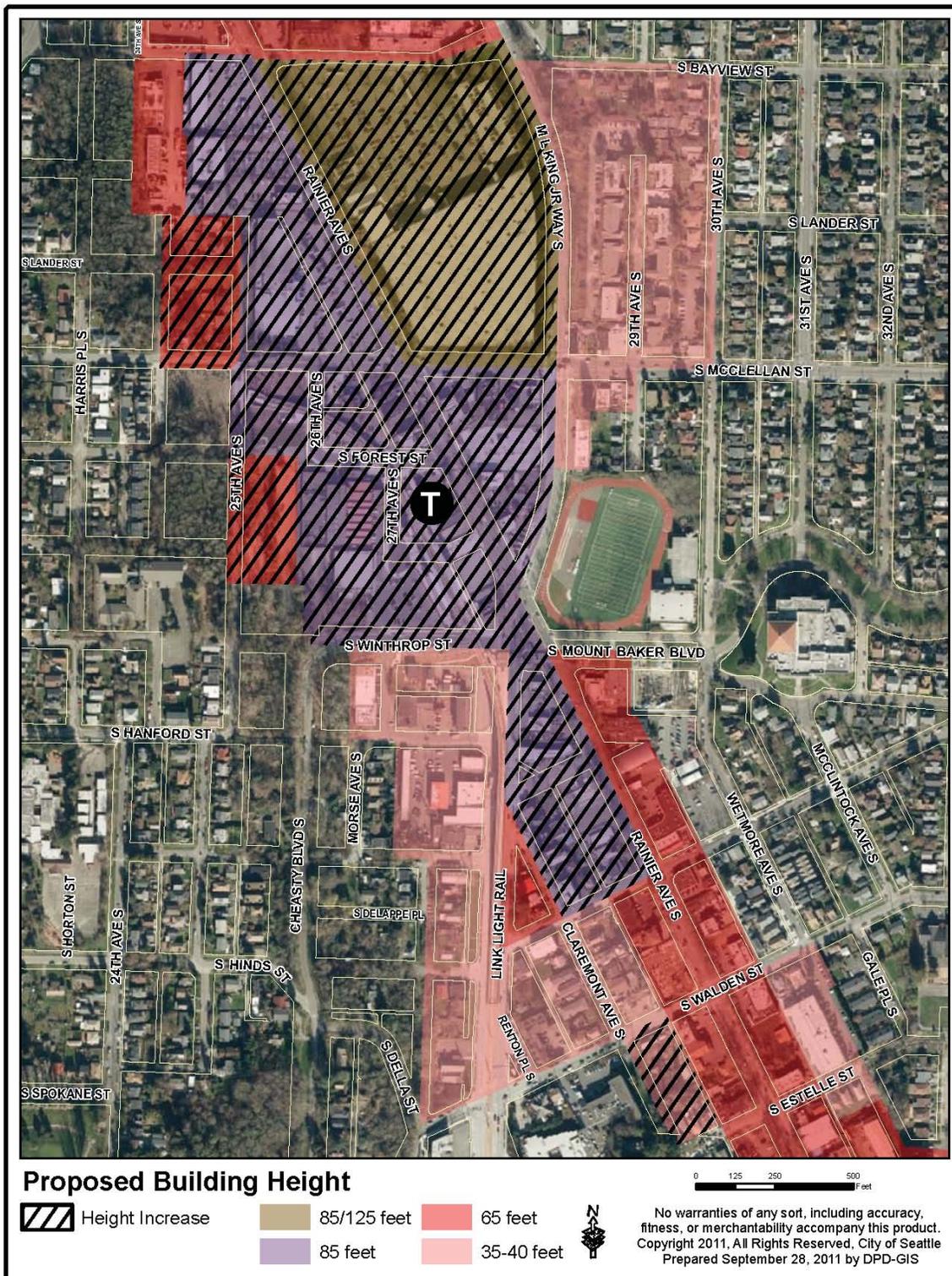
The Mount Baker Town Center area currently includes a diverse mix of housing and businesses; both are expected to grow substantially in the future. The City is currently considering an increase in allowed building height to encourage progression to a mixed-use pedestrian-oriented Town Center.

The area serves as a regional retail and service destination. Businesses include small and large independent retail stores, as well as national chain stores, banks, and gas stations. The area includes a number of large industrial employers including Pepsi, the University of Washington Laundry, and Darigold. Service retail and light industrial uses, another important source of local jobs, are dispersed among the retail stores. Education and social services include Franklin High School, the Lighthouse for the Blind, and King County United Way. The Mount Baker Light Rail Station is located northwest of the Rainier/MLK intersection. The Mount Baker Transit Center, which serves as a bus transfer center for King County Metro buses, is located across Rainier Avenue from the light rail station at Forest Street. Both the Light Rail Station and the Transit Center opened in 2009.

The existing land uses and built form of the area reflect a more typical suburban character—auto-oriented, single story commercial buildings set on large blocks with deep setbacks and parking between buildings and the sidewalk. In this area, Rainier Avenue and MLK Jr. Way each carry over 30,000 vehicle trips per day on average. (City of Seattle 2011) However, institutional and public uses such as the Light Rail Station, the Transit Center and Franklin High School also generate considerable pedestrian traffic. Based on 2000 Census data, it is estimated that about 30% of the households in the North Rainier area do not own a car, and many people walk to and from the area retail stores for their daily shopping. (City of Seattle 2008a)

Housing located outside of the commercial corridor primarily consists of single family housing in Mount Baker to the east and Beacon Hill to the west. However, higher density multifamily housing is becoming more common in the area. Examples include townhomes that have recently been built directly overlooking the light rail station, and the Clarion Apartments, which is a large apartment complex located on Rainier Avenue to the south of Rainier/MLK.

Proposed zoning changes would encourage higher land use densities as redevelopment of the area occurs, but would also allow existing land uses to continue as they are. Figure 2 shows the allowed building height under the proposed zoning, which over time would produce a richer mix of uses while retaining existing light industrial uses. Built form would become more urban—continuous street walls, taller buildings built closer to the sidewalk, more mixed-use development, multifamily residences, public open space, and a higher quality pedestrian environment. These proposed changes are intended to bring more people and urban vitality to the Town Center.



Source: Mount Baker Town Center Plan, Urban Design Framework, October 2011

Figure 2. Proposed Allowable Building Heights

What do current City transportation plans and policies say about the area?

Current City plans and policies support future higher density residential and commercial in the Mount Baker Town Center area, and also identify the need to provide a balanced transportation network that serves pedestrian, bicycle, transit, automobile, and freight mobility needs. Relevant plans and policies established for the area are described below.

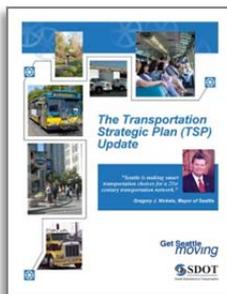
SEATTLE COMPREHENSIVE PLAN



The Seattle Comprehensive Plan identifies an Urban Village Strategy to promote job and housing growth in concentrated centers that can be efficiently accessed and connected by a multimodal transportation system, including high quality, frequent transit. In the current Plan **the City has designated the area surrounding the Rainier Avenue corridor, from approximately Interstate-90 (I-90) to Dakota Street, as the North Rainier Hub Urban Village**. Hub urban villages are intended to provide a balance of housing and employment, generally at densities lower than those found in the City's urban centers, but higher than most other areas of the City. Hub urban villages provide goods, services, and employment to communities that are not close to urban centers.

In addition to laying out the City's land use strategy for accommodating future job and housing growth, the Comprehensive Plan shows how transportation infrastructure, policies and programs will be developed to ensure that the transportation system can efficiently support that growth; this includes mode shift goals that promote a transition to non-single-occupant vehicles. The City has developed a number of plans that focus on specific transportation modes, as described in the following sections. These more focused plans are all consistent with the Comprehensive Plan and build upon the policy framework it establishes.

TRANSPORTATION STRATEGIC PLAN



The Transportation Strategic Plan (TSP) provides more detailed policy and investment direction for preservation, maintenance, and development of Seattle's multimodal transportation system. It serves as a functional work plan for the Seattle Department of Transportation (SDOT), and describes the actions SDOT will take to accomplish the goals and policies in the Comprehensive Plan. Performance goals are included that track progress in the following areas: (1) improving safety, (2) preserving and maintaining infrastructure, and (3) increasing mobility and access through transportation choices.

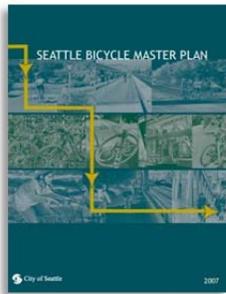
FREIGHT MOBILITY PLAN



The Freight Mobility Action Plan is a citywide plan to implement the freight components of the Comprehensive Plan and the Transportation Strategic Plan. The Plan also designates the City's Major Truck Streets, which are arterial streets that accommodate significant freight movement through the city, and connect to major freight traffic generators. Pavement on truck routes tend to deteriorate more quickly than other streets because they carry heavier loads and higher volumes. The Major Truck Street designation is one of the criteria used for determining paving priorities, as well as other improvements needed to keep freight traffic moving.

Rainier Avenue is designated as a Major Truck Street from Jackson Street to the Rainier/MLK intersection. There, the Major Truck Street designation transitions to MLK Jr. Way where it continues to the south city limits. This corridor serves as the only major truck route in southeast Seattle (south of I-90 and east of I-5).

