EIS Topic	Comments	Response
		addressing all potential geology and soils impacts and mitigating impacts, if any, to a less than significant level. For this reason, an analysis of geology and soils is not included in the EIS scope of analysis.
Environmental Contamination	▪ Supplement the Phase 1 environmental site assessment with current information ▪ Ensure that negative impacts from the former and current uses (gas station, dry cleaners) can be completely mitigated ▪ Thorough study of all contaminants, including site testing ▪ Develop remediation and environmental protection plan ▪ Demonstrate clear independence of the investigator ▪ Document potential groundwater contamination and potential to reach Lake Washington ▪ If needed, measures to clean contamination on and off the site ▪ Provide a soils report	The process for environmental remediation is established through state law (Model Toxics Control Act and Underground Storage Tanks) and implementing regulations. Mitigating measures, if any, identified in the EIS would rely on these processes. Therefore, the discussion of environmental remediation will be addressed in the plans and policies section of the EIS. This section will describe available information on site contamination and the regulatory process for environmental site remediation.
Air Quality	▪ Ability to meet the State Implementation Plan for maintaining National Ambient Air Quality Standards (NAAQS). ▪ Effects of air pollution on property values ▪ Emissions inventories during and post construction ▪ Free flow of air impacts as setback corridors no longer exist	From an air quality perspective, the trip generation associated with the proposal is likely to result in a very small, and likely non-measurable, impact on overall air quality. For these reasons, air quality impacts are not included in the EIS scope. The potential for localized odor and other impacts associated with construction activity will be addressed as part of the EIS construction impacts discussion. As noted in Section I, setbacks along all property lines are proposed. These setbacks are consistent with City development standards and are not anticipated to

EIS Topic	Comments	Response
		result in a significant negative impact to air flow around the site. In addition, the Kirkland Zoning Code Sections 115.15 and 115.100 establish standards for air quality and odor.
Noise	▪ Noise impacts from residential use ▪ Health and mental health impacts of noise ▪ Noise impacts on property values ▪ Include a noise study	Based the size and type of proposed uses, the City has concluded that future noise levels are typical of those in an urban area and there are no unusual sources of noise likely to result from the proposed development. In addition, the Kirkland Zoning Code Section 115.95 establishes standards for noise and adopts the maximum environmental noise levels pursuant to the State Noise Control Act of 1974, Chapter 70.107 RCW. Because potential noise impacts are not considered significant from a SEPA perspective, an analysis of noise is not included in the EIS scope of analysis.
Cultural and Historic Resources	▪ Agreements on work stoppage if there are archaeological findings ▪ Construction oversight	There are no known cultural or historic landmarks on or near the site. Consequently, cultural and historic resources are not included in the EIS scope of analysis.
Land Use Patterns/Zoning (Density)	▪ Site density should be re-scoped to match intent of BN zoning ▪ Change in overall density compared to surrounding area ▪ Compatibility of uses with surrounding area ▪ Character of business included ▪ Impacts of density: lack of storage, noise, pets, parking, safety, smoke and offensive odors, garbage ▪ Density will result in low cost housing ▪ Impacts to businesses in the CBD	Land use patterns, density in the surrounding area and land use compatibility will be described and discussed in the land use patterns section of the EIS.

ATTACHMENT 17
SEP13-00959
BEL-RED EIS PM PEAK TRIPS

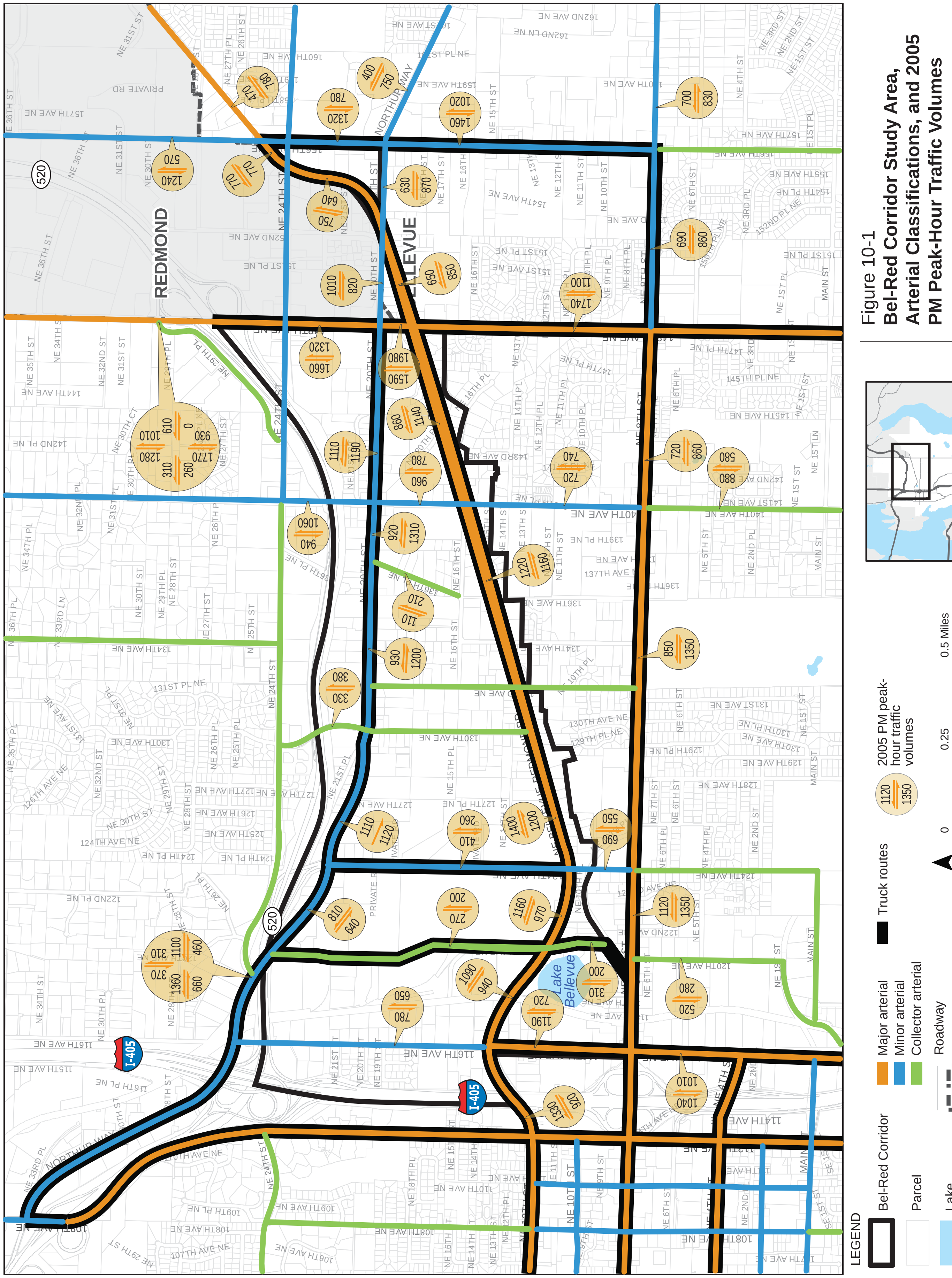
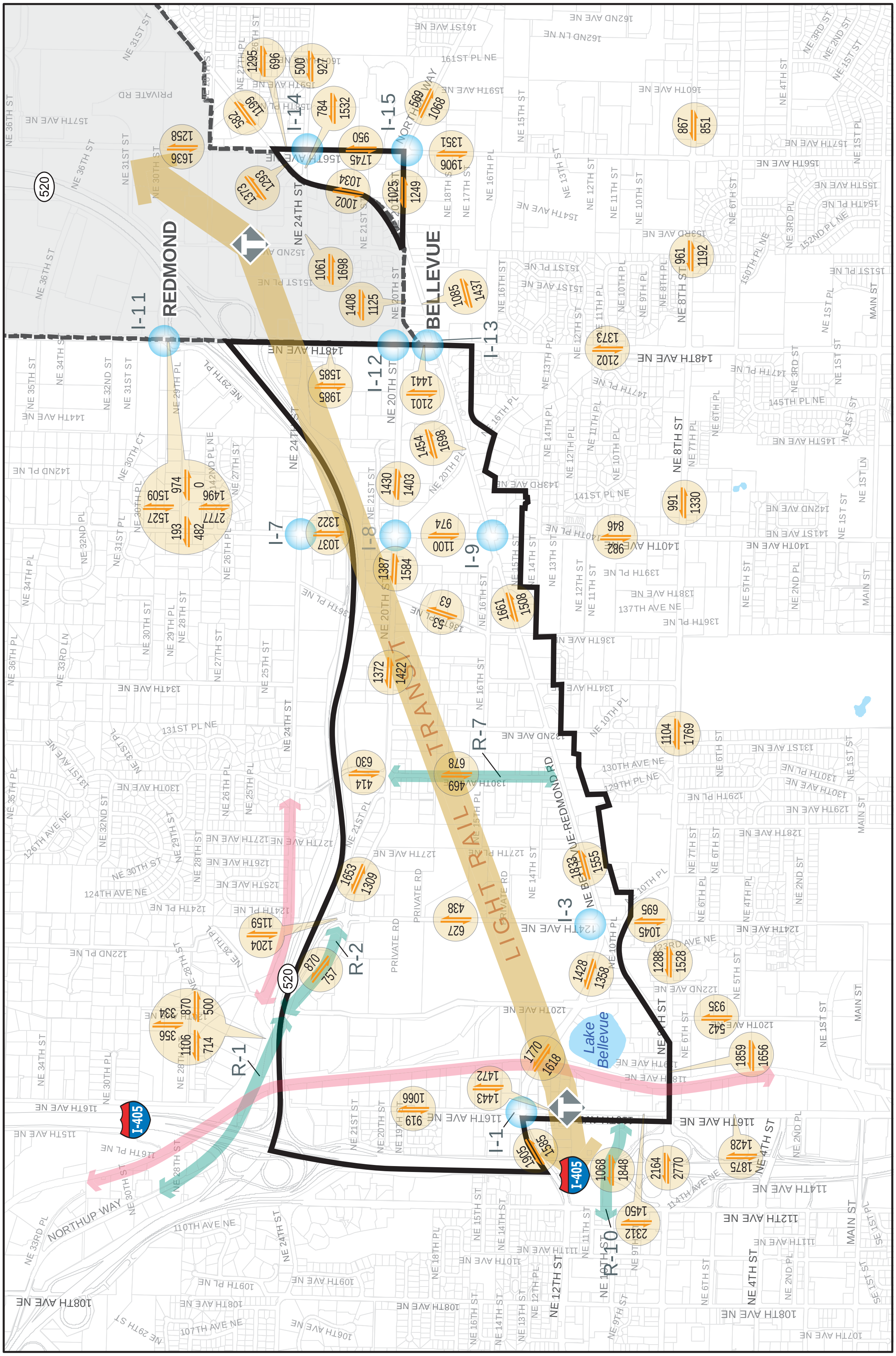


