CITY OF SHORELINE

Town Center Subarea Planned Action
Draft Supplemental Environmental Impact Statement

Prepared by: **May 2011**

City of Shoreline
Planning and Development Services
17500 Midvale Avenue N
Shoreline, WA 98133

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Acronyms

ADT- Average Daily Trips
AQI- Air Quality Index
BRT- Bus Rapid Transit
CIP- Capital Improvement Program
DAHP- Washington State Department of Archaeology and Historic Preservation
DEIS- Draft Environmental Impact Statement
DNS- Determination of Non-Significance
DOE- Washington State Department of Ecology
DS- Determination of Significance
DSEIS- Draft Supplemental Environmental Impact Statement
EIS- Environmental Impact Statement
EPA- United States Environmental Protection Agency
FAR- Floor Area Ratio
FEIS- Final Environmental Impact Statement
GIS- Geographic Information System
GMA- Growth Management Act
KCHPP- King County Historic Preservation Program
LOS- Level of Service
MUZ- Mixed Use Zone
NAAQS- National Ambient Air Quality Standards
NPDES- National Pollutant Discharge and Elimination System
NRPA- National Recreation and Parks Association
PM- Particulate Matter
PROS Plan- Parks, Recreation, and Open Space Plan
PSCAA- Puget Sound Clean Air Agency
PSE- Puget Sound Energy
PSRC- Puget Sound Regional Council
RCW- Revised Code of Washington
ROW- Right-of-way
SCL- Seattle City Light
SEIS- Supplemental Environmental Impact Statement
SEPA- State Environmental Policy Act
SMC- Shoreline Municipal Code
SPU- Seattle Public Utilities
SWMP- Stormwater Management Program
TAZ- Traffic Analysis Zone
TC- Town Center
TDM- Transportation Demand Management
TMP- Transportation Master Plan
V/C Ratio- Volume to Capacity Ratio
WAC- Washington Administrative Code
WSDOT- Washington State Department of Transportation

May 10, 2011

Subject: City of Shoreline Town Center Subarea Plan, Town Center Code, and Planned Action Ordinance Draft Supplemental Environmental Impact Statement

Dear Reader:

The City of Shoreline invites you to comment on the City of Shoreline Town Center Subarea Plan and Planned Action Ordinance Draft Supplemental Environmental Impact Statement (Draft SEIS). The Draft SEIS analyzes the environmental impacts of future land use, transportation, and other features in the Town Center Subarea.

Two alternatives are analyzed in the Draft EIS: the Proposed Alternative includes adoption of a Town Center Subarea Plan and associate development regulations (Town Center Code) and the Planned Action Ordinance; and the No Action Alternative, which is a continuation of the City's current Comprehensive Plan and development regulations applicable to the study area without amendment.

The Proposed Alternative would implement development, design, and street standards that have been developed in hopes of establishing a livable and walkable district. Concepts include a primarily form-based code; design review; neighborhood protection measures for adjacent single family neighborhoods; and new street frontage standards to increase pedestrian activity and public gathering and improve pedestrian safety.

The Proposed Alternative also includes adoption of a Planned Action Ordinance. If adopted pursuant to WAC 197-11-164, the Planned Action Ordinance would indicate that the EIS adequately addresses significant impacts of the Proposal, and that future projects consistent with the analyzed projects and parameters of the Planned Action Ordinance (1,200 residential units, 200,000 square feet of office space, and 200,000 square feet of commercial space) would not require future SEPA threshold determinations.

The evaluation of a No Action Alternative is required by SEPA. This alternative assumes that the Town Center Subarea Plan would not be adopted into the Comprehensive Plan, and would not be implemented with new development regulations.

This Draft SEIS identifies specific environmental impacts and ways to mitigate impacts in advance of development. The followed areas are addressed in the Draft SEIS: Land Use and Aesthetics, Air Quality, Parks and Recreation, Cultural and Historic Resources, Utilities, and Transportation.

Agencies, affected tribes, and members of the public are invited to comment on the Draft SEIS. The City of Shoreline will accept written comments from issuance on May 10, 2011 until 5:00 pm on June 9, 2011. Written or emailed comments may be provided to the Responsible Official as follows:

Responsible Official: David Levitan, AICP **Position/Title**: Associate Planner
Phone: (206) 801-2554 **Email**: dlevitan@shorelinewa.gov
Address: 17500 Midvale Avenue North, Shoreline, WA 98133

Should you require additional information on the Proposal, please contact Paul Cohen, Project Manager at (206) 801-2551 or pcohen@shorelinewa.gov.

Fact Sheet

Project Title

City of Shoreline Town Center Subarea Plan, Development Regulations, and Planned Action Ordinance

Proposed Action

The proposed action would involve the following:

- Adoption of the Town Center Subarea Plan, which would be incorporated into the City of Shoreline Comprehensive Plan;
- Adoption of the Town Center Code development regulations, which would be incorporated as Chapter 20.92 of the City of Shoreline Municipal Code; and
- Adoption of an ordinance designating the Town Center Subarea as a Planned Action for the purpose of State Environmental Policy Act (SEPA) compliance, pursuant to the Revised Code of Washington (RCW) 43.21C.031(2)(a) and Washington Administrative Code (WAC) 197-11-164.

The Subarea Plan includes a vision statement for the Town Center subarea, as well as a list of goals and policies to help achieve that vision. The Town Center Code includes an urban design concept plan (detailing street type designations and through connections), zoning map for the four Town Center Zone districts, and a variety of development, design, safety, and neighborhood protection standards. These standards include permitted uses in each zone, minimum and maximum building heights, streetscapes, parking, landscaping, internal connections, stormwater, green streets, pedestrian and bicycle amenities, traffic calming, and public spaces.

Based on City growth targets and projections, the City anticipates the Proposed Action could result in the following level of development in the subarea:

- 1,200 new residential units
- 200,000 sf of new office space
- 200,000 sf of new retail space

This Environmental Impact Study (EIS) also includes a general discussion of the three alternatives that have been developed for the proposed Park at Town Center. The Park at Town Center is envisioned as a passive recreational and gathering space along either side of the Interurban Trail (between Aurora Avenue North and Midvale Ave North), running from North 178th Street to North 185th Street. Following a final public workshop in June 2011, a preferred alternative will be selected and presented to the City Council in July or August 2011, and will be require Council adoption of a separate ordinance and Parks Master Plan. Because the preferred alternative has yet to be selected for the Park at Town Center, the City of Shoreline will be preparing a project-specific SEPA Checklist for the Park at Town Center.

No Action Alternative

The No Action Alternative assumes that the Town Center area would develop according to the existing Comprehensive land use designations and development regulations. As the Park at Town Center is a separate project, it is anticipated that it would still move forward under the No Action Alternative.

Supplemental EIS

This Supplemental Environmental Impact Statement (SEIS) expands on the analysis of the 1998 Comprehensive Plan EIS, 2004 Comprehensive Plan Update SEPA Checklist and DNS, the 2009 Regional Business (RB) Zone SEPA Checklist and DNS, and the 2007 Aurora Corridor Second and Third Mile SEPA Checklist and DNS, with more specific analysis of the Town Center Subarea Planned Action area. Copies of the aforementioned documents are available for review at the City of Shoreline, and were used to scope this EIS. Alternative C/D of the 1998 Comp Plan EIS proposed to accommodate expected future growth along major arterials and transit routes, primarily along Aurora Avenue North, and within the Town Center Subarea.

Development of this SEIS is subject to the procedures outlined in WAC 197-11-620, in addition to the procedures for Planned Actions outlined in WAC 197-11-164.

Location

The Town Center Subarea Plan area is located approximately 10 miles north of downtown Seattle, and is comprised of 79 acres of land on both sides of State Route 99 (Aurora Avenue North) in Shoreline, WA. The area's southern boundary is North 170th Street, and the northern boundary is North 188th Street. The western boundary is Linden Avenue North (north of 175th Street) and properties fronting on Aurora Avenue N (south of North 175th Street), and the eastern boundary is primarily Stone Avenue North, except for the areas north of North 185th Street and south of North 173rd Street, where the eastern boundary is the Seattle City Light (SCL) utility corridor.

Proponent

City of Shoreline

Lead Agency

City of Shoreline

Contact Person and Responsible Official

David Levitan, AICP
Associate Planner
17500 Midvale Ave N
Shoreline, WA 98133

Required Approvals

The Proposed Action would require the City of Shoreline City Council to take the following actions:

- Adoption of the Town Center Subarea Plan;
- Adoption of the Town Center Code; and
- Adoption of a Planned Action Ordinance

In addition, the City Council would adopt a separate ordinance approving the Park at Town Center Park Master Plan.

Date of Draft SEIS Issuance

May 10, 2011

Date Comments Due

June 9, 2011, 5:00 pm

Public Comment

Written comments can be mailed, faxed, or emailed to the responsible official as follows:

David Levitan, AICP, Associate Planner

Planning and Development Services

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Date of Implementation

Approval is anticipated by August 2011

Availability/Purchase of the Draft SEIS

The document is available free of charge on the City of Shoreline's Town Center Subarea Plan website: http://www.shorelinewa.gov/index.aspx?page=180.

Copies of the Draft SEIS are also available on CD for $2.00.

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Chapter 1: Summary

1.1 Introduction

This chapter provides a brief summary of information contained in this Planned Action Draft Supplemental Environmental Impact Statement (SEIS). It provides an overview of the alternatives (Proposed Action and No Action), significant impacts, mitigation measures, and unavoidable adverse impacts that could result from the proposed action. This summary is intended to be brief and selective; the reader should consult individual sections of the SEIS for detailed information concerning environmental impacts and mitigation measures of the alternatives.

1.2 Planned Action Ordinance

1.2.1 Definition of a Planned Action

The City of Shoreline proposes to designate the Town Center Subarea Plan and Code as a "Planned Action", pursuant to the State Environmental Policy Act (SEPA) and as defined under WAC 197-11-164 (under RCW 43.21C.031). The Planned Action process allows agencies to complete comprehensive environmental analysis for certain planned areas, such as subarea plans, during the plan-making process, and eliminates the need for site-specific environmental review for future projects at the time of permit application so long as they fall within the Planned Action boundaries and development parameters.

By law, planned actions must:

- be designated by ordinance;
- be located within an Urban Growth Area;
- be consistent with and implement a comprehensive plan or subarea plan;
- not be an essential public facility; and
- have had all potential significant environmental impacts adequately addressed.

The Planned Action analyzed in this SEIS meets all of these criteria. As such, the environmental review and mitigation measures included in this document cover all future projects that fall within the parameters of the Planned Action, as defined and adopted in the Planned Action Ordinance (see Section 1.2.2).

1.2.2 Adoption of the Planned Action Ordinance and Planned Action EIS

According to WAC 197-11-168, the ordinance adopting the planned action shall:

- Describe the types of projects the Planned Action applies to;
- Specifically find that the environmental impacts of the planned action proposal have been identified and adequately addressed in this SEIS; and
- Identify any specific mitigation measures that must be included for the proposal to qualify as a planned action.

As mentioned in the Fact Sheet, this SEIS evaluates the potential environmental impacts that could result from future development projects that are:

1) located within the Town Center subarea boundaries;
2) consistent with the Town Center Subarea Plan and Town Center Code development regulations; and
3) fall within the following development thresholds:
    a) 1,200 net new residential units
    b) 200,000 square feet (sf) of net new office space
    c) 200,000 square sf of net new retail space

When a future development project within the Town Center Subarea is proposed, the City must verify that the proposal is the type of project contemplated in the planned action ordinance, and that the probable adverse environmental impacts of the planned action project have been adequately addressed in this SEIS. If the proposal meets this test, no SEPA threshold determination or further environmental review would be required at the project level. The City may, however, require additional environmental review and mitigation if significant adverse environmental impacts were not adequately addressed in the planned action EIS, or if the proposal does not qualify as a planned action. Should future development in the subarea exceed the development thresholds referenced above, or have potential environmental impacts that the City determines have not been addressed in this document, the City of Shoreline would have the opportunity to complete additional SEPA environmental review, and revise this SEIS and the Planned Action Ordinance.

1.3 Proposed Action and Alternatives

1.3.1 Location

The Town Center Subarea Plan area is located approximately 10 miles north of downtown Seattle, and is comprised of 79 acres of land on both sides of State Route 99 (Aurora Avenue North) in Shoreline, WA. The area's southern boundary is North 170th Street, and the northern boundary is North 188th Street. The western boundary is Linden Avenue North (north of 175th Street) and properties fronting on Aurora Avenue N (south of North 175th Street), and the eastern boundary is generally Stone Avenue North, except for the areas north of North 185th Street and south of North 173rd Street, where the eastern boundary is the Seattle City Light (SCL) utility corridor. See Figure 1-1 for specific boundaries.

Figure 1-1: Town Center Boundaries

1.3.2 Proposed Action

As detailed in the Fact Sheet, the proposed action consists of three major elements:

1) Adoption of the Town Center Subarea Plan, which would be incorporated into the City of Shoreline Comprehensive Plan.
2) Adoption of the Town Center Code development regulations, which would be incorporated as Chapter 20.92 of the City of Shoreline Municipal Code. Development standards that are not addressed in Chapter 20.92 would be supplemented by the development standards in Title 20 of the Shoreline Municipal Code (SMC). In the event of a conflict between standards, the standards of Chapter 20.92 would prevail.
3) Adoption of an ordinance designating the Town Center Subarea as a Planned Action for the purpose of SEPA compliance, pursuant to the Revised Code of Washington (RCW) 43.21C.031(2)(a) and Washington Administrative Code (WAC) 197-11-164.

Based on City growth targets and projections over the next twenty years (5,000 new housing units and 5,000 new jobs), the City anticipates the Proposed Action could result in the following level of development in the subarea:

- 1,200 net new residential units
- 200,000 sf of net new office space
- 200,000 sf of net new retail space

Environmental analysis in this SEIS is limited to these development parameters. Should future projects in the subarea exceed these levels, additional environmental analysis would be needed, either for the individual project or as an addendum or supplement to this EIS.

Town Center Subarea Plan

The Town Center Subarea Plan envisions the Town Center in 2030 as "the vibrant cultural and civic heart of the City with a rich mix of housing and shopping options, thriving businesses, and public spaces for gatherings and events", which "stands out as a unique and inviting regional destination while gracefully fitting in within its surrounding landscape and neighborhoods". The plan envisions green open spaces, enclosed plazas, internal streets and pathways that break up large blocks and make them more walkable, underground and rear parking, storefronts opening onto parks, plazas, and wide sidewalks, and mixed use buildings with ground-floor and corner retail.

The Town Center's focus on walkability and gateway treatments are intended to create a "sense of place" that distinguishes it from other auto-oriented regions in the City and region. Building heights would be expected to range from one to three stories within transition areas adjacent to single-family residential areas along Linden and Stone Avenues N, to four-six story mixed-use structures along Midvale Avenue N and Firlands Way N, and up to six stories along sections of Aurora Avenue N.

How to fully achieve this vision is spelled out in a list of 4 goals and 26 policies that are included in the Town Center Subarea Plan, and are discussed in further detail in Section 2.3.

Town Center Code

The Town Center Code has been developed based on the goals and policies included in the Town Center Subarea Plan, with the hopes of developing the "vibrant cultural and civic heart of the City" described above. Further discussion of the Town Center Code is included in Section 2.3. However, some of the major components of the Code include:

- Four distinct zoning districts, with a transition overlay for areas adjacent to single family residential to provide suitable transitions between more and less intense uses;
- An increased emphasis on building form, rather than building use. Building height and setback requirements remain, but residential density requirements (dwelling units per acre) no longer exist;
- No minimum building size;
- A maximum beginning height of 35 feet (stepping up to 70 feet), landscape buffers, and limited vehicular access in residential transition overlays;
- Expanded public space, landscaping, lighting, and street frontage requirements;
- Greater unobstructed sidewalk requirements, including 10 feet for storefront streets ,eight feet for green link streets, and seven feet for boulevards streets, all with additional five foot amenity zones;
- Requirements for street parking and bulbouts on both sides of storefront and green link streets, for projects located near block ends or pedestrian crossings;
- Sitting walls or benches for storefront streets, to encourage public gathering;
- Limitations on surface parking along street frontages, and the potential for parking reduction through established criteria;
- High visibility corners, with specific development and design standards;
- Lot Through-connection and walkway requirements, to encourage connections to nearby properties, streets, trails, and transit, and between single family neighborhoods and Town Center;
- Building façade, modulation, and articulation design requirements;
- Sign standards that are more appropriate for pedestrian-oriented streets;
- Restoration of the brick road that is currently underneath Firlands Way, if feasible. If not, design a street that slows traffic and improves the pedestrian experience; and
- Design Review to apply design standards to new projects.

While the Plan and Code have goals, policies, and standards for roadway improvements to Midvale Ave N, Firlands Way N, the potential vacation of N. 182nd Street, and the extension of N. 180th Street, the Planned Action does not identify any specific timetable or funding mechanism to achieve these improvements. The cross-sections discussed are currently being incorporated into the City of Shoreline's Transportation Master Plan (TMP) Update, which is anticipated to be completed in late 2011. The TMP, as well as the City's Capital Improvement Program (CIP), will help prioritize future projects, and will be influenced by the size and scope of redevelopment projects in the subarea.

The Park at Town Center

Consistent with Policy TC-19 of the Town Center Subarea Plan, the City of Shoreline is currently working with the public to develop a new linear, passive recreational and gathering space on either side of the Interurban Trail, known as the Park at Town Center, between approximately N 178th Street and N 185th Street. Based on public input, three park alternatives have been developed. While this EIS document discusses some of the common themes and characteristics within the Recreation Section, it notes that a project-specific SEPA Checklist will be required once an alternative has been selected. Should an alternative be selected and adopted prior to adoption of the Subarea Plan, the City shall update the Final EIS (FEIS) document to identify the preferred alternative. The Park will also require adoption of a separate ordinance and Park Master Plan.

1.3.3 No Action Alternative

Major features of the No Action Alternative are summarized below:

Land Use: The No Action Alternative would retain the existing Comprehensive Plan and zoning designations for the study area. There are currently a variety of zoning designations in the study area, including Mixed Use Zone (MUZ), Industrial, Community Business, and residential zones that range in density from 6 to 48 units per acre (R-6 to R-48). Maximum building heights range from 30 feet (35 feet with a pitched roof) in the single family residential zones, to 65 feet in the Mixed Use Zone (when incentives such as green building practices, affordable housing, and mixed-use projects are met). There is a minimum building height of 35 feet in the MUZ zone.

Transportation and Streetscape: As mentioned, the Transportation Master Plan for the City of Shoreline is currently being updated. As part of that plan, the City is developing cross-sections for the streets within the subarea. These cross-sections are expected to be the same for both the Proposed and No Action Alternatives as far as number of travel lanes, widths, and bicycle lanes. As such, the look of the streets from "curb to curb" would be expected to be the same in both alternatives. However, the proposed improvements and standards beyond the curbs, such as bulbouts, street parking, and requirements for wider sidewalks and public plazas, would not be part of the No Action Alternative. In addition, streetscape improvements in the study area may be identified as a lower priority under the No Action Alternative, as the Town Center Subarea Plan identifies the City Council's commitment to creating a compact, walkable neighborhood where one currently does not exist.

The Park at Town Center: It is anticipated that the Park at Town Center would develop in a similar manner under the No Action Alternative. The Proposed Action does, however, include more detailed standards and analysis of how to connect the park to the surrounding Town Center area.

1.4 Prior Planning and Environmental Review

The City of Shoreline adopted a Comprehensive Plan complying with the Growth Management Act (GMA) in 1998. The Comprehensive Plan is intended to guide growth and development within the City for a twenty year period. As required by the GMA, the Comprehensive Plan is the guiding document for growth and development in the City of Shoreline, and must include the following elements: land use, housing, transportation, capital facilities, and utilities.

The City of Shoreline issued a Draft EIS (DEIS) for the 1998 Comprehensive Plan in November 1997, and adopted the FEIS in November 1998. The EIS identified and documented potential significant adverse environmental impacts and mitigation measures associated with a number of plan alternatives. The supplemental analysis in the Town Center Draft SEIS is based largely on Alternative C/D of the November 1997 Comprehensive Plan DEIS, which was one of three alternatives analyzed. Alternative C/D assumed that most growth in the City of Shoreline would be focused in selected "activity centers" within the City, with the primary area being along the central portion of the Aurora Corridor. The portion of Aurora Ave N between N 175th St and N 185th St is described as a central business area that "could be redeveloped with a wide variety of commercial uses and intensive residential uses", with higher density housing encouraged one block off Aurora Avenue on both sides (Linden and Midvale Avenues N) between N 175th St and N 185th St.

In 2001, the City completed the Central Shoreline Subarea Plan Report, which included 5 year and 25 year visions for the Aurora Corridor and included a first draft of potential development standards. This plan included a number of similar goals and policies to the Proposed Action, but was never adopted by the City Council.

In June 2005, the City of Shoreline adopted its state-mandated update to the Comprehensive Plan. As part of the process, the City completed a SEPA Environmental Checklist, and issued a Threshold Determination of Non-Significance (DNS). The City is beginning work on its next Comprehensive plan Update, which is anticipated to be adopted by the City Council by the end of 2012. An EIS will be prepared as part of the 2012 update.

In addition to the 1998 Comprehensive Plan EIS, the Town Center Subarea SEPA Checklist relied heavily on the SEPA Checklist and Technical Discipline Reports prepared for the Aurora Corridor Improvement Project, N 165th Street-N 205th Street, which was prepared in November 2007 and resulted in the issuance of a DNS on November 21, 2007. The study area for the Aurora Corridor project largely overlapped with the boundaries of Town Center. While focused primarily on the potential environmental impacts that could result from the redevelopment of the Aurora Avenue Corridor, these documents were used to scope this proposal's EIS, and ultimately helped focus the discussion to issues related to land use, aesthetics, transportation, utilities, historic resources, recreation, and air quality.

In 2007, the City Council developed the following policies to establish the framework for development of the land use, capital facility and programmatic aspects of the Town Center Subarea Plan.

- FW-1: Articulate a community vision for the town center as an early step in the development of detailed provisions for the subarea.
- FW-2: Establish a study area boundary to provide context for evaluating the opportunities and potential impacts from future development of commercial and mixed uses along Aurora Ave. N.
- FW-3: Engage Shoreline residents and businesses in detailed design processes for a) a park site on both sides of the Interurban Trail and b) Midvale Ave N.
- FW-4: Design roadway, transit and pedestrian facilities consistent with the City's preferred "Flexible alternative" for Aurora Avenue between N. 165th St. and N. 205th St.
- FW-5: Prepare a program of civic directional or 'way finding ' signage and evaluate refinements to city sign regulations to reflect the emerging function and visual character of Aurora Avenue.

1.5 Supplemental EIS

As noted, this Supplemental EIS focuses on potential impacts associated with development envisioned in, and consistent with, the Town Center Subarea Plan and Development Code. It supplements the analysis of the 1998 Comprehensive Plan EIS and 2005 Comprehensive Plan Update DNS with more specific analysis of the Town Center. Environmental analysis from the 2007 Aurora Corridor Improvement Project, N 165th Street-N 205th Street SEPA Checklist and DNS and the 2009 Regional Business SEPA Checklist and DNS were also used to help scope the topics with potential environmental impacts in this document, as the Town Center Subarea largely overlaps with the Aurora Corridor Project and the former RB zoning along Aurora Avenue N.

The 1998 Comprehensive Plan EIS evaluated a number of alternatives for the long range vision of the City, with the eventual adopted alternative (Alternative H) being developed from a combination of elements from a number of different alternatives. As part of the evaluation of alternatives, the City looked at one alternative (Alternative C/D) that sought to accommodate expected future growth along major arterials and transit routes, primarily along Aurora Avenue North, and within the Town Center Subarea.

1.6 Summary of Potential Impacts and Mitigation Measures

Land Use and Aesthetics

Impacts Common to Both Alternatives

Future commercial and residential redevelopment under either alternative is anticipated to result in slightly taller and denser developments than what currently exist in the Subarea. Although the mass and scale of the discussed redevelopment is already permitted by the current zoning (No Action Alternative) and would be consistent with the proposed Town Center zoning (Proposed Action), redevelopment could result in a change in land use and visual character in the subarea, as compared to the primarily one and two-story strip retail uses in the region. Adjacent single family neighborhoods have expressed concern regarding the potential impacts that could result from increased development in the Town Center Subarea.

Mitigation Measures Incorporated into the Proposed Action

As detailed in Sections 2.3 and 3.1, the Town Center Code was developed to create a visually appealing, mixed-use center neighborhood within the City of Shoreline, while at the same time protecting adjacent single family residential neighborhoods from any potential impacts that could result from redevelopment in the area. The Town Center Subarea Plan and Development Code include a number of standards and provisions regarding mass, scale, setbacks, site access, and landscaping that were developed to help protect and respect adjacent neighborhoods, and would require administrative design review and traffic studies for most projects. The emphasis on services, public spaces, and walkability will make Town Center accessible for the surrounding single family neighborhoods to use as amenities. In addition, the City held numerous public meetings and workshops over several years to gather input and hear concerns from nearby businesses and residents. As such, adoption of the Town Center Code and Subarea Plan would mitigate any potential adverse impacts related to land use and aesthetics.

Mitigation Measures Incorporated into No Action Alternative

Although not as detailed or comprehensive as those included in the Proposed Action, Section 20.50 of the Shoreline Municipal Code provides a number of development and design standards, most notably for the MUZ zone, that were developed to create transitions between the envisioned higher density residential and commercial uses within the Town Center and the adjacent single family neighborhoods. Administrative design review is already required for projects within the MUZ. However, it does not presently include the detailed design standards contained in the proposed Town Center Code. Both the existing zoning and proposed Town Center Code require stepbacks for large buildings adjacent to residential zones. Although to a lesser degree as the Proposed Action, the current code should mitigate any potential adverse impacts.

Historic Resources

Impacts Common to Both Alternatives

There are two properties within the Town Center Subarea that have been determined to have historic significance: the Auto Cabins at 17203 Aurora Avenue N, and the North Trunk (Red Brick) Road. Under either alternative, it is possible that redevelopment activities could result in demolition or alteration of these historic resources. The Auto Cabins are currently owned by a private property owner, while most of the Red Brick Road north of N 175th Street is owned by the City of Shoreline.

While the City is not currently aware of any plans to redevelop the Auto Cabins property, the Red Brick Road north of Walgreens is located within the area proposed for the Park at Town Center. The City of Shoreline is currently evaluating three alternatives for the proposed park, and based on public input will make a recommendation to the City Council sometime in Summer 2011. Two of the three park alternatives currently being evaluated- "Shoreline on the Move" and "Shoreline Center Stage"- would result in some alteration to the Red Brick Road.

Mitigation Measures Common to Both Alternatives

The proposed Park at Town Center will require a project-specific SEPA Checklist. In completing that checklist, the City of Shoreline SEPA Responsible Official has determined that any park alternative that proposes to remove or alter portions of the Red Brick Road will trigger a SEPA Determination of Significance (DS) and preparation of an Environmental Impact Statement (EIS).

Development activities that would result in the demolition of alteration of any structure or property listed on the City of Shoreline's Historical Resources Inventory shall be reviewed by City staff, and forwarded on to King County Historic Preservation Program staff for their review and recommendation. Should any structures within the Town Center Subarea be granted historic landmark designation, any alterations shall be subject to review by the King County Heritage and Landmarks Commission and King County Design Review Committee.

Transportation

Impacts Common to Both Alternatives

While not projected to exceed accepted level-of-service (LOS) standards, development consistent with the growth assumptions for the Town Center Subarea has the potential to result in additional vehicular traffic that could adversely impact the subarea's street system via cut-through traffic to adjacent neighborhoods.

Projected increases in vehicular traffic, coupled with the increased amount of pedestrian, bicycle, and transit use that typically accompany mixed-use development, has the potential to increase conflicts among the various users of Town Center.

Impacts for Proposed Action

The Town Center Code proposes to reduce the number of required parking spaces for residential, commercial, and office uses. This has the potential to result in spillover parking into the surrounding single family residential neighborhoods. Upon reducing the parking requirements in the North City Subarea District, the City of Shoreline experienced an increase in service requests and complaints related to spillover parking.

Mitigation Measures for No Action Alternative

Current Traffic Study Guidelines (SMC 20.60.140) for the City of Shoreline require that any development proposal that would generate 20 or more (net) PM peak hour trips to complete and submit a traffic study. Any large-scale redevelopment project within the Town Center subarea is likely to trigger this requirement.

Mitigation Measures for Proposed Action

Section 20.92.040 of the Town Center Code requires that all developments shall complete a traffic study and implement mitigation measures to mitigate potential cut-through traffic or parking impacts to single-family neighborhoods. These could include traffic calming measures identified in the various Neighborhood Traffic Action Plans (NTAP's), partial street closures, and other topics addressed in the required traffic study.

Should spillover parking continue to be a problem following implementation of traffic calming measures, surrounding neighborhoods may pursue the City's Residential Parking Zone (RPZ) program, which requires permits to park in certain areas of the City. The RPZ program has identified proximity to a business district as an appropriate reason for implementing permit parking.

Significant and Unavoidable Impacts

With implementation of the above mitigation measures, the Town Center Subarea project would not be expected to result in any significant and unavoidable adverse impacts.

Chapter 2: Description of the Alternatives

2.1 Introduction

Two alternatives have been identified and will be evaluated in this Draft SEIS. The first alternative is the Proposed Action, and involves adoption of the Town Center Subarea Plan and Development Code (SMC Chapter 20.92), as detailed in Chapter 1.3.2. The second alternative is the No Action Alternative, and involves maintaining the existing zoning and Comprehensive Plan land use designation and development regulations for Town Center area, as detailed in Chapter 1.3.3.

This chapter will provide an overview and history of the Town Center Subarea Plan and Town Center Code, and include details on how the Proposed Action differs from the No Action Alternative. Readers will notice that the growth target and traffic assumptions, as well as the street cross-sections, are the same for both alternatives. This is because both alternatives are based on the City's Transportation Master Plan (TMP) Preferred Alternative (further analysis and discussion is included in Chapters 3 and 8). The primary differences between the two alternatives will be in the design and development standards and requirements used to guide future development in the subarea, and the adopted Comprehensive Plan goals and policies in place to support these standards.

2.2 Project History and Background

Developing a Town Center has been a perennial topic for the City of Shoreline since before its incorporation in 1995. In 1996, the City Council identified the Town Center Subarea as a commercial and civic center in their Visioning Map. In 1998, the community identified the general area around N 175th Street and Aurora Avenue N as the "Heart of Shoreline". In 2003, the Planning Commission recommended a report supporting a plan for Central Shoreline. In 2007, the City Council approved 13 Strategic Points to service as a guide for development and improvements in Town Center until a plan (part of the Proposed Action) was adopted. Later in 2007, the City Council adopted Phase 1 of the Town Center Plan, which replaced the 13 strategic points with 5 Town Center framework goals for the Comprehensive Plan (discussed in Chapter 1 of this SEIS).

The City Council identified community input as an integral part of any plan for the Town Center Subarea, and directed staff to hold a number of meetings and workshops so that residents and businesses could provide their input. Between 2008 and 2010, the City held one design workshop, three city-wide meetings, two surveys (with 245 respondents each), a walking tour, four meetings with the adjoining neighborhoods, two meetings with Stone and Linden Avenue neighbors, and a speaker series on related planning topics, and invited two planning classes from the University of Washington to study Town Center, and shared the results with the public. In addition, the City met with representatives of Forward Shoreline, Chamber of Commerce, Economic Development

Committee, car dealerships, Top Foods, Fred Meyer, Aurora Rents, Ronald Methodist Church, Shoreline School District, Highland Ice Arena, and Interurban Building.

