City of Federal Way
City Center Planned Action Draft EIS

Prepared for:

CITY OF Federal Way

Prepared by:

Jones & Stokes

June 2006

Fact Sheet

Project Title

City of Federal Way City Center Planned Action

Proposed Action and Alternatives

Proposed Action

The action proposed by the City of Federal Way consists of the following related actions by the City of Federal Way City Council:

1. Adoption of an ordinance designating a portion of the City Center sub-area as a planned action for the purposes of State Environmental Policy Act (SEPA) compliance, pursuant to RCW 43.21C.031(2)(a) and WAC 197-11-164. The planned action designation would apply to proposed residential, retail, office, hotel, civic, and structured parking development falling within the development envelope analyzed in this EIS.

   Two action alternatives (Alternatives 1 and 2) assume the comparable development levels but distribute growth differently. Alternative 1 assumes that growth is focused around South 320th Street. Alternative 2 distributes future growth more evenly around the project area.

2. Adoption of a new height of structure standard for multi-unit housing in the City Center Core (CC-C), including area outside of the planned action project area.

No Planned Action Alternative

The No Action Alternative (Alternative 3) assumes the level and distribution of growth established in the Comprehensive Plan. The existing standard for height of multi-unit structures in the City Center Core zone would continue unchanged.

Comprehensive Plan EIS

The City of Federal Way completed an Environmental Impact Statement (EIS) on the City's GMA Comprehensive Plan and Development Regulations in 1995. This Planned Action EIS incorporates by reference the analysis contained in the 1995 Comprehensive Plan EIS as it relates to the City Center sub-area.

Location

The planned action project area is located in the City Center of the City of Federal Way, bounded on the north by South 312th Street; on the south by South 324th Street; on the west by

Pacific Highway South and on the east by 23rd Avenue South. The proposed Zoning Code amendment would apply to the entire City Center Core zoning designation.

Proponent

City of Federal Way

Date of Implementation

2006, with phased development following necessary permit approvals

Lead Agency

City of Federal Way

Responsible Official

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Required Approvals

- Planned Action Designation and Ordinance Adoption
- Adoption of Zoning Code Amendment for Multi-Unit Residential Structures in the City Center Core Zone

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Public Comment

Affected agencies, tribes, and members of the public are invited to comment on this Draft EIS. Comments may be provided in writing or verbally. Written comments should be directed to the contact person address identified above or may be submitted electronically to patrickd@cityoffederalway.com

During the comment period, a public meeting regarding the DEIS will be held on July 13 2006, 5:00 PM, Council Chambers, Federal Way City Hall, 33325 8th Ave S, Federal Way, WA 98063-9718.

Date of Draft EIS Issuance

June 26, 2006

Date Comments Due

July 25, 2006

Draft EIS Purchase Price

Paper and CD copies may be purchased at FedEx Kinko's Office and Print Center, 31823 Gateway Center Blvd S, Federal Way. The approximate cost of a black and white paper copy of the Draft EIS is estimated as follows:

Draft EIS	$12.00
Appendices	$33.00
Total	$45.00

CD copies are also available for approximately $10.00

Previous Environmental Documents

City of Federal Way Comprehensive Plan EIS, including the following documents;

CityShape From Vision to Plan Comprehensive Plan Draft EIS, issued November 19, 1993

City of Federal Way Comprehensive Plan & Development Regulations Final EIS, issued July 1995

Development Regulations to Implement the Federal Way Comprehensive Plan EIS Addendum, issued June 1995

Location of Background Information

City of Federal Way Community Development Services Department. See Lead Agency and Responsible Official Address listed above.

City of Federal Way
City Center Planned Action Draft EIS

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Table of Contents

Chapter 1 **Summary** **1-1**
1.1 Introduction 1-1
1.2 Proposed Action and Location 1-1
Proposed Action 1-1
Location 1-1
1.3 Description of Alternatives 1-2
Alternative 1 1-2
Alternative 2 1-2
Alternative 3 (No Action) 1-2
1.4 Summary of Potential Impacts and Mitigation Measures 1-2
Introduction 1-2
1.5 Issues to Be Resolved 1-2
1.6 Significant Unavoidable Adverse Impacts 1-2

Chapter 2 **Description of the Proposal and Alternatives** **2-1**
2.1 Introduction 2-1
Overview of the Proposed Action 2-1
Background 2-3
Objectives of the Proposal 2-6
2.2 Planning Process 2-6
Growth Management Act 2-6
City of Federal Way Comprehensive Plan 2-7
Development Regulations 2-7
2.3 Planned Action Process 2-8
Planned Action Overview 2-8
Planned Action EIS 2-9
Planned Action Ordinance 2-9
2.4 Environmental Review 2-9
Comprehensive Plan EIS 2-9
Scope of Review 2-10
2.5 Proposed Action and Alternatives 2-10
Overview 2-10
Alternative 1 2-11
Alternative 2 2-14
Alternative 3 2-15
2.6 Benefits and Disadvantages of Delaying Proposed Action 2-16
2.7 Major Issues to be Resolved 2-16

Chapter 3 **Affected Environment, Impacts and Mitigation Measures** **3-1**
3.1 Air Quality 3-1
Affected Environment 3-1

Impacts 3-3
Mitigation Measures 3-8
Significant Unavoidable Adverse Impacts 3-8
3.2 Land Use 3-9
Affected Environment 3-9
Impacts 3-20
Mitigation Measures 3-24
Significant Unavoidable Adverse Impacts 3-24
3.3 Aesthetics, Light and Glare 3-24
Affected Environment 3-24
Impacts 3-39
Mitigation Measures 3-44
Significant Unavoidable Adverse Impacts 3-44
3.4 Transportation 3-44
Affected Environment 3-44
Impacts 3-53
Mitigation 3-67
Significant Unavoidable Adverse Impacts 3-75
3.5 Public Services 3-75
Affected Environment 3-76
Impacts 3-79
Mitigation Measures 3-81
Significant Unavoidable Adverse Impacts 3-81
3.6 Utilities 3-81
Affected Environment 3-81
Impacts 3-86
Mitigation Measures 3-88
Significant Unavoidable Adverse Impacts 3-89

Chapter 4 **References 4-1**
4.1 Printed References 4-1
4.2 Personal Communications 4-2

List of Appendices

Appendix 1. Distribution List

Appendix 2. Transportation Impact Analysis

Appendix 3. SEPA Environmental Checklist

List of Tables

Table 1-1. Summary of Potential Impacts of Proposed Action and No Action Alternative 1-3
Table 2-1. Planned Action Development Envelope 2-1
Table 2-2. Alternative 1 (South 320th Street Focus) Development through 2009 2-11
Table 2-3. Alternative 1 (South 320th Street Focus) 2010 - 2014.....2-14
Table 2-4. Alternative 2 (Distributed Development) Development through 2009.....2-14
Table 2-5. Alternative 2 (Distributed Development) 2010 – 2014 2-15
Table 2-6. Alternative 3 (No Action) Development through 2009 2-15
Table 2-7. Alternative 3 (No Action) 2010–2014.....2-16
Table 3-1. National and State of Washington Ambient Air Quality Standards 3-2
Table 3-2. Modeled 1-Hour CO Concentrations (Year 2009 Alternative 1) 3-7
Table 3-3. Existing Development Planned Action Project Area 3-9
Table 3-4. Block 1, Sample Commercial Areas Building Footprint and Lot Area Ratios.....3-10
Table 3-5. Block 2, Sample Commercial Areas Building Footprint and Lot Area Ratios.....3-10
Table 3-6. Vacant and Redevelopable Land Summary 3-14
Table 3-7. City Center Core Permitted Uses and Development Standards.....3-17
Table 3-8. City Center Frame Permitted Uses and Development Standards 3-18
Table 3-9. Population and Employment Densities 3-19
Table 3-10. Project Area Employment (# of FTEs) 3-20
Table 3-11. Alternatives 1 and 2 Population and Employment Projections 3-21
Table 3-12. Alternative 3 Population and Employment Projections 3-24
Table 3-13. Study Intersections 3-45
Table 3-14. Level of Service Definitions 3-46
Table 3-15. 2004 Intersection Operations PM Peak, AM Peak, and Saturday Peak.....3-47
Table 3-16. Existing Parking Requirements.....3-49
Table 3-17. 2000-2002 Intersection Collision Rates 3-50
Table 3-18. 2000-2002 Corridor Collision Rates.....3-50
Table 3-19. 2005-2010 Transportation Improvement Program.....3-51
Table 3-20. Summary of Peak Hour Trip Generation for Federal Way City Center (2004–2009) 3-54
Table 3-21. Summary of Trip Generation for Federal Way City Center (2010–2014).....3-55

Table 3-22. 2009 Alternative 1 Intersection Operations....3-56
Table 3-23. Alternative 1 Parking Requirement....3-57
Table 3-24. 2009 Alternative 2 Intersection Operations....3-60
Table 3-25. 2009 Traffic Operations No Action (Alternative 3)....3-64
Table 3-26. Parking Requirement for Alternative 3....3-65
Table 3-27. Mitigation Cost Assumptions....3-67
Table 3-28. PM Peak Hour 2009 Mitigation....3-69
Table 3-29. Saturday Peak Hour 2009 Mitigation....3-70
Table 3-30. Intersection Operations by Peak Hour with Mitigation....3-70
Table 3-31. Calls for Service in City Center Project Area....3-77
Table 3-32. Traffic Enforcement Activity 2005....3-77
Table 3-33. Stations 62 and 64 Fire and EMS Calls for Service 2005....3-78
Table 3-34. Water and Sewer Service Demand Estimates....3-82
Table 3-35. Water and Sewer Demand Estimates by Alternative....3-87

List of Figures

Figure 1. City Center Sub Area 2-2
Figure 2. City Center Zoning Designations 2-4
Figure 3. Redevelopment Concepts 2-5
Figure 4. City Center Analysis Blocks 2-12
Figure 5. Overview of Alternatives 2-13
Figure 6. Air Quality Analysis Locations 3-5
Figure 7. Vacant and Redevelopable Land 3-12
Figure 8. Comprehensive Plan Designations 3-16
Figure 9. Representative Retail Development 3-25
Figure 10. Typical Streetscape 3-26
Figure 11. Representative Internal Circulation Pattern 3-27
Figure 12. The Commons at Federal Way 3-28
Figure 13. Example Development Area Locations 3-31
Figure 14. Example Development Area 1 3-33
Figure 15. Example Development Area 2 3-34
Figure 16. Example Development Area 3 3-35
Figure 17. Example Development Area 4 3-36
Figure 18. Example Development Area 5 3-37
Figure 19. Example Development Area 6 3-38
Figure 20. Example Development Area 7 3-40
Figure 21. Aerial Sketch of Example Development Area 3-42

Chapter 1
Summary

1.1 Introduction

This chapter summarizes information contained in this Planned Action Environmental Impact Statement (EIS). It contains a summary of the alternatives, significant impacts, mitigation measures, and significant unavoidable adverse impacts. This summary is intentionally brief; the reader should consult individual sections of this EIS for detailed information concerning the affected environment, impacts and mitigation measures.

1.2 Proposed Action and Location

Proposed Action

The Proposed Action consist of two related elements:

- Adoption of an ordinance designating a portion of the City Center sub-area as a "planned action" for the purposes of State Environmental Policy Act (SEPA) compliance, pursuant to RCW 43.21C.031(2)(a) and WAC 197-11-164. The planned action would apply to residential, retail, office, lodging, civic and structured parking development projects falling within the development envelope and project area analyzed in this EIS. The planned action designation would apply to development that occurs through 2014.

  This action may also include procedural text amendments to the Federal Way Municipal Code (FWMC) Chapter 22 (Zoning Code) to recognize the Planned Action designation and process. These changes are not expected to have an environmental impact and are not discussed further in this EIS.

- Adoption of a new structure height standard for multi-unit housing in the City Center Core zoning designation in the City Center sub-area.

Location

The City Center project area is located within the City of Federal Way; bounded on the south by South 324th Street; on the north by South 312th Street; on the west by Pacific Highway South; and on the east by 23rd Avenue South.

For the purpose of this EIS the planned action project area has been divided into three smaller analysis areas, referred to as Blocks 1, 2 and 3:

- Block 1 consists of the northern portion of the project area and is bounded on the north by S 312th Street, on the west by Pacific Highway South, on the south by South 316th Street and on the east by 23rd Avenue S;
- Block 2 is located in the central portion of the project area and is bounded on the north by S 316th Street, on the west by Pacific Highway South, on the south by S 320th Street and on the east by 23rd Avenue S.; and
- Block 3 located in the southern portion of the project area and consists mainly of The Commons at Federal Way. Block 3 is bounded on the north by S 320th Street, on the west by Pacific Highway South, on the south by S 324th Street and on the east by 23rd Avenue S.

The proposed change to the height standard for multi-unit residential structures would apply to all area within the City-Center Core zone. This area is generally bounded by Pacific Highway South on the west, South 324th Street on the south, Interstate 5 on the east and South 316th and 317th streets on the north.

1.3 Description of Alternatives

Alternative 1

The proposed land use pattern would create a dense, mixed-use urban neighborhood within the City Center. Growth would be focused around South 320th Street, with 47% of the new growth occurring in Block 2 and 41% in Block 3. This alternative would increase the permitted structure height for multi-unit housing in the City Center Core to 200 feet.

Alternative 2

The proposed land use pattern in Alternative 2 would be similar to Alternative 1, however, growth would be distributes more evenly throughout the project area. Under this Alternative, approximately 30% of the new growth would occurring in Block 3, with the remaining growth spread between Blocks 1 and 2. This alternative would increase the permitted structure height for multi-unit housing in the City Center Core to 145 feet.

Alternative 3 (No Action)

Alternative 3 assumes the level and distribution of growth will continued as currently established in the Comprehensive Plan. Existing structure height standards would continue unchanged.

1.4 Summary of Potential Impacts and Mitigation Measures

Introduction

Table 1-1 provides a summary of the environmental impacts for each element of the environment evaluated in Chapter 3 of the Draft EIS. For a complete discussion of the elements of the environment considered in this Draft EIS, please refer to Chapter 3.

Table 1-1. Summary of Potential Impacts of Proposed Action and No Action Alternative

Proposed Action	Alternative 1 South 320th Street Focus	Alternative 2 Distributed Development	Alternative 3 No Action
3.1 Air Quality			
Short Term Impacts			
Impacts Common to All Alternatives			
Impacts during construction	Temporary, localized impacts caused by fugitive dust during construction		
Odors	Short term and localized odors could result during paving operations using tar and asphalt		
Exhaust emissions	Emissions would be temporary and localized		
Long Term Impacts			
CO concentrations	Alternative 1 is predicted to generate higher vehicle trips than any other alternative. CO concentrations at each intersection modeled for Alternative 1 are all below the allowable ambient air quality standards. Thus, no significant operational air quality impacts are expected.	CO concentrations expected to be less than Alternative 1.	CO concentrations expected to be less than Alternative 1.

Proposed Action	Alternative 1 South 320th Street Focus	Alternative 2 Distributed Development	Alternative 3 No Action

Mitigation Measures

Short Term

Construction activities related to development approved under the Planned Action Designation could generate fugitive dust, which could be mitigated using the following best management practices:

- Use water sprays or other non-toxic dust control methods on unpaved roadways.
- Minimize vehicle speed while traveling on unpaved surfaces.
- Prevent trackout of mud onto public streets.
- Cover soil piles when practical.
- To the extent practical, minimize work during periods of high winds.
- Burning of slash or demolition debris is not permitted without express approval from PSCAA. No slash burning is anticipated for any construction projects in the City Center.

Mobile construction equipment and portable stationary engines would emit air pollutants including NOx, CO, and PM10. These emissions would be temporary and localized. It is highly unlikely that the temporary emissions would cause ambient concentrations at adjoining parcels to approach the NAAQS limits. Typical mitigation measures to minimize air quality and odor issues caused by tailpipe emissions include the following:

- Maintain the engines of construction equipment according to manufacturers' specifications.
- Minimize idling of equipment while the equipment is not in use.

Long Term

The CO concentrations modeled for this air quality assessment account for intersection improvements already included as part of the proposed action to mitigate traffic impacts. The analysis presented in this section indicates all of the project alternatives would result in compliance with applicable carbon monoxide standards. Consequently, no significant air quality impacts would be expected, and no consideration of special air quality mitigation measures is necessary.

Proposed Action	Alternative 1 South 320th Street Focus	Alternative 2 Distributed Development	Alternative 3 No Action
3.2 Land Use			
Land Use Patterns			
Focus of new growth	New development will be focused in Blocks 2 and 3. Block 1 will also experience new growth but at a relatively lower level than in Blocks 2 and 3.	Similar total amount of development as Alternative 1 but development will be more evenly distributed throughout the project area. Block 1 would experience greater growth and diversity of uses than in Alternative 1, but the overall development levels on Block 1 would continue to be less intensive than Blocks 2 and 3.	Development will increase and diversify in the project area but to a significantly lesser degree than under the other Alternatives.
New development through 2014			
New retail space:	750,000 sf	Same as Alternative 1	220,270 sf
New office space:	350,000 sf	Same as Alternative 1	104,446 sf
New hotel rooms:	600	Same as Alternative 1	-
New residential units:	750	Same as Alternative 1	270
New structured parking stalls:	750	Same as Alternative 1	-
Civic Uses:	100,000 sf	Same as Alternative 1	-
Impacts Common to All Alternatives			
	Land use patterns will intensify and the mix of uses will increase to create a greater diversity in land use pattern.		
	Over time, the scale of buildings may also increase as new development occurs and building heights are maximized along with density consisted with the Zoning Code.		

Proposed Action	Alternative 1 South 320th Street Focus	Alternative 2 Distributed Development	Alternative 3 No Action
Land Use Compatibility			
Multi-Unit Residential Structure Height:	Proposed increase to 200' for multi-unit structures may be incrementally noticeable within the City Center Core zone, but is generally compatible with building height and bulk standards within this zoning designation.	Proposed increase to 145' for multi-unit structures would be comparable to the current height limit for office structures and would be compatible with existing standards for other uses within this zoning designation.	Current height limit for multi-unit structures would remain unchanged. No significant impacts are anticipated.
Impacts Common to All Alternatives			
	Land use compatibility impacts could result under any of the alternatives and during any of the time periods. As vacant land is developed and other properties are redeveloped, uses that are currently separated and buffered from each other will be required to co-exist in closer proximity. The potential for conflict between uses with differing activity levels will increase as development results in a greater diversity and mix of uses in the project area. Neighborhoods around the edges of the project area with lower intensity uses, such as single and multi-family residential areas could experience impacts.		
Population, Employment Housing			
	New residential and employment population would be most concentrated in Blocks 2 and 3.	New residential and employment population would be more distributed throughout the project area than in Alternative 1.	There would be significantly less residential and employment population compared to Alternatives 1 and 2.
Impacts Common to All Alternatives			
	Under all alternatives, future residential and employment populations will increase, though at different rates and amounts.		
Mitigation Measures			
Existing development standards along the edges of the Planned Action area appear to be adequate to allow for a compatible transition from more intensive to less intensive uses. However, as development occurs, this transition area should be evaluated to confirm that long-term land use compatibility impacts are not being created. If necessary, new development standards for edge areas should be considered. Techniques could include site and building lighting limits, requirements for landscaping, noise control and other measures.			

Proposed Action	Alternative 1 South 320th Street Focus	Alternative 2 Distributed Development	Alternative 3 No Action
3.3 Aesthetics, Light Glare			
Visual Character	Proposed increase to 200' for multi-unit structures may be incrementally noticeable, but would be compatible with existing development standards in the City Center Core zoning designation. The proposed change is not expected to result in significant impacts to visual character.	Proposed increase to 145' for multi-unit structures would be comparable to the current height limit for office structures and is not expected to result in significant impacts to visual character in the City Center Core zoning designation.	Current height limit for multi-unit structures would remain unchanged.
Impacts Common to All Alternatives			
Visual Character	Under all Alternatives, the visual character of the project area will change over time from that of a typical low-scale suburban commercial center to a more intensive mid-rise and high-rise mixed-use cent. The magnitude of this change would be greater under Alternatives 1 and 2 than under Alternative 3.		
Light and Glare	Light generated from traffic, streetlights, parking lots and buildings would increase as a result of redevelopment under any of the alternatives. There is also the potential for increased glare depending on the type of building materials used in the new development. The magnitude of this impact is likely to be higher under Alternatives 1 and 2.		
Views	Development of new high and mid-rise buildings could result in decreased views for the remaining low-rise building located near these sites and from public rights-of ways. No impact to public facilities, such as schools or parks is anticipated.		
Shading Conditions	There is a potential for increased shadow impacts from development of taller buildings. In the short term, this will be most noticeable at existing low-rise development adjacent to new taller buildings. In the long term, as the area redevelops with taller buildings located in closer proximity to one another, the potential for greater shading through the project area could increase. Alternatives 1 and 2 will have taller buildings in a more compact development pattern, resulting in the potential for greater shading impacts compared to development in Alternative 3.		
Mitigation Measures			
Continued use of the City's Community Design Guidelines and review/approval process to monitor and mitigate potential impacts associated with light and glare, shadows, and aesthetic impacts resulting from new development. Increased building height for multi-unit structures in the City Center Core zone would be permitted only with review through the City's design review and public benefits review processes as set forth in the Community Design Guidelines. Monitor shade conditions as development occurs and amend the City's Community Design Guidelines to require site-specific shadow analysis in public places as needed.			

Proposed Action	Alternative 1 South 320th Street Focus	Alternative 2 Distributed Development	Alternative 3 No Action
3.4 Transportation			
2009 Traffic Operations	PM Peak Hour – Five intersections exceed the City's deficiency threshold, focused along S 272nd Street and Pacific Highway South. AM Peak Hour – Two intersections exceed the City's deficiency threshold, located at the I-5 northbound ramp and Military Road S/S 272nd Street. Saturday Peak Hour – Four intersections exceed the City's deficiency threshold, located around the project area.	PM Peak Hour – Five intersections exceed the City's deficiency threshold, focused along S 272nd Street and Pacific Highway South. AM Peak Hour – Two intersections exceed the City's deficiency threshold, located at the I-5 northbound ramp and Military Road S/S 272nd Street. Saturday Peak Hour – Four intersections exceed the City's deficiency threshold, located around the project area.	PM Peak Hour – Five intersections exceed the City's deficiency threshold, focused along S 272nd Street and Pacific Highway South. AM Peak Hour – Two intersections exceed the City's deficiency threshold, located at the I-5 northbound ramp and Military Road S/S 272nd Street. Saturday Peak Hour – Two intersections exceed the City's deficiency threshold, located at S 320th Street/20th Ave S and S 320th Street/23rd Ave S.
2014 Parking Requirements	In 2014, a total of approximately 4,000 spaces would be required compared to the No Action Alternative. The cumulative parking requirement for the City Center project area would be approximately 11,490 stalls.	In 2014, a total of approximately 4,000 additional spaces would be required compared to the No Action Alternative. The cumulative parking requirement for the City Center project area would be approximately 11,490 stalls.	In 2014, a total of approximately 1,540 parking spaces would be required for new development. The cumulative parking requirement for the City Center project area would be approximately 7,485 stalls.

Proposed Action	Alternative 1 South 320th Street Focus	Alternative 2 Distributed Development	Alternative 3 No Action
2014 Traffic Volumes	During the PM peak hour, an additional nearly 2,400 trips would be added between 2010 and 2014, concentrated on S 320th Street and Pacific Highway South. Total PM peak hour traffic growth resulting from Alternative 1 would be approximately 5,100 trips. During the AM peak hour, nearly 1,100 trips would be added between 2010 and 2014, focused on South 320th Street. Total AM peak hour traffic growth resulting from Alternative 1 would be approximately 2,200 trips. During the Saturday peak hour, slightly over 2,500 trips would be added in the project area and vicinity between 2010 and 2014. Total Saturday peak hour traffic growth resulting from Alternative 1 would be approximately 12,100 trips.	During the PM peak hour, an additional nearly 2,400 trips would be added between 2010 and 2014, concentrated on S 320th Street and Pacific Highway South. Total PM peak hour traffic growth under Alternative 2 would be approximately 5,100 trips. During the AM peak hour, nearly 1,100 trips would be added between 2010 and 2014, focused on South 320th Street. Total AM peak hour traffic growth resulting from Alternative 2 would be approximately 2,200 trips. During the Saturday peak hour, slightly over 2,500 trips would be added between 2010 and 2014 in the project area and vicinity. Total Saturday peak hour traffic growth resulting from Alternative 2 would be approximately 12,100 trips.	Approximately an additional 420 new PM peak hour trips would be added to area roadways between 2010 and 2014. Total PM peak hour traffic growth under Alternative 3 would be approximately 860 trips. During the AM peak hour, an additional 214 trips would be added. Total AM peak traffic growth resulting from Alternative 3 would be approximately 450 trips. During the Saturday peak hour, approximately 440 trips would be added between 2010 and 2104. Total Saturday peak hour traffic growth resulting from Alternative 3 would be approximately 1,050 trips.
Impacts Common to All Alternatives			
Traffic Safety	Probability of traffic collisions would increase with increased traffic.		
Transit Service	Ridership demand at the Federal Way Transit Center may increase with increased development in the project area		
Pedestrian Accessibility	Increased pedestrian activity would be expected with increased development in the project area.		
Bicycle Mobility	Bicycle facilities proposed in the Comprehensive Plan would connect destinations in the project area.		

Proposed Action	Alternative 1 South 320th Street Focus	Alternative 2 Distributed Development	Alternative 3 No Action
Mitigation Measures			
PM Peak Hour	Same as Alternative 3: 2nd northbound left turn lane at S 312th St/Pacific Highway South Optimize signal timing at S 336th St/Pacific Highway South	Same as Alternative 3: 2nd northbound left turn lane at S 312th St/Pacific Highway South Optimize signal timing at S 336th St/Pacific Highway South	2nd northbound left turn lane at S 312th St/Pacific Highway South Optimize signal timing at S 336th St/Pacific Highway South
AM Peak Hour	No mitigation is required.	No mitigation is required.	No mitigation is required.
Saturday Peak Hour	Mitigation required as shown under Alternative 3: Southbound and northbound right turn lanes at S 320th St/20th Ave S Second northbound right turn lane at S 320th St/23rd Ave S In addition, the following additional measures are required for Alternatives 1 or 2: Eastbound right turn lane at S 316th St/Pac Hwy S Northbound right turn lane at S 320th St/Pacific Highway South Westbound right turn lane at S 320th St/23rd Ave S	Mitigation required as shown under Alternative 3: Southbound and northbound right turn lanes at S 320th St/20th Ave S Second northbound right turn lane at S 320th St/23rd Ave S In addition, the following additional measures are required for Alternatives 1 or 2: Eastbound right turn lane at S 316th St/Pac Hwy S Northbound right turn lane at S 320th St/Pacific Highway South Westbound right turn lane at S 320th St/23rd Ave S	Southbound and northbound right turn lanes at S 320th St/20th Ave S Second northbound right turn lane at S 320th St/23rd Ave S

Proposed Action	Alternative 1 South 320th Street Focus	Alternative 2 Distributed Development	Alternative 3 No Action
Additional mitigation	Additional mitigation to reduce area traffic impacts, improve on-site circulation or meet city and state commuter trip reduction and transportation demand management requirements may include the following: • On-site improvements • Non-motorized mode improvements • Grid roadway development • Right-of-way dedication • Transportation demand management measures		
3.5 Public Services			
Police LOS	Expected growth will result in an increased need of approximately 8 officers by 2014 to maintain the current LOS.	Same as Alternative 1.	Expected future growth will result in an increased need of approximately 2 officers by 2014 to maintain current LOS.
Park and Recreation LOS	Additional residents will result in an increased demand for 19.3 acres of new parkland to maintain current LOS.	Same as Alternative 1.	Additional residents will result in an increased demand for 7 acres of new parkland to maintain current LOS.
Impacts Common to All Alternatives			
Police & Fire	Construction activity in the City Center may affect the response times of emergency vehicles.		
Fire	Future development will result in an incremental increase in calls for emergency service and future traffic growth may impact response time. Federal Way Fire Department reports that it has adequate existing and planned capacity to meet the increased demand under any of the alternatives.		

Proposed Action	Alternative 1 South 320th Street Focus	Alternative 2 Distributed Development	Alternative 3 No Action
Mitigation Measures			
• Coordinate with Federal Way Police and Fire Departments during final design, construction, and operation of future development under proposed action to ensure that reliable emergency access is maintained. • Coordinate with the Federal Way Parks and Recreation Department to identify opportunities for increased recreational open space for general public use throughout the project area, and within new development proposals. • Reduce public safety impacts thru adherence to CPTED design standards. • Provide emergency service providers with advanced notice of construction schedules and any planned street closures or blockages. • Avoid or minimize street closures or blockages during construction to avoid impact to emergency response times.			
3.6 Utilities			
Impacts Common to all Alternatives			
Water and Sanitary Sewer Service	Lakehaven Utility District states that it has available capacity to provide domestic water and sanitary sewer service to the City Center under any of the Alternatives. Alternative 1 and 2 will have the same water demand and sewer discharge rate. Alternative is expected to have slightly less demand.		
Energy	Construction activities could result in disruption of electric service, with the need to relocate service lines, and other construction related impacts. Over the long term, development under any of the Alternatives will increase demand for energy, both electric and gas. PSE indicates it has planned for growth and reports adequate capacity to serve the increased demand resulting under any of the Alternatives.		
Telecommunication	Increased residential and employment population will increase the use of and demand for telecommunications products. Service providers had indicated the have adequate capacity for the demand.		
Mitigation Measures			
• Ensure that all new development complies with local, state and federal standards for energy conservation. • Encourage drought-tolerant landscaping (xeriscaping) for new development. • Encourage new commercial, civic and residential development to incorporate appropriate water conservation measures, such as recycling, into their operations.			

1.5 Issues to Be Resolved

Adoption of a Planned Action Ordinance and concurrent Zoning Code amendments to increase the multi-unit residential structure height standard in the City Center Core zone would support development and re-development of the area to a more intensive mixed-use character consistent with the vision of the Comprehensive Plan. The key environmental issue facing decision-makers is the impact of additional traffic on area roadways and mitigating measures to address such impacts.

1.6 Significant Unavoidable Adverse Impacts

Air Quality

Temporary, localized dust and odor impacts could occur during the construction activities.

Land Use

No significant unavoidable adverse impacts are anticipated.

Aesthetics, Light and Glare

No significant unavoidable adverse impacts to aesthetics, light and glare are anticipated. The design standards, guidelines, and mitigating measures described above, together with the City's development regulations are adequate to mitigate the significant adverse impacts anticipated with redevelopment.

Transportation

Although numerous measures will mitigate transportation-related impacts, increases in traffic congestion at some nodes and/or along some corridors will result in remaining significant, unavoidable, adverse impacts on the area's transportation system. Development of the Federal Way City Center would generate additional traffic volumes on the area's roadways. However, the increased intersection capacity and associated traffic improvements would mitigate undesired impacts. The proposed mixed-use land use pattern, on-site improvements and public and private TDM actions, along with high levels of existing and future transit service may further reduce vehicle trips thereby further mitigating impacts.