Figure 10-1
Bel-Red Corridor Study Area, Arterial Classifications, and 2005 PM Peak-Hour Traffic Volumes
Bel-Red Corridor Draft EIS

336181.CS.07_TB092006012SEA Fig10-1_BelRedCorrArterialClassPM PeakHr_v4_19jan07_GIS_rr_Graphics_lw



LEGEND

- Bel-Red Corridor
- Intersection improvements
- 2030 PM peak-hour traffic volumes
- Arterial improvements
- Nonmotorized improvements
- Potential LRT alignments
- Potential LRT station locations; number of and specific locations will require additional analysis.

0 0.25 0.5 Miles

NORTH

Figure 10-5
No-Action Alternative Transportation Improvements and 2030 PM Peak-Hour Traffic Volumes
Bel-Red Corridor Draft EIS

336181.CS.07_TB092006012SEA_10-5_NoAct_v7.ai GIS_rr 22jan07_rd/lw

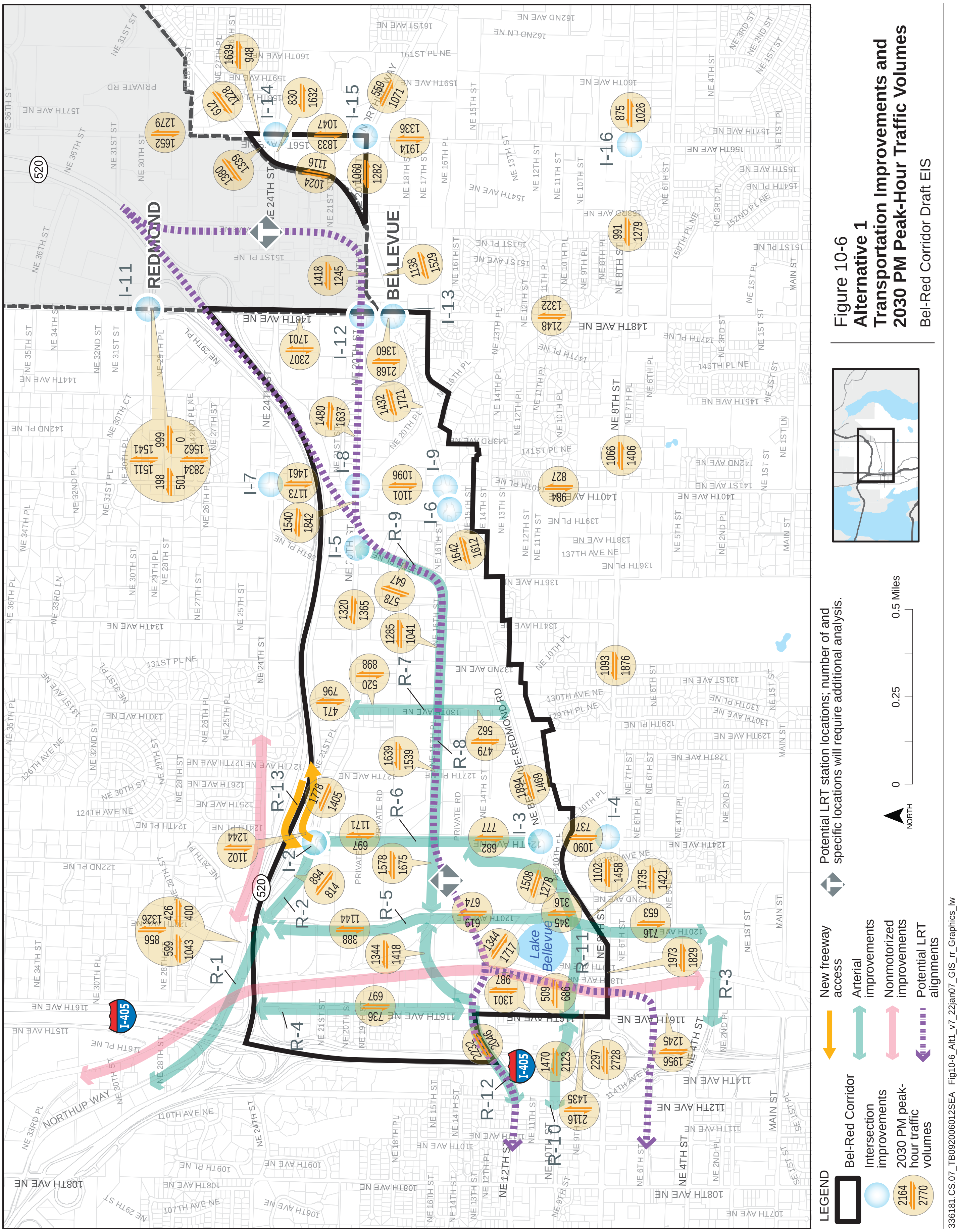
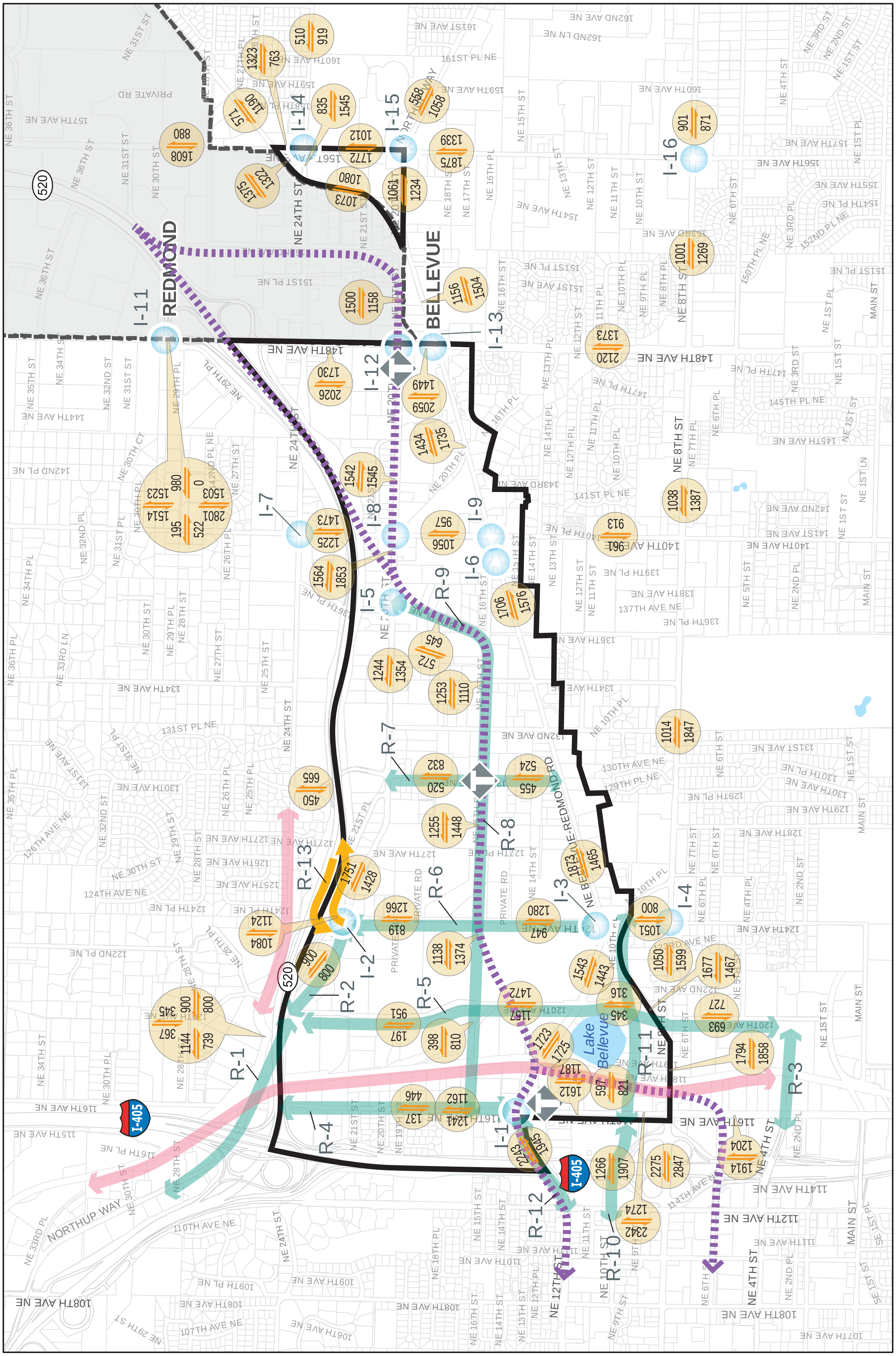


