



Environmental Assessment for the Interim Lease of Naval Station Puget Sound, Seattle

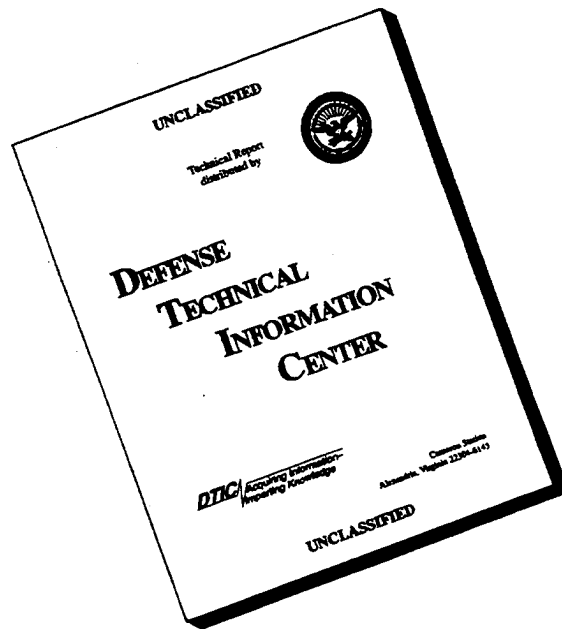
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DEPARTMENT OF THE NAVY
ENGINEERING FIELD ACTIVITY, NORTHWEST
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19917 7TH AVENUE N.E.
POULSBO, WASHINGTON 98370-7570

5090
Ser 232DM/5190

JUL 17 1996

Dear Interested Party:

Subj: AVAILABILITY OF ENVIRONMENTAL ASSESSMENT AND FINDING OF NO
SIGNIFICANT IMPACT

The enclosed Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) is forwarded for your information. The EA evaluates impacts of the Navy's proposed action to lease to the city of Seattle for immediate reuse approximately 136 acres of the former Naval Station Puget Sound, Sand Point. The purpose of the interim lease is to support local redevelopment in obtaining funds for homeless assistance, put unused property to productive use as quickly as possible, support the Seattle School District's space requirement for the temporary relocation of Ballard High School, and reduce the Navy's caretaker costs. Under the lease the City would begin limited reuse of the property for residential, recreational, administrative, and educational purposes, as well as utility upgrades. The FONSI is a determination that this project will not significantly impact human health and the environment, therefore an Environmental Impact Statement is not required. Copies of the EA and FONSI are being distributed to interested elected officials, agencies, native American tribes, and public libraries. Additionally, a public notice of availability is published in the July 12-July 14 Seattle Times.

The coordination and review efforts of all those who participated in the development of this EA is appreciated. If desired, additional copies of this EA may be obtained from Mr. Don Morris at Engineering Field Activity, Northwest in Poulsbo, Washington at (360) 396-0920.

Sincerely,

DON MORRIS
Environmental Planner

Enclosures:

- (1) EA for Interim Lease of Naval Station Puget Sound, Seattle
- (2) FONSI for Interim Lease of Naval Station Puget Sound, Seattle

DEPARTMENT OF DEFENSE

DEPARTMENT OF THE NAVY

FINDING OF NO SIGNIFICANT IMPACT FOR THE INTERIM LEASE OF NAVAL STATION PUGET SOUND, SAND POINT, SEATTLE, WASHINGTON.

Pursuant to the Council on Environmental Quality Regulations (40 CFR Parts 1500-1508) implementing procedural provisions of the National Environmental Policy Act (NEPA), the Department of the Navy gives notice that an Environmental Assessment (EA) has been prepared and an Environmental Impact Statement is not required for the proposed Interim Lease of Naval Station Puget Sound, Sand Point (Naval Station) to the City of Seattle.

A reuse plan for the Naval Station has been prepared by the City of Seattle, the designated local redevelopment authority (LRA). The LRA reuse plan is being addressed by the Navy under a separate NEPA action the *Environmental Impact Statement for the Reuse of Naval Station Puget Sound, Sand Point*. This interim lease is consistent with the LRA's reuse plan and this action will not prejudice the final disposal decision with respect to the property.

The proposed action is to allow the immediate use of 136 acres (55 hectares) of the former Naval Station by the City of Seattle. The Naval Station closed in September 1995, and the Navy proposes to lease a portion of the facility on an interim basis prior to the final disposition of the entire property. The purpose of the lease is to support the local redevelopment process in obtaining funds for homeless assistance; to put unused Navy property to productive use as quickly as possible, and support the Seattle School District's space requirement for the temporary relocation of Ballard High School. The lease would also reduce the Navy's caretaker costs.

Under the Interim Lease, proposed uses by the City includes low-income housing, community college classrooms, utility upgrades, training and administration activities, a senior center, and outdoor recreation. In order to accommodate the proposed uses, the City intends to rehabilitate and use Buildings 224, 26N, 26S, 330, 331, 332 for housing. Buildings 9, 18, and 47 are to be rehabilitated and used as temporary educational facilities. Building 5 would be used for vocational training, office, and storage activities. Building 138 would be used as a temporary site project office; Building 67 for fire department training activities; Building 406 for senior center activities and Building 222 would be demolished. Baseball fields would be improved and used for summer league play. Infrastructure, which includes water, sewer, drainage, electrical, natural gas, and telephone, would be upgraded as appropriate.

Other alternatives considered in the EA included one in which Building 5 would have limited use and Building 222 would not be demolished and the No-Action Alternative.

Under the No Action Alternative, the Naval Station would not be leased and the facility would remain unused in caretaker status.

During preparation of the EA, the following environmental resources were evaluated: Land Use, Historic and Culture, Recreation, Transportation, Noise, Public Service and Utilities, Crime and Law Enforcement, Environmental Health, Water, Air Quality, Biological Resources, and Socioeconomics. In order to avoid significant impacts, several mitigative measures have been identified: (1) Any exterior maintenance or modifications to buildings within the Historic District must be done in accordance with the Historic and Archaeological Resources Protection (HARP) Plan for Naval Station Puget Sound, Sand Point; (2) Plans for demolition of Building 222 will require review by the State Historic Preservations Officer (SHPO); (3) The City will adjust signal timing at NE 95th Street/Sand Point Way NE to reflect changes in traffic conditions as appropriate. With implementation of this mitigation the Navy finds the proposed action would not have a significant impact on the human or natural environment.

This EA may be obtained from: Commanding Officer, Engineering Field Activity, Northwest, Naval Facilities Engineering Command, 19917 7th Avenue NW, Poulsbo, Washington 98370-7570 (Attn: Mr. Don Morris, Code 232 DM), telephone (360) 396-0920. A limited number of copies of the EA are available to fill single copy requests.

6/28/96
Date



DAVID K. GEBERT
Captain, CEC, USN
Commanding Officer
Engineering Field Activity, Northwest
Naval Facilities Engineering Command

**ENVIRONMENTAL ASSESSMENT
FOR THE
INTERIM LEASE OF
NAVAL STATION PUGET SOUND, SEATTLE**

**Department of the Navy
Engineering Field Activity, Northwest
19917 - 7th Avenue NW
Poulsbo, Washington 98370-7570**

**Point of Contact: Don Morris
(360) 396-0920**

June 28, 1996

ABSTRACT

This Environmental Assessment (EA) was prepared to evaluate impacts of the Navy's proposed action to lease to the City of Seattle (City) for immediate use approximately 136 acres (55 hectares) of the former Naval Station Puget Sound, Sand Point. The Naval Station closed in September 1995, and the Navy proposes to lease part of the facility on an interim basis before final disposition of the property. The purpose of the interim lease is to support local redevelopment in obtaining funds for homeless assistance, put unused Navy property to productive use as quickly as possible, support the Seattle School District's space requirement for the temporary relocation of Ballard High School, and reduce the Navy's caretaker costs.

Under the interim lease, proposed uses by the City include low-income housing, community college classrooms, utility upgrades, training and administration, a senior center, and outdoor recreation. To accommodate the proposed uses, the City intends to rehabilitate and use Buildings 224, 26N, 26S, 330, 331, 332 for housing. Buildings 9, 18, and 47 are to be rehabilitated and used as temporary educational facilities. Building 5 would be used for vocational training, offices, and storage. Building 138 would be used as a temporary site project office, Building 67 for fire department training, and Building 406 for senior center activities. Building 222 would be demolished. Baseball fields would be improved and used for summer league play. Infrastructure, which includes water, sewer, drainage, electrical, natural gas, and telephone, would be upgraded as appropriate.

A reuse plan for the Naval Station has been prepared by the City of Seattle, the designated local redevelopment authority (LRA). The LRA reuse plan is being addressed by the Navy under a separate NEPA action, the *Environmental Impact Statement for the Reuse of Naval Station Puget Sound, Sand Point*. This interim lease is consistent with the LRA's reuse plan and this action will not prejudice the final disposal decision with respect to the property.

Other alternatives considered in the EA include one in which Building 5 would have limited use and Building 222 would not be demolished, and the No-Action Alternative. Under the No-Action alternative, the Naval Station would not be leased and the facility would remain unused in caretaker status.

Preparation of the EA evaluated these environmental resources: Land Use, Historic and Culture, Recreation, Transportation, Noise, Public Service and Utilities, Crime and Law Enforcement, Environmental Health, Water, Air Quality, Biological Resources, and

Socioeconomics. To avoid significant impacts, the following mitigating measures have been identified:

- Any exterior maintenance or modifications to buildings within the Historic District must be done in accordance with the Historic and Archaeological Resources Protection Plan for Naval Station Puget Sound, Sand Point.
- Plans for demolition of Building 222 will require review by the State Historic Preservation Officer.
- The City will adjust signal timing at NE 95th Street/Sand Point Way NE to reflect changes in traffic conditions as appropriate.

With implementation of these mitigating measures, the Navy finds that the proposed action would not have a significant impact on the human or natural environment.

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ABBREVIATIONS AND ACRONYMS

ACM	asbestos-containing material
ADT	average daily traffic, average daily trips
aMW	average megawatt
AST	aboveground storage tank
BEQ	bachelor enlisted quarters
BOQ	bachelor officer quarters
BRAC	Base Closure and Realignment Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
cfs	cubic feet per second
City	City of Seattle
City Parks	City of Seattle Department of Parks and Recreation
cm	centimeter
CO	carbon monoxide
COMPLAN	City of Seattle's Park and Recreation Comprehensive Plan
CRF	Cumulative Reserve Fund
dB	decibel
dBA	adjusted decibel
°F	degree Fahrenheit
DoD	U.S. Department of Defense
DOE	Washington State Department of Ecology
DPR	Department of Parks and Recreation (City of Seattle)
EA	environmental assessment
EIS	environmental impact statement
EPA	United States Environmental Protection Agency
FONSI	finding of no significant impact
ft ²	square foot
HARP	Historic and Archeological Resources Protection
HCS	Highway Capacity Software
HOV	high occupancy vehicle
HUD	U.S. Department of Housing and Urban Development
ITE	Institute of Traffic Engineers
I-5	Interstate Highway 5
kg	kilogram
kg/h	kilogram (of steam) per hour
km	kilometer

ABBREVIATIONS AND ACRONYMS (Continued)

kV	kilovolt
kVA	kilovolt-ampere
kWh	kilowatt-hour
kWh/yr	kilowatt-hours per year
L _{eq}	equivalent noise level
LOS	level of service
LRA	Local Redevelopment Authority
m	meter
Metro	Municipality of Metropolitan Seattle
mgd	million gallons per day
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
MTCA	Model Toxics Control Act
MW	megawatt
MWh	megawatt-hour
NAAQS	National Ambient Air Quality Standards
NAS	Naval Air Station
Navy	U.S. Navy
NBS	National Biological Service
NEPA	National Environmental Policy Act
NOAA	National Oceanic and Atmospheric Administration
NPL	National Priorities List
NPRA	National Parks and Recreation Association
NROTC	Naval Reserve Officer Training Candidates
NSCC	North Seattle Community College
OSHA	Occupational Safety and Health Administration
PCB	polychlorinated biphenyl
P.L.	Public Law
pph	pounds (of steam) per hour
ppm	parts per million
PSAPCA	Puget Sound Air Pollution Control Agency
psig	pounds per square inch gauge
RAC	risk assessment code
RCW	Revised Code of Washington
ROD	Record of Decision
RONA	Record of Non-Applicability
sec	second
SED	Seattle Engineering Department

ABBREVIATIONS AND ACRONYMS (Continued)

SHPO	State Historic Preservation Office/Officer
SIP	state implementation plan
SMC	Seattle Municipal Code
SMP	Shoreline Master Program
SPIF	Shoreline Park Improvement Fund
SR 99	State Route 99
SWD	Seattle Water Department
TSCA	Toxic Substances Control Act
UBC	Uniform Building Code
USC	U.S. Code
USCOE	U.S. Army Corps of Engineers
V	volt
V/C	volume-to-capacity ratio
WAC	Washington Administrative Code
WISHA	Washington Industrial Safety and Health Act
WNG	Washington Natural Gas
$\mu\text{g/L}$	microgram per liter
$\mu\text{g/m}^3$	microgram per cubic meter

1.0 INTRODUCTION

The U.S. Department of the Navy (the Navy) proposes to lease to the City of Seattle (City) approximately 136 acres (55 hectares) of the 152-acre (61.5-hectare) Naval Station Puget Sound, Seattle (Sand Point Naval Station). The lease is consistent with the City's entire reuse plan and would not prohibit other reasonable reuse alternatives under consideration in the *Draft Environmental Impact Statement Reuse of Naval Station Puget Sound, Sand Point* (in preparation). Under the lease, the City would begin limited reuse of the property for residential, recreational, administrative, and educational purposes, as well as utility upgrades. The potential impacts associated with the proposed action are evaluated in this environmental assessment (EA) pursuant to the requirements of the National Environmental Policy Act (NEPA) and implementation regulations issued by the Council on Environmental Quality (CEQ) (40 CFR 1500).