BICYCLE MASTER PLAN



The Seattle Bicycle Master Plan defines a set of actions to develop a complete network of on- and off-street bicycle facilities and supporting programs to make bicycling a viable choice for a wide variety of trips. Adopted in 2007, the Bicycle Master Plan was created to achieve two goals: (1) Increase bicycling in Seattle for all trip purposes. Triple the amount of bicycling in Seattle between 2007 and 2017; and 2) Improve safety of bicyclists throughout Seattle and reduce the rate of bicycle collisions by one-third between 2007 and 2017. **In the Mount Baker Town Center, the Plan recommends that the following improvements be made:**

- **MLK Jr. Way** – north of the Rainier/MLK intersection, restripe provide a bicycle lane, which would connect to a proposed signed bicycle route (utilizing shared roadway) along Mount Baker Boulevard S/S Winthrop Street/Cheasty Boulevard S.
- **McClellan Street** – east of MLK, restripe to provide a bicycle lane; between Rainier and MLK, mark with sharrows; west of Rainier, sign as a shared roadway.
- When the **bicycle and pedestrian bridge overpass** is reconstructed across Rainier Avenue S at Mount Baker Boulevard, build it wide enough to accommodate both bicycle and pedestrian traffic comfortably and safely. (Identified as Improvement #29 under Bicycle Facility Recommendations for Key Corridors and Focus Areas.)

No recommendations are made for bicycle improvements on Rainier Avenue. The Bicycle Master Plan indicates that "further study is needed" along this corridor.

PEDESTRIAN MASTER PLAN



The Pedestrian Master Plan, adopted by the City in 2009, defines the actions needed to improve walkability in Seattle. The Plan establishes objectives to complete and maintain the citywide pedestrian system, improve walkability and pedestrian safety on all streets, and to get more people walking for transportation, recreation, and health. The Plan identifies the Mount Baker Town Center area as having high potential pedestrian demand and as a high priority area for improvement. It identifies **high opportunity for roadway crossing improvements at the intersections of Rainier Avenue with Bayview Street, McClellan Street, MLK Jr. Way, and Walden Street.**

TRANSIT MASTER PLAN



The current Seattle Transit Master Plan, adopted in 2005, defines a citywide Urban Village Transit Network (UVTN) —a vision for a network of transit corridors that connect the City's urban centers and villages with high-quality transit service within a short walk for most residents. The UVTN provides a framework for measuring transit performance on important arterial corridors, but it gives limited direction for how the City should invest capital resources in operable, end-to-end transit corridors. SDOT is currently updating the Transit Master Plan.

The updated Plan will establish the Frequent Transit Network (FTN), which builds upon the UVTN. The FTN will replace the UVTN by developing a program of coordinated transit corridor capital investments, with project-level detail on how to implement speed and reliability improvements.

Under the current Plan, **Rainier Avenue is designated as a UVTN from Jackson Street to Seward Park Avenue; it is designated as an FTN High Priority Bus Corridor** in the draft Plan update.

COMPLETE STREETS POLICY

Seattle's Complete Streets policy is about creating and maintaining safe streets for everyone. It directs SDOT to design streets for pedestrians, bicyclists, transit riders, and persons of all abilities, while promoting safe operation for all users, including freight. Complete Streets principles are applied to all street improvement projects, other than routine repair and maintenance, unless the SDOT director issues an exception. Any roadway improvements constructed in the Mount Baker Town Center area will be developed according to Complete Streets principles.

Seattle Complete Streets Policy: Guiding Principle

"To design, operate and maintain Seattle's streets to promote safe and convenient access and travel for all users—pedestrians, bicyclists, transit riders, and people of all abilities, as well as freight and motor vehicle drivers."

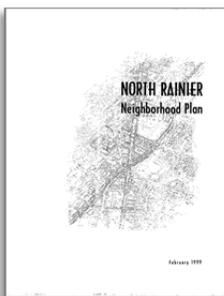
Ordinance #122386

April 30, 2007

What neighborhood plans and studies have been completed for this area?

The vision for the Mount Baker Town Center has emerged from many community-based plans and studies that have been underway since 1999. In addition to land use strategies, these plans strongly establish a need for transportation improvements in the area that will provide a balanced transportation network serving pedestrian, bicycle, transit, vehicle, and freight mobility needs. These plans are described in chronological order below.

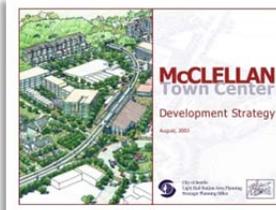
NORTH RAINIER NEIGHBORHOOD PLAN (FEBRUARY 1999)



This plan covered the north Rainier area from Interstate 90 to Charleston Street. It was led by a community-based planning committee and included extensive public outreach. Key areas of emphasis included creation of a town center in the Rainier/MLK area, bicycle and pedestrian networks, accessible transit, and attractive green streetscapes along Rainier Avenue and MLK Jr. Way. The plan identified a strong need to provide affordable housing for a diverse population. It emphasized the need for economic development in the area, encouraging new commercial and industrial activities while retaining the diversity and ethnic heritage that make the Rainier Valley unique. The

Plan envisioned residents with access to a range of services without having to leave the community.

MCCLELLAN TOWN CENTER DEVELOPMENT STRATEGY (DECEMBER 2001)



This study focused on the area around the Rainier/MLK intersection, from S McClellan Street to S Walden Street, and it built upon the town center vision that had been established in the North Rainier Neighborhood Plan. It identified a variety of commercial and housing development strategies, as well as public investments and design recommendations intended to integrate the proposed future light rail station into the commercial core of the neighborhood. It also sought to address traffic circulation, safety

and aesthetic issues in the area, as well as to create "sense of place." The process was guided by a Town Center Advisory Council that included representatives of nine community groups, local property and business owners, and staff from the City and Sound Transit. This study proposed and assessed a **roundabout concept at Rainier/MLK**, which is described in more detail later in this report.

RAINIER TRAFFIC SAFETY PROJECT (DECEMBER 2008)

RAINIER TRAFFIC SAFETY PROJECT



The Rainier Traffic Safety Project, implemented from April 2006 to October 2008, was funded by the Washington Traffic Safety Commission, Washington State Department of Transportation (WSDOT) and SDOT. It covered 7.5 miles along Rainier Avenue S from Dearborn Street in the north to the city limits in the south. The goal of the traffic safety program was to reduce collisions on roads using low-cost, near-term solutions through partnerships with community groups, business, engineering, enforcement, education, and emergency service organizations.

Street improvements included enhanced way-finding and safety signage, enhanced pavement marking, optimized signal timings, improvements to pedestrian signals and crossings, minor changes in vehicle channelization, education programs, and enhanced enforcement. WSDOT evaluated traffic volumes and collision experience for a multi-year period before and after improvements were made. It showed that the total number of injuries along the corridor decreased by 8 percent, and the total number of collisions decreased by 1 percent. Although the decrease in total collisions was relatively small, corresponding traffic volumes on Rainier were higher than average during that time, due to light rail construction that was happening along MLK Jr. Way at the time.

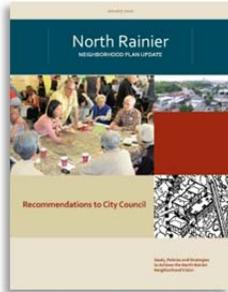
SOUTHEAST TRANSPORTATION STUDY (DECEMBER 2008)



The Southeast Transportation Study (SETS) built on prior planning efforts to provide a comprehensive transportation plan for southeast Seattle (south of I-90 and east of I-5). It was developed to serve as a blueprint for financing and programming transportation improvements over the next two decades. Led by SDOT, this project partnered with King County Metro, Sound Transit, WSDOT, the Seattle School District, and other City departments; it was also informed by a Core Community Team that included 28 representatives from local business and community groups. SETS projects focus on improving safety; maintaining vehicle capacity and freight accessibility on Rainier; improving transit access, speed and reliability; and supporting the transition of the core business district around the Mount Baker Station to a pedestrian-friendly urban village.

The report notes the challenge on Rainier Avenue to balance the needs of changing land development patterns, and many more people on the sidewalks, with the necessity to maintain capacity for high traffic volumes and its use as a major truck route. It also indicates that despite carrying the highest traffic volumes in southeast Seattle, all of the intersections analyzed in the Mount Baker Town Center area operate at acceptable levels of service, and are projected to do so through 2030. It does note, however, that two intersections (Rainier/MLK and Rainier/Walden) are High Collision Locations, which means that they experience greater than 10 collisions per year on average. **Key recommended transportation projects in the Mount Baker Town Center area** include (1) reconfiguring the Rainier/MLK intersection so that pedestrians can cross at-grade on all approaches, (2) improving the two intersections that are currently High Collision Locations, (3) improving S McClellan Street for pedestrians and cyclists traveling to and from the light rail station, and (4) constructing a non-motorized trail along MLK between Bayview and McClellan. These recommended projects are described in more detail later in this report.

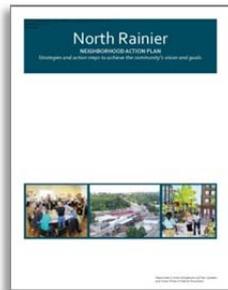
NORTH RAINIER NEIGHBORHOOD PLAN UPDATE (JANUARY 2010)



The North Rainier Plan Update reflects an update of the 1999 Neighborhood Plan. It envisions Rainier Avenue as a highly functioning multimodal complete street, with a network of safe streets for pedestrians and bicycles, and integrated green and open space, consistent with the 1999 vision.

Goals include provision of a vibrant, business district that serves North Rainier residents and is a destination shopping area with stores that serve the greater Rainier Valley, while maintaining ethnic and cultural diversity in businesses and the community. The plan also emphasizes affordable housing for all income levels, safe neighborhoods, provision of green jobs and development, and support for community youth. This update effort included extensive community involvement with 48 neighborhood meetings.