Figure 10-6
Alternative 1
Transportation Improvements and 2030 PM Peak-Hour Traffic Volumes
Bel-Red Corridor Draft EIS



LEGEND

- Bel-Red Corridor
- Intersection improvements
- 2030 PM peak-hour traffic volumes
- New freeway access
- Arterial improvements
- Nonmotorized improvements
- Potential LRT alignments
- Potential LRT station locations; number of and specific locations will require additional analysis.

0 — 0.25 — 0.5 Miles

NORTH

Figure 10-7
Alternative 2
Transportation Improvements and 2030 PM Peak-Hour Traffic Volumes

Bel-Red Corridor Draft EIS

336181.CS.07_TB092006012SEA Fig10-7_Alt2_v7_22jan07_GIS_rr_Graphics_lw

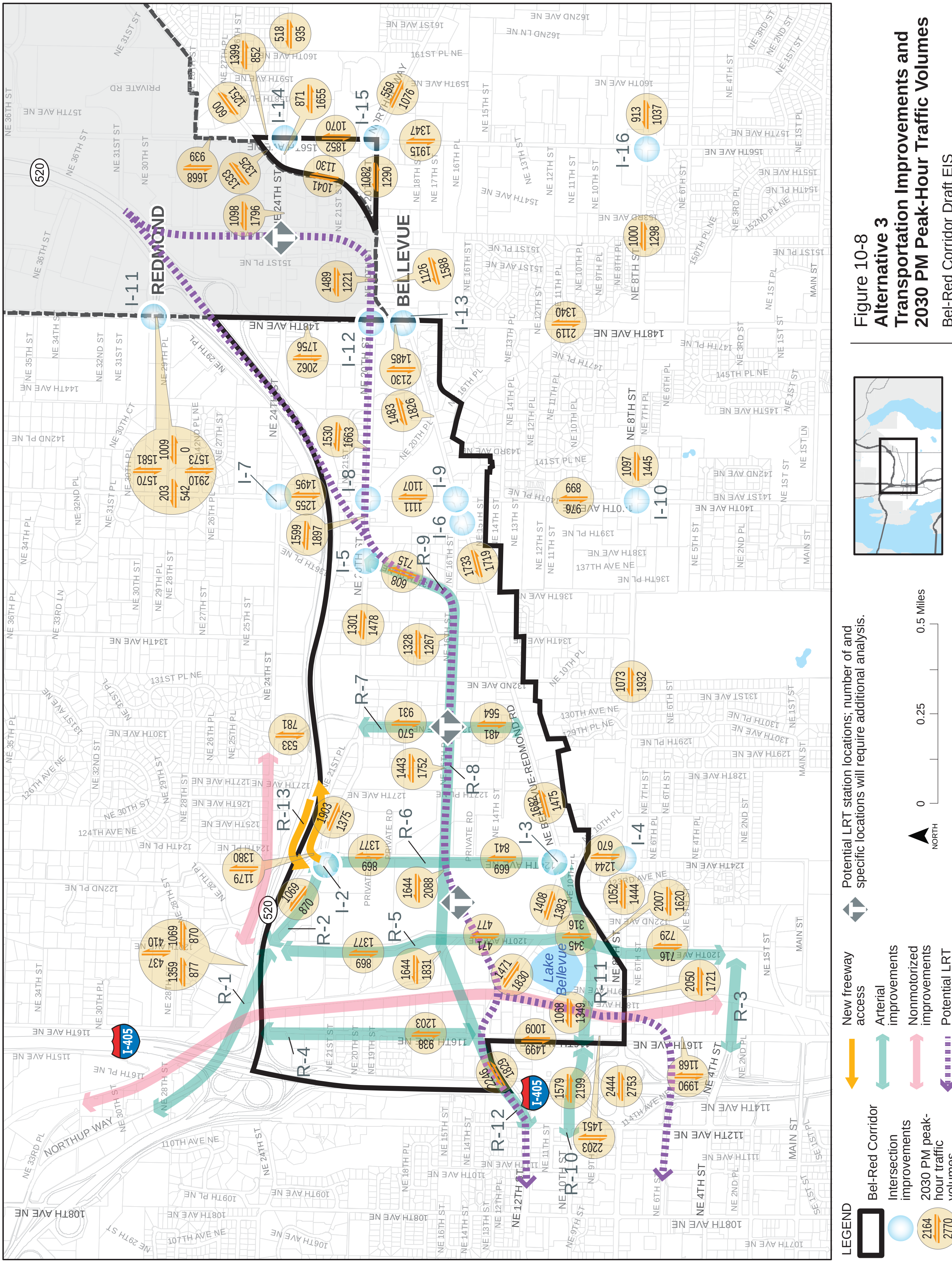


Figure 10-8
Alternative 3
Transportation Improvements and 2030 PM Peak-Hour Traffic Volumes
Bel-Red Corridor Draft EIS