1.1 AUTHORITY AND JURISDICTION

The 1996 amendments to the Defense Base Closure and Realignment Act anticipate interim leases of property approved for closure or realignment (Section 2833 of Subtitle C of S.1124 as passed by the House [Engrossed Amendments]). They also provide that interim leases "shall be deemed not to prejudice the final disposal decision with respect to the property."

This EA is prepared in compliance with the statutory requirements of NEPA, as amended by Public Law 91-190, 42 USC 4347. Conformance with this law is being carried out under the provisions of the Navy's *Environmental and Natural Resources Program Manual* (U.S. Navy 1994b, OPNAVINST 5090.1B):

An EA is an analysis of the potential environmental impact of a proposed action. When the military does not know before-hand whether or not the proposed action will significantly affect the human environment or be controversial with respect to environmental effects, an EA is prepared. If on the basis of the EA, it is determined that the proposed action will not significantly impact the environment, a finding of no significant impact (FONSI) will be prepared. Otherwise an Environmental Impact Statement (EIS) will be prepared.

In Sections 2 through 5 of this EA, the Navy has evaluated the proposed action to determine the significance of potential impacts and the adequacy of proposed mitigating measures. Based on this evaluation, the Navy will decide whether a FONSI is appropriate or the proposed action would generate significant impacts. If significant nonmitigatable impacts could occur, preparation of an EIS could be required. If the Navy's proposed action would not cause significant impacts to the environment, the Navy will prepare a FONSI for local public notification. Public notification would consist of (1) newspaper publication of a summary of the FONSI; and (2) direct mailing of the full FONSI and the completed EA to interested parties such as members of the public, regulatory/resource agencies, libraries, elected officials, and the others identified during preparation of the EA. The FONSI news notification will run for 3 consecutive days in the "Public Notices" section of the *Seattle Times*, a local newspaper with distribution in the area of the proposed action.

1.2 HISTORY AND BACKGROUND

Sand Point Naval Station is located on the western shore of Lake Washington, approximately 6 miles (10 kilometers) northeast of downtown Seattle (Figure 1-1). The Navy established the base in 1929 on land acquired from King County. Sand Point Naval Station was initially named Naval Air Station (NAS) Seattle at Sand Point. It served as a Naval Air Reserve training facility until December 7, 1941.

During World War II, NAS Seattle supported air transport and ship outfitting for the Alaskan and Western Pacific areas of operation. In 1945, at the peak of its activity, the base supported more than 4,600 Navy, Marine Corps, and civilian personnel. After the war, the base was designated a Naval Reserve Air Station. From 1945 to 1970, the station maintained Naval Reserve squadrons to supplement active duty forces in the continental United States and abroad. Aviation activities officially ceased on June 30, 1970, and NAS Seattle was decommissioned.

On July 1, 1970, NAS Seattle was redesignated Naval Support Activity, Seattle. Three years later the Navy surplused much of the property. NOAA received 116 acres (47 hectares), including one-third of the runways and 3,500 feet (1,067 meters) of waterfront property. The City of Seattle received approximately 198 acres (80 hectares) comprising the southeast portion of the base, including approximately 1 mile (1.6 kilometers) of waterfront property; this area became Magnuson Park in 1977. The Navy retained the remainder of the base. From 1970 until April 1982, the base provided logistic services to the 13th Naval District, U.S. Department of Defense (DoD), and other federal agencies.

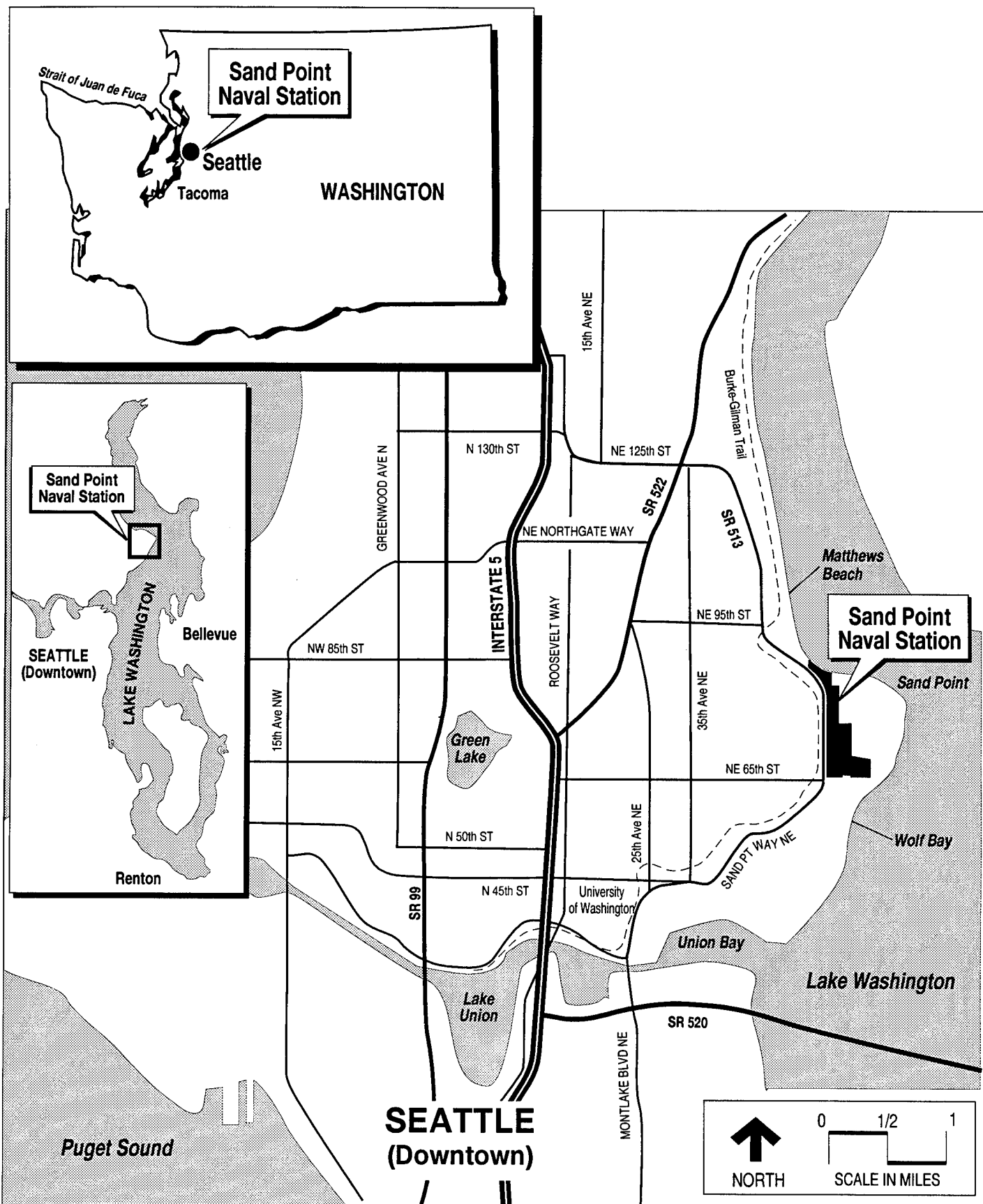


**Figure 1-1
Vicinity Map**

**SAND POINT
ENVIRONMENTAL
ASSESSMENT**
June 1996

In April 1982, Naval Support Activity, Seattle, was redesignated Naval Station, Seattle, and on October 10, 1986, was redesignated Naval Station Puget Sound. Until recently, the base functioned as a support and billeting facility for the Northern Pacific Fleet.

Given the authority under the Defense Base Closure and Realignment Act of 1990 (BRAC), the Defense BRAC Commission on July 1, 1991, recommended closure of Sand Point Naval Station. Congress approved the recommendation and the naval station closed in September 1995. The Navy has maintained the base in caretaker status since that time. All of the Navy's scheduled environmental cleanup actions at the Sand Point Naval Station are complete. Functions formerly housed at Sand Point have been transferred to other facilities, including Naval Submarine Base, Bangor, and Naval Station Puget Sound, Everett.

1.3 PURPOSE AND NEED FOR PROPOSED ACTION

The Navy proposes to lease approximately 136 acres (55 hectares) of the former naval station property to the City of Seattle on an interim basis before conveyance of the entire property. The interim lease would implement a portion of the reuse plan proposed by the City, the designated local redevelopment authority (LRA). The purpose of the interim lease is to achieve the following goals:

- *Support the local redevelopment process in obtaining funding for homeless assistance.* The City of Seattle has been awarded a McKinney Act supportive housing grant. One requirement of the grant is that the City have control of the site by July 10, 1996. This lease would allow the City to obtain that site control.
- *Put available property to productive use as quickly as possible through leases to spur rapid reuse and to reduce the Navy's caretaker costs.* The purpose of closing military installations is to prevent the taxpayer from funding infrastructure and maintenance that support a shrinking military. The Department of Defense has chosen to close bases as rapidly as possible and to encourage reuse that will relieve expenditures for maintenance and protection of vacant properties. Conveyance of the property through a lease agreement eliminates the Navy's responsibility to continue in a caretaker status.

- *Support the City of Seattle and the Seattle School District in the temporary placement of Ballard High School.* Ballard High School is scheduled for renovation to upgrade a deteriorating structure that could potentially create health and safety concerns for the students in attendance. To accommodate the City and School District's need for a short-term (1997 to 1999) high school site, the district is negotiating to use the Sand Point property.

2.0 PROPOSED ACTION AND ALTERNATIVES

This section describes the Navy's proposed action (preferred alternative), which is evaluated in this EA. NEPA requires that the effects of a proposed action be evaluated for a reasonable range of alternatives and that these "action" alternatives be measured against an "existing condition" or no-action alternative. To explore land-use options, an additional alternative (minimal office alternative) was evaluated.

2.1 DESCRIPTION OF THE PROPOSED ACTION (PREFERRED ALTERNATIVE)

The Navy is considering entering into an Interim Lease Agreement (preferred alternative) with the City of Seattle so that the City can use certain Sand Point Naval Station buildings and grounds. The interim lease would implement a portion of the reuse plan proposed by the City, the designated local redevelopment authority (LRA) under BRAC laws. As the LRA, the City developed a reuse plan for the base, which will form the basis of the property disposal decision regarding the Naval Station. The City submitted its reuse plan in November 1993 in response to the property disposal and reuse process (City Planning 1993a). As a separate action, the entire reuse plan is being considered in a separate environmental impact statement (EIS) (in preparation).

The City's reuse plan outlines the use of the entire base. However, the acreage proposed for the City interim lease *excludes* approximately 16 acres (6.5 hectares) of property requested by the National Oceanographic and Atmospheric Administration (NOAA) and the National Biological Service (NBS). NOAA requested approximately 10 acres (4 hectares) at the north end of the base, adjacent to their current facilities, and approximately 1.2 acres (0.5 hectare) for the access road to their facilities. NBS requested approximately 5 acres (2 hectares) at the southeast corner of the base currently used by its National Fisheries Research Center. Thus, these areas are not included in this EA.

2.2 DESCRIPTION OF ALTERNATIVES

This EA evaluates the preferred alternative (Figure 2-1), a minimal office alternative (Figure 2-2), and a no-action alternative (as required by NEPA).

2.2.1 Preferred Alternative

Under the preferred alternative (Friedli 1996a), the City proposes to allow for the activities described in the following subsections and shown on Figure 2-1.

Buildings 224, 26N, 26S, 330, 331, and 332

These buildings would be rehabilitated for residences for homeless individuals and families, as well as supervising staff.

Buildings 9, 18, and 47

These buildings would be rehabilitated for educational uses.

Classroom and Dormitory Use. Within the preferred alternative, there are two scenarios (each containing two phases), for classroom use of Building 9. Each scenario contains two phases:

Scenario 1: Phase I—Ballard High School is temporarily relocated to Building 9 from fall 1997 to fall 1999. The building will house high school classes for approximately 1,100 weekday students and 90 staff members. The building would also house community college classrooms for five to seven community-based evening classes (Monday through Thursday) for 75 to 105 students and one or two Saturday morning classes for 15 to 30 students.