Public Services

No significant unavoidable adverse impacts to public services are anticipated.

Utilities

No significant unavoidable adverse impacts are anticipated.

Chapter 2

Description of the Proposal and Alternatives

2.1 Introduction

Overview of the Proposed Action

The action proposed by the City of Federal Way consists of the following related actions:

1. Adoption of an ordinance designating a portion of the City Center sub-area (see Figure 1) as a planned action for the purposes of State Environmental Policy Act (SEPA) compliance, pursuant to RCW 43.21C.031(2)(a) and WAC 197-11-164. The planned action designation would apply to construction of proposed residential, retail, office, hotel, civic and structured parking development falling within the development envelope and project area analyzed in this EIS. The total development envelope analyzed in this EIS is summarized in Table 2-1. The project area is shown in Figure 1.

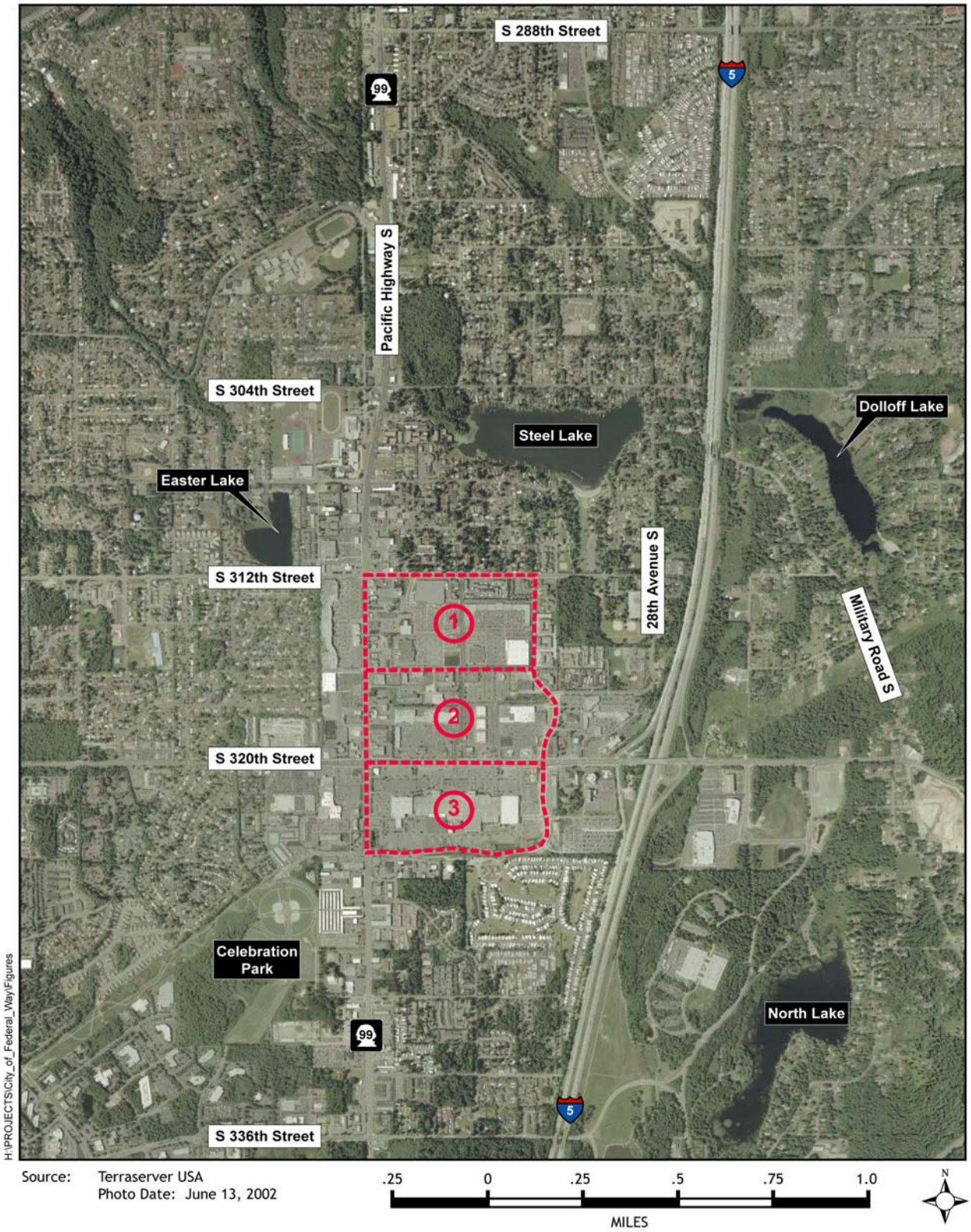
Table 2-1. Planned Action Development Envelope

Uses	Development Envelope
Retail	750,000 sf
Office	350,000 sf
Lodging	600 rooms
Residential	750 units
Civic	100,000 sf
Structured Parking	750 stalls

Source: City of Federal Way, 2003

The planned action designation would apply to development that occurs through 2014.

This action may also include procedural text amendments to the Federal Way Municipal Code (FWMC) Chapter 22 (Zoning Code) to recognize the Planned Action designation and process. These changes are not expected to have an environmental impact and are not discussed further in this EIS.



CITY OF Federal Way

Federal Way
Planned Action EIS

Prepared by:

Jones & Stokes

Figure 1:
City Center Sub Area

Although the planned action designation would not apply to individual development proposals outside of the development envelope or project area, the environmental analysis conducted in this EIS could be used to help achieve SEPA compliance for such proposals.

WAC 197-11-600 provides the criteria and procedure for use of existing environmental documents for SEPA compliance.

2. Adoption of a new structure height standard for multi-unit housing in the City Center Core (CC-C) zoning designation in the City Center sub-area, including area outside of the planned action project area (see Figure 2). The new height standard would be 200 feet under Alternative 1 and 145 feet under Alternative 2.

Background

The City of Federal Way Comprehensive Plan lays out a long-range vision for the future of Federal Way. The Plan includes nine elements: Land Use, Transportation, Housing, Capital Facilities, and Private Utilities; Economic Development; Natural Environment; Potential Annexation Areas; and City Center.

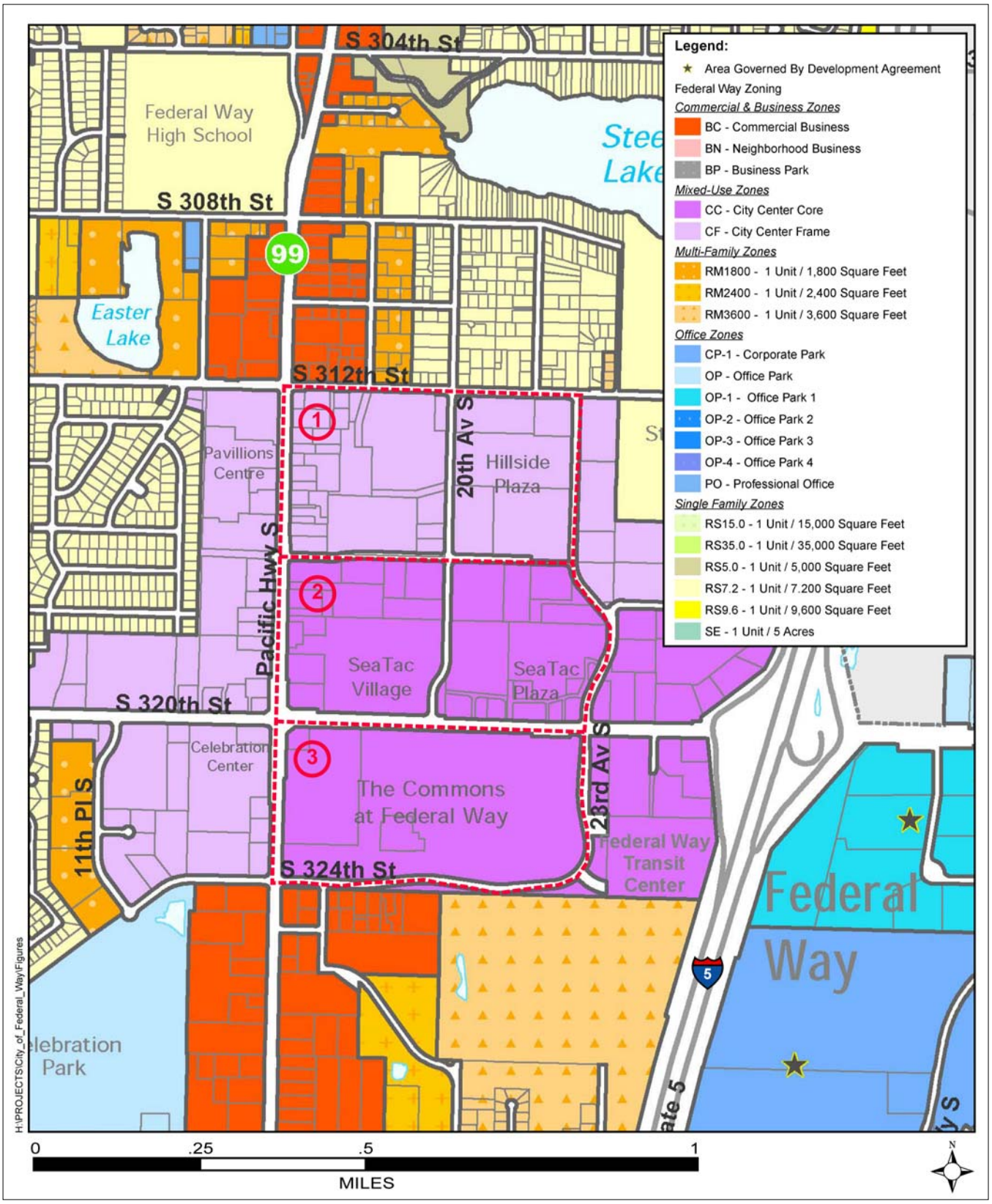
Chapter 7 of the Comprehensive Plan addresses the City Center sub-area. City Center contains approximately 414 acres and is bound by South 312th Street, South 324th Street, Interstate 5, 11th Place South and 13th Avenue South (see Figure 1). As described in the Comprehensive Plan, City Center is characterized by:

- Typical suburban strip retail and mall development;
- Large areas of surface parking around the retail development;
- Disjointed and over-sized block grid network;
- Lack of consistent pedestrian improvements; and
- Little residential population.

The future vision for City Center states, "By the end of the comprehensive planning horizon, the Federal Way City Center will have evolved into the cultural, social, and economic center of the City and fulfilled its role as one of Puget Sound's regional network of urban centers. This role will be reinforced by pedestrian-oriented streetscapes; an efficient multi-modal transportation system; livable and affordable housing; increased retail, service, and office development in a compact area; a network of public spaces and parks, superior urban design; and a safe, essential and vibrant street life." Figure 3 illustrates potential development consistent with this vision that could occur in a portion of City Center.

In support of this vision, the principal purposes of the City Center chapter are to:

- Create an identifiable downtown that is the social and economic focus of the City;
- Strengthen the City as a whole by providing for long-term growth in employment and housing;



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Federal Way
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Prepared by:
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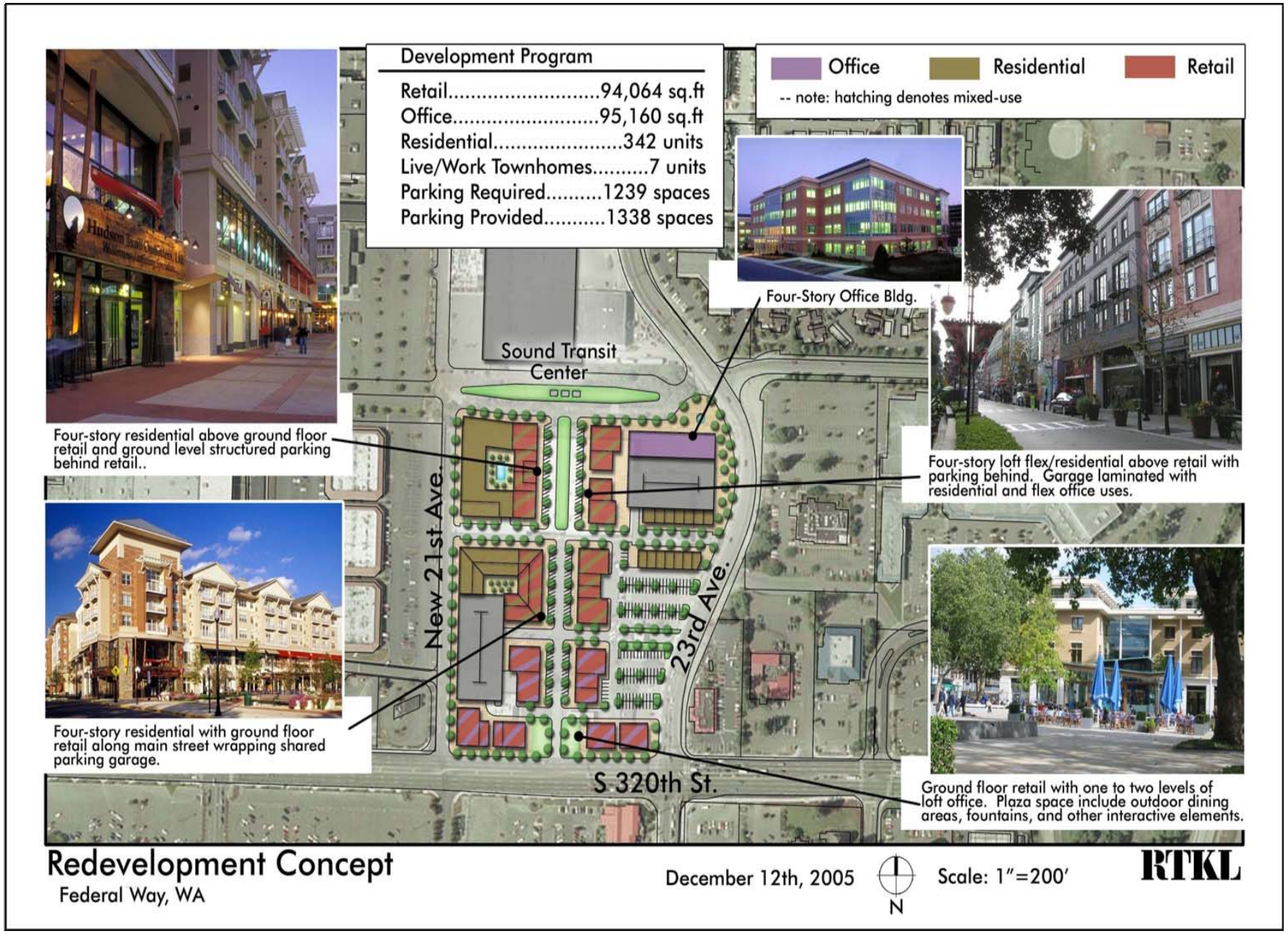
Figure 2:
City Center Zoning Designations



CITY OF Federal Way

Federal Way Planned Action EIS

Prepared by:

Jones & Stokes

Figure 3: Redevelopment Concepts

- Promote housing opportunities close to employment;
- Support development of an extensive regional transit system;
- Reduce dependency on automobiles;
- Consume less land with urban development;
- Maximize the benefit of public investment in infrastructure and services;
- Reduce costs of and time required for permitting;
- Provide a central gathering place for the community; and
- Improve the quality of urban design for all developments.

The City Center chapter contains a number of policies intended to help achieve these goals. City Center Policy CCP5 specifically addresses the intent to prepare a Planned Action EIS for the City Center area. The policy states that the City should "[c]omplete an area-wide environmental impact statement and SEPA Planned Action and provide streamlined permit review in the City Center to accelerate changes to the core area."

This proposal is intended to support the principal purposes of the City Center Chapter and to specifically implement Policy CCP5.

Objectives of the Proposal

The Proposed Action is intended to achieve the following objectives:

- Support the principal objectives of the City Center Chapter of the Comprehensive Plan, particularly those that promote a more intensive urban style of development in the City Center and the reduction in costs and time required for permitting.
- Fulfill the direction of City Center Element Policy CCP5.
- Provide an incentive to development proposals that are consistent with the overall intent of the City Center vision.
- Provide greater certainty to potential developers, city decision-makers and the general public regarding the future development pattern and likely impacts of future development in the City Center area.

2.2 Planning Process

Growth Management Act

The Growth Management Act (GMA), adopted by the 1990 Washington State Legislature and amended periodically thereafter, contains a comprehensive framework for managing growth and development within local jurisdictions. Many of the provisions of the GMA apply to the state's largest and fastest growing jurisdictions, including King County and all

cities within the county. Additionally, some provisions, such as requirements to identify and regulate critical areas, apply to all local jurisdictions.

Comprehensive plans for cities planning under GMA must include a land use element (including a future land use map), housing element, transportation element, public facilities element, and utilities element. Additional elements may be added at the local jurisdiction's option. The GMA plan must provide for adequate capacity to accommodate the city's share of projected regional growth. The plan must also ensure that planned and financed infrastructure can support planned growth at a locally acceptable level of service.

As required by the GMA, the City of Federal Way has prepared and adopted a local comprehensive plan to guide future development and fulfill the City's responsibilities under GMA.

City of Federal Way Comprehensive Plan

The City's Comprehensive Plan was prepared in accordance with the GMA and underwent an extensive public participation process that included City residents, property owners, and business owners as documented in the Federal Way Comprehensive Plan Introduction. The Comprehensive Plan in its entirety contains nine elements: Land Use, Transportation, Economic Development, Housing, Capital Facilities, City Center, Potential Annexation Area, Natural Environment, and Private Utilities.

The GMA requires the plan to be updated no more than once a year except under special circumstances. The GMA also requires a review and update of the plan every ten years. In compliance with these requirements, the City of Federal Way has annually updated the Comprehensive Plan.

Development Regulations

Zoning Requirements

Zoning designations in City Center are the City Center Core (CC-C) and City Center Frame (CC-F). The CC-C designation is intended to provide for a concentration of growth into a high-density, mixed-use center for Federal Way. The CC-F designation provides for medium-density mixed-use development in the area surrounding the CC-C designation and extending to the boundary of the City Center sub-area. The CC-F zone allows for similar uses to the CC-C zone, but at a lower density and intensity. The development standards in the CC-F designation are intended to allow a compatible transition to the surrounding area.

Article X1, Chapter 22 of the Federal Way City Code establishes the district regulations for the zoning designations in the City. Division 8 establishes the uses and development standards for development in the CC-C and CC-F zones. Permitted uses in the CC-C and CC-F zones include office, retail, entertainment, hotel, convention and trade centers, multi-unit housing, and a variety of public uses.

Division 8 also establishes required review processes, lot size, required yards, structure height and required parking. Requirements related to building height are described below.

Height of Structure – In the CC-C zone, permitted building heights vary depending on the use. Office and hotel uses are permitted a base height of 95 feet, retail and multi-unit residential uses to a base height of 70 feet. In all cases, heights are allowed to increase subject to special regulations. Office and hotel uses may increase to 145 feet; retail uses to 95 feet; and multi-unit residential uses to 85 feet.

In the CC-F zone, the base height limit for office and retail structures is 35 feet, with potential increased building height allowed on a case-by-case basis. Base height limit for multi-unit residential uses is 70 feet and for hotel uses is 45 feet. An increased structure height may be allowed for all uses on a case-by-case basis.

Community Design Guidelines

Article XIX, Chapter 22, of the Federal Way City Code establishes Community Design Guidelines applicable to all zones in the City and to all development applications except single family residential. New development proposals in the planned action project area would be subject to the Community Design Guidelines and review process.

As described in Section 22-1630, the purpose of the Community Design Guidelines are to establish minimum design standards to protect property values and enhance the general appearance of the city; increase flexibility and encourage creativity in building and site design; achieve predictability in design review; improve and expand pedestrian amenities; and implement Crime Prevention through Environmental Design (CPTED) principles.

Proposals subject to community design guidelines are processed as a component of the underlying land use process. The director of community development services has the authority to approve, modify, or deny proposals under this process.

Site design guidelines (Section 22-1634) address general site criteria, parking (surface lots and structured parking), pedestrian circulation and public spaces, landscaping, commercial service and institutional facilities and other site elements. Guidelines for building design (Section 22-1635) address general building criteria, landscape screening, and building articulation and scale. Additional guidelines are provided for building and pedestrian orientation and mixed-use residential buildings. Section 22-1638(c) provides specific guidelines for the City Center Core and Frame zones. Guidelines in this section address parking (surface and structured parking), entrance and building facades, and the location of drive-through facilities.

2.3 Planned Action Process

Planned Action Overview

According to WAC 197-11-164, a Planned Action is defined as a project that: is designated a planned action by ordinance; has had the significant environmental impacts addressed in an EIS; has been prepared in conjunction with a comprehensive plan or subarea plan; is located within an urban growth area; is not an essential public facility; and is consistent with an adopted comprehensive plan.

The City proposes to designate the City Center project area (Figure 1) as a planned action, pursuant to the State Environmental Policy Act (SEPA) and implementing rules. As shown in Figure 1, the project area is bounded on the south by South 324th Street; on the north by South 312th Street; on the west by Pacific Highway South; and on the east by 23rd Avenue South. Federal Way will follow applicable procedures, described generally below, to review proposed projects within the project area through the land use review process associated with each project to determine their impacts and impose any appropriate development conditions.

Planned Action EIS

The significant environmental impacts of projects designated as Planned Actions must be identified and adequately analyzed in an EIS (WAC 197-11-164). Planned Action projects should only be designated when a city can reasonably analyze the site-specific impacts that would occur as a result of the types of projects designated.

Planned Action Ordinance

According to WAC 197-11-168, the ordinance designating the Planned Action shall include the following:

1. A description of the type of project action being designated as a Planned Action;

2. A finding that the probable significant environmental impacts of the Planned Action have been identified and adequately addressed in an EIS;

3. Identification of mitigation measures that must be applied to a project for it to qualify as a Planned Action.

Following the completion of the EIS process, the City of Federal Way would designate the Planned Action by ordinance. The ordinance would identify mitigation, as described in this EIS, which would be applicable to future site-specific development actions. Mitigation could include requirements that would apply to all development in the planned action area as well as measures that may apply on a case-by-case basis.

2.4 Environmental Review

Comprehensive Plan EIS

The City of Federal Way completed an Environmental Impact Statement (EIS) on the City's GMA Comprehensive Plan and Development Regulations in 1995. The Comprehensive Plan EIS considered impacts associated with the proposed land use pattern, including land use in the proposed City Center sub-area (Comprehensive Plan Chapter 7). Elements of the environment that were considered in the Comprehensive Plan EIS include earth; air quality; water resources; plants and animals; energy; environmental health; land & shoreline use; aesthetics, light and glare; transportation; public services and utilities. This Planned Action EIS incorporates by reference the analysis contained in the 1995 Comprehensive Plan EIS as it relates to the City Center sub-area.

Scope of Review

Pursuant to SEPA Rules (WAC 197-11-408 through 410), a Determination of Significance was issued by the City of Federal Way on September 3, 2003. Interested citizens, agencies, organizations, and affected tribes were invited to submit comments on the scope of the EIS. The scoping process included one public meeting, held on September 17, 2003. This meeting provided information about the EIS process, the proposal and alternatives, a SEPA Environmental Checklist on the proposal (Appendix 3) and an opportunity to comment on the proposed scope of the environmental review. No comments were received on the scope of the EIS.

This Draft EIS addresses the following elements of the environment:

- **Land Use** – The land use analysis includes an evaluation of the amount, types, scale and pattern of uses. The focus of the analysis is on land use compatibility with existing and planned development within and adjacent to the project area.
- **Transportation** – The transportation analysis identifies and evaluates potential impacts to morning/evening peak hour traffic and Saturday traffic in and around the project area. The period through 2009 is analyzed in detail, with a more generalized analysis for the period between 2010 and 2014.
- **Aesthetics** – The aesthetics discussion includes a narrative evaluation of the design and character of existing buildings and the nature of change to the urban character that may result from the proposal and alternatives.
- **Public Services** – The public services analysis reviews police, fire and emergency medical services, parks and recreation, and energy and communication. Existing levels of service, estimated needs and demand for services, and measures needed, if any, to respond to projected demand from the proposal and alternatives are described.
- **Utilities** – The utilities analysis focuses on water and sewer service. Existing capacity, constraints, planned improvements are described and compared to future demand for water and sewer service resulting from the proposal and alternatives.
- **Air Quality** – Air quality analysis focuses on potential air quality impacts resulting from increased traffic associated with the proposal and alternatives.

2.5 Proposed Action and Alternatives

Overview

This EIS evaluates three alternative land use scenarios for the City Center project area. For the purpose of analysis and discussion in this EIS, the planned action project area has been divided into three smaller analysis areas, referred to in this Draft EIS as Block 1, Block 2 and Block 3. Block 1 consists of the northern portion of the project area and is bounded on the north by S 312th Street, on the west by Pacific Highway South, on the south by South 316th Street and on the east by 23rd Avenue S. Block 2 is located in the central portion of the project area and is bounded on the north by S 316th Street, on the west by Pacific Highway South, on the south by S 320th Street and on the east by 23rd Avenue S. Block 3 is located in

the southern portion of the project area and consists mainly of The Commons at Federal Way. Block 3 is bounded on the north by S 320th Street, on the west by Pacific Highway South, on the south by S 324th Street and on the east by 23rd Avenue S. Please refer to Figure 4.

Alternatives 1 and 2 assume the maximum development identified in Table 2-1, but distribute growth differently. Alternative 1 assumes that growth is focused around South 320th Street, with over 85 percent of new growth occurring in Blocks 2 and 3. Alternative 2 distributes future growth more evenly around the project area. Alternative 3 (No Action) assumes the level and distribution of growth established in the Comprehensive Plan. Figure 5 shows the relative distribution and amount of total growth assumed under each of the three alternatives.

The alternatives also include different assumptions regarding maximum structure height in the City Center-Core and City Center-Frame zones. Under Alternative 3 (No Action) the existing structure height standards would continue unchanged.

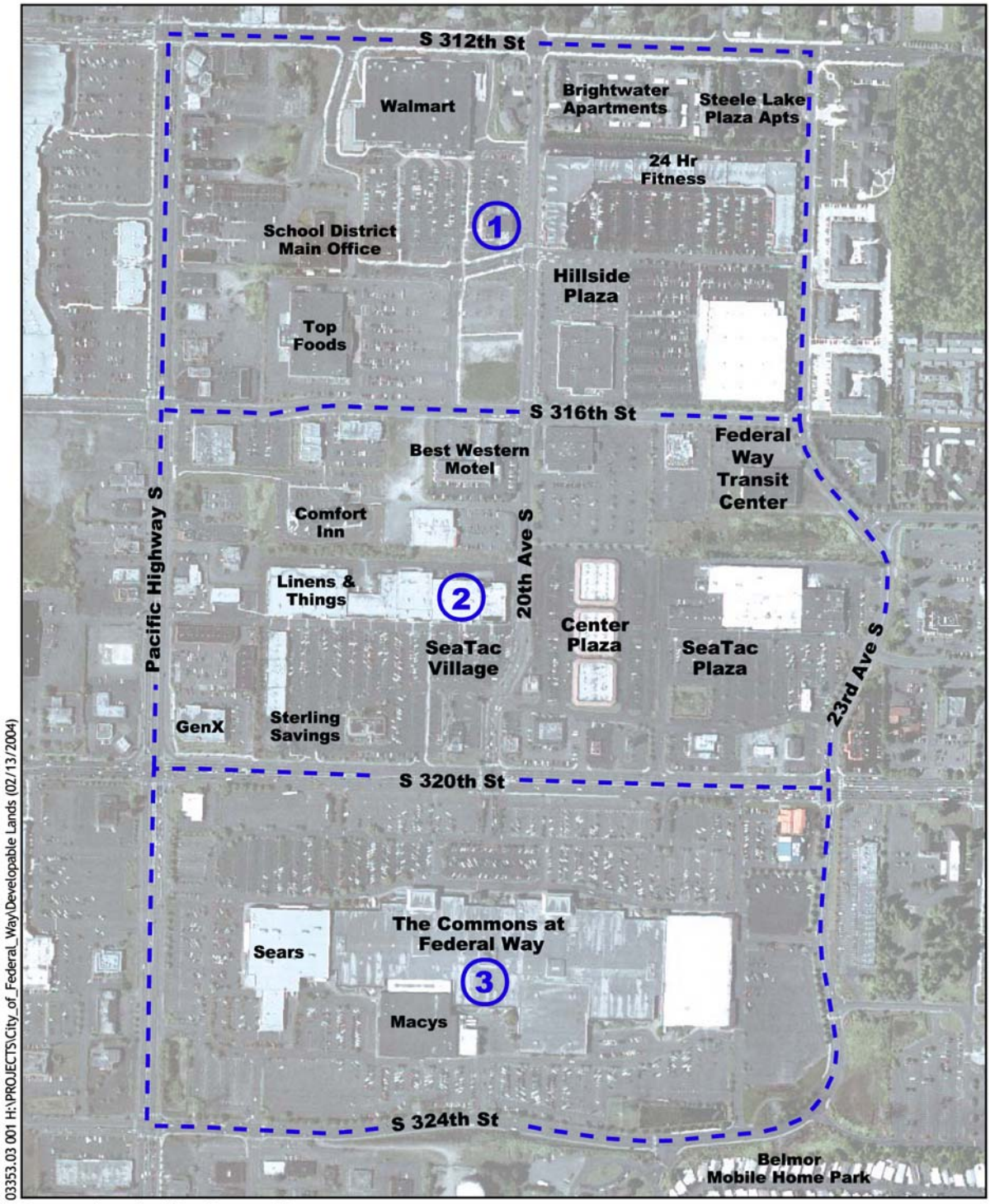
Alternative 1

Land Use Pattern. The proposed land use pattern would create a dense, mixed-use urban neighborhood focused around South 320th Street, with development focused in Blocks 2 and 3. The total amount of new development anticipated for the City Center area is as described in Table 2-1 and Figure 5. The new development would be distributed over time and throughout the project area as shown in Tables 2-2 and 2-3.