NORTH RAINIER NEIGHBORHOOD ACTION PLAN (SEPTEMBER 2010)



The North Rainier Neighborhood Action Plan provides strategies and action steps to implement the updated neighborhood plan.

The North Rainier Action Plan is the work plan that identifies priorities, strategies and action steps to be accomplished together by the community and the City in order to achieve the vision and goals established in the North Rainier Neighborhood Plan Update. The action plan is intended to be refreshed regularly by the community and the City. It is a living document meant to accommodate changing priorities, conditions, tools and resources.

Priorities for the current action plan were established through a community involvement process. The goal that "Rainier Avenue S and MLK Jr. Way S are safe and attractive to walk, bike, and ride as well as drive" was selected as the top priority goal in the Plan.

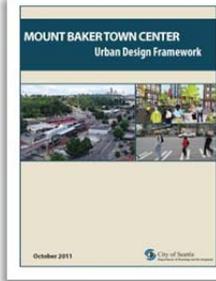
SEATTLE STATION AREA TRANSPORTATION ANALYSIS (MAY 2011)



This report provides transportation analysis for areas near three Link light rail stations, including the Mount Baker Station. The study analyzed the effect on transportation of increased density and building heights that are being considered to accommodate additional residential and employment growth in the areas near the stations. The analysis presented in this report indicates that in spite of the high traffic volumes carried on Rainier and MLK, all major intersections in the Mount Baker Town Center area operate at acceptable levels of service under existing conditions, and are expected to remain so through 2030 with the planned higher land use densities and no major infrastructure improvements. This report

presents and assesses a **one-way "bowtie" couplet concept at Rainier/MLK**, which would allow more space for transit and non-motorized improvements, but could increase vehicle delay at some area intersections. The one-way couplet is described in detail later in this report.

MOUNT BAKER TOWN CENTER URBAN DESIGN FRAMEWORK (OCTOBER 2011)



The Mount Baker Town Center Urban Design Framework (UDF) continues the vision of the North Rainier Neighborhood Plan Update but focuses on the Mount Baker Town Center subarea. The UDF envisions creation of a transit accessible “main street” shopping district on Rainier Avenue S and S McClellan Street, with gateways and landmarks reinforcing the Town Center identity. The Plan also emphasizes creation of a complete network of sidewalks and bicycle infrastructure, and complete streets with easy connections to nearby neighborhoods and historic neighborhoods. The UDF proposes changes in zoning that would allow greater building heights in some portions of the corridor (shown previously on Figure 2). It supports further evaluation of the one-way couplet concept at Rainier/MLK, and envisions that with the couplet in place, wide sidewalks, parking lane, landscaping, bike lanes and bus lanes could be added in the corridor.

What transportation improvements have been suggested so far?



*View of Town Center area, looking north toward downtown Seattle.
Source: Mount Baker Town Center Plan, Urban Design
Framework, October 2011*

Transportation improvements proposed within the various plans and studies for Rainier/MLK and the surrounding Mount Baker Town Center area have ranged from small, focused, mode-specific projects to very large-scale, multimodal projects. As described earlier in this report, the City has not yet made any decisions about the specific transportation improvements that will be built.

Project concepts that have been proposed to date include (1) a roundabout at Rainier/MLK with signalized pedestrian crossings at several locations upstream, (2) a one-way “bowtie” couplet that would eliminate the Rainier/MLK intersection and provide more room for transit and non-motorized facilities, and (3) numerous focused roadway and sidewalk improvements, many of which seek to improve safety and mobility for pedestrian and bicycle modes.

These concepts, along with their respective benefits and challenges, are described in detail on the following pages.

RAINIER AVENUE S / MARTIN LUTHER KING JR. WAY S – ROUNDABOUT

The roundabout concept, shown on Figure 3, was developed and assessed in 1999 as part of the McClellan Town Center Development Strategy. The concept was developed to improve circulation and safety at Rainier/MLK, and also provide aesthetic improvement to the area.

CHARACTERISTICS

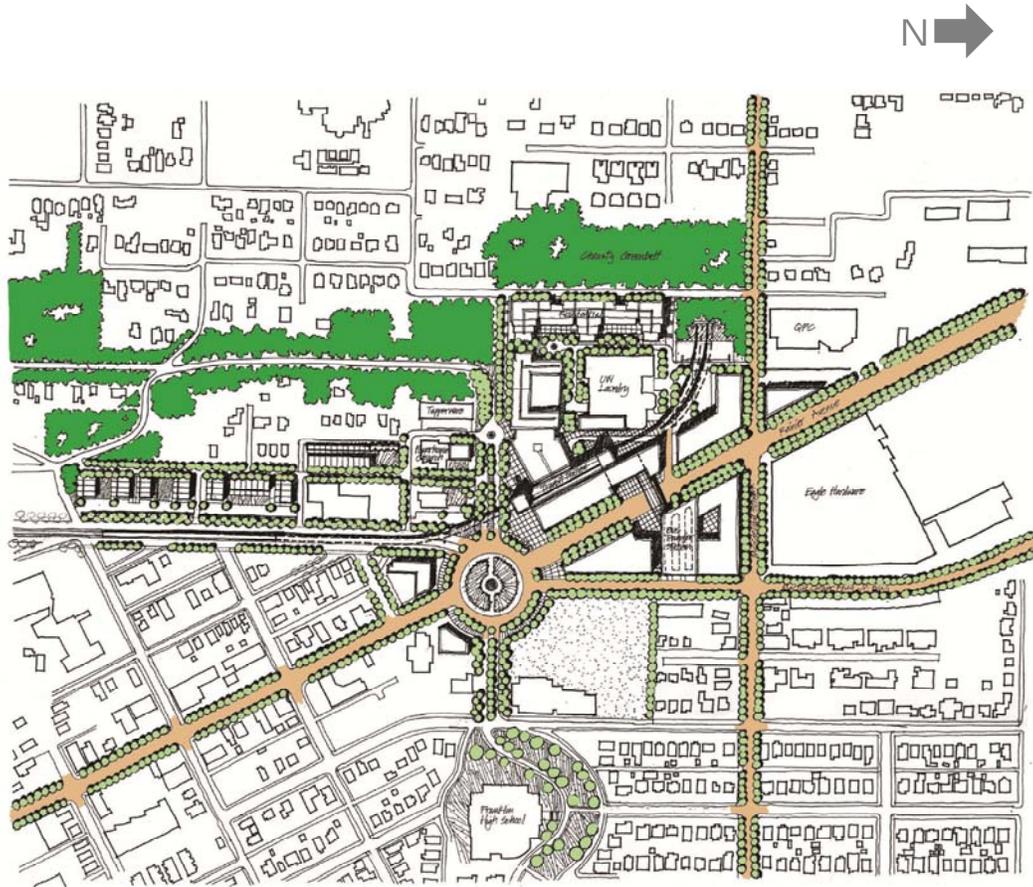
- 2-lane or 3-lane roundabout would be constructed at Rainier/MLK. Both widths were determined to adequately accommodate projected future vehicle traffic through 2020. If this concept were pursued, updated analysis that evaluates conditions through 2035 or 2040 would likely be needed.
- The study determined that the space needed to accommodate a 3-lane roundabout would not be that much larger than space needed for a 2-lane roundabout.
- Number of entering roadway lanes would be minimized to shorten length of pedestrian crossings, to the extent possible.
- Signalized pedestrian crossings would be provided at locations away from the roundabout to provide safe crossings and also to provide gaps in vehicles entering the roundabout intersection.

BENEFITS

- Creates green open space and a focal point for the area.
- Improves vehicle traffic flow at the intersection.
- Connects Cheasty and Mount Baker Boulevards at the intersection.
- Improves pedestrian crossings at locations away from the roundabout, due to addition of signalized pedestrian crossings.

CHALLENGES

- Requires significant right-of-way acquisition at Franklin High School and elsewhere.
- Lengthens distance of pedestrian crossing at Rainier/MLK.
- Could increase vehicle volumes on Cheasty Boulevard and Mount Baker Boulevard.
- Would be larger than most roundabouts constructed in the Seattle area, and may have a learning curve as drivers adjust.



Source: McClellan Town Center Development Strategy, December 2001.

Figure 3. Rainier/MLK Roundabout Concept

ONE-WAY “BOWTIE” COUPLET

The one-way couplet concept, shown on Figure 4, was developed and assessed in 2011 as part of the Seattle Station Area Transportation Analysis. The concept was developed as a potential way for vehicle traffic to be accommodated in narrower width to allow more space for transit and non-motorized improvements.

CHARACTERISTICS

- Between S Bayview St and S Hanford St, the western Rainier/MLK roadway would be one-way southbound and the eastern Rainier/MLK roadway would be one-way northbound; the existing Rainier/MLK intersection would no longer have crossing or conflicting vehicular movements.
- Between Rainier Ave S and MLK Jr. Way S, S Bayview Street would be one-way westbound and S Hanford Street would be one-way eastbound. Two-way east-west vehicle traffic would be allowed on S McClellan Street and on a potential future new road north of McClellan.
- Two-way bicycle lanes would be provided on MLK Jr. Way S; a northbound “contraflow” bus lane would be provided on Rainier Ave S.
- A new traffic signal would be constructed at Rainier/Hanford, and a transit and pedestrian signals would be constructed at the narrow portion of the couplet and in front of Franklin High School.
- The Mount Baker Town Center UDF also proposes additional signalized pedestrian crossings that would be provided at numerous locations along the couplet.