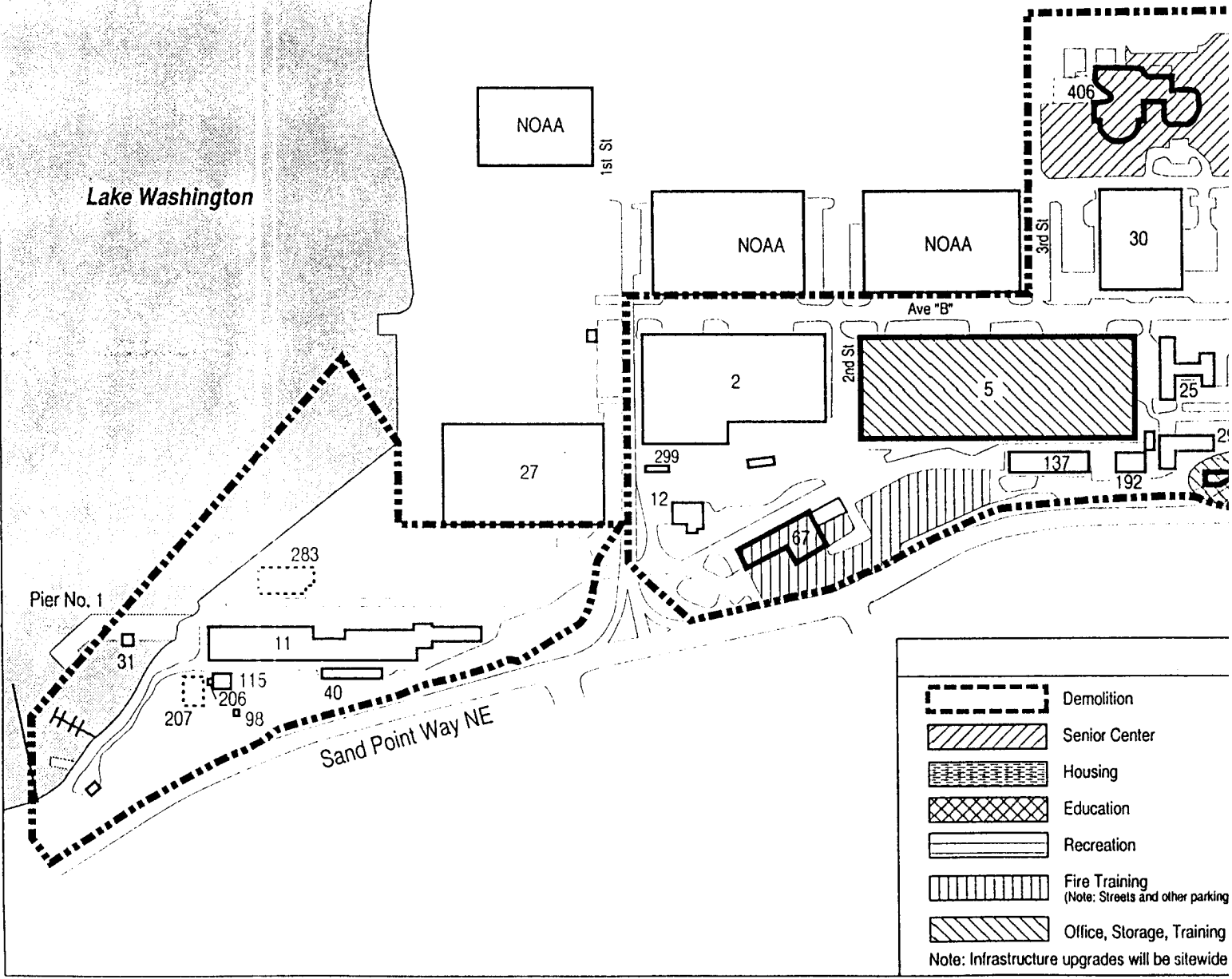
Phase II—After Ballard High School returns to its original building, Building 9 would house community college classes for approximately 150 to 300 weekday students, 15 to 25 community-based evening classes for 225 to 375 students, and three to five Saturday morning classes for 45 to 75 students (Riley 1996).

Scenario 2: Phase I—Building 9 would initially undergo renovation and house a small number of community college classes (for up to 105 students at any one time).

Phase II—After renovation, Building 9 would house community college classes for approximately 150 to 300 weekday students, 15 to 25 community-based evening classes for 225 to 375 students, and three to five Saturday morning classes for 45 to 75 students (Riley 1996). (This is the same as Scenario 1, Phase II.)

National Oceanic and Atmospheric Administration (NOAA)

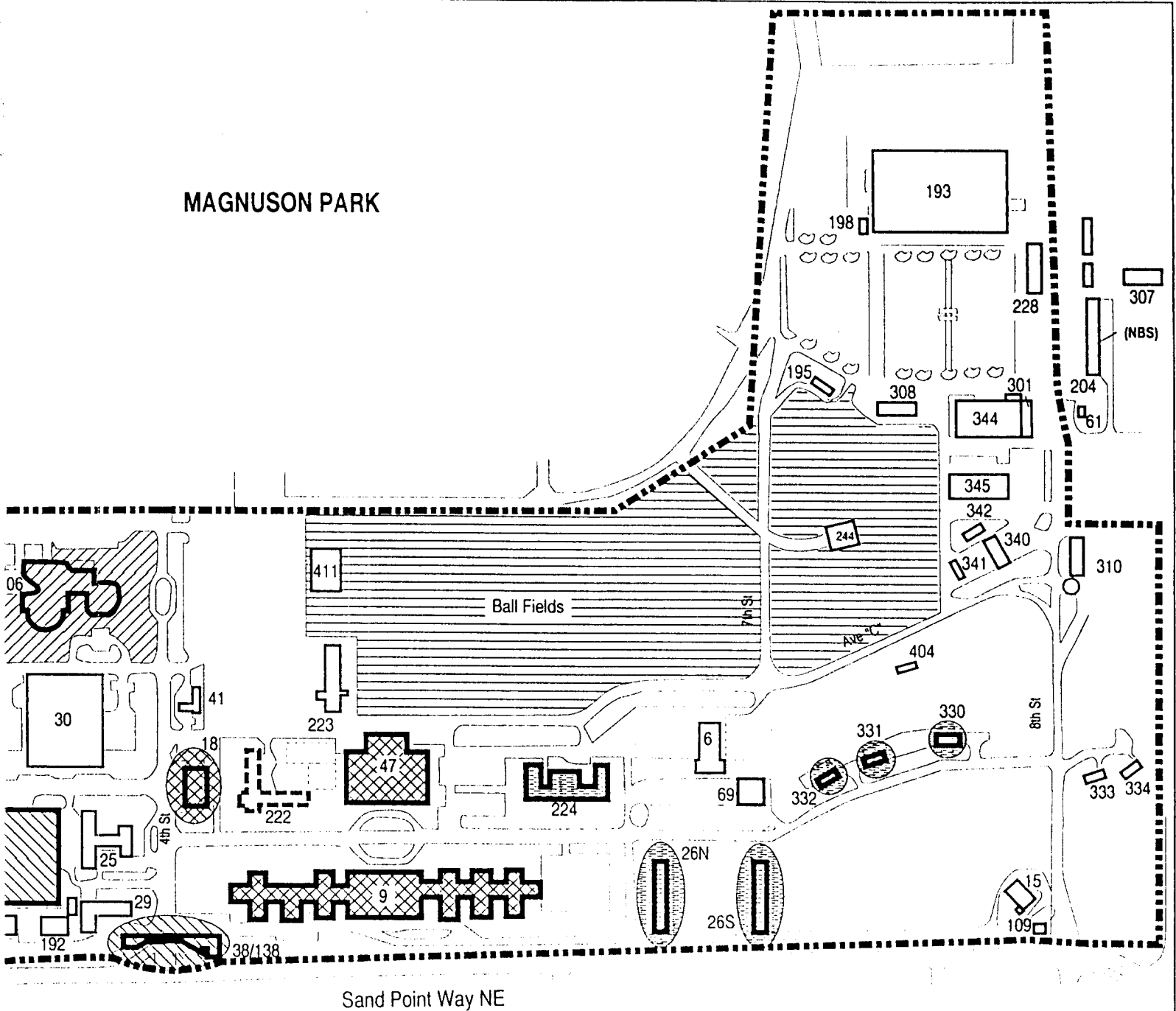
Lake Washington



- Demolition
- Senior Center
- Housing
- Education
- Recreation
- Fire Training
(Note: Streets and other parking)
- Office, Storage, Training
- Note: Infrastructure upgrades will be sitewide

2

MAGNUSON PARK



LEGEND

- Interim Lease Project Area
- Foundation Only
- Bldg Location and Number

re Training
 Note: Streets and other parking lots will also be used)
 fice, Storage, Training
 grades will be sitewide

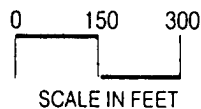


Figure 2-1
Preferred Alternative

SAND POINT
 ENVIRONMENTAL
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1

National Oceanic and Atmospheric Administration (NOAA)

Lake Washington

NOAA

1st St

NOAA

NOAA

406

30

3rd St

Ave "B"

2

5

25

27

299

12

67

137

192

29

283

Pier No. 1

31

115

206

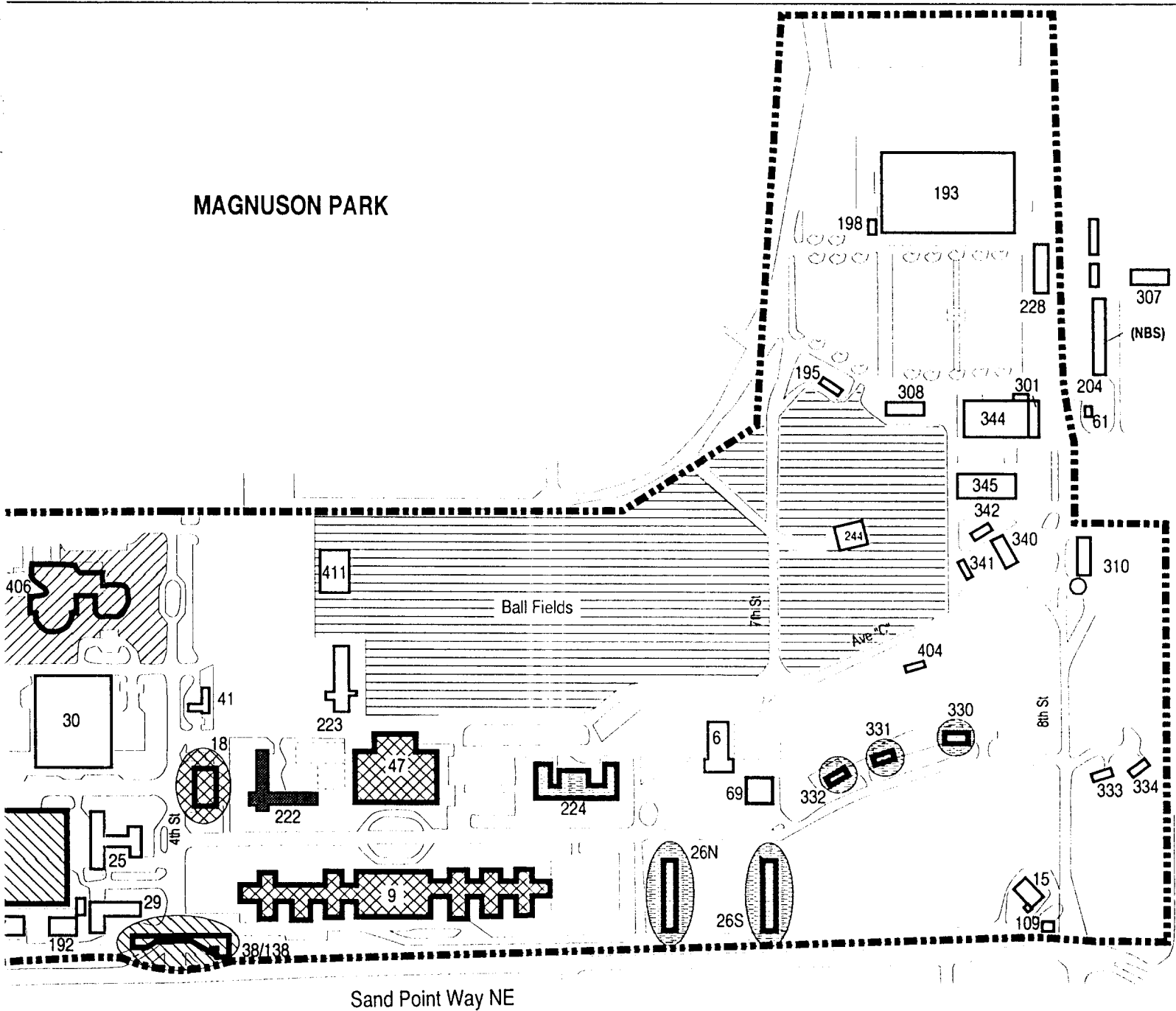
98

40

Sand Point Way NE

- Vacant
- Senior Center
- Housing
- Education
- Recreation
- Fire Training
(Note: Streets and other parking lots)
- Office, Storage, Training

Note: Infrastructure upgrades will be site-wide.



Dormitory use is also being considered for Building 9. The community college anticipates that approximately 200 students could be accommodated in the dormitory.

Administrative Office Use. Under Scenario 1, 5 to 10 offices would be shared by high school and NSCC administrative staff. If residential dormitories for NSCC are located at Sand Point, approximately one to two residential administration offices would be at the same location. After September 1999, it is possible that Seattle Community College District VI offices could relocate to Building 9. If this move occurs, it would add approximately 70 employees.

Under Scenario 2, the offices would be used by the community college only.

Baseball Fields

The Seattle Department of Parks and Recreation (City Parks) would use the ballfields at Sand Point in the same manner as in the past. Anticipated use is as follows:

- Mid-March to early June: Little League
- Late spring to summer: City softball leagues, T-ball training, and coach pitch training

The areas of interest are the existing ballfields east and south of Building 47 (Figure 2-1). No lit fields are necessary. The Parks Department would provide portable sanitation facilities near the fields; Magnuson Park also has restrooms. The Parks Department would cover the Navy and the City of Seattle under its Little League liability insurance.