336181.CS.07_TB092006012SEA Fig10-8_Alt3_v7_22jan07_GIS_rr_Graphics_lw

TABLE 1-3
Summary of Impacts and Mitigation Measures for Bel-Red Corridor Alternatives
Bel-Red Corridor Final Environmental Impact Statement

Environmental Element	No-Action Alternative	Preliminary Preferred Alternative	Alternative 1	Alternative 2	Alternative 3
Air Quality	No significant impacts.	As a result of increased traffic in the study area, carbon monoxide emissions would increase by about 40 percent over the No-Action Alternative, and emissions of particulates would increase by about 30 percent. No violations of air quality standards are expected to occur. Construction would temporarily increase dust and vehicle emissions near the construction area. Mitigation would include using best management practices (BMPs) to control dust, covering exposed soils, and requiring idling vehicles to be shut off.	Similar to Preliminary Preferred Alternative.	Similar to Preliminary Preferred Alternative.	Similar to Preliminary Preferred Alternative.
Watershed Processes	No direct impacts; however, study area water quality and habitat would likely continue to degrade over time without retrofitting stormwater detention facilities and developing different incentives (such as LID to protect stream corridors).	All action alternatives would provide opportunities to improve stormwater management, use LID techniques, and protect or enhance habitat through conditions on redevelopment and/or developer incentives. The Preliminary Preferred Alternative would provide the best opportunities for stream restoration and enhancement in the West Tributary and Goff Creek watersheds, with fewer opportunities in the	The single development node and lower density development options provides the most limited opportunities for incentives for improving watershed processes. The West Tributary would be the area with the most opportunity for improved conditions. Similar to Preliminary Preferred Alternative. .	Increasing to three development nodes provides increased incentive opportunities for stream corridor improvements in the Goff and Valley Creek areas. However, maintaining the light industrial area along the West Tributary would provide limited opportunities for improvements in that area.	The nodes of higher development potential provide greater incentive opportunities for stream corridor enhancement along the West Tributary and Goff Creek. Similar to Preliminary Preferred Alternative.

ATTACHMENT 18
FILE NO. SEP13-00959
BEL-RED EIS - AIR QUALITY SUMMARY

CHAPTER 3
Air Quality

This chapter identifies the potential for air quality impacts as a result of redevelopment in the Bel-Red Corridor. This evaluation compares the relative potential for impacts among the No-Action Alternative and the three proposed action alternatives.

Methodology

Potential air quality impacts during construction were evaluated qualitatively by describing the types of sources and typical pollutants expected from typical construction activities associated with developing the land uses envisioned in the Bel-Red Corridor. Particulate matter (PM) is the primary pollutant of concern resulting from earth-moving activities; exhaust emissions from diesel-fueled trucks and construction equipment also are a source of PM.

Vehicle exhaust would be the primary source of air emissions associated with the project. Air quality impacts were evaluated quantitatively using an emissions burden analysis to evaluate the alternatives within the study area. This analysis was performed using the U.S. Environmental Protection Agency (USEPA)-approved MOBILE6.2 vehicle emission modeling software, which is used to estimate a fleet-average vehicle emission factor in terms of grams per vehicle mile traveled (VMT). These emission factors were obtained from the Puget Sound Regional Council (PSRC; Peak, 2006). This emission factor is then multiplied by the traffic forecast data for each alternative in the study area. In this case, estimated VMT for the afternoon peak hour were multiplied by the MOBILE6.2 emission factor to calculate the pounds per hour (during PM peak hour) of emissions for each alternative (including the No-Action Alternative) in the year 2030.

Existing Conditions

Existing conditions provide background information for the air quality analysis, and this background information includes the following:

- The **regulatory status** describes the regulatory environment that establishes the impact analysis requirements for this EIS, identifies the pollutants of concern, and describes current air quality status with respect to air quality standards.
- The **existing air quality** summarizes existing air emissions sources and measurement data indicating pollutant concentrations in the study area and vicinity.

Regulatory Status

Air quality is protected by federal, state, and local air quality regulations that are enforced locally by the Puget Sound Clean Air Agency (PSCAA) and the Washington State Department of Ecology (Ecology). Air quality standards have been established to protect human health from the effects of several pollutants collectively referred to as "criteria pollutants." These pollutants—and the health effects of each—are described below:

- **Carbon monoxide** (CO) is a colorless, odorless gas that forms when fuels containing carbon burn. Motor vehicles are the principal source of CO emissions in urban areas. Maximum concentrations usually occur near roadway intersections and other areas of traffic congestion, and they decrease rapidly with distance from the source. CO interferes with the uptake of oxygen by red blood cells, which can affect the heart, lungs, and brain.
- **Particulate matter** enters the air from industrial operations, vehicle traffic, and other sources, such as burning wood and other materials. Two historically common classifications for PM are total suspended particulates (TSP) and inhalable PM (PM_{10}), which are particles with a diameter less than or equal to 10 micrometers. Recent regulatory changes by the USEPA have also created an additional standard for even smaller particles, those less than 2.5 micrometers in diameter ($PM_{2.5}$). Health effects from smaller particles include damage to lungs from particles that are deeply inhaled, as well as synergistic effects with other pollutants. Aesthetic effects can occur when PM deposits cover surfaces on which they settle, thereby reducing visibility.
- **Volatile organic compounds** (VOCs) are a key component in the formation of ozone, or O_3 (see below). These compounds are emitted or evaporate into the atmosphere from a variety of sources, including natural (nonhuman-caused) sources. In most urban areas, however, most VOC emissions come from mobile sources (automobiles and other vehicles). There are no National Ambient Air Quality Standards (NAAQS) for this pollutant category; it is regulated to prevent O_3 effects and, thus, is covered under construction and operating permit programs.
- **Oxides of nitrogen** (NOx) are produced as the result of high-temperature fuel combustion and subsequent atmospheric reactions. Common NO_X sources are motor vehicles, power plants, refineries, and other industrial operations. Like VOCs, NO_X emissions in an urban setting are overwhelmingly produced by transportation sources. NO_X is a contributing factor in O_3 formation, and it also has its own ambient air quality standard because nitrogen dioxide is a poisonous gas that is a factor in a range of respiratory diseases.
- **Ozone** (O_3) in the lower atmosphere is a harmful air pollutant and contributes to the formation of smog. Ozone is a secondary pollutant formed by the reaction of VOCs and NO_x in the presence of strong sunlight. Thus, O_3 levels can be reduced by minimizing emissions of those precursor pollutants. Ozone is a pungent-smelling, colorless gas that is an irritant to lungs and respiratory functions. People with chronic respiratory problems, like asthma, are most sensitive to elevated O_3 levels.
- **Mobile source air toxics** (MSATs) are compounds that have been found to cause health effects such as cancer or neurological or reproduction problems. USEPA has identified 21 MSATs that can occur in motor vehicle emissions, six of which are listed as priority MSATs: benzene, formaldehyde, acetaldehyde, diesel PM, acrolein, and 1,3-butadiene. MSATs are not currently regulated as criteria pollutants, and they have no ambient air quality standards established.