Table 2-2. Alternative 1 (South 320th Street Focus) Development through 2009

	Blocks			
	1	2	3	Total
Retail (sf)	67,500	202,500	180,000	450,000
Office (sf)	37,500	112,500	60,000	210,000
Lodging (rooms)	60	180	120	360
Residential (units)	75	225	150	450
Civic (sf)	0	0	0	0
Structured Parking (stalls)	0	150	300	450

Source: City of Federal Way, Jones & Stokes, 2003



03353.03 001 H:\PROJECTS\City_of_Federal_Way\Developable Lands (02/13/2004)

Source: Parcels: King County GIS

1 Block Boundaries with Block Number

N

300 0 300 600 Feet

Scale 1" = 600 Feet

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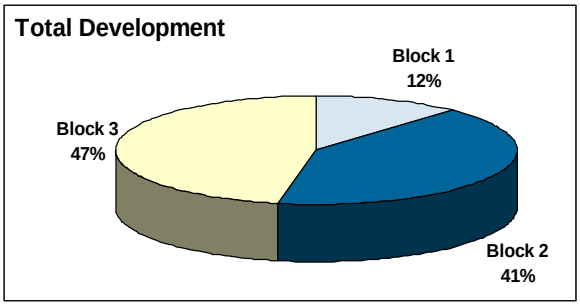
Federal Way
Planned Action EIS

Prepared by:

Jones & Stokes

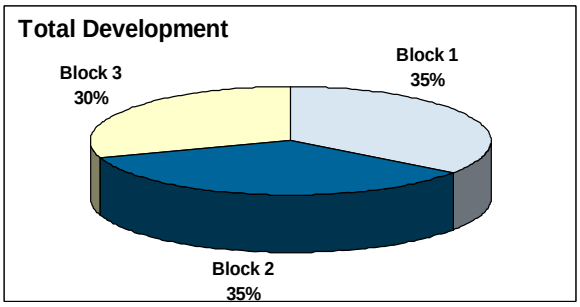
Figure 4:
City Center Analysis Blocks

Alternative 1: South 320th Street Focus



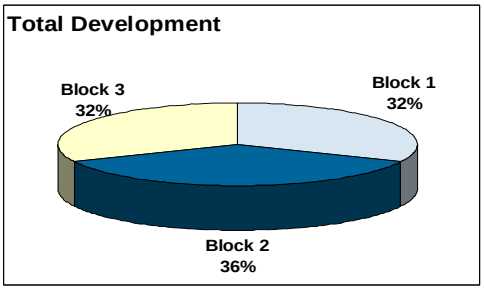
Land Use	Block 1	Block 2	Block 3	Total
Retail	112,500	337,500	300,000	750,000
Office	62,500	187,500	100,000	350,000
Hotel	100 rooms	300 rooms	200 rooms	600 rooms
Residential	125 units	375 units	250 units	750 units
Civic Uses	0	50,000 sf	50,000 sf	100,000 sf
Structured Parking	0	250 spaces	500 spaces	750 spaces

Alternative 2: Distributed Development



Land Use	Block 1	Block 2	Block 3	Total
Retail	255,000 sf	255,000 sf	240,000 sf	750,000 sf
Office	135,000 sf	135,000 sf	80,000 sf	350,000 sf
Hotel	220 rooms	220 rooms	160 rooms	600 rooms
Residential	275 units	275 units	200 units	750 units
Civic Uses	50,000 sf	50,000 sf	0	100,000 sf
Structured Parking	175 spaces	175 spaces	400 spaces	750 spaces

Alternative 3: No Action Alternative



Land Use	Block 1	Block 2	Block 3	Total
Retail	68,790 sf	83,400 sf	68,080 sf	220,270 sq
Office	48,476 sf	39,970 sf	16,000 sf	104,446 sf
Residential	70 units	100 units	100 units	270 units

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Figure 5:
Overview of Alternatives

Table 2-3. Alternative 1 (South 320th Street Focus)
2010 - 2014

	Blocks			
	1	2	3	Total
Retail (sf)	45,000	135,000	120,000	300,000
Office (sf)	25,000	75,000	40,000	140,000
Lodging (rooms)	40	120	80	240
Residential (units)	50	150	100	300
Civic (sf)	0	50,000	50,000	100,000
Structured Parking (stalls)	0	100	200	300

Source: City of Federal Way, Jones & Stokes, 2003

Under this Alternative, approximately 47 percent of new growth would be located at The Commons at Federal Way site (Block 3). Approximately 41 percent would occur in Block 2 and the remainder (12%) in Block 1.

Development Regulations. Alternative 1 would amend FWMC Division 8, Section 22-797 to allow a maximum structure height for multi-unit housing of 200 feet. The current height standard is 70 feet or 85 feet.

Alternative 2

Land Use Pattern. Similar to Alternative 1, the proposed land use pattern would create a dense, mixed-use urban neighborhood in the project area. In contrast to Alternative 1, Alternative 2 would distribute growth relatively more evenly throughout the project area. Relatively more growth is allocated to Block 1 and relatively less to Blocks 2 and 3. The total amount of new development anticipated for the City Center area is as described in Table 2-1 and Figure 5 and would be distributed over time and throughout the project area as shown in Tables 2-4 and 2-5.

Table 2-4. Alternative 2 (Distributed Development)
Development through 2009

	Blocks			
	1	2	3	Total
Retail (sf)	153,000	153,000	144,000	450,000
Office (sf)	81,000	81,000	48,000	210,000
Lodging (rooms)	132	132	96	360
Residential (units)	165	165	120	450
Civic (sf)	0	0	0	0
Structured Parking (stalls)	175	0	240	415

Source: City of Federal Way, Jones & Stokes, 2003

Table 2-5. Alternative 2 (Distributed Development)
2010 – 2014

	Blocks			
	1	2	3	Total
Retail (sf)	102,000	102,000	96,000	300,000
Office (sf)	54,000	54,000	32,000	140,000
Lodging (rooms)	88	88	64	240
Residential (units)	110	110	80	300
Civic (sf)	50,000	50,000	0	100,000
Structured Parking (stalls)	0	175	160	335

Source: City of Federal Way, Jones & Stokes, 2003

Under this Alternative, approximately 30 percent of new growth would be located at The Commons at Federal Way site (Block 3). Remaining development potential would be spread between Blocks 1 and 2, which each area accommodating approximately 35 percent of the new growth anticipated under the planned action.

Development Regulations. Alternative 2 would amend FWMC Division 8, Section 22-797 to allow a maximum structure height for multi-unit housing of 145 feet. The current height standard is 70 feet or 85 feet.

Alternative 3

Land Use Pattern. As described in the Comprehensive Plan, the land use pattern in the City Center project area would be characterized by an intensively developed urban core that includes mixed use, office, retail and residential development. Greatest intensity of development would occur in the City Center Core area, with development transitioning in the City Center Frame to the surrounding area. Overall, anticipated growth under this alternative would be approximately 32 percent of that anticipated for office and retail development and 36 percent of that anticipated for residential development under the action alternatives. Tables 2-6 and 2-7 below show the projected growth by Block area and time period.

Table 2-6. Alternative 3 (No Action)
Development through 2009

	Blocks			
	1	2	3	Total
Retail (sf)	41,270	50,040	40,850	132,160
Office (sf)	29,086	23,980	9,600	62,666
Residential (units)	40	60	60	160

Source: City of Federal Way, Jones & Stokes, 2003

Table 2-7. Alternative 3 (No Action)
2010–2014

	Blocks			
	1	2	3	Total
Retail (sf)	27,520	33,360	27,230	88,110
Office (sf)	19,390	15,990	6,400	41,780
Residential (units)	30	40	40	110

Source: City of Federal Way, Jones & Stokes, 2003

Under this Alternative, approximately 32 percent of the new growth would be located at The Commons at Federal Way site (Block 3). Approximately 36% would be located in Block 2, with the remainder (32%) in Block 1

Development Regulations. Under the No Action Alternative, existing development standards would continue unchanged. Development standards for structure height would not be amended.

2.6 Benefits and Disadvantages of Delaying Proposed Action

The Proposed Action includes adoption of a Planned Action Ordinance for future development in the City Center sub-area and adoption of increased structure height standards for multi-family residential development in the City Center – Core and Frame zones. Delaying implementation of the Proposed Action would delay the potential impacts identified in this EIS, including potential land use conflicts, changes to visual character, increased traffic congestion and increased demand for public services and utilities. This delay could be considered environmentally beneficial in the short-term. Deferring implementation would also delay and reduce the likelihood that the City Center sub-area will develop in a manner consistent with the vision of the Comprehensive Plan. Delay would not allow new development and associated review processes to benefit from the analysis developed through this Planned Action process.

2.7 Major Issues to be Resolved

Adoption of a Planned Action Ordinance and concurrent Zoning Code amendments to allow increased structure heights in the City Center Core and Frame zones would support development and re-development of the area to a more intensive mixed-use character consistent with the vision of the Comprehensive Plan. The key environmental issue facing decision-makers is the impact of additional traffic on area roadways and mitigating measures to address such impacts.

Chapter 3

Affected Environment, Impacts and Mitigation Measures

3.1 Air Quality

Affected Environment

This chapter discusses the potential impacts, mitigation measures, and unavoidable significant adverse impacts to air quality in the project area. Potential air quality impacts will be primarily related to increases or decreases in vehicular traffic on surface streets.

Existing Area Conditions

The general air quality in the project area is dominated by vehicular trips from I-5, Pacific Hwy South (SR 99), South 320th Street and numerous City streets. Secondary sources of emissions are from commercial land uses and nearby SeaTac Airport. (See Section 3.2, Land Use Patterns.)

The vehicular air pollution sources, in the form of tailpipe emissions generated during local and regional trips, are characteristic of urban commercial and interstate pass-through trips. Local emissions are dominated by vehicular emissions related to commercial, residential, and pass-through regional trips. Additionally, space heating source emissions contribute to background air quality.

Regulatory Overview

Three agencies have air quality jurisdiction in the project area: the United States Environmental Protection Agency (EPA), the Washington Department of Ecology (Ecology), and the Puget Sound Clean Air Authority (PSCAA). Although their regulations are similar in stringency, each agency has established its own standards. Unless the state or local agency has adopted a more stringent standard, the EPA standards apply.

EPA and Ecology establish regulations designed to limit emissions from air pollution sources and to minimize concentrations of pollutants in the outdoor air. Table 3-1 lists both the national and State of Washington ambient air quality standards. The National Ambient Air Quality Standards (NAAQS) consist of primary standards designed to protect public health and secondary standards designed to protect public welfare (e.g., preventing air pollution damage to vegetation). Washington has established additional state ambient standards for

total suspended particulates and sulfur dioxide standards more stringent than the federal requirements.

Table 3-1. National and State of Washington Ambient Air Quality Standards

National (EPA)			
Pollutant	Primary	Secondary	Washington State
Carbon Monoxide			
8-hour average 1-hour average	9 ppm 35 ppm	9 ppm 35 ppm	9 ppm 35 ppm
Particulate Matter			
PM10			
Annual average 24-hour average	50 µg/m^3 150 µg/m^3	50 µg/m^3 150 µg/m^3	50 µg/m^3 150 µg/m^3
PM2.5			
Annual average 24-hour average	15 µg/m^3 65 µg/m^3	15 µg/m^3 65 µg/m^3	15 µg/m^3 65 µg/m^3
Lead			
Quarterly average	1.5 µg/m^3	1.5 µg/m^3	1.5 µg/m^3
Sulfur Dioxide			
Annual average 24-hour average 3-hour average 1-hour average	0.03 ppm 0.14 ppm No standard No standard	No standard No standard 0.50 ppm No standard	0.02 ppm 0.10 ppm No standard 0.40 ppm[a]
Ozone			
8-hour average[b]	0.08 ppm	0.08 ppm	0.08 ppm
Nitrogen Dioxide			
Annual average	0.05 ppm	0.05 ppm	0.05 ppm

Source: Jones & Stokes, 2005
Notes: Annual standards never to be exceeded. Short-term standards not to be exceeded more than once per year unless noted.
ppm = parts per million
PM10 = particles 10 microns or less in size
PM2.5 = particles 2.5 microns or less in size
µg/m3 = micrograms per cubic meter
a 0.25 ppm not to be exceeded more than two times in 7 consecutive days.
b Not to be exceeded on more than 1 day per calendar year as determined under the conditions indicated in Chapter 173-475 WAC.

Attainment Status

Ecology maintains a network of air quality monitoring stations throughout the state. These stations are placed in areas where there may be air quality problems, usually in or near urban areas or close to large air pollution sources. A limited number of additional stations are located in remote areas to provide an indication of regional background air pollution levels.

Based on monitoring information collected over a period of years, the state and federal agencies designate regions as being “attainment”, “nonattainment”, or “unclassifiable” areas for regulated air pollutants. “Attainment” status indicates that air quality in an area meets the federal, health-based ambient air quality standards; “nonattainment” status indicates that air quality in an area does not meet those standards. “Unclassifiable” status indicates that there are no relevant monitoring data for the area, in which case the area has the same regulatory status as “attainment” status. Regions previously designated as nonattainment that have demonstrated consistent improvements in air quality have been reclassified as “maintenance” areas, requiring approval of maintenance plans by Ecology.

The project area is within the portion of the County that was classified as nonattainment for CO and ozone in the 1990s. In 1996 PSCAA redesignated the entire region to be in attainment for ozone and CO, and maintenance plans for those pollutants have been approved by EPA (PSRC 2003). Although there are no CO or ozone monitors in the immediate project area PSCAA's monitors in the region have demonstrated compliance with the ambient standards since achieving attainment status. The project area is part of the approved maintenance area for CO and ozone.

Transportation Conformity

Federally funded transportation projects proposed for construction within nonattainment areas or maintenance areas are subject to the Transportation Conformity regulations specified under the Clean Air Washington Act. The permitting agency must demonstrate conformity by the following steps:

- Conduct a regional air quality analysis by consulting with the regional transportation planning agency (in this case PSRC) to confirm the proposed roadway project was included in an approved regional transportation plan, and that PSRC included the emissions from the proposed project in their regional air quality modeling for their required annual Air Conformity Analysis.
- Conduct a project-level carbon monoxide "hot spot" analysis to model the worst-case concentrations adjacent to the roadway, and compare the modeled concentrations to the allowable ambient air quality standards.

Because the proposal is not for a federally funded transportation project, it is not subject to the Transportation Conformity regulations. Regardless, the emission calculation and ambient air quality modeling protocols specified by the regulation were used for this assessment as relevant tools to evaluate the ambient air quality impacts associated with the project alternatives.

Impacts

The proposed action could affect air quality in two ways. First, during construction, dust impacts from construction activities can be significant, even if localized and temporary. Second, increased traffic due to population and employment growth associated with development under the planned action will generate vehicle emissions (which will continue to be the single largest air pollutant source category within City Center).

Method of Analysis for CO Hot-Spot Analysis

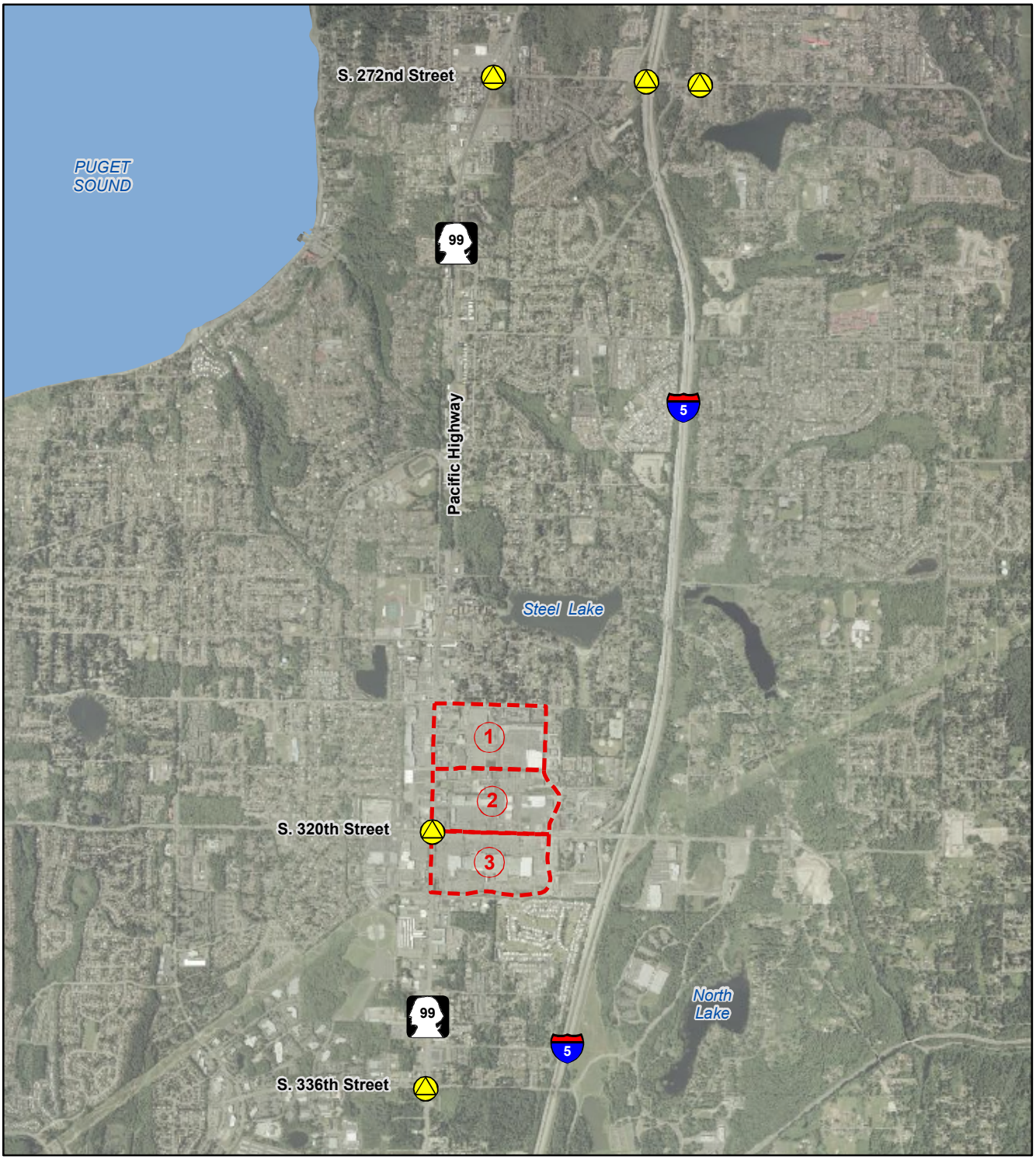
The CO hot spot analysis was conducted in accordance with the PSRC/Ecology guidance document "Guidebook for Conformity" (KJS 1995). Hot-spot modeling was done for the 2009 Build Year. Two standard computerized tools were used to evaluate potential air quality impacts from the Build Alternative, using a three-step process. First, peak-hour traffic volumes and intersection turning movements were identified based on the transportation analysis. Second, MOBILE6.2 CO pollutant emission factors for the modeled years were obtained from PSRC (McGourty 2005). Third, EPA's CAL3QHC computer dispersion model was used to estimate ground-level concentrations at receptors adjacent to the roadway, and the modeled concentrations were compared to the allowable ambient air quality standards.

Intersections Selected for Hot-Spot Analysis

PSRC/Ecology guidance specifies that the hot-spot analysis must be conducted at up to six intersections within the project area, representing the most congested conditions. Hot-spot modeling should be done for the three intersections with the worst level of service (LOS), and the three intersections with the highest peak-hour traffic volumes (KJS 1995). LOS is a measure of the weighted average vehicle delay during the peak traffic period at a signalized intersection. LOS "A" is the least congested, with an average delay of less than 10 seconds per vehicle. LOS "F" represents a weighted average delay of more than 80 seconds per vehicle. Please refer to the Transportation discussion (Section 3.4) of this Draft EIS for additional information. This combination of requirements provides the criteria for selecting intersections for the air quality analysis, and conversely, for eliminating intersections that do not warrant quantitative analysis.

PM peak-hour traffic volumes and LOS at 22 intersections within and near the project area were identified for Alternative 1, Alternative 2, and Alternative 3 for the 2009 Build Year. The traffic volumes of 2009 Alternative 1 were used for the hot-spot modeling because Alternative 1 will generate higher peak hour-volumes than the other alternatives. Under Alternative 1, the three intersections with the worst LOS are S 272nd/Pacific Highway South, S 272nd/Military Road S, and S 272nd Street/I-5 southbound ramp. The three intersections with the highest volumes are S 272nd Street/ Pacific Highway S, S 320th Street/Pacific Highway S, and S 336th Street/Pacific Highway S. The following five project intersections were included in the CO hot-spot analysis (see Figure 6).

- S 272nd Street and Pacific Highway S
- S 272nd Street and I-5 southbound ramp
- S 272nd Street and Military Road S
- S 320th Street and Pacific Highway S
- S 336th Street and Pacific Highway S



Air Quality Analysis Location

Source: Terraserver USA (June 2002)

N
W E
S

Miles
0 0.5 1

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Jones & Stokes

Figure 6:
Air Quality Analysis Locations

Short Term Impacts

Construction associated with growth and development would occur under all of the alternatives. During construction, dust from excavation and grading could cause temporary, localized increases in the ambient concentrations of fugitive dust and suspended particulate matter. Construction activity would be required to comply with the PSCAA's Regulation I, Section 9.15 requiring reasonable precautions to minimize dust emissions.

Construction activities would likely require the use of diesel-powered heavy trucks and smaller equipment such as generators and compressors. These engines would emit air pollutants that could slightly degrade local air quality in the immediate vicinity of the activity. However, these emissions would be temporary and localized, and the resulting construction emissions would likely be far outweighed by emissions from existing traffic around the project area.

Some construction activities could cause odors detectible to some people in the vicinity of the activity. This could be particularly true during paving operations using tar and asphalt. Such odors would be short-term and localized. Construction activities would be required to comply with the PSCAA regulations requiring the best available measures to control the emissions of odor-bearing air contaminants (Regulation I, Section 9.11). In addition, no slash burning would be permitted in association with the development of this project.

Construction equipment, material hauling, and detours for excavation and grading could affect traffic flow in the project area. If construction delays traffic enough to significantly reduce travel speeds in the area, general traffic-related emissions would increase.

Long Term Impacts

2009

Development under all of the alternatives will increase the traffic volumes of streets within and surrounding the City Center project area. Alternative 1 is predicted to generate the highest vehicle trips based on the traffic analysis. Therefore, the air quality impact analysis was performed for Alternative 1 as the worst-case scenario.

Carbon monoxide (CO), is the air pollutant of primary concern for mobile vehicles, is the pollutant emitted in the largest quantity and is the only pollutant for which modeling guidelines have been established. Therefore, in accordance with PSRC/Ecology guidance CO is the only pollutant that was quantitatively modeled for the hot-spot analysis (KJS 1995).

Table 3-2 displays the results of the CAL3QHC dispersion modeling for CO concentrations adjacent to each of the five subject intersections for the 2009 Alternative 1. The table lists both the modeled 1-hour and 8-hour average concentrations. The listed CO concentrations include an assumed background value representative of suburban areas.

The listed concentrations represent the maximum values modeled for hypothetical receptors located on the sidewalks adjacent to each intersection, with stagnant atmospheric conditions, under the most restrictive wind speed and wind direction. Thus, the listed values represent worst-case concentrations that are likely higher than would ever actually be experienced by local residents and pedestrians.

As shown in Table 3-2 the modeled worst-case CO concentrations at each intersection for Alternative 1 are all below the allowable ambient air quality standards. The forecasted traffic volumes are higher for Alternative 1 than for any other alternative. Therefore, it is expected that none of the alternatives would cause any significant operational air quality impacts.

Table 3-2. Modeled 1-Hour CO Concentrations (Year 2009 Alternative 1)

Intersection	1-hour average (ppm)	8-hour average (ppm)
S 272nd Street/Pacific Highway S	9.5	6.7
S 272nd Street/I-5 southbound ramp	7.7	5.4
S 272nd Street/Military Road S	8.7	6.1
S 320th Street/Pacific Highway S	11.2	7.9
S 336th Street and Pacific Highway S	10.5	7.4

Allowable ambient air quality standards: 35 ppm (1-hour), 9 ppm (8-hour)
Listed values include assumed background: 3 ppm (1-hour); 2.1 ppm (8-hour)
All intersections were modeled for the weekday PM condition.
Source: Jones & Stokes, 2006

Table 3-2 shows the modeled CO concentrations for the weekday PM peak traffic volumes. As this table shows, Alternative 1 would not cause any significant operational air quality impacts during the peak hour period. Because Alternative 1 is expected to generate the highest peak hour traffic volumes, it is not expected that either of the remaining alternatives would result in any significant air quality impacts.

2014

Quantitative CO hot-spot modeling was not conducted for the year 2014 because the site-specific data required for hot-spot modeling (intersection levels of service and intersection turning movements) were not available for that year. However, based on the favorable CO hot-spot modeling results for 2009 it is concluded the ambient air quality impacts for 2014 would be less than the allowable air quality limits, so planned development would not cause signficant air quality impacts in 2014. This conclusion is based on two sets of facts. First, as listed in Table 3-2 the modeled CO concentrations for 2009 are well within the allowable air quality limits, even though the CO modeling approach used a worst-case screening model and conservatively high background concentrations. Second, it is likely that CO concentrations will steadily decrease between the years 2009 to 2014 because the increase in future traffic volumes will be more than offset by future emission reductions from individual vehicles. Future traffic volumes are forecast to increase at rates of only 1.5% to 3.3% per year. However, EPA's MOBILE62 emission factor model indicates CO emission factors for individual vehicles will decrease by 3.5% to 4.0% per year. Because the annual decrease in CO emission factors exceeds the annual increase in traffic volume, ambient CO impacts are expected to decrease in the future.

Mitigation Measures

Short Term

Construction activities related to development approved under the Planned Action Designation could generate fugitive dust, which could be mitigated using the following best management practices:

- Use water sprays or other non-toxic dust control methods on unpaved roadways.
- Minimize vehicle speed while traveling on unpaved surfaces.
- Prevent trackout of mud onto public streets.
- Cover soil piles when practical.
- To the extent practical, minimize work during periods of high winds.

Burning of slash or demolition debris is not permitted without express approval from PSCAA. No slash burning is anticipated for any construction projects in the City Center.

Mobile construction equipment and portable stationary engines would emit air pollutants including NOx, CO, and PM10. These emissions would be temporary and localized. It is highly unlikely that the temporary emissions would cause ambient concentrations at adjoining parcels to approach the NAAQS limits. Typical mitigation measures to minimize air quality and odor issues caused by tailpipe emissions include the following:

- Maintain the engines of construction equipment according to manufacturers' specifications.
- Minimize idling of equipment while the equipment is not in use.

Long Term

The CO concentrations modeled for this air quality assessment account for intersection improvements already included as part of the proposed action to mitigate traffic impacts. The analysis presented in this section indicates all of the project alternatives would result in compliance with applicable carbon monoxide standards. Consequently, no significant air quality impacts would be expected, and no consideration of special air quality mitigation measures is necessary.

Significant Unavoidable Adverse Impacts

Temporary, localized dust and odor impacts could occur during the construction activities.

3.2 Land Use

This section describes the project areas existing land uses, relationship to surrounding land uses, site and surrounding area comprehensive plan and zoning classifications; and analyzes potential impacts resulting from the proposed action.

Affected Environment

Overview

The City Center project area consists of approximately 200 acres located in downtown Federal Way (see Figure 1). The project area contains a variety of uses, including commercial, office, parking, and multi-family residential uses. Table 3-3 summarizes the existing development in the project area.

Table 3-3. Existing Development Planned Action Project Area

Block	Commercial (retail, office, restaurant, services)	Residential	Hotel
Block 1	538,224 sf	190 units	--
Block 2	500,221 sf	N/A	230 rooms
Block 3	850,469 sf	N/A	--
Total	1,888,914 sf	190 units	230 rooms

Source: King County Department of Assessments, 2006.

Commercial uses, including freestanding retail stores, hotels, retail centers and services are the predominant land use. In terms of area, the other major land use in the project area is parking and private circulation. Surface parking is plentiful throughout the project area, constituting an estimated 50 to 70 percent of the land area.

Some offices uses, including the offices of the Federal Way School District Administration, are located in Blocks 1 and 2. The only housing in the project area are two multi-family developments in the northeast corner of Block 1.

Block 1

Block 1 is primarily developed with large freestanding retail stores including Wal-Mart and Top Foods. In addition, smaller retail and service uses are located in small strip commercial centers scattered throughout Block 1. Many small businesses also line Pacific Highway South on the west side of Block 1, including a number of stores that specialize in ethnic foods and services. Hillside Plaza and a commercial center anchored by 24-Hour Fitness are located on the eastern portion of Block 1. Building footprints of these developments tend to be small relative to lot size. Please see Table 3-4 for some examples of building area relative to lot size.

Table 3-4. Block 1, Sample Commercial Areas Building Footprint and Lot Area Ratios

Commercial Area	Lot Area	Building Footprint	Ratio of Building Footprint to Lot Area	Land Area used for Parking, Circulation and Landscaping
Walmart	433,422 sf	122,549 sf	.28	310,873 sf
Top Foods Grocery	304,870 sf	65,714 sf	.22	239,156 sf
Hillside Plaza	383,818 sf	110,234 sf	.29	273,584 sf

Source: King County Department of Assessments 2006.

Other uses found in Block 1 include the Federal Way School District Administration building and two multi-family residential buildings. These two residential complexes contain a total of 190 units. Steel Lake Plaza Apartments are located at the corner of 23rd Avenue South and S. 312th Street. This development has a total of 54 units developed at a density of approximately 27 units per acre. Brightwater Apartments are located immediately west of Steel Lake Plaza Apartments along S. 312th Street, extending just past 20th Avenue S. Brightwater has a total of 126 units developed at approximately 26 units per acre.

At the northwest corner of Block 1 and at the northwest corner of S. 316th Street and 20th Avenue South, there are numerous vacant and/or for-sale commercial businesses (Figure 7).

Access to and within Block 1 is provided by the public rights-of-way that surround the area, as well as a number of intra-block circulation routes and informal circulation via the surface parking that surrounds the retail uses.

Block 2

Development in Block 2 is primarily composed of retail, service and parking uses. Retail establishments are clustered along S. 320th Street and Pacific Highway South. Commercial centers include SeaTac Village, Center Plaza, and SeaTac Plaza. The buildings that house these uses occupy one-third or less of their respective lots, with the remaining area occupied primarily by surface parking and some limited landscaping. Table 3-5 below summarizes the ratio of building area to lot area for these three developments.

Table 3-5. Block 2, Sample Commercial Areas Building Footprint and Lot Area Ratios

Commercial Area	Lot Area	Building Footprint	Ratio of Building Footprint to Lot Area	Land area used for parking, circulation and landscaping
SeaTac Village	688,456 sf	166,897 sf	0.24	521,559 sf
Center Plaza	263,907 sf	68,855 sf	0.26	195,052 sf
SeaTac Plaza	363,101 sf	107,394 sf	0.31	233,957 sf

Source: King County Department of Assessments, 2006.

Block 2 also has two hotels, Best Western Executel and Comfort Inn, which provide a total of 230 hotel rooms.

There are a number of vacant or underdeveloped parcels particularly in the northern portion of this block, along S. 316th Street (Figure 7). The 25,024 sf cinema building located at S. 316th Street and 20th Avenue South, is closed and vacant. The Federal Way Transit Center, owned and operated by Sound Transit, is located at the southwest corner of 23rd Avenue South and S. 316th Street. The Transit Center includes bus bays and a 1,200 stall parking structure.

Similar to Block 1, access to Block 2 is provided via the adjacent public rights-of-way, intra-block circulation routes and informal circulation through the large surface parking areas.

Block 3

Block 3 differs from the rest of the project area in that it is developed with The Commons at Federal Way, a single commercial center. The Commons at Federal Way is an enclosed regional shopping center of approximately 736,051 square feet.