Sitewide Infrastructure Upgrades

The infrastructure would be upgraded sitewide to include water, sewer, drainage, electrical, natural gas, and telephone. The City has performed preliminary analyses of the utilities. Relative to current codes, the utilities, in many cases, are either substandard, deficient, antiquated, or in need of repair.

Various Roads and Parking Lots

The Seattle Fire Department Training Division proposes to use space and facilities at Sand Point for the following training purposes:

- New recruit driver training
- New recruit fire hose training

Driver Training. Under an Interim Lease Agreement, the Seattle Fire Department Training Division proposes to use Sand Point streets and unused parking areas for driver training for new recruits (Friedli 1996b). Firefighter recruits and their instructors would practice driving fire apparatus on the streets and in large unused parking areas such as that southwest of Building 67. No sirens or red lights would be used.

Driver training would take place during the week of September 2 through 6, 1996. During this training period, recruits and instructors would use restroom facilities and a lunch/break area in Building 67.

Fire Hose Training. Because of the unusually large number of firefighter recruits expected in 1996, the normal training area at Fire Station 14 is expected to be extremely overcrowded. To handle the overcrowding, an additional, remote training site is proposed near Building 67. Use of streets and unused large parking areas near Building 67 for hose training would provide a protected, nonpublic area to lay fire hose, hook up to fire hydrants, and perform other similar hose training exercises. Currently, hose drills are performed on a public street right-of-way on Harbor Island. It is expected that this right-of-way may not be available during the later spring and summer recruit classes. The areas near Building 67 would be used for hose training, and restrooms and a lunch/break area in Building 67 would be used from September 9 to October 4, 1996. No sirens or red lights would be used (Friedli 1996a).

Building 5

Building 5 has been designated for office, storage, and training activities. the estimated uses are as follows: storage (approximately 208,754 square feet) and office (approximately 221,540 square feet).

Building 138

Building 138 would be used for a site project office to coordinate the rehabilitation and other construction activities on site.

Building 406

Building 406 would be designated for use as a senior center, although the specific activities have not been developed at this time.

Building 222

Building 222 is a large, two-story wood frame structure built in 1939 and proposed for demolition. It is formed by two wings in a nearly L-shaped configuration.

An engineering evaluation completed in 1994 indicates that large, active cracks exist in the foundation. The concrete foundation wall has moved and leans excessively inwards on the western and southern ends of the building. The building is not in compliance with current seismic codes or engineering practice and modification completed in the basement will not prevent serious damage to the building and/or collapse in an earthquake. Interior wood columns have overturned in the same direction as the western exterior foundation wall. Base timber columns are not physically secured to the concrete pedestals as necessary to prevent lateral and vertical loads from unseating them. At the column cap, only two lag bolts connect the column and the underside of the floor beam.

The following recommendation resulted from the engineering evaluation:

"...Building #222 be condemned. The inspection of the structure shows that serious structural problems exist in the west wing of the building that must be repaired and modified.....the building should be kept locked and unoccupied by any tenant."

Because of these conditions, under the interim lease, the City would demolish the building.

2.2.2 Minimal Office Alternative

This alternative is similar to the preferred alternative (above) except for the proposed uses of Building 5 and Building 222. Under the minimal office alternative, there will be no office use in Building 5. The portion (221,540 square feet) of Building 5 proposed for office use under the preferred alternative and Building 222 would remain intact and vacant.

2.2.3 No-Action Alternative

Under the no-action alternative, the following would occur:

- The Navy would maintain its ownership of the Sand Point Naval Station, and the facility would not be used for any military or civilian purpose.

- The Navy would continue to serve as property caretaker and would maintain the facility to prevent deterioration and provide security.

2.3 PREVIOUS ENVIRONMENTAL DOCUMENTATION

The Navy has conducted several studies and environmental analyses associated with the Sand Point Naval Station. Environmental analysis for this proposed action (i.e., the interim lease) relied on the following studies:

- *Final Environmental Impact Statement for Realignment of Naval Station Puget Sound, Seattle, Washington* (U.S. Navy 1991)
- *Historic and Archaeological Resources Protection (HARP) Plan for Naval Station Puget Sound, Seattle, Final* (EDAW 1994)
- *Base Realignment and Closure (BRAC) Cleanup Plan for Naval Station Puget Sound, Seattle, Seattle, Washington* (URS 1995a)
- *Draft Environmental Impact Statement, Reuse of Naval Station Puget Sound, Seattle* (in preparation).

2.4 SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATING MEASURES

Based on the analysis presented in Chapter 3, neither the Navy's proposed action nor the minimal office alternative is expected to result in significant impacts to the environment, provided specified mitigating measures are implemented. Assuming the mitigating measures identified in this EA are implemented by the City, an alternative will be selected and a FONSI will be issued for that alternative.

A summary and comparison of environmental impacts and mitigating measures are presented in Table 2-1 by resource category. This table compares the preferred, the minimal office, and the no-action alternatives.

2.5 CONCLUSION OF FINDINGS

The preferred alternative is the highest and best use of the property. Impacts for the preferred alternative and the minimal office alternative are considered to be similar

Table 2-1
Comparison of Environmental Impacts and Mitigating Measures
for Preferred, Minimal Office, and No-Action Alternatives

Affected Environment	Preferred Alternative	Minimal Office Alternative	No-Action Alternative
Land Use			
Environmental impacts			
Residential	No significant impacts.	Same as preferred alternative.	Residential areas would not be utilized.
Recreational	No significant impacts.		Recreational areas would not be utilized.
Administrative/maintenance	No significant impacts.		No significant impact.
Educational	No significant impacts.		No educational use would occur.
Institutional	No significant impacts.		Institutional facilities would not be used.
Mitigating measures	None required.	None required.	None required.
Historic and Cultural Resources			
Environmental impacts	No impacts on archaeological resources because no resources are identified. Buildings in the proposed naval station historic district will be kept architecturally intact except for Building 222, which will be demolished. However, this activity is not determined to be significant.	No impacts on archaeological resources because no resources are identified. Under this alternative all buildings will remain intact.	No impacts on archaeological resources. Buildings in the proposed historic district would continue to be maintained and kept architecturally intact by the Navy.
Mitigating measures	Follow the Navy HARP Plan. All demolition plans to be reviewed and approved by the SHPO.	Follow the Navy HARP Plan.	Follow the Navy HARP Plan.
Recreation			
Environmental impacts	Additional recreational space would be open for general public use, thus reducing the shortage of open space in the Northeast Subarea of the City of Seattle. Use of the existing Navy recreation center would improve public access to indoor recreational facilities.	Same as preferred alternative.	Recreational facilities and opportunities at Sand Point would not be used.
Mitigating measures	None required.	None required.	None required.
Transportation			
Environmental impacts	Between 4,562 and 6,036 average daily trips are expected to be generated. Street networks are expected to operate at acceptable conditions, except for N.E. 95th St./Sand Point Way N.E. and the Montlake Bridge. Level of service at N.E. 95th St./Sand Point Way N.E. would deteriorate from level D today to level F in the year 2000, with the preferred alternative. This alternative would increase Montlake Bridge traffic by 3 percent. Numbers of bus transit riders, pedestrians, and bicyclists are expected to increase. Parking is not anticipated to be a problem.	Approximately 3,696 average daily trips are expected to be generated. Impacts on street networks will be the same as for the preferred alternative. Bridge traffic will be increased by 2 percent. All other impacts are the same as for the preferred alternative.	No traffic would be generated. While it is not an impact of the no-action alternative, level of service at N.E. 95th St./Sand Point Way N.E. will deteriorate from level D today to level E in the year 2000. Similarly, traffic on the Montlake Bridge will increase.

Table 2-1 (Continued)
Comparison of Environmental Impacts and Mitigating Measures
for Preferred, Minimal Office, and No-Action Alternatives

Affected Environment	Preferred Alternative	Minimal Office Alternative	No-Action Alternative
Transportation (cont.)			
Mitigating measures	The City will adjust signal timing to reflect changes in traffic conditions as appropriate. The City will signalize or improve the intersection of Sand Point Way N.E. and N.E. 95th St., if warranted.	Same as preferred alternative.	None required.
Noise			
Environmental impacts	Overall noise impacts are expected to be slight.	Same as preferred alternative.	The noise level would remain low under caretaker status.
Mitigating measures	None required.	None required.	None required.
Public Services and Utilities			
Environmental impacts	Since there will be upgrades to site and building utilities, there would be no significant adverse impacts.	Same as preferred alternative.	Existing systems would be maintained by the Navy.
Mitigating measures	None required.	None required.	None required.
Crime and Law Enforcement			
Environmental impacts	On site: An increase in crime would result on site as a result of the increased population using the site. This increase would not be significant, as crime rates would remain below the city average. Off site: There would be no significant crime increase in adjacent neighborhoods. Seattle Police Department would provide protection.	Same as preferred alternative.	The Navy would continue to provide security. The City police have concurrent jurisdiction and would respond if called.
Mitigating measures	None required.	None required.	None required.
Environmental Health			
Environmental impacts	Buildings: - Demolition and remodeling could release friable asbestos that may pose a health risk. - Children exposed to lead-based paint in structures where abatement has not been performed may be susceptible to lead poisoning. Grounds: - Contaminated soils and sediments could remain in a few isolated areas and excavation could uncover them.	Similar to preferred alternative except that no buildings are proposed for demolition; therefore, the potential for release of friable asbestos may be slightly reduced.	None. Because no demolition, grading, or excavation would be performed, no disturbances requiring cleanup would occur.

Table 2-1 (Continued)
Comparison of Environmental Impacts and Mitigating Measures
for Preferred, Minimal Office, and No-Action Alternatives

Affected Environment	Preferred Alternative	Minimal Office Alternative	No-Action Alternative
Environmental Health (cont.)			
Mitigating measures	None required.	None required.	None required.
Water			
Environmental impacts	Demolition and excavation activities may result in increased sedimentation but are not anticipated to be significant.	Same as preferred alternative.	None anticipated.
Mitigating measures	None required.	None required.	None.
Air Quality			
Environmental impacts	Dust emissions and exhaust emissions from temporary construction and demolition activities may add slightly to background concentrations of pollutants. Some additional increases in traffic will increase emissions but are not expected to result in exceedances of the carbon monoxide standards.	Similar to preferred alternative except that no buildings are proposed for demolition, and the total office space has been reduced. Dust emissions from construction may be slightly lower. Emissions from traffic are not expected to result in exceedances of carbon monoxide standards.	None required.
Mitigating measures	None required.	None required.	None required.
Biological Resources/Endangered Species			
Environmental impacts	No significant impacts.	No significant impacts.	None.
Mitigating measures	None required.	None required.	None required.
Socioeconomics			
Environmental impacts	Rehabilitation of housing units could affect property values if out of character with neighborhood. Possible short-term impacts from temporary use by Ballard High.	Same as preferred alternative.	None.
Mitigating measures	None required.	None required.	None required.

Note:

HARP Historic and Archaeological Resources Protection

except for the historic and cultural resource, environmental health, and air quality topics. Under the preferred alternative, Building 222 will be demolished. This action could be mitigated through review and approval by the State Historic Preservation Office (SHPO). This building would remain intact under the minimal office alternative; therefore, no impacts to historic or cultural resources are anticipated. Under the environment health and air quality analysis, it has been determined that dust emissions may be slightly higher under the preferred alternative due to the demolition of Building 222. These impacts can be mitigated through the application of Best Management Practices and therefore no adverse significant impacts are anticipated under the preferred alternative. Building 222 has been condemned by the City due to its deteriorated condition and could create a health and safety hazard if it were to remain intact. Both the preferred alternative and the minimal office alternative would require mitigation to alleviate potential transportation impacts.

The no-action alternative does not meet purpose and need goals; it does not promote the rapid reuse of the property, does not allow the temporary placement of Ballard High School, and does not support local redevelopment in obtaining funding for homeless assistance.

3.0 AFFECTED ENVIRONMENT, ENVIRONMENTAL CONSEQUENCES, AND MITIGATING MEASURES

This section presents the environment affected, as well as the environmental consequences and mitigating measures of implementing the preferred alternative (interim lease), the minimal office alternative, and no-action alternative. The following elements are evaluated:

Land use	Crime and law enforcement
Historic and cultural resources	Environmental health
Recreation	Water
Transportation	Air quality
Noise	Biological resources
Public services and utilities	Socioeconomics

The analysis compares the preferred, the minimal office, and the no-action alternatives and notes the differences in impacts, if any. Where possible, a comparison of the degree of impact is made between the alternatives. Mitigating measures are discussed for those impacts that could be significant.

3.1 LAND USE

This section evaluates the land use types located in the portion of Sand Point Naval Station covered under the preferred, the minimal office, and the no-action alternatives. Comparative (proposed versus existing land uses) and compatibility (proposed land use related to neighborhood character) analyses were conducted. Figure 3-1 shows the buildings and areas covered under the Interim Lease Agreement.

3.1.1 Affected Environment (Existing Conditions)

Land and Building Uses at Sand Point Naval Station

Because of the reduction in activity at Sand Point Naval Station in preparation for its closure, it was necessary to determine and compare baseline or "existing conditions" with proposed future uses. Information from periods just before and after the announcement of the base closure (1989 through 1993) was used to characterize existing conditions. The affected environment (or existing conditions) is Sand Point Naval Station and the surrounding area. To establish consistent terminology throughout this land use section,

the following general categories were used to describe land and building uses. The definitions for these categories were obtained and summarized from zoning codes of several local jurisdictions.