2.3 Action Alternative (Proposed Action)

Town Center Subarea Plan

As discussed in Section 1.3.2, the Town Center Subarea Plan Vision Statement envisions the Town Center in 2030 as "the vibrant cultural and civic heart of the City with a rich mix of housing and shopping options, thriving businesses, and public spaces for gatherings and events", which "stands out as a unique and inviting regional destination while gracefully fitting in within its surrounding landscape and neighborhoods". The plan envisions green open spaces, enclosed plazas, internal streets and pathways that break up large blocks and make them more walkable, underground and rear parking, storefronts opening onto parks, plazas, and wide sidewalks, and mixed use buildings with ground-floor and corner retail.

Building heights would be expected to range from one to three stories within transition areas adjacent to single-family residential areas along Linden and Stone Avenues N; four and five story mixed-used structures along Midvale Avenue N and Firlands Way N; and up to six stories along sections of Aurora Avenue N. To create a better pedestrian environment, buildings along streets such as Firlands Way N and Midvale Ave N would be located at the back of sidewalk, bringing storefronts closer to the street and resulting in a more vibrant business and street environment.

A major focus of the Vision Statement is the creation and expansion of pedestrian, bicycle, and transit connections to the surrounding neighborhoods and region, reducing the dependence on automobiles and making the area accessible to users of all transportation modalities. The Plan also emphasizes the importance of energy efficiency and implementing natural stormwater solutions. Such efforts are seen as a large part of the City's commitment to the three E's of sustainability-environmental quality, economic vitality and social equity.

How to achieve this vision is spelled out in a list of 4 goals and 26 policies that are included in the Town Center Subarea Plan. A few of the major goals and policies of the plan include:

- An urban form, mix of land uses (commercial, residential, and civic), and walkability that distinguishes it from more commercially dominated and auto-oriented portions of the Aurora Corridor and allows residents to work, shop, and eat near where they live, with a hierarchy of Boulevard, Storefront, and Greenlink streets to serve different mobility and access roles within Town Center.
- Gateway treatments, such as signs and landscaping, that announce one's arrival to Town Center, as well as directional wayfinding signage to help residents and visitors navigate the area;

- Encourage the removal of the partial intersection at N 182nd St and Aurora Ave N, and its replacement with a fully signalized mid-block intersection at N 180th St, should redevelopment of adjacent parcels allow it;
- Reconfigure Midvale Avenue N (between N. 175th St and N 182nd St) and Firlands Way N as low speed, pedestrian friendly lanes with back in angle parking and wide sidewalks to support mixed use development and a vibrant streetscape;
- Develop the Park at Town Center as a passive open space for public gathering, celebrations, and link it to the City Hall Civic Center;
- Encourage structured parking and minimize surface parking;
- Recognize the importance of historic preservation, education, and interpretation;
- Develop a form-based development code; and
- Adopt Town Center design standards and design review procedures.

Town Center Code

The Town Center Code has been developed based on the goals and policies included in the Town Center Subarea Plan, with the hopes of developing the "vibrant cultural and civic heart of the City" described above. Some of the major components of the Code, which are also discussed in Section 1.3.2, include:

- Four distinct zoning districts, including a specific medium density district along Stone Avenue N and a transition overlay for all other areas adjacent to single family residential, created to provide suitable transitions between more and less intense uses. The maximum height in these areas begins at 35 feet, which is the same as the existing Zoning Code;
- An increased emphasis on building form, rather than building use. Building height and setback requirements remain, but residential density requirements no longer exist.
- Expanded public space, landscaping, lighting, and street frontage requirements;
- Greater unobstructed sidewalk requirements, including 10 feet for storefront streets ,eight feet for green link streets, and seven feet four boulevards streets, all with additional five foot amenity zones;
- Requirements for street parking and bulbouts on both sides of storefront and green link street for projects located near block ends or pedestrian crossings;
- Sitting walls or benches for storefront streets, to encourage public gathering;
- Limitations on surface parking along street frontages, and the potential for parking reductions through established criteria;
- High visibility corners, with specific development and design standards;
- Lot Through-connection and walkway requirements, to encourage pedestrian connections between single family neighborhoods and Town Center;
- Building façade, modulation, and articulation design requirements;
- Restoration of the brick road that is currently underneath Firlands Way N, if feasible. If not, design a street that slows traffic and improves the pedestrian experience; and
- Design Review.

The Town Center Code has been developed to focus more on regulating the form and character of development, and less on land uses and densities. As such, it does not included the lengthy uses tables that are found in most conventional zoning codes, and instead identifies a short list of permitted and prohibited uses. The first part of the Town Center Code (Sections 20.92.020 and 20.92.030) addresses the purpose, land uses and dimensional standards that would be permitted within the subarea. Administrative Design Review would be required for any permit involving the construction of a new building or addition equaling at least 10,000 square feet in floor area.

While permitted uses are largely based on form, the Town Center Code recognizes that areas along Aurora Avenue N should not look exactly the same as those adjacent to single family residential neighborhoods on Stone or Linden Avenues. As a result, the zoning has been divided into the following four districts (Figure 2-1) to further distinguish their land uses, development dimensions, and design standards.

- TC-1 Aurora Southwest – The most permissive of the four districts, this district allows the same uses, and has the same development standards, as the TC-2 district (discussed below), as well as being the only district where vehicle sales, leasing, and servicing are permitted.
- TC-2 Aurora – With frontage on Aurora, 175th, and 185th, this district emphasizes commercial development, with some residential uses and pedestrian activity internal to the blocks that front primarily along Boulevard streets (such as parcels that extend from Aurora through to Linden). The maximum building height is 70 feet, with 0' front, side, and rear yard setbacks allowed for properties adjacent to nonresidential zones, and 15' side and rear yard setbacks required from residential zones.
- TC-3 Firlands/Midvale – This district emphasizes residential development, with some commercial development and pedestrian activity envisioned, primarily along Storefront Streets (those streets with building frontages at the back of sidewalk; see Chapter 8.1.1). The maximum building height and setbacks are the same as for the TC-1 and TC-2 districts.
- TC-4 Stone Avenue – This district focuses on medium density residential development as a means to protect adjacent single family residential neighborhoods. As such, there is a 15' front yard setback, and 5' side and rear yard setbacks from both residential and nonresidential zones, and a maximum building height of 35' (the same as permitted under existing single family residential zoning).
- Transition Overlay – This overlay adds building height restrictions and landscape screening between the Town Center and adjacent single family neighborhoods. The overlay is aimed primarily at providing an adequate transition and buffer between the Town Center and surrounding single family neighborhoods, and as such requires 20' side and rear yard setbacks for parcels adjacent to low density residential zones (R-4 and R-6), and 15' setbacks from medium and high density residential zones (R-8 through R-48).

A further discussion of building height, most notably height step-back requirements, is included under the Neighborhood Protection section.

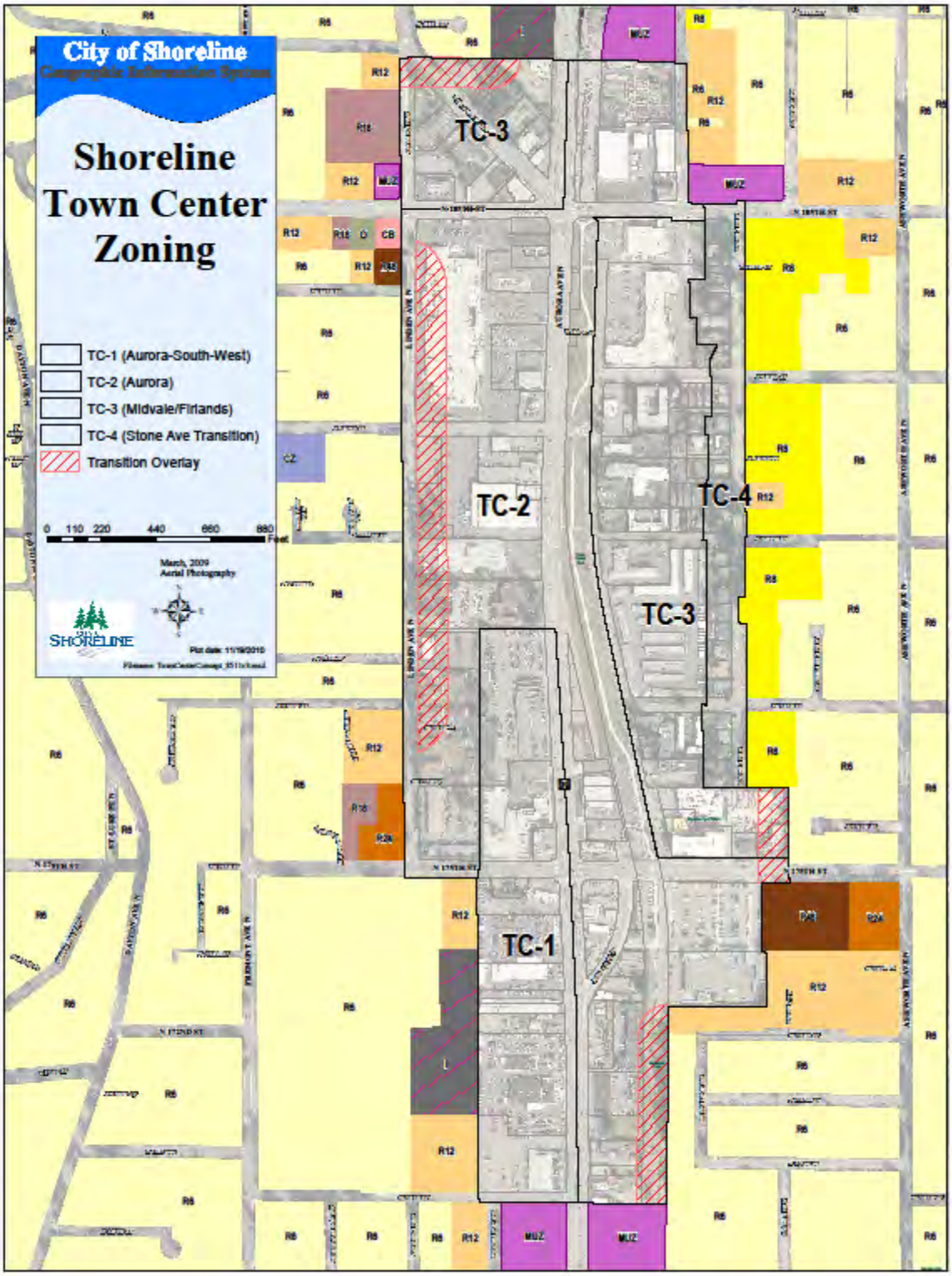

Figure 2-1: Proposed Town Center Zoning

The initial discussion of use and dimensional standards for the Town Center is followed by Section 20.92.030, which outlines proposed street types and pedestrian circulation. Figure 2-2 illustrates the three types of streets in the Town Center Subarea, with further discussion of street frontage design standards included in Section 20.92.050. As noted, Through Connections are shown as conceptual locations, with location and connection type (such as those allowing vehicles, versus a strictly pedestrian/bicycle path) dictated by the design and redevelopment of individual projects and sites.

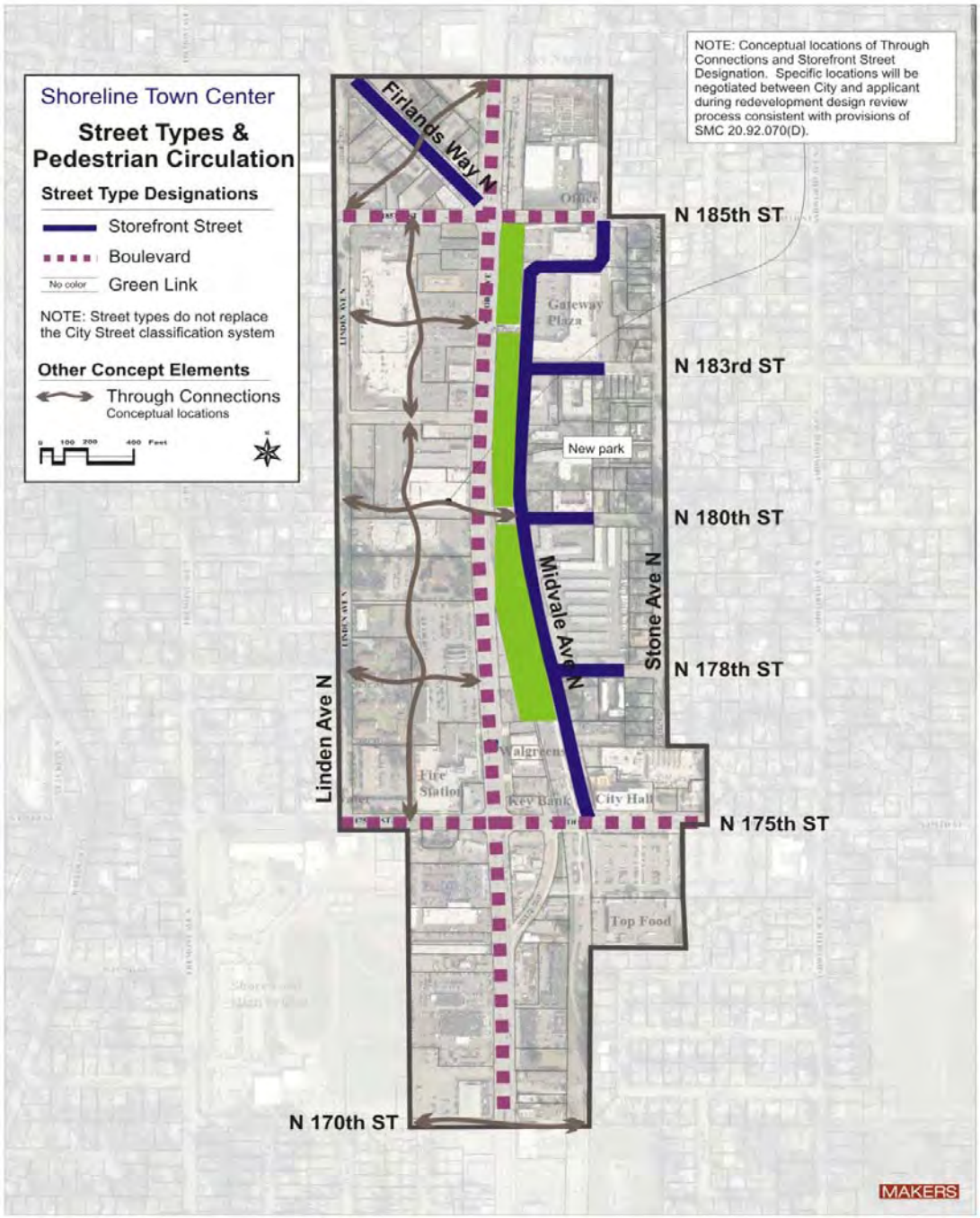

Figure 2-2: Town Center Street Types and Pedestrian Circulation

The next sections (20.92.040-20.92.080) of the Town Center Code are the design standards, which are articulated into five connecting elements that work together in order to build Town Center into a continuous, well-functioned, and attractive district.

1) Neighborhood Protection Design– This element focuses on establishing visual and traffic impact mitigation measures for adjacent single family neighborhoods while providing access to amenities in the Town Center. For example, the maximum building height is 35 feet in all districts for the first 50 horizontal feet from the property line, with an additional 10 feet in height allowed for each subsequent 20 feet from the property line. To further buffer the potential visual impacts of future development, buildings in Districts TC-2 and TC-3 that are adjacent to single family residential (R-4 and R-6) zones will be required to provide a 15-foot wide, Type I landscape with an 8-foot solid fence or wall. In regards to traffic, this element requires the preparation of traffic impact studies that analyze cut-through traffic and parking impacts for all development in the Town Center, and prohibits direct commercial truck access from Stone or Linden Avenue N, unless no other access is available.

2) Street Frontage Design – This element establishes dimensional and design standards for streets (including on-street parking and street trees), sidewalks, lighting, utilities, and way-finding signs that are appropriate to different modes of transportation (including pedestrian) and respectful of adjoining land uses. Given their focus on pedestrian activity, Storefront Streets (Firlands and Midvale) have the widest sidewalk dimensions (10 feet), and also require all developments to provide a minimum of 8 feet of bench or sitting wall. On-street parking is required unless adequate right-of-way is not available, and bulbouts are implemented as traffic calming devices at block ends and pedestrian crossings so as to improve pedestrian safety and the overall pedestrian environment.

3) Site Design – This element is designed to complement the streetscape and connect activity from the public street/sidewalk internal to sites, creating sites that promote and enhance public walking and gathering and provide safe routes for pedestrians and disabled people across parking lots, to building entries, and between buildings. While standards vary depending on the street type- Boulevard Streets may use either Storefront or Greenlink Street (streets with landscaped building setbacks) standards, or a combination of the two- topics addressed include building location (relative to the property line), required transparent window areas, weather protection, permitted size and location of surface parking lots (not allowed on street corners or between right-of-way and building fronts), parking standards, and public and open space requirements.

   Additional design treatment standards are established for street corner sites, such as beveled building corners, distinctive facades, balconies, or artwork. Consistent with the goals of creating an attractive and safe pedestrian environment, internal walkways that connect building entries, public places, and parking areas with the adjacent sidewalks and the Interurban Trail are required for all sites. Public places are required on all parcels greater than ½ acre, with additional standards for parcels greater than 5 acres. Parking

requirements have been reduced, with additional reductions of up to 50% possible depending on proximity to transit, on-street parking, and shared parking agreements.

4) Building Design – This element seeks to contribute to a more accessible, distinctive, and attractive neighborhood by requiring the use of architectural elements such as façade articulation, roofline modulation, building offsets, and distinctive windows and materials. Requirements vary slightly based on the type of street the building is fronting on, but in all cases aim to reduce the apparent scale of buildings (and their potential aesthetic impact on surrounding neighborhoods) and add visual interest to the Town Center.

5) Signage – While signage can complement the built environment and increase visibility for businesses, this element establishes standards to ensure that signs are of an appropriate size, scale, character, and material to be compatible with future development in the Town Center. Topics such as illumination, materials, and sign type (monument, building-mounted, projecting, under-awning, window, etc) are discussed, with additional requirements for the Transition Overlay and TC-4 districts.

Potential Street Improvements

While the Plan and Code have goals, policies, and standards for roadway improvements to Midvale Ave N, Firlands Way N, the vacation of N. 182nd Street, and the extension of N. 180th Street, the Planned Action does not identify any specific timetable or funding mechanism to achieve these improvements. The cross-sections discussed are currently being incorporated into the City of Shoreline's TMP Update, which is anticipated to be completed in late 2011. The TMP, as well as the City's Capital Improvement (CIP), will help prioritize future projects, and will be heavily influenced by the size and scope of redevelopment projects in the subarea.

2.4 No Action Alternative

As discussed in Section 1.3.3, the No Action Alternative would retain the existing Comprehensive Plan and zoning designations for the study area. As can be seen in Figure 2-3, there are currently a variety of zoning designations in the study area, including Mixed Use Zone (MUZ), Industrial, Community Business, and residential zones that range in density from 6 to 48 units per acre (R-6 to R-48). Maximum building heights range from 30 feet (35 feet with a pitched roof) in the single family residential zones, to 65 feet in the Mixed Use Zone (when incentives such as green building practices, affordable housing, and mixed-use projects are met). There is a minimum building height of 35 feet in the MUZ zone. Landscaping, parking, lighting, and open space requirements vary based on the zone, but are not as strict or specific as those in the Proposed Action.

As mentioned, the TMP for the City of Shoreline is currently being updated. As part of that plan, the City is developing cross-sections for the streets within the subarea. These cross-sections are expected to be the same for both the Proposed and No Action Alternatives as far as number of travel lanes, widths, and bicycle lanes. As such, the look of the streets from "curb to curb" would be

expected to be the same in both alternatives. However, the proposed improvements and standards beyond the curbs, such as bulbouts, street parking, and requirements for wider sidewalks and public plazas, would not be part of the No Action Alternative. In addition, streetscape improvements in the study area may be identified as a lower priority under the No Action Alternative, as the Town Center Subarea Plan identifies the City Council's commitment to creating a compact, walkable neighborhood where one currently does not exist.

MUZ zoning currently occupies the majority of the proposed Town Center Subarea. Development in the MUZ is subject to the standards and provisions in SMC 20.50.021, which were largely developed to mitigate the potential aesthetic impacts that large projects could have on adjacent single family residential neighborhoods, but with less detail and specificity than the Proposed Town Center Code.

Requirements in the MUZ include:

- Administrative design review for all developments;
- Provision of public gathering spaces at a rate of 1,000 square feet per acre;
- Phased maximum building heights, densities, and floor area ratios (FAR's), which start at 35 feet and 48 units/acre for residential-only buildings and 45 feet, 70 units/acre, and a FAR of 2.0 for commercial buildings, and can reach a maximum of 65 feet, 150 units/acre, and a FAR of 3.6 if incentives such as affordable housing, green building standards, and holding a neighborhood meeting are met; and
- Step-back requirements for projects adjacent to parcel zoned R-4 through R-12 (low and medium residential), with maximum building heights in the first 100 feet from the property limited to 45 feet and maximum building heights of 55 feet within 101-200 feet of the property line.

General Comparison of the Alternatives

In general, the Proposed Action has the potential to result in slightly higher residential densities than the No Action Alternative, as the maximum building height in Town Center Districts TC-1 through TC-3 is slightly higher than the MUZ (and does not rely on incentives to get to the maximum building height), the Proposed Action does not require any setbacks from nonresidential zones, and the stepback requirements are limited to 110 feet in the Proposed Action, as opposed to 200 feet under the current MUZ zoning. However, given the similar types of uses allowed under either alternative, the levels of development would be expected to be fairly similar, which was the rationale for using the same growth and traffic assumptions for both alternatives. As stated at the beginning of this chapter, the primary differences between the alternatives would be expected in the visual character, sense of place, and walkability of the area.

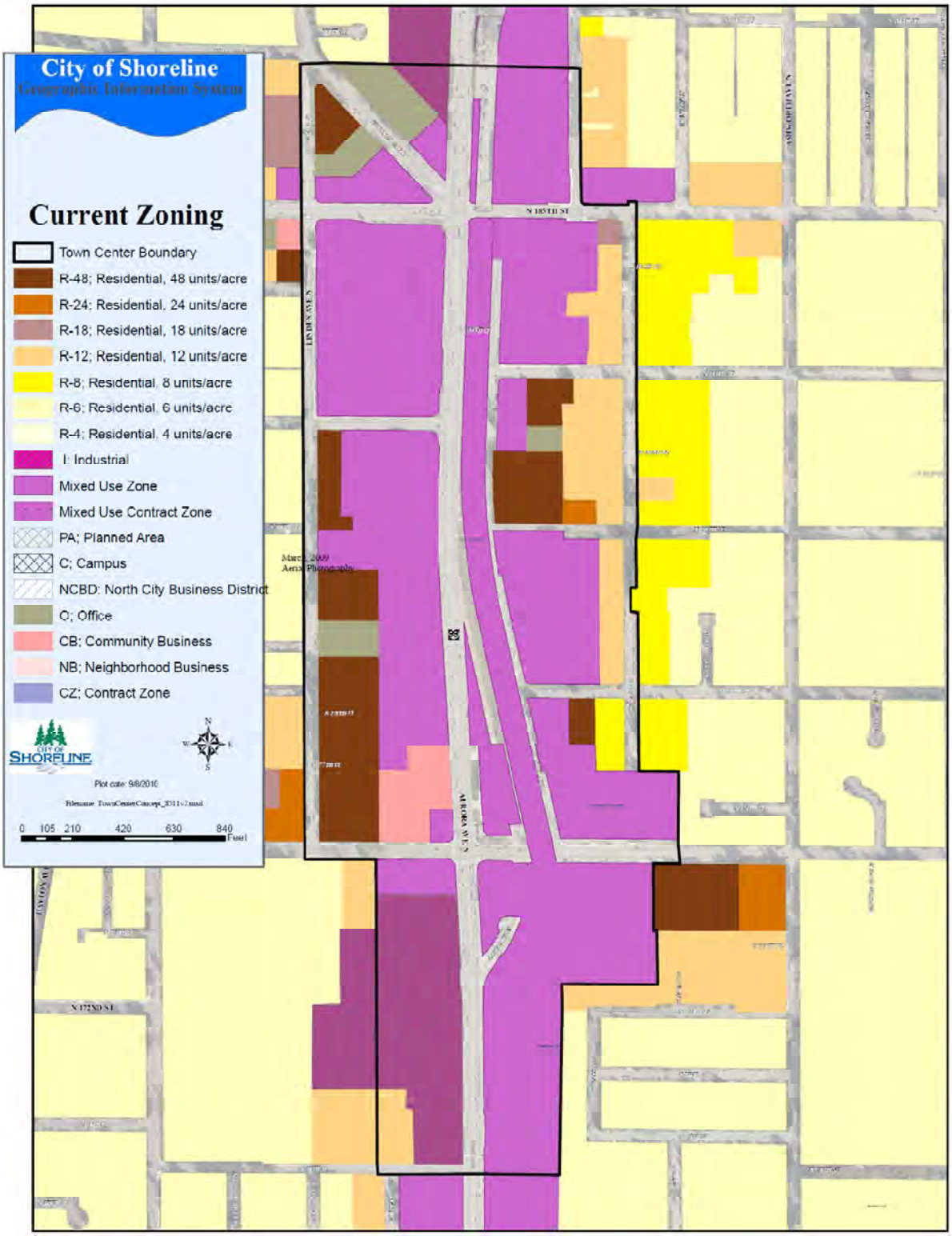

Figure 2-3: Current Zoning in the Town Center

Chapter 3: Land Use and Aesthetics

3.1 Affected Environment

3.1.1 Current Conditions and Existing Zoning (No Action Alternative)

As a first-tier residential suburb of Seattle that largely developed in its current form in the 1950's and 1960's, Shoreline has historically been a bedroom community, with corridors of auto-oriented strip mall development. The Town Center Subarea largely meets this description, with a mix of primarily one and two-story strip mall and big box retail, office, commercial, residential, and automobile sales uses along Aurora Avenue, and multi-family residential units along portions of Linden Avenue N, Midvale Avenue N, and N 178th, N 180th, and N 183rd Streets. The Town Center is also home to a number of local and municipal government uses, including the new four-story Shoreline City Hall at the NE corner of N 175th Street and Midvale Avenue N, Shoreline Fire Department Headquarters on the northwest corner of Aurora Avenue N and N 175th Street, and Shoreline Police Headquarters at the NE corner of N 185th Street and Midvale Avenue N.

Commercially zoned parcels along Aurora Avenue N and Midvale Avenue N are generally fairly shallow, and transition quickly to single family residential neighborhoods just beyond the subarea boundaries, along the east side of Stone Avenue, the west side of Linden Avenue, and to the north of Firlands Way N and N 188th Street. Figure 2-3 (in Chapter 2) illustrates the existing zoning in the Town Center Subarea. The majority of the subarea, and almost all parcels along Aurora Avenue N, Midvale Ave N, N 175th Street, and N 185th Street, is zoned Mixed Use Zone (MUZ). Office and R-48 (the City's highest density residential zoning, at 48 units/acre) zoning exists along portions of Linden Avenue N, Firlands Way N, and Midvale Avenue N, with R-12 and R-8 zoning located along Stone Avenue N, the subarea's eastern edge.

Development standards for the existing zoning in the area can be found in Chapter 20.50 of the Shoreline Municipal Code (SMC). Residential development standards for the subarea's existing zoning can be seen in Table 3-1. Development along Stone Avenue N (areas zoned R-8 and R-12) is limited to 35 feet in height, with 10' front yard setbacks and 5' rear and side yard setbacks. Residential development within the Office zone is also limited to 35 feet in height (and 24 units/acre), which can be increased to 50 feet for mixed-use projects if the additional story is stepped back at least eight feet. Residential development in the Community Business and Industrial zones (present in a few parcels just north and south of N 175th Street on the west side of Aurora) can be as high as six stories (60-65 feet), with increased setback requirements for properties adjacent to residential zones. Multi-family residential developments are also required to provide on-site open space, at the rate of 170 sf per 3BR+ unit, 130 sf per 2BR unit, and 100 sf per studio/1BR unit.

STANDARDS	R-4	R-6	R-8	R-12	R-18	R-24	R-48	NB/O	CB	MUZ/ Industrial
Base Density: Dwelling Units/Acre	4 du/ac	6 du/ac	8 du/ac	12 du/ac	18 du/ac	24 du/ac	48 du/ac	24 du/ac	48 du/ac	See SMC 20.50.021
Min. Front Yard Setback (2) (3)	20 ft	20 ft	10 ft	10 ft	10 ft	10 ft	10 ft	10 ft	10 ft	10 ft
Min. Rear Yard Setback (2) (4) (5)	15 ft	15 ft	5 ft	5 ft	5 ft	5 ft	5 ft	10 ft from residential, 15 ft from non-residential	10 ft from residential, 15 ft from non-residential	15 ft from residential, 15 ft from non-residential
Min. Side Yard Setback (2) (4) (5)	5 ft min. and 15 ft total sum of two	5 ft min. and 15 ft total sum of two	5 ft	5 ft	5 ft	5 ft	5 ft	5 ft from residential, 10 ft from non-residential	5 ft from residential, 10 ft from non-residential	5 ft from residential, 15 ft from non-residential
Base Height (9)	30 ft (35 ft with pitched roof)	30 ft (35 ft with pitched roof)	35 ft	35 ft	35 ft (40 ft with pitched roof)	35 ft (40 ft with pitched roof)	35 ft (40 ft with pitched roof) (8)	35 ft (50 ft with mixed-use project)	60 ft	65 ft (See SMC 20.50.021
Max. Hardscape (2) (6)	45%	50%	65%	75%	85%	85%	90%	85%	85%	95%

Table 3-1: Residential Development Standards under Existing Zoning

SMC 20.50.230 details the development standards for commercial (non-residential) development under the existing zoning in the subarea; a summary is included in Table 3-2. In general, the front yard setback is 10 feet (which must be fully landscaped for residential projects), which can be reduced to zero feet for commercial projects if adequate street improvements have been made or are available (within the Town Center Subarea, all properties along Aurora Avenue N, N 175th Street, and N 185th Street would be eligible for zero lot lines due to the recent Aurora Corridor Improvement Project). The base heights are the same as for residential development within these zones, with the same stepback and transition area requirements as for residential development (discussed in further detail on the next page). Side and rear yard setbacks are not required for parcels adjacent to other commercially zoned parcels, but require 10-15 foot setbacks for those areas adjacent to areas zoned R-8 to R-48 (such as Stone and Linden Avenues N). SMC Chapters 20.50.120 through 20.50.280 also includes requirements for parking, landscaping, and building design, articulation and modulation, which are discussed below, which have been incorporated and expanded in the Town Center Code.