Table 3-1 summarizes the federal, state, and regional air quality standards for the criteria pollutants. Areas that do not meet these standards—as evidenced by monitoring data that has measured concentrations above the standards—are classified as "nonattainment areas" and are required to take measures to reduce pollutant concentrations below the standards. Once an area has improved its air quality to the point that it meets the standards, then it is reclassified as a "maintenance area," in which special measures must be taken to ensure that the area will continue to comply with future ambient air quality standards. The State Implementation Plan (SIP), maintained by Ecology, documents these special measures, which include requirements for controlling emissions from both motor vehicles and point sources (e.g., industrial facilities).

TABLE 3-1
National, State, and Regional Ambient Air Quality Standards
Bel-Red Corridor Draft Environmental Impact Statement

Pollutant	National		Washington State	Puget Sound Region
	Primary	Secondary		
Nitrogen dioxide				
Annual average (ppm)	0.05	0.05	0.05	0.05
Carbon monoxide				
8-hour average (ppm)	9	NS	9	9
1-hour average (ppm)	35	NS	35	35
Ozone				
8-hour average (ppm)	0.08	0.08	NS	NS
Lead				
Maximum arithmetic mean (µg/m^3; averaged over calendar quarter)	1.5	1.5	NS	1.5
Sulfur dioxide				
Annual arithmetic average (ppm)	0.03	NS	0.02	0.02
24-hour average (ppm)	0.14	NS	0.10	0.10
3-hour average (ppm)	NS	0.5	NS	NS
1-hour average (ppm)	NS	NS	0.40	0.40
Particulate matter (PM_{10})				
Annual arithmetic average (µg/m^3)	50	50	50	50
24-hour average (µg/m^3)	150	150	150	150
Particulate matter ($PM_{2.5}$)				
Annual arithmetic average (µg/m^3)	15	15	NS	NS
24-hour average (µg/m^3)	65	65	NS	NS
Particulate matter (total suspended particulates)				
Annual geometric average (µg/m^3)	NS	NS	60	NS
24-hour average (µg/m^3)	NS	NS	150	NS

Source: Ecology, 2006.
µg/m^3 micrograms per cubic meter
NS No standard established
PM_{10} particulate matter smaller than 10 microns in diameter
$PM_{2.5}$ particulate matter smaller than 2.5 microns in diameter
ppm parts per million

The Bel-Red Corridor is located approximately 10 miles east of Seattle, within the Puget Sound area as defined by state air quality plans. Although currently designated as attainment for all criteria pollutants, the Puget Sound area is considered a maintenance area for CO due to measured violations of the standard in the late 1980s. The region was redesignated from CO nonattainment to attainment/maintenance on October 10, 1996, based on air quality improvements. The CO attainment/maintenance area extends roughly from Everett to Olympia along the Interstate 5 (I-5) corridor.

Transportation projects in Washington State are subject to Transportation Conformity Regulations (Code of Federal Regulations [CFR], Title 40, Part 93 and WAC 173-420) if they are proposed within an air quality nonattainment or maintenance area. These regulations ensure that the project will conform to the SIP and will not impede the goal of improving air quality. The conformity regulations require that projects resulting in additional traffic (such as a new development or new roadway capacity) be analyzed to determine whether they will violate air quality standards by creating or increasing congestion at specific intersections. However, because this is a programmatic-level EIS, there is not enough information on any individual project to complete a conformity analysis. Because the Bel-Red Corridor is located in a CO maintenance area, individual projects proposed within this area will need to undergo conformity analysis. These analyses will be completed as part of project-level environmental reviews as redevelopment and/or transportation projects are advanced for implementation under any new *Bel-Red/Northup Subarea Plan* (City of Bellevue, 1988).

Existing Air Quality Emissions

Air pollutant emissions in the Bel-Red Corridor are primarily from motor vehicle exhaust and light industrial and commercial facilities. Motor vehicle emissions depend on various factors (i.e., vehicle age, engine type, and travel speed) and tend to be highest during peak commuting hours when volumes are greatest and delays at signals and stop signs are longest. Industrial and commercial facilities in the study area that contribute to air emissions include dry cleaners, automotive body repair shops, gasoline stations, commercial bakers, and coffee roasters. These facilities primarily emit VOCs, but they also emit, to a lesser degree, CO, NOx, and PM.

Ecology and PSCAA monitor and measure pollutant concentrations in the Puget Sound region. Only two pollutants are measured near the Bel-Red Corridor: CO and $PM_{2.5}$. Figure 3-1 locates the monitors nearest the study area, and Table 3-2 shows the measured concentrations at the nearest sites for the last three full years of data for CO and $PM_{2.5}$, as compared to the air quality standards for each. There have been no measured air quality standard exceedances in the last three years for any criteria pollutant monitored in the Puget Sound region.

Impacts

Construction Impacts

Air quality impacts related to project construction activities would occur primarily as a result of emissions from heavy-duty construction equipment (such as bulldozers, backhoes, and cranes), diesel-fueled mobile sources (such as trucks), diesel- and gas-fueled generators, and on- and off-site project-related vehicles (such as service and pick-up trucks).

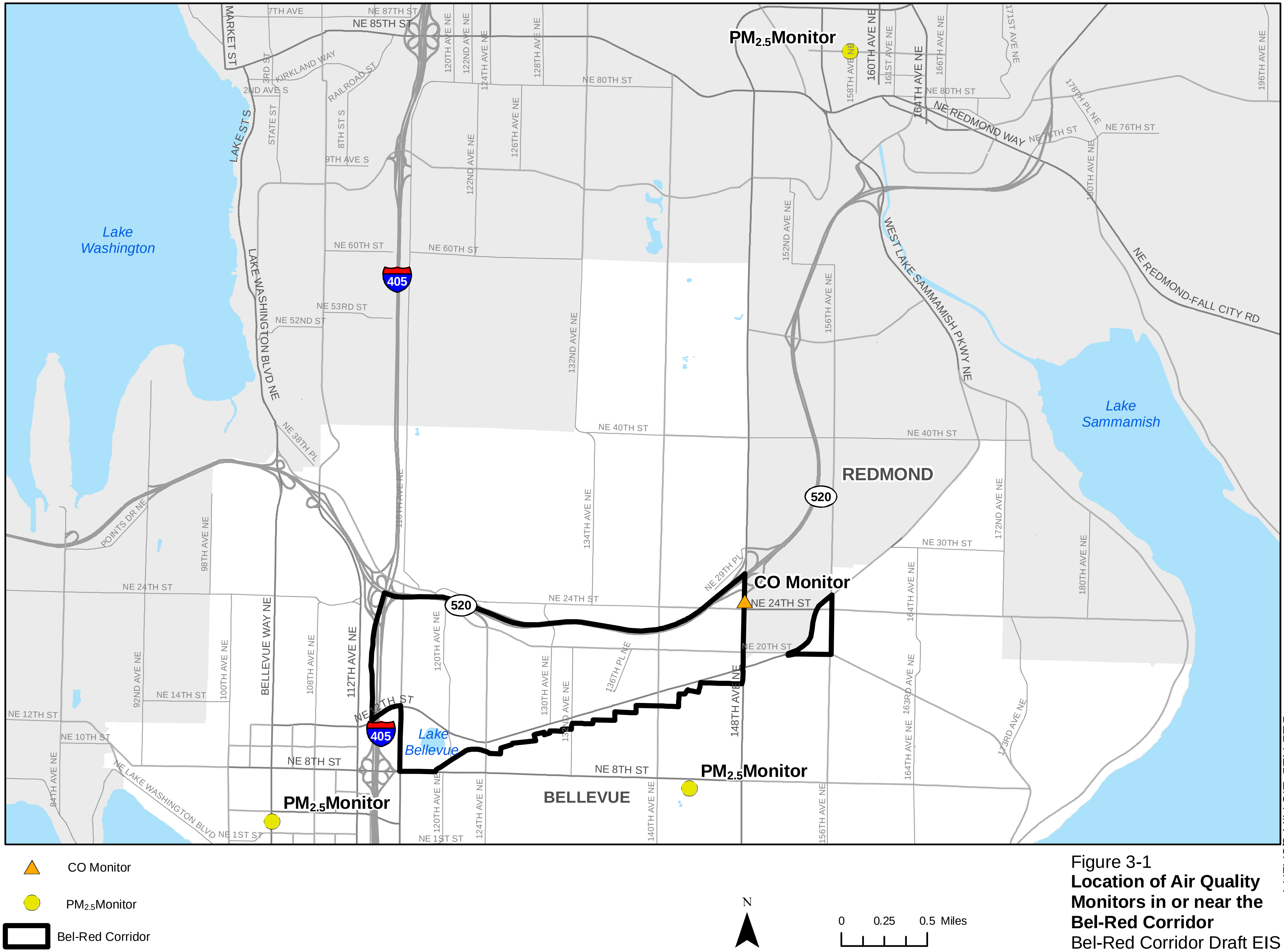


Figure 3-1
Location of Air Quality Monitors in or near the Bel-Red Corridor
Bel-Red Corridor Draft EIS