The mall offers a variety of retail shops, food, and entertainment. Anchor stores for the mall include Sears, Macy's and Target. Sears is located on a separately owned parcel just west of the main mall building. Two small areas of commercial use are located in the northeast corner of the property, separate from the primary development.

The entire block is approximately 62 acres (2,697,235 square feet) with paved surface parking covering approximately 70 percent of the area.

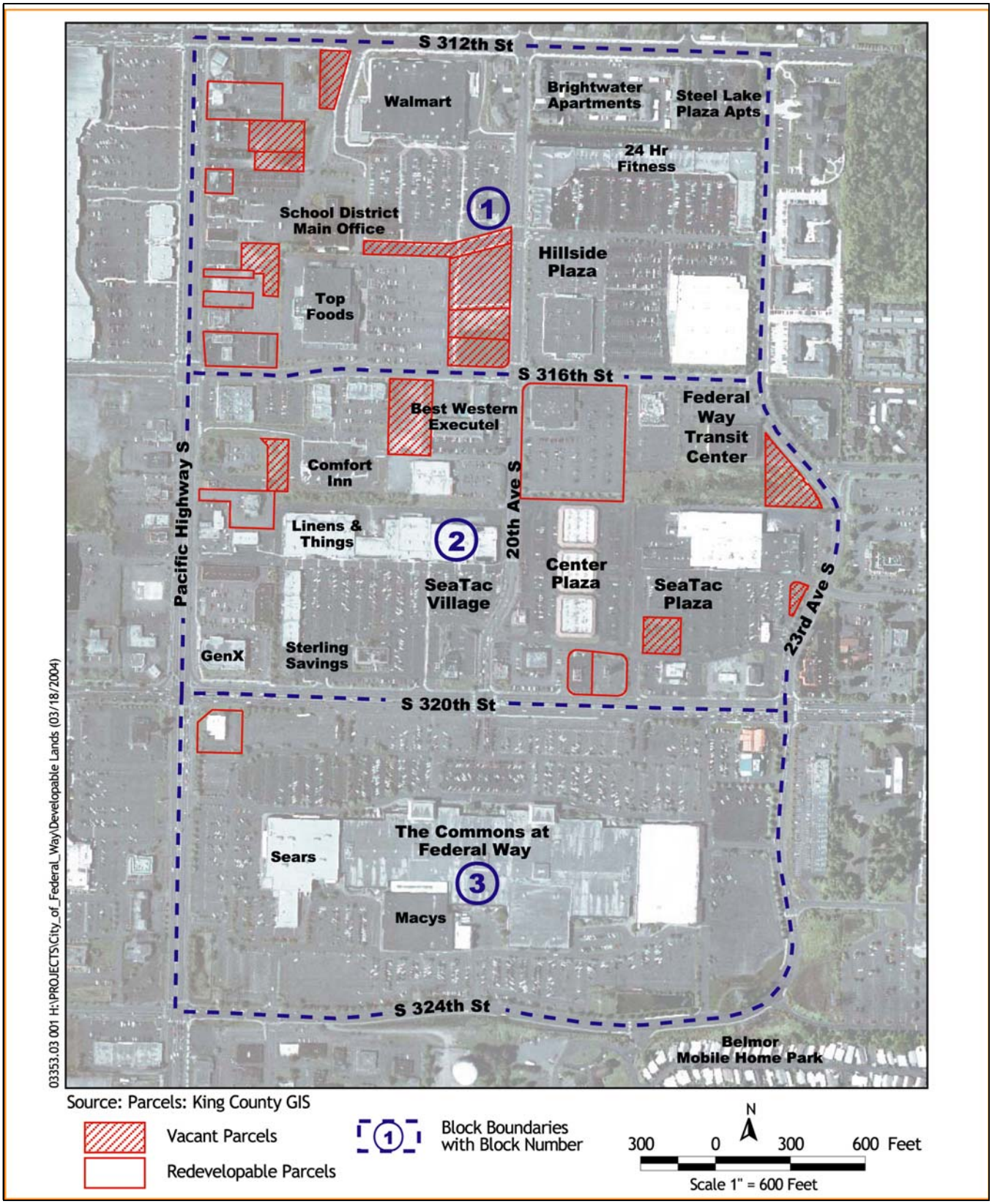
Surrounding Land Uses

A mix of commercial, residential and public uses are found in the area surrounding the project area. To the east, commercial uses located within the City Center sub-area extend from the project area to Interstate 5. Uses in this area include Steel Lake Park, Harry S. Truman High School, multi-family housing developments, a church, the Gateway Center containing a cinema, shops and hotel, office complexes, and a mix of free-standing retail and services uses.

To the west, newer retail strip malls and commercial uses, including Pavilion Center, are located on the west side of Pacific Highway South. Commercial uses extend along Pacific Highway South, to the northwest and southwest of the project area, including some multi-story office buildings and hotels. A mix of single family and multi-family residential uses are located west of the Pacific Highway South commercial area. Celebration Park is located to the southwest of the project area.

To the north of 312th Street, a small multi-family area is located at 18th Avenue South. The balance of the area to the north is a developed single-family residential neighborhood. Steel Lake Park is located in this area, north of S 308th Street.

South of The Commons at Federal Way, property is developed with a mix of commercial and multi-family uses, including Belmor Mobile Home Park.



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Jones & Stokes

Figure 7:
Vacant and Redevelopable Land

Vacant and Redevelopable Land

Vacant Land

Based on a review of the project area and King County Assessor's data, approximately 5 acres are vacant in Block 1 and 3 acres in Block 2, for a total of approximately 8 acres of vacant land. See Figure 7 for the location of these parcels.

Redevelopable Land

The identification of redevelopable land is dependent on a variety of factors, including general and localized economic conditions, perceived market opportunities and the financial and investment goals of individual property owners. For this analysis, two measures have been used. The first is based on the King County Buildable Lands Report. The King County Buildable Lands Report is an analysis, required by the Washington GMA, which measures capacity to absorb growth in local jurisdictions. For the purpose of this study, jurisdictions in King County, including the City of Federal Way, were required to establish a methodology for identifying redevelopable land. The approach used by Federal Way and many other jurisdictions compares the value of improvements on a property to the value of the property itself. Properties with relatively low improvement values compared to property values are assumed to be more likely to be redeveloped. In commercial areas, redevelopable properties are identified as those in which the improvement value is 50 percent or less of the property values.

This approach was used to identify redevelopable properties in the project area. Under this approach a total of 5 acres are identified as redevelopable in the project area. By Block area, this breaks down to approximately 2.8 acres in Block 1, 6.05 acres in Block 2, and 0.65 acres in Block 3. See Figure 6 for the location of these parcels.

A second measure of the redevelopment potential in the project area considers the potential for development of existing paved surface parking areas. As discussed previously, paved parking is a predominant land use in the project area. Typical commercial center development in the project area has two-thirds or more of developed area used for surface parking. Some portion of these parking areas could be reduced or consolidated in structured parking facilities to allow redevelopment of existing parking areas.

Based on King County Assessor’s data, the project area has a total of approximately 8.15 acres of vacant and redevelopable land in Block 1; 8.97 acres in Block 2; and 0.65 acres in Block 3, for a total of 17.7 acres of vacant and redevelopable land in the Project area (see Table 3-6). If existing paved surface parking areas were considered, the amount of re-developable land would increase significantly. The degree to which the paved parking areas could be used depends on whether new development would consolidate parking into structured parking.

Table 3-6. Vacant and Redevelopable Land Summary

	Vacant Land[1]	Redevelopable Land[2]	TOTAL
Block 1	5.35 acres	2.80 acres	8.15acres
Block 2	2.92 acres	6.05 acres	8.97 acres
Block 3	0 acres	0.65 acres	0.65 acres
TOTAL	6.7 acres	5.08 acres	17.7 acres

Source: Jones & Stokes, 2006.

1. Based on King County Assessor's data, 2006.
2. King County Buildable Lands Report methodology; using 2006 King County Assessor's data.

Land Use Compatibility

In general, the project area consists of low scale retail and service uses with large parking areas. The large existing parking areas allow ample parking for typical demand and appear to have sufficient capacity for peak times. Because the uses are low-scale, spread out and similar in character, little or no potential land use conflicts are evident.

In the areas adjacent to the project area, there is a potential for land use conflicts where residential uses adjoin intensive commercial activity. Conflicts could arise from lighting, noise and general activity levels that may spill over from commercial to residential areas. Development in the Planned Action Area could also have greater height and bulk compared to adjoining development, resulting in increased shadowing and disparity in building scale.

The proposed Zoning Code amendment to allow for increased multi-unit structure height in the City Center-Core zoning designation could result in greater building height for multi-unit structures with the potential for increased shadowing and greater disparity in building scale. However, as discussed below, because the proposed change under either alternative is comparable to existing height standards for other uses in this designation, the impact is not expected to be significant.

Another potential conflict within the project area is between pedestrian and auto-related uses. Currently, the project area is heavily auto-oriented. Pedestrian connections are not consistently provided and are interrupted by driveways and parking lots.

Existing Comprehensive Plan Land Use Designations

As shown on Figure 3, the project area is currently designated City Center Core (CC-C) from S. 324th Street to S. 316th Street. From S. 316th to S. 312th the area is designated City Center Frame (CC-F).

The intent of the CC-C land use designation is to create a high-density mixed-use "center" for Federal Way, and become an urban center as envisioned in VISION 2020 and the King County County-wide Planning Policies. The CC-C designation recognizes that traditional city centers are places where diverse office, retail, and government uses are concentrated, as well as cultural and civic facilities, community services, and housing. The CC-C designation is intended to allow for and encourage this level of diversity and concentration of uses.

Within the planned action project area, the CC-C designation applies to Blocks 2 and 3. This designation also applies to the area east of Blocks 2 and 3, extending to Interstate 5.

The City Center Frame area provides for an area of dense mixed-use development surrounding and supporting the core. The CC-F designation provides a transition between high-activity areas in the core area and less dense neighborhoods outside of the Frame. The Frame area allows uses that are similar to those in the core area, but are of lower density and intensity. The CC-F designation applies to Block 1 in the planned action project area. Adjacent to the project area, the designation is also found on the west side of Pacific Highway South, and surrounding Steel Lake Park.

As shown in Figure 8, Comprehensive Plan designations for the surrounding area includes:

- Community Business – Community Business is the City's largest retail designation in terms of area and is intended to allow for a wide range of commercial businesses. The Community Business designation is found along Pacific Highway South, to the northeast and southeast of the project area.
- Multi-Family – The multi-family designation allows for a range of multi-family densities. This designation is found to the north and south of the project area. Densities in these areas include 1 unit per 1,800 sf of lot area, up to 1 unit per 3,600 sf of lot area.
- Single Family – The Single Family designation near the project area allow for densities of 1 unit per 7,200 sf of lot area. This designation is located north of the project area and west of the CC-F designation on the west side of the CC-F designation.

Existing Zoning Code Designations

Zoning designations are generally consistent with the comprehensive plan land use designations described above.

As shown in Figure 3, the area is currently zoned City Center Core (CC-C) from S. 324th Street to S. 316th Street. From S. 316th to S. 312th the area is zoned City Center Frame (CC-F). Tables 3-7 and 3-8 identify the major permitted uses and standards provided for in each zone.

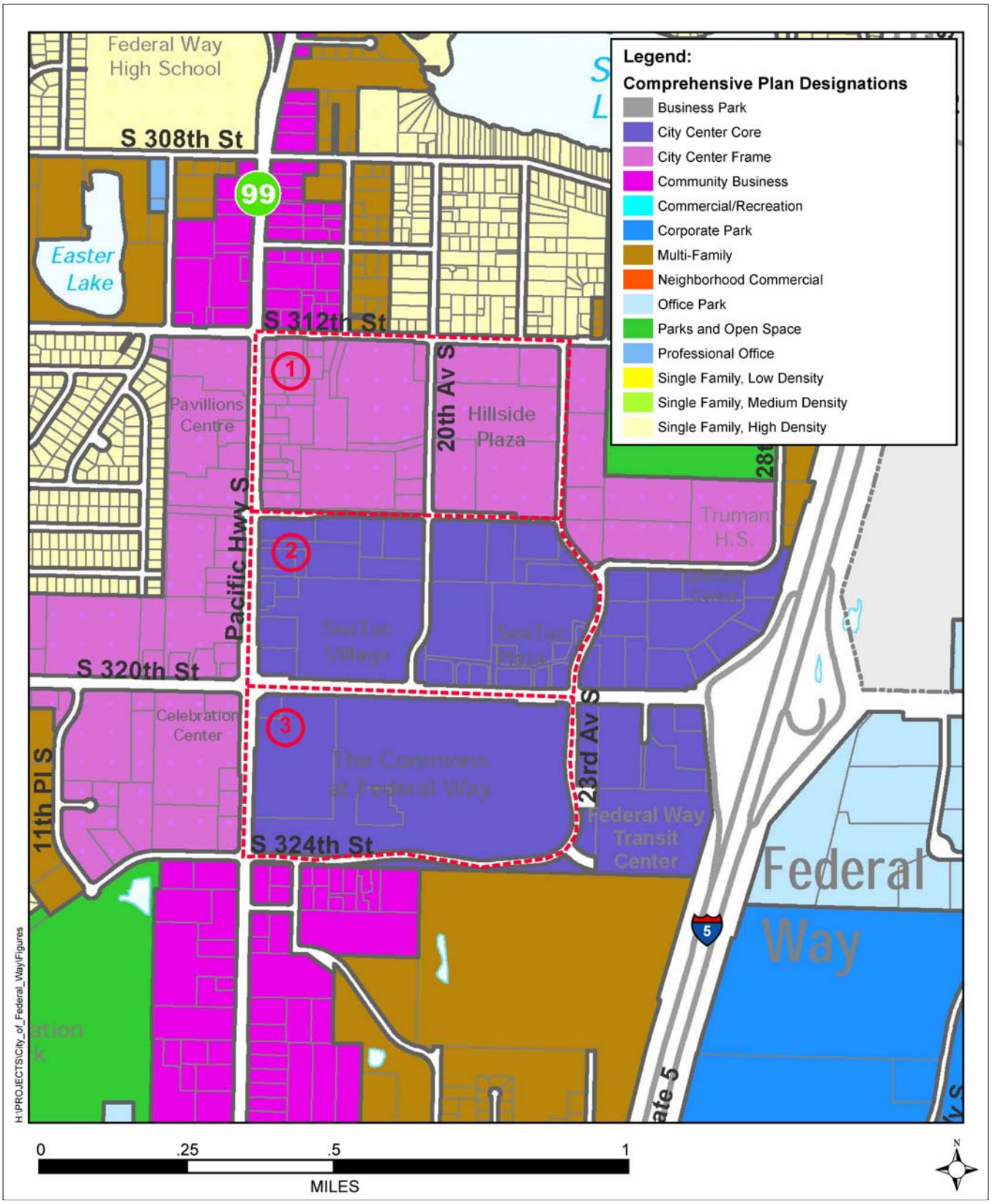

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Figure 8:
Comprehensive Plan Designations

Table 3-7. City Center Core Permitted Uses and Development Standards

Permitted Uses	Maximum Building Height	Minimum Parking Requirement
Office	95' above average building elevation to a maximum of 145' subject to special regulations for this use.	1 stall/300 sf
Retail, including regional retail shopping center	70' above average building elevation to a maximum of 95' subject to special regulations for this use.	1 stall/300 sf
Hotel/Convention/Trade Centers	95' above average building elevation to a maximum of 145' subject to special regulations for this use.	1 stall/guest room; convention/trade center case by case
Entertainment	70' above average building elevation to a maximum of 95' subject to special regulations for this use.	1 space/200 gsf for private clubs and lodges; all other uses 100 space/100 gsf
Parking garage	45 feet above average building elevation	case by case
Multi-Unit Housing	70' above average building elevation to a maximum of 85' subject to special regulations for this use.	1.7 stalls/unit
Hospital/Nursing Home	35 feet above average building elevation	case by case
Government Facility	75 feet above average building elevation	case by case
Public Utility	35 feet above average building elevation	case by case
Schools	35 feet above average, with gym up to 55' if beyond 100' from residential zone.	case by case
Personal Wireless Service Facility	Not specified; subject to Zoning Code Section 22-967.	Not applicable

Source: City of Federal Way, 2006.

Table 3-8. City Center Frame Permitted Uses and Development Standards

Permitted Uses	Maximum Building Height	Minimum Parking Requirement
Office	35' above average building elevation	1 stall/300 sf
Retail	35' above average building elevation	1 stall/300 sf
Hotel/Convention/Trade Centers	45' above average building elevation	1 stall/guest room convention/trade center case by case
Entertainment	60' above average building elevation	1 space/200 gsf for private clubs and lodges, all other uses 100 space/100 gsf
Vehicle Service Station	35' above average building elevation	case by case
Multi-Unit Housing	70' above average building elevation to a maximum of 85' subject to special regulations for this use.	1.7 stalls/unit
Group Homes/Transition Housing	35'above average building elevation.	case by case
Schools, Day Care Facilities, Churches	35'; gyms to 55' if located more than 100 feet from adjacent residential zone.	case by case
Hospital facilities	35' above average building elevation	case-by case

Source: City of Federal Way, 2006

As shown in Figure 3, zoning designations in the surrounding area also correspond to comprehensive plan land use designations. Zoning designations include:

- Community Business (BC) – BC allows general retail uses and is located along Pacific Highway South, to the north and south of the City Center sub-area.
- RM 1800 – This multi-family zoning designation allows multi-family development to a maximum density of 24 units per acre. This designation is found north of the project area.
- RS 7.2 – The single-family designation allows a density of six units per acre and is the primary zoning designation for the single-family area surrounding the City Center sub-area. In addition, Steel Lake Park and Celebration Park are both zoned RS 7.2.
- RM 2400, RM 3600 – These multi-family designations allow maximum densities of 18 and 12 units per acre, respectively. These designations are found in the area south of The Commons at Federal Way.

Community Design Standards

Article XIX of the Federal Way City Code establishes Community Design Guidelines applicable to all zones in the City and to all development applications except single family residential. Proposals subject to community design guidelines are processed as a component of the underlying land use process. The director of community development services has the authority to approve, modify, or deny proposals under this process.

Site design guidelines (Section 22-1634) address general site criteria, parking (surface lots and structured parking), pedestrian circulation and public spaces, landscaping, commercial service and institutional facilities and other site elements. Guidelines for building design (Section 22-1635) address general building criteria, landscape screening, and building articulation and scale. Additional guidelines are provided for building and pedestrian orientation and mixed-use residential buildings. Section 22-1638(c) provides specific guidelines for the City Center Core and Frame zones. Guidelines in this section address parking (surface and structured parking), entrance and building facades, and the location of drive-through facilities.

Please refer to the Aesthetics section of this Draft EIS for additional discussion of these Guidelines.

Population, Employment, Housing

For the purpose of this analysis, population and employment estimates are based on current City of Federal Way assumptions for multi-family residential household size and employment density for various commercial uses. These assumptions are summarized in Table 3-9 below and used in the analysis that follows.

Table 3-9. Population and Employment Densities

Land Use	Density Factors
Multifamily housing	2.36 persons per household
Retail	400 sf per employee
Office	350 sf per employee
Other	800 sf per employee (used only for Alternative 3 - No Action)
Lodging	1 employee per 1.49 rooms

Sources: City of Federal Way, 2003 and King County Buildable Lands Report

Within the project area, housing and residential population is limited to two apartment complexes in Block 1. The Steel Lake Apartments have 18 one-bedroom units and 36 two-bedroom units for a total of 54 units. The Brightwater Apartments has 52 one-bedroom, 63 two-bedroom, and 21 three-bedroom units for a total of 136 units. Based on the estimated population in these two projects, the project area contains approximately 448 residents.

The project area is primarily an employment center and has an estimated employment population of 4,215 (see Table 3-10, below). The largest component of employment population is in the retail sector, with 3,170 employees or 75 percent of the total employment population. Office employment comprises the next largest sector, with 873 employees, or 21 percent of total employment. Together these two employment sectors comprise 4043 employees, or 96 percent of all employment in the project area.

Table 3-10. Project Area Employment (# of FTEs)

Block	Retail	Office	Other	Lodging	TOTAL
Block 1	721	200	2	0	923
Block 2	1020	380	5	154	1,559
Block 3	1,429	292	11	0	1,732
Total	3,170	873	18	154	4,215

Source: City of Federal Way, Jones & Stokes, 2006

Proportionately, Block 3 has the largest employment population, with 1,732 employees or 41 percent of the total. Within Block 3, 82 percent of the employment population is in the retail sector. Block 2 has 1,559 employees, or approximately 37 percent of the total employment population. Within Block 2, 65 percent of employees are in the retail sector, followed by office employees, who comprise 24 percent of Block 2 employment. Block 2 has the only lodging employment with approximately 154 people. Block 1 has the smallest employment population, with 923 employees. The mix of retail, office, and other employee population is comparable to the project area as a whole.

In the surrounding area, residential population is found in the areas zoned for and developed with single and multi-family residential areas.

The two largest employers in the surrounding area include Weyerhaeuser and the Federal Way School District, with 3,586 and 2,885 employees, respectively (Federal Way Chamber of Commerce). Other large employers in the area with approximately 500-600 employees each include World Vision, the U.S. Post Office, and St Francis Hospital.

Impacts

Land Use Patterns

Impacts Common to All Alternatives

Under all of the alternatives, the land use pattern in the project area will intensify and the mix of uses will increase to create a greater diversity in land use pattern. Over time, the scale of buildings may also increase as new development occurs and is built in a manner consistent with the standards allowed under the Federal Way Zoning Code.

The primary difference between alternatives is the overall amount, pace and location of development that may occur. Potential changes to land use patterns anticipated under each alternative are described below.

Alternative 1

As shown in Table 3-11, development through 2009 under Alternative 1 would introduce a total of 450,000 sf of new retail space, 210,000 sf of office space, 360 hotel rooms, 450 residential units, and 450 structured parking stalls. Growth will be focused in Blocks 2 and 3, in the vicinity of S 320th Street. In these areas, existing low scale retail development may be displaced and surface parking areas may be redeveloped. The land use pattern will become

more efficient with more of the available developable land in active use. Block 1 will also experience some of these impacts, but to a relatively less degree than Blocks 2 and 3.

Table 3-11. Alternatives 1 and 2 Population and Employment Projections

Additional Population	through 2009	2010 – 2014	Total
Residential	1,062	708	1,770
Employment			
Office	599	399	998
Retail	1,125	751	1,876
Other (civic)	0	399	399
Lodging	242	162	404
Total New Employment	1,966	1,711	3,677

Source: City of Federal Way, Jones & Stokes, 2003

Between 2010 and 2014, growth under Alternative 1 will continue, with an additional 300,000 square feet of retail development, 140,000 square feet of office development, 240 hotel rooms, 300 residential units, 100,000 square feet of civic uses and 300 spaces of structured parking would be developed. As in the prior time period, growth will continue to be focused in Blocks 2 and 3. The land use pattern will continue to grow more intensive and diverse, with new development of vacant land, surface parking areas, and under-developed properties. Under Alternative 1, Block 1 will continue to experience new growth at relatively lower levels of intensity, compared to Blocks 2 and 3.

The proposed increased in structure height for multi-unit housing would have an incremental impact on building heights in the CC-C zone. Multi-unit housing would be allowed to develop to a height that is 55 feet higher than the current height limit for office and hotel uses in this zone. If multi-unit structures were built to the maximum height limit, these structures would be among the tallest buildings in the CC-C zone.

Alternative 2

Alternative 2 would result in the same total amount of development as Alternative 1, but would distribute development more evenly throughout the project area. In general, impacts to the overall land use pattern would be similar to Alternative 1. Development and redevelopment of vacant land, excess surface parking areas, and under-developed parcels would be expected. Compared to Alternative 1, a greater growth and diversity of uses in Block 1 would be expected. However, because the underlying zoning in Block 1 limits building height and bulk to allow for a transition to the lower intensity area to the north, it is expected that overall development levels on Block 1 would continue to be less intensive than Blocks 2 and 3.

Adoption of the proposed increased height limit for multi-unit structures would have the similar impacts as described under Alternative 1. However, because building heights would be limited to 145 feet, equal to the existing height limit for office buildings and hotels, the overall impact is not expected to be significant and comparable to development that is currently permitted in the CC-C zone.

Alternative 3

Alternative 3 (No Action) assumes a total increase of 220,270 sf of retail space, 104,446 sf of office space, and 270 residential units. Overall, Alternative 3 would result in increased intensification and diversity in the project area, but to a significantly lesser degree than under Alternatives 1 and 2.

Under Alternative 3, the Zoning Code structure height standards in the CC-C and CC-F zones would remain.

Land Use Compatibility

Alternative 1

The proposed increase to 200 feet for multi-unit structures would allow these structures to be the tallest within this zoning designation. The next tallest structure height would be allowed for office and hotel uses, with a maximum building height of 145 feet. This increased height for multi-unit structures may be incrementally noticeable within the City Center Core zone. However, the proposed height is generally compatible with building height and bulk standards within this zoning designation and is not expected to result in significant land use compatibility impacts.

Alternative 2

The proposed increase to 145' for multi-unit structures would be equal to the current height limit for office and hotel structures in the CC-C zone and comparable to the height standard for other uses in this zone. The proposed height standard is not expected to result in significant land use compatibility impacts.

Alternative 3

Under Alternative 3, the current height limit of 70 feet for multi-unit residential structures would remain unchanged. This height limit is equal or similar to standards for retail, entertainment, and government facilities uses in the CC-C zone. No land use compatibility impacts are expected to result.

Impacts Common to All Alternatives

As properties within the project area redevelop, vacant land, under-developed land, and surface parking lots will be consumed. Uses that are currently separated and buffered from each other will be required to co-exist in closer proximity. Under these circumstances, the potential for land use conflict increases. Land use conflicts arise when activity levels differ greater between uses, when spillover lighting and noise levels affect adjoining uses, or when building height, bulk and scale differ greatly between uses. The potential for such conflict will increase with greater diversity and mix of uses in the project area.

Within the Planned Action project area, land use compatibility impacts may occur where intensive redevelopment occurs next to existing lower intensity land uses within the project area. These contrasts will be incremental and short-term. Over the period of the planned action designation, the contrast between the older one story structures and the redeveloped

properties will fade as the project area fully develops and reflects a more uniform pattern, building design and scale.

Around the edges of the project area, adjoining lower intensity uses, such as single and multi-family residential areas could also experience impacts. However, for residential areas north of the project area, the current CC-F zoning designation has development standards intended to ensure a transition to lower intensity uses. In this area, these development standards should mitigate any potential land use compatibility impacts. To the south, existing multi-family development directly adjoins Block 3 in the project area. Potential land use conflicts could result if Block 3 is intensively developed in the area near these multi-family residences.

Land use compatibility impacts could result under any of the alternatives and during any of the time periods. The potential for land use conflicts increases with increasing intensity and density.

Population, Employment, Housing

Impacts Common to all Alternatives

Under all of the alternatives, future residential and employment population will increase. The alternatives differ as to the amount and timing of these increases. Impacts resulting to population, housing and employment for each alternative in the two time periods analyzed in this EIS are described below.

Alternative 1

As shown in Table 3-11, Alternative 1 is expected to generate a total new residential population of 1,770 persons and total new employment population of 3,677. The new employment population would have a greater emphasis on office, lodging, and other employment. New office employment would consist of 998 persons, or 27 percent of all new employees. New retail employees would remain the largest employment group, with 1,876 new employees, or 50 percent of total new employment.

Under Alternative 1, new residential and employment population would be most concentrated in Blocks 2 and 3, where new development is focused.

Alternative 2

Impacts under Alternative 2 would be similar to those described for Alternative 1, except that new residential and employment population would be more distributed throughout the project area.

Alternative 3

Table 3-12 identifies the residential and employment population that could result from development under Alternative 3. Compared to the action alternatives, Alternative 3 would result in significantly less residential and employment population. Through 2009, Alternative 3 would general 378 new residents and 522 new employees, compared to 1062 new residents and 1,986 new employees under the action alternatives during this same time period. By

2014, Alternative 3 is expected to generate only about 25 percent of the employment population and 36 percent of residential population expected under the action alternatives.

Over half of the new employment created under Alternative 3 would be in the retail sector.

Table 3-12. Alternative 3 Population and Employment Projections

Additional Population	through 2009	2010 – 2014	Total
Residential	378	260	638
Employment			
Office	179	119	298
Retail	330	220	550
Other	13	5	18
Lodging	--	--	--
Total New Employment	522	344	866

Source: City of Federal Way, Jones & Stokes, 2006

Mitigation Measures

Existing development standards along the edges of the Planned Action area appear to be adequate to allow for a compatible transition from more intensive to less intensive uses. However, as development occurs, this transition area should be evaluated to confirm that long-term land use compatibility impacts are not being created. If necessary, new development standards for edge areas should be considered. Techniques could include site and building lighting limits, requirements for landscaping, noise control and other measures.

Significant Unavoidable Adverse Impacts

No significant unavoidable adverse impacts are anticipated.

3.3 Aesthetics, Light and Glare

This section of the Draft EIS addresses the existing conditions, potential impacts, mitigating measures and unavoidable significant adverse impacts that the proposal and alternatives may have on the visual character, amount of light and glare and views to and from the project area.

Affected Environment

Visual Character

The project area, located just west of Interstate 5 between South 312th Street and South 324th Street, is the City's commercial center and is characterized by low-scale suburban commercial buildings, large surface parking lots and wide arterial streets with relatively little landscaping.

Buildings in the project area are predominantly one- and two stories, with flat roofs and canopies containing tenant signage. Buildings are typically earth tone and finished with brick, painted concrete or stucco. Please see Figure 9 for an example of typical commercial development in the project area.

Figure 9. Representative Retail Development

Jones and Stokes, 2005.

The project area is strongly auto-oriented. Public rights-of-way are very wide, with limited pedestrian amenities, although streets include improved sidewalks, decorative lighting and transit stops. Street trees and buffer landscaping is provided in some areas, but is not consistently present in the project area (See Figure 10).

Figure 10. Typical Streetscape

Jones and Stokes, 2005.

As Figure 11 illustrates, parking areas and internal circulation lanes are a dominant visual feature in the project area. The majority of land area not occupied by buildings is devoted to surface parking and internal circulation. These parking areas are typically not fully utilized and the large areas of pavement serve to physically and visually increase the distance between the commercial uses and the adjacent public streets.

Figure 11. Representative Internal Circulation Pattern

Jones and Stokes, 2005.

In addition, because the block size in the project area is very large, private development has incrementally divided these large blocks with small internal circulation roads. These internal circulation routes are not well defined or marked. Pedestrian amenities, lighting or landscape features are not provided. In general, these internal roadways are not easily distinguished from the surrounding parking lots and contribute to the illusion of large paved areas around the buildings. In some cases, commercial buildings are oriented toward these private access lanes, rather than toward the public right-of-way. Figure 11 shows an example of a private internal circulation road serving the mid-block uses in the project area.