STANDARDS	Neighborhood Business (NB) and Office (O) Zones	Community Business (CB)	Mixed-Use (MUZ) and Industrial (I) Zones
Min. Front Yard Setback (Street) (1) (2)	10 ft	10 ft	10 ft
Min. Side and Rear Yard (Interior) Setback from NB, O, CB, MUZ, and I Zones (2)	0 ft	0 ft	0 ft
Min. Side and Rear Yard (Interior) Setback from R-4 and R-6 (2)	20 ft	20 ft	20 ft
Min. Side and Rear Yard (Interior) Setback from R-8 through R-48 (2)	10 ft	10 ft	15 ft
Base Height (6)	35 ft (3)	60 ft	65 ft (4) (5)
Max. Impervious Surface	85%	85%	90%

Table 3-2: Commercial Development Standards under Existing Zoning

As discussed in Section 2.4, development in the MUZ is subject to the standards and provisions in SMC 20.50.021. Requirements in the MUZ include:

- Administrative design review for all developments;
- Provision of public gathering spaces at a rate of 1,000 square feet per acre;
- Phased maximum building heights, densities, and floor area ratios (FAR's), which start at 35 feet and 48 units/acre for residential-only buildings and 45 feet, 70 units/acre, and a FAR of 2.0 for commercial buildings, and can reach a maximum of 65 feet, 150 units/acre, and a FAR of 3.6 if incentives such as affordable housing, green building standards, and holding a neighborhood meeting are met; and
- Step-back requirements for projects adjacent to parcels zoned R-4 through R-12 (low and medium residential), with maximum building heights in the first 100 feet from the property limited to 45 feet and maximum building heights of 55 feet within 101-200 feet of the property line.

Permitted Uses

Chapter 20.40.110 of the SMC includes a detailed list of permitted and prohibited uses under current zoning. Uses are listed as permitted, conditionally permitted, or subject to a Special Use Permit, with blank boxes representing prohibited uses. Certain uses are required to meet Supplemental Criteria before they can be approved, with the criteria established in SMC 20.40.200 through 20.40.610. For those uses and businesses not specifically covered in the use tables, a Code Interpretation can be made by the Department Director to determine whether said use is permitted.

3.1.2 Proposed Town Center Subarea Plan and Town Center Code (Proposed Action Alternative)

Town Center Subarea Plan

The Town Center Subarea Plan develops a vision of what the subarea may look like over the next twenty years, providing a list of goals and policies to help achieve this vision. Among others, Goal TC-2 calls for the creation of a Town Center that is "complete, compact and connected to its neighborhoods and the region", while Goal TC-3 proposes to "create a 'sense of place' in Town Center that provides a focal point for Shoreline's civic life and community-wide identity".

These goals are supported by policies such as Policy TC-1, which calls for a safe, attractive, and walkable Town Center that links mixed use, mid-rise buildings, a broad range of housing choices, major civic amenities, public gathering places and bus rapid transit service, and Policy TC-5, which encourages additional retail, service, grocery, and restaurant uses to serve people who live or work in Town Center or within walking distance of it. However, while encouraging growth in the subarea, a major focus of the Plan (and Town Center Code, discussed below) is protecting nearby single family neighborhoods. For example, Policy TC-16 seeks to protect adjacent residential areas from impacts generated by developments in Town Center by establishing a medium density buffer of townhomes and similar density residential uses between the commercial uses in Town Center and the single family neighborhoods east of Midvale and limit lighting, signage and noise impacts. The policy also calls for orienting commercial uses west of Aurora so that they have primary access and impacts oriented toward Aurora, rather than to the neighborhood west of Linden.

Town Center Code

The Town Center Code was developed to implement the goals and policies of the Town Center Subarea Plan. As detailed in Section 2.3, The Town Center Code's intent is to focus more on regulating the form and character of development, and less on establishing specific land uses and densities. However, given the City's vision of creating a compact, pedestrian and bicycle-friendly, mixed-use environment within the Town Center, there are several uses outlined in Table 3-3 that would be prohibited in some or all districts of Town Center, many of which are permitted (either outright, conditionally, or subject to supplemental criteria) under existing zoning.

The proposed Town Center Land Use Chart is tiered, with the highest number of prohibited uses existing in the TC-4 Zone (adjacent to single-family neighborhoods along Stone Avenue N), and the least restrictions in the TC-1 and TC-2 zones (those areas along Aurora Avenue N). Examples of types of uses that would be prohibited within the entire Town Center are Heavy Equipment and Truck Repair, Shipping Containers, Trucking and Courier Services, Warehousing and Wholesale Trade, Adult Use Facilities, Gambling Uses, Transfer Stations, and Bus Bases. The Town Center Code provides additional discretion to the City's Planning Director to make decisions as to whether certain uses are permitted.

General Land Use Category	Specific uses listed in Table	TC-1 Aurora SW	TC-2 Aurora	TC-3 Midvale /Firlands	TC-4 Stone Ave Residential
Detached Single Family	20.40.120				
Duplex, Apt, Single Family Attached	20.40.120				
Group Residences	20.40.120				
Lodging	20.40.120				
Health Facility	20.40.140		PERMITTED USES		
Government Facility	20.40.140				
Automotive fueling and service Stations	20.40.130				
Retail, Eating, and Drinking	20.40.130				
Personal and Business Services	20.40.130				
Vehicle Sales, Leasing, and Service(2)	20.40.130				
Gambling Uses					
Wrecking Yards			PROHIBITED USES		
Industrial Uses					
Adult Use Facility					

Table 3-3: Town Center Land Use Chart

Figure 2-1 in Chapter 2 illustrated the proposed zoning designations for the Town Center. As discussed in Section 20.92.020, the four zoning districts and one transition overlay district would include:

TC-1: Located along the west side of Aurora between N 170th and N 179th, this zone would allow for the widest range of uses. All uses in TC-2 and TC-3 would be allowed, as well as allowing vehicle sales, leasing, and servicing.

TC-2: Covering the remainder of properties fronting on Aurora Avenue, N. 175th and N. 185th streets and provides a broad range of uses and development potential with pedestrian activity primarily internal to the sites. The uses are generally similar to what currently exists under MUZ and Industrial zoning, while prohibiting gambling establishments, wrecking yards, industrial uses, and adult use facilities.

TC-3: This zone is primarily for properties along Midvale and Firlands and allows a wide range of uses (the same as TC-2), with an increased focus on pedestrian activity, primarily along Storefront Street (see Figure 2-2) frontages.

TC-4: This zone is oriented around Stone Avenue and limits the residential heights, uses and vehicle circulation to protect the adjacent single family neighborhoods. Uses are limited to attached and detached single-family, duplex, apartment, and group residential uses, similar to the R-8 and R-12 zoning that currently exists in much of this area.

Transition Overlay: This overlay provides a transition from higher intensity development to lower intensity uses and protects adjoining single family neighborhoods that are not adjacent to TC-4 zoning (notably along Linden, north of Firlands, and in the SE portion of the subarea) from taller building heights, traffic, and inappropriate land uses.

As stated, because the Town Center Code is focused more on form than on use, the list of permitted uses does not vary significantly from those permitted under the existing Development Code. Along these lines, the Town Center Development Standards (Table 3-4) are the same for residential and non-residential development.

In most instances, the new development standards for the TC-1 through TC-3 districts are quite similar to the standards for properties that are currently zoned MUZ, the zoning designation which constitutes the majority of the parcels located in these three zoning districts. There are properties currently zoned R-48 and Office that would be rezoned to TC-2 or TC-3, and as such could result in slightly higher building heights. However, these properties are either located away from single family residences (those fronting along Midvale Avenue N), or, as discussed above, have transition overlay districts with height and stepback requirements that have been designed to help protect adjacent single family neighborhoods.

	TC-1 *Aurora SW*	TC-2 *Aurora*	TC-3 *Midvale/ Firlands*	TC-4 *Stone Ave Res*	Transition Overlay
Minimum Front Yard Setback (1)(2)(3)	0-10 ft (6)	0-10 ft	0-10 ft	15 ft	15 ft
Minimum Side Yard Setback from Nonresidential Zones (4)	0 ft	0 ft	0 ft	5 ft (5)	5 ft (5)
Minimum Rear Yard Setback from Nonresidential Zones	0 ft	0 ft	0 ft	5 ft	0 ft
Minimum Side & Rear Yard (Interior) Setback from R-4 & R-6	15 ft	15 ft	15 ft	5ft	20ft
Minimum Side & Rear Yard Set-back from R-8 through R-48 and TC-4	15 ft	15 ft	15 ft	5 ft	15 ft
Maximum Height (5)	70 ft	70 ft	70 ft	35 ft	35 ft
Maximum Hardscape Area	95%	95%	95%	75%	75%

Table 3-4: Proposed Town Center Development Standards

Exceptions to Table 3-4

(1) Unenclosed porches and covered entry features may project into the front yard setback by up to 6 feet. Balconies may project into the front yard setback by up to 2 feet.

(2) Additional building setbacks may be required to provide right-of-way and utility improvements.

(3) Front yard setbacks are based on the applicable street designation. See figure 20.92.020 for the street designation and SMC 20.92.070(B) for applicable front yard setback provisions.

(4) These may be modified to allow zero lot line developments for internal lot lines only.

(5) See section 20.92.050.C for height step-back standards.

(6) Front yards may be used for outdoor display of vehicles to be sold or leased in the TC-1 zone.

3.1.3 Demonstration Sites: Illustrating How Development Subject to the Town Center Code May Look

As was discussed in detail in Chapter 2.3, the Town Center Subarea Plan is focused on creating an attractive, unique, and compact mixed-use center, which also respects and protects the surrounding single family neighborhoods. Chapter 2.3 provided a discussion of the Town Center Code, which is divided into seven different sections (proposed SMC Sections 20.92.020 through 20.92.080) that seek to create a set of comprehensive design principles that help achieve the Subarea Plan vision.

While the discussion of the various development standards in the Town Center Code (detailed in Chapter 2.3) provides an introduction to some of the design and development concepts envisioned for Town Center, pictures are typically more helpful in establishing what that vision actually looks and feels like. As such, the Town Center Code includes a number of pictures and plans to illustrate appropriate design and articulation treatments (including building articulation and modulation and window design), parking lot locations and configurations, through-connections and walkways, signage, landscaping, and public and open spaces.

To help further illustrate what future projects that implement the design and development standards in the Town Center Code may look like, and their potential impacts on and benefits to the existing character and streetscape of the Town Center, the City of Shoreline has created Google Sketchup models that illustrate renderings of potential redevelopment projects for two groups of parcels within the Town Center. It is important to note that these parcels do not have any pending or immediate plans for redevelopment, and the property owners have not been approached by the City. Instead, the two sites were selected based on a variety of characteristics, including:

- Size: the two sites represent many of the larger parcels in the subarea, which allow for larger project examples and the incorporation of more Code elements;
- Street Frontage: both demonstration projects front on multiple streets, and collectively represent the three Street Types (storefront, boulevard, and green link) in the Town Center Subarea (for a further discussion of street frontages, see Chapter 8.1.1). As such, they provide a variety of perspectives based on the street type;
- Location and Zoning: One site on each side of Aurora Avenue N was selected. Both have at least one side adjacent to single family residential neighborhoods. The sites have different zoning: TC-2 with a Transition Overlay for one site, and TC-3 with a thin ribbon of TC-4 on the other site.
- Land Use Type: Consistent with the vision and growth assumptions for Town Center, the project on the west side of Aurora illustrates a commercial development project, while the project on the east side of Aurora (fronting on Midvale Avenue N) illustrates a primarily residential project (with ground floor retail). As types, amounts, and orientation of open space, public plazas, landscaping, and other items discussed in the Town Center Code will likely be slightly different for commercial and residential projects, it is useful to have examples of both types of development.

Site 1: 17828 Midvale Ave N and 17962 Midvale Ave N (Mr. Van Gard Storage/Interurban Offices)

The Mr. Van Gard site is a 4.2 acre site on Midvale Ave N, between N 178th Street and N 180th Street, that currently serves as a one-story self storage facility. Site access and primary frontage is along Midvale Avenue N (a Storefront Street), with additional frontage along N 180th Street and N 178th Street (Green Link Streets). Adjacent to that site, at the southeast corner of Midvale Avenue N and N 180th Street, is the Interurban Office Building, a two-story office building on 1.17 acres. In total, the two sites occupy about 5.4 acres, and are currently zoned MUZ. To the east of the site, along Stone Avenue N, are eight parcels totaling about 1.3 acres that are comprised of a mix of single family and duplex residences, and are zoned R-12.

The Town Center Subarea Plan, as well as long-term growth projections developed for the TMP (400 new housing units for this section of the Subarea), envisions this area as primarily multi-family residential development, with ground floor retail. As such, the model shows a cluster of buildings with four and five stories of multi-family residential units over ground-floor retail, consistent with the development and design standards established for the TC-3 district. As the site fronts primarily on Midvale Avenue N, a storefront street, the building is located right along the property line, with surface parking moved away from the right of way towards the middle of the site. Consistent with the vision and standards for the TC-4 district, the model shows a row of three story townhouses along Stone Avenue N, to help serve as a buffer between the project and the surrounding single family neighborhood. Figures 3-1, 3-2, and 3-3 show aerial views of the site, looking east from Aurora Ave N (across the Interurban Trail), north from N 178th Street, and south from N 180th Street.

Figure 3-1: Looking East towards Midvale Avenue N and N 178th Street

Figure 3-2: Looking North towards Midvale Avenue N and N 178th Street

As can be seen from the aerial views, the site provides pedestrian and vehicular entries and walkways from all three sides (178th, 180th, and Midvale), improving access and connections to the site from throughout Town Center. In addition, the aerials illustrate a site design that has been developed to help protect the character of existing single family neighborhoods, by placing the tallest buildings along Midvale Avenue N (six stories- five stories of residential over ground floor retail), and gradually stepping the building height down for the buildings along the eastern edge of the site (five stories-four stories of residential over ground floor retail). To the east of the complex, the model illustrates three story townhouse developments along Stone Avenue N, which is consistent with the vision and standards for the TC-4 district, and provides an added buffer for the properties across Stone Avenue N.

Figure 3-3: Looking South from N 180th Street

Figure 3-4: Corner of Midvale Avenue N and N 180th Street looking South

As noted above, the renderings illustrate many of the Town Center design standards. Figure 3-4 illustrates the corner of Midvale Avenue N (a Storefront Street) and N 180th Street (a Greenlink Street). Both have wide sidewalks (10 and 8 feet, respectively), with street trees every 30 feet. Although difficult to see in Figure 3-4, the curb bulbs out at the street corner, which creates room for on-street parking on the north side of N 180th Street (a similar bulb-out at N 178th Street can be seen at the bottom of Figure 3-2) and functions as a traffic calming device. On-street parking on Midvale Avenue N is shown, a requirement for both sides of Storefront Streets. The west side of Midvale is planned to have back-in angled parking within the Seattle City Light right-of-way (see Figure 8-4 in the Transportation Chapter).

Consistent with the Town Center Code, the building is located on the property line (back of sidewalk), within 15 feet of the street corner. As required for Street Corner properties, the building has a distinctive façade and roofline design from the rest of the building at the intersection of N 180th Street and Midvale Ave N. The building provides façade articulation at a minimum of every 80 feet, through such measures as façade offsets, balconies, and distinctive ground floor façades and window treatments, as well as roofline modulation at a minimum of every 120 feet. Parking is prohibited at the street corner and surface parking lots (conceptually shown, but not striped, in the model) have been placed internal to the site in order to maximum building street frontage.

As mentioned briefly above, the renderings show a 3-story townhouse development along Stone Avenue N, which provides a buffer between the larger multi-family project and the single family residential neighborhoods to the east. Figures 3-5 and 3-6 illustrate what Stone Avenue N may look like, with 8 foot sidewalks, street trees within amenity zones, and porches, balconies, awnings, and roofline modulation breaking up the mass and scale of the townhouse buildings.

Figure 3-5: Looking Northwest towards Townhouses on Stone Avenue N

Figure 3-6: Stone Avenue N Streetscape

Site 2: 18325 Aurora Avenue N (Fred Meyer) and 18005 Aurora Avenue N (Highland Ice Arena)

Demonstration Site 2 consists of several parcels (zoned MUZ and R-48), totaling approximately 13 acres, which are bounded by N 185th Street on the north, Aurora Avenue N on the east (both Boulevard Streets), N 180th Street on the south, and Linden Avenue N on the west (both Greenlink Streets). Current uses on the site include a Fred Meyer (retail and grocery store), large surface parking lots, fast food restaurants, auto parts store, one-story strip mall development, and the Highland Ice Arena. N 182nd currently runs from Aurora Avenue N to Fremont Ave N, and separates the Ice Arena and parking lot from the rest of the demonstration site. However, consistent with the Town Center Subarea Plan, the model created for Demonstration Site 2 illustrates the vacation of N 182nd Street west of Aurora, and its replacement with the proposed extension of N 180th Street.

As discussed, given its frontage along the west side of Aurora Avenue N, the City envisions primarily commercial redevelopment in this area of the Town Center (District TC-2). As Fred Meyer has expressed a general interest in redeveloping and expanding their store in the future (the building is now 50 years old), a new, larger Fred Meyer makes up a majority of the site model. The building design incorporates Northwest architectural design elements consistent with the Town Center Code (discussed in further detail below), with an L-shaped design that extends from the corner of Aurora Avenue N and N 185th Street, west along N 185th Street, and then south along Linden Avenue N (Figure 3-7). To the south of the new Fred Meyer, a 3-story multifamily residential development is located along Linden Avenue, while a small cluster of retail fronts along Aurora Avenue N in the middle of the site, and another large building (potentially a redeveloped Highland Ice Arena with additional retail uses) is located on the northwest corner of Aurora Ave N and N 180th Street.

Figure 3-7: Looking West across the Interurban Trail and Aurora Avenue N

The model design illustrates numerous Town Center development and design standards. Surface parking is landscaped and placed internal to the site (much less than 50% of the total site frontage), providing easy access to all portions of the site and maximizing storefront street frontages. Vehicular access is available from Aurora Avenue N and N 180th Street but not from Linden Avenue N, which is consistent with the Town Center Code's Neighborhood Protection Standards. There are a network of pathways and sidewalks internal to the site to facilitate easy pedestrian and bicycle access, which also connect to Aurora Avenue N, across Aurora to the Interurban Trail, and to the single family neighborhood to the west.

Figure 3-8 shows the northeast corner of the property, located at the corner of Aurora Avenue N and N 185th Street (both Boulevard Streets). The building has been placed right along the property line (back of sidewalk), with the exception of the large public plaza and gathering space along N 185th Street that has been designed to maximize pedestrian and bicycle use of the property and provide adequate hard surface area for tables and chairs. Pedestrians and bicyclists using the Interurban Trail would be able to access the site by crossing Aurora Avenue N at N 185th Street or N 180th Street, and utilize the wide sidewalks installed as part of the Aurora Corridor Project.

The building includes a variety of façade articulation and roof modulation elements, including façade offsets and vertical piers (requirements for building frontages along Boulevard Streets), as well as distinctive windows, building materials, architectural elements, and enhanced landscaping at the northeast corner of the property. Project signage is appropriate in scale, internally illuminated, and building-mounted central to an architectural element, and does not include the use of billboards, electronic changing message signs, and pole signs, which are prohibited by the Town Center Code.

Figure 3-8: Looking South towards Aurora Avenue N and N 185th Street

Figure 3-9: Linden Avenue N looking North towards N 182nd Street

Moving west to Linden Avenue N, Figure 3-9 illustrates what development within the Transition Overlay District may look like, with development standards established to protect the adjacent single family residential neighborhoods. As required by the Code, the Fred Meyer and townhouse buildings have been setback from Linden Avenue N a minimum of 15 feet (which is also required for developments along Greenlink Streets), and are limited to a maximum height of 35 feet. Street trees and additional landscaping help to increase the buffer for properties to the west.

Figures 3-10 and 3-11 show two different perspectives of the southwest entrance to the Fred Meyer, which is located to the northeast of the townhouse development shown in Figure 3-9. The figures illustrate a large public plaza (a minimum of 5,000 square feet, 80% of it suitable for seating and gathering, is required for sites over 5 acres) with sitting areas, landscaping, and water features, which has been designed to encourage public gathering and attract pedestrian traffic. This area is connected to the Linden Avenue neighborhood via an internal pedestrian/bicycle only pathway that is just east of N 182nd Street, and connects to the parking lots and the rest of the site's buildings through a series of sidewalks and pathways.

Overall, the two sites illustrate a number of the development and design standards that have been included in the Town Center Code to create visually attractive and walkable development that respects and protects the adjacent single family neighborhoods, consistent with the vision of the Town Center Subarea Plan.

Figure 3-10: Fred Meyer Southwest Entrance and Public Plaza Looking West

Figure 3-11: Fred Meyer Southwest Entrance and Public Plaza Looking East

3.2 Impacts

Impacts Common to Both Alternatives

Future commercial and residential redevelopment under either alternative is anticipated to result in slightly taller and denser developments than what currently exist in the Subarea. Although the mass and scale of the discussed redevelopment is already permitted by the current zoning (No Action Alternative) and would be consistent with the proposed Town Center zoning (Proposed Action), redevelopment could result in a change in land use and visual character in the subarea, as compared to the primarily one and two-story strip retail uses in the region. Adjacent single family neighborhoods have expressed concern regarding the potential impacts that could result from increased development in the Town Center Subarea.

3.3 Mitigation Measures

Mitigation Measures Incorporated into the Proposed Action

As detailed in Sections 2.3 and 3.1, the Town Center Code was developed to create a visually appealing, mixed-use center neighborhood within the City of Shoreline, while at the same time protecting adjacent single family residential neighborhoods from any potential impacts that could result from redevelopment in the area. The Town Center Subarea Plan and Development Code include a number of standards and provisions regarding mass, scale, setbacks, site access, and landscaping that were developed to help protect and respect adjacent neighborhoods, and would require administrative design review and traffic studies for most projects. The emphasis on services, public spaces, and walkability will make Town Center accessible for the surrounding single family neighborhoods to use as amenities. In addition, the City held numerous public meetings and workshops over several years to gather input and hear concerns from nearby businesses and residents. As such, adoption of the Town Center Code and Subarea Plan would mitigate any potential adverse impacts related to land use and aesthetics.

Mitigation Measures Incorporated into No Action Alternative

Although not as detailed or comprehensive as those included in the Proposed Action, Section 20.50 of the Shoreline Municipal Code provides a number of development and design standards, most notably for the MUZ zone, that were developed to create transitions between the envisioned higher density residential and commercial uses within the Town Center and the adjacent single family neighborhoods. Administrative design review is already required for projects within the MUZ. However, it does not presently include the detailed design standards contained in the proposed Town Center Code. Both the existing zoning and proposed Town Center Code require stepbacks for large buildings adjacent to residential zones. Although to a lesser degree as the Proposed Action, the current code should mitigate any potential adverse impacts.

3.4 Significant Unavoidable Adverse Impacts

With implementation of development and design standards present in either mitigation measure, no significant and unavoidable land use impacts are anticipated.

Chapter 4: Air Quality and Climate Change

4.1 Affected Environment

4.1.1 Air Quality

Three agencies have jurisdiction over air quality in the Central Puget Sound region of Washington. The Puget Sound Clean Air Agency (PSCAA) is responsible for monitoring air quality in King, Snohomish, Kitsap, and Pierce Counties, working with the Washington Department of Ecology (DOE) to track air monitoring results for six criteria air pollutants at a number of monitoring sites throughout the four counties. The closest monitoring sites to Shoreline are located in Lynnwood and Lake Forest Park.

The United State Environmental Protection Agency (EPA) sets national ambient air quality standards (NAAQS) for these six pollutants, which include:

- Particulate Matter (10 micrometers and 2.5 micrometers in diameter)
- Ozone
- Nitrogen Dioxide
- Carbon Dioxide
- Sulfur Dioxide
- Lead

Regions that meet the NAAQS for criteria pollutants are said to be in attainment, while those that are not are said to be nonattainment areas.

Since 2004, the PSCAA has also increased its monitoring of over 400 air toxics, which are chemicals and compounds defined by DOE and PSCAA as pollutants that can lead to a number of adverse health effects, such as increased cancer risk and respiratory effects.

To help monitor and present data on regional air quality in the Central Puget Sound, the PSCAA issues an annual Air Quality Data Summary. The PSCAA compiles the data into an Air Quality Index (AQI), which is a nationwide reporting standard developed by EPA for the six criteria pollutants and is calculated for the monitoring sites throughout the region. An AQI below 50 is considered Good; between 51 and 100 is considered Moderate (the maximum acceptable level); between 101 and 150 is considered Unhealthy for Sensitive Groups; and above 151 is considered Unhealthy for all groups. The most recent data summary, covering the year 2008, was issued in October 2009.

In general, the data summary shows that air quality in the area is improving, especially for carbon dioxide and sulfur dioxide. However, the summary states that elevated fine particle levels present the greatest challenge in the region. Much of Pierce County is currently considered a

nonattainment area for particulate matter 2.5 micrometers in size (PM2.5) due to elevated fine particulate levels in South Tacoma that exceed the NAAQS (which were lowered for PM2.5 by EPA in 2006), while monitoring sites in Snohomish County are close to the federal standard and all four counties exceed the agency's local PM2.5 health goal of 25 ug/m3. PM2.5 is generated primarily by automobile emissions and wood burning, and as such tend to be highest in the region during the winter months, which can lead to mandatory burn bans.

In addition, ozone levels remain a concern for the region, as ozone concentrations have not decreased as significantly as its precursor pollutants, and ozone levels at the Enumclaw monitoring site violated the strengthened March NAAQS (0.075 ppm) between 2006 and 2008.

Air Quality in the City of Shoreline and Town Center

Given these issues, it is important to consider and promote land use and transportation options that have the potential to help improve air quality in the region. The Town Center Subarea Plan envisions the area as a "model of environmentally sound building and development practices", with "efficient and sustainable structures with zero carbon impacts", and a mix of uses that helps to reduce automobile trips, increase transit use, and results in more compact development within the Town Center Subarea. The Town Center Subarea Plan and Town Center Code are consistent with the City's Environmental Sustainability Strategy (adopted in 2008), which focuses on balancing environmental quality, economic vitality, and human health and managing growth in a sustainable way. In the future, the Sustainability Strategy envisions a number of Key Program Strategies that could improve air quality in the Town Center Subarea, including:

- Development of a residential green building program;
- Measuring and tracking emissions in the permitting and planning process; and
- Prioritizing non-motorized transportation investment and planning

4.1.2 Greenhouse Gas Emissions and Climate Change

According to the EPA, greenhouse gases are gases such as carbon dioxide, methane, nitrous oxides, and fluorinated gases that trap heat in the atmosphere, resulting in elevated atmospheric temperatures. Between 1990 and 2007, EPA estimates that greenhouse gas emissions increased by 17%, with the dominant factor in US emissions being carbon dioxide emissions from fossil fuel combustion, which saw a 21.8% increase during that period. In 2007, the United States Supreme Court ruled that greenhouse gases are pollutants under the federal Clean Air Act, and directed the EPA to analyze the potential adverse health impacts. In 2009, the EPA determined that six specific greenhouse gases threaten public health and the welfare of current and future generations.

While encouraging the reduction of greenhouse gases, PSCAA does not monitor their levels in the atmosphere. However, DOE has issued a "Working Paper" determining that jurisdictions are now required to consider the potential impacts of climate change in the SEPA process. DOE has stated

that agencies may follow DOE's guidance, or implement their own process, so long as they consider the direct, indirect, and cumulative impacts of greenhouse gases of a proposal.

In 2007, King County added a section on greenhouse gas emissions to its SEPA Checklist, and created a worksheet to help calculate the lifetime greenhouse gas (GHG) emissions of projects. Lifetime emissions include embodied emissions (those directly tied to the use), energy emissions from operation/construction of the use, and transportation uses related to construction and operation of, and customer/resident travel to and from, the use. Values are reported in Metric Ton Carbon Dioxide Equivalents ($MtCO_2e$).

Based on the development parameters of the Town Center Subarea Planned Action, the lifetime greenhouse gas emissions for 1,000 large building multi-family units, 150 small building multi-family units, 50 single-family homes, 200,000 square feet of office, and 200,000 square feet of commercial (retail) space were calculated (see Appendix A). In total the lifetime greenhouse gas emissions of the Town Center is anticipated to be 1.9 million $MtCO_2e$. As a reference, the yearly energy emissions of approximately 1,200 primarily multi-family residential units is about 10,00o $MtCO_2e$, while the yearly transportation emissions are typically about two times that value (20,000 $MtCO_2e$). While the King County Worksheet does not account for variables such as reduced parking standards, proximity to transit and bicycle trails, and mixed-use developments, the City anticipates that such characteristics will be influential in reducing the Town Center Subarea's overall carbon footprint.

Addressing Climate Change in the Town Center Subarea and City of Shoreline

In our region, transportation accounts for the biggest share of greenhouse gas emissions. As previously discussed, the Town Center Subarea envisions a compact mix of land uses that allows residents and employees to walk and ride their bikes and reduce their dependence on automobiles for short trips, which has the benefit or reducing greenhouse gases. Such strategies and goals are also incorporated into the City's Environmental Sustainability Strategy, and in the U.S. Mayor's Climate Protection Agreement, Cascade Agenda, and Green City Partnership Program, which the Shoreline City Council has adopted by resolution. In 2009, the City of Shoreline began collecting baseline data about local practices that contribute to global warming. Later this year, the City hopes to begin a program to offer individuals and businesses alternative actions that protect our climate.

4.2 Impacts

Development in the Town Center Subarea is expected to increase by up to 1200 units, 200,000 square feet of office, and 200,000 square feet of commercial under either alternative, as part of the anticipated 5,000 housing units and 5,000 jobs that the City of Shoreline is anticipated to accommodate over the next twenty years. This level of development will result in short term construction impacts related to air quality and the potential for longer-term impacts related to operations of future uses. However, all development will be subject to applicable local, regional, state, and federal regulations related to air quality and climate change.

In addition, the Town Center Subarea Plan's focus on compact, mixed-use development to accommodate said growth will result in a net benefit to air quality when compared to the City's historic reliance on suburban, single-family residential development to accommodate growth. The City has also increased its commitment to addressing air quality and climate change in recent years through its adoption of the Environmental Sustainability Strategy, U.S. Mayor's Climate Protection Agreement, Cascade Agenda, and Green City Partnership Program.

As such, the proposal would not result in any significant environmental impacts.

4.3 Mitigation Measures

Given the lack of significant impacts, no mitigation measures are required. However, the City of Shoreline is committed to continuing to pursue and adopt programs and policies that have the potential to improve air quality and reduce greenhouse gases.

4.4 Significant Unavoidable Adverse Impacts

None.

Chapter 5: Parks and Recreation

5.1 Affected Environment

The City of Shoreline currently has 330 acres of parks throughout the City, including 20 developed park sites, two off-leash dog park sites (one year-round, one seasonal), and numerous open space and preserve sites. Shoreline's parks are classified based on their service area, according to classifications established by the National Recreation and Parks Association (NRPA). Neighborhood parks generally have a ½ mile service area (15 minute walk), community parks a 1 ½ to 3 mile service area, and regional parks attract visitors from throughout the region. Many of the City's community parks also include soccer, baseball, and softball fields which are used by youth and adult leagues throughout the City and region.

5.1.1 Parks and Open Space within the Town Center Subarea

Figure 5-1 illustrates City parks in the general vicinity of the Town Center.

<u>The Interurban Trail</u>

The Interurban Trail is a 3.25-mile paved multi-purpose pedestrian and bicycle trail that is located on the east side of Aurora Avenue N within the Seattle City Light power transmission line right-of-way between N 145th Street and N 205th Street. Consistent with Policy TC-10 of the Subarea Plan, the trail connects neighborhoods to shopping, services, employment, transportation centers, and parks. The trail corridor provides an important north-south linkage through the City and to the rest of the regional Interurban Trail system (south to Seattle and north to Everett).

The trail serves as the spine of the City's bicycle trail system and is used by commuters, as well as recreational bicyclists, walkers, and joggers. The City of Shoreline recognizes the importance of the Interurban Trail, and is committed to maintaining it as a regional bicycle and pedestrian facility. The City of Edmonds is set to begin construction on its portion of the Interurban Trail in Summer 2011, which will serve to improve connections to Mountlake Terrace, Lynnwood, and Everett to the north.