File Path: \\Simba\proj\BellevueWACityOf\336181BEL_RED\CS.08 Prepare Draft EIS\GIS\AirQuality.mxd, Date: September 21, 2006

TABLE 3-2
Ambient Criteria Pollutant Concentration Levels Measured from 2003 to 2005
Bel-Red Corridor Draft Environmental Impact Statement

		Maximum Concentration			
Monitoring Location	**Parameter**	**2003[1]**	**2004[1]**	**2005[2]**	**NAAQS**
Particulate Matter ($PM_{2.5}$)[1]					
Bellevue (601 143rd Ave NE)	Annual arithmetic mean (µg/m^3)	8.3	8.3	7.3	15
	24-hour average (µg/m^3)	28	22	28	65
Bellevue (305 Bellevue Way NE)	Annual arithmetic mean (µg/m^3)	7.0	7.7	7.1	15
	24-hour average (µg/m^3)	34	30	26	65
Redmond[2] (Redmond City Hall 15670 NE 85th Street)	Annual arithmetic mean (µg/m^3)	7.2	7.0	7.1	15
	24-hour average (µg/m^3)	36	34	42	65
Carbon Monoxide[1]					
Bellevue (2421 148th Avenue NE)	8-hour average (ppm)	6.5	4.8	4.0	9
	1-hour average (ppm)	9.0	3.2	5.9	35

[1]Source: PSCAA, 2006.
[2]Nephelometer data.
µg/m^3 micrograms per cubic meter
NAAQS National Ambient Air Quality Standard
$PM_{2.5}$ particulate matter smaller than 2.5 microns in diameter
ppm parts per million

The following types of construction operations were considered in assessing construction air quality impacts:

- Material storage, handling, and processing
- Loading and unloading (stockpile to trucks)
- Demolition and dumping
- Earth-moving and excavating
- Grading, scraping, dozing, and removal activities
- Paving, asphalt, or concrete activities
- Materials hauling
- Wind erosion of exposed surfaces
- Transporting materials on paved and unpaved roads

Fugitive PM_{10} and $PM_{2.5}$ emissions are associated with site preparation, demolition, ground excavation, grading, cut-and-fill operations, and structure erection. Fugitive dust emissions also could be generated as a result of construction-related traffic and wind erosion of uncovered demolition and excavation areas. PM emissions would vary from day to day, depending on the level of activity, specific operations, and weather conditions. For example, hot, dry weather conditions could increase PM emissions. Emission rates would depend on soil moisture, soil silt content, wind speed, and the quantity and type of operating equipment.

Larger dust particles would settle near the source, and fine particles (PM_{10} and $PM_{2.5}$) would be dispersed over greater distances from the construction sites. Construction contractors in the Puget Sound area are encouraged to use best management practices (BMPs) to minimize impacts to air quality during construction; these BMPs include the following:

- Spray exposed soil with water or other dust suppressants to prevent visible dust emissions, particularly during demolition activities by mechanical or explosive methods.
- Cover dirt, gravel, and debris piles as needed to reduce dust and wind-blown debris.
- Cover all trucks when transporting fill materials or soil, wet materials in trucks, or providing adequate freeboard (space from the top of the material to the top of the truck) to minimize dust emissions during transportation.
- Cover loads of hot asphalt to minimize odors.
- Provide wheel washers to remove dirt that vehicles would otherwise carry off site to decrease PM deposits on area roadways.
- Remove dirt from public roads, sidewalks, and bicycle and pedestrian paths to reduce windblown dust on area roadways.
- Route and schedule construction trucks to minimize disruption or delays to traffic during peak travel times to reduce potential air quality impacts caused by congestion.
- Route construction trucks away from residential and business areas to minimize annoyance from dust.
- Gravel or pave haul roads to reduce windblown dust and dirt being deposited on local roads.
- Use ultra-low sulfur fuels in construction equipment to reduce sulfur emissions.
- Locate construction equipment and truck staging areas away from sensitive receptors as practical and while considering potential impacts to other resources.
- Plant vegetative cover on graded areas that would be left vacant for more than one season to reduce windblown particulates in the area.
- Coordinate (by lead agencies) construction activities with other projects in local proximity to reduce the cumulative effects of concurrent construction projects.
- Minimize emissions by assuring proper equipment operation:
    - Turn off the engine of construction vehicles if they are left idling for more than 15 minutes.
    - Require appropriate emission-control devices (catalytic converters or particulate traps) on all construction equipment powered by gasoline or diesel fuel to reduce CO, NO_X, and PMs in vehicular exhaust.
    - Use relatively new, well-maintained equipment to reduce CO and NO_X emissions.

Additionally, there will be engine exhaust from personal vehicles (construction workers), heavy trucks, and construction equipment. These emissions would primarily comprise NO_x, sulfur dioxide (SO_2), PM, CO, and VOCs, which are common at construction sites. If construction traffic and lane closures were to increase congestion in the area, then traffic emissions would increase temporarily as a result of increased idling and would be limited to the area surrounding the construction site. The effects would be temporary and would likely not be significant within the context of overall traffic within the corridor. Some construction phases (particularly during paving operations using asphalt) would result in short-term odors; these odors might be detectable to some people near the project site but would be diluted as distance from the site increases.

Operational Impacts

An emissions burden analysis was performed to estimate the Bel-Red Corridor PM peak-hour emission rates associated with each alternative. CO, PM (both PM_{10} and $PM_{2.5}$), and O_3 precursor (VOC and NO_X) emission rates were calculated as part of the burden analysis to indicate the effects of each action alternative throughout the study area on those air pollutants. Only direct emissions of each pollutant were estimated, and there was no attempt to estimate secondary formation downwind of the release. (For example, VOCs and NOx can contribute to O_3 formation under certain conditions, and NOx is a precursor to $PM_{2.5}$.) The emission estimates are calculated as a peak-hour emission rate in pounds per hour (lb/hr) for the study area in the design year (2030).

The potential air pollutant rates for the proposed alternatives were estimated by multiplying MOBILE6.2 emission factors by the project-specific PM peak-hour project area VMT. Emission rates were estimated for each action alternative and compared to the No-Action Alternative emission rates for the year 2030. Because the VMT were calculated only within the study area boundaries, they do not characterize changes that might occur elsewhere in the region as a result of study area changes. These values are useful for comparing the action alternatives, but they are not meant to predict localized or regional air quality effects that would result from specific projects.

Table 3-3 presents the results of the burden analysis. The data show higher predicted emissions for all action alternatives as compared to the No-Action Alternative. This is primarily due to the fact that each action alternative proposes additional housing and commercial development, thus resulting in additional vehicles traveling to and from these facilities within the corridor. The highest air emissions are predicted for Alternative 3, which has the highest predicted number of additional housing units and commercial square footage.