The Commons at Federal Way is the commercial anchor in the project area. The Mall is principally oriented toward S 320th Street, with surface parking area located between the primary building and the street (see Figure 12). Development consists of the primary mall facility and includes one outbuilding, located in the northeast corner of the parking area. The property is bounded along the west side by a utility easement that generally parallels South 324th Street and contains high voltage transmission lines and utility towers.

Figure 12. The Commons at Federal Way

The Commons at Federal Way, 2005.

In general, the project area contains little vegetation. Existing landscaping generally consists of minimal site planters or small perimeter landscape strips. The lack of greenery combined with the large areas of pavement creates a harsh, uninviting appearance.

Light and Glare

Typical of any commercial area, the project area generates a considerable amount of ambient light. Principal sources of light and glare include motor vehicles, parking area lighting, interior and exterior lighting associated with commercial development, and street lighting.

Views

Views to the south to Mount Rainier are found throughout the project area. In some areas, this view is broken up by power lines and buildings. However, property north of S 316th Street sits on a slight rise above the rest of the project area. In this area, there is a greater opportunity for unobstructed views of Mount Rainier, particularly in buildings that rise more than one story above street level.

Shading Conditions

The amount of shadow in an area varies by time of year and day. Shadows are generally longest during the winter months, when the angle of the sun is at its lowest point. Shadows are cast by any structure that blocks sunlight, including buildings, trees and sharp changes in topography. Currently in the project area, building heights are relatively low; there is little significant vegetation and no significant topographic peaks or valleys. Therefore, shadows are generally limited to the area immediately around buildings and do not impact neighboring

properties. The existing development pattern does not shade public parks or other sensitive uses, such as schools or residential areas.

Design Review

Article XIX of the Federal Way City Code establishes Community Design Guidelines applicable to all zones in the City and to all development applications except Single Family Residential. Proposals subject to community design guidelines are processed as a component of the underlying land use process. The Director of Community Development Services has the authority to approve, modify, or deny proposals under this process.

Site design guidelines (Section 22-1634) address general site criteria, parking (surface lots and structured parking), pedestrian circulation and public spaces, landscaping, commercial service and institutional facilities, lighting standards and other site elements. Pertinent site design guidelines are summarized below:

- Natural features should be incorporated into site design.
- Pedestrian areas and amenities should be incorporated into site design. Pedestrian areas should be easily seen and accessible.
- Similar design elements throughout the project should be used for design continuity.
- Physical features, activities and people should be in visible locations to increase safety and decrease crime.
- Incorporate measures to discourage crime, including access control and site design to reflect ownership.
- For surface parking lots, minimize vehicle-turning movements, make driveways visible from the right-of-way, do not impede pedestrian circulation, share access points with adjacent properties and incorporate retail pads adjacent to the right-of-way in large surface parking areas.
- Parking structures should include active uses along the street frontage, minimize the bulk and mass of the structure; be architecturally consistent with the primary structure; incorporate building articulation and accessory elements; minimize views into the garage from surrounding streets.
- Pedestrian connections should be clearly delineated using a variation in paved texture and color and protected from vehicle circulation areas; connections should be provided between adjoining properties; bicycle racks should be provided; outdoor furniture and streetscape elements should be incorporated.
- Lighting shall not spill onto adjacent properties; shall be provided in outdoor circulation areas and shall incorporate cut-off shields; and shall not decrease the amount of landscaping required for projects.

Guidelines for building design (Section 22-1635) address general building criteria, landscape screening, and building articulation and scale. Additional guidelines are provided for building and pedestrian orientation and mixed-use residential buildings. Pertinent site design guidelines are summarized below. Please refer to Section 22-1635 for the complete text.

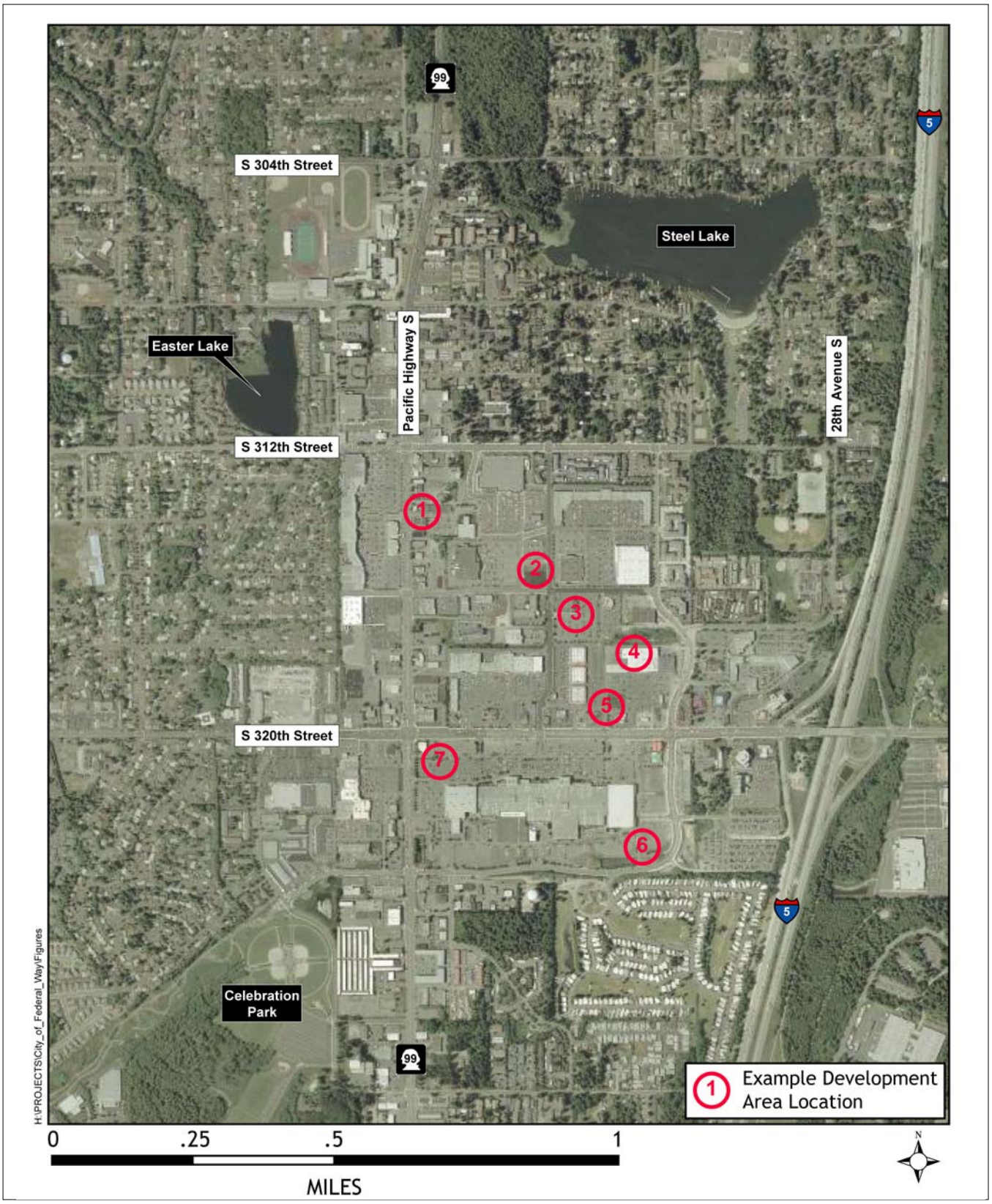
- Emphasize natural topography.
- Preserve public viewpoints through building siting or massing.
- Materials and design features of fences and walls should reflect that of the primary building.
- Incorporate building façade modulation and screening options, including the use of landscaping, canopies or arcades, and pedestrian plazas.
- Meet standards for building articulation, including articulation of blank walls.

Section 22-1638(c) provides specific guidelines for the City Center Core and Frame zones. Guidelines in this section address parking (surface and structured parking), entrance and building facades, and the location of drive-through facilities. Guidelines include the following:

- Surface parking areas are to be located behind buildings or in a parking structure. If along a right-of-way, surface parking and driving areas may not occupy more than 25% (in the Core) or 40% (in the Frame) of the project's linear frontage along principal pedestrian right(s)-of-way.
- Principal entrance facades shall front on, face, or be clearly recognizable from the right-of-way and/or the principal pedestrian right-of-way for projects exposed to more than one right-of-way.
- Building facades shall incorporate a combination of facade treatment options consistent with general design standards established by Section 22-1635 to the degree appropriate to the building size, scale, design and site context and as established in Section 1638(c)(3).
- Pedestrian pathways from rights-of-way and other public spaces shall be provided to primary building entrances.
- Drive-through facilities and stacking lanes shall not be located along a building façade that faces or is clearly visible from a right-of-way, public sidewalk and pedestrian plaza.
- Above-grade parking structures with a ground level facade visible from a right-of-way shall incorporate retail, commercial or office uses along at least 50 percent of the building's lineal frontage, or specified landscaping or decorative building elements.
- When curtain wall glass and steel systems are used to enclose a building, the glazing panels shall be transparent on 50 percent of the ground floor facade fronting a right-of-way or pedestrian area.

Example Development Locations

For the purpose of illustration, seven example development locations have been identified. These examples illustrate the potential development type and scale that could occur under the proposed action at these locations or at other similar locations in the planned action project area. They do not represent specific development or redevelopment plans by the City or any private party. These example development area locations are shown in Figure 13. Existing conditions on each site are described below; a description of future example development at each site follows in the impact discussion.



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Jones & Stokes

Figure 13:
Example Development Area Locations

Example Development Area 1: East side of Pacific Highway South, north of S 316th Street

Development in this area includes freestanding buildings containing restaurant and retail uses. Development is of relatively low intensity and is characterized by low-scale buildings and paved surface parking. Development is generally oriented toward Pacific Highway South. (See Figure 14)

Example Development Area 2: Northwest quadrant of the intersection of 20th Avenue S/S 316th Street

This development area is currently vacant. Major retail uses surrounding this development area include Top Foods to the west, Walmart to the north and Toys R Us to the east. The Executel Hotel is located to the south, across S 316th Street (Figure 15).

Example Development Area 3: Southeast quadrant of the intersection of 20th Avenue S and South 316th Street

This is the site of a closed movie theatre complex. Existing development consists of the theatre structure and a large parking area to the south (see Figure 16).

Example Development Area 4: West of 23rd Avenue South, at approximately S 319th Place

Development in this area includes the SeaTac Plaza, a single-story commercial complex consisting of approximately 107,400 square feet and 234,000 square feet of surface parking. The future Sound Transit Center is planned for the property north of the SeaTac Plaza (see Figure 17).

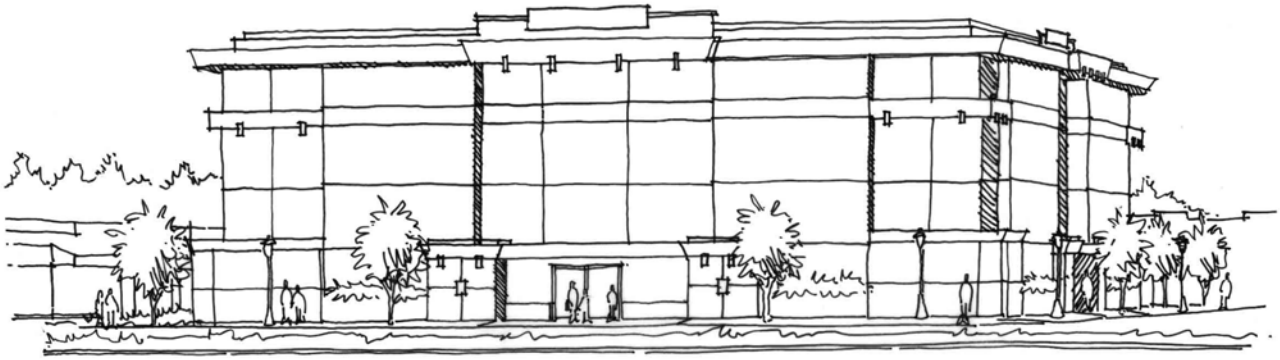
Example Development Area 5: North of South 320th Street at approximately 21st Avenue South

Development in this area includes access tracts, a fast food restaurant, a bank, and an automobile service station. Development is low-scale in character and surrounded by paved surface parking and circulation lanes. The SeaTac Plaza, which contains a variety of retail uses, is located immediately north of this area (Figure 18).

Example Development Area 6: Southeast corner of The Commons at Federal Way site

This area is located in the southeast corner of The Commons at Federal Way parking lot. Development in this area consists of paved parking area, bounded along the southern edge by the power transmission towers and power lines. Development to the east, across 23rd Avenue South consists of small retail strips, located above the street, behind a concrete retaining structure (see Figure 19).

Existing Development – Entrance on Street



Example Development – Mid-rise Office

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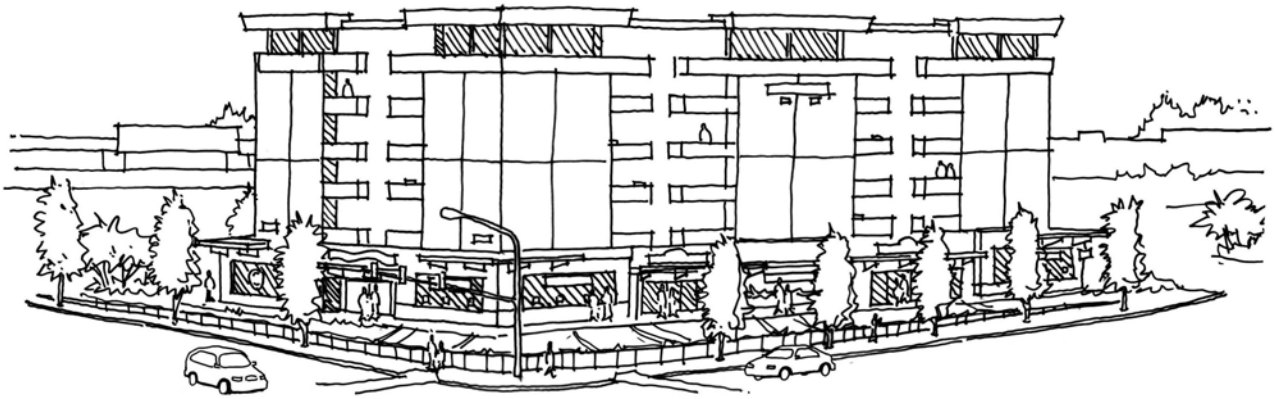
Figure 14:
Example Development
Area 1

Existing Development



Example Development – Mid-rise Mixed Use

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Figure 15:
Example Development
Area 2

Existing Development

Example Development – Highrise Residential/Hotel

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Figure 16:
Example Development
Area 3

Existing Development

Example Development – Highrise Office

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Figure 17:
Example Development
Area 4

Existing Development

Example Development – Low-rise Commercial

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Figure 18:
Example Development
Area 5

Existing Development

Example Development – Mid-rise Mixed Use

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Figure 19:
Example Development
Area 6

Example Development Area 7: The Commons at Federal Way/Pacific Highway South and S 320th Street

The area is located in The Commons at Federal Way parking lot, immediately east of the existing bank building. The area fronts on S 320th Street and is characterized by paved surface parking and landscaping (see Figure 20).

Impacts

Impacts Common to All Alternatives

Visual Character

Under all three alternatives, the visual character of the project area would change from that of a typical low-scale suburban commercial center to a more intensive mid-rise and high-rise mixed- use center for Federal Way and surrounding area. Existing low-scale buildings, excess surface parking areas, and vacant property may develop or redevelop into more intensive uses. Building heights could increase from single story buildings to mid- and high-rise buildings and may include structured parking. Rather than the surface parking areas that currently predominate, parking is likely to be provided in stand-alone structures or as part of office, retail or other structures. The magnitude of this change would be greater under Alternatives 1 and 2 than under Alternative 3.

The overall significance or magnitude of these impacts depends on the preferences of those viewing the change; the quality of the architectural and urban design features incorporated into the development; and the degree to which the overall scale and form of the development incorporates features of the local setting. For example, some individuals may perceive the change from a relatively low-intensity suburban character to more intensive urban uses as a negative environmental impact; to others it may be viewed as a positive and expected change in a growing urban setting.

Light and Glare

Light generated from traffic, streetlights, parking lots and buildings would increase as a result of redevelopment under any of the alternatives. Building materials that incorporate reflective surfaces could also increase the potential for glare. The magnitude of this impact is likely to be greatest under Alternatives 1 and 2, which will have the greatest activity and development intensity.

Views

Development of high and mid-rise buildings in the project area could result in improved views to Mount Rainier for these uses; but could also result in decreased views for the remaining low-rise buildings located near these sites and from public right-of-ways.

Existing Development

Example Development – Low-rise Commercial

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Figure 20:
Example Development
Area 7

Shading Conditions

Development under any of the alternatives is likely to result in taller buildings and a more compact development pattern. Under these conditions, there is a potential for increased shadow impacts around these buildings. Over the short-term, these impacts are likely to be most noticeable to existing low-scale development, as taller buildings develop in adjacent locations. Over time, as the area redevelops with more taller buildings located in closer proximity to one another, the potential for greater shading throughout the project area could increase.

To the extent that Alternatives 1 and 2 will have taller buildings in a more compact development pattern, shading impacts may be greater compared to Alternative 3. Incorporation of public plazas, open spaces, and building façade articulation through the Community Design Guidelines could mitigate this potential impact. No impacts to public facilities such as schools or parks are anticipated as a result of the proposal or alternatives.

Example Development Areas

Illustrations of potential development type and scale that might occur in the project area at each of the example development areas are shown in Figures 14 through 20.

As these or other sites develop in the short-term, existing lower scale and intensity uses may contrast visually with the large, more intensive new development. This is particularly true for example development areas 1 through 4 and 6. Example development areas 5 and 7 represent lower scale retail buildings that are similar in scale and character to current development in the project area.

For the more intensive uses, the redeveloped property and adjacent sites may not be uniform in scale or architectural design. These contrasts will be incremental and short-term. Over the period of the planned action designation, the contrast between the older one story structures and the redeveloped properties will fade as the project area fully develops and reflects a more common pattern of building design and scale.

For illustrative purposes, Figure 21 shows an aerial view of the City Center Planned Action area if the buildings on the seven sample development areas were built.

This amount of development represents approximately one-third of the development that would be permitted under the Planned Action designation.

Alternative 1

Under Alternative 1, the focus of development would be in the vicinity of S 320th Street. Development in The Commons at Federal Way and properties immediately north of S 320th Street would experience the greatest change in visual character. Changes would likely include increased building height and bulk, together with increased development of pedestrian amenities, landscaping and plazas. Although the area would likely continue to be auto-oriented in character, increased development and activity could result in greater pedestrian amenities.

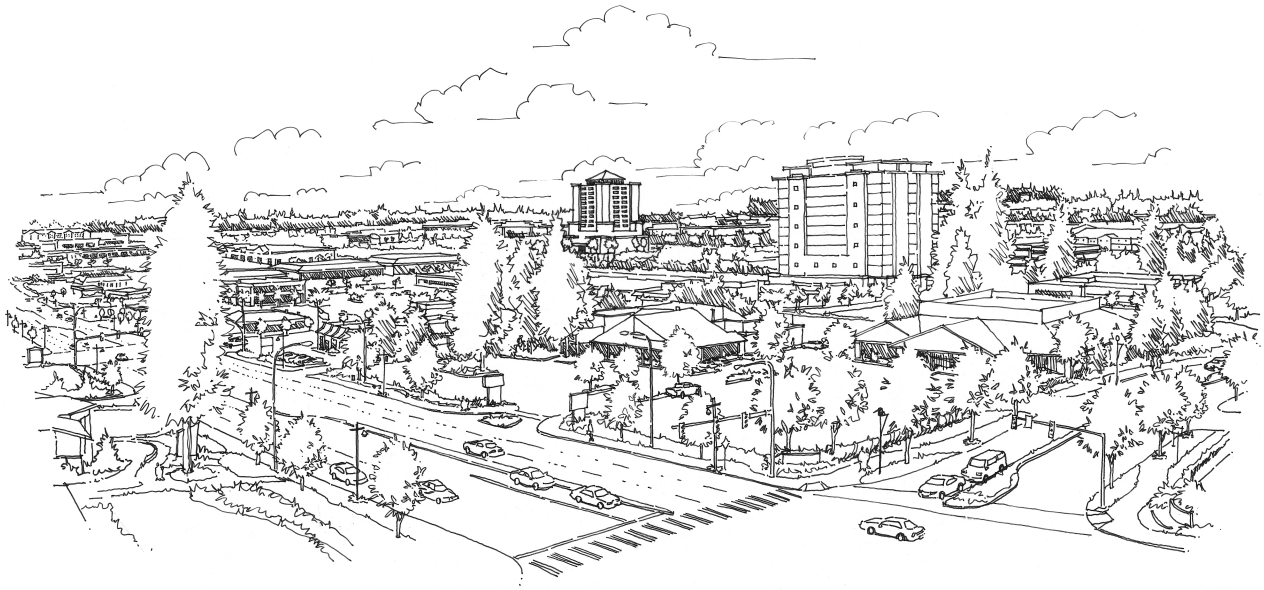

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Figure 21:
Aerial Sketch of Example Development Areas

For office and retail uses, development intensity, building height and bulk would not be increased relative to existing development regulations, but would be increased relative to existing development. Designation of the project area as a Planned Action Area may also result in a greater likelihood of increased high-rise development in the future.

The proposed increase in allowable structure height for multi-unit structures to 200 feet for development in the CC-C zone would increase the potential for buildings of greater height than are currently permitted. The difference in the currently allowed maximum of 145 feet for office uses to 200 feet for multi-unit structures equates to approximately 3 - 4 stories. This may be incrementally noticeable, but is not expected to result in a significant change in the overall appearance of the downtown area. In addition, the required design review process and accompanying design measures, such as a slimmer building profile, use of clear glazing, streetscape, landscape and other amenities, will help mitigate for the increased height.

Alternative 2

Under Alternative 2, new development intensity, building height, and bulk would increase similar to Alternative 1, although development under Alternative 2 would be relatively more distributed throughout the project area. Changes would likely include an overall change from a suburban commercial center to an intensive, urban center.

The proposed increase in allowable structure height for multi-unit structures to 145 feet for development in the CC-C zone would increase the potential for multi-unit development to develop to a height equal to the current allowable height for office buildings. Although this increase will allow more types of development (multi-unit in addition to office uses) to develop to 145 feet in height, it is unlikely that this change would be noticeable. Development would match the general intensity of development that is currently allowed for other uses. In addition, the required design review process and accompanying design measures, such as a slimmer building profile, use of clear glazing, streetscape, landscape and other amenities, will help mitigate for the increased height.

Alternative 3

Under the No Action Alternative, existing land use designations and zoning in the project area would continue and all future development would be subject to individual project specific environmental review.

The maximum building heights for development in the CC-C zone would remain unchanged.

Overall, the potential amount, type, and scale of redevelopment in the project area are uncertain. The area could maintain its suburban character with a mix of one-and two-story, auto-oriented buildings. Alternatively, free standing big-box retail and other similar uses could be proposed. Future development and emergence of City Center as an identified urban center would occur on a long-term incremental basis.

Mitigation Measures

- Continued use of the City's Community Design Guidelines and review/approval process to monitor and mitigate potential impacts associated with light and glare, shadows, and aesthetic impacts resulting from new development, including structured parking.
- Increased building height for multi-unit structures in the City Center Core zone would be permitted only with review through the City's design review and public benefits review processes as set forth in the Community Design Guidelines.
- Monitor shade conditions as development occurs and amend the City's Community Design Guidelines to require site-specific shadow analysis in public places as needed.

Significant Unavoidable Adverse Impacts

Other than change itself, no significant unavoidable adverse impacts to aesthetics, light and glare are anticipated. The design standards, guidelines, and mitigating measures described above, together with the City's development regulations are adequate to mitigate the significant adverse impacts anticipated with redevelopment.

3.4 Transportation

The purpose of this section is to describe the transportation impacts associated with development under the proposed planned action designation in Federal Way's City Center. This section assesses the expected impacts on the City's transportation systems, including roadways and intersections, transit, bicycles and pedestrian facilities, and identifies actions and improvements to mitigate the impacts. The transportation analysis is a summary of the full transportation analysis report, included with this document as Appendix 2.

Affected Environment

Level of Service Analysis Approach

This section analyzes existing conditions (2004) and the short-term (2009) and longer-term (2014) impacts of the three project alternatives. The 2009 analysis provides a detailed description of the expected transportation impacts and proposed mitigation of the proposed alternatives. The 2014 analysis provides a more generalized discussion of future traffic volumes and does not include proposed mitigation.

The existing conditions analysis describes area traffic volumes, traffic operations, traffic safety, and transit service for the AM, PM and Saturday peak hours. The future conditions analysis includes the cumulative impacts of traffic increases associated with each alternative and general traffic growth to provide a full assessment of future traffic impacts. The future year analysis also assumes the completion of projects within the City of Federal Way's 2005-2010 Transportation Improvement Plan.

The study includes 27 intersections analyzed for one or more of the three peak hour periods – PM peak hour, AM peak hour and Saturday peak hour. The peak hours represent the worst single peak hour observed two-hour traffic count period. Table 3-13 lists the study

intersections within the area. The AM peak hour analyzed 10 intersections, the PM peak hour analyzed 22 intersections and the Saturday peak hour analyzed 14 intersections. These intersections were analyzed for existing and future conditions to describe the impact of the proposal on the transportation system.

Table 3-13. Study Intersections

Intersection	PM Peak	AM Peak	Saturday Peak
S 272 St & Pacific Hwy S	X	X	X
S 272 St & I-5 SB Ramp	X	X	X
S 272 St & I-5 NB Ramp	X	X	X
S 272 St & Military Rd S	X	X	X
S 288th St & Pacific Hwy S	X		
S 288th St & Military Rd S	X		
S Dash Point Rd & Pacific Hwy S		X	
S 312 St & Pacific Hwy S	X		X
S 312 St & 28 Av S	X		
S 316 St & Pacific Hwy S			X
SW 320 St & 21 Av SW		X	
S 320 St & 1 Av S	X	X	X
S 320 St & Pacific Hwy S	X		X
S 320 St & 20 Av S			X
S 320 St & 23 Av S	X		X
S 320 St & I-5 SB Ramp	X	X	X
S 320 St & I-5 NB Ramp			X
S 320 St & Military Rd S	X		
S 324 St & Pacific Hwy S	X		X
SW 336 St & 21 Av SW	X		
S 336 St & Pacific Hwy S	X	X	
SW 340 St & Hoyt Rd SW	X		
SW Campus Dr & 1 Av S	X		
S 348 St & Pacific Hwy S	X		
SW 356 St & 21 Av SW	X		
S 356 St & Pacific Hwy S	X		
S 356 St & Enchanted Pkwy S	X	X	X
Number of Intersections Analyzed	22	10	14

Source: Mirai Associates 2006

The City of Federal Way follows the Highway Capacity Manual (HCM) methodology to calculate the impact of a project on area intersections. The HCM describes the quality of traffic operations at intersections based on a measure known as Level of Service (LOS). LOS uses an A through F scale, with LOS A representing minimal traffic delays and LOS F representing severe congestion and long delays. The LOS is measured using the average control delay of the intersection and is reported for the overall intersection for signalized intersections and all-way stops, and for the worst movement of unsignalized intersections. Table 3-14 describes the LOS for signalized and unsignalized intersections.

Table 3-14. Level of Service Definitions

LOS	Signalized Delay per Vehicle (sec/veh)	Unsignalized Delay per Vehicle (sec/veh)
A	0-10	0-10
B	>10-20	>10-15
C	>20-35	>15-25
D	>35-55	>25-35
E	>55-80	>35-50
F	>80	>50

Source: Highway Capacity Manual (HCM 2000, Transportation Research Board)

The HCM methodology also calculates volume to capacity ratio to express the extent an intersection is below or above its theoretic capacity. Please refer to Appendix 2 for a more detailed discussion of LOS and the analysis used in this study.

LOS Standard

The City of Federal Way defines the minimum acceptable level of service as LOS E or better with a volume/capacity ratio of less than 1.00 for signalized intersections. Intersections operating below this threshold are deficient.

For unsignalized intersections other than all-way stops, the lane volume/capacity ratio for any lane group must meet the 1.0 standard.

Existing Street Network

The City of Federal Way roadway system serves both local and regional roles, providing access to residents and businesses as well as connections to adjacent and regional destinations. Primary roadways and intersections within the project area and surrounding vicinity are described below:

Interstate 5 is the primary north-south interstate freeway in western Washington and provides regional access to the project area. I-5 has five travel lanes north of S 320 Street and four lanes south of S 320 Street, with a posted speed limit of 60 mph. Study intersections connecting with the I-5 ramps include the northbound and southbound ramps at S 320 Street, the S 317 Street direct access ramps and at S 272 Street.

Pacific Highway S. (SR-99) is a five to seven lane principal arterial connecting Federal Way with the City of Tacoma to the south and the City of Kent to the north. The posted speed

limit is 40 mph. Study intersections along SR-99 include S 272 Street, S Dash Point Rd, S 312 Street, S 316 Street, S 320 Street, S 324 Street, S 336 Street, S 348 Street, and S 356 Street.

S 272 Street a principal arterial that connects Pacific Highway S to Interstate 5 and SR-516. Study intersections along S 272 include Pacific Highway S, I-5 ramps, and Military Road S.

S 320 Street is a principal arterial with 5 to 7 travel lanes. The roadway connects I-5 with SR-99 to the west and Military Road/Peasley Canyon Road to the east. Study intersections along S 320 Street include 1 Avenue S, Pacific Highway S, 21 Avenue S, 23 Avenue S, I-5 ramps, and Military Road.

S 356th Street is a principal arterial that provides a connection between the City of Tacoma and I-5 and SR-18. Study intersection on S 356th Street includes 21st Avenue SW, Pacific Highway S, and Enchanted Parkway S.

Existing Traffic Operations

The City considers intersections to be operating at an acceptable LOS if operations are LOS E or better and its v/c ratios are less than 1.0 for the sum of the critical movements of the intersection. Table 3-15 lists the existing LOS operation for the PM, AM and Saturday peak hour for each of the study intersections applicable to that period.