<u>Proposed Park at Town Center</u>

The City of Shoreline is currently in the planning process for the Park at Town Center, as a passive recreational space that would be located on either side of the Interurban Trail between N 178th Street and N 185th Street. The Town Center Subarea Plan envisions it as a linear park that "provides a green thread through the center of the area", with Policy TC-19 proposing "a memorable, green, open space" linked to City Hall that should be programmed for "celebrations, public gatherings and informal 'third places'".

Figure 5-1- City of Shoreline Parks and Open Space

Based on input from the community, the City is considering three alternatives for the Park at Town Center: On the Move, Reflection, and Center Stage (see Appendix B). All three alternatives share common elements such as flexible spaces for outdoor events, a restroom facility, a link to City Hall, lighting, public art, and connections to surrounding neighborhoods, while differing in regards to the orientation of pathways, the use of water features, and the location of the Ronald Place (Red Brick Road) bricks.

Input on the three alternatives is being accepted until June 1, after which time the alternatives will be presented at a public workshop. Ultimately, one alternative will be selected and forwarded on to the City Council for adoption.

Parks and Open Space near the Town Center Subarea

- Richmond Highlands Recreation Center and Park is a 4.2-acre community park located south of Shorewood High School and includes: a small gym with a stage and indoor play equipment, a game room with billiard and ping pong tables, a meeting room with kitchen, outdoor children's play equipment, and a ball field. In 2009 and 2010, the City completed improvements to the baseball field/dugouts and installed a new restroom facility.
- Meridian Park is a 3.13-acre natural area located south of Meridian Park Elementary School and includes a wetland with a stream crossing as well as some passive meadow and natural areas with a circular trail. The park also includes picnic tables, benches, a basketball court, and tennis courts.
- Ronald Bog Park is a City-owned 13.61-acre natural area at the headwaters of Thornton Creek, on N 175th St just west of Interstate 5. The site was once a peat bog that was actively mined in the 1950s. The park currently features a small square-shaped pond that shows evidence of the past peat mining activities; in addition, the pond now serves an important function in stormwater management for the City.
- The 9.02-acre Crowell Park is a community park in the Meridian Park that was completely renovated in August 2010. Cromwell Park includes a basketball court, play equipment, amphitheatre, baseball field, playfield, and walking paths.
- Echo Lake Park is a 0.77-acre natural area located at the north end of Echo Lake and abutting the Interurban Trail along its eastern border. The park includes restroom facilities, picnic tables, and benches.
- Darnell Park is a 0.83-acre natural area located just east of the Interurban Trail, just south of N 165th Street. The park includes an open segment of Boeing Creek.

5.1.3 Parks Level of Service

The City of Shoreline is currently working on the update to its Parks, Recreation, and Open Space (PROS) Plan, which was adopted in May 2005. The current PROS Plan does not have an established level of service for parks and recreation services (such as acres of park/1,000 residents). Instead, the PROS Plan focuses on the recreational amenities (playfields, park benches, water fountains, restrooms, etc) available to residents by the City's recreational facilities.

While there is not a specific level of service established in the Comprehensive Plan or PROS Plan, the 2005 PROS Plan did identify a citywide deficiency in amenities at the community park and neighborhood park level. Since that time, City of Shoreline residents passed an $18.6 million bond levy to acquire new open space and complete park improvements, with much of that money spent on improving amenities at the neighborhood and community park level. In the immediate vicinity of the Town Center Subarea, that included a complete redevelopment of Cromwell Park (detailed above) and field improvements at Richmond Highlands Park. In addition, the City has made significant improvements to amenities at Richmond Beach Saltwater Park (a nearby regional park), Boeing Creek Park, Hamlin Park, and Twin Ponds Park.

5.2 Impacts

While the 2011 PROS Plan is currently still being completed, preliminary analysis has shown that the previous amenities deficiencies at the Community and Neighborhood Park have been addressed by recent and continuing park improvements throughout the City. As detailed above, a number of those improvements have been at park facilities that would serve the current and future population of the Town Center Subarea. As such, neither alternative is anticipated to result in potential significant impacts related to parks and recreation. Should a future PROS Plan show deficiencies due to increases in population within the Town Center, additional analysis will be needed.

5.3 Mitigation Measures

No mitigation measures needed.

5.4 Significant Unavoidable Adverse Impacts

None

Chapter 6: Historic and Cultural Resources

6.1 Affected Environment

As part of the Aurora Corridor Improvement Project: N 165th Street-N 205th Street, a Cultural Resources Assessment was prepared in August 2007 by Western Shore Heritage Services, Inc. (WSHS). The WSHS study was based on a review of previous ethnographic, historic, and archaeological investigations in the local areas; site file searches at the Washington Department of Archaeology and Historic Preservation (DAHP) and King County Historic Preservation Program (KCHPP); and a review of relevant background literature and maps. In addition, Suquamish and Tulalip Tribes cultural resources staff were notified by WSHS of the Aurora Corridor project details and provided the opportunity to comment on the potential impacts of the project.

The WSHS study area based its Area of Potential Effect (APE) on those parcels that had the potential to be impacted by the construction areas for the Aurora Corridor project, and included Aurora Avenue N between N 165th Street and N 205th Street (the parcels on the west side of Aurora between 180th and 185th all extend west to the east side of Linden Avenue N), as well as Midvale Ave N between N 175th Street and N 185th Street.

As such, the WSHS study covered the majority of the Town Center Subarea, with the exception of the multifamily residential (apartment) developments along the east side of Linden Avenue N between N 175th Street and N 179th Street; the single and multifamily residential units along the west side of Stone Avenue N between N 175th Street and N 185th Street; and seven parcels on Firlands Way N between N 185th Street and N 188th Street.

The WSHS study determined that there were four historic properties eligible for listing on the National Register of Historic Places located within the Aurora Corridor Project's APE, two of which are located within the Town Center Subarea (see Appendix C). The first property is the Auto Cabins, located at 17203 Aurora Avenue N. The Auto Cabins are a group of small cabins built between 1921 and 1943 around an older (1914) bungalow, which provided accommodations to the increasing numbers of travelers on Aurora Avenue N/U.S. Highway 99, and provided housing for employees of the Interurban rail line. Although two of the cabins have been demolished and the other cabins are unoccupied and in varying degrees of deterioration, the WSHS study recommended them as eligible for the National Register under Criterion A due to their association with early auto-oriented, commercial development along Pacific Highway/Aurora Avenue N. The Auto Cabins are listed as an "Existing" historic structure by King County and the City of Shoreline.

The second property eligible for listing is three segments of the North Trunk (Red Brick) Road, which was completed in 1914 and is located along Ronald Place N (just east of Aurora Avenue N) north and south of N 175th Street. The last exposed section of the brick auto road that followed Aurora Avenue N from N 85th Street in Seattle to N 205th Street in Shoreline, it was part of a paved brick highway that become part of the Pacific Highway, a continuous paved route completed from Mexico to Canada in 1923. During the 1930's, most of the brick road was covered with concrete during the construction of Aurora Avenue N.

The portion of the North Trunk Road just north of N 175th Street was demolished as part of recent commercial development (Walgreens and Key Bank), and is listed as a "Demolished" historic structure by King County and the City of Shoreline. The area south of N 175th Street is in the worst condition, and is listed as "Modified" by King County, while the area north of the Walgreens is listed as an "Existing" historic structure. The WSHS study found that both of these remaining segments of the Brick Road (the areas south of 175th and north of Walgreens) "have retained variable integrity of location, design, setting, materials, workmanship, feeling and association", and are eligible for listing under Criterion A due to its association with the region's commercial and residential development during the teens and 1920s. The study concluded that these segments are the only known surviving exposed examples of the North Trunk Road, and one of the few brick roads left in King County.

For those areas outside the WSHS study's study area, but still within the Town Center subarea boundaries, the City of Shoreline has also reviewed historic designations made by the King County Heritage and Landmarks Commission. Per SMC 15.20.020, the King County Heritage and Landmarks Commission is designated and empowered to act as the landmarks commission for the City of Shoreline. The City of Shoreline is granted one Special Member to the Commission, who serves on the commission when it reviews and designates Shoreline buildings and structures nominated for landmark status.

In 1996 (just after the City was incorporated), King County prepared a Historical Resources Inventory List for the City of Shoreline. Over the last 15 years, several additional structures have been added to the inventory. The City of Shoreline has taken this inventory and added it as a layer to its Geographic Information System (GIS). In reviewing this inventory for the Town Center Subarea, the only other remaining (not demolished) historic structure located within the Town Center is the Parker's Casino at 17001 Aurora Avenue N, which was built in 1930 as the Parker's Ballroom and is listed as "Modified". Per the WSHS study, the Parker's Casino was previously inventoried, and was deemed ineligible for listing in the National Register, due to the considerable alterations and modifications it has undergone. When demolition or alteration of an inventoried historic structure (but not a landmark structure) is proposed, City of Shoreline staff notifies King County Historic Preservation Program staff, who review and provide recommendations on the project.

Two properties just outside the Town Center Subarea have also been granted historic landmark designation by King County. The Ronald School, which is currently being used by the Shoreline Historical Museum and will be incorporated into the redeveloped Shorewood High School, is located

on N 175th Street just outside the subarea boundaries. It was granted City Landmark status by the King County Landmarks Commission in 2008. Plans for restoring the building have been subject to review by the King County Design Review Committee. In addition, the Richmond Masonic Temple, located at N 185th St and Linden Avenue N just outside the subarea boundaries, was granted City Landmark status in September 2010.

6.2 Impacts

Impacts Common to Both Alternatives

There are two properties within the Town Center Subarea that have been determined to have historic significance: the Auto Cabins at 17203 Aurora Avenue N, and the North Trunk (Red Brick) Road. Under either alternative, it is possible that redevelopment activities could result in demolition or alteration of these historic resources. The Auto Cabins are currently owned by a private property owner, while most of the Red Brick Road north of N 175th Street is owned by the City of Shoreline.

While the City is not currently aware of any plans to redevelop the Auto Cabins property, the Red Brick Road north of Walgreens is located within the area proposed for the Park at Town Center. The City of Shoreline is currently evaluating three alternatives for the proposed park, and based on public input will make a recommendation to the City Council sometime in Summer 2011. Two of the three park alternatives currently being evaluated- "Shoreline on the Move" and "Shoreline Center Stage"- would result in some alteration to the Red Brick Road.

Because the Park at Town Center has yet to select and adopt a preferred alternative, the City has determined that the Park at Town Center will require completion of a project-specific SEPA Checklist. In addition, it has been determined that any park alternative that proposes to remove or alter the section of the Red Brick Road north of the Walgreens (approximately N 178th Street) will require a SEPA Determination of Significance (DS), due to its potential impacts to a historic resource.

The portion of the Red Brick Road between N 173rd and 175th Street was recently vacated, and consistent with the new design of the Aurora Corridor, no longer connects to N 175th Street. It has been incorporated into the site of a private property (Aurora Rents) which is currently being redeveloped. Due to this section having very little structural integrity and being largely deteriorated, the WSHS study determined that if businesses were to redevelop in this location (which is now the case), a finding of "no adverse effect" was recommended. Given this, there is no adverse impact from the redevelopment of the Aurora Rents property over this segment of the Red Brick Road.

6.3 Mitigation Measures

Mitigation Measures Common to Both Alternatives

The proposed Park at Town Center will require a project-specific SEPA Checklist. In completing that checklist, the City of Shoreline SEPA Responsible Official has determined that any park alternative that proposes to remove or alter portions of the Red Brick Road will trigger a SEPA Determination of Significance (DS) and preparation of an Environmental Impact Statement (EIS).

Development activities that would result in the demolition of alteration of any structure or property listed on the City of Shoreline's Historical Resources Inventory shall be reviewed by City staff, and forwarded on to King County Historic Preservation Program staff for their review and recommendation. Should any structures within the Town Center Subarea be granted historic landmark designation, any alterations shall be subject to review by the King County Heritage and Landmarks Commission and King County Design Review Committee.

6.4 Significant Unavoidable Adverse Impacts

Adherence to the mitigation measures listed under Section 6.3 would result in no significant and unavoidable adverse impacts.

Chapter 7: Utilities

7.1 Affected Environment

As discussed in the SEPA Checklist, utilities in the Town Center Subarea are provided by the following utility providers:

Electricity- Seattle City Light (City of Seattle)
Water- Seattle Public Utilities (City of Seattle)
Stormwater- City of Shoreline
Sewer- Ronald Wastewater District
Natural Gas- Puget Sound Energy
Refuse/Recycling/Yard and Food Waste- Cleanscapes
Telephone/Internet/Cable Television- Frontier (formerly Verizon) and Comcast

The SEPA Checklist noted that the Town Center Subarea is entirely developed, and as such the entirety of the subarea has utility infrastructure in place. Utility providers are required to plan their systems to accommodate projected regional growth (which accounts for the development projections in the Town Center Subarea Planned Action area), and SMC 20.60.020 requires all development proposals to be served by adequate utilities prior to occupancy. The following section addresses whether there is adequate existing or planned utility infrastructure in place to accommodate these levels of development (1,200 units, 200,000 square feet of office, and 200,000 square feet of commercial) envisioned for both the Proposed No Action Alternatives.

7.1.1 Electricity- Seattle City Light (City of Seattle)

Seattle City Light (SCL) provides electricity to the entire City of Shoreline, including the Town Center Subarea. SCL's main transmission lines run along its utility corridor on the east side of Aurora Avenue N through the Town Center, adjacent to the Interurban Trail. As part of the Aurora Corridor Project, its distribution lines along Aurora Avenue, Midvale Avenue, N 175th, and N 185th have or will be undergrounded.

As of Calendar Year 2009, approximately 91.2% of SCL's electricity was generated by hydroelectric sources, such as its hydroelectric projects on the Skagit and Pend Oreille Rivers (approximately 50%) and long-term contracts with the Bonneville Power Administration. In March 2010, SCL reached a new agreement with the Pend Oreille Public Utility District to relicense the Boundary Dam Hydroelectric Project, which is expected to provide nearly half of its power over the next twenty years. In addition, in 2010 SCL re-negotiated its agreement to purchase electricity from the Bonneville Power Administration. That contract runs between 2011 and 2028, and is expected to provide approximately 40% of its power during that period.

Given the long term commitments and contracts Seattle City Light has in place for hydroelectric power over the next twenty years, as well as its commitment to providing alternative energy sources (in 2009 approximately 3.3% of its electricity was generated by wind, and it invested millions of dollars in wind technology), the Town Center Subarea has an adequate supply of electricity available to accommodate the projected growth over the next twenty years. Distribution lines are already in place due to the nearly built-out nature of the subarea, and as such adequate infrastructure is available.

7.1.2 Water- Seattle Public Utilities (City of Seattle)

Seattle Public Utilities (SPU) provides water to portion of Shoreline west of Interstate 5, including the Town Center Subarea. As required by the State of Washington, SPU prepares a Water System Plan every six years, with the most recent plan developed in 2007. In that plan, SPU indicates that there is no need to seek additional water sources to accommodate projected growth in the region, as it has adequate water supply to accommodate said growth through at least 2055, even if climate change were to result in a reduction in the snowpack. If additional water sources are needed, future Water System Plans would be updated to account for these needs.

According to the Public Services and Utilities Analysis Technical Memorandum prepared by Jones and Stokes for the Aurora Corridor Improvement Project: N 165th Street-N 205th Street, a single 24" water main is present underneath Aurora for most of the segment between N 165th Street and N 205th Street, with a double 24" main located underneath the portion between N 170th Street and N 182nd Street. 6-12" water mains cross Aurora towards the Town Center Subarea boundaries of Linden and Stone at N 170th Street and N 182nd Street, while a 20" water main is present under N 185th Street. As part of the Aurora Corridor Project, SPU relocated, realigned, and made minor improvements to some of its water lines as part of its Multiple Utility Relocation project.

In addition, the City of Shoreline is currently negotiating with the City of Seattle to acquire the SPU water system within Shoreline, including the Town Center Subarea. This acquisition has the potential to result in more accurate assessments of future infrastructure needs, given the local focus and knowledge that City of Shoreline staff could provide. As much of the SPU system is between 50 and 100 years old, it is likely that infrastructure improvements will be needed in the future throughout the Subarea and the City as a whole.

Individual projects covered under this Planned Action will still be required to submit Certificates of Water Availability and fire flow analyses at the time of project submittal. Such requirements will ensure that any and all future projects have adequate water pressure and capacity to accommodate the proposed levels of development.

7.1.3 Sewer/Wastewater- Ronald Wastewater District

The Ronald Wastewater District currently serves approximately 99% of the City of Shoreline (about 54,000 residents), including the entire Town Center area, as well as the Point Wells site in Snohomish County. An estimated 83% of the sewer mains in the Town Center Subarea are 8" concrete pipes, although a variety of 6", 10", 12", and 14" pipes also exist underneath Aurora Avenue. The majority of wastewater treatment is provided by the King County Wastewater Treatment Division, with the City of Edmonds Wastewater Treatment Plant providing additional treatment to the district.

Under King County Code 13.24, the district is required to prepare a Comprehensive Sewer Plan that is consistent with all applicable local comprehensive plans (notably Shoreline and King County), reflect current supply and demand, and forecast future supply and demand. In June 2010, the King County Utilities Technical Review Committee (UTRC) reviewed Ronald Wastewater's plan and recommended approval. On January 6, 2011, the Ronald Wastewater Comprehensive Sewer Plan was approved by King County via Ordinance 17014.

According to King County Ordinance 17014, the district used 2007 King County Buildable Lands growth assumptions for the City of Shoreline to project that it could adequate serve a residential population of approximately 75,000 residents by 2030 through redevelopment and expansion to Point Wells. Both the Proposed Action and No Action Alternatives would lead to increased demand for wastewater service and treatment. However, as the levels of development projected within the Town Center Subarea are consistent with the growth assumptions adopted by Ronald Wastewater District, there is adequate capacity to accommodate said growth. In addition, as part of the Aurora Corridor Project, Ronald Wastewater made improvements to its system and capacity in the subarea.

While future projects covered under this Planned Action will be exempt from SEPA, they will still be required to receive a Certificate of Sewer Availability as part of the development review process. This requirement ensures that any potential wastewater impacts can be identified and addressed, and that development cannot occur if adequate infrastructure is for some reason not available. The City of Shoreline also expects to acquire the Ronald Wastewater District by 2016, which should result in wastewater review being even better incorporated into the City's development review process.

7.1.4 Stormwater and Surface Water- City of Shoreline

The City of Shoreline's Surface Water and Environmental Services Program is responsible for maintaining and improving drainage and stormwater facilities in the Town Center Subarea and the City of Shoreline. The City of Shoreline is subject to regulation under the Western Washington Phase II Municipal Stormwater Permit administered by the Washington State Department of Ecology (DOE). The permit was created by the Department of Ecology to fulfill federal Environmental Protection Agency National Pollutant Discharge and Elimination System (NPDES) requirements

governing stormwater. By complying with the NPDES permit, the City of Shoreline is allowed to discharge stormwater to waters of the State (i.e. local lakes, streams and Puget Sound) if it takes certain actions to prevent stormwater pollution. Storm drain lines generally consist of corrugated metal and concrete pipes, ranging in size from 4 to 18 inches.

The permit requires the City to create and implement a Stormwater Management Program (SWMP). The SWMP outlines the City's plan to develop and implement the following programs and processes:

- Public education and outreach
- Public involvement and participation
- Illicit discharge detection and elimination
- Controlling stormwater run-off from construction sites
- Operations and maintenance of stormwater facilities after construction

The City is in the latter stages of completing a comprehensive update to its 2005 Surface Water Master Plan, with completion anticipated later in 2011. The 2005 Plan has resulted in a number of capital improvement (CIP) projects related to drainage, including drainage and stormwater improvements at Ronald Bog, Cromwell Park, East Boeing Creek, and Pan Terra Pond. The 2011 plan will incorporate a number of low-impact development (LID) and natural drainage/stormwater policies and standards, consistent with the 2005 Stormwater Management Manual for Western Washington and Low Impact Development Technical Guidance Manual for Puget Sound, which have been adopted by the City of Shoreline.

These plans and policies are anticipated to greatly increase on-site stormwater detention and retention within the city and subarea, which will decrease the amount of stormwater entering the City's storm drains and reduce potential flooding impacts. The City is also updating its Engineering Development Guide, which will incorporate additional LID and natural drainage standards within City right-of-way (ROW).

The Aurora Corridor Project includes a number of natural water quality treatments which have since been incorporated into the City's vision for stormwater treatment and drainage management throughout the City. These include rain gardens, bioswales, Filterra bioretention systems, and root boxes using Silva Cell technologies (a system of modular blocks that hold lightly compacted soils in place so as to allow filtration and avoid flooding and promote root and tree growth, while bearing loads for above ground streetscapes). The Town Center Subarea Plan envisions incorporating similar techniques throughout the subarea , resulting in a "strategic system for capturing and treating stormwater on site and protecting and enhancing overall environmental quality". Desired street section features included under both alternatives include landscaped medians and amenity zones, which should serve to further improve stormwater detention and treatment within the subarea.

7.1.5 Natural Gas- Puget Sound Energy

Puget Sound Energy (PSE) provides natural gas for heating and cooking to customers with the Town Center Subarea. PSE has adequate infrastructure and/or capacity in place to accommodate projected growth in the subarea.

7.1.6 Refuse/Recycling/Yard and Food Waste- Cleanscapes

Cleanscapes has provided waste collection services to all residents and business in the City of Shoreline, including the Town Center Subarea, since 2008. Since that time, it has developed a number of programs, such as its Neighborhood Waste Reduction Rewards, to help reduce waste generation in the City. Waste collected by Cleanscapes is taken primarily to the Shoreline Recycling and Transfer Station (2300 N. 165th Street), operated by the King County Solid Waste Division, before being taken to the Cedar Hills Regional Landfill near Maple Valley. The Cedar Hills facility is currently anticipated to reach capacity and close by approximately 2024, at which point King County will need to develop alternative landfill options.

7.1.7 Telephone/Internet/Cable Television: Comcast and Frontier

Cable, telephone, and internet services in the Town Center Subarea are provided by Comcast and Frontier. Underground cable television and fiber-optic cables are present underneath Aurora Avenue N for the entirety of the Subarea, with above ground cables present throughout the rest of Town Center. Fiber-optic system improvements to help link the Shoreline School District, City of Shoreline, and Shoreline Fire Department are currently underway throughout the Town Center, further improving the quality and efficiency of system. Given these improvements, and the rapid technological advances in the field, adequate infrastructure appears available.

7.2 Impacts

Overall, adequate utility infrastructure is in place to accommodate projected growth under both the Proposed Action and No Action Alternatives, as neither would result in development beyond what is already permitted by existing zoning. As such, no significant impacts are expected under either alternative.

7.3 Mitigation Measures

No mitigation measures are needed.

7.4 Significant Unavoidable Adverse Impacts

None

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Chapter 8: Transportation

8.1 Affected Environment

8.1.1 Vehicular Traffic

Existing Traffic Volumes and Collisions

With its location on either side of Aurora Avenue N (a state highway), and the presence of arterials at its northern (N 185th Street) and southern (N 175th Street) edges, the Town Center Subarea has long been dominated by the automobile and auto-oriented uses. As can be seen in Figure 8-1, more than 37,000 vehicles per day travel along Aurora Avenue N between N 170th Street and N 185th Street. Much of this traffic crosses through the subarea to connect with Interstate 5 via N 175th Street (over 22,000 daily trips between Aurora Avenue N and Ashworth Avenue N). In the western half of the subarea, approximately 2,500 vehicles per day travel along Linden Avenue N and N 182nd Street, while on the east side nearly 3,200 vehicles per day travel along Midvale Avenue N, and over 500 vehicles travel along Stone Avenue N.

Given these traffic volumes, many intersections and road segments within the Town Center Subarea experience a high number of vehicle collisions, most notably Aurora Avenue N. As illustrated in Figure 8-2, between 2008 and 2010 there were 95 collisions along Aurora Avenue N between N 170th Street and N 185th Street (a consistent 31/32 collisions between 170th and 175th, 175th and 180th, and 180th and 185th), with an additional seven collisions at the intersection of N 175th Street and Aurora Avenue N and five collisions at N 175th Street and Midvale Ave N. According to the Aurora Corridor Transportation Discipline Report, the overall collision rate along Aurora Avenue N, N 175th Street, and N. 185th Street is more than double the statewide average for urban principal arterials.

The City anticipates that the number of collisions along Aurora will be greatly reduced following completion of the Aurora Corridor Project Improvement Project, N 165th Street-N 205th Street later in 2011, which should result in improved vehicular, pedestrian, and bicycle safety in the subarea. The Aurora Corridor Project will replace the former center turn lane with a landscaped median and dedicated left-turn and U-turn pockets, which the Aurora Corridor Improvement Project Transportation Discipline Report found will result in improved channelization, separate pedestrians from vehicular traffic, and reduce potential conflicts between vehicles, pedestrians, and bicyclists. Business Access and Transit (BAT) lanes, which are limited to buses and vehicles making turns, will reduce conflicts for vehicular turning at intersections and businesses. The project will also result in additional left and right-turn lanes, which should reduce the queuing of cars at intersections and further reduce the number of potential conflicts.

Transportation Master Plan (TMP) Update

The City of Shoreline is currently updating its Transportation Master Plan (TMP), the long-range plan that helps guide the City's Capital Improvement Program and 6 Year Transportation Improvement Plan (TIP), coordinates transportation improvements with land uses, and plans for what is needed to respond to projected growth. The TMP, which is currently undergoing internal staff review, is anticipated to be adopted by the City Council in September 2011. Once completed, its analysis will provide the foundations for the Transportation Element of the Comprehensive Plan, which the City is aiming to adopt by the end of 2012. As it is being developed concurrently with the Town Center Subarea Plan and Development Code, the TMP is incorporating various elements and street standards from the Plan and Code (Proposed Action). However, TMP policies and standards will be identical should the No Action Alternative be adopted instead of the Proposed Action Alternative.

Street Classification in the Town Center

Federal and State guidelines require that streets be classified based on function. Generally, streets are classified as either arterial streets or non-arterial streets. Local jurisdictions can also use the designations to guide the nature of improvements allowed and/or desired on certain roadways, such as sidewalks or street calming devices. The City of Shoreline uses these designations. The primary function of arterials is to provide a high degree of vehicular mobility by limiting property access. The vehicles on arterials are often through traffic. Arterials are generally connected with interstate freeways or limited access roadways. All streets other than arterials are generally designated as non arterial streets, which provide local accesses

Figure 8-3 shows the proposed street classifications that have been developed as part of the Draft TMP. Given their existing traffic volumes and the anticipated levels of growth in the Town Center, both Linden Avenue N (between N 175th Street and N 185th Street) and Midvale Avenue N (between N 175th Street and N 183rd Street) are proposed to be reclassified to Collector Arterials. Table 8-1 notes that Collector Arterials provide access to community services and businesses, connect traffic from non-arterial streets to arterials, and accommodate medium length trips, all of which accurately describe the anticipated roles of Linden and Midvale Avenues N within the Town Center.

To address concerns about the potential adverse traffic impacts to the surrounding neighborhoods that could result from the proposed levels of development and reclassification of these streets to Collector Arterials, the City of Shoreline has created specific policies for Midvale and Linden Avenues N. Policy TC-16 calls for commercial uses west of Aurora to be oriented so that they have primary access from Aurora, rather than along Linden, while Policy TC-17 calls for the street section of Midvale Avenue N to be reconfigured as a low speed, pedestrian-friendly lane with back-in angled parking that can support future uses in the area, while providing adequate capacity for the anticipated levels of development. In addition, Section 20.92.040(D) of the proposed Town Center Code prohibits direct commercial vehicular and service access from Linden Avenue unless no other access is available or practical.