Based on the existing monitoring data, predicted concentrations would be significantly below their respective standards for both CO and $PM_{2.5.}$ This indicates that, despite the predicted increase in traffic volumes and emissions, the Bel-Red Corridor redevelopment is not likely to result in any exceedance of the air quality standards. The corridor design has incorporated assumed improvements to roadways and transit options that will maintain an acceptable level of service (LOS) for vehicles, despite an increase in volume. Maintaining traffic flow will reduce idling and, therefore, reduce pollutant emissions from vehicles. It should also be noted that each alternative assumes a varied number of LRT alightings and boardings (see Chapter 1 for more discussion), the highest number of which occur under Alternative 3; therefore, potential pollutant emissions from vehicles are assumed to be further reduced.

TABLE 3-3
Burden Emissions Analysis: PM Peak-Hour Project Emissions for the Region (pounds per hour)
Bel-Red Corridor Draft Environmental Impact Statement

Alternative	CO	PM_{10}	$PM_{2.5}$	VOC	NOx
2030 No-Action Alternative	2,921	7.0	3.4	162	105
2030 Alternative 1	4,204	9.2	4.4	259	147
2030 Alternative 2	4,283	8.8	4.3	281	147
2030 Alternative 3	4,786	9.1	4.4	337	160

Source: CH2M HILL, 2006.
CO carbon monoxide
NOx oxides of nitrogen
PM10 particulate matter smaller than 10 microns in diameter
$PM_{2.5}$ particulate matter smaller than 2.5 microns in diameter
VOC volatile organic compound

As noted earlier in this chapter, a conformity analysis will be required for individual projects proposed as part of the corridor redevelopment. The conformity analysis will identify intersections at which project-related traffic increases result in the potential for localized exceedances of the ambient air quality standards. These intersections are known as “hot spots” and are identified by the PSCAA for each project based upon its location and anticipated traffic volumes. For the Bel-Red Corridor, the intersections with the highest traffic volumes under all action alternatives are those along 116th Avenue NE and 148th Avenue NE; many of these intersections will be at LOS E or F in 2030. PSCAA will likely require hot-spot analyses for some or all of these intersections for future development and/or transportation improvement projects.

To the extent that existing pollutant-generating land uses (e.g., repair shops or dry cleaners) redevelop over time, overall emissions within the Bel-Red Corridor would be lower in the future than they are now. This improvement would be less under Alternatives 1 and 2 that retain areas of service uses and light industrial uses, respectively. Most pollutants generated by these land uses, however, are regional in their effects. If businesses were to relocate elsewhere within the Puget Sound region, then there would be little difference in regional air quality as compared to the No-Action Alternative.

Mitigation Measures

No significant adverse air quality impacts during operation are anticipated as a result of any project alternative; therefore, no mitigation is required. Construction impacts would be mitigated by the BMPs described above.

Unavoidable Adverse Impacts

No unavoidable adverse impacts to air quality are anticipated.

Existing Parking Analysis

5/29/2013

Existing Parking **68**

Building/Use	Gross Floor Area	Parking Ratio	Required Parking	Existing Parking	Parking Credit
Hector's Building					
Restaurant (Hector's)	4556	1/125	36.4	0	
Office	2422	1/350	6.9	0	
Common - Restaurant	114	1/125	0.9	0	
Common - Office	106	1/350	0.3	0	
Subtotal	**7198**		**44.6**	**0**	
Lakeside Building					
Restaurant (Hector's BoH)	2715	1/125	21.7	0	
Restaurant (World Wrapps)	1667	1/125	13.3	0	
Retail	1646	1/350	4.7		
Office	128	1/350	0.4	0	
Subtotal	**6156**		**40.1**	**0**	
Kirkland Waterfront Market					
Restaurant (Szmania)	3704	1/125	29.6	46	
Restaurant (Sushi)	1701	1/125	13.6	0	
Restaurant (Thin Pan)	1626	1/125	13.0	0	
Retail (Tully's)	1348	1/350	3.9	11	
Retail (Ben & Jerry's)	534	1/350	1.5	0	
Office	8460	1/350	24.2	11	
Common-Restaurant	1098	1/125	8.8		
Common-Retail	281	1/350	0.8		
Common-Office	2657	1/350	7.6		
Subtotal	**21409**		**103.0**	**68**	
Calabria Building					
Restaurant (Calabria)	4387	1/125	35.1	0	
Retail (Sasi)	876	1/350	2.5	0	
Subtotal	**5263**		**37.6**	**0**	
Total	**40026**		**225.3**	**68**	**157.3**

SUMMARY				
Parking per Use				
Restaurant	21568	1/125	172.5	46
Retail	4685	1/350	13.4	11
Office	13773	1/350	39.4	11
Total	**40026**		**225.3**	**68**

Parking Required	**225.3**
Existing	**68**
Parking Credit	**157.3**

Demo Space/Parking Analysis

5/29/2013

Building/Use	Gross Floor Area	Parking Ratio	Required Parking	
Hector's Building				
Restaurant (Hector's)	1972	1/125	15.8	
Office	0	1/350	0.0	
Subtotal	**1972**		**15.8**	(to be demolished)
Lakeside Building				
Restaurant (Hector's BoH)	2715	1/125	21.7	
Restaurant (World Wrapps)	1667	1/125	13.3	
Retail	1646	1/350	4.7	
Office	128	1/350	0.4	
Subtotal	**6156**		**40.1**	(demolished)
Kirkland Waterfront Market				
Restaurant	0	1/125	0.0	
Retail/Office (Upstairs Patio)	0	1/350	0.0	
Subtotal	**0**		**0.0**	(no demolition)
Calabria Building				
Restaurant (Calabria)	4387	1/125	35.1	
Retail (Sasi)	876	1/350	2.5	
Subtotal	**5263**		**37.6**	(demolished)
Total	**13391**		**93.5**	

SUMMARY			
Parking per Use			
Restaurant	10741	1/125	85.9
Retail/Office	2650	1/350	7.6
Total	**13391**		**93.5**

Grandfathered Parking Credit	**93.5**
Existing Parking	68
Removed for alley easment	-3
Parking stalls to be maintained	**65**

New Area/Parking Analysis

5/29/2013

Building/Use	Gross Floor Area	Parking Ratio	Required Parking	Existing parking
Hector's Building Expansion				
Restaurant	7476	1/125	59.8	
Retail	0	1/350	0.0	
Office	24986	1/350	71.4	
Subtotal	**32462**		**131.2**	
Kirkland Waterfront Market 2009 Remodel				
Restaurant	1124	1/125	9.0	
Retail	0	1/350	0.0	
Office	784	1/350	2.2	
Subtotal	**1908**		**11.2**	
Kirkland Waterfront Market Addition				
Restaurant	965	1/125	7.7	
Retail	0	1/350	0.0	
Office	12993	1/350	37.1	
Subtotal	**13958**		**44.8**	65
Main Street Building				
Restaurant	0	1/125	0.0	
Retail	13740	1/350	39.3	
Office	18001	1/350	51.4	
Common - Restaurant	0	1/125	0.0	
Common - Retail	1609	1/350	4.6	
Common - Office	2108	1/350	6.0	
Subtotal	**35458**		**101.3**	
Total	**83786**		**288.6**	**65**

Summary By Use			
Restaurant	9565	1/125	76.5
Retail	15349	1/350	43.9
Office	58872	1/350	168.2
Total	**83786**		**288.6**

Required Parking for New Gross Area	288.6
Grandfathered (Demo) Credit	-93.5
Required Parking	**195.1**
New parking stalls	186.0
Provided Parking	**186.0**
	-9.1 Deficit

Total stalls on Site
65 existing
186 new
251.0

* Applicant reserves the right to share parking between uses on three (3) parcels as allowed by KZC 105.45.
* Applicant currently in negotiations with City regarding (5) displaced public parking stalls located at the Parcel C frontage on Main Street.