BENEFITS

- Allows space within existing right-of-way for wider sidewalks, on-street parking along the Rainer Avenue S retail corridor, bus lane, and/or bicycle lanes, though some additional right-of-way could still be required to accommodate all planned facilities.
- Shortens pedestrian crossing distance at most locations.
- Improves vehicle operation at Rainier/MLK intersection (by eliminating the conflicting vehicular movements).

CHALLENGES

- Increases vehicle volumes on Bayview, McClellan, and Hanford Streets; increases vehicle delay at intersections of McClellan and Hanford with Rainier and MLK. Without additional improvement at Rainier/McClellan, this intersection would be highly congested.
- Additional right-of-way could be required to widen the turning radii to accommodate truck turns at MLK/Hanford and Rainier/Bayview, which would also increase the lengths of pedestrian crossings.
- While it would improve travel time for some traffic movements and for the overall corridor, it would increase travel time for northbound movements through the corridor on Rainier, and southbound movements through the corridor on MLK.



Source: Seattle Station Area Transportation Analysis, May 2011

Figure 4. One-Way “Bowtie” Couplet Concept

SMALLER SCALE IMPROVEMENTS TO PEDESTRIAN/BICYCLE INFRASTRUCTURE

Numerous smaller safety and mobility improvements for pedestrian and bicycle travel have been identified in different plans and studies that have been completed for the Mount Baker Town Center area. Projects could be implemented either singly or as part of a package that serves as a first phase prior to future larger-scale infrastructure improvements.

CHARACTERISTICS

Projects could include but are not limited to the following:

- From the *Southeast Transportation Study* (see Figure 5): (1) reconfigure the Rainier/MLK intersection so that pedestrians can cross at-grade on all approaches, (2) improve the two intersections, MLK/Walden and Rainier/Bayview, that are designated as High Collision Locations, (3) improve McClellan Street for pedestrians and cyclists traveling to and from the light rail station, (4) construct a non-motorized trail along MLK between Bayview Street and McClellan Street.
- From the *Mount Baker Town Center UDF*: Widen sidewalks, provide pedestrian amenities such as landscaping and street furniture, construct bicycle facilities, construct traffic calming measures along and between the Rainier Avenue and MLK Jr. Way corridors.
- From the *City Bicycle Master Plan*: (1) restripe MLK Jr. Way, north of the Rainier/MLK intersection, to provide a bicycle lane, (2) restripe McClellan Street east of MLK to provide a bicycle lane, (3) mark sharrows on McClellan Street between Rainier and MLK, (4) reconstruct the bicycle and pedestrian bridge overpass across Rainier Avenue at Mount Baker Boulevard so that it is wide enough to accommodate both bicycle and pedestrian traffic comfortably and safely.
- From the *City of Seattle Pedestrian Master Plan*: provide improved pedestrian crossings at the intersections of Rainier Avenue with Bayview Street, McClellan Street, MLK Jr. Way, and Walden Street.

BENEFITS

- Implemented more quickly than a large-scale project.
- Individual projects or packages of projects can serve as incremental steps toward larger-scale improvements.
- Can be targeted to address immediate gaps in pedestrian and bicycle circulation and safety.

CHALLENGES

- Does not address future growth in vehicle traffic expected to result from increased development.
- There may be insufficient right-of-way to complete the pedestrian or bicycle networks while maintaining vehicular capacity through the corridor.



Source: Southeast Transportation Study, December 2008a

Figure 5. SETS Transportation Project Recommendations

What feedback has been provided by businesses so far?

Although business outreach efforts are at a very preliminary stage, the City has received early feedback from different businesses that represent a variety of the types of uses that are present in the area, and also the type of mixed-use development that the Town Center Plan proposes will be more prevalent in the future. Preferences and concerns that they have stated to the City regarding future transportation improvements, and also future land use plans as they relate to transportation, are summarized as follows.

PEPSI (2300 26TH AVENUE S)

TRANSPORTATION CHARACTERISTICS

- Facility operates 24 hours/day, 6 days/week. Truck trips are spread throughout the 24 day, and occur during both peak and off-peak times.
- Parking for employees provided on south side of Bayview – all cross Bayview as pedestrians to get to the facility. Currently use the crosswalk at Lowe's.
- Tanker trucks (wheel base [WB] 70 [feet]) enter and exit the site from Bayview; entering trucks wait in the center turn lane for the gate to be opened. These trucks typically include 5 liquid sugar trucks/day, 1 nitrogen truck/day, and 5 CO₂ trucks per week. A number of smaller vehicles also enter the site at this location, and also wait in the center turn lane for the gate to be opened.
- Approximately once per month, a truck is parked in the center turn lane on Bayview to pump oil out of an oil/water separator; this takes about an hour. The County also parks a truck in the center lane of Bayview a few times per year to conduct water quality monitoring.
- Distribution and deliveries make up 40-60 round trips per day. These trucks enter and exit the site at the gate on 25th Avenue S; typically they travel on College to/from Rainier. Entering trucks sometimes queue up on Walker or College waiting to get into the gate.

FEEDBACK ON POTENTIAL TRANSPORTATION IMPROVEMENTS

- Ok with pedestrian and bicycle improvements, as long as they do not take away vehicle capacity.
- Feel that a roundabout would provide acceptable operations and therefore are ok with this concept; however, are skeptical about its feasibility. Particularly, the size that would be needed to accommodate all of the large trucks and buses that travel through the intersection. Since large roundabouts are not typical in this area, feel that it could have a significant learning curve for local drivers.
- Concerned that the bowtie couplet would add delay and increase travel time for trucks and automobiles that travel to and from their sites. Expect that the increase in travel time would be due to more circuitous routes that would be required, and also added delay at the east-west streets on which most vehicles would be forced to travel when they are either coming or going.

- Bowtie configuration would require that trucks entering at Bayview gate would approach site via MLK, since Bayview would be one-way westbound. For trucks arriving from the north on Rainier, this would require that they turn off of Rainier and on to MLK somewhere north of the area, OR, they would need to travel past Bayview on Rainier, and make left turns on McClellan, MLK, and then Bayview.
- Bowtie configuration would require that trucks destined for south Rainier would need to turn left through the intersection of MLK/Hanford and right through the intersection of Rainier/Hanford. Trucks exiting the site via the Bayview gate would also need to turn left through the intersection of Rainier/Bayview.
- Have particular concern about the effect of a couplet on Bayview Street, Walker Street and College Street, which could lose access functions to accommodate increased traffic volumes.
- *[Additional note from previous discussion between Pepsi and City staff]* Bowtie configuration would require that outbound employees destined for westbound McClellan turn left on to Rainier and weave across Rainier to turn right on McClellan. Currently, they can make right turns from Bayview to MLK to McClellan. Have discussed with the City the possibility of improving the turning radius from eastbound Walker to southbound MLK.

OTHER FEEDBACK

- This area is ideally located for shipping in all four directions; there is no desire to move the facility as part of future area redevelopment plans.
- Pepsi has made substantial investment developing the facility in a way that allows it to blend into the surrounding neighborhood.
- Would like to participate in ongoing coordination efforts related to Town Center transportation improvements.
- The coordination efforts that Sound Transit conducted during the development and construction of the light rail station were very well done; encourage the City to take a similar approach in coordinating with businesses on the Town Center project.
- Up to this point, information about potential transportation improvements has been spread mainly by word of mouth, primarily by opponents. City has been very responsive when contacted about these topics, but it would be better to more proactively reach out to the broader business community.

UW LAUNDRY (2901 27TH AVENUE S)

TRANSPORTATION CHARACTERISTICS

- Plant operates Monday through Friday. Linen delivery and pick-up occurs 7 days per week.
- Pick-up and delivery of linens generates 15 round trips per day via 24-foot box trucks and 3-7 round trips per day via van. New linens are delivered via 36-foot semi-tractor-trailer (WB-45), 4 times per weekday.

- Twice per month, tanker trucks deliver chemicals to the facility – trucks have 48-foot bulk tank trailers (WB-62).
- Occasionally need to replace heavy equipment, utilizing semi-trucks with 52-foot trailers (WB-65) or longer.
- Shifts for majority of employees do not coincide with times that are well served by transit; almost all employees who work these shifts commute via automobile. Fewer employees work a split shift with start/end more compatible with transit service times; about half of these employees commute via automobile.
- Output has almost doubled from the time the facility opened in 1984 until now. Overall demand from existing customers typically grows 3-4% per year; this trend is expected to continue into the future. If new customers are gained, the growth would be higher.

FEEDBACK ON POTENTIAL TRANSPORTATION IMPROVEMENTS

- Ok with pedestrian and bicycle improvements, as long as they do not adversely affect the ability of the vehicle traffic generated by their operations to travel to and from their site; in general, recognize benefit of these types of improvements for the overall area, but do not see a large direct benefit to industrial businesses.
- Feel that a roundabout would provide acceptable operations, but are concerned about the size needed to accommodate large trucks and the right-of-way impact.
- Concerned that the bowtie couplet would increase travel time for trucks and automobiles that travel to and from the site. Currently, all delivery trips except one are to/from areas north of the facility; outbound trucks destined for northbound Rainier take Forest eastbound and turn left onto northbound Rainier. Under the bowtie configuration, if these trucks need to travel around almost the entire couplet (going southbound on Rainier, eastbound on Hanford, northbound on MLK, westbound on Bayview, and then northbound on Rainier) it is expected that this would add considerable time and cost to the facility's operations. If the roads can be configured to accommodate these trucks taking 26th Avenue (to McClellan, to MLK, to Bayview, to northbound Rainier) it would still add operating time and cost, but less than the other route.