- **Residential**—a building or area used to provide permanent or temporary living space
- **Recreational**—an area devoted to facilities and equipment for swimming, tennis, and walking outdoors
- **Commercial**—an area used by businesses and individuals to provide retail services
- **Educational (Educational/Arts/Cultural)**—an area designed for academic instruction, arts, and cultural activities, including facilities to support these activities
- **Administrative/Maintenance**—an area designated for the management and implementation of public or business activities, or an area established to keep equipment and structures in good repair
- **Institutional**—a building or area used for nonprofit, religious, or public use, such as a church, library, public or private school, hospital, or government-owned or -operated building
- **Light Industrial (Light Industrial/Warehouse)**—an area used for the manufacture and production of goods, including warehousing

Sand Point Naval Station, which was officially closed in September 1995, is currently under caretaker status. At this time, only a security and maintenance contractor is on the base. The former base is entirely surrounded by a chain link fence. There are two security-controlled access points: one along Sand Point Way N.E. at Building 38, and another along Avenue "C", north of Building 310 on N.E. 65th Street (which becomes the Magnuson Park access road).

Sand Point Naval Station encompasses 152 acres (61.5 hectares) that were used for residential, recreational, commercial, institutional, and administrative/maintenance activities. The approximate acreages for each activity are presented in Table 3-1. (Please note that Table 3-1 indicates land uses only, not building uses.) Important historic buildings are located on the former base and are discussed in Section 3.2.

Table 3-1
Existing Land Use Categories

General Use Categories	Existing Conditions Acreage (Hectares)
Residential	15 (6)
Recreational	30 (12)
Commercial	30 (12)
Educational (educational/arts/cultural)	N/A
Administrative/maintenance	72 (29) ^a
Institutional	5 (2) ^b
Light industrial	N/A
Other	N/A
Total	152 (61.5)

^aIncludes light industrial and NOAA property

^bNational Biological Services (former U.S. Fish and Wildlife Service)

Notes:

Acreages are approximate (numbers have been rounded or estimated)

N/A Not applicable

The following paragraphs describe land and building uses at Sand Point Naval Station when it was in operation. Table 3-2 lists specific building uses within the land use areas. Figure 3-1 shows existing land use areas at the base.

Residential Land Use Areas. Residential land use at Sand Point Naval Station was confined primarily to 15 acres (6 hectares) on the west/southwest portion. On-base housing consisted of eight buildings and over 300,000 square feet (27,870 square meters) of living space, with manicured landscaped areas and paved roads. All residential buildings were occupied by military personnel. Total housing capacity was approximately 544 people.

Five officer family houses (Buildings 330, 331, 332, 333, and 334), bachelor officer quarters (BOQ), bachelor enlisted quarters (BEQ), and general quarters (enlisted barracks) are located on base. These quarters occupied three buildings (Buildings 9, 26, and 224) and contained a total of 277 rooms and 449 beds. From 1989 through 1993, the occupancy rate for the residential buildings was 50 to 70 percent in the winter and 80 to

Table 3-2
Existing Conditions—
Building Uses Within Land Use Areas

Within Residential Land Use Area			
Building No.	Existing Building Function	Building Use Type	Square Footage (Square Meters)
9	Enlisted Barracks	Residential	223,516 (20,765)
26N	Bachelor Officer Quarters	Residential	16,082 (1,494)
26S	Bachelor Officer Quarters	Residential	17,282 (1,605.5)
224	Bachelor Enlisted Quarters	Residential	38,264 (3,555)
330	Family Housing	Residential	6,390 (594)
331	Family Housing	Residential	6,233 (579)
332	Family Housing	Residential	6,233 (579)
333	Family Housing	Residential	1,990 (185)
334	Family Housing	Residential	2,113 (196)
408	Parking	Residential	660 (61)
Total Within Residential Area			318,763 (29,613)
Within Recreational Land Use Area			
Building No.	Existing Building Function	Building Use Type	Square Footage (Square Meters)
6	Bowling Alley	Recreational	10,793 (1,003)
15	Craft/Hobby Shop	Recreational	3,268 (304)
31	Boathouse	Recreational	3,141 (292)
47	Gym	Recreational	50,060 (4,650)
69	Parking Garage	Recreational	6,776 (629.5)
275	Boathouse (small craft)	Recreational	288 (27)
402	Boathouse	Recreational	1,760 (163.5)
410	Recreation Pavilion	Recreational	888 (82.5)
411	Pavilion Picnic Shelter	Recreational	888 (82.5)
Total Within Recreational Area			77,862 (7,233)

Table 3-2 (Continued)
Existing Conditions—
Building Uses Within Land Use Areas

Within Commercial Land Use Area			
Building No.	Existing Building Function	Building Use Type	Square Footage (Square Meters)
193	Commissary	Commercial	93,334 (8,670)
195	Travel Agency	Commercial	819 (76)
198	Thrift Shop	Commercial	300 (28)
228	Uniform Shop	Commercial	4,074 (38)
244	Maintenance Shop	Administrative/Maintenance	5,011 (465.5)
301	Country Store	Commercial	9,500 (883)
308	Package Store	Commercial	4,202 (390)
310	Auto Hobby Shop	Commercial	4,020 (373.5)
340	Gas Pump Service Station	Commercial	To be determined
341	Gas Pump Service Station	Commercial	300 (28)
342	Gas Pump Service Station	Commercial	To be determined
344	Country Store	Commercial	11,000 (1,023)
345	Service Bay	Commercial	5,298 (492)
401	Sentry House	Institutional	60 (6)
404	Recreation	Recreational	1,120 (104)
Subtotals by Building Use Type Within Commercial Land Use Area			
Commercial Building			132,847 (12,341.5)
Recreational Building			1,120 (104)
Administrative/Maintenance Building			5,011 (465.5)
Institutional Building			60 (6)
Total Within Commercial Area			139,038 (12,917)

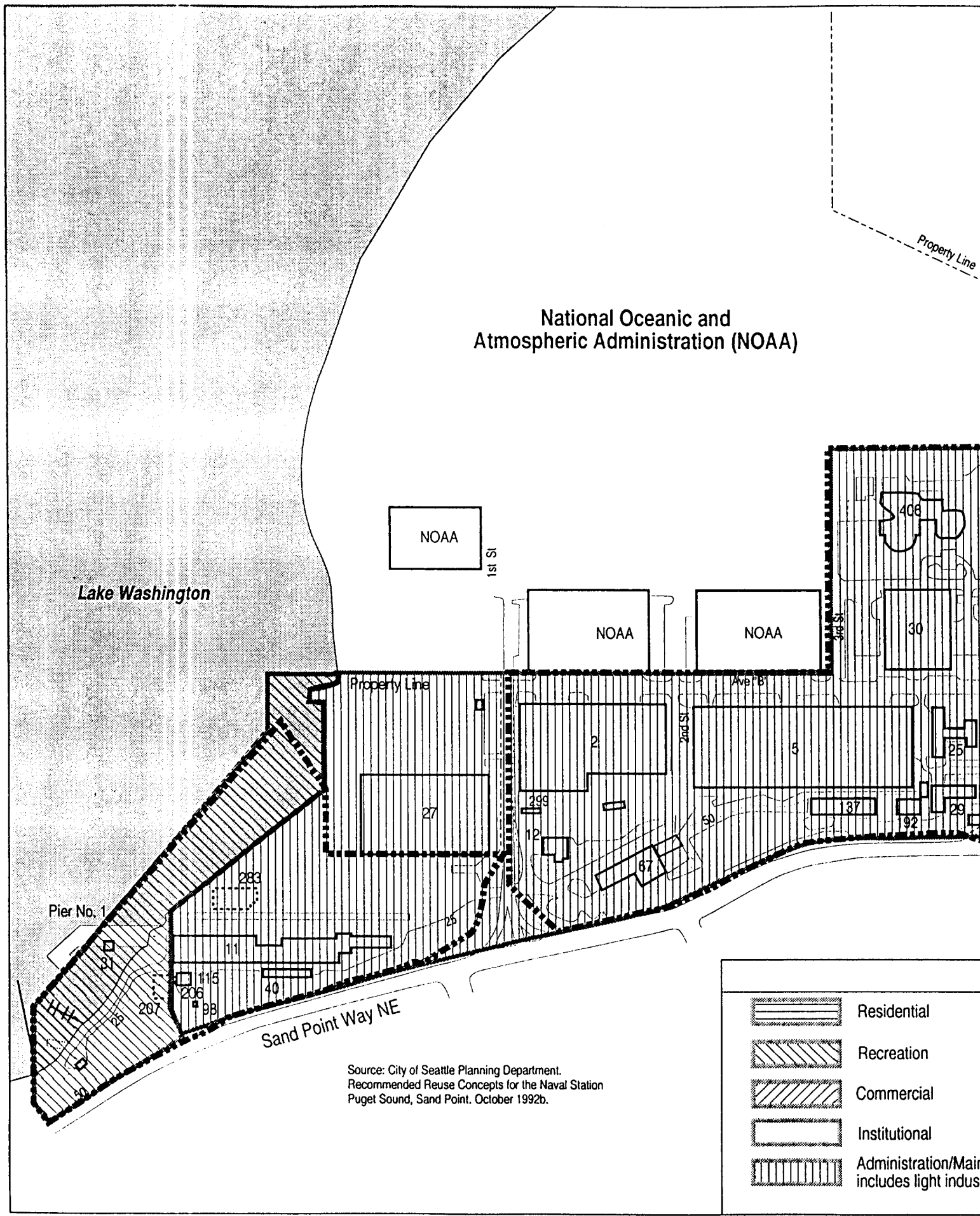
Table 3-2 (Continued)
Existing Conditions—
Building Uses Within Land Use Areas

Within Administrative/Maintenance Land Use Area			
Building No.	Existing Building Function	Building Use Type	Square Footage (Square Meters)
2	Training	Educational	144,232 (13,399)
5	Warehouse	Light Industrial	417,467 (38,783)
11	Public Works Shops	Administrative/Maintenance	59,206 (5,500)
12	Boiler	Administrative/Maintenance	5,653 (517)
18	Fire Station	Institutional	14,137 (1,313)
25	Administration	Administrative/Maintenance	27,892 (2,591)
27	Reserve Training	Educational	114,617 (10,648)
29	Dispensary	Administrative/Maintenance	33,744 (3,135)
30	Administration	½ Administrative/Maintenance ½ Recreational	40,033 (3,719) 40,033 (3,719)
38	Security	Institutional	58 (5)
40	Paint Shop	Light Industrial	924 (86)
41	Security	Institutional	2,030 (189)
67	Garage	Administrative/Maintenance	33,720 (3,133)
115	Public Works Storage	Light Industrial	1,500 (139)
138	Security	Institutional	12,806 (1,190)
192	Administration	Administrative/Maintenance	4,800 (446)
222	Administration	Administrative/Maintenance	30,126 (2,799)
223	Family Services Centers	Administrative/Maintenance	9,080 (843.5)
299	Public Works Storage	Light Industrial	1,120 (104)
406	Brig	Institutional	29,270 (2,719)
407	Hazardous Waste Storage	Administrative/Maintenance	548 (51)
Subtotals by Building Use Type Within Administrative/Maintenance Area			
Educational Building			258,849 (24,047)
Administrative/Maintenance Building			244,802 (22,742)
Recreational Building			40,033 (3,719)
Light Industrial Building			421,011 (39,112)
Institutional Building			58,301 (5,416)
Total Within Administrative/Maintenance Area			1,022,996 (95,036)
Within Institutional Land Use Area			
Building No.	Existing Building Function	Building Use Type	Square Footage (Square Meters)
204 ^a	NBS Laboratory	Institutional	9,572 (889)

^aNo use indicated for Buildings 307 and 61.