LSP - Phase I - KWM New Area/Parking Analysis

5/29/2013

Building/Use	Gross Floor Area	Parking Ratio	Required Parking	Existing parking
Kirkland Waterfront Market 2009 Remodel				
Restaurant	1124	1/125	9	
Retail	0	1/350	0	
Office	784	1/350	2	
Subtotal	**1908**		**11**	
Kirkland Waterfront Market Addition				
Restaurant	963	1/125	8	
Retail	0	1/350	0	
Office	12995	1/350	37	
Subtotal	**13958**		**45**	
Total	**15866**		**56**	**65**

Summary By Use			
Restaurant	2087	1/125	17
Retail	0	1/350	0
Office	13779	1/350	39
Total	**15866**		**56**

Required Parking for New Gross Area	56	
Grandfathered (Demo) Credit	-38	(Calabria building)
Required Parking	**18**	

New parking stalls	20	
Demolish 1 stall	-1	
Provided Parking	**19**	
	1	Surplus

Total stalls on Site	
65	Existing
19	New
84.0	

* Applicant reserves the right to share parking between uses on three (3) parcels as allowed by KZC 105.45.

AREA SUMMARY

5/29/2013

Building/Use	EXISTING Gross Floor Area	DEMO Gross Floor Area	NEW Gross Floor Area	TOTAL Gross Floor Area
Lakeside Building				
Restaurant	4382	4382	0	0
Retail	1646	1646	0	0
Office	128	128	0	0
Subtotal	**6156**	**6156**	**0**	**0**
Calabria Building				
Restaurant	4387	4387	0	0
Retail	876	876	0	0
Office	0	0	0	0
Subtotal	**5263**	**5263**	**0**	**0**
Hector's Building Expansion				
Restaurant	4670	1972	7476	10174
Retail	0	0	0	0
Office	2528	0	24986	27514
Subtotal	**7198**	**1972**	**32462**	**37688**
Kirkland Waterfront Market Addition				
Restaurant	8129	0	2089	10218
Retail	2163	0	0	2163
Office	11117	0	13777	24894
Subtotal	**21409**	**0**	**15866**	**37275**
Main Street Building				
Restaurant	0	0	0	0
Retail	0	0	15349	15349
Office	0	0	20109	20109
Subtotal	**0**	**0**	**35458**	**35458**
Total	**40026**	**13391**	**83786**	**110421**
Summary By Use				
Restaurant	21568	10741	9565	20392
Retail	4685	2522	15349	17512
Office	13773	128	58872	72517
Total	**40026**	**13391**	**83786**	**110421**

ATTACHMENT 21
FILE NO. SEP13-00959
ALLEY MODIFICATION

CITY OF KIRKLAND
Department of Public Works
123 Fifth Avenue, Kirkland, WA 98033 425.587.3800
www.kirklandwa.gov

MEMORANDUM

To: Jon Regala, Planner

From: Pam Bissonnette, Interim Public Works Director
Rob Jammerman, Development Engineering Manager
Thang Nguyen, Transportation Engineer

Date: December 13, 2013

Subject: Alley Modification for McLeod Mixed-Use Project

Per Kirkland Zoning Code (KZC) Chapter 110.27, the Public Works Department has reviewed and approves a modification to the alley improvements standards for the proposed McLeod Mixed-Use Project. The following considerations were taken into account when approving this modification:

1. ***Zoning Code give authority to the Public Works Director to determine alley improvements:*** KZC 110.27 allows the Public Works Director to determine the extent and nature of other improvements in the alley for non-single-family development permits (see highlighted sections below):

   KZC 110.27 Alleys

   The pavement width of an alley must be at least 12 feet but may be required to be increased by the Public Works Director or Fire Marshall. For all commercial, industrial, office, or multifamily projects, the applicant shall improve the alley abutting the subject property and extend it to the existing improved street, and may be required to improve an additional 30 feet past the property frontage to provide emergency turnaround. For single-family dwellings using the alley for primary vehicular access, the applicant shall pave a 12-foot-wide asphalt apron extending 20 feet from the nearest improved street toward the subject property. For all types of development permits, the Public Works Director shall determine the extent and nature of other improvements required in alleys on a case-by-case basis. Typical improvements include, but are not limited to, replacement of the alley driveway apron and curb, installation of storm drainage, repair of existing paving, and installation of crushed rock in gravel alleys. The use of pervious pavement in alleys will be considered if approved by the Public Works Director.

2. ***Alley access is preferred over access to Lake Street or Main Street:*** Alley access was recommended for this project in lieu of direct access from Lake Street or Main Street. The Downtown Plan (contained in the Comprehensive Plan) contains language which supports limiting curb cuts in the Downtown area in order to avoid disruption to pedestrian and vehicular traffic on busy streets such as Lake Street. Limiting curb cuts on busy sidewalks and streets also reduces safety hazards. Driveway access to the McLeod Mixed-Use Project via Main Street was not preferred due to its close proximity to the nearby intersection (alley/Main Street) and the conflicts it would present. Use of the alley provides for better distribution of traffic and eliminates additional access points to the said streets.

3. ***Recommended Alley Modifications based on adjoining uses:*** The alley serving this project is located in the Central Business District and required the Public Works Department to study the full development potential of the properties adjacent the alley and develop a standard to meet the build-out of adjacent uses. During our study we concluded the following:

   A. The alley shall have a 4 ft. wide sidewalk along one side to provide for pedestrian circulation between Lake Street and Main Street. Alleys do not normally have sidewalks, but given the surrounding uses, and the direct route between the two said streets, a sidewalk was required. The sidewalk was installed when the Bank of America site was redeveloped.

B. The alley shall be a minimum of at least 20 feet wide from the McLeod Project parking garage entrance east to Main Street. This width is required to provide a 10 foot wide travel lane in each direction.

C. No improvements will be required to the alley west of the McLeod Project. However, this portion of the alley shall be limited to one-way westbound due to the inability to expand the alley width given that the Hector's building will remain.

4. **Design team agrees with the required modifications:** Last, it should be noted that the applicant's design team has reviewed and agrees with the recommended modifications.

per day, with about 84 net new trips occurring in the AM peak hour and 103 net new trips occurring in the PM peak hour.

Table 3.4-8 Trip Generation Summary – Weekday

	Size	Daily	AM Peak Hour			PM Peak Hour		
			In	*Out*	*Total*	*In*	*Out*	*Total*
PROPOSED PROJECT								
Apartment (LU 220)	143 units	990	15	59	74	62	34	96
General Office (LU 710)	3,200 sf	40	4	1	5	1	4	5
Medical Office (LU 720)	3,000 sf	110	6	1	7	3	7	10
Total Vehicle Trips with Project		**1,140**	**25**	**61**	**86**	**66**	**45**	**111**
EXISTING SITE								
Retail (LU 820)	2,114 sf	-90	-1	-1	-2	-4	-4	-8
Total Existing Vehicle Trips		**-90**	**-1**	**-1**	**-2**	**-4**	**-4**	**-8**
NET CHANGE IN VEHICLE TRIPS		**1,050**	**24**	**60**	**84**	**62**	**41**	**103**

Source: Heffron Transportation, June 2012.

It should be noted that these trip generation estimates are conservatively high in that they assume that all trips generated by the project would occur by vehicle. Survey results from the year 2000 Census compiled by the Puget Sound Regional Council (PSRC) indicate that for residences located in PSRC Transportation Analysis Zone 265 (the PSRC zone in which the project site is located), about 92% of trips typically occur by vehicle and 8% occur by transit or non-motorized modes.[10]

Table 3.4-9 summarizes the projected vehicle trip generation for the proposed redevelopment during each peak hour of a typical Saturday and Sunday. As shown, 76 net new trips are expected to be generated by the site during the highest volume hour on a Saturday, and 67 net new trips are projected for the highest volume hour on a Sunday. The projected weekend peak hour net new trips are lower than the net new trips projected during the weekday AM or PM peak hours.

[10] Puget Sound Regional Council (PSRC), Journey-to-Work data from 2000 U.S. Census data for PSRC Transportation Analysis Zone 265.