OTHER FEEDBACK

- The City strongly encouraged UW to locate the laundry facility in this area in the 1980s to support economic development goals. Facility was constructed in 1984, and provides linens for numerous area hospitals in addition to the UW Medical Center.
- Are ok with redevelopment plans that include higher residential densities, but have concern that some new residents to the area may eventually raise issues with living near industrial facilities.
- Future redevelopment should be planned to be integrated with existing industrial development; significant investment has been made to develop the facility at

this particular site, and it serves as a major area employer. The area is also ideally situated for access to the freeways and other Seattle neighborhoods.

- Encourage the City to take a similar approach that Sound Transit used to coordinate with businesses on the Town Center project.
- There is potential for redevelopment of the south parcel of the UW property, south of the laundry facility.

QFC (2701 RAINIER AVENUE S)

TRANSPORTATION CHARACTERISTICS

- Daily trucks generated by commercial sites include both semi-tractor-trailers from the warehouse and box-trucks for direct store deliveries. Truck trips occur throughout the day, during both peak and off-peak times of day.
- Feel that people are “programmed” to look for places to park in surface lots, except in areas where density and parking demand is very high, such as Capitol Hill. Even in medium dense neighborhoods such as Ballard or Queen Anne Hill, stores with underground parking tend to underperform when compared to stores with surface lots.
- Imposed parking time limits and implemented parking lot monitoring after the light rail station was complete to stop people from using it as a park and ride; so far this effort has been effective.

FEEDBACK ON POTENTIAL TRANSPORTATION IMPROVEMENTS

- Feel that a roundabout would provide acceptable operations and therefore are ok with this concept.
- Have strong concerns about a bowtie couplet. Feel that it would hurt business mainly because it would make access to the business inconvenient, particularly for traffic traveling in the direction that puts them a block away from the site. Access to the business must be convenient otherwise customers will switch to nearby competitors who can provide that convenience.
- The expected degradation of Rainier/McClellan to failing operations as a result of the bowtie couplet is of particular concern.
- Opposed to addition of a median or c-curb on McClellan that would prohibit left turn access into or out of businesses. [*Note, no median or c-curb is proposed on McClellan under any of the potential transportation improvement scenarios.*]
- Ok with pedestrian and bicycle improvements but do not feel that non-motorized access significantly helps business unless the surrounding land use has Capitol Hill-level densities.
- Existing parking lot is relatively small. Could not afford to lose parking spaces as a result of transportation improvements.

OTHER FEEDBACK

- Concerned that the City could apply the same design standards and regulations that would be applied in neighborhoods that are already dense, or require that redevelopment occur in a way that relies on a density that is not yet realized.

QFC/RITE AID PROPERTY OWNER (2701 RAINIER AVENUE S)

FEEDBACK ON POTENTIAL TRANSPORTATION IMPROVEMENTS

- Favors bicycle and pedestrian improvements and feels that they are very important, but should not be built at the expense of accommodating vehicle traffic since that still brings in the majority of business to the area. Particularly supports widening sidewalks and expects that this could be easily accomplished as part of property redevelopment.
- Most strongly favors roundabout concept; feels it would establish a node of identity for the area. Believes there could be sufficient space for a roundabout if the Franklin High School existing gymnasium were rebuilt at a different location on the high school site, and the existing field track were rebuilt at a different orientation that would include the location of the existing gymnasium. Feels that since the existing track is substandard and the existing gymnasium is old, the high school would benefit from new facilities.
- Feels that the couplet has unacceptable side effects for existing businesses who have been in the area for years, and that the City should not settle on any solutions that would negatively affect them.

OTHER FEEDBACK

- Inertia of each of the properties standing alone poses the greatest risk for stopping redevelopment progress. Because a large portion of property in the area is owned by a relatively small number of people, there is great opportunity for property owners to cooperate with each other to redevelop in a way that is beneficial to existing businesses and property owners, while also moving in a direction that supports the Town Center Plan (e.g. a business is allowed to remain open at its existing location while it builds a new better space on a different site. Then once that business relocates, the next business is allowed to remain open at its existing site while it builds a new better space at the first building's previous site, etc.). However, this will require very strong vision and leadership by the City, who would need to facilitate that type of coordination. It would allow property owners to pool risks and rewards, and be less nervous about being first.
- Properties in the area are generally underutilized. A natural valley is an ideal location for commerce. Many of the large businesses in the area either own their property or have long-term leases. It is important to incorporate these businesses into long-range plans.
- Would be nice to see some institutional uses or graduate student housing in the area; take advantage of the light rail connection between this area and the University of Washington campus.
- Station area planning has been well done.

- Does not understand why the bus transit center was located across Rainier Ave from the light rail station. Even though this facility is fairly new, relocation nearer the light rail station should be considered as part of future redevelopment plans.
- Feels the time is right to develop a streetscape enhancement plan for the area; could be effective to pick a smaller area and implement this type of plan to showcase the direction in which the Town Center area is headed.

ARTSPACE

Artspace is not currently located in the Town Center area, but is planning on building a medium-density mixed residential/retail development near the new light rail station.

TRANSPORTATION CHARACTERISTICS

- Pedestrian and bicycle improvements are essential for the success of mixed-use developments that provide limited to no parking and rely on having residents and customers who favor transit and non-motorized modes.
- Experience with other developments is that if free unrestricted on-street parking is available in the area, fewer residents who own vehicles will purchase garage parking. Free parking supply tends to fill up.
- If residential development is designed to accommodate only people who don't own cars, there are still challenges with parking for people visiting those residents.
- Would like to pursue opportunities for shared parking between businesses (who would primarily utilize the parking spaces during the day) and apartment resident vehicle commuters (who would primarily utilize the parking spaces during the night).
- Need infrastructure in place to support desired density, and not expect that desired density will occur first and that infrastructure will come after.
- New mixed-use development would benefit greatly from provision of a loading zone/short term parking in front of the building, if no other parking supply is to be provided. This would help support new retail development (e.g. drive-by customers could run in to buy something) and also new residential development (e.g. allows residents to be picked up at their building).

FEEDBACK ON POTENTIAL TRANSPORTATION IMPROVEMENTS

- Favor any and all improvements that can be made to pedestrian and bicycle infrastructure, the sooner the better.
- Strongly favor bowtie couplet because it would allow for the type of alternative mode infrastructure that is important for the success of mixed-use developments, namely, wider sidewalks and pedestrian amenities, bicycle lanes, on-street parking and landscaping that would provide a buffer between pedestrians and vehicles.
- Feel that future improvements need to include a bike lane on Rainier Avenue, and easier crossings of Rainier; do not feel that a bike lane only on MLK would

provide enough bicycle support for mixed-use development that is centered on Rainier.

OTHER FEEDBACK

- Need to provide a good pedestrian connection between Franklin High School and the area around the transit center.
- It is very important that a buffer be provided between pedestrians on the sidewalk and vehicles on the road.
- Concerned that the City could apply the same design standards and regulations for new mixed-use developments that would be applied in neighborhoods that are already dense. Feels that a great vision has been laid out for the area, but that its full realization is a long time away; in order for the desired type of new development to feel confident about moving in to the area, incremental steps and flexible design standards are needed that consider the existing characteristics of the area (e.g. full parking restrictions and requirements for 18-foot wide sidewalks may need to be relaxed for the near term).
- Developers of new mixed-use projects must be confident that the right measures are in place to help them be successful. If early new development is not successful there is a great risk that it will be perceived as a cautionary tale, and subsequent new development will be less likely.
- Most of the small types of retail businesses that open on the ground floor of mixed-use developments do not make enough money to be profitable with their retail operations alone; most need a wholesale side of the business that can be used to support the retail. This will be particularly true for early development that comes in before higher overall densities are reached.
- Residential “eyes” above a plaza make it safer.
- City needs to engage large property owners in livability issues that include transportation.
- Very interested in participating in community-based efforts related to implementation; not interested in participating in more planning efforts.

DARIGOLD (4058 RAINIER AVENUE S)

TRANSPORTATION CHARACTERISTICS

- Darigold employees at site work two major shifts (6 A.M. – 4:30 P.M. and 4:30 P.M. – 3 A.M.), Monday through Saturday. There is a small clean-up crew who work 9 P.M. – 5 A.M. Most drive and park but some commute using light rail.
- Estenson Logistics employees at site work two shifts (3 A.M. – 2 P.M. and 3 P.M. – 1 A.M.), seven days per week. Most drive and park.
- Each day, 10–20 WB-65 trucks (53-foot trailers) enter and exit the site (20–40 one-way trips) associated with product distribution. They typically arrive full of

materials needed for plant operation, and leave full of milk and juice products to be distributed throughout Washington.

- Each day, 11–20 container trucks enter the site empty and leave full of milk and juice products. These trucks travel to the Ports of Seattle and Tacoma.
- Each day, 27 WB-70 tanker trucks (56-foot trailers) enter the site bringing raw milk, and leave empty.
- Darigold is growing – expect that future truck volumes will be greater than existing.
- Truck trips are spread out over the 24-hour day and occur during both peak and non-peak times of day. They are purposely spread out to minimize the chance that they will back up at the facility and have to queue on the adjacent streets.

FEEDBACK ON POTENTIAL TRANSPORTATION IMPROVEMENTS

- Favor pedestrian and bicycle improvements, as long as they do not adversely affect the ability of the vehicle traffic generated by their operations to travel to and from their site; in general, recognize the aesthetic benefit of these types of improvements, and also the safety benefit of having a lot of people walking around in the area – like working in an area that looks nice and feels safe.
- Feel that a roundabout would provide acceptable road operations but have concerns about the property impacts at Franklin High School. Do not feel that road improvements should be made at the expense of the high school.
- Have concerns about operations at the corners of the bowtie couplet. Would need to ensure that WB-70 trucks could easily turn at all of the couplet intersections – Rainier/Hanford, MLK/Hanford, Rainier/Bayview, and MLK/Bayview.