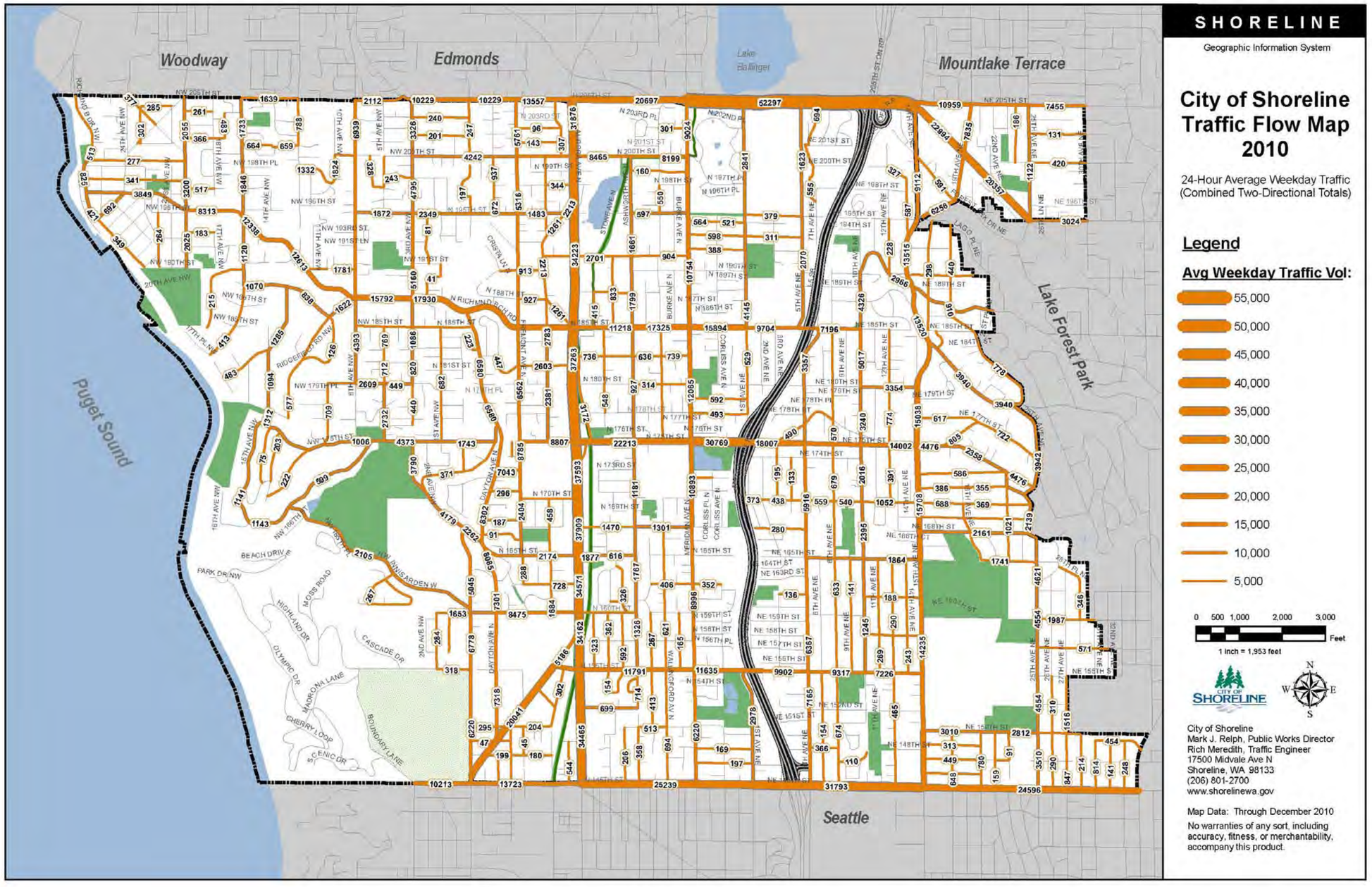

Figure 8-1: City of Shoreline 2010 Traffic Volumes

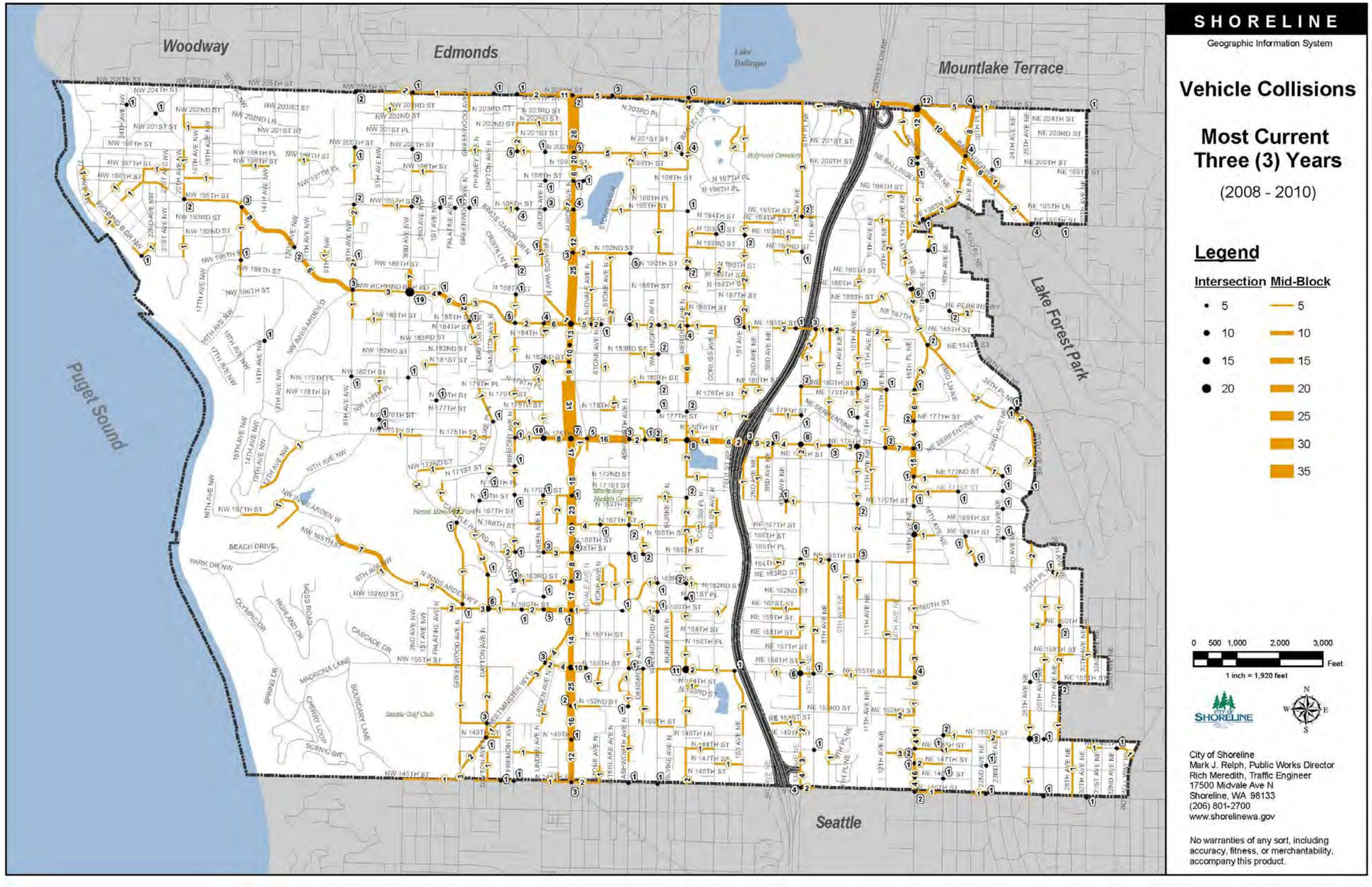

Figure 8-2: City of Shoreline Vehicle Collisions, 2008-2010

Street Frontage Design Standards in the Town Center Subarea

To complement the Street Classification system that has been developed as part of the TMP, Policy TC-8 of the Subarea Plan calls for a hierarchy of Boulevard, Storefront, and Greenlink streets to serve different mobility and access roles within the Town Center. Figure 2-2 illustrates these street types, which are defined below.

Boulevard Street	Refers to a street and/or segment of a street where there's an option for commercial storefronts or landscaped setbacks along the street with the option of ground floor residential or commercial uses.
Green Link Street	Refers to a street and/or segment of a street envisioned to have or maintain landscaped building setbacks along the street. See Figure 20.92.030 for the location of designated Landscaped Streets and SMC 20.92.070(B)(3) for the description and applicable standards for properties fronting on designated Landscaped Streets.
Storefront Street	Refers to a street or segment of a street envisioned to have storefronts placed up to the edge of the sidewalk. See figure 20.92.030 for the location of designated Storefront Streets and SMC 20.92.070(B)(1) for the description and applicable standards for properties fronting on designated Storefront Streets.

Section 20.92.050 of the proposed Town Center Code details these street types and standards, with a major goal of the section as it relates to vehicles being to minimize conflicts between vehicular traffic/parking and pedestrian and bicycle uses. The frontage design standards call for wide sidewalks (ranging from 7-10 feet), as well as on-street parking and bulb-outs at block ends and pedestrian crossing. It is anticipated that such measures will greatly improve the pedestrian and bicycle environment, and improve safety for all transportation modalities.

As part of the TMP, street cross-sections have been developed for streets throughout the subarea, based on street frontage design standards in the Town Center Code. Figures 8-4, 8-5, and 8-6 show the proposed cross sections for Midvale Ave N, Linden Avenue N, and Firlands Way N. All three streets have 10-12' travel lanes (dictated by the ROW width) and 5' landscaped amenity zones, with mature street trees. Midvale Avenue N and Firlands Way N. are Storefront Streets, which require 10' sidewalks, and both also have back-in angle parking on one side of the street. Linden Avenue N is a Greenlink street, and as such has 8' sidewalks and 8' parallel parking on the east side (the west side is outside the Subarea, and required to provide 5' sidewalks). Cross sections for Aurora Avenue N, N 175th Street, and N 185th Street were developed as part of the Aurora Corridor Project. As previously mentioned, the proposed street cross-sections for these three streets are the same for the Proposed Action and No Action Alternatives.

	Arterial Streets			Non Arterial Streets	
	Principal Arterial	**Minor Arterial**	**Collector Arterial**	**Local Primary Street**	**Local Secondary Street**
Function	- Connect cities and urban centers with minimum delay - Connect traffic to Interstate system - Accommodate long and through trips	- Connect activity centers within the City - Connect traffic to Principal Arterials and Interstate - Accommodate some long trips	- Provide access to community services and businesses - Connect traffic from Local Primary Streets to Minor or Principal Arterials - Accommodate medium length trips	- Connect traffic from local secondary streets to Collector Arterials - Accommodate short trips to neighborhood destinations - Provide local accesses	- Provide local accesses
Speed Limits	30 – 40 mph	30 – 35 mph	25 – 30 mph	25 mph	25 mph
Daily Volume (vehicles per day)	More than 15,000	7,000 – 20,000	2,000 – 8,000	less than 3,000	less than 3,000
Number of Lanes	Three or more lanes	Two or more lanes	Two or more lanes	One or Two lanes	One or Two lanes
Lane striping	Travel lanes delineated with stripes	Travel lanes delineated with stripes	Travel lanes delineated with stripes	No centerline striping	No centerline striping
Transit	Buses/transit stops allowed	Buses/transit stops allowed	Buses/transit stops allowed	Buses/transit stops not generally allowed except for short segments	Buses/transit stops not allowed
Bicycle Facilities	May contain bicycle lanes, shared lanes or signage	May contain bicycle lanes, shared lanes or signage	May contain bicycle lanes, shared lanes or signage	- Shared lanes can be provided - Signs may be included	Bike facilities not specifically provided; may include signed bike routes
Pedestrian Facilities	- Sidewalks on both sides - Amenity zones	- Sidewalks on both sides - Amenity zones	- Sidewalks on both sides - Amenity zones	Safe pedestrian access through the use of sidewalks, trails, or other means.	Safe pedestrian access through the use of sidewalks, trails, or other means.

Table 8-1- Draft TMP Typical Street Characteristics

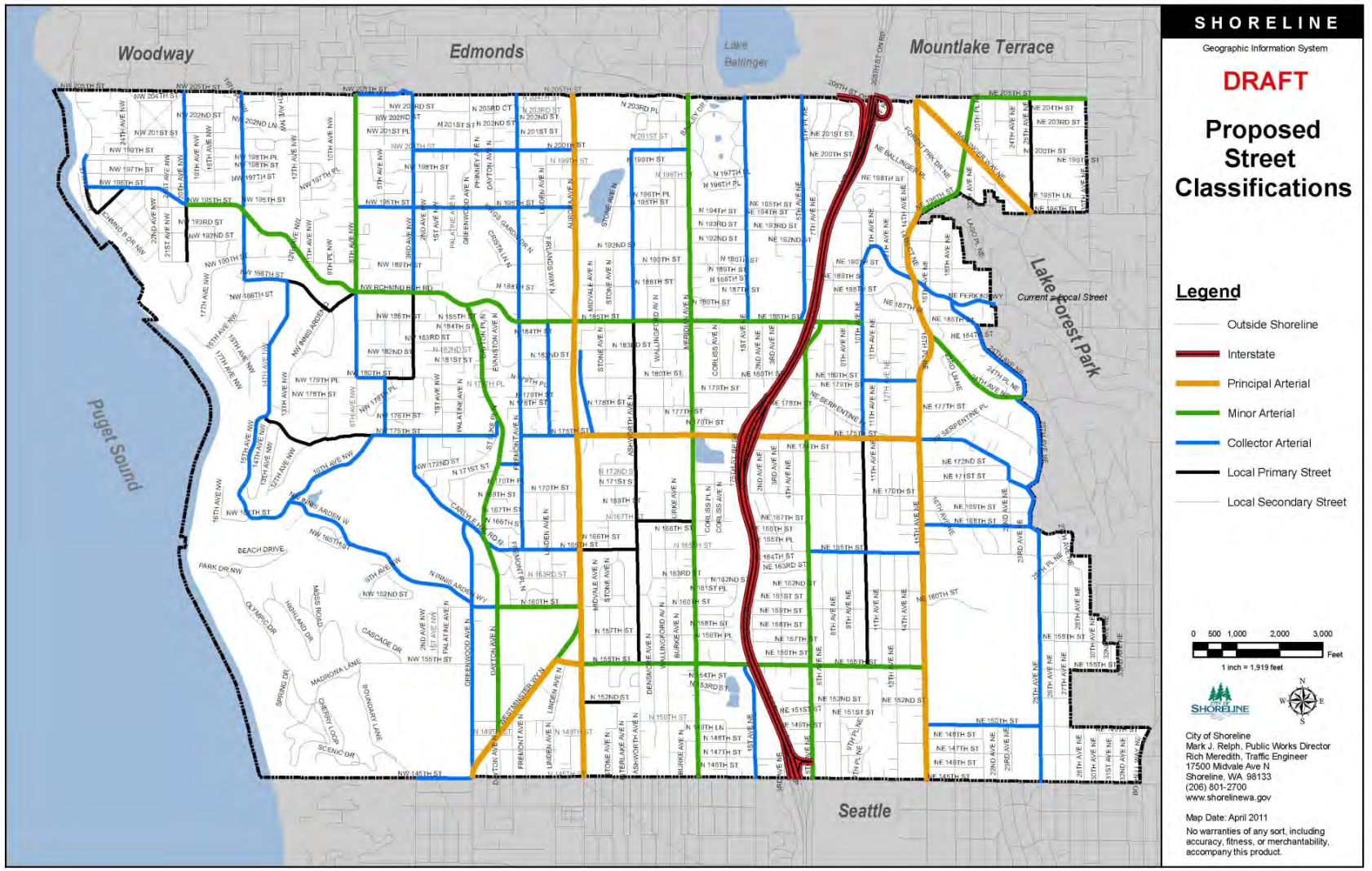

Figure 8-3: Draft TMP Street Classifications

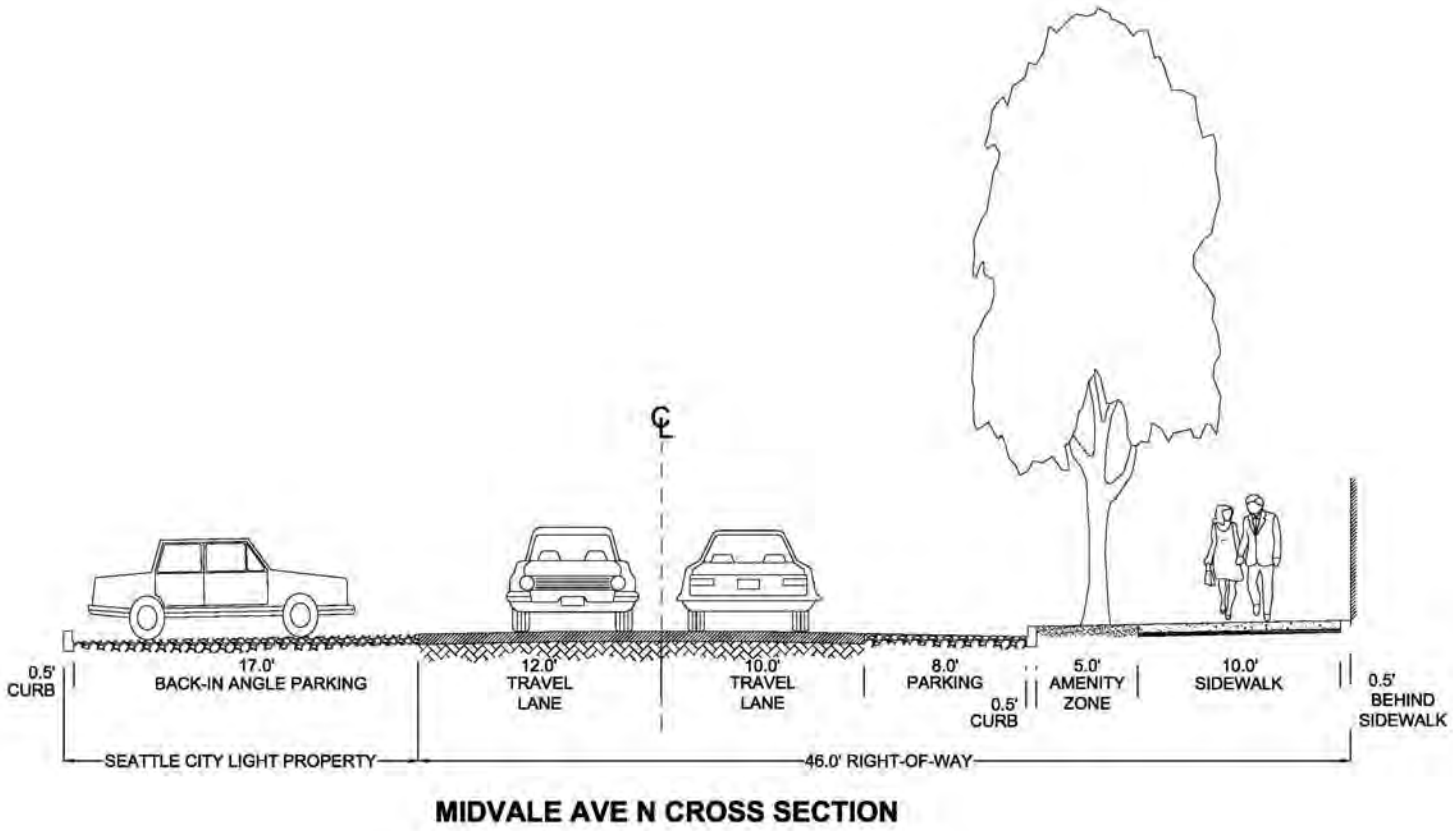

Figure 8-4: Draft TMP Cross-Section for Midvale Avenue N

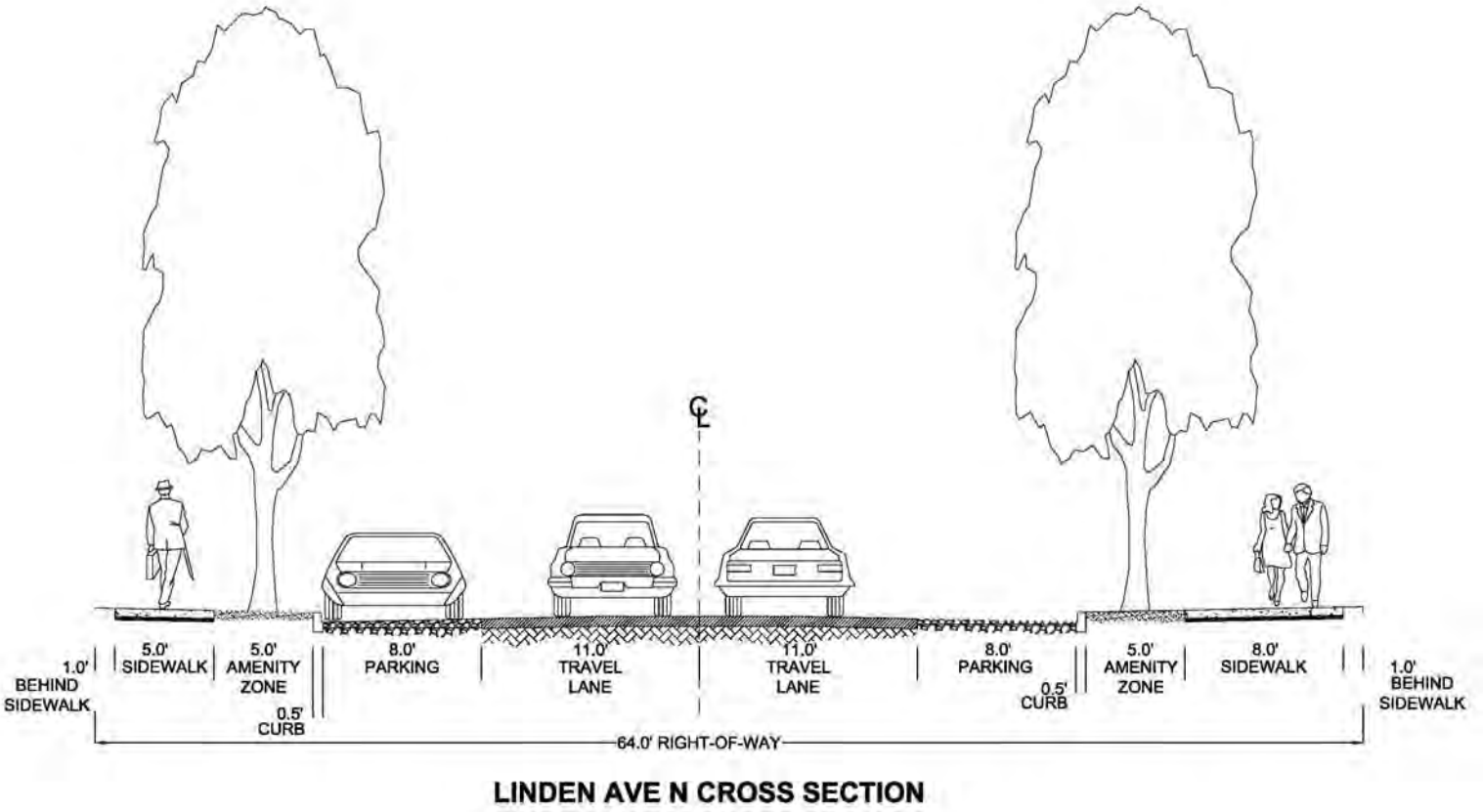

Figure 8-5: Draft TMP Cross Section for Linden Avenue N

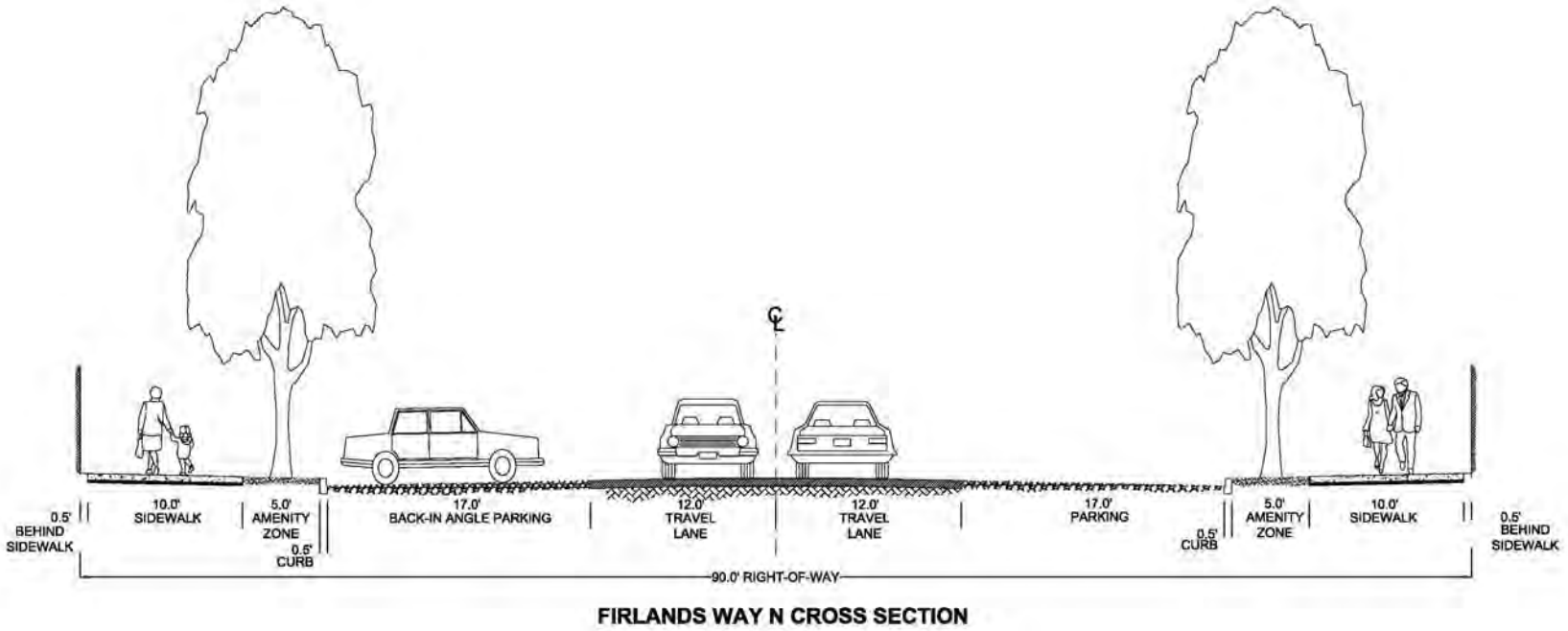

Figure 8-6: Draft TMP Cross Section for Firlands Way N

Potential Traffic and Level of Service (LOS) Impacts from Development in the Town Center

The Growth Management Act (GMA) allows each local jurisdiction to choose a level of service (LOS) method and standards. Level of service (LOS) standards are measures used to denote intersection operating conditions that help judge the performance of the transportation system, and are tied to the delay a vehicle encounters at a signalized or un-signalized intersection. LOS measurements are letter based and range from LOS A (free flowing conditions) to LOS F (unacceptable, stop-and-go conditions), with delay measured in seconds. The City of Shoreline has adopted LOS E as an acceptable LOS for signalized intersections (SMC 20.60.140). While Highways of Statewide Significance (such as Aurora Avenue N) are exempt from GMA concurrency (concurrency is the concept that adequate infrastructure must be available prior to development) requirements, the City is required to adopt a LOS for state highways, and has adopted the same LOS E standard.

As part of the Aurora Corridor Project, the City developed LOS intersection projections for Alternative B (the adopted design) throughout the Town Center Subarea for the years 2013 (anticipated completion of the Aurora Corridor Improvement Project) and 2030 (long-term growth). Table 8-2 includes these LOS projections. The projections were based on 2005 traffic counts, with the assumption that traffic volumes would continue to increase at an average rate of 1.1% over the next 25 years (2005-2010). However, over the past 5 years (2005-2010), traffic volumes along the Aurora Corridor actually declined, leading to improved LOS between 2005 and 2010, and lesser short-term (current) impacts than initially estimated.

	2013 Build (Year of Opening)				**2030 Build (Growth Targets)**			
	AM Peak		PM Peak		AM Peak		PM Peak	
	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
205th & Aurora	D	50	D	47	E	71	E	72
200th & Aurora	E	59	D	50	D	48	E	71
192nd & Aurora	B	11	B	14	B	15	B	10
185th & Aurora	D	44	C	32	E	78	A	56
185th & Midvale	A	4	A	5	A	4	A	5
182nd & Aurora	B	18	C	25	C	23	D	38
182nd & Midvale	C	23	C	30	C	24	C	28
175th & Aurora	D	46	C	33	E	70	D	48
175th & Midvale	B	12	B	19	B	14	B	19
165th & Aurora	C	31	C	33	D	50	D	47

Table 8-2: Projected AM and PM Peak Hour Levels of Service in the Town Center Subarea

Overall, even when accounting for projected traffic volume growth of 1.1% per year, acceptable LOS were projected over the next twenty years for all analyzed intersections in and around the Town Center Subarea. The analysis was based on the assumption that N 182nd Street would remain, and as such does not account for Policy TC-14 of the Subarea Plan, which encourages the removal of the western leg of the intersection at N 182nd Street and Aurora Avenue N, and its replacement with a fully signalized mid-block intersection at N 180th Street and Aurora Avenue N. Should a future redevelopment project propose to vacate N 182nd Street, it would be subject to Washington State Department of Transportation (WSDOT) approval (which has jurisdictional authority over Aurora Avenue N, given its designation as a state highway) and a detailed traffic study.

As part of the 2011 TMP Update, the City of Shoreline hired DKS Associates to develop a new traffic model to help estimate potential vehicular traffic impacts associated with projected growth in the City over the next twenty years. The traffic model takes into account existing traffic levels (2008 traffic counts) in the City, and projects future traffic impacts based on the City's expected long-term (2030) growth projections, dividing the City into 141 transportation analysis zones (TAZ's) through which the growth is distributed. The growth assumptions in the model are consistent with both the City's overall growth targets over the next twenty years (5,000 new housing units and 5,000 new jobs), and those anticipated for the Town Center subarea (approximately 1,200 new housing units and 1,200 new jobs, which was projected to result in 200,000 square feet of office space and 200,000 square feet of commercial space). In general, 2030 growth assumptions in the model are localized around the proposed Light Rail stations along Interstate 5 at N 145th and N 185th Streets and along major transit corridors, such as the Town Center Subarea.

As part of its analysis, DKS prepared volume/capacity (V/C) ratios based on current (2008) and long-term (2030) traffic volumes to help identify existing and future roadway segments of concern in the City. V/C ratios are useful in providing a general assessment of capacity sufficiency on a given roadway, and are often used by cities and counties to help identify intersections for further LOS analysis, as well as future roadway improvements that can be implemented to help address future adverse traffic impacts. As noted, all future projects in the Town Center will be required to complete and submit a detailed traffic analysis.

As shown in Figure 8-7, all road segments within the Town Center Subarea currently operate at a V/C ratio of 0.80 or less, indicating acceptable traffic conditions, even before the completion of the Aurora Corridor Improvement Project. Figure 8-8 illustrates the projected V/C ratios for the year 2030, taking into account future roadway improvement projects (such as net two-way left turn lanes on Meridian, Fremont, and Dayton Avenues N and NE 185th Street) identified by the City. While several roadway segments along Aurora Avenue N are anticipated to reach V/C ratios between 0.91 and 1.00, the V/C ratio results, when coupled with the previously calculated LOS projections for 2030, illustrate that all segments and intersections within the Town Center Subarea are anticipated to have adequate capacity to accommodate anticipated levels of growth and still operate at an acceptable level. Most notably, traffic volumes and LOS along Greenlink and Storefront Streets (either Collector Arterials or Non-Arterials) will continue to be very low.