①

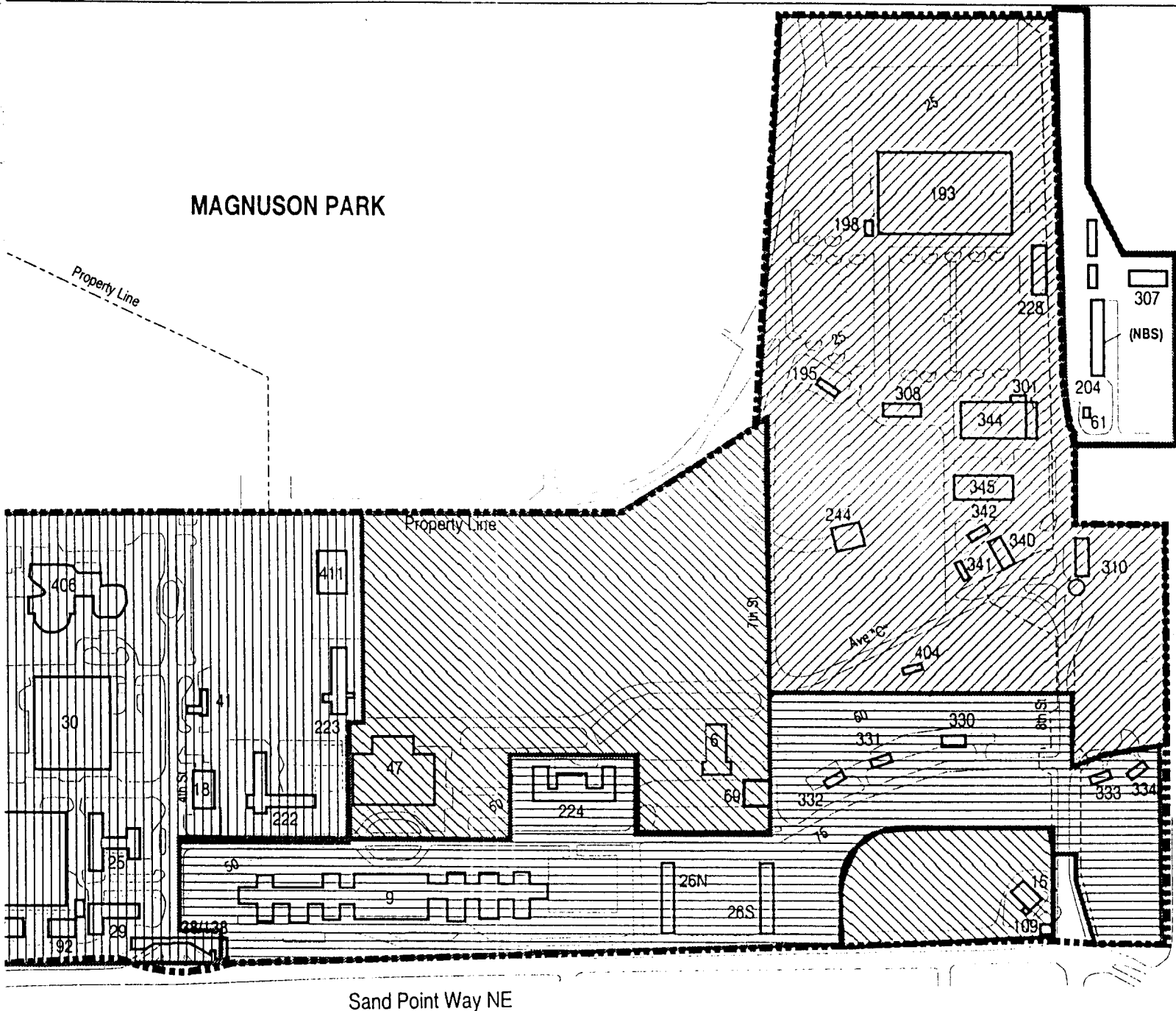
National Oceanic and Atmospheric Administration (NOAA)



Source: City of Seattle Planning Department.
Recommended Reuse Concepts for the Naval Station
Puget Sound, Sand Point. October 1992b.



MAGNUSON PARK



LEGEND

Residential

Recreation

Commercial

Institutional

Administration/Maintenance
includes light industrial

- Interim Lease Project Area
- Property Line
- Foundation Only
- Bldg Location and Number
- Elevation Contours in Feet Above Mean Sea Level



0 150 300
SCALE IN FEET

Figure 3-1
Existing Land Use Areas at Sand Point

SAND POINT
ENVIRONMENTAL
ASSESSMENT
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100 percent in the summer. To accommodate overflow during peak times or special events, cots or temporary facilities were set up in the gymnasium or other buildings.

Recreational Land Use Areas. The base had three recreational land use areas (that included water-related activities), which comprise approximately 30 acres (12 hectares). The first area includes over 1,000 feet (305 m) of land located along Lake Washington; the second area, an open area located in the central portion of the base, contains sports fields and play areas; and the third area, located in the southwestern portion of the base, is surrounded by residential land use. Water recreation-related areas include a boathouse with docking facilities. (See Section 3.3 for additional information about recreation.) Areas designated for recreational land use include nine buildings containing 77,862 square feet (7,233 m²) of space. Other buildings used for recreational purposes are found in the commercial and administrative land use areas (Buildings 404 and 30, respectively). A recreational pavilion is located in the commercial land use area near the southern end of the base. Table 3-3 lists the major recreational facilities and their approximate average frequency of use.

Table 3-3
Recreational Facilities and Frequency of Use

Facility	Frequency of Use
Tennis courts	30 people/day
Gymnasium	75 to 100 people/day
Bowling alley	10 people/month
Swimming pool	300 to 400 people/month
Sports fields	1,200 people/week
Marina	20 people/week
Estimated Average Total Use	8,340 to 9,190 people/month

Many major recreational events were held at Sand Point Naval Station in the last few years, and as many as 75,000 people per year used the facilities. The largest recreational event, held in 1992, was attended by 45,000 people. According to Navy security personnel, traffic problems were minimized through the use of on-base parking and an adequately staffed gate.

Commercial Land Use Area. The 30-acre (12-hectare) commercial land use area at the south end of the base, which contains a total of 12 commercial buildings and 133,000 square feet (12,356 m²) of commercial building space, is approximately the same

size as the recreational land use area. It contains mostly buildings that were used for commercial purposes, including a commissary, country store, service bays, and package store. The commissary alone occupies more than 93,000 square feet (8,640 m²). One recreational, one administrative/maintenance, and one institutional building are also located in the commercial land use area. All of the commercial buildings are located in the commercial land use area, along with many large, paved parking areas.

Educational Land Use Area (None). Educational, arts, and cultural land use areas are *not* specifically called out as being part of the current land uses at Sand Point Naval Station. However, certain buildings were designated for educational purposes. Nearly 260,000 square feet (24,154 m²) of building space was devoted to educational seminars and Navy training (e.g., reserve training was held in Buildings 27 and 2). Building 15, which is located near the southwest corner of the base in the recreational land use area, contained facilities for ceramics and other crafts. However, this building use was considered recreational.

Administrative/Maintenance Land Use Areas. The largest land use area on the base (occupying 76 acres [31 hectares]) is administrative/maintenance. This land use area has the greatest diversity of building uses at Sand Point Naval Station; however, the majority of buildings (10) were administrative. These included a family services building, a dispensary, a garage, hazardous waste storage, and several administrative buildings. The institutional use buildings included security buildings, a brig, a fire station, and a laboratory. The light industrial-use buildings included a warehouse, the paint shop, and public works storage. Educational buildings included a reserve training building.

Approximately 250,000 square feet (23,225 m²) of administrative/maintenance space exists throughout the base. Table 3-4 shows the number of tenants who occupied these building spaces over the past several years and the number of personnel associated with the tenants. Tenant levels prior to 1989 have been as high as 52. Space was leased to tenants associated with the military. Examples of tenants include a defense contracts office and a medical clinic. The average number of personnel between 1989 and 1993 was 1,196. These numbers do not include reservist or nonmilitary employees.

Institutional Land Use Area, Light Industrial Land Use Area, and Other (None). The existing land uses for institutional, light industrial, and other are *not* specifically called out in the land uses for Sand Point Naval Station; however, at the southeast portion of Sand Point, an undesignated area approximately 4 acres or 1.5 hectares) appears to be all institutional land use. Building uses for institutional and light industrial exist on the base. Institutional building uses can be found in the commercial and administrative/maintenance land use areas, as well as undesignated institutional land use areas. Light

Table 3-4
Number of Tenants (1989 through 1993)
Within the Administrative Maintenance Land Use Area

Fiscal Year	No. of Tenants	Personnel				
		Officer	Enlisted	Civilian	Contractor	Total
1989	37	108	584	652	50	1,394
1990	35	111	573	548	11	1,243
1991	34	119	564	513	12	1,208
1992	29	106	550	526	21	1,203
1993	24	65	479	375	14	933

industrial, with the largest square footage of any building use, can be found in the administrative land use area only.

Land Uses in Adjacent Neighborhood

Most of the neighborhood surrounding Sand Point Naval Station was built in the 1940s and 1950s. The city was divided into 12 subareas for planning and other purposes. Sand Point Naval Station and the adjacent neighborhood are located within the Northeast Subarea. The Northeast Subarea contains approximately 5,686 gross (includes open space, roads, etc.) acres (2,302 hectares) and is home to approximately 68,000 people (City Planning 1993c). For purposes of this environmental assessment, only the land uses within approximately 0.25 mile (0.40 km) of the base are considered in the compatibility analysis. The definite change in grade (steep hill) approximately 0.25 mile (0.40 km) west of the base and the change in neighborhood character within 0.25 mile (0.40 km) northwest and south of the base serve as natural boundaries to delineate the neighborhood. Figure 3-2 shows current City of Seattle zoning for the area, and Figure 3-3 shows current neighborhood land uses.

Neighborhood Residential Use. The surrounding neighborhood is primarily single-family residential, with a strip of multifamily residential along Sand Point Way N.E. across from the base. Single-family residential housing lies to the west of the multifamily housing area. There are approximately 17,376 single-family and 10,610 multifamily residential units in the Northeast Subarea. The Northeast Subarea has a slightly higher density than other areas, with five households per gross acre compared to four households per gross acre citywide.

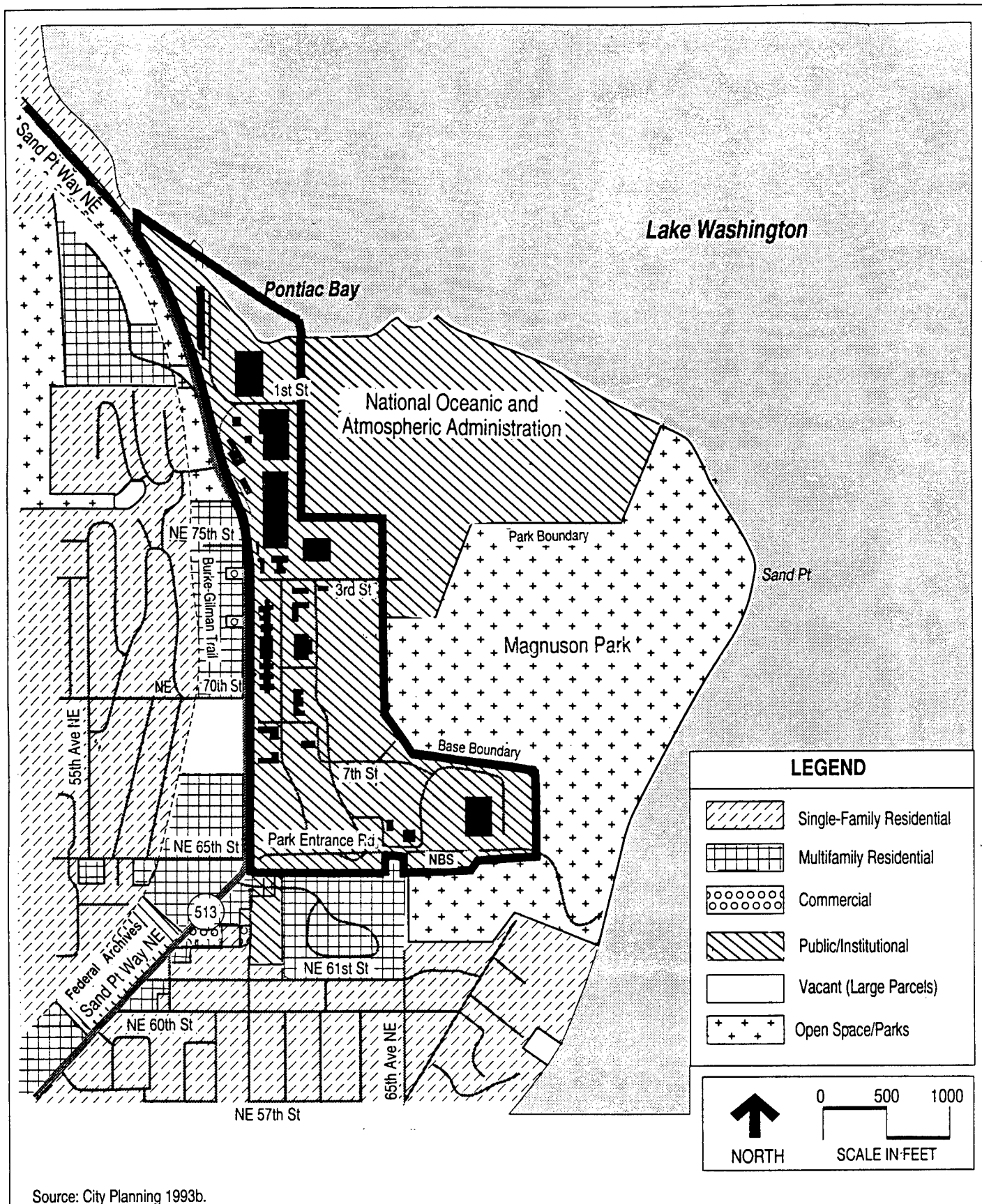


Figure 3-3
Current Neighborhood Land Uses

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Neighborhood Recreational Use. A number of recreational facilities are adjacent to the base and within the 0.25-mile (0.40-km) study area. Magnuson Park, which adjoins Sand Point Naval Station to the east, is a 195-acre (79-hectare) multipurpose recreational area that includes a waterfront area. Water-related activities are concentrated along approximately 2,000 linear feet (610 m) of shoreline. Recreational facilities include two softball fields, two soccer fields, six unlit outdoor tennis courts, two picnic areas, play areas, restroom facilities, a permanent float at the swimming beach, one boat launch site with three piers and two launching lanes, and paved and informal trails. A complete discussion of Magnuson Park and a recreational facilities map are included in Section 3.3.

The Burke-Gilman Trail, which is located approximately 400 to 600 feet (122 to 183 m) from the base to the west, separates the multifamily from the single-family housing west of the base. This regional pedestrian and bicycle corridor stretches approximately 20 miles (32 km) from the Fremont neighborhood of Seattle north to Bothell. The Burke-Gilman Trail connects with the Sammamish River Trail in Bothell, which adds approximately 9 miles (14.5 km). The total length of these regional trails is about 29 miles (47 km), extending from Fremont in Seattle to Marymoor Park in Redmond. The City plans to extend this trail system another 3 miles (5 km) west of Fremont to Shilshole Marina.