OTHER FEEDBACK

- This facility has been at its current location since the 1960s. Darigold works hard to be a good neighbor.
- Are ok with redevelopment plans that include higher residential densities, but have concern that some new residents to the area may eventually raise issues with living near industrial facilities.
- It is very important to involve area businesses as plans move forward into implementation.

LOWE'S (2700 RAINIER AVENUE S)

City staff members were unsuccessful in their attempt to connect with Lowe's management to interview them for this project. However, in a teleconference held in June 2011, Lowe's managers reviewed the one-way bowtie couplet concept and discussed potential transportation improvements in the area with City staff.

- Priority is to maintain easy customer access to the Lowe's site, and also maintain access for large semi-tractor trailer trucks that deliver their products.

- Semi-trucks generally enter and exit the site via Bayview Street.
- Bowtie configuration would require that trucks entering from Bayview would approach site via MLK, since Bayview would be one-way westbound. For trucks arriving from the north on Rainier, this would require that they turn off of Rainier and on to MLK somewhere north of the area, OR, they would need to travel past Bayview on Rainier, and make left turns on McClellan, MLK, and then Bayview.
- Bowtie configuration would require that trucks destined for south Rainier would need to turn left through the intersection of Rainier/Bayview, turn left through the intersection of MLK/Hanford, and turn right through the intersection of Rainier/Hanford.

What has been the experience of other communities with some of the key issues?

Many of the questions that have been raised so far have also been questions raised in other communities facing similar issues. While each community has unique characteristics, it can be helpful to learn generally what has worked and lessons learned, based upon others' experiences. The following sections describe the experience shared by other communities with respect to the following three broad questions:

- What type of effect can pedestrian and transit-oriented design have on business?
- How can a transition from an auto-oriented to more pedestrian-oriented area occur in way that will be positive for existing and new businesses?
- What type of effect can a one-way couplet have on businesses?

EFFECT OF PEDESTRIAN/TRANSIT-ORIENTED DESIGN ON BUSINESSES

Review of case studies indicate that pedestrian and transit-oriented improvements can have a positive impact on businesses, but that certain elements must be in place. Examples of cities where non-motorized and transit improvements have been implemented and resulted in a positive economic impact include West Palm Beach, San Francisco's Valencia Street, Washington DC's Barrack's Row, and University Place's Bridgeport Way, summarized as follows.

- In **West Palm Beach**, streets were historically designed to make it easy for drivers to get through town without stopping. Properties were 80% vacant, the city was in debt, and street crime was increasing. A decision was made to invest in pedestrian crossings, traffic calming measures, and streetscape improvements. West Palm Beach now has a vibrant, safe downtown with an 80% commercial occupancy rate and commercial and residential property values along the improved corridors have increased. (FHWA 2011a)
- **San Francisco's Mission District** converted the four-lane Valencia Street to three lanes (one travel lane in each direction and a center turn lane) with widened sidewalks and bicycle lanes to slow down traffic and accommodate other users. After the improvements were implemented, a survey showed that about 40% of merchants reported increased sales, and 60% reported more area residents shopping locally. Overall, about two-thirds of respondents thought the increased levels of pedestrian and bicycling activity and other street changes improved business and sales. (Drennen 2003)
- In **Washington DC** it was difficult to walk around the Barracks Row area due to uninviting sidewalks, lack of streetlights, and speeding traffic. After implementing new patterned sidewalks, more efficient public parking, and new traffic signals, Barrack's Row attracted 44 new businesses and 200 new jobs. (National Complete Streets Coalition 2011)

- Bridgeport Way, located in the **City of University Place**, is a major arterial roadway through town and provides access to City Hall, a library, senior housing, a medical facility, and multiple retail centers. Traffic volumes on Bridgeport Way ranged between 18,800 vehicles per day at the south end of the city to 24,100 vehicles per day near the city center in 1996. The City decided to transform Bridgeport Way by providing pedestrian and bicycle improvements while still accommodating vehicular movement through the corridor. The proposed roadway design included restrictions on vehicle left-turns at driveways, construction of wide sidewalks, landscaped strips, and bicycle lanes on both sides of the road, new street lighting, provision for U-turns at intersections, and buried utilities. The project resulted in average vehicle travel speeds decreasing by 13%, collisions decreasing by 60%, increased pedestrian traffic, and a positive economic impact on business along the corridor. A review of citywide sales tax data showed that sales revenue growth for businesses around the project corridor was 2% higher than other businesses in the city. (FHWA 2011b)

In general, it is important that non-motorized and transit improvements are constructed as part of an overall plan. If not, they can be underutilized. Key elements for the success of pedestrian-oriented communities include (Burden 2011):

1. Intact town centers with stores that are open for business a minimum of 8 hours a day.
2. Residential densities, mixed income, mixed use with higher densities are near the town center and appropriate concentrations further out.
3. Public spaces for people to assemble, play, and associate with others within their neighborhood.
4. Universal design with appropriate ramps, medians, refuges, crossings of driveways, sidewalks on all streets where needed, benches, shade, and other basic amenities to make walking feasible and enjoyable for everyone.
5. Key streets that are speed controlled with street trees, on-street parking, and other affordable methods.
6. Streets and trails that are well linked in a grid or other highly connected pattern.

In addition, design of non-motorized and transit improvements must consider existing land uses and transportation issues such as truck and bus turning radii to make sure that the planned improvements operate safely and efficiently.

TRANSITION FROM AUTO-ORIENTED TO TRANSIT-ORIENTED DEVELOPMENT

When an area transitions from auto-oriented development to transit-oriented development, it can be a challenge to determine the appropriate land uses, density, building setbacks, and parking requirements that should be in place while the transition takes place. It is important to provide guidelines that seek to move development in the desired direction but still recognize the existing characteristics of the area. Cities that have implemented interim regulations to achieve this goal include the following:

- **Austin, Texas**, adopted a transit-oriented development ordinance that outlined a two-phase implementation approach. During Phase I, the ordinance created districts around future transit facilities and identified overall interim development regulations relating to use, site development standards and parking. During Phase II, Station Area Plans were created to establish specific design standards and development goals for each district. Minimum off-street parking requirements were limited to 60 percent of that normally prescribed for proposed use(s). (City of Austin, 2005)
- **Phoenix, Arizona** provided for interim transit-oriented overlay zoning districts near the transit stations of the Central Phoenix/East Valley Light Rail Corridor. The overlay districts prohibit uses that do not support transit ridership, including drive-in businesses, car washes, and gas stations. In order to encourage walking and bicycling, the ordinance limits the maximum allowable amount of parking spaces in the zone to 125% of the minimum required by code. The ordinance places additional parking restrictions based on the proximity to the transit station (such as placing a 25% reduction in minimum parking requirements for residential uses that are located within 1,320 feet of a transit station). The ordinance requires that the on-street parking along a property's frontage to be counted towards its parking requirement. (City of Phoenix, 2004)
- For designated transit-oriented development-compact neighborhood overlay districts in **Durham, North Carolina**, design standards limit parking supply to the minimum number required by their code, allowing the minimum to be exceeded only when there is a demonstrated need for additional parking. Required parking may be reduced up to 50 percent if it is found that the nature of the proposed uses, the timing of vehicle trips, and the provisions for nearby transit service warrant the reduction. On-street parking is encouraged and required where appropriate. (City of Durham, 2011)
- University United (a coalition of citizens and businesses) proposed its own interim transit-oriented zoning district overlay for University Avenue in **Midway, Wisconsin**. Within the interim overlay district, the minimum and maximum parking requirements for retail and commercial uses are 50% and 70% of the required parking per current zoning. (Board of University United 2006)

In each of these cases, the cities did not prohibit parking in the transit-oriented development overlay zone, but limited the amount that could be provided in order to encourage the transition to higher densities and increased use of alternative modes, while still recognizing local driving and parking characteristics and providing some accommodation for vehicle traffic generated during the transition time.

EFFECT OF ONE-WAY STREETS ON BUSINESSES

Review of case studies indicates that the conversion of two-way streets to one-way couplets can improve vehicular traffic operations and safety conditions. Opinions vary about whether conversions to one-way streets can have adverse impacts on businesses along the affected roadways, and depend somewhat on the original intent for creating the couplet. The trend over the past 10-15 years has been mixed. Many cities favor two-way streets and have been converting traditional higher-speed one-way couplets to back to two-way; but there has also been a trend in which some cities have developed smaller lower-speed one-way couplets as part of “complete streets” projects. The potential benefits, disadvantages, and trends regarding one-way streets are described below.

POTENTIAL BENEFITS

One-way streets can carry more traffic. Converting two-way streets to one-way streets can increase vehicle capacity by as much as 50% and decrease travel times by 10% to 50%. There are several reasons for these increases. With two-way traffic flow, left-turning drivers must have breaks in oncoming traffic to access side streets. These breaks in traffic may be provided by traffic signals or stop signs on the major street. Locations where heavy left-turn traffic exists often also require storage for left-turning vehicles so drivers can wait for breaks in oncoming traffic without delaying through traffic behind them. The introduction of one-way traffic flow removes the conflicting opposing traffic flows that make left turns difficult. The need to stop opposing traffic to accommodate those turns is eliminated and the need for storage capacity is also often eliminated. The result can be better free-flow of traffic on the major street with limited interruptions. Since left turns are also often factors in automobile collisions with opposing traffic and pedestrians, the one-way configuration can help to reduce some of those safety concerns, and have been shown to reduce total collisions by 10% to 50%. (Institute of Transportation Engineers 1992)

Another key advantage to one-way conversion is that its benefits can be realized with minimal capital costs to the city making the changes. One-way couplets make use of existing roadway widths without the need for widening and can also reduce the costs of traffic control such as signalization. Often, excess right-of-way can be used for other elements such as on-street parking, bicycle lanes, pedestrian facilities, and/or street-scape improvements. In some locations, better traffic flow, less congestion, and other amenities are specifically desired by adjacent businesses. Business may be willing to accept the potential disadvantages (described in the following section) in exchange for the benefits.