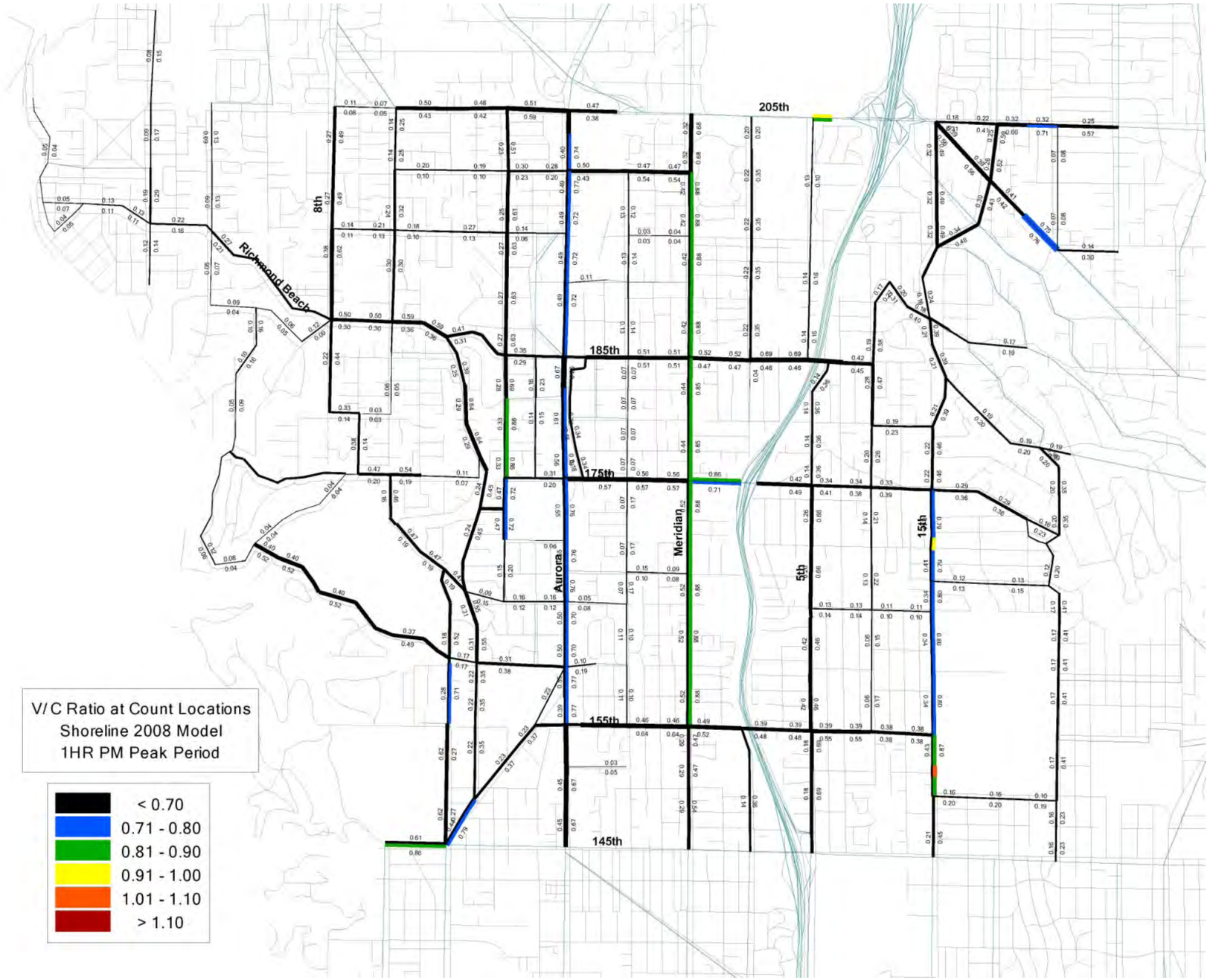

Figure 8-7: 2008 V/C Ratios in the City of Shoreline

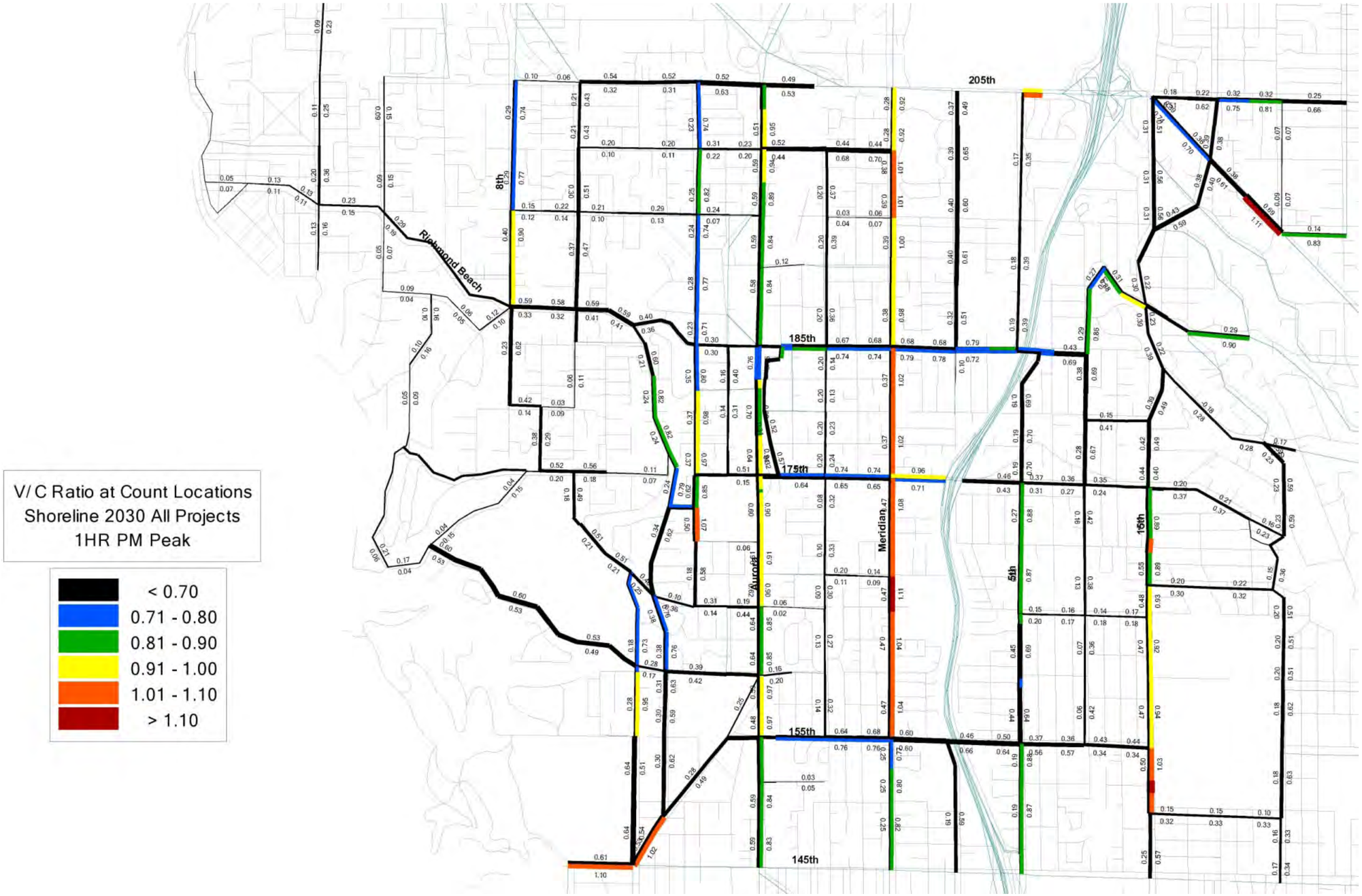

Figure 8-8: Projected 2030 V/C Ratios in the City of Shoreline with Project Improvements

8.1.2 Neighborhood Protection and Traffic Calming

One of the main concerns voiced by residents in neighborhoods adjacent to the Town Center has been the potential for increased cut-through traffic as a result of increased residential and commercial development in the subarea. Policy TC-16 of the Subarea Plan seeks to protect adjacent residential areas from impacts generated by developments in Town Center.

Traffic calming is one way to help protect neighborhoods from the potential impacts of increased traffic resulting from residential and commercial development within the Town Center. Traffic calming refers to measures which aim to reduce or manage the negative effects of motor vehicle use and improve conditions for non-motorized street users. Traffic calming measures can include speed humps, traffic circles, curb extensions (chicanes, neckdowns, and bulbouts), diverters, and landscaping. Figure 8-9 is a graphic created by the United States Department of Transportation that illustrates various traffic calming examples.

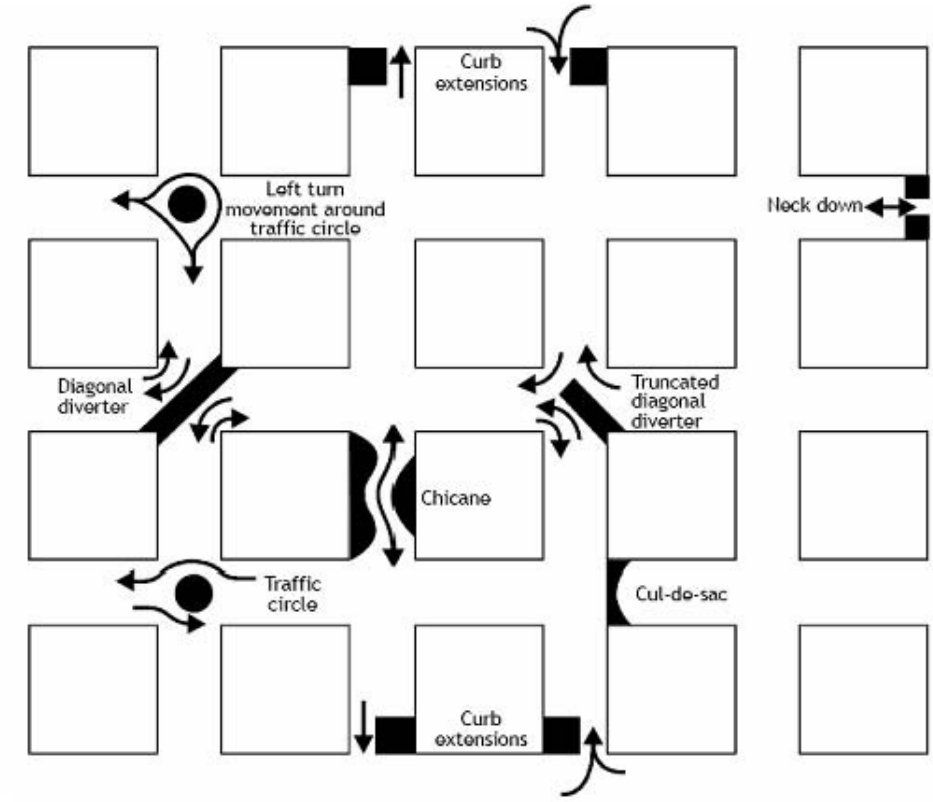

Figure 8-9: Traffic Calming Examples from the US Department of Transportation

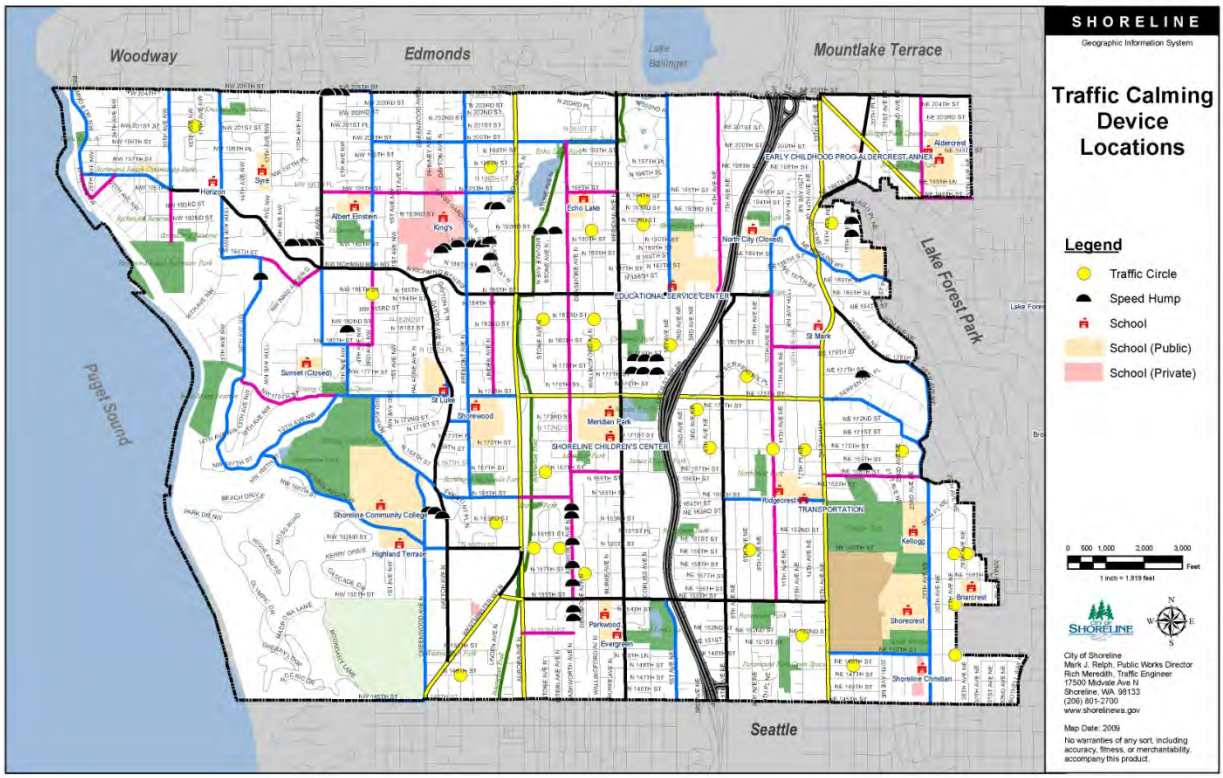

Figure 8-10: Traffic Calming Devices in the City of Shoreline

Figure 8-10 illustrates the location of existing Traffic Calming Devices in the City of Shoreline. Currently, the only traffic calming device within Town Center is a traffic circle at N 183rd Street and Stone Avenue N. However, since 2006 the City's Traffic Services Division has worked with neighborhood associations throughout the City to create Neighborhood Traffic Action Plans (NTAP's), in the hopes of improving the safety, mobility, and livability of the City's neighborhoods.

The NTAP program has resulted in comments and recommendations for the four neighborhoods surrounding the Town Center (Hillwood and Richmond Highlands to the west, and Echo Lake and Meridian Park to the east), with potential improvements prioritized based on community input. Examples of traffic calming that were proposed through the NTAP program included installing a traffic circle at N 178th Street and Wallingford Avenue N (just east of Town Center) to cut down on traffic speeds and potential collisions, and installing a traffic calming device at Linden Avenue N and N 180th Street.

Section 20.92.040 of the proposed Town Center Code is focused on Neighborhood Protection Standards for the surrounding neighborhoods. Section 20.92.040(E) notes that all development in the Town Center will be required to complete a traffic study (they are already required for all projects resulting in 20 net PM peak hour trips, per SMC 20.60.140), and include a specific focus on any mitigation measures that are needed to mitigate potential impacts related to cut-through traffic or parking. Traffic calming devices are a common solution to addressing cut-through traffic impacts.

8.1.3 Pedestrian and Bicycle Environment

Given the current automobile-oriented nature of the Town Center, most notably Aurora Avenue N, pedestrian and bicycle amenities are fairly limited. Figure 8-11 illustrates the Existing Pedestrian Facilities in the City, while Figure 8-12 shows the Existing Bicycle Facilities. The main north/south pedestrian and bicycle route through the Town Center is the Interurban Trail, a separated path that runs along the eastern side of Aurora Avenue N through the entirety of the Town Center, connecting to Edmonds and Seattle to the north and south. Concrete sidewalks exist on N 185th Street and N 175th Street, and on east side of Linden Avenue N along the western edge of the Fred Meyer, but are piecemeal in nature throughout the rest of Town Center. As part of the Aurora Corridor project, new wider sidewalks will be installed on the west side of Aurora Avenue N, while the Interurban Trail will continue to serve pedestrian traffic on the east side of Aurora. There are designated bike lanes on N 185th Street east of the Interurban Trail, but no other east-west bicycle lanes to move bicyclists through the Town Center and connect them to other parts of the City and region.

Several Town Center Subarea Plan policies address creating a more walkable environment within the Town Center. Policy TC-10 calls for creating a seamless network of safe, convenient, and attractive walkway improvements within Town Center that also connects to all streets, the Interurban Trail, high capacity transit on Aurora, and adjacent neighborhoods, while Policy TC-12 calls for creating safe and attractive pedestrian crossings of Aurora, walkways to better link uses within Town Center, and more direct and attractive walkways from adjacent neighborhoods. In regards to bicyclists, Policy TC-11 calls for improved and expanded bicycle paths.

The Town Center Subarea Plan and Code also place a great emphasis on creating quality pedestrian and bicycle connections within and between individual parcels in the Town Center. Section 20.92.060(A) of the Town Center Code calls for promoting and enhancing public walking and gathering with attractive and connected development, which provide safe routes for pedestrians and disabled people across parking lots, to building entries, and between buildings, while Section 20.92.060(D) requires developments to include internal walkways that connect building entries, public places, and parking areas with the adjacent street sidewalks and Interurban Trail.

As part of the TMP, the City has developed proposed Draft Pedestrian and Bicycle System improvements (which, as previously mentioned, would be the same for the Proposed Action and No Action Alternatives). These plans call for the installation of sidewalks along the entirety of Linden and Midvale Avenues N and Firlands Way N, as well as adding designated east-west bike lanes to N 175th Street and N 185th Street for the entirety of the Town Center and beyond, allowing for improved pedestrian and bicycle connections to adjacent neighborhoods and the region. Figures 8-13 and 8-14 show these proposed improvements. If sufficient funding were to become available, completion of these projects would result in a major improvement to the existing pedestrian and bicycle environment in the subarea, and be consistent with numerous goals and policies of the Town Center Subarea Plan.

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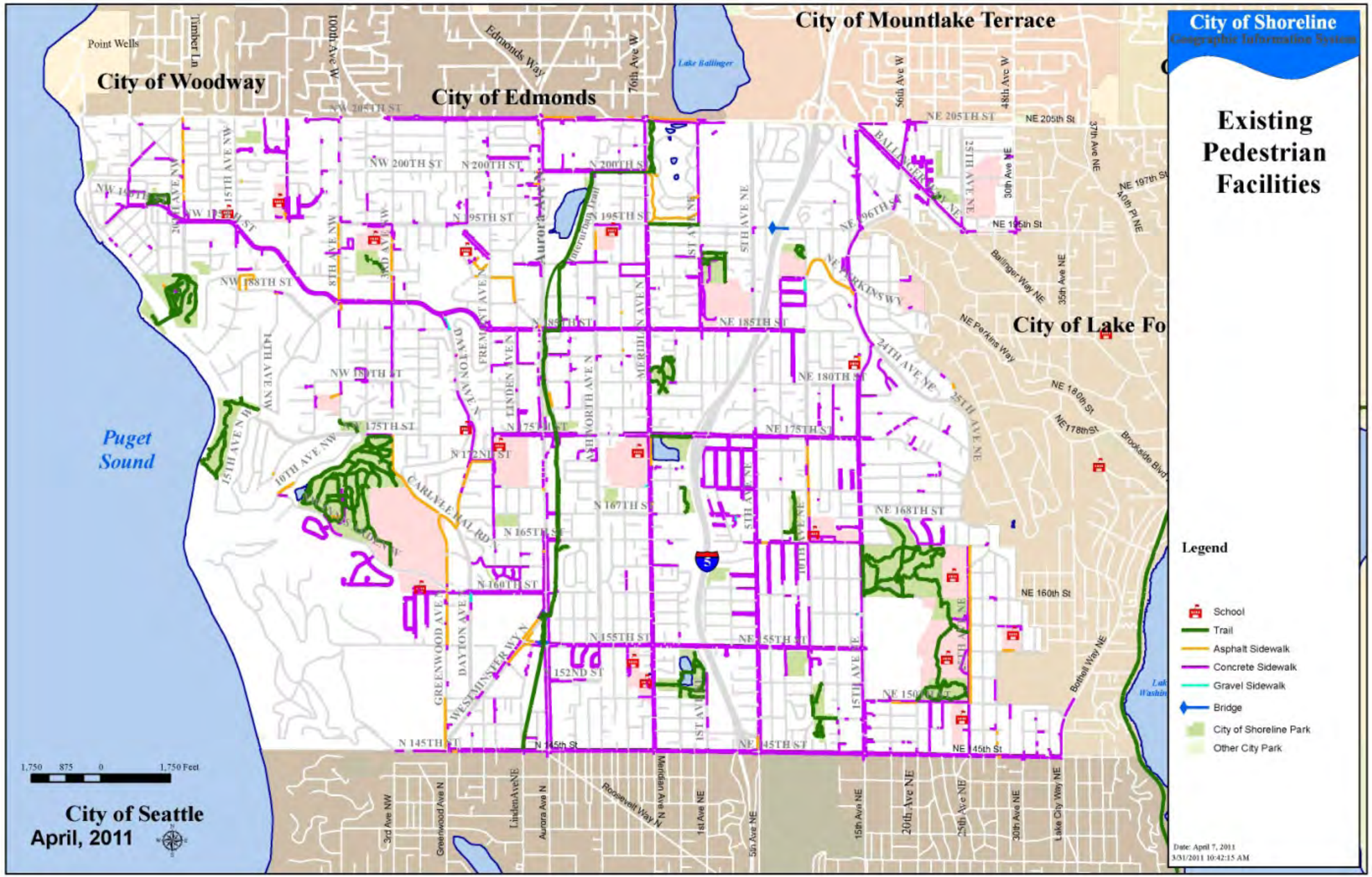

Figure 8-11: Existing Pedestrian Facilities

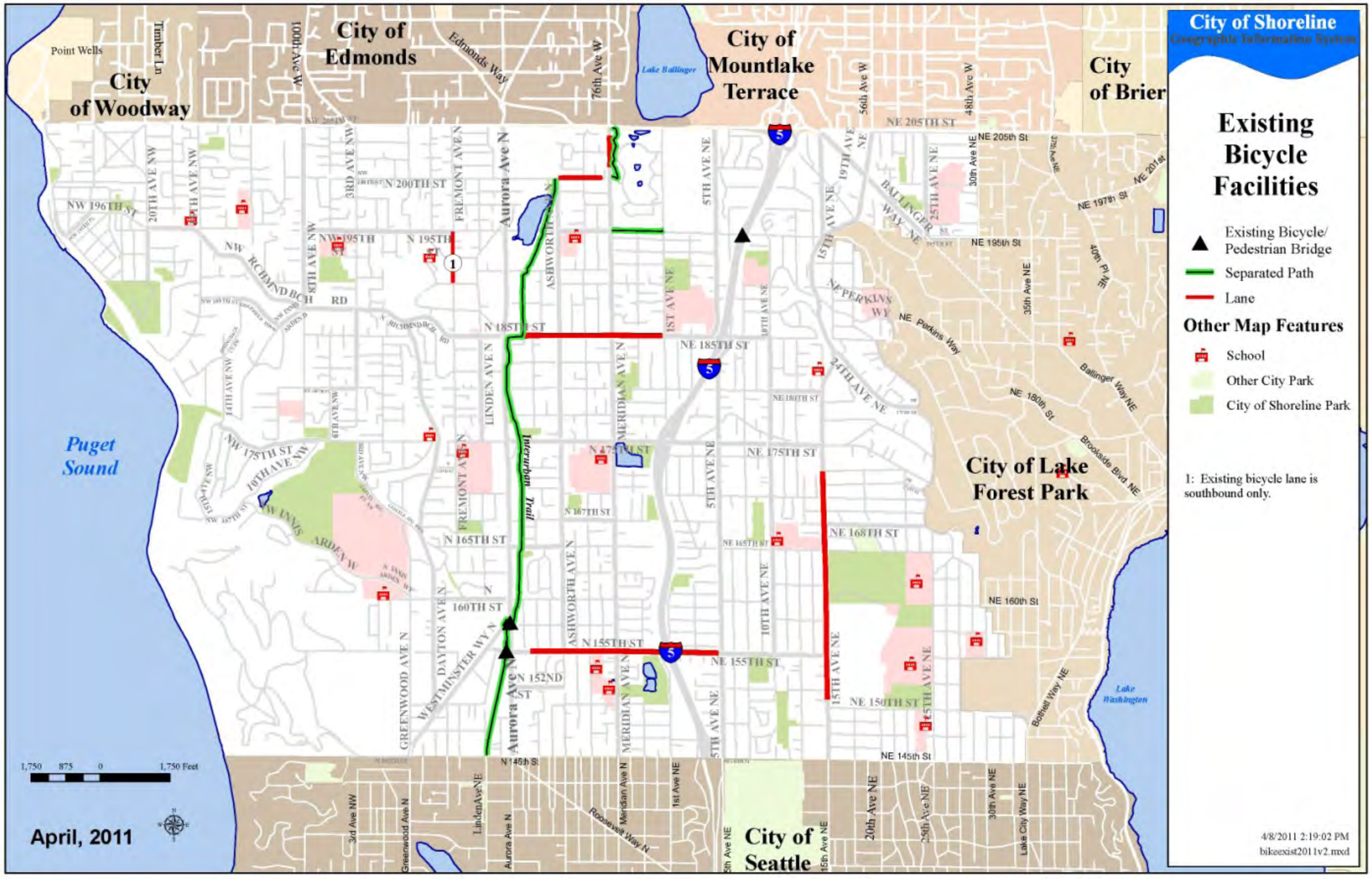

Figure 8-12: Existing Bicycle Facilities

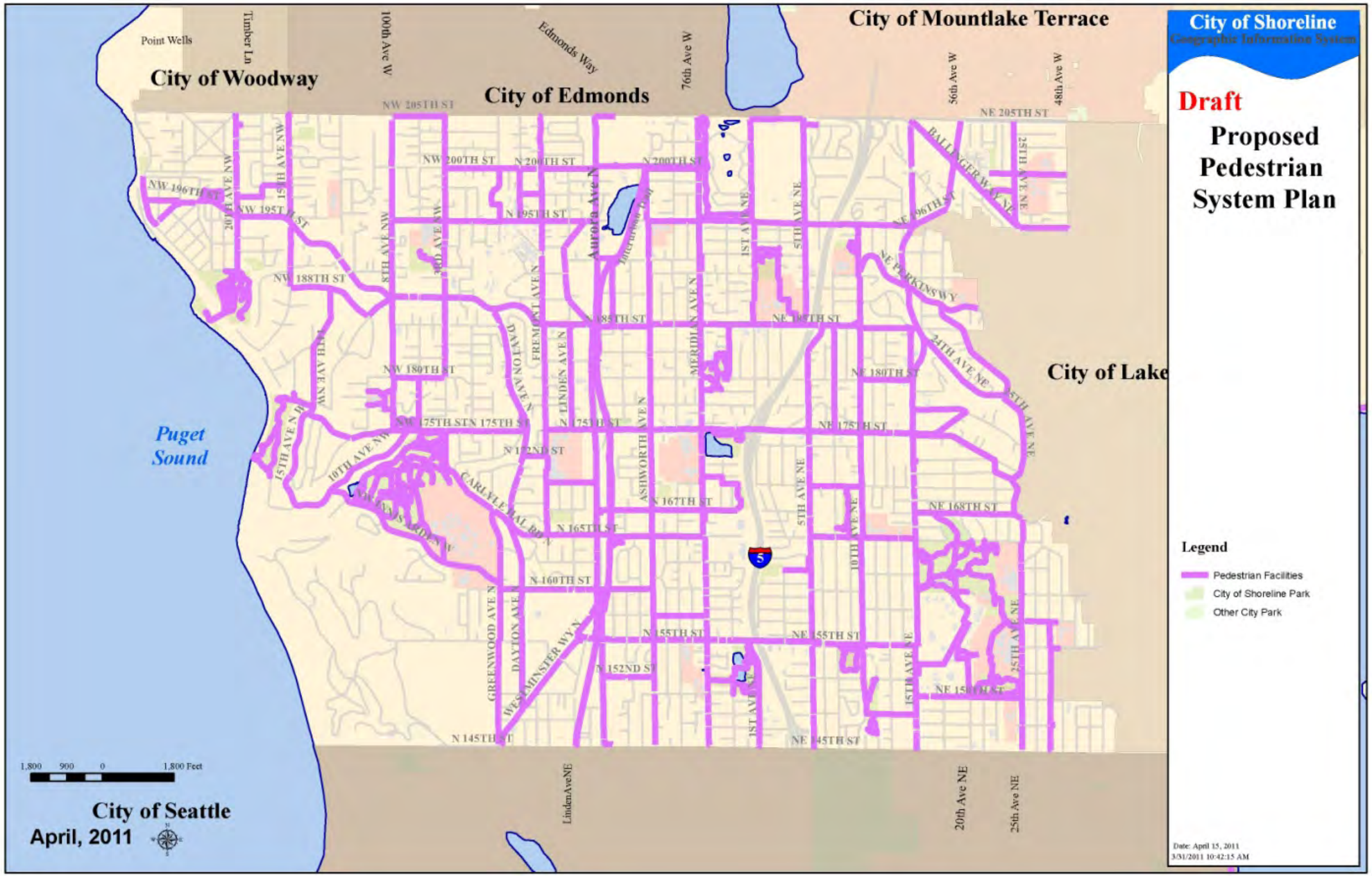

Figure 8-13: Draft TMP Pedestrian System Plan

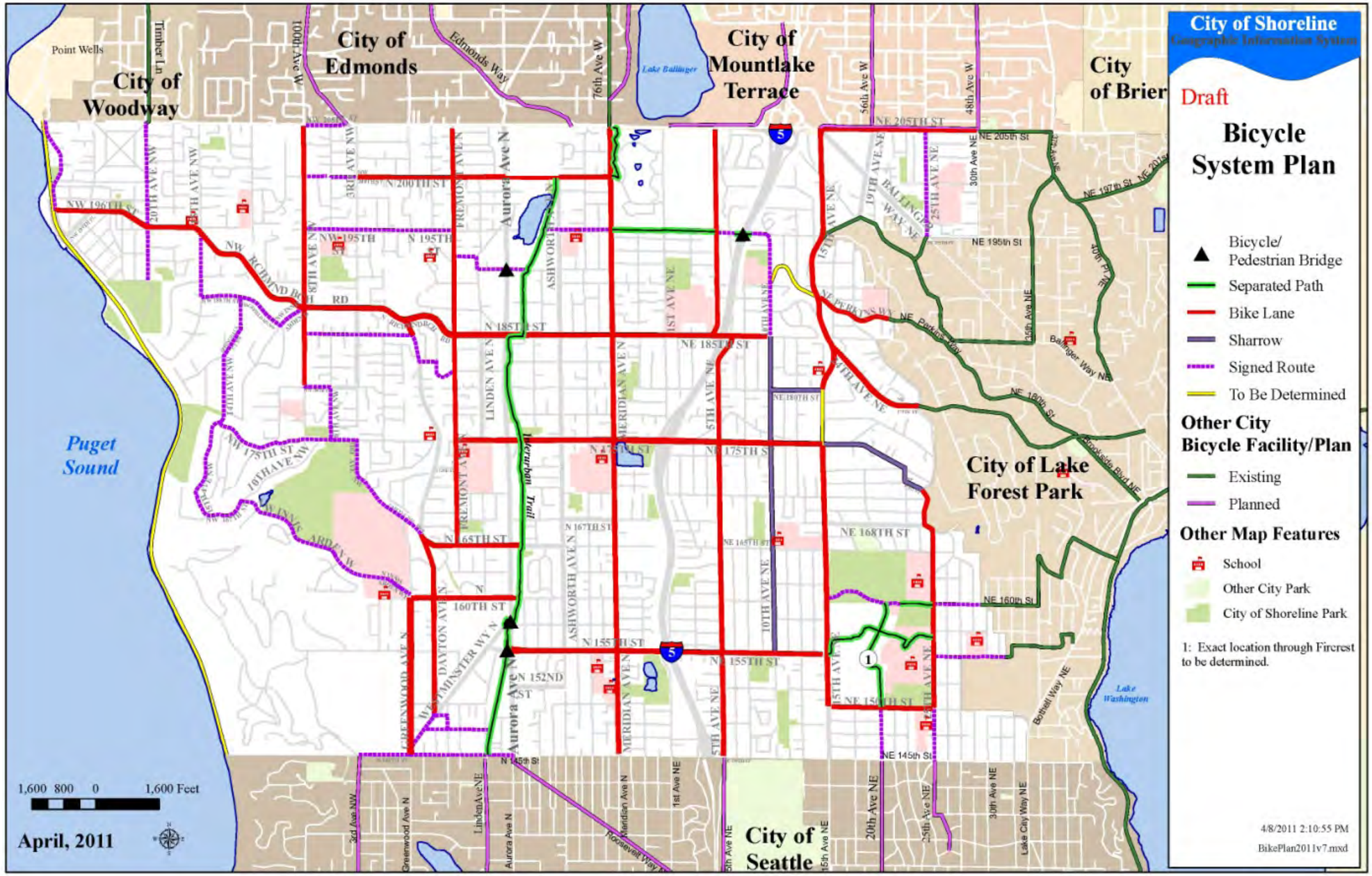

Figure 8-14: Draft TMP Bicycle System Plan

8.1.4 Transit

The Town Center Subarea Plan places a great emphasis on improving and expanding the transit system within the subarea, with high capacity transit along Aurora Avenue N, frequent local bus service, and future Sound Transit light rail service (estimated to open in 2023) envisioned as providing a variety of transit connections to adjacent neighborhoods and the surrounding region. Additional focus has been placed on creating a network of walkways and pedestrian connections to help transit users connect to and navigate the Town Center.

Existing Bus Service

A number of existing bus lines operate within the Town Center and vicinity, either all day (Figure 8-15) or during peak commute hours (Figure 8-16). These include King County Metro Line 358, which provides service along Aurora Avenue N to Downtown Seattle every 7-15 minutes throughout the day; Metro Line 301, providing peak service down Interstate 5 to Seattle; and Metro Line 348, which provides service along N 185th Street between Richmond Beach and the Northgate Transit Center.

Future Bus Service and Proposed Short-Term Transit Enhancements

Starting in 2013, King County Metro will begin operating the RapidRide E Line along Aurora Avenue N. Largely following the route of Line 358, the line will provide faster and more frequent service between Aurora Village Transit Center and downtown Seattle, with stations at N 175th and 185th Streets and additional stops at N 180th and N 170th Streets. To capitalize on the new RapidRide line, the City of Shoreline has developed a draft series of short-term transit enhancements (Figure 8-17) to help expand transit opportunities in the Town Center and throughout the City. Desired improvements, including increasing King County Routes 373 and 330 to All-Day service, would be subject to King County Metro planning, prioritization, and funding. However, the City of Shoreline will continue to work and coordinate with Sound Transit in an attempt to maximize transit opportunities within and adjacent to the Town Center, in hopes of creating the transit-friendly, pedestrian-oriented environment envisioned in the Subarea Plan.