Table 3-15. 2004 Intersection Operations PM Peak, AM Peak, and Saturday Peak

Intersection	PM Peak[4]		AM Peak[4]		Saturday Peak[4]	
	LOS[1]	V/C[2]	LOS	V/C	LOS	V/C
S 272 St & Pacific Hwy S	F	1.29	E	1.01	E	0.97
S 272 St & I-5 southbound Ramp	E	1.07	C	0.85	C	0.69
S 272 St & I-5 northbound Ramp	C	0.97	E	1.13	C	0.72
S 272 St & Military Rd S	F	1.26	F	1.22	D	0.76
S 288th St & Pacific Hwy S	D	0.89				
S 288th St & Military Rd S	D	0.74				
S Dash Point Rd & Pacific Hwy S			C	0.47		
S 312 St & Pacific Hwy S	E	0.92			E	0.93
S 312 St & 28 Av S	C	0.67[3]				
S 316 St & Pacific Hwy S					F	1.16
SW 320 St & 21 Av SW			E	1.00		
SW 320 St & 1 Av S	F	1.06	E	1.01	F	1.18
S 320 St & Pacific Hwy S	D	0.79			D	0.92
S 320 St & 20 Av S					F	1.76
S 320 St & 23 Av S	C	0.85			F	1.09
S 320 St & I-5 southbound Ramp	C	0.92	C	0.74	D	0.99

Intersection	PM Peak[4]		AM Peak[4]		Saturday Peak[4]	
	LOS[1]	V/C[2]	LOS	V/C	LOS	V/C
S 320 St & I-5 northbound Ramp					C	0.75
S 320 St & Military Rd S	D	0.85				
S 324 St & Pacific Hwy S	D	0.68			D	0.88
SW 336 St & 21 Av SW	E	0.94				
S 336 St & Pacific Hwy S	E	1.15	D	0.70		
SW 340 St & Hoyt Rd SW	C	0.85	B	0.63	B	0.62
SW Campus Dr & 1 Av S	E	1.05				
S 348 St & Pacific Hwy S	D	0.92				
SW 356 St & 21 Av SW	C	0.75				
S 356 St & Pacific Hwy S	D	0.89				
S 356 St & Enchanted Pkwy S	D	0.78				

Source: Mirai Associates, 2006

1. LOS reflects the overall operation of the intersection based on the Highway Capacity Manual 2000 methodology
2. V/C is the combined volume/capacity of the critical movements of the intersection as identified as the Xc in the HCM 2000 methodology
3. Maximum v/c ratio at all-way stop-controlled unsignalized intersection.
4. PM peak hour occurs between 4 and 6 p.m.; AM peak hour occurs between 7 and 9 a.m.; Saturday peak hour occurs between 11 a.m. and 1 p.m.

PM Peak Hour Deficiencies – Six intersections exceed the City's deficiency threshold in 2004. These intersections either operate at LOS F and/or have a volume to capacity ratio equal to or higher than 1.00. Three of the deficient intersections are located along S 272 Street along the border with the City of Kent. Other deficient intersection locations include SW 320 Street & 1 Avenue S, S 336 St & Pacific Highway S, and SW Campus Drive & 1 Avenue S.

AM Peak Hour Deficiencies – Five of the study intersections exceed the City's deficiency threshold in 2004. These intersections either operate at LOS F and/or have a volume to capacity ratio equal to or higher than 1.00. The areas with the deficient locations include the S 272 Street corridor at the intersections at the I-5 northbound ramp, I-5 southbound ramp, and Military Road S, and the S 320 Street corridor at the intersections of 1 Avenue S and 21 Avenue SW.

Saturday Peak Hour Deficiencies – Four of the Saturday study intersections exceed the City's deficiency threshold in 2004. These intersections either operate at LOS F and/or have a volume to capacity ratio equal to or higher than 1.00. These intersections are concentrated around the project area at intersections along Pacific Highway S and S 320 Street. Weekend retail activity at these locations is likely to contribute to the high traffic at these intersections.

Parking

The existing number of parking stalls reflects the more auto-oriented development pattern of the current land uses. Block 1 has 2,960 spaces, Block 2 has 2,760 spaces, and Block 3 has 3,240 for a total of 8,960 spaces.

Table 3-16 describes the number of spaces City Code requires for each existing land use. Approximately 5,900 stalls are required under the current parking requirements. When compared with the existing parking supply, there are approximately 3,000 extra parking spaces than required by City standards.

Table 3-16. Existing Parking Requirements

Land Use	Parking Code Requirement	Existing Development	Required Parking
Civic Uses	Case by case	0 sf	0 stalls
Hotel	1 per room	230 rooms	230 stalls
Office	1 per 300 sf	344,610 sf	1,149 stalls
Other[1]	1 per 1,000 sf	14,400 sf	15 stalls
Residential	1.7 per unit	190 units	323 stalls
Retail	1 per 300 sf	1,268,000 sf	4,227 stalls
Total			5,944 stalls

Source: Jones and Stokes Associates, 2006.

1. Category includes such uses as wholesale, storage, light manufacturing and other similar uses.

Collision Data

Review of historical collision data provides an indication of the location and severity of incidents at intersections and along corridors. Three years (2000-2002) of collision data were analyzed to identify overall trends within Federal Way.

High Collision Rate Locations

The City requires the identification of high collision locations, both for corridors and individual intersections. High collision locations are defined as follows:

- A collision rate of more than 1.0 collision per million entering vehicles at an intersection.
- A collision rate of more than 10.0 collisions per million vehicle miles on a roadway segment.

Table 3-17 identifies the study intersections that exceed the 1.0 collision per million entering vehicles. Eighteen of the 32 intersections exceed the 1.0 collision per million entering vehicles. The highest location is at Military Road S / S 288 Street that averaged 2.38 collisions per million entering vehicles between 2000 and 2002.

Table 3-18 identifies the roadway corridors that exceed the City's standard of 10.0 collisions per million vehicle miles on a roadway segment. All but one of the study corridors exceeds the 10.0 collisions per million-vehicle mile standard.

Table 3-17. 2000-2002 Intersection Collision Rates

Intersection	Total Collisions	Collision Rate
Military Rd S / S 288 St	82	2.38
SR 99 / S 312 St	122	2.25
SR 99 / S 348 St	137	2.14
SR 99 / S 272 St	113	1.88
SW 336 St / 21 Av SW	87	1.73
SR 99 / S 320 St	149	1.72
SR 99 / S 316 St	75	1.63
SR 161 / SR 18	136	1.54
Hoyt Rd SW / SW 340 St	31	1.44
SR 99 / S 288 St	79	1.42
S 320 St / southbound I-5 Ramps	84	1.42
SR 99 / S 324 St	76	1.37
SR 99 / S 304 St	58	1.34
S 320 St / 20 Ave S	69	1.29
SR 99 / S Dash Point Rd	61	1.25
S 320 St / 23 Ave S	88	1.22
SR 99 / S 336 St	64	1.1
S 356 St / 21 Av SW	37	1.01

Source: City of Federal Way

Table 3-18. 2000-2002 Corridor Collision Rates

Corridor	Volumes	Length	Collision Rate
S 348 St (SR 99 to 16 Avenue S)	332	0.21	37.09
S 288 St (SR 99 to Military Road S)	241	0.52	36.56
S 272 St (SR 99 to Military Road S)	492	1	24.3
S 312 St (SR 99 to 28 Avenue S)	229	0.75	24.16
SR 99 (S 272 Street to S 356 Street)	2496	5.24	16.57
S 320 St (SR 99 to Military Road S)	837	1.4	14.06
S 304 St (SR 99 to Military Road S)	88	0.79	11.64
Military Rd (S 272 Street to S 328 Street)	407	3.83	7.2

Source: City of Federal Way

Roadway Improvements Assumptions

Within the project area and surrounding vicinity, there are a number of planned transportation improvements to increase roadway capacity and to improve mobility. The 2009 baseline forecasts assumes projects identified in the City of Federal Way's 2005-2010 Transportation Improvement Program (Table 3-19) and two state interchange improvements.

Table 3-19. 2005-2010 Transportation Improvement Program

Location	Description
City Center Access	Design Study, Environmental analysis
SR 99 HOV Lanes Phase 2: S 324 St - S 340 St	Add HOV lanes, left-turn lanes on 324, 2nd northbound left-turn lane @ 336, install raised median
SR 99 HOV Lanes Phase 3: S 284 St - SR 509	Add HOV lanes, 2nd southbound left-turn lane and rechannelized westbound approach for 2nd westbound left-turn lane @ 288, install raised median, signal @ SR 509 @ Redondo Way S with interconnect to 11 Pl S
S 348 St: 9 Ave S - SR 99	Add HOV lanes, 2nd northbound left-turn lane on SR 99, install raised median, underground utilities
S 320 St @ 1 Ave S	Add 2nd northbound, westbound, and southbound left-turn lanes, westbound right-turn lanes, widen 1 Ave S to 5 lanes to S 316 St
S 356 St: 1 Ave S - SR 99	Widen to 5 lanes, bike lanes, sidewalks, illumination
S 320 St: 8 Ave S - SR 99	Add HOV lanes, install raised median, underground utilities, illumination
S 348 St @ 1 Ave S	Add westbound, southbound right-turn lanes, 2nd eastbound, westbound left-turn lanes
S 336 St @ 1 Way S	Add westbound right-turn lane, signal modifications, extend southbound left-turn lane
10 Ave SW / SW 344 St: SW Campus Dr - 21 Ave SW	Extend 3-lane collectors, sidewalks, street lights
1 Ave S: S 320 St - S 330 St	Install raised median, improve access at 328th
S 320 St @ 20 Ave S	Add 2nd left-turn lanes eastbound, westbound
21 Ave SW / SW 357 St: SW 356 St - 22nd Ave SW	Extend 2-lane collector, signal modifications
SR 99 HOV Lanes Phase 4: SR 509 – S 312 St	Add HOV lanes, install raised median
SR 18 @ SR 161	Add eastbound, westbound right-turn lanes, 3rd westbound left-turn lane, 2nd northbound right-turn lane, add 3rd lane on SR 161 southbound to S 352nd St
S 336 St @ 9 Ave S	Signal modifications
SW 312 St: 1 Ave S – SR 509	Widen to 3 lanes, bike lanes, sidewalks, street lights
S 320 St @ I-5	Add 2nd left-turn lane, 3rd right-turn lane on southbound off-ramp, widen S 320 St under crossing to 7 lanes.
S 356 St: SR 99 - SR 161	Widen to 5 lanes, bike lanes, sidewalks, illumination
S 304 St @ 28 Ave S	Add northbound right-turn lane, signal
S 352nd St: SR 99 - SR 161	Extend 3 lane principal collector and signal at SR-99
SW 320 St @ 21 Ave SW	Interconnect to 26 Ave SW with the addition of a 2nd westbound left-turn lane

Location	Description
S 320 St: 1 Ave S - 8 Ave S	Add HOV lanes, install raised median Design phase
Military Rd S: S Star Lake Rd - S 288 St	Widen to 5 lanes, sidewalks, street lights
SW 320 St @ 47 Ave SW	Install traffic signal
S 312 St @ 28 Ave S	Add southbound right-turn lane
21 Ave S from S 318 St to S 320 St	Extends 2-lane grid street with on-street parking
SW 336 Wy / SW 340 St: 26 Pl SW - Hoyt Rd	Widen to 5 lanes
Westway Neighborhood	Add Crime Prevention Street Lights through out the Neighborhood of Westway
S 314 St: 20 Ave S - 23rd Ave S	Install sidewalks, ADA ramps, curbs & gutter, pedestrian improvements
1 Ave S: S 292nd St - S 312 St	Shoulder improvements

Source: Mirai Associates 2006

Transit Services

Federal Way is served by a number of transit providers including King County Metro, Pierce County Transit, and Sound Transit. In the vicinity of the project area, there is frequent transit service with 23 routes serving the area during weekday hours with service as frequent four times per hour. Midday and Weekend service levels are lower.

The hub of transit service is the Federal Way Transit Center and Garage located between S 316 Street and S 317 Street, west of 23 Avenue S. The transit center includes a HOV direct access ramp for bus and carpool access between the HOV lanes on I-5 at S 317 Street. The new ramp allows buses and carpools to avoid the congested S 320 Street/ I-5 interchange. The Transit Center serves the freeway-oriented bus routes King County Metro Routes 177, 194, and 197; and Sound Transit Routes 565, 574 and 577. Other transit routes at the Transit Center include King County Metro Routes 174, 181, 182, 183,187, 545,574, 577, 901, 903 and Pierce Transit Routes 402, 500 and 501.

The other major transit facility within the project area vicinity is the Federal Way/S 320th St Park and Ride facility at 23rd Ave S & S 323rd Street. Routes 173, 174, 177, 194 and 196 serve the park and ride facility. Other area park and ride facilities include the South Federal Way Park & Ride located on S 348th Street and the Twin Lakes Park and Ride lot located on SW 344th Street.

Pedestrian Facilities

Sidewalks in the project area generally occur along both sides of the street system connecting retail areas with adjacent neighborhoods and parks. Major impediments to pedestrians include crossing of major roadways of substantial width and vehicle traffic, such as S 320 Street at Pacific Highway S. Additionally, existing large blocks with limited connections within the project area are deterrents to heavy pedestrian usage.

The proposed street network in the project area would divide the area's large blocks with a new grid network that would increase pedestrian access and convenience within the project area and to surrounding areas. The *City of Federal Way Comprehensive Plan* (2003 revision, Chapter 3) includes roadway design standards specific to the City Center project area to provide higher quality pedestrian facilities. These standards will require roadways to be constructed with 8-12 foot wide sidewalks, street lighting, and to provide street trees and other amenities such as benches and furniture. The plan also identifies potential pedestrian over crossing locations on S 320 Street and Pacific Highway S that would allow improved pedestrian access within the City Center Sub-area.

Bicycle Facilities

Existing bicycle facilities within and adjacent to the project area vary from striped shoulder areas to marked bicycle lanes.

The planned bicycle network within the project area would develop bicycle lanes along S 316 Street, 20 Avenue S, S 324 Street and Gateway Boulevard connecting to the existing and future park and ride lot facilities, area parks, and the Bonneville Power Administration utility corridor trail. This level of development is assumed within the Comprehensive Plan for all three alternatives considered.

Impacts

This section documents the impact of the alternatives on the surrounding roadway network and at study intersections. It describes the number of trips associated with the development of the alternatives and trip distribution within and around the project area, and assesses the impact of the project alternatives on intersection operations, traffic safety, pedestrian and bicycle systems, and transit operations.

2009 Trip Generation

Trip generation rates for the PM peak hour trip were developed in conjunction with a travel demand forecasting model. A travel demand forecasting model is a computer model developed to project traffic volumes and patterns based upon land use and the characteristics of the transportation system. The roadway network under study, as well as the land use that generates traffic on that network, is coded into the model. The model projects traffic on the roadway system based on observed traffic data and statistical data that associates typical travelers' tendencies with land use. A model of existing conditions is first created, and calibrated according to observed existing traffic volumes and patterns. Once a calibrated model is completed, it can be used to project the traffic volumes and patterns of future land use and transportation network scenarios. The traffic demand model for this study was created using EMME/2 software. Please refer to Appendix 2 for additional discussion of model methodology.

Table 3-20 summarizes growth in trip generation (2004-2009) for the proposal. The estimates for the 2009 No Action (Alternative 3) represents around a 10% growth in peak trips compared with 2004 conditions. Growth in the PM peak hour between 2004 and 2009 is approximately 40%, compared with 7% for the No Action Alternative. The AM peak hour trips for 2009 Alternatives 1 and 2 represent a 60% increase compared with 2004 conditions, while the Saturday trips are around 40-45% higher.

Table 3-20. Summary of Peak Hour Trip Generation for Federal Way City Center (2004–2009)

Time Period	2004	2009 Alternative 1 increase from 2004	2009 Alternative 2 increase from 2004	2009 Alternative 3 (No Action) increase from 2004
AM peak hour	2,078	1,220	1,220	233
Saturday peak hour	6,713	2,816	2,816	613
PM peak hour	6,363	2,727	2,522	442

Source: Institute of Transportation Engineers (ITE) Trip Generation, 7th Edition (2004) for AM and Saturday Peak hour. The PM peak hour trips are based on the EMME/2 model origins and destinations from project area TAZs. Please refer to Appendix 2 for additional description of methodology.

2014 Forecasts

The 2014 forecasts are intended to provide an initial look at the traffic operations and impacts of each of the alternatives. This analysis describes the forecasting methodology, describes the expected roadway volumes for Alternatives 1-3 and identifies locations where traffic growth may impact City's intersections. Because this is a longer range forecast, only roadway volumes are reported. In addition, specific mitigation measures are not included. The City has proposed to conduct a 2009 analysis of building construction and traffic growth to verify the status of project area development and to update the traffic forecasts for 2014.

2014 Forecast Methodology

Forecasts of the PM peak hour were completed using the EMME/2 transportation model, described above (2009 Trip Generation) and in Appendix 2. The model compares the 2009 and 2014 land uses to estimate future traffic levels and to assign the volumes to the roadway network. The model was used to identify the 2009-2014 growth in background traffic and the 2009-2014 growth in trips.

The AM and Saturday peak hour forecasts use the 2004-2009 traffic growth factors to estimate an expected 2014 background traffic. General background growth for the AM and Saturday peak hour is assumed at 1.5% per year. Trip generation for each alternative was assigned and added to the 2009 base volumes and 2009-2014 background growth traffic to provide an estimate of 2014 volumes.

Roadway Improvement Assumptions

Only one roadway improvement project based on the CIP was added to the baseline model for 2014. This project would construct a roadway connection between S 312th Street at 14th Avenue S and S 320th Street at 11th Place S.

Trip Generation

Table 3-21 summarizes the growth in trip generation from 2009 to 2014. The 2014 forecasts include two options for a "Civic Center" resulting in a range of values for the trip generation. The first civic center option would develop a convention center facility that would be primarily be used for special events, expositions, and activities. The second civic center

option would be a daily-use facility, which would feature daily activities and programs. The second option would be expected to have higher daily and peak hour trip generation.

The estimates of growth for the 2009-2014 No Action (Alternative 3) represents 70-90% of the growth expected from 2004-2009 as shown in Table 3-20. Alternatives 1 and 2 have the same trip generation. The range of trip generation reflects the two options for the Civic Center land use. The PM and Saturday peak hour trip growth is slightly lower than the growth during the 2004- 2009 time period. The AM trips represent 77% of the previous five-year growth.

Table 3-21. Summary of Trip Generation for Federal Way City Center (2010–2014)

Time Period	2014 Alternative 1 increase from 2009 Alt 1*	2014 Alternative 2 increase from 2009 Alt 2*	2014 Alternative 3 increase from 2009 Alt 3
AM peak hour	919-1,073	919-1,073	214
Saturday peak hour	2,537-2,552	2,537-2,552	437
PM peak hour	2,360 – 2,370	2,360 – 2,370	419

Source: ITE Trip Generation, 7th Edition

* Range of trip generation reflects two options for the Civic Center land use.

Trip Distribution and Assignment

Trip distribution and assignment were assumed to remain similar to 2009. The PM peak hour distribution was calculated using the EMME/2 model. The AM and Saturday trip distribution used the 2009 distribution of trips to assign the 2014 traffic growth on the network.

Alternative 1

This section describes the traffic impacts associated with Alternative 1. The section describes the trip generation, distribution and assignment, the 2009 turning volumes, transportation impacts and recommended mitigation.

Trip Generation, Distribution, and Assignment

Alternative 1 accounts for the highest concentration of development within the City Center. Under this alternative, development would be concentrated along S 320 Street. PM peak hour trip distribution and assignment were completed using the Federal Way EMME/2 model. AM and Saturday distribution and assignment follow existing area traffic patterns. Figures 15 to 17 in Appendix 2 show the trip distribution for the 2009 under Alternative 1 for the PM, AM and Saturday peak hours.

Traffic Volumes

Figures 18 to 20 in Appendix 2 show the 2009 turning movement volumes for each study intersection for Alternative 1 for the PM, AM, and Saturday peak hours.

2009 Alternative 1 Traffic Operations

Table 3-22 lists the LOS operation for the PM, AM and Saturday peak hour for Alternative 1.

Table 3-22. 2009 Alternative 1 Intersection Operations

Intersection	PM Peak[4]		AM Peak[4]		Saturday Peak[4]	
	LOS[1]	V/C[2]	LOS	V/C	LOS	V/C
S 272 St & Pacific Hwy S	**F**	1.09*	D	0.71	D	0.79
S 272 St & I-5 southbound Ramp	**F**	1.00*	C	0.73	C	0.62
S 272 St & I-5 northbound Ramp	C	0.92	E	1.09*	B	0.67
S 272 St & Military Rd S	**F**	1.22*	F	1.10*	D	0.63
S 288th St & Pacific Hwy S	D	0.81				
S 288th St & Military Rd S	C	0.78				
S Dash Point Rd & Pacific Hwy S			C	0.52		
S 312 St & Pacific Hwy S	**E**	1.05*			D	0.99
S 312 St & 28 Av S	B	0.65[3]				
S 316 St & Pacific Hwy S					**E**	**1.05[5]**
SW 320 St & 21 Av SW			D	0.78		
S 320 St & 1 Av S	D	0.82	D	0.81	D	0.98
S 320 St & Pacific Hwy S	D	0.91			**F**	**1.00[5]**
S 320 St & 20 Av S					**F**	**1.35**
S 320 St & 23 Av S	D	0.76			**F**	**1.04[5]**
S 320 St & I-5 southbound Ramp	C	0.78	C	0.72	C	0.92
S 320 St & I-5 northbound Ramp					B	0.72
S 320 St & Military Rd S	D	0.96				
S 324 St & Pacific Hwy S	D	0.87			D	0.87
SW 336 St & 21 Av SW	E	0.99				
S 336 St & Pacific Hwy S	**D**	1.04[5]	C	0.69		
SW 340 St & Hoyt Rd SW	C	0.63	B	0.53	B	0.53
SW Campus Dr & 1 Av S	E	0.97				
S 348 St & Pacific Hwy S	D	0.80				
SW 356 St & 21 Av SW	C	0.84				
S 356 St & Pacific Hwy S	C	0.84				
S 356 St & Enchanted Pkwy S	D	0.83				

Source: Mirai Associates, 2006.

1. LOS reflects the overall operation of the intersection based on the Highway Capacity Manual 2000 methodology
2. V/C is the combined volume/capacity of the critical movements of the intersection as identified as the Xc in the HCM 2000 methodology.

3. Maximum v/c ratio at all-way stop-controlled unsignalized intersection.
4. PM peak hour occurs between 4 and 6 p.m.; AM peak hour occurs between 7 and 9 a.m.; Saturday peak hour occurs between 11 a.m. and 1 p.m.
5. Results from HCM2000 Signals (version 4.1f)

PM Peak Hour Deficiencies – Five intersections exceed the City's deficiency threshold in 2009 for Alternative 1. Deficient intersections are focused along S 272 Street and Pacific Highway S, where growth in regional traffic is expected to affect intersection operations during the PM peak hour.

AM Peak Hour Deficiencies – Two of the study intersections exceed the City's deficiency threshold in 2009 for Alternative 1. The deficient intersections are located at I-5 northbound Ramp and Military Road S along S 272 Street.

Saturday Peak Hour Deficiencies – Four of the Saturday study intersections exceed the City's deficiency threshold in 2009 for Alternative 1. These intersections are focused around the project area, at S 316 Street and S 320 Street on Pacific Highway S, and at the intersections at 20 Avenue S and 23rd Avenue S on S 320 Street. Weekend retail activity at these locations is likely to contribute to the high traffic at these intersections.

Parking Requirements

Table 3-23 describes the increase in parking requirement for the Alternative 1 above existing levels. These increases assume full development by the year 2014. The parking requirements estimate the number of spaces required for the proposed mix of uses assumed for Alternative 1 and is identical for Alternatives 1 and 2. Compared with Alternative 3, 4,001 additional spaces would be required under the City's parking code. These spaces may be provided on the site or as part of parking structures assumed as part of future development. The actual parking requirement for an individual development may be reduced through shared parking arrangements or transportation demand management programs. This reduction could vary from 10% to 20%.

Table 3-23. Alternative 1 Parking Requirement

Land Use	Parking Code Requirement	Proposed Development[1]	Required Parking[2]	Increase over Alternative 3
Civic Uses	Case by case	1000,000 sf	Unknown	Unknown
Hotel	1 per room	600 rooms	600 stalls	600 stalls
Office	1 per 300 sf	350,000 sf	1,167 stalls	819 stalls
Other[3]	1 per 1000 sf	0 sf	0 stalls	0 stalls
Residential	1.7 per unit	750 units	1,275 stalls	816 stalls
Retail	1 per 300 sf	750,000 sf	2,500 stalls	1,766 stalls
Total			5,542 stalls	4,001 stalls

Source: Jones and Stokes Associates, 2005.

1. Assumes 2014 full build-out of planned action development envelope; please see Chapter 2.
2. These parking demands may be 10% to 20% less based on shared parking.
3. Category includes such uses as wholesale, storage, light manufacturing and other similar uses.

Traffic Safety Impact

As the amount of traffic increases within the area, the probability of traffic collisions would be expected to increase. The *City of Federal Way Comprehensive Plan* identifies that congestion is a primary factor in collision rates. Alternative 1 would increase the number of trips at high collision locations, the number of trips associated with this alternative make up only a small proportion of the entering trips. In addition, roadway improvements designed to reduce congestion may lower congestion-associated collisions.

Transit Service Impact

Alternative 1 would provide a high level of urban development and amenities in immediate proximity to the Federal Way Transit Center. Under the alternative, a large proportion of development would be concentrated along S 320 Street, near the transit center, providing a high number of potential transit users who may be able to walk to the Transit Center. Expected residents in the project area would likely include transit users and may result in increased ridership demand at the transit center.

Pedestrian Accessibility

The *City of Federal Way Comprehensive Plan* identifies a number of roadway and pedestrian improvements to occur as part of development in the project area. The Alternative 1 concept of a pedestrian-oriented, mixed-use center would encourage use of these facilities, as residents would be able to easily access retail and service locations within a short walking distance.

Bicycle Mobility Impact

Chapter 7 of the 2002 *City of Federal Way Comprehensive Plan* identifies bicycle facilities planned for the City Center area. These bicycle facilities would connect major destinations and would increase the mobility of bicyclists within the project area. New development under the planned action would increase the demand for bicycle facilities in the project area. Impacts associated with development permitted through the Planned Action Ordinance would be addressed as described in the Additional Mitigation section on page 3-73.

2014 Alternative 1 Traffic Volumes

Figures 30 to 32 in Appendix 2 show the expected 2014 traffic volumes on selected roadways for the Alternative 1 for the PM, AM and Saturday peak hours. Because the land uses are concentrated along the S 320 Street corridor, the project trips generated for Alternative 1 would impact primarily intersections along this corridor.

AM Peak Hour

During the AM peak hour, Alternative 1 volumes would be on roadways near and within the project area. During the AM peak hour, nearly 1,100 trips to area roadways would be added, concentrated on roads near the project area, especially on S 320 Street. Intersections that would see the greatest impact from the alternative would be:

- S 320 St & I-5 southbound - 320 Ramp (510 additional trips)

- S 320 St & 1 Av S (380 additional trips)
- S 336 St & Pacific Hwy S (370 additional trips)
- S 272 St & Pacific Highway S (340 additional trips)

PM Peak Hour

During the PM peak hour, the primary impact of Alternative 1 would be on roadways near and within the project area. During the PM peak hour, the alternative would add nearly 2,400 trips to area roadways, concentrated on S 320 Street and Pacific Highway S. The following intersections would be impacted by the alternative:

- S 320 St & Pacific Hwy S (1260 additional trips)
- S 336 St & Pacific Hwy S (910 additional trips)
- S 348th St & Pacific Hwy S (870 additional trips)
- S 324 St & Pacific Hwy S (780 additional trips)
- S 320 St & Military Rd S (750 additional trips)
- S 320 St & 23 Av S (740 additional trips)

Saturday Peak Hour

Alternative 1 would add 2,500 trips to area roadways, mainly within and adjacent to the project area. The following intersections would see the greatest impact from the alternative during the Saturday peak hour:

- S 320 St & Pacific Hwy S (1370 additional trips)
- S 320 St & 20 Av S (1220 additional trips)
- S 320 St & 23 Av S (980 additional trips)
- S 312 St & Pacific Hwy S (910 additional trips)
- S 320 St & I-5 southbound - 320 Ramp (870 additional trips)
- S 316 St & Pacific Hwy S (850 additional trips)

Alternative 2

This section describes the traffic impacts associated with Alternative 2. The section describes the trip generation, distribution and assignment, the 2009 turning volumes, transportation impacts and recommended mitigation.

Trip Generation, Distribution, and Assignment

Alternative 2 accounts for the same level of development within the City Center as Alternative 1, but spreads this development throughout the project area. The trip distribution

and assignment were completed using the City's EMME/2 model. AM and Saturday distribution and assignment follow existing area traffic patterns.

Traffic Volumes

Figures 24 to 26 in Appendix 2 show the 2009 turning movement volumes for each study intersection for Alternative 2 for the PM, AM and Saturday peak hours. Traffic volumes for the PM peak hour are based on the model results. AM and Saturday volumes were estimated based upon an annual growth rate.

2009 Alternative 2 Traffic Operations

Table 3-24 lists the LOS operation for the PM, AM and Saturday peak hour for Alternative 2. These intersection operations are based on existing signal timing and phasing as provided by the City of Federal Way.

Table 3-24. 2009 Alternative 2 Intersection Operations

Intersection	PM Peak[4]		AM Peak[4]		Saturday Peak[4]	
	LOS[1]	V/C[2]	LOS	V/C	LOS	V/C
S 272 St & Pacific Hwy S	**F**	1.09[5]	D	0.71	D	0.75
S 272 St & I-5 southbound Ramp	**F**	1.03[5]	C	0.73	C	0.62
S 272 St & I-5 northbound Ramp	C	0.85	E	1.09[5]	B	0.67
S 272 St & Military Rd S	**F**	1.27[5]	F	1.10[5]	D	0.63
S 288th St & Pacific Hwy S	D	0.81				
S 288th St & Military Rd S	C	0.77				
S Dash Point Rd & Pacific Hwy S			C	0.52		
S 312 St & Pacific Hwy S	**E**	1.05[5]			D	0.98
S 312 St & 28 Av S	B	0.65[3]				
S 316 St & Pacific Hwy S					**E**	**1.06**[5]
SW 320 St & 21 Av SW			D	0.78		
S 320 St & 1 Av S	D	0.81	D	0.81	D	0.97
S 320 St & Pacific Hwy S	D	0.91			**F**	**1.01**[5]
S 320 St & 20 Av S					**E**	**1.47**[5]
S 320 St & 23 Av S	D	0.76			**F**	**1.05**[5]
S 320 St & I-5 southbound Ramp	C	0.78	C	0.71	C	0.94
S 320 St & I-5 northbound Ramp					B	0.76
S 320 St & Military Rd S	D	0.96				

Intersection	PM Peak[4]		AM Peak[4]		Saturday Peak[4]	
	LOS[1]	V/C[2]	LOS	V/C	LOS	V/C
S 324 St & Pacific Hwy S	D	0.86			D	0.87
SW 336 St & 21 Av SW	E	0.99				
S 336 St & Pacific Hwy S	**D**	1.05[5]	C	0.69		
SW 340 St & Hoyt Rd SW	C	0.63	B	0.53	C	0.57
SW Campus Dr & 1 Av S	E	0.96				
S 348 St & Pacific Hwy S	D	0.80				
SW 356 St & 21 Av SW	C	0.84				
S 356 St & Pacific Hwy S	C	0.83				
S 356 St & Enchanted Pkwy S	D	0.82				

Source: Mirai Associates, 2006

1. LOS reflects the overall operation of the intersection based on the Highway Capacity Manual 2000 methodology
2. V/C is the combined volume/capacity of the critical movements of the intersection as identified as the Xc in the HCM 2000 methodology.
3. Maximum v/c ratio at all-way stop-controlled unsignalized intersection.
4. PM peak hour occurs between 4 and 6 p.m.; AM peak hour occurs between 7 and 9 a.m.; Saturday peak hour occurs between 11 a.m. and 1 p.m.
5. Results from HCM2000 Signals (version 4.1f)

PM Peak Hour Deficiencies – Five intersections exceed the City's deficiency threshold in 2009 for Alternative 2. Deficient intersections are focused along S 272 Street and Pacific Highway S, where growth in regional traffic is expected to affect intersection operations during the PM peak hour.