The benefits described above were demonstrated in a study of the Vine Street Corridor in the City of Cincinnati, Ohio. This corridor was converted from a two-way street to a one-way street in 1975. It was converted back to two-way operations in 1999. An historical review of traffic volumes, collisions, travel times, and operations found that the one-way configuration accommodated higher volumes of traffic, had substantially lower number of collisions, had shorter travel times, and benefited transit with shorter trips and less congestion. (City of Cincinnati 2004)

POTENTIAL DISADVANTAGES

Some of the operational benefits described above can also be seen as disadvantages in the immediate vicinity of one-way streets. For example, better traffic flows and the potential for higher speeds may be unwelcome to pedestrians and cyclists in the area. Better traffic flows and higher speeds can also attract more through-traffic that is not destined to businesses in the area. Along many arterial corridors, businesses such as supermarkets, pharmacies, convenience retail, and some service businesses, rely on attracting customers (30% to 75%)

from traffic passing their sites. The elimination of one direction of this customer base could have a substantial adverse impact, particularly for businesses that rely on peak activity during morning or afternoon. For example, a coffee or pastry shop might attract a substantial amount of customers from traffic passing its site during the morning commute. If a one-way couplet reconfiguration relocates the peak direction morning flow to another adjacent street and peak flow passing the shop now only occurs in the afternoon, it could substantially reduce customers for that business.

One-way streets can also have disadvantages to traffic and local travel since they can require drivers to use out-of-direction routes to access destinations. The result can be increased vehicles miles travelled. There are also potential safety concerns as pedestrian collisions may occur more frequently with left-turns leaving one-way streets. (Institute of Transportation Engineers 1992)

CURRENT TRENDS AND ECONOMIC CONSIDERATIONS

To understand current trends with one-way couplets, it is important first to distinguish the different motivations for converting to couplets that have historically occurred. In the 1970s and 1980s, many cities converted arterial streets to one-way couplets in order to move higher volumes of vehicular traffic more efficiently through their areas. These couplets often were developed on a large scale, removing on-street parking and encouraging higher traffic volumes and faster speeds (referred to in this report as “traditional” couplets). Many cities have since determined that traditional couplets have adversely affected businesses and the trend has been to convert these types of facilities back to two-way streets. However, there are recent examples of communities that have created couplets on a smaller scale, not with the objective of moving higher traffic volumes more quickly, but of moving vehicular traffic along narrower streets that are also designed to accommodate pedestrian, bicycle, and transit modes of travel (referred to in this report as “multimodal” couplets). Each of these trends is described below.

Trends Away from Traditional One-Way Couplets

A trend away from traditional higher-speed couplets is illustrated by the number of cities that have converted one-way streets back to two-way operations; a study out of Clemson University identified 36 U.S. cities known to have converted one-way couplets to two-way streets (Baco 2009). Often conversions back to two-way configurations are suggested as part of urban revitalization efforts. The concern about adverse impacts of traditional couplets to businesses is demonstrated by the results reported along Vine Street in Cincinnati, Ohio. After the conversion of Vine Street from two-way to one-way flow, it was reported that 40 percent of businesses were closed. (Walker et al, 2000) The City of Seattle has also returned one-way streets to two-way operation, most notably in the South Lake Union neighborhood with the conversion of the 9thAvenue/Westlake Avenue couplet, and the current major project that is under construction to convert Mercer Street to two-way operation.

Other cities (Lexington, Louisville, and Owensboro, Kentucky, Clifton Forge, Virginia, and Wichita, Kansas) have recently contemplated conversion of one-way street couplets to two-way configuration. (Creasey 2011, AECOM 2010, and City of Wichita 20__)

A recent study performed by the Texas Transportation Institute and Texas A&M University considered the safety and economic impacts of converting two-way frontage roadways to one-way streets. The results indicate that after the conversions, declines in gross sales of 2% to 30% occurred in all but two of conversion site cities, while the larger State of Texas experienced a 13% increase during the same period. However, the study indicated that

there did not appear to be substantial negative impacts on appraised land values after the conversion. The research included business-owner/manager surveys and the responses indicated the following:

1. Business owners encouraged jurisdictions to minimize construction periods for conversions, maintain access, and engage the business community and stakeholders early and often.
2. Customers prefer not to make out-of-direction travel when approaching or leaving certain types of business.
3. Customer satisfaction may be negatively impacted by conversions of streets from two-way to one-way operation.
4. Businesses were concerned about losses in customers and sales more than any benefits to land value that may occur with the conversions.
5. Business owners who prefer one-way configurations believe there is a reduced risk of collisions and overall benefits to traffic safety and less congestion.
6. Most business owners surveyed felt the conversion would harm their businesses, citing loss of access, reduced numbers of customers, construction impacts, and other associated elements.
7. Retail business owners were concerned about delivery convenience.

(Eisele et al, 2011)

Trends in Favor of Multimodal Couplets

A number of cities have developed one-way couplets that are smaller in scale, with design elements intended to discourage higher vehicle speeds, rather than encourage them as traditional couplets have done. Typically developed as part of "complete streets" programs, these one-way streets are designed to carry traffic within narrower road widths, and include facilities to accommodate pedestrians, bicyclists, transit, and/or on-street parking. Areas that have multimodal street systems focused around couplets include the convention center area in Boise, Idaho, the 16th Street Mall in Denver, Colorado, the Pearl Street area of Boulder, Colorado, the Palm Springs Town Center in Florida, and the San Elijo Hills Village Urban Center in North San Diego County. In addition, downtown Portland, Oregon, utilizes its tight grid of narrow one-way streets to provide facilities for multimodal circulation. (MetroAnalytics 2011)

The stated advantages of the couplets in these areas are consistent with the benefits described earlier in this section. In addition to accommodating more vehicles in narrower road widths, the one-way streets allow for easier signal coordination, and allow drivers to make both left and right turns without other conflicting vehicle movements. Instead of a large intersection of two-way multi-lane streets, these areas have a number of smaller intersections of one-way streets; the narrower widths allow for easier pedestrian crossings. They also typically allow more room within traditional right-of-way widths for wider sidewalks, bike lanes, on-street parking, landscaping, and/or pedestrian amenities. These types of features have a traffic calming effect and tend to slow down vehicular traffic, providing for a safer mix of motorized and non-motorized traffic.

CONCLUSION

Overall, there are strong traffic engineering reasons to support conversion of two-way streets to one-way couplet operations including benefits to traffic capacity, improved travel times, enhanced safety, and efficient use of public right-of-way for other transportation related amenities (parking, non-motorized facilities, street scape enhancements, etc.). However, there is potential for negative impacts on some types of local businesses along the subject roadways.

The impact of roadway improvement projects, particularly projects involving access and left turn restrictions, has been the subject of many studies across the country. Economic analysis completed for the Aurora Corridor project in the City of Shoreline summarized the conclusions of many of these studies and provides the following observations:

- Studies distinguish between destination businesses and convenience businesses. A destination business is a specific store or commercial center that a customer makes a premeditated decision to patronize. Customers of destination businesses are more likely to tolerate restrictions on access. A convenience business, or drive-by business, is a store or business that a customer typically patronizes as an impulse when driving by. Potential customers of convenience businesses are more likely to choose an alternative establishment if they perceive restriction on access or limitation on parking. Such businesses require visibility, signage, and convenient access. The most common types of convenience businesses are gas stations, convenience stores, fast food restaurants, and some personal services.
- Impacts on business sales vary by type of business and location. Studies indicated that destination businesses do not typically experience significant loss of on-going business due to access restrictions, while convenience businesses may experience some losses.

(Property Counselors 2007)

Examples can be found of cities that have experienced both successes and failures with one-way couplets. The experiences of other cities illustrate that a number of factors must be considered when determining if a couplet is appropriate, and in identifying the specific design elements should be put in place if a couplet is built. Important considerations when reviewing options for converting two-way streets to one-way operation include access needs of businesses along a roadway that may vary according to the types of businesses that are present, as well as the overall atmosphere for pedestrians and customers. Detailed analysis that considers the balance between safety, mobility and access is warranted, with outcomes varying on a case-by-case basis.

What have we learned so far?

A significant amount of planning has been completed in the Mount Baker Town Center area, both as part of adopted citywide plans and as the focus of community-based efforts. Development of these plans and studies has spanned many years and involved countless numbers of area residents, business owners, property owners, City staff, partner agency staff, and professional planners, architects, and engineers. Many of these efforts built upon previous efforts, and some common themes can be found. In general, the plans envision the Mount Baker Town Center as an area that includes a diverse mix of people and businesses, and has great potential to grow in a way that will reflect the unique character of the area. In addition, the plans envision the area being supported by a multimodal transportation system that accommodates pedestrians, bicyclists, transit riders, motorists, and persons of all abilities, while promoting safe operation for all users, including freight.

However, the plans also recognize that the transition from auto-oriented development to a pedestrian-friendly urban village will take time. Rainier Avenue and MLK Jr. Way will need to continue to carry significant vehicle volumes due to the overall arterial street pattern that provides for limited alternative routes, the reliance of existing industrial and commercial development (both inside and outside the Town Center area) on the vehicle connections these streets provide, and the need to maintain Rainier Avenue and MLK Jr. Way as Major Truck Streets.