Future Light Rail Service and Proposed Long-Term Transit Enhancements

Sound Transit is currently evaluating alternatives for the North Corridor extension of Link light rail service, which, when operational in 2023, would extend light rail service north from Northgate (anticipated to open in 2021), through Shoreline, and on to Lynnwood. The Sound Transit 2 Plan (approved by voters in 2008) assumed a fully elevated light rail line along Interstate 5, with stations at NE 145th Street and NE 185th Street. However, additional alternatives, including a potential line along Aurora Avenue N, are currently being evaluated. The City of Shoreline has not adopted a preferred alternative, and as such has proposed a draft series of long-term transit enhancements (Figure 8-18), which focus primarily on expanding feeder service to the future light rail stations (either along N 185th Street to I-5, or along Aurora Avenue N to N 155th Street or N 192nd Street).

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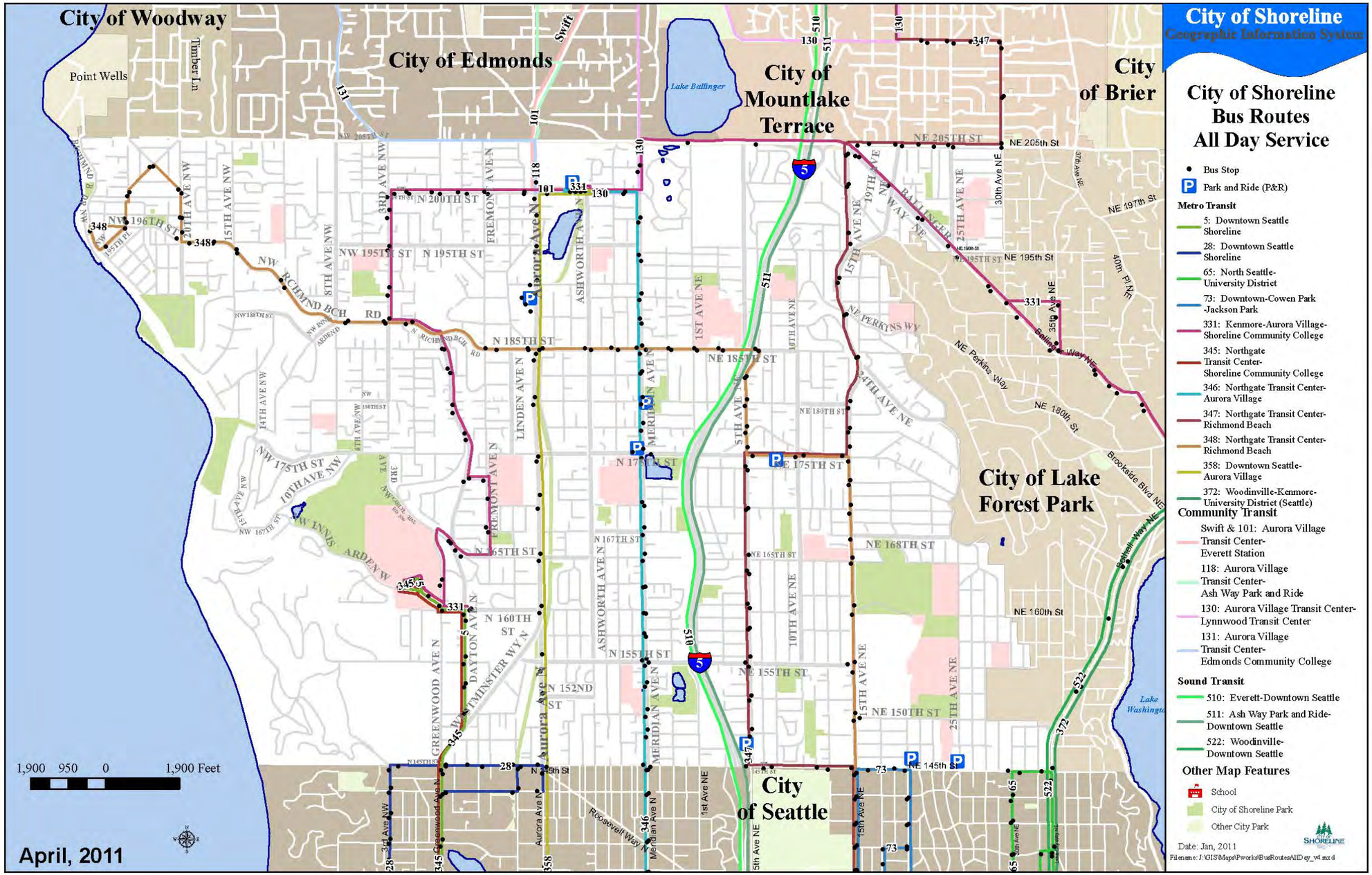

Figure 8-15: Existing All Day Bus Service for the City of Shoreline

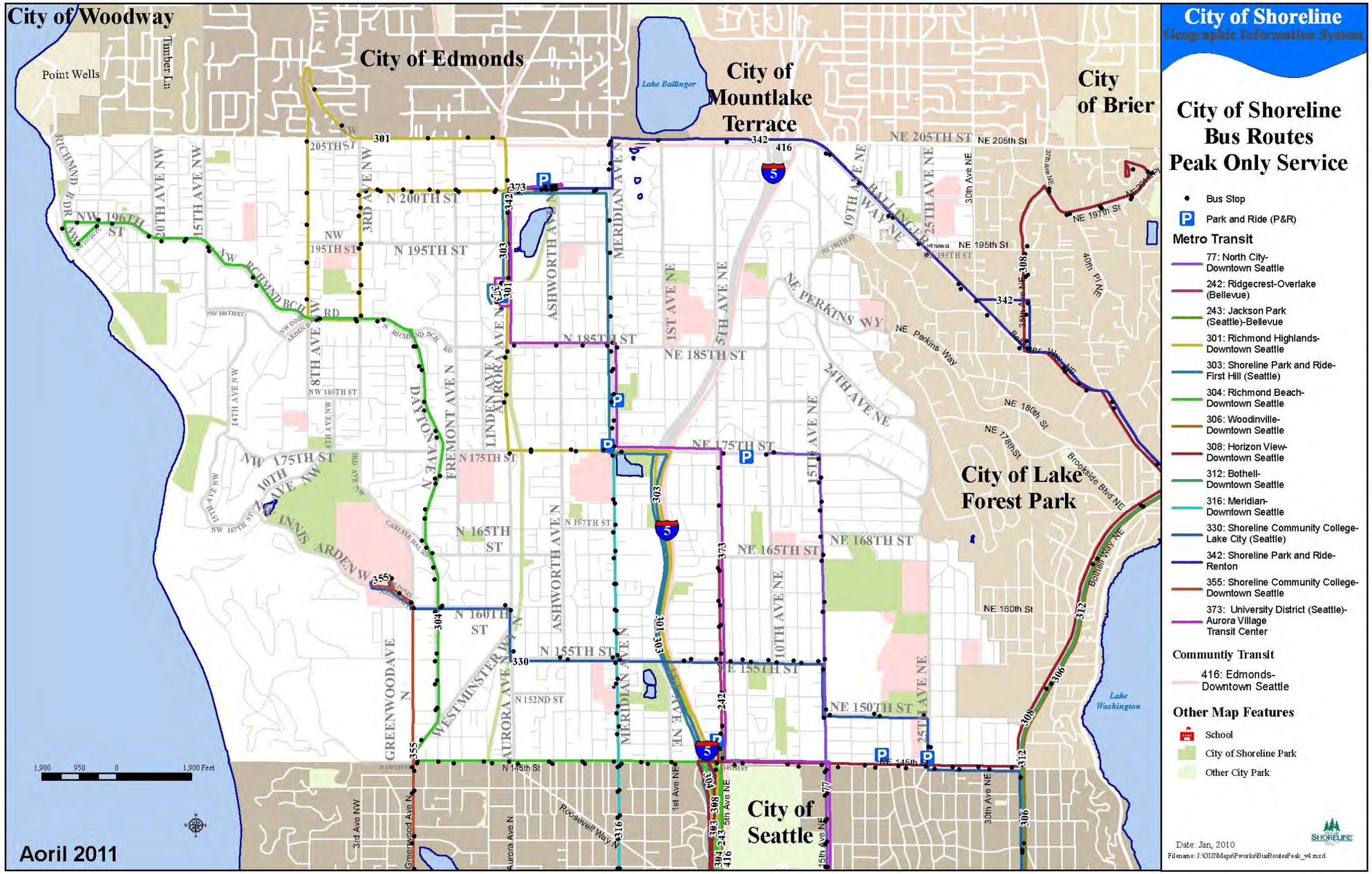

Figure 8-16- Existing Peak Hour Bus Service for the City of Shoreline

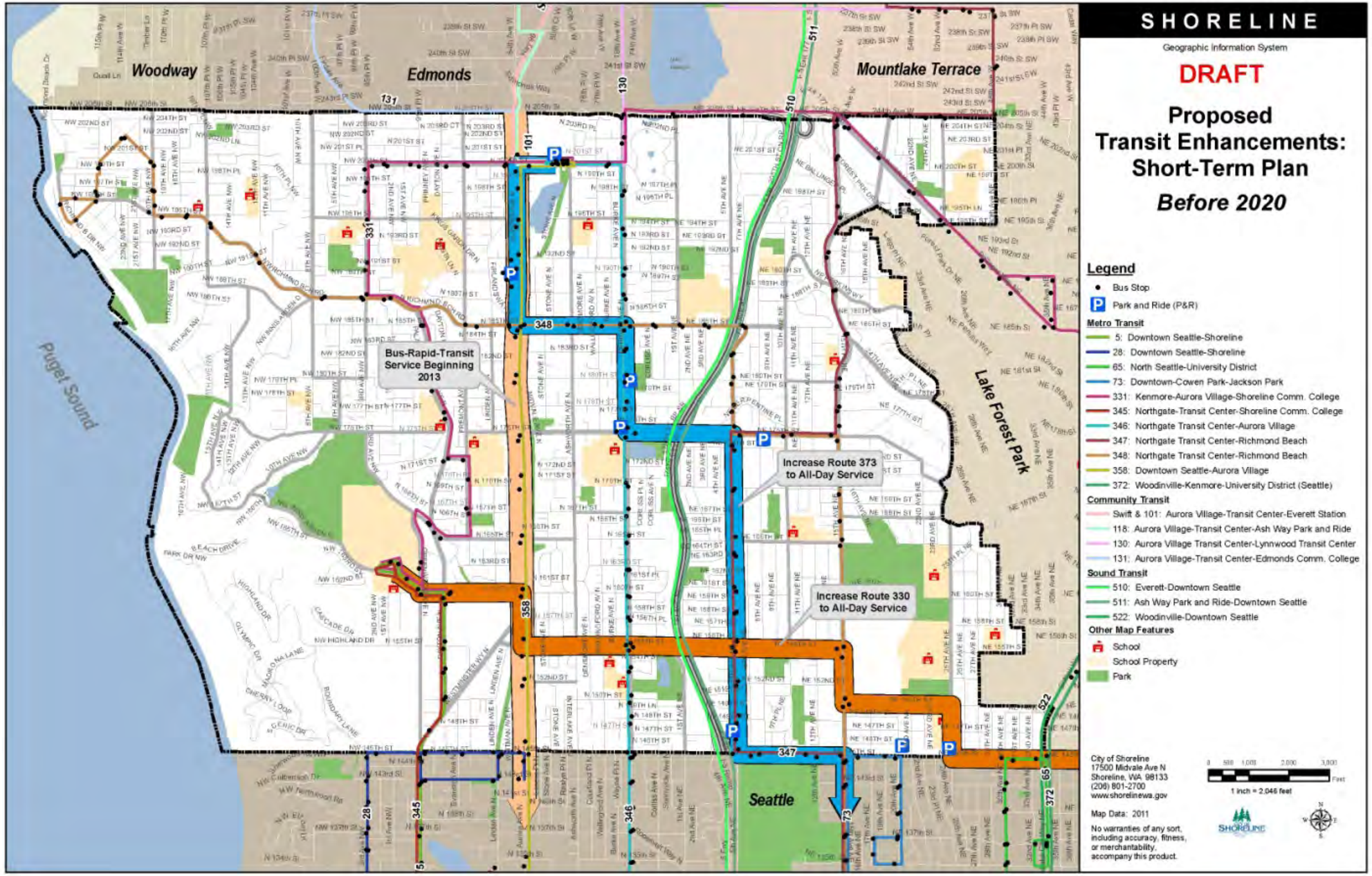

Figure 8-17: Proposed Short-Term Transit Improvements

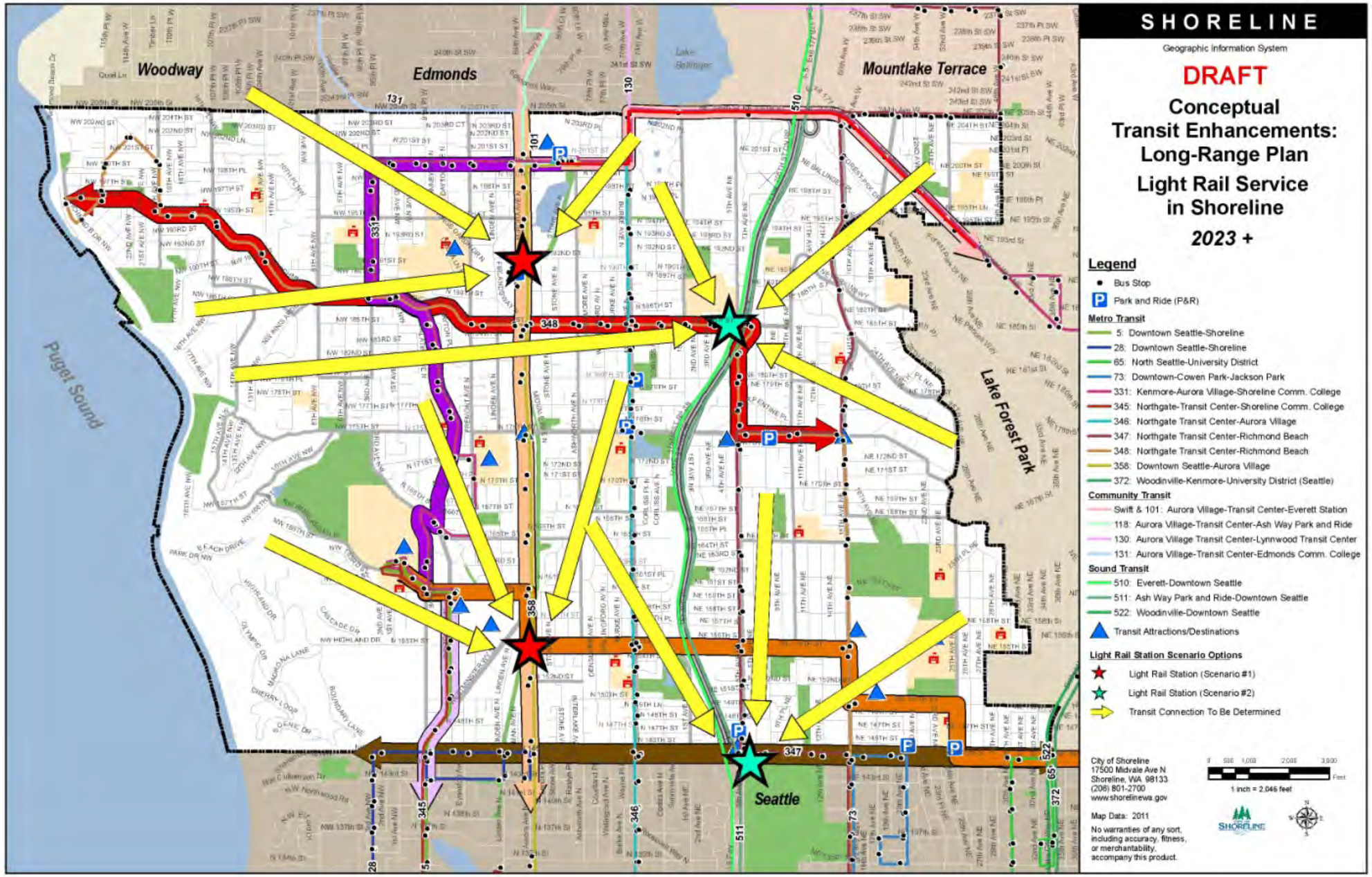

Figure 8-18: Proposed Long Term Transit Improvements

8.1.5 Parking

As previously discussed, a common theme found throughout the Town Center Subarea Plan is to reduce the area's historic reliance on automobiles, and increase the number of pedestrians, bicyclists, and transit users. With that being said, providing an adequate and appropriate amount of parking will be an important element to creating and supporting the mix of uses that contribute to a vibrant Town Center.

SMC 20.50.390 details the existing minimum off-street parking requirements for the City of Shoreline. For residential uses, single family residences require a minimum of 2 parking spaces, while apartments and condominiums require between 1.2 (for studios) and 2 (three bedrooms or larger) spaces per unit. Commercial, office, and retail uses require 1 parking space per 300 square feet of floor area. There are a number of standards and requirements related to surface parking lot standards, access, landscaping, and lighting, as well as the potential for a 20% reduction in required parking spaces when a project proposes a coordinated design and shared access to consolidated parking areas linked by pedestrian walkways.

The proposed Site Design Standards of the Town Center Code (20.92.060) includes a number of design standards related to parking, which expand on the current Development Code requirements. These standards require safe routes for pedestrians across parking lots, to building entries, and between buildings (through pathways, lighting, and landscaping requirements), and limit the amount of surface parking areas that can be located along the site frontages of Storefront/Greenlink Streets (65 lineal feet) and Boulevard Streets (50% of the site frontage), with parking internalized on sites so as to maximize building street frontage.

The parking ratios in the Town Center Code have been simplified to include just a few uses, with residential units requiring 0.75 spaces/bedroom, retail uses requiring 1 space/400 net square feet, and civic/office uses requiring 1 space/500 net square feet. These standards are lower than the existing Code requirements, as the Town Center Subarea Plan and Development Code anticipate a higher number of pedestrians, bicyclists, and transit users. The proposed parking standards are closer to those established for the North City Subarea District (SMC 20.90.080), which requires between 1 and 1.6 parking spaces per residential unit, and one parking space per 500 square feet of gross floor area.

In addition, the Town Center Code allows the Planning Director to approve reductions of up to 50% in parking requirements for projects that meet criteria such as provision of on-street parking along the parcel's street frontage, proximity (1/4 mile) to a transit stop, a commute trip reduction program, or a shared parking agreement with adjoining parcels.

8.2 Impacts

Impacts Common to Both Alternatives

Impact 8.2.1: While not projected to exceed accepted level-of-service (LOS) standards, development consistent with the growth assumptions for the Town Center Subarea has the potential to result in additional vehicular traffic that could adversely impact the subarea's street system via cut-through traffic to adjacent neighborhoods.

Impact 8.2.2: Projected increases in vehicular traffic, coupled with the increased amount of pedestrian, bicycle, and transit use that typically accompany mixed-use development, has the potential to increase conflicts among the various users of Town Center.

Impacts for Proposed Action

Impact 8.2.3: The Town Center Code proposes to reduce the number of required parking spaces for residential, commercial, and office uses. This has the potential to result in spillover parking into the surrounding single family residential neighborhoods. Upon reducing the parking requirements in the North City Subarea District, the City of Shoreline experienced an increase in service requests and complaints related to spillover parking.

8.3 Mitigation Measures

Mitigation Measures for No Action Alternative

Mitigation Measure 8.3.1: Current Traffic Study Guidelines (SMC 20.60.140) for the City of Shoreline require that any development proposal that would generate 20 or more (net) PM peak hour trips to complete and submit a traffic study. Any large-scale redevelopment project within the Town Center subarea is likely to trigger this requirement.

Mitigation Measures for Proposed Action

Mitigation Measure 8.3.2: Section 20.92.040 of the Town Center Code requires that all developments shall complete a traffic study and implement mitigation measures to mitigate potential cut-through traffic or parking impacts to single-family neighborhoods. These could include traffic calming measures identified in the various NTAP's, partial street closures, and other topics addressed in the required traffic study.

Mitigation Measure 8.3.3- Should spillover parking continue to be a problem following implementation of traffic calming measures, surrounding neighborhoods may pursue the City's Residential Parking Zone (RPZ) program, which requires permits to park in certain areas of the City.

The RPZ program has identified proximity to a business district as an appropriate reason for implementing permit parking.

8.4 Significant Unavoidable Adverse Impacts

With implementation of the above mitigation measures, no significant unavoidable adverse impacts are anticipated related to transportation.

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Chapter 9: References

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Washington State Department of Ecology. *Draft Greenhouse Gas Emissions and SEPA Working Paper*. October 2010.

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Appendix A- Greenhouse Gas Emissions Worksheet

King County Department of Development and Environmental Services
SEPA GHG Emissions Worksheet
Version 1.7 12/26/07

Introduction

The Washington State Environmental Policy Act (SEPA) requires environmental review of development proposals that may have a significant adverse impact on the environment. If a proposed development is subject to SEPA, the project proponent is required to complete the SEPA Checklist. The Checklist includes questions relating to the development's air emissions. The emissions that have traditionally been considered cover smoke, dust, and industrial and automobile emissions. With our understanding of the climate change impacts of GHG emissions, King County requires the applicant to also estimate these emissions.

Emissions created by Development

GHG emissions associated with development come from multiple sources:

- The extraction, processing, transportation, construction and disposal of materials and landscape disturbance (Embodied Emissions)
- Energy demands created by the development after it is completed (Energy Emissions)
- Transportation demands created by the development after it is completed (Transportation Emissions)

GHG Emissions Worksheet

King County has developed a GHG Emissions Worksheet that can assist applicants in answering the SEPA Checklist question relating to GHG emissions.

The SEPA GHG Emissions worksheet estimates all GHG emissions that will be created over the life span of a project. This includes emissions associated with obtaining construction materials, fuel used during construction, energy consumed during a buildings operation, and transportation by building occupants.

Using the Worksheet

1. Descriptions of the different residential and commercial building types can be found on the second tabbed worksheet ("Definition of Building Types"). If a development proposal consists of multiple projects, e.g. both single family and multi-family residential structures or a commercial development that consists of more than on type of commercial activity, the appropriate information should be estimated for each type of building or activity.

2. For paving, estimate the total amount of paving (in thousands of square feet) of the project.

3. The Worksheet will calculate the amount of GHG emissions associated with the project and display the amount in the "Total Emissions" column on the worksheet. The applicant should use this information when completing the SEPA checklist.

4. The last three worksheets in the Excel file provide the background information that is used to calculate the total GHG emissions.

5. The methodology of creating the estimates is transparent; if there is reason to believe that a better estimate can be obtained by changing specific values, this can and should be done. Changes to the values should be documented with an explanation of why and the sources relied upon.

6. Print out the “Total Emissions” worksheet and attach it to the SEPA checklist. If the applicant has made changes to the calculations or the values, the documentation supporting those changes should also be attached to the SEPA checklist.

Section I: Buildings

Type (Residential) or Principal Activity (Commercial)	# Units	Square Feet (in thousands of square feet)	Emissions Per Unit or Per Thousand Square Feet (MTCO2e)			**Lifespan Emissions (MTCO2e)**
			Embodied	Energy	Transportation	
Single-Family Home	50		98	672	792	**78,092**
Multi-Family Unit in Large Building	1000		33	357	766	**1,155,694**
Multi-Family Unit in Small Building	150		54	681	766	**225,027**
Mobile Home	0		41	475	709	**0**
Education		0.0	39	646	361	**0**
Food Sales		0.0	39	1,541	282	**0**
Food Service		0.0	39	1,994	561	**0**
Health Care Inpatient		0.0	39	1,938	582	**0**
Health Care Outpatient		0.0	39	737	571	**0**
Lodging		0.0	39	777	117	**0**
Retail (Other Than Mall)		200.0	39	577	247	**172,551**
Office		200.0	39	723	588	**269,869**
Public Assembly		0.0	39	733	150	**0**
Public Order and Safety		0.0	39	899	374	**0**
Religious Worship		0.0	39	339	129	**0**
Service		0.0	39	599	266	**0**
Warehouse and Storage		0.0	39	352	181	**0**
Other		0.0	39	1,278	257	**0**
Vacant		0.0	39	162	47	**0**

Section II: Pavement

Pavement		0.00				**0**

Total Project Emissions: **1,901,233**

Definition of Building Types

Type (Residential) or Principal Activity (Commercial)	Description
Single-Family Home.....	Unless otherwise specified, this includes both attached and detached buildings
Multi-Family Unit in Large Building	Apartments in buildings with more than 5 units
Multi-Family Unit in Small Building	Apartments in building with 2-4 units
Mobile Home.....	
Education	Buildings used for academic or technical classroom instruction, such as elementary, middle, or high schools, and classroom buildings on college or university campuses. Buildings on education campuses for which the main use is not classroom are included in the category relating to their use. For example, administration buildings are part of "Office," dormitories are "Lodging," and libraries are "Public Assembly."
Food Sales	Buildings used for retail or wholesale of food.
Food Service	Buildings used for preparation and sale of food and beverages for consumption.
Health Care Inpatient	Buildings used as diagnostic and treatment facilities for inpatient care.
Health Care Outpatient	Buildings used as diagnostic and treatment facilities for outpatient care. Doctor's or dentist's office are included here if they use any type of diagnostic medical equipment (if they do not, they are categorized as an office building).
Lodging	Buildings used to offer multiple accommodations for short-term or long-term residents, including skilled nursing and other residential care buildings.
Retail (Other Than Mall).....	Buildings used for the sale and display of goods other than food.
Office	Buildings used for general office space, professional office, or administrative offices. Doctor's or dentist's office are included here if they do not use any type of diagnostic medical equipment (if they do, they are categorized as an outpatient health care building).
Public Assembly	Buildings in which people gather for social or recreational activities, whether in private or non-private meeting halls.
Public Order and Safety	Buildings used for the preservation of law and order or public safety.
Religious Worship	Buildings in which people gather for religious activities, (such as chapels, churches, mosques, synagogues, and temples).
Service	Buildings in which some type of service is provided, other than food service or retail sales of goods
Warehouse and Storage	Buildings used to store goods, manufactured products, merchandise, raw materials, or personal belongings (such as self-storage).
Other	Buildings that are industrial or agricultural with some retail space; buildings having several different commercial activities that, together, comprise 50 percent or more of the floorspace, but whose largest single activity is agricultural, industrial/ manufacturing, or residential; and all other miscellaneous buildings that do not fit into any other category.
Vacant	Buildings in which more floorspace was vacant than was used for any single commercial activity at the time of interview. Therefore, a vacant building may have some occupied floorspace.

Sources: .....

Residential 2001 Residential Energy Consumption Survey
Square footage measurements and comparisons
http://www.eia.doe.gov/emeu/recs/sqft-measure.html

Commercial Commercial Buildings Energy Consumption Survey (CBECS),
Description of CBECS Building Types
http://www.eia.doe.gov/emeu/cbecs/pba99/bldgtypes.html

Embodied Emissions Worksheet

Section I: Buildings

Type (Residential) or Principal Activity (Commercial)	# thousand sq feet/ unit or building	Life span related embodied GHG missions (MTCO2e/ unit)	Life span related embodied GHG missions (MTCO2e/ thousand square feet) - See calculations in table below
Single-Family Home	2.53	98	39
Multi-Family Unit in Large Building	0.85	33	39
Multi-Family Unit in Small Building	1.39	54	39
Mobile Home	1.06	41	39
Education	25.6	991	39
Food Sales	5.6	217	39
Food Service	5.6	217	39
Health Care Inpatient	241.4	9,346	39
Health Care Outpatient	10.4	403	39
Lodging	35.8	1,386	39
Retail (Other Than Mall)	9.7	376	39
Office	14.8	573	39
Public Assembly	14.2	550	39
Public Order and Safety	15.5	600	39
Religious Worship	10.1	391	39
Service	6.5	252	39
Warehouse and Storage	16.9	654	39
Other	21.9	848	39
Vacant	14.1	546	39

Section II: Pavement

All Types of Pavement			50

	Columns and Beams	Intermediate Floors	Exterior Walls	Windows	Interior Walls	Roofs		
Average GWP (lbs CO2e/sq ft): Vancouver, Low Rise Building	5.3	7.8	19.1	51.2	5.7	21.3		
Average Materials in a 2,272-square foot single family home	0.0	2269.0	3206.0	285.0	6050.0	3103.0	Total Embodied Emissions (MTCO2e)	Total Embodied Emissions (MTCO2e/ thousand sq feet)
MTCO2e	0.0	8.0	27.8	6.6	15.6	30.0	88.0	38.7

Sources

All data in black text — King County, DNRP. Contact: Matt Kuharic, matt.kuharic@kingcounty.gov

Residential floorspace per unit
2001 Residential Energy Consumption Survey (National Average, 2001)
Square footage measurements and comparisons
http://www.eia.doe.gov/emeu/recs/sqft-measure.html

Floorspace per building
EIA, 2003 Commercial Buildings Energy Consumption Survey (National Average, 2003)
Table C3. Consumption and Gross Energy Intensity for Sum of Major Fuels for Non-Mall Buildings, 2003
http://www.eia.doe.gov/emeu/cbecs/cbecs2003/detailed_tables_2003/2003set9/2003excel/c3.xls

Average GWP (lbs CO2e/sq ft): Vancouver, Low Rise Building
Athena EcoCalculator
Athena Assembly Evaluation Tool v2.3- Vancouver Low Rise Building
Assembly Average GWP (kg) per square meter
http://www.athenasmi.ca/tools/ecoCalculator/index.html
Lbs per kg 2.20
Square feet per square meter 10.76

Average Materials in a 2,272-square foot single family home
Buildings Energy Data Book: 7.3 Typical/Average Household
Materials Used in the Construction of a 2,272-Square-Foot Single-Family Home, 2000
http://buildingsdatabook.eren.doe.gov/?id=view_book_table&TableID=2036&t=xls
See also: NAHB, 2004 Housing Facts, Figures and Trends, Feb. 2004, p. 7.

Average window size
Energy Information Administration/Housing Characteristics 1993
Appendix B, Quality of the Data. Pg. 5.
ftp://ftp.eia.doe.gov/pub/consumption/residential/rx93hcf.pdf

Pavement Emissions Factors
MTCO2e/thousand square feet of asphalt
or concrete pavement 50 (see below)

Embodied GHG Emissions……Worksheet Background Information

Buildings
Embodied GHG emissions are emissions that are created through the extraction, processing, transportation, construction and disposal of building materials as well as emissions created through landscape disturbance (by both soil disturbance and changes in above ground biomass).

Estimating embodied GHG emissions is new field of analysis; the estimates are rapidly improving and becoming more inclusive of all elements of construction and development.

The estimate included in this worksheet is calculated using average values for the main construction materials that are used to create a typical family home. In 2004, the National Association of Home Builders calculated the average materials that are used in a typical 2,272 square foot single-family household. The quantity of materials used is then multiplied by the average GHG emissions associated with the life-cycle GHG emissions for each material.

This estimate is a rough and conservative estimate; the actual embodied emissions for a project are likely to be higher. For example, at this stage, due to a lack of comprehensive data, the estimate does not include important factors such as landscape disturbance or the emissions associated with the interior components of a building (such as furniture).