Other nearby recreational facilities include the Sand Point Country Club golf course, a private facility approximately three-fourths the size of Magnuson Park; the View Ridge Swim and Tennis Club, a private facility at N.E. 77th St. and Sand Point Way N.E.; and Matthews Beach Park, north of Sand Point Naval Station along the Burke-Gilman Trail, which is accessible from Sand Point Way N.E. Inverness Ravine and View Ridge parks are also within the neighborhood land use study area.

Neighborhood Commercial Use. Commercial land use adjacent to the base, across Sand Point Way N.E., consists of two small neighborhood commercial ventures: a dry cleaning facility and a convenience store. Several blocks south, along Sand Point Way N.E., are a crafts store and a restaurant.

Neighborhood Educational Use. Educational, arts, and cultural areas exist in the nearby area. Several licensed childcare facilities are located within the 0.25-mile (0.40-km) study area, and at least one school (View Ridge Elementary) is located approximately 1 mile west of the Sand Point Naval Station.

Neighborhood Institutional and Administrative Uses. Three federal facilities are located near the base: NOAA, NBS, and the Federal Archives. The 112-acre (45-hectare)

NOAA facilities (northeast of the base) contain six buildings totaling 602,000 square feet (55,926 m²). Three of these structures are used for offices and an auditorium. One building includes warehousing, offices, and a dive center. Two former hangars are used for bulk storage and some wet laboratory activities. The staging pier, used primarily to transport personnel and supplies, can accommodate a vessel 250 to 300 feet (76 to 91 m) long.

South of N.E. 65th Street, the 4.2-acre (1.7-hectare) NBS houses fishery research facilities and office space. Existing buildings, including four newly constructed buildings, contain approximately 56,500 square feet (5,249 m²). NBS moved into the new buildings in April 1994.

The Federal Archives are located on the west side of Sand Point Way N.E., south of the base. The primary activity there is information storage, which could be considered a warehouse use.

3.1.2 Environmental Consequences

Preferred Alternative

The proposed building uses under the preferred alternative are shown in Table 3-5 and on Figure 2-1. Buildings within the preferred alternative that will continue to be used for residential purposes include Buildings 26N, 26S, 224, 330, 331, and 332. The proposed building uses that are part of the preferred alternative and are changing from the existing condition (defined as the condition prior to base closure) include: Buildings 9 (residential), 47 (gym), 18 (fire station), and 5 (warehouse), which will now be used for office and storage; Buildings 38 (Sentry House) and 138 (security), which will now be used for office, storage, and training purposes (temporary field office); Buildings 406 (brig) and 67 (garage), which will now be used for institutional purposes (probably as a senior center and for fire training, respectively); and Building 222 (administration), which is scheduled for demolition.

The overall effect will be an increase in buildings used for educational and office purposes and a decrease in buildings used for light industrial and residential purposes.

The surrounding neighborhood land uses are single-family residential, institutional (public and institutional), commercial (four small commercial ventures), and recreational (open space). The uses for the buildings listed in Table 3-5 would be compatible with residential neighborhood uses. The changes proposed for some buildings to be used for institutional or office, storage, and training are also compatible with similar existing uses

Table 3-5
Proposed Building Uses Under the Preferred and Minimal Office Alternatives

Building No.	Existing Building Function*	Existing General Land Use Category*	Preferred Alternative	Square Footage (Meters)	Minimal Office Alternative	Square Footage (meters)
5	Warehouse	Light industrial	Office/storage	208,734/208,733 (19,391/19,391)	Storage/vacant	208,734/208,733 (19,391/19,391)
9	Enlisted barracks	Residential	Educational	223,516 (20,765)	Educational	223,516 (20,765)
18	Fire station	Institutional	Educational	14,137 (1,313)	Educational	14,137 (1,313)
26N	Bachelor officer quarters	Residential	Residential	16,082 (1,494)	Residential	16,082 (1,494)
26S	Bachelor officer quarters	Residential	Residential	17,282 (1,605.5)	Residential	17,282 (1,705.5)
38	Security (Sentry House)	Institutional	Office, storage, training	58 (5)	Office, storage, training	58 (5)
47	Gym	Recreational	Educational	50,060 (4,650)	Educational	50,060 (4,650)
67	Garage	Administrative/maintenance	Institutional (fire training)	33,720 (3,133)	Institutional (fire training)	33,720 (3,133)
138	Security	Institutional	Office, storage, training	12,806 (1,190)	Office, storage, training	12,806 (1,190)
222	Administration	Administrative/maintenance	Demolition	30,126 (2,799)	Vacant	30,126 (2,799)
224	Bachelor enlisted quarters	Residential	Residential	38,264 (3,555)	Residential	38,264 (3,555)
330	Family housing	Residential	Residential	6,390 (594)	Residential	6,390 (594)

Table 3-5 (Continued)
Proposed Building Uses Under the Preferred and Minimal Office Alternatives

Building No.	Existing Building Function ^a	Existing General Land Use Category ^a	Preferred Alternative	Square Footage (Meters)	Minimal Office Alternative	Square Footage (meters)
331	Family housing	Residential	Residential	6,233 (579)	Residential	6,233 (579)
332	Family housing	Residential	Residential	6,233 (579)	Residential	6,233 (579)
406	Brig	Institutional	Institutional (Sr. Ctr.)	29,270 (2,719)	Institutional (Sr. Ctr.)	29,270 (2,719)

^aExisting refers to the building's use prior to base closure.

in the neighborhood. There are no educational uses of base buildings in the existing condition. The existing buildings that will be used for educational purposes were used for administrative/maintenance or recreational purposes. The decrease in administrative/maintenance building use would increase compatibility with the surrounding neighborhood. The recreational area would not change.

It is possible that Ballard High School (Seattle School District) could be relocated temporarily to Sand Point Naval Station (Building 9) from 1997 through 1999, while the existing high school is being renovated. No significant environmental consequences or impacts on building or area land uses are expected because the use would be temporary.

However, since the property is currently zoned for single-family housing, the City is proposing zoning changes to accommodate its reuse plan. These proposed changes, along with the actual proposed changes to the City reuse plan, were presented for public comment on May 28, 1996. The City is also preparing a State Environmental Policy Act EIS on these changes.

In summary, no significant environmental consequences or impacts are expected from the changes in building and land use.

Minimal Office Alternative

Under the minimal office alternative, all proposed uses are similar to the uses under the preferred alternative with the exception of Buildings 5 and 222. Under this alternative, part of Building 5 would be used for storage (208,734 sq feet), and the remainder (208,733 sq feet) would remain vacant.

Similar to the preferred alternative, no significant environmental consequences or impacts are expected from the changes in building and land use.

No-Action Alternative

Under the no-action alternative, there would be no land and building uses because the Navy would only maintain (not use) Sand Point Naval Station. Potential environmental consequences associated with the no-action alternative are as follows:

- Housing and other neighborhood-compatible facilities would not be used
- The federal government would continue to pay to maintain a facility without benefit

3.1.3 Mitigating Measures

Preferred and Minimal Office Alternatives

Environmental consequences resulting from implementing the preferred alternative changes to land or building uses and from incompatibility with neighborhood character were determined to be insignificant; therefore, no mitigating measures are suggested.

No-Action Alternative

No mitigating measures are required.

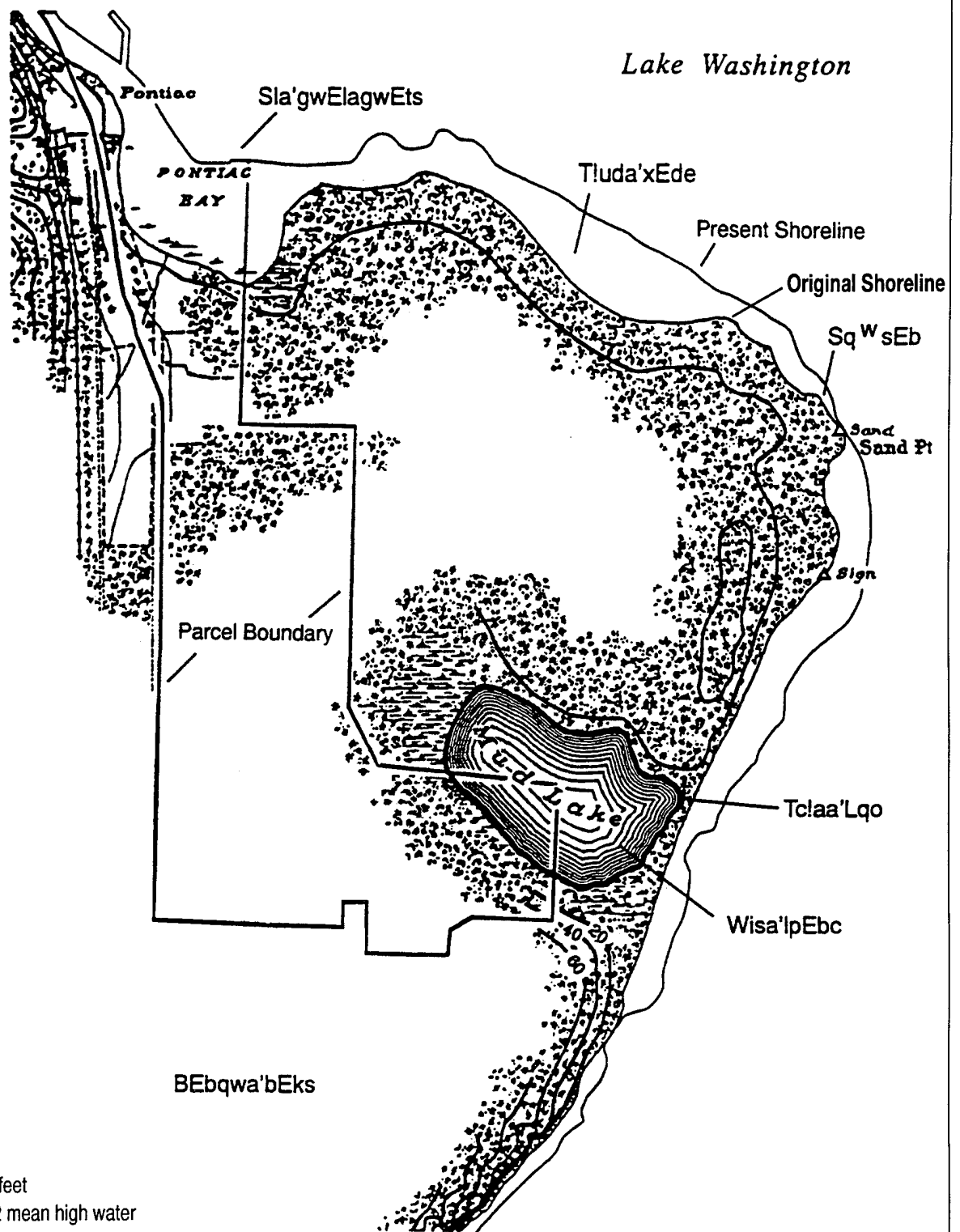
3.2 HISTORIC AND CULTURAL RESOURCES

This section discusses the history of Sand Point Naval Station, criteria for historic building and historic district eligibility for the National Register of Historic Places, impacts of the preferred, minimal office, and no-action alternatives on historic and cultural resources, and potential mitigating measures.

3.2.1 Affected Environment

History

The history of the Sand Point area is rooted in aboriginal Native American use of Lake Washington and its environs. Buerge (1984), using a number of sources, including the accounts of T. T. Waterman, J. P. Harrington, and A. Ballard, summarized this early period. Natives who used the lake were known as "hah-chu-AHBSH" (xatou'abc) or "people of the lake." (In this section, native names in parentheses are from the work of Waterman [1922].) According to Buerge (1984), seven winter villages were located around the lake shore; a typical village consisted of houses clustered at the mouth of a salmon stream. In the mid-19th century, these groups numbered perhaps 700 people (Buerge 1984). The largest and most influential group, the "hloo-weelth-AHBSH," was situated on the shores of Union Bay on the important portage between Lake Washington and the salt water of Puget Sound (Buerge 1984). This group used Green Lake and the salmon resources of Ravenna Creek. A group possibly associated with the "hloo-weelth-AHBSH" inhabited three longhouses on the shores of Wolf Bay, immediately south of Sand Point (Figure 3-1). These people used a small prairie (BEbqwa'bEks) near the current Windermere community and the resources of Mud Lake (Wisa'lpEbc) on Sand Point (Buerge 1984) (Figure 3-4). Sand Point was given the name "sqwab" (Sq'sEb),



Notes:

Contour Interval - 20 feet

Elevation above 1902 mean high water

Not to Scale

Sources: base map (USCGS 1902); modern shoreline and naval station
parcel boundary (USGS 1983); native place names (Waterman 1922)

Figure 3-4
Sand Point Geography Circa 1902
(Before Development of Naval Station)

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while its northern shore near Pontiac Bay was called T!uda'xEde or "plant with small, inedible white berries" (Waterman 1922). Pontiac Bay, on the north shore of Sand Point, was called Sla'gwElagwEts or "cedar bark, where it grows" (Waterman 1922). Just north of Sand Point, another group, the "tu-oh-beh-DAHBSH," lived at the mouth of Thornton Creek, which empties into the lake at Matthews Beach.

Many of the winter village sites on Lake Washington were evidently occupied as late as the 1860s, and settlements at Leschi and on Lake Union were perhaps inhabited until the 1880s (Buerge 1984). Native peoples apparently continued to regularly use the lake until 1916 when construction of the Lake Washington Ship Canal by the U.S. Army Corps of Engineers lowered the lake's level by about 9 feet (2.7 m) (Buerge 1984).