AM Peak Hour Deficiencies – Two of the study intersections exceed the City's deficiency threshold in 2009 for Alternative 2. The deficient intersections are located at I-5 northbound Ramp and Military Road S along S 272 Street.

Saturday Peak Hour Deficiencies – Four of the Saturday study intersections exceed the City's deficiency threshold in 2009 for Alternative 2. These intersections are focused around the project area, at S 316 Street and S 320 Street on Pacific Highway S, and at the intersections at 20 Avenue S and 23rd Avenue S on S 320 Street. Weekend retail activity at these locations is likely to contribute to the high traffic at these intersections.

Parking Requirement

The parking requirement for Alternative 2 is identical to that shown for Alternative 1. Please refer to Table 3-23 for a summary of the total parking requirement for Alternative 2.

Traffic Safety Impact

As the amount of traffic increases increase within the area, the probability of traffic collisions would be expected to increase. The *City of Federal Way Comprehensive Plan* identifies that congestion is a primary factor in collision rates. Alternative 2 would increase the number of trips at high collision locations, the number of trips associated with this alternative make up

only a small proportion of the entering trips. Improvements associated with traffic improvement would reduce congestion and the congestion-associated collisions.

Transit Service Impact

Alternative 2 would provide a high level of urban development and amenities in area near the new Federal Way Transit Center. Under the alternative, development would occur throughout the project area, providing a high number of potential transit users who may walk to the Transit Center. Expected residents of the project area would likely include transit users.

Pedestrian Accessibility

The *City of Federal Way Comprehensive Plan* identifies a number of roadway and pedestrian improvements to occur as part of future development. Alternative 2 concept of a pedestrian-oriented, mixed-use center would encourage use of these facilities, as residents would be able to easily access retail and service locations within a short walking distance.

Bicycle Mobility Impact

Chapter 7 of the 2002 *City of Federal Way Comprehensive Plan* identifies bicycle facilities planned for the City Center area. These bicycle facilities would connect major destinations and would increase the mobility of bicyclists within the project area. New development under the planned action would increase the demand for bicycle facilities in the project area. Impacts associated with development permitted through the Planned Action Ordinance would be addressed as described in the Additional Mitigation section on page 3-73.

2014 Alternative 2 Traffic Volumes

Figures 33 to 35 in Appendix 2 show the expected 2014 traffic volumes on selected roadways for the Alternative 2 for the PM, AM and Saturday peak hours. The project trips generated for Alternative 2 are assumed identical to Alternative 1, but assume that development is spread throughout the project area.

AM Peak Hour

During the AM peak hour, Alternative 2 volumes would be on roadways near and within the project area. During the AM peak hour, the alternative would add nearly 1,100 trips to area roadways, concentrated on roads near the project area. Intersections that would see the greatest impact from the alternative would be:

- S 320 St & I-5 southbound - 320 Ramp (520 additional trips)
- S 320 St & 1 Av S (380 additional trips)
- S 336 St & Pacific Hwy S (370 additional trips)
- S 272 St & Pacific Highway S (340 additional trips)

PM Peak Hour

During the PM peak hour, the primary impact of Alternative 2 would be on roadways near and within the project area. During the PM peak hour, the alternative would add nearly 2,400 trips to area roadways, concentrated on roads near the project area. The following intersections would see the greatest impact from the alternative:

- S 320 St & Pacific Hwy S (1180 additional trips)
- S 336 St & Pacific Hwy S (880 additional trips)
- S 348th St & Pacific Hwy S (860 additional trips)
- S 324 St & Pacific Hwy S (740 additional trips)
- S 320 St & Military Rd S (700 additional trips)
- S 320 St & 23 Av S (670 additional trips)

Saturday Peak Hour

Alternative 2 would add 2,500 trips to area roadways, mainly within and adjacent to the project area. The following intersections would see the greatest impact from the alternative during the Saturday peak hour:

- S 320 St & Pacific Hwy S (1370 additional trips)
- S 320 St & 20 Av S (1160 additional trips)
- S 320 St & 23 Av S (1010 additional trips)
- S 320 St & I-5 southbound - 320 Ramp (910 additional trips)
- S 312 St & Pacific Hwy S (890 additional trips)
- S 316 St & Pacific Hwy S (880 additional trips)

No Action (Alternative 3)

The No Action alternative represents the expected growth in the project area without the proposal. This alternative would follow existing development patterns. Roadway and transit improvements listed in the Transportation Improvement Program (TIP) are assumed to occur under this alternative.

Traffic Growth

Forecasts of the PM peak hour were completed using the EMME/2 transportation model. The model uses the 2009 and 2004 land uses to estimate future traffic levels and to assign the volumes to the roadway network. Use of the model allows traffic to be redistributed, responding to new capacity from roadway improvements or drivers seeking new routes in order to avoid intersections with high delays. For the No Action alternative (Alternative 3), the trip generation and distribution were based on the expected development in the planning area without the land use and zoning changes assumed in the action alternatives.

Traffic Volumes

Figures 12-14 in Appendix 2 show the 2009 traffic volumes for the PM peak, AM peak and Saturday peak at each of the study intersections. The growth in traffic for the No Action alternative assumes the scheduled roadway improvements from the 2005-2010 TIP.

2009 No Action Traffic Operations

Table 3-25 lists the LOS operation for the PM, AM and Saturday peak hour for each of the study intersections analyzed for that period. These intersection operation results assume the completion of the 2005-2010 Transportation Improvement Program, and existing signal timing and phasing as provided by the City of Federal Way.

Table 3-25. 2009 Traffic Operations No Action (Alternative 3)

Intersection	PM Peak[4]		AM Peak[4]		Saturday Peak[4]	
	LOS[1]	V/C[2]	LOS	V/C	LOS	V/C
S 272 St & Pacific Hwy S	**F**	**1.10[5]**	C	0.71	D	0.77
S 272 St & I-5 southbound Ramp	**F**	**1.02[5]**	C	0.73	C	0.62
S 272 St & I-5 northbound Ramp	C	0.92	**E**	**1.08[5]**	B	0.67
S 272 St & Military Rd S	**F**	**1.24[5]**	**F**	**1.09[5]**	D	0.63
S 288th St & Pacific Hwy S	D	0.82				
S 288th St & Military Rd S	C	0.78				
S Dash Point Rd & Pacific Hwy S			C	0.50		
S 312 St & Pacific Hwy S	**E**	**1.05[5]**			D	0.86
S 312 St & 28 Av S – unsignalized	B	0.64[3]				
S 316 St & Pacific Hwy S					D	0.89
SW 320 St & 21 Av SW			D	0.76		
S 320 St & 1 Av S	D	0.81	C	0.77	D	0.85
S 320 St & Pacific Hwy S	D	0.92			D	0.92
S 320 St & 20 Av S					**E**	**1.14[5]**
S 320 St & 23 Av S	D	0.77			**F**	**0.95[5]**
S 320 St & I-5 southbound Ramp	C	0.78	C	0.68	C	0.84
S 320 St & I-5 northbound Ramp					B	0.68
S 320 St & Military Rd S	D	0.96				
S 324 St & Pacific Hwy S	D	0.86			D	0.77
SW 336 St & 21 Av SW	E	0.99				
S 336 St & Pacific Hwy S	**D**	**1.03[5]**	C	0.68		
SW 340 St & Hoyt Rd SW	C	0.63	B	0.52	B	0.55
SW Campus Dr & 1 Av S	E	0.96				

Intersection	PM Peak[4]		AM Peak[4]		Saturday Peak[4]	
	LOS[1]	V/C[2]	LOS	V/C	LOS	V/C
S 348 St & Pacific Hwy S	D	0.87				
SW 356 St & 21 Av SW	C	0.85				
S 356 St & Pacific Hwy S	C	0.87				
S 356 St & Enchanted Pkwy S	D	0.82				

Source: Mirai Associates, 2006

1. LOS reflects the overall operation of the intersection based on the Highway Capacity Manual 2000 methodology
2. V/C is the combined volume/capacity of the critical movements of the intersection as identified as the Xc in the HCM 2000 methodology.
3. Maximum v/c ratio at all-way stop-controlled unsignalized intersection.
4. PM peak hour occurs between 4 and 6 p.m.; AM peak hour occurs between 7 and 9 a.m.; Saturday peak hour occurs between 11 a.m. and 1 p.m.
5. Results from HCM2000 Signals (version 4.1f)

PM peak hour Deficiencies – Five intersections exceed the City's deficiency threshold in 2009. Deficient intersections are focused along Pacific Highway S and along S 272 Street, where growth in regional traffic is expected to affect intersection operations during the PM peak hour.

AM peak hour Deficiencies – Two of the study intersections exceed the City's deficiency threshold in 2009. The areas with the deficient locations are along S 272 Street at the I-5 northbound ramp and Military Road S intersections.

Saturday peak hour Deficiencies – Two of the Saturday study intersections exceed the City's deficiency threshold in 2009 under the No Action Alternative. These intersections are located in the heart of the project area at the intersections of S 320 Street & 20 Avenue S and S 320 Street & 23 Avenue S. Weekend retail activity at these locations is likely to contribute to the high traffic levels observed at these intersections.

Parking Requirement

Table 3-26 describes the increase in parking requirements for the No Action alternative above existing levels. These increases assume full development by the year 2014. The parking demand represents the requirements for proposed development under Alternative 3 and does not include existing land uses. The number of spaces represents the City's Parking Code requirement and may be reduced through shared parking arrangements or transportation demand management programs. This reduction could vary from 10% to 20%.

Table 3-26. Parking Requirement for Alternative 3

Land Use	Parking Code Requirement	Proposed Development	Required Parking[1]
Civic Uses	Case by case	0 sf	0 Stalls
Hotel	1 per room	0 rooms	0 stalls
Office	1 per 300 sf	96,486 sf	348 stalls
Other[2]	1 per 1,000 sf	0 sf	0 stalls

Land Use	Parking Code Requirement	Proposed Development	Required Parking[1]
Residential	1.7 per unit	186 units	459 stalls
Retail	1 per 300 sf	182,506 sf	734 stalls
Total			1,541 stalls

Source: Jones and Stokes Associates 2005.

1. These parking demands may be 10% to 20% less based on shared parking.

2. Category includes such uses as wholesale, storage, light manufacturing and other similar uses.

Traffic Safety Impact

As the amount of traffic increases increase within the area, the probability of traffic collisions would be expected to increase. The *City of Federal Way Comprehensive Plan* identifies that congestion is a primary factor in collision rates. While the No Action alternative would increase the number of trips at high collision locations, the numbers of trips associated with this alternative make up only a small proportion of the entering trips.

Transit Service Impact

The No Action alternative would support increased transit services and accessibility described in the *City of Federal Way Comprehensive Plan*. These actions would increase transit service levels and envisions increasing jobs and housing opportunities within the project area to take create a transit-oriented community.

Pedestrian Accessibility

The *City of Federal Way Comprehensive Plan* identifies a number of roadway and pedestrian improvements to occur as part of the development in the project area. Improvements include sidewalks and pedestrian corridors, addition of the grid street system, pedestrian crossings (potentially elevated) of major roadways and inclusion of pedestrian elements such as street furniture, covered transit stops, and pedestrian-scale lighting.

Bicycle Mobility Impact

Chapter 7 of the 2002 *City of Federal Way Comprehensive Plan* identifies bicycle facilities planned for the City Center area. These bicycle facilities would connect major destinations and would increase the mobility of bicyclists within the project area. New development under the No Action Alternative would increase demand for bicycle facilities in the project area. Because development levels are expected to be less compared to Alternatives 1 or 2, impacts on bicycle facilities demand would be correspondingly less. Under the No Action Alternative, impacts associated with individual development proposals in this area would continue to be individual reviewed through the SEPA review process and decisions about the need for bicycle facilities would be made on a case-by-case basis.

2014 No Action Traffic Volumes

Figures 27 to 29 in Appendix 2 show the expected 2014 traffic volumes on selected roadways for the No Action Alternative (Alternative 3) for the PM, AM and Saturday peak hours. The

volumes indicate higher traffic levels on area streets and roadways that may result in increased congestion at major intersections.

The majority of traffic growth would be from 2009-2014 background growth associated with regional traffic and future development not associated with the City Center proposal. The No Action alternative adds only low levels of traffic to area roadways. Based on the trip generation, approximately 420 new PM peak hour trips would be added to area roadways. Impacts from the project area are generally low, with the added 2009-2014 traffic growth accounting for less than 5% of traffic volumes at intersections.

Mitigation

Mitigation for the proposal identifies the actions necessary to meet the City's LOS threshold for study intersections. The mitigation in this section is divided into PM Peak, AM Peak, and Saturday peak hours to isolate the impacts of each of these intersection locations. The specific level of mitigation necessary for any particular future development project will be determined during the City's project review and based on an analysis of site access. However, only mitigation measures included in this EIS and incorporated into the City Council-approved Planned Action Ordinance will be required to address off-site impacts. The specific dollar amount of any required mitigation contribution will be on the basis of proportional impacts at rates to be determined by City Council.

Mitigation Cost Assumptions

The City of Federal Way provided the following cost assumptions (Table 3-27) for use in estimating the costs of improvements. Additional costs assumptions based on previous experience were added for optimization of signal timing and installation of a permitted plus overlap phase for right turn movements.

Table 3-27. Mitigation Cost Assumptions

Improvement	2009 $
Construction	
1. Widening in City Center or on state highways	$89/SF
2. Widening in other commercial zones	$76/SF
3. Widening elsewhere	$63/SF
5. Shoulder widening	$13/SF
6. Lighting	$66/LF
7. Signal Pole Relocation	$69,000/EA
8. Retaining Wall	$127/SF
9. New Signal	$228,000/EA
10. Mobilization	8.0% of construction
Right of Way	
1. Right of way	$44/SF
2. Parcel purchase	Market Value
3. Parking stalls loss	$5,000/EA
Project Development	
1. Permitting	5% of construction
2. Contingency	30% of construction

Improvement	2009 $
3. Design	25% of construction
4. Construction Engineering	15% of construction
5. Stormwater	20% of construction

Cost estimates developed in consultation with the City of Federal Way Department of Public Works. 2004 to 2009 assumed 3% annual growth factor for the cost for construction and materials.

Mitigation Improvements

Mitigation improvements for this study were based on projects identified by the City through their capital improvement planning process and other area planning projects.

Sources of mitigation improvements for the intersections include:

- 2009-2020 Capital Improvement Plan (CIP)
- 2030 City Center Access Study (2005) – Traffic Systems Management (TSM) Projects

Other mitigation improvements were based on the results of the LOS analysis. These improvements include: signal optimization and addition of turn lanes. All mitigation improvements were identified for feasibility and reviewed by City staff.

In some cases, mitigation actions may not be feasible, reasonable, or desirable. In these cases, mitigation may require changes in current policies or result in undesired consequences, such as long vehicle delays or pedestrians access issues. While there may be actions that could bring an intersection to the City's LOS threshold, investigation of these mitigation actions fall outside the scope of this analysis and would require policy changes by the City or State to implement. Examples of these types of mitigation include:

- The cycle length to extend beyond a 120 second cycle
- Relocation or removal of businesses
- Triple turn lanes at major intersections
- Additional through lanes on a major thoroughfare
- Conversion of HOV lanes to be used for general purpose travel on Saturdays
- Limits on turning movements at an intersection (no left turn)
- Development of parallel travel routes
- Changes to physical topography

PM Peak Hour

For the PM peak hour, improvements would be needed to meet the City's LOS standard for the No Action alternative. Optimization of signal timing is assumed to occur as part of future City signal coordination activities. No further improvements are required during the PM peak hour for Alternative 1 and 2. Table 3-28 indicates the PM peak hour improvements identified for the three alternatives.

Table 3-28. PM Peak Hour 2009 Mitigation

Intersection	Improvement	2009 Cost ($ x1000)
PM Alternative 3 – No Action		
S 312 St & Pacific Hwy S	Add 2nd northbound left turn lane (CIP 01-05)	$ 2,080[1]
S 336 St & Pacific Hwy S	Optimize signal timing	0
	Alternative 3 Total	$ 2,080
PM Alternative 1 – Additional Mitigation		
S 312 St & Pacific Hwy S	No Additional Improvements Required	0
S 336 St & Pacific Hwy S	No Additional Improvements Required	0
	Alternative 1 Additional Mitigation	$ 0
PM Alternative 2 – Additional Mitigation		
S 312 St & Pacific Hwy S	No Additional Improvements Required	0
S 336 St & Pacific Hwy S	No Additional Improvements Required	0
	Alternative 2 Additional Mitigation	$ 0

Source: Mirai Associates, 2006

1.City of Federal Way estimate factored to 2009.

The final mitigation improvements for the planned action would be reviewed and adopted by City Council. As identified in this study, Alternatives 1 and 2 would require no additional mitigation over actions needed for the No Action alternative. The No Action mitigation would be approximately $2.1 million. Planned action development may be required to fund a proportional share of the No Action Alternative improvements.

AM Peak Hour

Assuming completion of the PM peak mitigation indicated in Table 3-28, no additional mitigation is required for the AM peak hour.

Saturday Peak Hour

Table 3-29 lists the Saturday peak hour mitigation improvements. As identified in this study, the Saturday peak hour analysis assumes the completion of the PM peak hour improvements indicated in Table 3-28.

A substantial amount of the Saturday mitigation would be required for the No Action alternative. Two options are provided for construction of the northbound right turn lane at S. 320th Street and 20th Avenue S intersection. The first option relocates a proposed sidewalk to the west of a future but permitted building, eliminating the need for a full building take. The second option purchases the building and constructs the sidewalk within the roadway right-of-way. The difference between the two options is estimated at $2.6 million. The range of costs for the No Action alternative would be approximately $2.5 million to $5.2 million. Alternatives 1 and 2 would require $3.2 million of additional improvements amounting to a total (including Alternative 3) of approximately $5.7-$8.4 million.

Table 3-29. Saturday Peak Hour 2009 Mitigation

Intersection	Improvement	2009 Cost ($x1000)
Saturday Alternative 3 Mitigation		
S 320 St & 20 Av S	Northbound right turn lane (TSM 2) Option 1	521
	Northbound right turn lane (TSM 2) Option 2	3,170
	Southbound right turn lane	1,029
S 320 St & 23 Av S	Second northbound right turn lane. (TSM 3)	1,003
	Alternative 3 Total	$ 2,553-5,202
Saturday Alternative 1 Additional Mitigation		
S 316 St & Pacific Hwy S	Eastbound right turn lane (TSM 12)	$ 717
S 320 St & Pacific Hwy S	Northbound right turn lane	729
S 320 St & 20 Av S	No Additional Improvements Required	0
S 320 St & 23 Av S	Westbound right turn lane	1,737
	Alternative 1 Additional Mitigation	$ 3,183
Saturday Alternative 2 Additional Mitigation		
S 316 St & Pacific Hwy S	Eastbound right turn lane (TSM 12)	$ 717
S 320 St & Pacific Hwy S	Northbound right turn lane	729
S 320 St & 20 Av S	No Additional Improvements Required	0
S 320 St & 23 Av S	Westbound right turn lane	1,737
	Alternative 2 Additional Mitigation	$ 3,183

Source: Mirai Associates, 2006

Timing of Implementation

Mitigation improvements for the area will depend on the location and rate of development within the project area. In addition, the timing of projects will depend also on the whether Saturday projects will be mitigated to the PM Peak hour thresholds. PM peak hour improvements are the highest priority, because Saturday and AM peak hour analyses assumed the completion of the PM peak hour projects.

All projects that are identified as mitigation will be needed by 2010 to meet the City's transportation threshold for the expected level of development. Additional study of the intersections of S 320 Street & Pacific Highway S and S 320 Street & 23 Avenue S may be required to identify appropriate solutions to address these intersections under Saturday peak hour conditions. Table 3-30 shows projected intersection operations by peak hour with the recommended mitigation.

Table 3-30. Intersection Operations by Peak Hour with Mitigation

	Alternative 3		Alternative 1		Alternative 2	
PM Peak	Mitigated		Mitigated		Mitigated	
Intersection	LOS	v/c	LOS	v/c	LOS	v/c
S 272 St & Pacific Hwy S[1]	F	1.10[2]	F	1.09[2]	F	1.09[2]
S 272 St & I-5 southbound Ramp[1]	F	1.02[2]*	F	1.00[2]	F	1.00[2]
S 272 St & Military Rd S[4]	F	1.24[2]	F	1.22[2]	F	1.22[2]

	Alternative 3		Alternative 1		Alternative 2	
PM Peak	Mitigated		Mitigated		Mitigated	
Intersection	LOS	v/c	LOS	v/c	LOS	v/c
S 312 St & Pacific Hwy S	D	0.95	D	0.95	D	0.95
S 336 St & Pacific Hwy S	D	0.92	D	0.93	D	0.93
AM Peak						
S. 272 St & I-5 northbound Ramp (WSDOT)	E	1.08[2]	E	1.09[2]	E	1.09[2]
S. 272 St & Military Rd S[4]	F	1.09[2]	F	1.10[2]	F	1.10[2]
Saturday Peak						
S 316 St & Pacific Hwy S	na[3]	na[3]	D	0.92	C	0.92
S 320 St & Pacific Hwy S	na[3]	na[3]	E	0.96	E	0.94[2]
S 320 St & 20 Av S	D	0.95	D	0.99	D	0.99
S 320 St & 23 Av S	E	0.92*	E	0.92	E	0.93

Source: Mirai Associates, 2006

1. The City of Kent exempts intersections along Highways of Statewide Significance from their LOS threshold.
2. Results based on HCM2000 Signals software (version 4.2f), refer to Appendix 2 for additional information.
3. Meets City of Federal Way thresholds without mitigation.
4. King County requires mitigation of intersections that receive 30 trips in an hour or 20% of the proposed new trips and exceeds LOS F. Less than 2% of project trips access the King County intersection of Military road/272nd Street.

Additional Mitigation

The mitigation identified in this analysis is focused on the roadway improvements necessary to meet the expected travel demand on area roadways associated with the proposed development in the project area. Development will also need to meet the requirements of applicable codes at the time of application. Such requirements might include the dedication of right-of-way, installing curbs gutters and sidewalks, drainage improvements, and other requirements of the City. Additional mitigation may be required for individual development applications within the project area in order to reduce area traffic impacts or improve on-site circulation and to meet City and State requirements for Commute Trip Reduction and Transportation Demand Management. Actions to be considered include:

On-site improvements – Driveway and circulation actions to minimize impact on area roadways. Actions may include management of access points, traffic control measures, construction of internal roadways, pedestrian and bicycle improvements, and connections to adjacent developments.

Non Motorized mode improvements – Mitigation may be required per site specific and land use development proposals to address pedestrian, bicycle, and transit improvements to support the plans, policies, and goals as noted within the *City of Federal Way Comprehensive Plan* City Center Element (2002, Chapter 7) and Transportation Element (2003, Chapter 3).

Grid Roadway Development – Part of the City Center Plan is to develop a number of internal roadways (see Figure 11 in Appendix 2) to create smaller blocks that will improve the grid network and improve the access for pedestrians and vehicles. Right-of-way dedication and street improvements shall be a component of the development submittal phase of a proposed project within the project area. Roadways within the project area must meet specific "City Center" design standards as specified in the Transportation Element (Chapter 3) of the *City of Federal Way Comprehensive Plan* (2003 revision, Figure III-3)

Right-of-way Dedication – Right of way dedication and frontage improvements may be required in conjunction with proposed developments. Roadways within the project area must meet specific "City Center" design standards as specified in the Transportation Element (Chapter 3) of the *City of Federal Way Comprehensive Plan* (2003 revision, Figure III-3).

Transportation Demand Management (TDM) – TDM actions can be used to reduce the impact of the project and as a mitigation action. These actions may include provision of transit passes to tenants and employees, ridesharing programs, priority carpool parking, and guaranteed ride home programs. TDM actions are designed to primarily address commute trips and may not be applicable as mitigation for all developments.

Table III-13 (page 60) of the *City of Federal Way Comprehensive Plan (2003 revision*, Chapter 3, Transportation Element) stratifies various TDM alternatives by their functional grouping and potential effectiveness, implementation difficulties, and expected cost effectiveness. These strategies include: Telecommuting, Parking Pricing and Subsidy Removal, Compressed Work Week, Employer-Based Management, and Parking Supply Strategies.

Based upon the above, the following are a list of recommended mitigation measures that can be considered in conjunction with individual development projects within the project area:

1. Encourage voluntary expansion of the CTR Program to employers of less than 100 employees. The encouragement by employers may be as diverse as subsidized bus passes, car pool space priority, bike racks, shower facilities, van pools, car pool information access, telecommuting, variable work hours, etc.

2. Encourage the formation and expansion of area-wide ride-sharing programs. Such programs operate with little direct cost to the City and are highly cost-effective.

3. Support the enhancement of Park and Ride facilities and transit centers to supplement the regional system, either directly through physical development or enhancements or indirectly through development conditions where employer vans are required to shuttle employees to Park and Ride facilities or transit centers.

4. Facilitate enhancements to the HOV System. This may include the dedication of property for HOV lanes, construction of arterial HOV lanes within existing City ROW, and priority treatments for buses at traffic signals. At the very least, where feasible, opportunities to support enhanced access to the State system of HOV lanes should be considered.

5. Achieve densities and mix of uses to support public transportation, decrease trip generation and parking impacts.

6. Encourage facilities (shelters, loading spaces, etc.) to accommodate City Center shuttle service in association with development projects, together with enhanced pedestrian and bicycle access and security.

7. Improve pedestrian and bicycle access to bus routes and transit centers. This can be a requirement of subdivision, development, and redevelopment. The City may need to acquire easements and construct trail connections. Development incentives could be granted for providing such amenities that are pedestrian, bike and transit friendly. While bicycle, pedestrian and transit services and facilities may be desirable for other reasons; they should not be looked on as highly cost-effective strategies to the exclusion of those actions listed above.

Neighborhood Traffic Control – Development within the project area may be required to include actions to reduce the impact of cut through traffic on residential areas. Examples of neighborhood traffic control actions include: turn restrictions, speed controls, traffic enforcement, and parking restrictions.

The following mitigation recommended shall support the following *City of Federal Way Comprehensive Plan* (2003 revision) Transportation Element (Chapter 3):

Minimize through traffic on residential streets by maximizing through travel opportunities on arterial and collector streets.

Employ traffic calming measures in neighborhoods (where feasible) where traffic volumes and speeds on local streets consistently exceed reasonable levels.

Improve safety on residential streets by:

a. Reducing street widths while maintaining on-street parking.

b. Increasing separation between sidewalks and streets.

c. Reducing design speeds to discourage speeding.

d. Limiting the length of straight streets to discourage speeding.

e. Discouraging the use of four-legged intersections.

Keep through traffic to state routes and arterials. Discourage the use of local or neighborhood streets for through movements (unless part of an overall process of creating a street grid).

Parking – Mitigation actions that reduce the parking requirements within the project area should be encouraged. Examples include shared parking, employee parking programs, parking time restrictions, paid parking programs. Shared parking strategies focus on looking at opportunities where adjacent uses have parking demand profiles that can support the sharing of a smaller amount of parking spaces. For example, an office building with an 8 AM to 5 PM demand could share its parking with evening dominated uses such as restaurants, or a cinema. A parking demand study, which shows the hourly parking demand profiles for adjacent uses and the potential for joint parking opportunities within a mixed-use development, can be used to reduce the number of parking spaces.

In addition, contained in the above TDM mitigation are strategies that overlap with parking mitigation plans for development. A development may propose a plan and management system to the City for approval upon submittal of the development permit. Those items may contain the following in support of the City of Federal Way and state Commute Trip Reduction (CTR) requirements:

Alternative Mode Support Measures

Public education and promotion may increase the effectiveness of these other strategies up to 3%.

Area-wide Ride matching Services – May result in a 0.1 – 3.6% reduction in vehicle miles traveled (VMT) and an up to 2.5% VMT reduction in transit services. Reductions in parking required may be calculated on the basis of these lower trip-generation rates.

Vanpool Service – May result in an up to 8.3% commute VMT reduction, as well as a reduction in transit and vanpool fares up to 2.5%. Reductions in parking required may be calculated on the basis of these lower trip-generation rates.

Non-Motorized Modes plan and implementation – 0-2% regional VMT reduction - calculations shall be based parking requirement mitigation as a result of lower trip generation calculations.

HOV Facilities – May result in an up to 1.5% VMT reduction and 0.2% vehicle trip reduction. Reductions in parking required may be calculated on the basis of these lower trip-generation rates.

On site development Park and Ride – May result in up to 0-0.5% VMT reduction. Reductions in parking required may be calculated on the basis of these lower trip-generation rates.

Employer-Based TDM Measures

Parking mitigation -- Monetary incentives may result in an up to 8-18% trip reduction at site. Reductions in parking required may be calculated on the basis of these lower trip-generation rates.

Alternative Work Schedules – May result in as much as a 1% regional VMT reduction. Reductions in parking required may be calculated on the basis of these lower trip-generation rates.

Commute Support Programs – May result in up to 0.1-2.0% regional VMT reduction. Reductions in parking required may be calculated on the basis of these lower trip-generation rates.

Parking Management – May result in up to a 20 to 30% reduction in SOV trips to/from the site. Reductions in parking required may be calculated on the basis of these lower trip-generation rates.

Telecommuting – Up to 10% commute VMT reduction. Reductions in parking required may be calculated on the basis of these lower trip-generation rates.

Other Strategies

Parking Tax – May result in up to a 1 to 5% reduction in regional VMT and trip generation, but requires City Council and/or legislative action. Reductions in parking required may be calculated on the basis of these lower trip-generation rates.

Development Parking Impact Mitigation – Requires Council approval to allow for payment of parking-mitigation funds towards long-term investments in structured parking solutions in lieu of full parking requirement. Reductions in parking required may be calculated on the basis of these lower trip-generation rates.

Mixed Land Use/Jobs Housing Balance – May result in VMT reductions up to 10%. Parking stall credit is given based on overlapping shared usage of mixed facility, per City Code provisions.

Transit-Oriented and Pedestrian Friendly Design – Site and building design that encourages transit usage and/or walking may reduce overall parking requirement. Requires design review and staff approval.

Employment Center Density – Achievement of sufficient density within the City Center to constitute a regional employment center may reduce SOV work trips to individual development projects by up to 50%. Parking stall reductions may also apply to developments.

Other Parking Management Plans – May mitigate 1 to 5% region-wide VMT, provided enforcement issues are addressed in the mitigation plan.