King County realizes that the calculations for embodied emissions in this worksheet are rough. For example, the emissions associated with building 1,000 square feet of a residential building will not be the same as 1,000 square feet of a commercial building. However, discussions with the construction community indicate that while there are significant differences between the different types of structures, this method of estimation is reasonable; it will be improved as more data become available.

Additionally, if more specific information about the project is known, King County recommends two online embodied emissions calculators that can be used to obtain a more tailored estimate for embodied emissions: www.buildcarbonneutral.org and www.athenasmi.ca/tools/ecoCalculator/.

Pavement
Four recent life cycle assessments of the environmental impacts of roads form the basis for the per unit embodied emissions of pavement. Each study is constructed in slightly different ways; however, the aggregate results of the reports represent a reasonable estimate of the GHG emissions that are created from the manufacture of paving materials, construction related emissions, and maintenance of the pavement over its expected life cycle. For specifics, see the worksheet.

Special Section: Estimating the Embodied Emissions for Pavement

Four recent life cycle assessments of the environmental impacts of roads form the basis for the per unit embodied emissions of pavement. Each study is constructed in slightly different ways; however, the aggregate results of the reports represent a reasonable estimate of the GHG emissions that are created from the manufacture of paving materials, construction related emissions, and maintenance of the pavement over its expected life cycle.

The results of the studies are presented in different units and measures; considerable effort was undertaken to be able to compare the results of the studies in a reasonable way. For more details about the below methodology, contact matt.kuharic@kingcounty.gov.

The four studies, Meil (2001), Park (2003), Stripple (2001) and Treolar (2001) produced total GHG emissions of 4-34 MTCO2e per thousand square feet of finished paving (for similar asphalt and concrete based pavements). This estimate does not including downstream maintenance and repair of the highway. The average (for all concrete and asphalt pavements in the studies, assuming each study gets one data point) is ~17 MTCO2e/thousand square feet.

Three of the studies attempted to thoroughly account for the emissions associated with long term maintenance (40 years) of the roads. Stripple (2001), Park et al. (2003) and Treolar (2001) report 17, 81, and 68 MTCO2e/thousand square feet, respectively, after accounting for maintenance of the roads.

Based on the above discussion, King County makes the conservative estimate that 50 MTCO2e/thousand square feet of pavement (over the development's life cycle) will be used as the embodied emission factor for pavement until better estimates can be obtained. This is roughly equivalent to 3,500 MTCO2e per lane mile of road (assuming the lane is 13 feet wide).

It is important to note that these studies estimate the embodied emissions for roads. Paving that does not need to stand up to the rigors of heavy use (such as parking lots or driveways) would likely use less materials and hence have lower embodied emissions.

Sources:

Meil, J. A Life Cycle Perspective on Concrete and Asphalt Roadways: Embodied Primary Energy and Global Warming Potential. 2006. Available: http://www.cement.ca/cement.nsf/eee9ec7bbd630126852566c40052107b/6ec79dc8ae03a782852572b90061b914/$FILE/ATTK0WE3/athena%20report%20Feb.%202%202007.pdf

Park, K, Hwang, Y., Seo, S., M.ASCE, and Seo, H. , "Quantitative Assessment of Environmental Impacts on Life Cycle of Highways," Journal of Construction Engineering and Management , Vol 129, January/February 2003, pp 25-31, (DOI: 10.1061/(ASCE)0733-9364(2003)129:1(25)).

Stripple, H. Life Cycle Assessment of Road. A Pilot Study for Inventory Analysis. Second Revised Edition. IVL Swedish Environmental Research Institute Ltd. 2001. Available: http://www.ivl.se/rapporter/pdf/B1210E.pdf

Treloar, G., Love, P.E.D., and Crawford, R.H. Hybrid Life-Cycle Inventory for Road Construction and Use. Journal of Construction Engineering and Management. P. 43-49. January/February 2004.

Energy Emissions Worksheet

Type (Residential) or Principal Activity (Commercial)	Energy consumption per building per year (million Btu)	Carbon Coefficient for Buildings	MTCO2e per building per year	Floorspace per Building (thousand square feet)	MTCE per thousand square feet per year	MTCO2e per thousand square feet per year	Average Building Life Span	Lifespan Energy Related MTCO2e emissions per unit	Lifespan Energy Related MTCO2e emissions per thousand square feet
Single-Family Home	107.3	0.108	11.61	2.53	4.6	16.8	57.9	672	266
Multi-Family Unit in Large Building	41.0	0.108	4.44	0.85	5.2	19.2	80.5	357	422
Multi-Family Unit in Small Building	78.1	0.108	8.45	1.39	6.1	22.2	80.5	681	489
Mobile Home	75.9	0.108	8.21	1.06	7.7	28.4	57.9	475	448
Education	2,125.0	0.124	264.2	25.6	10.3	37.8	62.5	16,526	646
Food Sales	1,110.0	0.124	138.0	5.6	24.6	90.4	62.5	8,632	1,541
Food Service	1,436.0	0.124	178.5	5.6	31.9	116.9	62.5	11,168	1,994
Health Care Inpatient	60,152.0	0.124	7,479.1	241.4	31.0	113.6	62.5	467,794	1,938
Health Care Outpatient	985.0	0.124	122.5	10.4	11.8	43.2	62.5	7,660	737
Lodging	3,578.0	0.124	444.9	35.8	12.4	45.6	62.5	27,826	777
Retail (Other Than Mall)	720.0	0.124	89.5	9.7	9.2	33.8	62.5	5,599	577
Office	1,376.0	0.124	171.1	14.8	11.6	42.4	62.5	10,701	723
Public Assembly	1,338.0	0.124	166.4	14.2	11.7	43.0	62.5	10,405	733
Public Order and Safety	1,791.0	0.124	222.7	15.5	14.4	52.7	62.5	13,928	899
Religious Worship	440.0	0.124	54.7	10.1	5.4	19.9	62.5	3,422	339
Service	501.0	0.124	62.3	6.5	9.6	35.1	62.5	3,896	599
Warehouse and Storage	764.0	0.124	95.0	16.9	5.6	20.6	62.5	5,942	352
Other	3,600.0	0.124	447.6	21.9	20.4	74.9	62.5	27,997	1,278
Vacant	294.0	0.124	36.6	14.1	2.6	9.5	62.5	2,286	162

Sources

All data in black text — King County, DNRP. Contact: Matt Kuharic, matt.kuharic@kingcounty.gov

Energy consumption for residential buildings

2007 Buildings Energy Data Book: 6.1 Quad Definitions and Comparisons (National Average, 2001)
Table 6.1.4: Average Annual Carbon Dioxide Emissions for Various Functions
http://buildingsdatabook.eren.doe.gov/
Data also at: http://www.eia.doe.gov/emeu/recs/recs2001_ce/ce1-4c_housingunits2001.html

Energy consumption for commercial buildings and Floorspace per building

EIA, 2003 Commercial Buildings Energy Consumption Survey (National Average, 2003)
Table C3. Consumption and Gross Energy Intensity for Sum of Major Fuels for Non-Mall Buildings, 2003
http://www.eia.doe.gov/emeu/cbecs/cbecs2003/detailed_tables_2003/2003set9/2003excel/c3.xls

Note: Data in plum color is found in both of the above sources (buildings energy data book and commercial buildings energy consumption survey).

Carbon Coefficient for Buildings

Buildings Energy Data Book (National average, 2005)
Table 3.1.7. 2005 Carbon Dioxide Emission Coefficients for Buildings (MMTCE per Quadrillion Btu)
http://buildingsdatabook.eere.energy.gov/?id=view_book_table&TableID=2057
Note: Carbon coefficient in the Energy Data book is in MTCE per Quadrillion Btu.
To convert to MTCO2e per million Btu, this factor was divided by 1000 and multiplied by 44/12.

Residential floorspace per unit

2001 Residential Energy Consumption Survey (National Average, 2001)
Square footage measurements and comparisons
http://www.eia.doe.gov/emeu/recs/sqft-measure.html

average lief span of buildings,
estimated by replacement time method

	Single Family Homes	Multi-Family Units in Large and Small Buildings	All Residential Buildings	
New Housing Construction, 2001	1,273,000	329,000	1,602,000	
Existing Housing Stock, 2001	73,700,000	26,500,000	100,200,000	
Replacement time:	57.9	80.5	62.5	(national average, 2001)

Note: Single family homes calculation is used for mobile homes as a best estimate life span.
Note: At this time, KC staff could find no reliable data for the average life span of commercial buildings.
Therefore, the average life span of residential buildings is being used until a better approximation can be ascertained.

Sources:

New Housing Construction, 2001
Quarterly Starts and Completions by Purpose and Design - US and Regions (Excel)
http://www.census.gov/const/quarterly_starts_completions_cust.xls
See also: http://www.census.gov/const/www/newresconstindex.html

Existing Housing Stock, 2001
Residential Energy Consumption Survey (RECS) 2001
Tables HC1:Housing Unit Characteristics, Million U.S. Households 2001
Table HC1-4a. Housing Unit Characteristics by Type of Housing Unit, Million U.S. Households, 2001
Million U.S. Households, 2001
http://www.eia.doe.gov/emeu/recs/recs2001/hc_pdf/housunits/hc1-4a_housingunits2001.pdf

Transportation Emissions Worksheet

Type (Residential) or Principal Activity (Commercial)	# people/ unit or building	# thousand sq feet/ unit or building	# people or employees/ thousand square feet	vehicle related GHG emissions (metric tonnes CO2e per person per year)	MTCO2e/ year/ unit	MTCO2e/ year/ thousand square feet	Average Building Life Span	Life span transportation related GHG emissions (MTCO2e/ per unit)	Life span transportation related GHG emissions (MTCO2e/ thousand sq feet)
Single-Family Home	2.8	2.53	1.1	4.9	13.7	5.4	57.9	792	313
Multi-Family Unit in Large Building	1.9	0.85	2.3	4.9	9.5	11.2	80.5	766	904
Multi-Family Unit in Small Building	1.9	1.39	1.4	4.9	9.5	6.8	80.5	766	550
Mobile Home	2.5	1.06	2.3	4.9	12.2	11.5	57.9	709	668
Education	30.0	25.6	1.2	4.9	147.8	5.8	62.5	9247	361
Food Sales	5.1	5.6	0.9	4.9	25.2	4.5	62.5	1579	282
Food Service	10.2	5.6	1.8	4.9	50.2	9.0	62.5	3141	561
Health Care Inpatient	455.5	241.4	1.9	4.9	2246.4	9.3	62.5	140506	582
Health Care Outpatient	19.3	10.4	1.9	4.9	95.0	9.1	62.5	5941	571
Lodging	13.6	35.8	0.4	4.9	67.1	1.9	62.5	4194	117
Retail (Other Than Mall)	7.8	9.7	0.8	4.9	38.3	3.9	62.5	2394	247
Office	28.2	14.8	1.9	4.9	139.0	9.4	62.5	8696	588
Public Assembly	6.9	14.2	0.5	4.9	34.2	2.4	62.5	2137	150
Public Order and Safety	18.8	15.5	1.2	4.9	92.7	6.0	62.5	5796	374
Religious Worship	4.2	10.1	0.4	4.9	20.8	2.1	62.5	1298	129
Service	5.6	6.5	0.9	4.9	27.6	4.3	62.5	1729	266
Warehouse and Storage	9.9	16.9	0.6	4.9	49.0	2.9	62.5	3067	181
Other	18.3	21.9	0.8	4.9	90.0	4.1	62.5	5630	257
Vacant	2.1	14.1	0.2	4.9	10.5	0.7	62.5	657	47

Sources

All data in black text — King County, DNRP. Contact: Matt Kuharic, matt.kuharic@kingcounty.gov

people/ unit

Estimating Household Size for Use in Population Estimates (WA state, 2000 average)
Washington State Office of Financial Management
Kimpel, T. and Lowe, T. Research Brief No. 47. August 2007
http://www.ofm.wa.gov/researchbriefs/brief047.pdf
Note: This analysis combines Multi Unit Structures in both large and small units into one category;
the average is used in this case although there is likely a difference

Residential floorspace per unit

2001 Residential Energy Consumption Survey (National Average, 2001)
Square footage measurements and comparisons
http://www.eia.doe.gov/emeu/recs/sqft-measure.html

employees/thousand square feet

Commercial Buildings Energy Consumption Survey commercial energy uses and costs (National Median, 2003)
Table B2 Totals and Medians of Floorspace, Number of Workers, and Hours of Operation for Non-Mall Buildings, 2003
http://www.eia.doe.gov/emeu/cbecs/cbecs2003/detailed_tables_2003/2003set1/2003excel/b2.xls

Note: Data for # employees/thousand square feet is presented by CBECS as square feet/employee.
In this analysis employees/thousand square feet is calculated by taking the inverse of the CBECS number and multiplying by 1000.

vehicle related GHG emissions

Estimate calculated as follows (Washington state, 2006)_

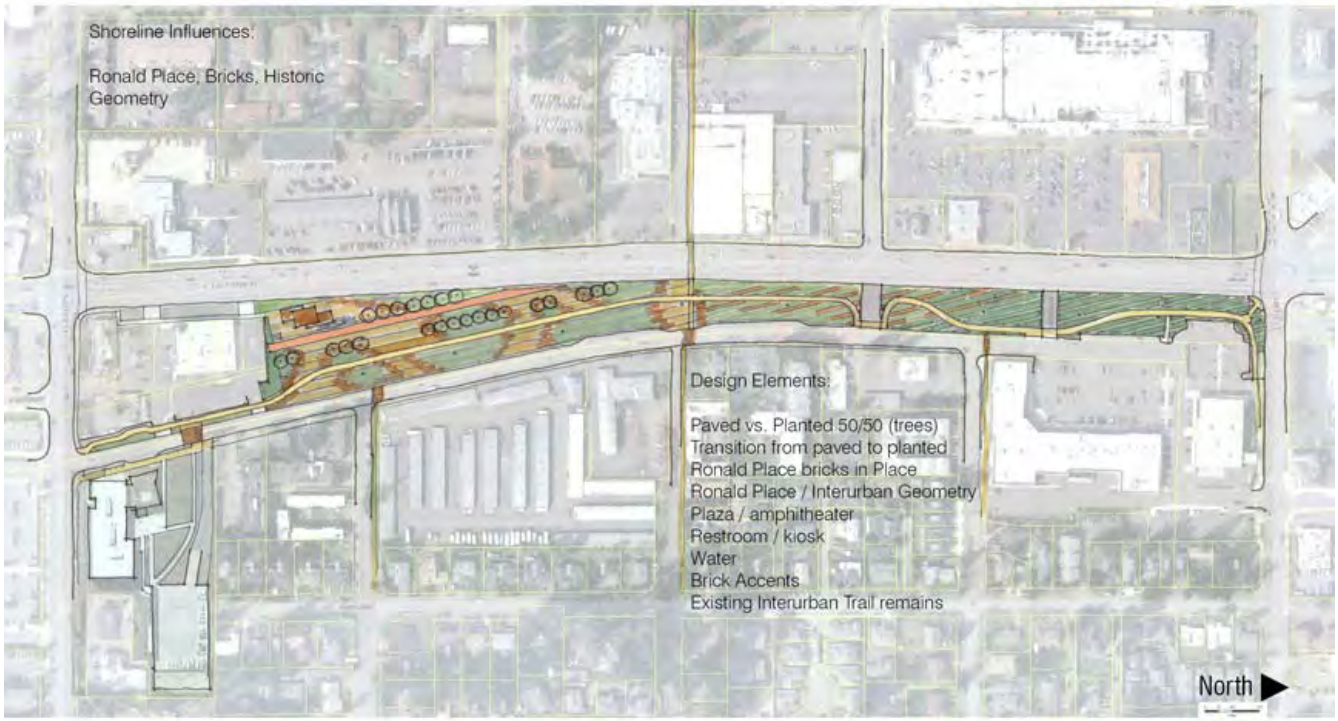
56,531,930,000	2006 Annual WA State Vehicle Miles Traveled	
		Data was daily VMT. Annual VMT was 365*daily VMT.
		http://www.wsdot.wa.gov/mapsdata/tdo/annualmileage.htm
6,395,798	2006 WA state population	
		http://quickfacts.census.gov/qfd/states/53000.html
8839	vehicle miles per person per year	
0.0506	gallon gasoline/mile	
		This is the weighted national average fuel efficiency for all cars and 2 axle, 4 wheel light trucks in 2005. This includes pickup trucks, vans and SUVs. The 0.051 gallons/mile used here is the inverse of the more commonly known term “miles/per gallon” (which is 19.75 for these cars and light trucks).
		Transportation Energy Data Book. 26th Edition. 2006. Chapter 4: Light Vehicles and Characteristics. Calculations based on weighted average MPG efficiency of cars and light trucks.
		http://cta.ornl.gov/data/tedb26/Edition26_Chapter04.pdf
		Note: This report states that in 2005, 92.3% of all highway VMT were driven by the above described vehicles.
		http://cta.ornl.gov/data/tedb26/Spreadsheets/Table3_04.xls
24.3	lbs CO2e/gallon gasoline	
		The CO2 emissions estimates for gasoline and diesel include the extraction, transport, and refinement of petroleum as well as their combustion.
		Life-Cycle CO2 Emissions for Various New Vehicles. RENew Northfield.
		Available: http://renewnorthfield.org/wpcontent/uploads/2006/04/CO2%20emissions.pdf
		Note: This is a conservative estimate of emissions by fuel consumption because diesel fuel,
2205		with a emissions factor of 26.55 lbs CO2e/gallon was not estimated.
4.93	lbs/metric tonne	
	vehicle related GHG emissions (metric tonnes CO2e per person per year)	

average lief span of buildings, estimated by replacement time method — See Energy Emissions Worksheet for Calculations

Commercial floorspace per unit — EIA, 2003 Commercial Buildings Energy Consumption Survey (National Average, 2003)
Table C3. Consumption and Gross Energy Intensity for Sum of Major Fuels for Non-Mall Buildings, 2003
http://www.eia.doe.gov/emeu/cbecs/cbecs2003/detailed_tables_2003/2003set9/2003excel/c3.xls

Appendix B - Park at Town Center Design Alternatives

SHORELINE REFLECTION



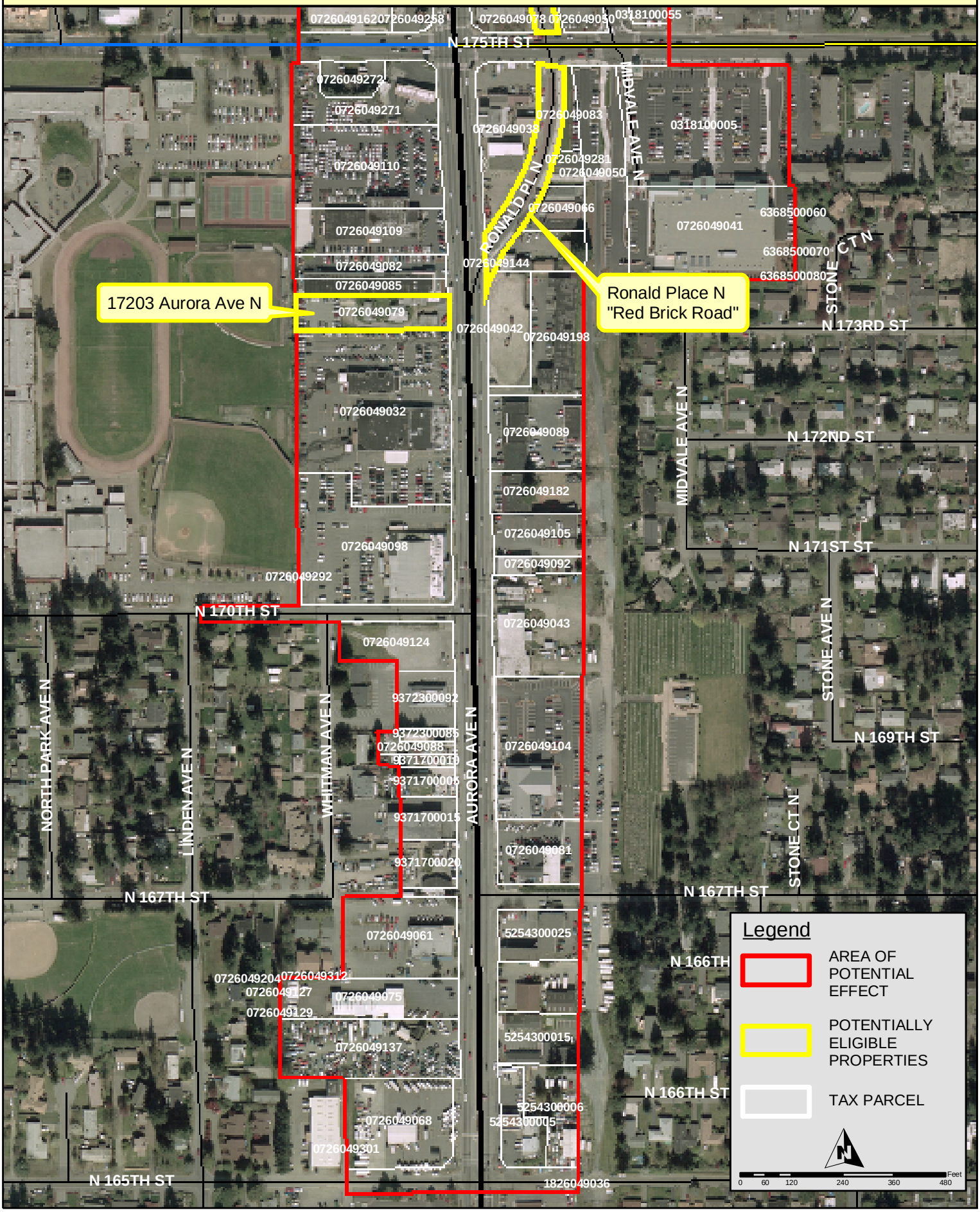
TOWN CENTER PARK

CITY OF SHORELINE

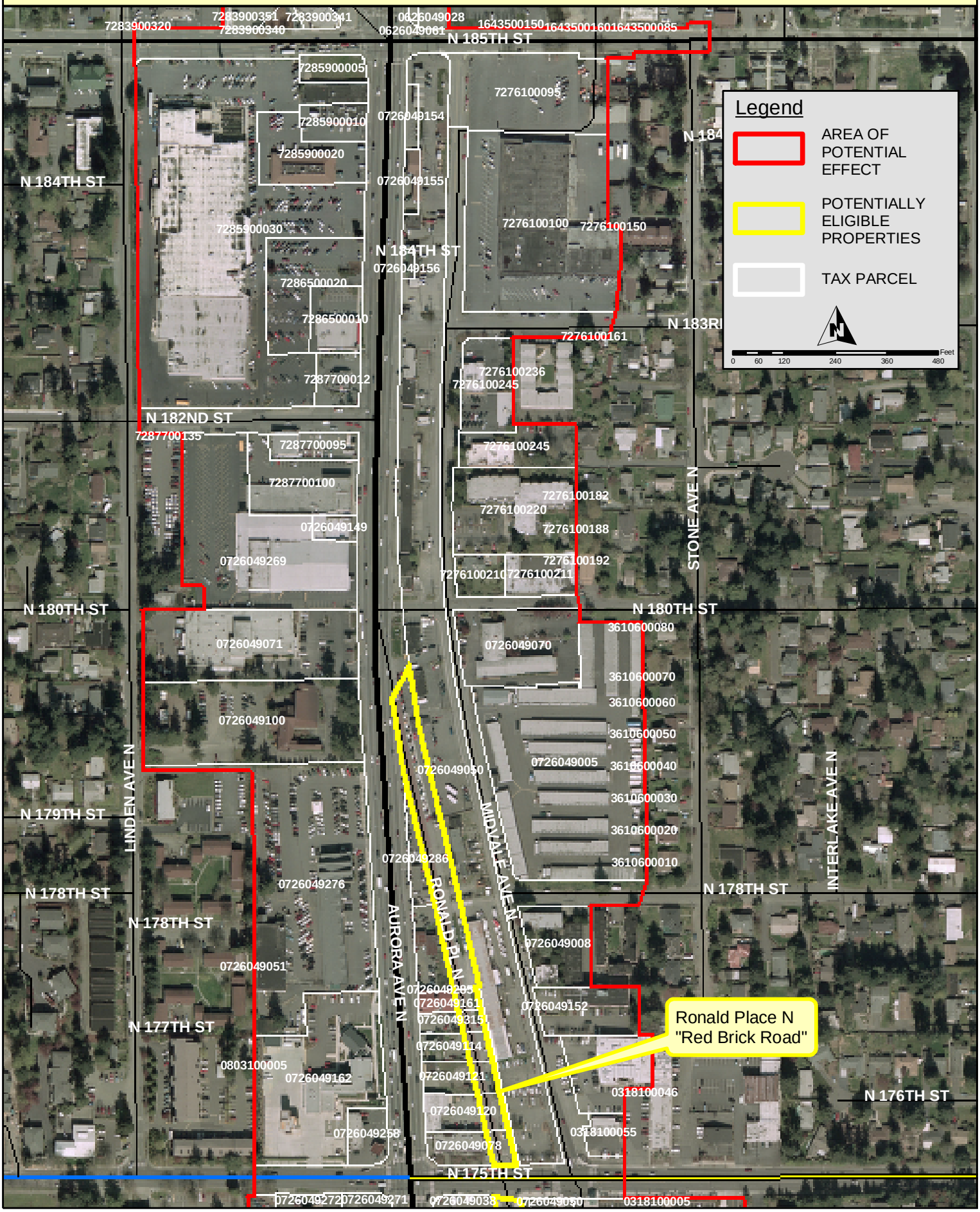
The Berger Partnership PS
Landscape Architecture


SHORELINE CENTER STAGE
Shoreline Influences:
Edge to Edge (shore to shore),
Neighborhood representation
(14 nodes with art and events)
Design Elements:
Paved vs. Planted 80/20
Ronald Place bricks essence
Stage / Grand plaza (water when not in use)
Restroom
Interurban / walk share
Brick accents
Flexibility
Organic series of spaces
City Hall Market
Midvale greening
North
TOWN CENTER PARK
CITY OF SHORELINE
The Berger Partnership PS
Landscape Architecture

Appendix C: Tax Parcel Numbers & Potentially Eligible Properties
Map #1: N 165th Street to N 175th Street



Appendix C: Tax Parcel Numbers & Potentially Eligible Properties
Map #2: N 175th Street to N 185th Street



Appendix D- Distribution List

SEPA Unit
Department of Ecology
PO Box 47703
Olympia, WA 98504-7703

Puget Sound Regional Council
1011 Western Ave., Suite 500
Seattle, WA 98104-1035

Seattle City Light
Laurie Geissinger, SEPA Official
700 – 5th Ave., Suite 3300
PO Box 34023
Seattle, WA 980124-4023

Attorneys for Thornton Creek Legal Defense Fund: Paul A Kampmeier
Smith & Lowney, PLLC
2317 East John Street
Seattle, WA 98112

Capital Projects Director
Shoreline School District
18560 – 1st Ave NE
Shoreline, WA 98155

Gary Kriedt, Sr Envir. Planner
King County Transit Division
Envir. Planning & Real Estate
201 S Jackson St, MS KSC-TR-0431
Seattle, WA 98104-3855

SEPA Responsible Official
Seattle/King County Health Dept.
401 5th Ave #1100
Seattle, WA 98104-1818

Steve Deem, PE
NW Drinking Water Operations
20435 – 72nd Ave S, #200, K17-12
Kent, WA 98032-2358

Ginger Holser (Freshwater)
Laura Arber (Saltwater)
Department of Fish and Wildlife
16018 Mill Creek Blvd
Mill Creek, WA 98012

National Marine Fisheries Service
7600 Sand Point Way NE
Seattle, WA 98115-0070

Attn: Sam Wentz
WA State Dept. of Commerce
PO Box 48350
Olympia, WA 98504-8350

SEPA Coordinator
Seattle Public Utilities
700 5th Avenue, Suite 4900
PO Box 34018
Seattle, WA 98124-4018

Michael U. Derrick, General Manager
Ronald Wastewater District
PO Box 33490
Shoreline, WA 98133

CleanScapes, Inc.
Attn: Chief Operating Officer
5939 – 4th Ave S
Seattle, WA 98108

Dept of Community Development
Attn: SEPA Responsible Official
City of Lynnwood
19100 – 44th Ave W
Lynnwood, WA 98046

Attn: Dale Morimoto
Department of Transportation
15700 Dayton Ave N
PO Box 330310
Shoreline, WA 98133

SEPA Responsible Official
Puget Sound Clean Air Agency
1904 – 3rd Ave, Suite 105
Seattle, WA 98101

Parks and Recreation Commission
7150 Clean Water Lane, KV-11
Olympia, WA 98504

US Army Corps of Engineers
Seattle District/OD-RG
PO Box C-3755
Seattle, WA 98124

KC Office of Business Relations
& Economic Development
Attn: Historic Preservation Officer
400 Yesler Way Suite #510
Seattle, WA 98104-2583

DNR SEPA Center
PO Box 47015
Olympia, WA 98504-7015

Stu Turner, District Manager
Shoreline Water District
PO Box 55367
Shoreline, WA 98155-0367

Comcast Cable
Attn: Gary Cook
1525 – 75th St SW #200
Everett, WA 98203

Shoreline Fire Department
Attn: Chief Marcus Kragness
17525 Aurora Ave N
Shoreline, WA 98133

Perry Weinberg, SEPA Resp. Official
Sound Transit
401 S Jackson St
Seattle, WA 98104

Thornton Creek Alliance
PO Box 25690
Seattle, WA 98104

Environmental Planning-OAP
KC Wastewater Treatment Division
201 S Jackson St, MS KSC-NR-0505
Seattle, WA 98104-3855

Kelly Cooper
Department of Health
Environmental Health Division
PO Box 47820
Olympia, WA 98504-7820

Donna J Bunten, Critical Area Coord.
Shorelands, Environ. Assistance Prgm
State of Washington DOE
PO Box 47600
Olympia, WA 98504-7600

Paramount Park Neighborhood Group
c/o Janet Way
940 NE 147th Street
Shoreline, WA 98155

Snohomish County Planning Dept
Attn: Clay White
1st Floor, Courthouse
Everett, WA 98201

SEPA Responsible Official
City of Lake Forest Park
17425 Ballinger Way NE
Lake Forest Park, WA 98155

DPD City of Seattle
700 – 5th Ave, Suite 200
PO Box 34019
Seattle, WA 98124-4019

City of Edmonds
121 – 5th Ave N
Edmonds, WA 98020

City of Mountlake Terrace
Attn: SEPA Responsible Official
23024 – 58th Ave W
Mountlake Terrace, WA 98043

Department of Community Development
Attn: SEPA Responsible Official
City of Bothell
18305 – 101st Ave NE
Bothell, WA 98011

Town of Woodway
Attn: City Clerk
23920 – 113th Pl W
Woodway, WA 98020

King County DDES
Attn: Greg Borba, SEPA Official
900 Oaksdale Ave, Land Use Div.
Renton, WA 98055

Attn: Karen Walter
Muckleshoot Indian Tribe
39015 – 172nd Ave SE
Auburn, WA 98092

Tulalip Tribal Council
Attn: Peter Mills
6700 Totem Beach Road
Marysville, WA 98270

Tulalip Natural Resources
Attn: SEPA Responsible Official
6406 Marine Drive
Marysville, WA 98271

Department of Community Development
Attn: SEPA Responsible Official
PO Box 82607
Kenmore, WA 98028-0607