This report represents the end of the neighborhood planning process, but a very early step in the implementation process for future transportation improvements; it reflects the initiation of the City's outreach to local businesses. No decisions have yet been made about the specific transportation improvements that will be built.

Figure 6 shows a comparison of the potential transportation improvements that have been proposed to date, including the extent to which they meet transportation improvement goals for the Mount Baker Town Center area. The alternatives presented are as follows:

- **Existing conditions** – Reflects vehicular traffic volumes, non-motorized volumes, and physical roadway and sidewalks characteristics as they are today; this is provided for comparison to the potential future alternatives.
- **Do nothing** – No future improvements would be made, so future increased vehicular and non-motorized traffic would operate on existing roadways and sidewalks. However, increasing traffic over time could still require a need for future improvements within the corridor.
- **Roundabout** – 2-lane or 3-lane roundabout at Rainier/MLK with pedestrian crossings upstream on the approaches, as described earlier in this report.
- **Bowtie couplet** – A one-way couplet of Rainier and MLK between Bayview and Hanford, along with additional transit, bicycle, and pedestrian facilities in the corridor, as described earlier in this report.
- **Rainier as boulevard** – Wider sidewalks constructed along Rainier, along with landscaping and pedestrian amenities; curb bulbs and on-street parking could potentially be provided where sufficient land is available.

- **Incremental enhancements** – Smaller safety and mobility improvements identified throughout previous plans and studies, focused primarily on pedestrian and bicycle travel but also potentially on vehicle safety and mobility, implemented either singly or as part of a package as funding becomes available.

Notes that describe the transportation improvement goals are provided after the figure. As shown, the Do Nothing alternative would not satisfy any of the multimodal safety or mobility objectives in the Town Center area. The improvement alternatives (action alternatives) would be expected to satisfy different project goals to varying degrees; it is possible that a preferred alternative could include different elements of these alternatives.

Although the City is in the early stages of the implementation process, feedback provided by businesses thus far indicate very mixed opinions about potential large-scale capital improvements that have been proposed. The roundabout concept has generally received positive or neutral comments, but there is skepticism about the feasibility of building it and also some concern about the amount of land that would be required to build it, as well as the adjustment needed for motorists to learn how to drive this type of facility. The couplet concept has received strong comments both for and against. If this concept moves forward, there are many vehicle access and circulation issues—many of which are specific to particular businesses or sites—that will need to be addressed. A couplet would need to be designed to accommodate a significant amount of large truck traffic that is generated by local industrial and retail businesses (particularly at the couplet corners), as well as trucks that travel through the corridor on the Major Truck Street, and also ensure adequate vehicular access for a wide variety of businesses located adjacent to the one-way roadways.

Feedback provided by businesses to date has reflected general agreement in the following three areas:

- In general, support has been voiced for improvement to the pedestrian and bicycle networks in the area, and it has been acknowledged that a more people-oriented area is also a more desirable area in which to work. Some businesses have qualified their support with the desire that non-motorized improvements be implemented in a way that does not adversely affect vehicle operations.
- There is a desire to have interim development regulations and design guidelines that will encourage the transition to desired higher densities and increased use of alternative modes, while still recognizing general auto-oriented characteristics of the area, and providing accommodation for vehicle traffic that is expected to still be generated during the transition period.
- There has been general recognition that existing industrial, service, and retail businesses contribute significantly to both the identity and the economy of the area, and that it will be important for redevelopment to occur in a way that allows these businesses to continue to thrive, and accommodates their unique transportation needs.

These areas could provide good topics for a community-oriented process that focuses on implementation. There could be great benefit in engaging residents, business owners, and property owners to develop a package of smaller, focused transportation improvement projects that can be built sooner rather than later. This would help the community feel that real progress toward their vision is being made, while larger-scale and more potentially controversial solutions are being worked out.

Figure 6. Comparison of Transportation Improvement Alternatives

| Transportation Improvement Goal | Existing Conditions | Do Nothing | Roundabout | Bowtie Couplet | Rainier as Boulevard | Incremental Enhancements |
|---|---------------------|------------|------------|----------------|----------------------|--------------------------|
| Shorten pedestrian crossing distances across intersections. | ○ | ○ | ○ | ● | ◐ | ◐ |
| Increase sidewalk widths. | ○ | ○ | ◐ | ◐ | ◐ | ◐ |
| Provide good pedestrian connections to transit. | ○ | ○ | ◐ | ◐ | ◐ | ◐ |
| Improve transit speed. | ◐ | ○ | ◐ | ◐ | ○ | ◐ |
| Provide continuous bicycle network. | ○ | ○ | ○ | ◐ | ◐ | ◐ |
| Maintain vehicle access to businesses. | ◐ | ◐ | ◐ | ◐ | ◐ | ◐ |
| Improve vehicle operations on Rainier and MLK. | ○ | ○ | ◐ | ● | ◐ | ◐ |
| Improve vehicle operations on Bayview, McClellan and Hanford. | ◐ | ◐ | ◐ | ○ | ◐ | ◐ |
| Provide on-street parking. | ○ | ○ | ○ | ● | ◐ | ○ |
| Reconnect Cheasty and Mount Baker Boulevards. | ○ | ○ | ● | ● | ◐ | ◐ |
| Establish sense of place. | ○ | ○ | ● | ● | ◐ | ◐ |
| Minimize right-of-way acquisition. | ● | ◐ | ○ | ◐ | ◐ | ◐ |

Extent to which goal is satisfied:



High



Medium High



Medium



Medium Low



Low

Notes on Figure 6:

Shorten pedestrian crossing distances across intersections: A couplet would allow on-street parking within the existing right-of-way; it is possible that some curb bulbs could be provided on Rainier as a boulevard where a sufficient amount of property could be acquired. A roundabout would lengthen pedestrian crossings at Rainier/MLK.

Increase sidewalk widths: Rainier as a boulevard or a couplet would provide continuous wide sidewalks; the other improvements would likely result in sidewalk improvements at spot locations, but not along the entire corridor length.

Provide good pedestrian connections to transit: Connections to transit would be improved to the extent that overall pedestrian connections are improved. Rainier as a boulevard, or a couplet with a contraflow bus lane, would provide the highest level; smaller improvements associated with the other action alternatives could be focused to improve transit connections.

Improve transit speed: While no alternative would result in high vehicle speeds through the corridor, a couplet with a contraflow bus lane is expected to improve overall transit speeds the most, and a roundabout would also be expected to improve overall vehicle speeds through the corridor. Incremental enhancements could improve vehicle speeds to a lesser extent.

Provide continuous bicycle network: A couplet would provide room on MLK for a bike lane, though not on Rainier; other smaller improvements could improve bicycle connections but would not provide a continuous network; a roundabout would provide no improvement for bicycle travel, and would lengthen bicyclists' travel distance through Rainier/MLK.

Maintain vehicle access to businesses: A roundabout or smaller focused improvements would have little effect on access to businesses; a couplet could result in access limitations for industrial and some types of retail businesses located along the one-way streets, but could improve or have little effect on other types. A boulevard could restrict some left-turn access to and from businesses between intersections.

Improve vehicle operations on Rainier and MLK: A couplet would eliminate all conflicting vehicle movements, and a roundabout would greatly improve vehicle flow. Incremental enhancements could improve operations, though not to the extent of the larger projects.

Improve vehicle operations on Bayview, McClellan and Hanford: Rainier as a boulevard or incremental improvements would likely include focused improvements that allow the east-west streets to operate similar or better than existing conditions. A roundabout would likely have little effect on these streets. A couplet is expected to increase traffic volumes and delay on McClellan and Hanford, particularly at the intersection of Rainier/McClellan unless additional intersection improvements are made.

Provide on-street parking: A couplet would allow on-street parking within the existing right-of-way; it is possible that some parking could be provided on Rainier as a boulevard where a sufficient amount of property could be acquired.

Reconnect Cheasty and Mount Baker Boulevards: Either a roundabout or couplet includes design elements that would restore connection of Mount Baker Boulevard to Rainier. Incremental enhancements could include also potentially improve the connection.

Establish sense of place: Either a roundabout or couplet would provide a strong visual cue that a person has arrived someplace. Rainier as a boulevard would also provide a less dramatic visual cue.

Minimize right-of-way acquisition: Of the action alternatives, a roundabout would require the most additional property; a couplet would require the least since it would primarily fit within existing right-of-way, though some additional property could be needed to accommodate truck turns and all non-motorized elements. Wide continuous sidewalks on Rainier and/or incremental enhancements would likely require some additional property. Do-Nothing would require the least additional property; however, as traffic increases over time, some improvements could still be required that require additional property.

What are the next steps?

As the City develops and refines specific solutions, the concerns of business and property owners will be addressed in greater detail. The City is still very early in the development stages of transportation improvements for the Town Center area. Future steps include identification of transportation improvement alternatives for further study and development, environmental assessment of draft improvement alternatives, determination of a preferred improvement alternative, obtaining funding for transportation improvements, design, and construction. Throughout the process, the City will continue to coordinate with business and community members regarding their specific transportation needs and issues.

Feedback or additional ideas regarding future transportation improvements in the Mount Baker Town Center area are welcome at any time. For additional information or to provide feedback, please contact:

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Previous City of Seattle studies and plans for the Mount Baker Town Center area are provided at:

www.seattle.gov/dpd/Planning/Neighborhood_Planning/NeighborhoodPlanUpdates/NorthRainier/default.asp

www.seattle.gov/transportation/ppmp_sap_neigh.htm#mccellan