Significant Unavoidable Adverse Impacts

Although numerous measures will mitigate transportation-related impacts, increases in traffic congestion at some nodes and/or along some corridors will result in remaining significant, unavoidable, adverse impacts on the area's transportation system. Development of the Federal Way City Center would generate additional traffic volumes on the area's roadways. However, the increased intersection capacity and associated traffic improvements would mitigate undesired impacts. The proposed mixed-use land use pattern, on-site improvements and public and private TDM actions, along with high levels of existing and future transit service may further reduce vehicle trips thereby further mitigating impacts.

3.5 Public Services

This section of the Draft EIS describes existing conditions, potential impacts, mitigating measures and unavoidable adverse impacts that the proposal and alternatives may have on public services. The public services analyzed in this chapter include police, fire, emergency medical service (EMS), parks and recreation, energy (electricity, natural gas) and telecommunications.

Affected Environment

Police

In March 2006, Federal Way Department of Public Safety had 155 full-time employees consisting of 119 sworn officers and 36 civilian positions. Police coverage for each 24-hour period is divided into three shifts. The City of Federal Way is divided into seven patrol districts. The W4 and W6 patrol districts serve the City Center project area. Minimum staffing levels are seven officers and one supervisor per shift, although many shifts have eight or nine officers assigned to a shift. (Michelle Landon, 2006). Two officers are assigned to Block 3 (The Commons at Federal Way) in the project area, each working approximately 32 hours a week in the mall and 8 hours in the surrounding areas as patrol officers.

In 2004, there were a total of 78,534 calls for service citywide, with 6,259 calls originating from the City Center project area, or approximately 8 percent of total calls. Call data for 2005 showed a total of 79,956 calls for service citywide, with 6,365 calls originating from the City Center, also approximately 8 percent of total calls.

The goal for the Federal Way Police Department is to respond to Emergency and Priority 1 calls in 3-5 minutes, Priority 2 calls in 7-10 minutes, Priority 3 calls in 15-17 minutes, and Priority 4 calls in 28-30 minutes[1]. Data shows that throughout Federal Way response time goals are being achieved or exceeded for all calls except Priority 4 calls: Emergency calls (1.11min.), Priority calls 1 (3.88 min.), Priority 2 calls (13.17 min.), and Priority 3 calls (18.84min.) Priority 4 calls (37.43 min.) were only slightly above the response goal of 28-30 minutes. Response times in the City Center project area are comparable or less than those in the City as a whole, mainly because of the central location of the project area.

Part 1 Crimes are reported to both the FBI and State of Washington. These crimes include murder/manslaughter, rape, robbery, felony assaults, burglaries, auto theft, felony theft, and arson. In 2005, larceny was the most prevalent crime Citywide and within the City Center, followed by auto theft, burglary, robbery and felony assault.

Calls for Service (CFS) data is compiled according to reporting districts (RDs). The RDs do not correspond exactly to Block boundaries in the project area. However, Block 1 is primarily served by RD 76, Block 2 by RD 74, and Block 3 by RD 48. These are RDs are used to represent block data in the following analysis.

1

Type of call	Definition
Priority E Emergency	Highest priority-confirmed hazard that could result in extensive loss of life and/or property. It represents the greatest danger for officers responding to an immediate danger. (e.g. bank robbery in progress, shooting, car jacking with weapon)
Priority 1	Represents a potential hazard that could result in the loss of life and/or property. Officers responding may be at risk or seriously jeopardized. (e.g. Bank holdup alarm, assault with weapon, bomb or explosive devise found, robbery or assault in progress)
Priority 2	Represents minimal hazard with considerably less potential for loss of life and/or property. Minimal risk to responding officers.(e.g. injury accident, auto theft or burglary in progress)
Priority 3	Represents low hazard, non-life threatening situation with minimal risk of property loss. (e.g. non-injury vehicle accident, verbal dispute, drug activity, signal malfunction, suspicious person, or vehicle.)
Priority 4	Represents cold calls.(e.g. abandoned vehicle, animal complaint, firework complaints, illegal dumping, lost/found property, traffic complaints)

The top 5 categories of calls for Reporting District (RD) 48 (The Commons at Federal Way-Block 3) in 2005 include shoplifting, theft, 911 hang-up, false alarms, and fraud. Between 2001-2005 shoplifting calls have increased, while theft has decreased.

The top 5 categories of calls for RD 74 (Block 2) in 2005 include theft, shoplifting, 911 hang-up, false alarms, and accidents. The nature of calls has remained consistent since 2001, with theft decreasing each year. The top 5 categories of calls for RD 76 (Block 1) in 2005 include shoplifting, theft, 911 hang-up, hit & run, and accidents. The top 5 categories of calls for RD 76 have remained fairly consistent, with a substantial increase in calls for shoplifting, and traffic related disturbances. Table 3-31 shows the breakdown of the major call types of calls for service for each of these reporting districts.

Table 3-31. Calls for Service in City Center Project Area

Crime Type	2001		2001		2003		2004		2005	
	City Center	City	City Center	City	City Center	City	City Center	City	City Center	City
Homicide	0	4	0	4	1	2	0	0	0	8
Rape	4	43	1	49	3	50	1	50	2	55
Robbery	19	128	14	124	23	125	23	121	23	153
Felony Assault	9	158	7	141	37	120	40	109	36	101
Burglary	26	521	36	677	37	672	30	759	32	793
Auto Theft	128	1179	85	206	78	3145	68	1118	126	1573
Larceny	743	3516	738	3347	743	1204	421	3257	753	3786
Arson	2	17	0	29	1	14	1	23	0	24
Total	**931**	**5566**	**881**	**4577**	**923**	**5332**	**584**	**5437**	**972**	6493
Crime %	16.73%		**19.25%**		**17.31%**		**10.74%**		**14.97%**	

Source: Federal Way Department of Public Safety, 2006

Table 3-32 compares the citywide data for the three main reporting districts in the project area. As shown, 3.5 percent of collisions, 5.1 percent of traffic stops, and 2.5 percent of DUI arrests occurred within the City Center project area.

Table 3-32. Traffic Enforcement Activity 2005

Type of Activity	Citywide	RD76		RD74		RD48	
	# of calls	# of calls	%	# of calls	%	# of calls	%
Collisions	2,256	25	1.1	18	0.8	35	1.6
Traffic Stops	13,205	35	0.2	96	0.7	555	4.2
DUI Arrests	359	1	0.3	3	0.8	5	1.4

Source: Federal Way Department of Public Safety, 2006.

Fire and EMS

The Federal Way Fire Department services include fire suppression, fire prevention (building inspection and public information), emergency medical, and communications center operation for 911 emergency calls. Services are provided from seven stations located throughout the Department's 34 square miles of service area. In March 2006, there were 136 personnel, with 104 employees working fire suppression, 14 support staff, and 18 volunteers. Two stations primarily serve the City Center area. Station 62 is located at 31617 1st Avenue S. and Station 64 is located at 3203 S. 360th.

Station 62 has 3 shifts of 8 personnel for a total of 24 staff. Major equipment at Station 62 includes a 2002 KME Pumper, 2003 Road Rescue Aid Car, 2003 Suburban Command Vehicle, 1991 Pierce 105' Aerial Ladder Truck.

Station 64 has 3 shifts with either 7 per shift for a total of 21 personnel. Major equipment at Station 64 includes a 1992 Utilimaster Step van (Major Incident Response Command Unit), 1995 Pierce Telesqurt Fire Engine, and 2003 Road Rescue Aid Car.

Table 3-33 shows the number of fire and EMS calls for service at Stations 62 and 64 in 2005. During this period, the department as a whole received 11,816 calls for fire protection and emergency medical service. As shown in Table 3-34, Station 62 responded to 112 fire calls and 2,518 EMS calls. Station 64 responded to 96 fire calls and 1,428 EMS calls. This data includes all calls to these stations, including calls within and around the project area (Grant Gaspard, Federal Way Fire Department, 2006).

Table 3-33. Stations 62 and 64 Fire and EMS Calls for Service 2005

Fire Calls for Service		
Station	# of Incidents	Average Response Time
Station 62	112	5.27 minutes
Station 64	96	5.57 minutes
EMS Calls for Service		
Station	# of Incidents	Average Response Time
Station 62	2,518	5.16 minutes
Station 64	1,428	5.24 minutes

Source: Federal Way Fire Department 2005.
Notes: Average response time is decimal value, not time value.

The Fire Department has established a service standard that seeks to respond to all emergency calls in less than 7 minutes. As shown in Table 3-33, the Fire Department achieved this standard.

Emergency medical response calls for service make up approximately 75 percent of total calls received, with fire calls comprising 4 percent of calls throughout the department. Service area wide, between 2004-2005, fire calls increased by 2.7percent, and emergency medical services increased by 4.6 percent. As established by the Department’s equipment and personnel standards, each emergency medical response should include a minimum of one

response vehicle and two fully equipped and fully trained crew members. Equipment and personnel standards for each fire response include a minimum of two fire-fighting vehicles and six fully equipped and fully trained crewmembers.

Parks and Recreation

When the City of Federal Way incorporated in 1990, there were approximately eight acres of parkland available per 1,000 population. Since that time, the City has purchased additional property and developed new facilities. As of 2005, the City provided 11.79 acres of parkland per 1,000 population, compared to an adopted level of service of 10.9 acres of parkland per 1,000 population. Inventoried parkland as of 2004 is 981.71 acres, with 577.91 acres developed for recreational use areas and 403.80 acres undeveloped.

Parks near the City Center project area include Steel Lake and Celebration Park. Steel Lake Park is located just to the northeast of the project area and is divided by S. 312th Street. The park consists of both active and passive uses north and south of S. 312th Street. South of S. 312th Street, Steel Lake facilities include an athletic complex comprised of 2 softball fields, 1 soccer field, and a skate park, totaling 53 acres. On the north side of S. 312th Street there are five reservable picnic sites, a boat ramp to Steel Lake, and one small softball field, soccer field, outdoor basketball court, and volleyball court. There is also a large children's play area and a concessions, and restroom facilities. Steel Lake Park is very popular throughout Federal Way, especially during the summer months for swimming in the lake.

Celebration Park is located just southwest of the City Center project area, at 11th Place South and S. 324th Street. Celebration Park is an 83-acre site with a mixture of active and passive uses. The passive area consists of nature trails and wetlands while the active area consists of 4 lighted softball fields and 4 lighted soccer fields. There is also a children's play area.

The City includes acquisition of parks as an on-going project category in the Parks Six-Year Capital Improvement Plan (CIP). The City has also taken administrative actions to take advantage of other available public recreation facilities in the area, such as schools. Some school facilities, such as Truman High School, located just east of the project area, are available nights and weekends for use by public residents.

The Federal Way Parks CIP does not identify any planned projects within the City Center project area. A community center and pool at Celebration Park is planned. The Parks, Recreation, and Cultural Services department has expressed interest in creating open space and pedestrian friendly designs in the City Center area (Federal Way, 2006).

Impacts

Impacts Common to All Alternatives

Police

During construction phases of future development, construction activity in the City Center project area may affect the response times of emergency vehicles. Currently, the Federal Way Police Department staffs 1 officer per 700 citizens (1.4 officers per 1,000 population). To maintain the current level of service, future development will result in an incremental increase in calls for emergency service. Under Alternative 3 (No Action) approximately 638

additional residents and 866 employees can be expected in the area by 2014. Based on the residential population alone, this will result in an increased need of approximately one officer by 2014 to maintain the current LOS. If employment population is also considered, Alternative 3 would result in a need for a total of 2 officers by 2014.

Under Alternative 1 and 2 development assumptions, an additional 1,770 residents and 3,677 employees can be expected in the project area by 2014. Based on the additional residential population alone, this will result in an increased need of approximately 2.5 officers by 2014 to maintain the current LOS. If employment population is also considered, a total of approximately 8 police offers would be required. Therefore, Alternatives 1 and 2 result in the greatest need for additional officers between 2004-2014.

Alternatives 1 and 2 will generate the greatest demand for police services and will also generate the greatest amount of development and supports tax base to provide revenues to support increased police staffing. Assuming that some of these additional revenues are provided for police protection, the Federal Way Police Department concludes that it will have adequate existing and planned capacity to meet the increased demand under any of the alternatives (Brian J Wilson, Federal Way Department of Public Safety, 2003). With coordination and planning, no significant impacts are expected to result from the proposal or alternatives.

Fire

During construction phases of future development, construction activity in the City Center project area may affect the response times of emergency vehicles.

Over the long term, future development will result in an incremental increase in calls for emergency service and future traffic growth may impact the response time of emergency vehicles. The magnitude of the increment would depend on the type and rate of the development and related transportation system improvements. The Federal Way Fire Department reports that it has adequate existing and planned capacity to meet the increase under any of the alternatives and does not anticipate any significant impacts to result from the proposal or alternatives.

Parks and Recreation

Development of either of the action alternatives will result in an additional 1,770 new residents and 3,677 new employees in the City Center project area. The additional residents will result in an increased demand for 19.3 acres of new parkland, according to the City's 2002 level of service goal of 10.9 acres per 1,000 population. Under Alternative 3, the 638 new residents would result in an increased demand for approximately 7 acres of parkland.

Although the City does not have a park and open space standard for employees, it is likely that new employees in the area will use parks during the lunch hour and before and after work hours. In the future, the City may wish to consider identification of open space standard on level of service standard for employees.

Mitigation Measures

Impacts to public services from development under the planned action designation would not be significant. However, measures can be taken to prevent or further minimize environmental consequences to public services and utilities.

Recommended mitigating measures include:

- Coordinate with Federal Way Police and Fire Departments during final design, construction, and operation of future development under proposed action to ensure that reliable emergency access is maintained.
- Coordinate with the Federal Way Parks and Recreation Department to identify opportunities for increased recreational open space for general public use throughout the project area, and within new development proposals.
- Reduce public safety impacts thru adherence to CPTED design standards.
- Provide emergency service providers with advanced notice of construction schedules and any planned street closures or blockages.
- Avoid or minimize street closures or blockages during construction to avoid impact to emergency response times.

Significant Unavoidable Adverse Impacts

No significant unavoidable adverse impacts to public services are anticipated.

3.6 Utilities

Affected Environment

Water

The Lakehaven Utility District provides domestic water for the entire City, including the City Center project area. The primary sources of domestic water are four aquifer systems that underlie the City. The water system includes 400 miles of mainline, 22 wells and 12 storage tanks with an approximate storage capacity of 31 million gallons. The average daily pumping rate is approximately 11 million gallons per day (MGD).

The November 1998 Lakehaven Comprehensive Water System Update (CWSU) sets forth projected facility needs and standards. It is based on growth projections developed by the local governments served by the District. In the case of Federal Way, the CWSU is based on growth projections contained in the City's Comprehensive Plan. The CWSU meets or exceeds Federal Way Fire Department's fire flow requirements for new development. Water service is extended to new development through one of 4 methods: connection to existing mains, utility local improvement districts (ULID), developer extension agreement, or temporary water service agreement.

Table 3-34 shows estimated usage demands per land use activity type. In the Federal Way area, the average annual per residential equivalent consumption rate is 214 gallons per day. During peak usage, approximately 225 gallons of water per residential equivalent per day are consumed. Three residential equivalents per 1,000 square feet are assumed to be a rough estimate for restaurant consumption rate. For example, a 5,000 square foot restaurant could be expected to use an equivalent peak of 3,375 gallons of water per day. Retail and office use average 0.2 and 0.3 residential equivalents per 1,000 square feet respectively. Water consumption throughout Federal Way has decreased on average 1 percent per year over the past few years while growth has increased approximately .6 to .8 percent per year, resulting in a slight decrease in water use each year.

Table 3-34. Water and Sewer Service Demand Estimates

Type of Use	Estimated Usage Units (Residential Equivalent)	Equivalent Peak Water Demand (per day)	Equivalent Sewer Discharge (per day)
Residential	1 residential equivalent (2.45 persons)	225 gallons per day (gpd)	220
Restaurant	3 per 1,000sf	675 gpd per 1,000sf	660 per 1,000sf
Retail	0.2 per 1,000sf	45 gpd per 1,000sf	44 per 1,000sf
Office	0.3 per 1,000sf	68 gpd per 1,000sf	66 per 1,000sf

Source: Lakehaven Utility District 2003, 2006

Water pressure is not a limitation in the City Center project area. For example, 10,000 gallons per minute of flow is possible at the intersection of 320th and SR 99. This amount of pressure is ample for a typical urban commercial center. The pressure boundary is located within the City Center along 320th. The pressure boundary allows large water consumption in one area (i.e., north of 320th) not to affect water pressure to other areas (i.e., south of 320th).

A portion of the District's water supply and storage program includes ASR (Aquifer Storage and Recovery). This program includes: direct recharge of reclaimed groundwater, natural recharge of potable aquifers, discharge of reclaimed water to wetlands, commercial reuse, and landscape irrigation of reclaimed water. The ASR storage pond is currently undergoing review and will have a 50 MGD capacity. This storage facility is expected to be fully functional by 2024.

Lakehaven has identified goals and objectives to: maintain their water systems and water quality to the highest level of service and at the least level required by applicable regulations, participate in conservation efforts to maximize existing water supply resources, and develop new water resources and install new water distribution systems as necessary to serve the existing and future population within the District.

Sewer

The Lakehaven Utility District also provides sewer service to the City of Federal Way, including the City Center project area. The sanitary sewer system is comprised of three major components: the trunk collection system, the pump station system, and the wastewater treatment plants. The trunk system collects wastewater from drainage basins and conveys it

to the treatment plant primarily by gravity flow. In areas where use of gravity flow is not possible, pump stations and force mains are used to pump the sewage to a location where gravity flow can be used.

The District's Comprehensive Wastewater System Plan was updated in 1999. The sewer system includes 350 miles of mainline, 27 pump stations and two secondary wastewater treatment plants. The system is divided into 7 primary basins and 40 smaller sub-basins. The wastewater generated within the City Center area is within one of the largest basins known as Lakota. Wastewater from the City Center area flows directly to the Lakota Plant, designed for an average flow of 10 million gallons per day (MGD). Currently flows are averaging 4.2 MGD and no expansions are expected until 2017 (Lakehaven Utility District, 2006).

Demand for sanitary sewer service is based on future population and employment forecasts. Population forecasts are presented by drainage basin and are based on the adopted land use plans of the various jurisdictions within which the District operates. In the case of Federal Way, forecasts are based on the City's Comprehensive Plan. In the Federal Way area, approximately 220 gallons per residential equivalent per day of sewer flow are discharged into the system. As shown in Table 3-35, restaurant use estimates assume 660 gallons per day of discharge for each 1,000 square feet and office and retail uses assumes a discharge rate of 66 and 44 gallons per 1,000 square feet per day, respectively. Water saving devices and customer conservation has resulted in a reduction of treated effluent by approximately 1 percent per year (Lakehaven Utility District, 2003).

The District develops a capital improvement projects (CIP) summary as a part of the annual District budget process. The CIP lists individual capital projects for the succeeding 10-year time frame and prioritizes projects according to the system needs. No CIP projects are planned within the City Center area. Two new pump stations will be added at 1st Ave and the BPA right-of-way, and 44th and the BPA right-of-way (east of Military Road). Both of these stations are expected to be up and running by 2005.

Electricity

There are four115 kV (kilovolt) transmission lines owned by Puget Sound Energy (PSE) that bring electrical power into the City of Federal Way. There is also a double circuit 500 kV transmission line and a double circuit 230 kV transmission line that crosses through the city owned by Bonneville Power Administration.

Six distribution substations transform the incoming 115 kV power to 12 kV. The distribution substation located within the City Center is known as Belmor Substation. It has two transformers, referred to as Belmor 1 and Belmor 2.

The load on all the substations varies, continuously meeting the demand of the customers. Main factors affecting load fluctuations are time of day and weather conditions, with temperature being a major factor. Residential peak loads are highly dependent upon natural gas usage, size of home, and weather conditions. Commercial loads are highly business specific, and can range from approximately 1 VA (volt ampere) per square foot for general warehousing to 15 VA per square foot for refrigerated warehousing.

PSE predicts that the load for the greater Federal Way area will grow by 103.9 MVA between 1990 and 2020. Additional transmission lines and substations will be necessary to increase

service reliability and/or capacity in the Federal Way area to meet the projected load growth over the next 30 years. PSE forecasts that these improvements, along with others elsewhere in the area, will produce a system that will be operating at 72.5 percent of capacity by the year 2020.

To add additional transmission capacity to serve the projected growth in the area, an expansion of Christopher Substation (in Auburn) is planned. From Christopher, additional 115 kV lines are planned within existing PSE right-of-way and on franchise right-of-way west to 51st Ave S and to Marine View Substation. A future transmission line is also planned along Military Road S, south of South 320th street.

To add additional distribution capacity to serve the projected growth in the area, three new distribution substations are planned: Steel Lake, Twin Lakes, and Enchanted. Marine View Substation will be expanded to accommodate the new 115 kV lines (as discussed above) and a second transformer can also be added to Marine View, Lakota, Kitts Corner, and West Campus Substations.

Natural Gas

PSE provides natural gas to the City Center area through a network of interconnecting supply and distribution mains. The closest high-pressure facilities from the City Center area are located on Military Rd & 32 Avenue S. The current system is capable of supplying approximately 50,000 customers in the Federal Way area. Based on growth projections from 1997, PSE estimates that there will be approximately 22,500 customers in the Federal Way area by 2009.

Natural gas is not an essential service and therefore PSE is not mandated to serve all areas. Extension of service is based on requests and the results of a market analysis to determine if revenues from an extension will offset the cost of construction. The City Center area has not been previously studied/analyzed for future development. PSE would rely on land use and population data from various sources, including the City of Federal Way.

According to PSE's Rate Department, the average house (using natural gas for heating, cooking and hot water) consumes about 100,000 cubic feet of gas per year. Commercial/industrial varies widely depending on the specific use and no typical use applies.

Upgrades to the natural gas system are made to maintain reliable gas service to customers. Reliable natural gas service is dependent on both adequate system capacity and operating pressures throughout the distribution system. As customers are added to the existing distribution system and gas consumption increases, gas pressure within the distribution system decreases. From time to time system improvements must be made to ensure adequate pressures are maintained. Typical improvements and expansions to the distribution system include interconnection of portions of the supply and distribution mains to provide gas from multiple directions, addition of more parallel mains, and replacement of existing mains where larger sizes (and higher capacity) are needed.

PSE employs a modeling tool that uses existing customer load information to model the gas system. Using temperature as the variable, PSE can model the gas system under high load conditions. This modeling system is then compared against actual gauge readings for establishing accuracy of the model. Using this modeling system as its base, PSE gas planners

then plan for system upgrades based on a number of inputs, such as proposed population growth, specific requests for gas service, notification of land use action by jurisdictions, physical condition of the system, and municipal roadway improvements or new construction. At this time, no improvements are planned to existing facilities. Long Range plans for the years 2008-2009 call for installation of a 16" STW High Pressure supply main from Auburn Valley to the Star Lake area, and the route is still in the planning stage.

Telecommunications

Federal Way area telecommunications service providers include Qwest, which operates both land-based and cellular telephone systems, AT&T Wireless, AirTouch, GTE, Sprint, Nextel, VoiceStream, and Metricom which provide wireless telephone and data services, and Comcast which provides cable TV service.

Telephone System

Qwest delivers telecommunication services to the Federal Way planning area as regulated by WUTC. A local exchange area is served by a Central Office (CO), which contains various kinds of switching equipment. From a CO, there are typically four main cable routes extending relatively north, south, east, and west. From each main cable route there are branch distribution routes. These facilities may be aerial or buried, copper or fiber. Extending from the branch distribution routes are local lines that can be used for voice or data transmission by subscribers.

Qwest is required by law to provide adequate telecommunications services on demand. Accordingly, Qwest will provide facilities to accommodate whatever growth pattern occurs within the City Center. According to Qwest representatives, additional capacity is easily added to the system.

Wireless Networks

The Federal Way area is currently served with wireless service by Qwest, AT&T Wireless, AirTouch, GTE, Sprint, Nextel, Metricom, and VoiceStream. All of these technologies use a line-of-sight radio signal transmitted and received by antennas.

The FCC regulates the cellular telephone industry by controlling where carriers can operate and what frequencies can be utilized in their operation. This ensures that their operation does not interfere with AM/FM radio and cable television transmissions. If interference does occur, the cellular tower operator is required by the FCC to eliminate any noise or interference that impacts local citizens. For example, if a television set or radio experiences interference from the tower, the operator must either correct the problem or disable the cellular site. The City has regulations to address the siting of wireless facilities.

Wireless companies expand services in response to growth. For this reason, companies closely analyze market demand to determine expansions into new service areas.

Cable Television

Comcast Cable (formerly AT&T) serves the City Center project area. Comcast attempts to provide service to all residents within its franchise areas. Factors considered in extending service are overall technical integrity, economical feasibility, and franchise requirements.

Cable television installations are made to new subscribers at published rates, provided they are less than 150 feet from a distribution or feeder line. Connections requiring longer runs are charged on a time and materials basis.

Comcast works closely with utility companies and local jurisdictions to stay informed on proposed developments so that cable can be a part of a development's plans. Each year, engineers assigned to the Federal Way area assess the need for system expansion based on telephone inquiries, permitting data from the City and County, and technological advances in distribution equipment.

Impacts

Impacts Common to All Alternatives

Water and Sanitary Sewer Service

Table 3-35 shows the approximate demand and discharge rates for residential, office, and retail or restaurant use under the proposed action. Alternatives 1 and 2 have the same development rates, with a total of 226,300 gallons per day in water demands assuming no restaurants and 383,800 assuming restaurant development. These alternatives would generate approximately 222,500 gallons per day in sewer discharge with no restaurants and 376,500 gallons per day with restaurant development. Assuming no restaurant development, Alternative 3 would result in a water demand increase of 77,763 gallons per day and 75,985 gallons per day in sewer discharge. With restaurant development, Alternative 3 would result in a water demand increase of 123,565 gallons per day and 120,769 in sewer discharge.

Although an estimate for demand associated with lodging or civic uses was not available, it is not expected to cause the overall demand for service to rise to a level of significance. This is because the estimated demand is very small relative to available water supply and sanitary sewer treatment capacity. According to Lakehaven, approximately 10 MGD of additional water flow is available and an additional 5.8 MGD of discharge can be processed at the Lakota Plant that serves the project area (Stan French, Lakehaven Utility District, 2006). As shown in Table 3-35, the highest estimated increase in demand for water service by 2014 is approximately 383,800 gpd and highest estimate demand for sanitary sewer discharge treatment is 376,600 gpd.

The Lakehaven Utility District states that it has available capacity to provide domestic water and sanitary sewer service to the City Center project area under any of the alternatives. No significant impacts to water or sewer systems are expected to occur as a result of development of the City Center project area under any of the alternatives. The Lakehaven Utility District confirmed the availability to supply additional water according to demand, and the ability to treat additional sewage through 2017.

Ongoing maintenance of conveyance and distribution lines will be necessary. No conflicts with proposed plans, policies, or regulations are expected. No additional capacity would be required.

Table 3-35. Water and Sewer Demand Estimates by Alternative

Alternative	Residential	Office	Retail	Retail/Restaurant[1]	TOTAL
Water Demand Gallons per day (gpd)					
Alternatives 1 and 2					
Through 2009	101,250 gpd	14,280 gpd	20,250 gpd	114,750 gpd	135,780 – 230,280 gpd
2010 – 2014	67,500 gpd	9,520 gpd	13,500 gpd	76,500 gpd	90,520 – 153,520 gpd
TOTAL	168,750 gpd	23,800 gpd	33,750 gpd	191,250 gpd	226,300 – 383,800 gpd
Alternative 3					
Through2009	36,000 gpd	4,261 gpd	5,947 gpd	33,415 gpd	46,208 – 73,676 gpd
2010 – 2014	24,750 gpd	2,841 gpd	3,964 gpd	22,298 gpd	31,555 – 49,889 gpd
TOTAL	60,750 gpd	7,102 gpd	9,911 gpd	55,714 gpd	77,763 – 123,565 gpd
Sanitary Sewer Discharge Gallons per day (gpd)					
Alternatives 1 and 2					
Through 2009	99,000 gpd	13,860 gpd	19,800 gpd	112,200 gpd	132,660 – 225,060 gpd
2010 – 2014	67,500 gpd	9,240 gpd	13,200 gpd	74,800 gpd	89,940 – 151,540 gpd
TOTAL	166,500 gpd	23,100 gpd	33,000 gpd	187,000 gpd	222,600 – 376,600 gpd
Alternative 3					
Through 2009	35,200 gpd	4,136 gpd	5,815 gpd	32,673 gpd	45,151 – 72,009 gpd
2010 – 2014	24,200 gpd	2,758 gpd	3,876 gpd	21,802 gpd	30,834 – 48,760 gpd
TOTAL	59,400 gpd	6,894 gpd	9,691 gpd	54,475 gpd	75,985 – 120,769 gpd

Source: Lakehaven Utility District, Jones & Stokes, 2006

1. Assumes approximately 1/3 of the total retail development will be restaurant use

Energy

Electricity

During construction phases of the proposal and alternatives, construction activity could result in disruption of service, the need to relocate service lines, and other construction related impacts. These impacts will occur over a short time period and are not anticipated to result in significant impacts to the area.

Over the long term, development of the proposal and alternatives will increase demand for energy. As noted previously, residential demand varies greatly depending on home size, weather conditions, use of natural gas and other factors. Future residential demand is likely to increase significantly as residential development increases from the current 154 units to the planned 750 units.

Commercial demand for electricity also varies widely. Depending on the actual uses, future development of commercial and civic uses under the proposal could result in an increased demand of 1,200,00VA to 18,000,000 VA with full development under the planned action

Natural Gas

Under the action alternatives, future residential development could increase by 750 new units, which can easily be accommodated by PSE, which has capacity in the existing system to supply approximately 50, 000 customers in the Federal Way area, compared to the 22,500 customers anticipated by PSE by 2009. The 750 new units could result in demand for 75,000,000 cubic feet of natural gas if all new homes used natural gas for heating, cooking and hot water. Commercial use varies widely, but could be expected to increase significantly if all new development under the proposal were to occur.

As noted previously, Puget Sound Energy has planned for growth and reports adequate capacity to serve this increased demand. Significant impacts are not anticipated.

Telecommunication

Over the long term, the increased residential and employment population will increase the use of and demand for telecommunication products. Service providers have adequate capacity and do not anticipate significant impacts in the provision of service.

Mitigation Measures

Water and Sanitary Sewer Service

- Ensure that all new development complies with local, state and federal standards for energy conservation.
- Encourage drought-tolerant landscaping (xeriscaping) for new development.
- Encourage new commercial, civic and residential development to incorporate appropriate water conservation measures, such as recycling, into their operations.

Utilities

- Plan with service providers to minimize impacts of utility relocations (equipment procurement times, relocate in advance of construction, etc.)
- Inform utility customers of any planned temporary service disruptions.
- Coordinate with all utility companies on the design of the new services and hookups for the proposed action.

Significant Unavoidable Adverse Impacts

No significant unavoidable adverse impacts are anticipated.

Chapter 4
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