The Sand Point area was first surveyed by John R. Neal in 1855 under contract with the Government Land Office (1856). EuroAmericans settled the area in the 1860s under the Homestead Act (EDAW 1993a), and in the 1870s, Morgan J. Carkeek, a Seattle pioneer, acquired property along Pontiac Bay. This property, which was subsequently deeded to the City in 1918 for a park, eventually became part of the naval base in 1929 (EDAW 1993a). Lake Washington Shipyards at Pontiac Bay were served by the Maple Saw Mill at what is now Matthews Beach and by the Seattle, Lake Shore & Eastern Railroad, which by 1885 extended to Pontiac Bay (EDAW 1993a). In approximately 1900, the shipyards moved to Houghton, Washington, and a brickyard that used clay sources west of Sand Point was developed in the Pontiac Bay area (EDAW 1993a). The lowering of the lake's level in 1916, which was caused by the construction of the Lake Washington Ship Canal, significantly altered the shoreline configuration in the Sand Point area (Figure 3-4), diminishing the size of Mud Lake and Pontiac Bay. Subsequently, during the initial phase of naval base construction in the late 1920s and 1930s, the Sand Point landscape was leveled, and both Mud Lake and Pontiac Bay were filled to accommodate runways and buildings (EDAW 1993a). Section 1.2 summarizes the history of the naval base development and operation.

Historic District Selection

As part of the preferred alternative, and the base closure and realignment process as a whole, the Navy will comply with federal historic preservation laws and pursuant regulations. Section 106 of the National Historic Preservation Act (16 U.S.C. 470f) requires the Navy, prior to any undertaking, to "take into account the effect of the undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register."

Compliance with Section 106 initially consisted of an inventory of historic and archaeological resources and an assessment of which resources were eligible for inclusion on the National Register of Historic Places (EDAW 1993a). This process has led to the identification of a number of historic resources within a proposed historic district.

An archaeological inventory conducted by Historical Research Associates, Inc. (HRA) noted that the records of the Washington State Office of Archaeology and Historic Preservation listed no previously recorded archaeological sites for the Sand Point Naval Station area and that no evidence of archaeological sites was found during an on-the-ground survey of portions of the Sand Point property by HRA. The report concluded that the absence of archaeological evidence was a result of extensive surface modification to the properties as a result of military activities (HRA 1992).

The historic buildings on the Sand Point property were evaluated in two separate phases, each phase evaluating the structures and buildings in terms of the eligibility criteria for inclusion on the National Register of Historic Places. The following criteria define eligibility for listing on the National Register:

The quality of significance in American history, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and (a) that are associated with events that have made a significant contribution to the broad patterns of our history; or (b) that are associated with the lives of persons significant in our past; or (c) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or (d) that have yielded, or may be likely to yield, information important in prehistory or history . . . (36 CFR 60.6)

A property that achieved significance within the past 50 years will not be considered eligible for the National Register, unless it is of exceptional importance (36 CFR 60.6).

The first phase of historic evaluation was conducted on the 37-acre (15-hectare) area originally affected by the 1989 recommendation to realign the portion of Sand Point Naval Station that serves fleet units at Naval Station Puget Sound, Everett. This tract, which the federal government acquired in 1932, includes the south part of today's naval base. The report individually evaluated and inventoried 22 structures within this tract for

historic significance. However, no structure met National Register criteria for historic significance (BNMR 1990).

As a result of the 1991 Base Closure Commission's recommendation to close Sand Point Naval Station, the second phase of historic evaluation assessed an additional 37 structures and re-evaluated Building 30. EDAW, on behalf of the Navy, evaluated each structure, documenting the evaluation on historic property inventory forms, in terms of National Register criteria (EDAW 1993b). Ratings for each documented building encompassed seven elements of integrity—location, design, setting, materials, workmanship, feeling, and association. Using these elements, nine buildings and one monument met the National Register criteria under Criterion A, for their association with the role of the military and the growth and development of the City, and under Criterion C, for the significance of period architecture. The structures of concern are Buildings 2, 5, 9, 12, 25, 29, 30, 47, and 138; Monument 396 commemorates the first round-the-world flight by seaplane, which began and ended at Sand Point Naval Station in 1926. These buildings were included in a proposed historic district recommended in the survey report prepared in January 1993 (EDAW 1993a).

These recommendations were reviewed by the staff of the State Historic Preservation Officer (SHPO). After a visit to Sand Point, the SHPO's staff concurred with the preliminary recommendations made in the initial report (EDAW 1993a). The SHPO also recommended expanding the proposed historic district and including Buildings 11, 15, 26, 27, 31, 67, 330, 331, and 332 (EDAW 1994). The expanded historic district reflects three major periods of development and uses of Sand Point (EDAW 1993a, 1994):

- Early Construction, Reserves, and Army Use - 1926 to 1934
Dominant architectural style: Colonial Revival
- Active Navy Use - 1935 to 1938
Dominant architectural style: Art Deco/Modern
- World War II - 1939 to 1946
Dominant architectural style: Modern

A map of the recommended national register historic district is provided as Figure 3-5.

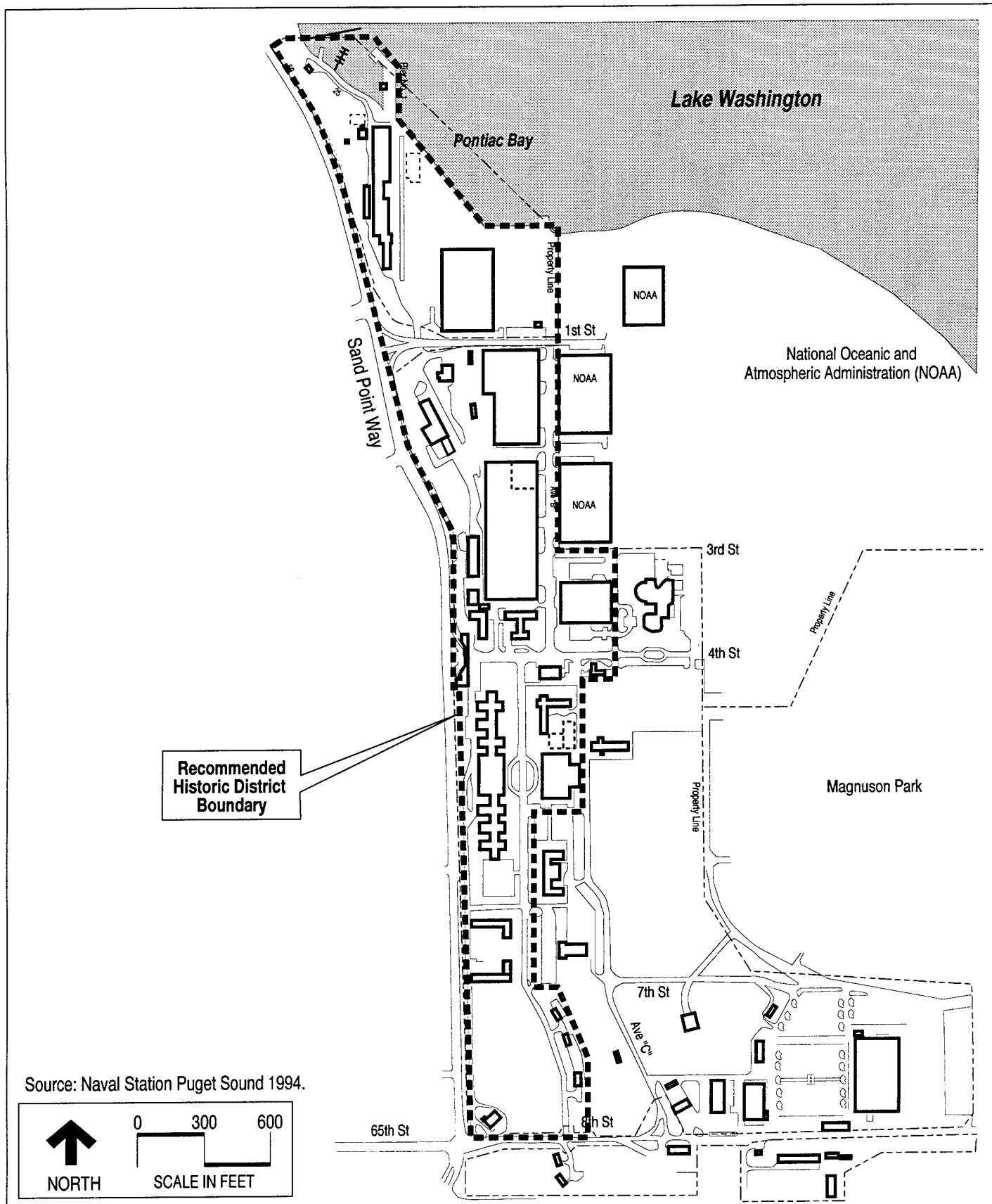


Figure 3-5
Recommended National Register
Historic District

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3.2.2 Environmental Consequences

Preferred Alternative

Archaeological Resources. Although aboriginal use of the Sand Point vicinity is well documented (Buerge 1984; Waterman 1922), no archaeological resources have been identified on the base (HRA 1992). Local Native American groups have raised concerns that subsurface archaeological resources may be present; currently, none are known to exist. Therefore, no environmental consequences to known archaeological resources are expected from the preferred alternative.

Historic Resources. Table 3-6 lists the buildings and structures deemed worthy of inclusion on the National Register (BNMR 1990; EDAW 1993a); it also indicates their planned use, if any, under the preferred alternative (interim lease).

Closure of Sand Point Naval Station and the end of military use necessarily means that historic buildings may be used for new purposes. The use of several of the historic buildings would occur under the preferred alternative:

- Building 5, which may originally have been a hangar, was later used as a warehouse and for administration. Under the preferred alternative, the City would use portions of this building for office space, storage, and training activities. These uses are compatible with prior uses of the building.
- Building 9 was probably the original main building on the base, containing barracks, mess halls, offices, and a base chapel. Under the preferred alternative, the building would be used either for the temporary relocation of Ballard High School and later for some evening community college classes or solely for day and evening community college classes, as well as administrative offices associated with the school and/or college. These uses are considerably different from the building's historic use.
- Building 26 (north and south), the bachelor officer quarters, would retain its original use as housing.
- Building 47 (theater, gym, and pool) would be used for educational purposes in a fashion similar to its historic use.

Table 3-6
Proposed Uses for Sand Point Naval Station Buildings
Eligible for the National Register

Building No.	Common Name	City Use Under Preferred Alternative/Minimal Office Alternative
2	Reserve armory	None
5	Supervisor of shipbuilding, conversion, and repair	Locations 5B and 5C used for office, storage, and training activities/storage only
9	Transient personnel unit	Northern portion of building used either as temporary location for Ballard High School and community college classes, or solely for community college purposes
11	Public works/shops	None
12	Heat plant building	None
15	Hobby shop	None
25	Administration building	None
26 (north and south)	Bachelor officer quarters	Housing
27	Reserve training	None
29	Multiuse medical clinic	None
30	Personnel support detachment	None
31	Admiral's barge office	None
47	Theater/gym/pool	Education use
67	Motor pool shop	None
138	Main gate/police	Site project office
222	Storage	Demolished/vacant
330 331 332	Officers' housing	Housing
396	World flight monument	None

Source: EDAW 1993a

- Building 138 (main gate/police) would be used as the site project office, a use that differs from its historic use as the main gate for the base.
- Buildings 330, 331, and 332, used historically as officers' housing, would also be used for housing under the preferred alternative.

Under the preferred alternative, some of the historic Sand Point Naval Station buildings will retain their original uses, which will enhance the integrity of the proposed historic district by keeping building function and architectural form intact. Buildings 9 and 138 are the exceptions. However, these exceptions are not likely to seriously impair the overall character of the proposed historic district.

Also, under the preferred alternative, the City plans to rehabilitate the buildings scheduled for reuse and to make infrastructure upgrades to water, sewer, drainage, electrical, natural gas, and telephone systems. Such actions will be subject to the requirements and restrictions outlined in Section 3.6.3.

The City also proposes to demolish Building 222. During the evaluation of Sand Point Naval Station, this building was not considered to contribute to the proposed historic district (EDAW 1993b), and the City has determined that the building is unsafe and should remain locked and unoccupied pending a final determination on restoration or demolition (Jones 1994). Because Building 222 lies within the boundary of the proposed historic district, the City's plan for demolition would be reviewed and approved by the SHPO.

Minimal Office Alternative

The minimal office alternative is similar to the preferred alternative with the exception that Building 222 would not be demolished.

No Action Alternative

Under the no-action alternative, wherein the Navy retains the base, the Navy will continue to maintain the historic buildings to prevent their deterioration. No consequences would result from the no-action alternative because the Navy would continue to follow its historic and archaeological resources protection (HARP) plan (EDAW 1994). Under this plan, the Navy must comply with all federal laws on historic preservation.

3.2.3 Mitigating Measures

Because the Navy retains ownership under the preferred and minimal office alternatives, historic resources on the base will receive the same protection as they would under the no-action alternative, in which the Navy complies with its HARP plan. Under the HARP plan, any exterior maintenance or modifications must be done in accordance with the approaches recommended in the *Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Buildings* (National Park Service 1990).

The Navy retains ownership under the preferred and minimal office alternatives and so archaeological resources would receive the same protection as under the no-action alternative, which includes the Navy's compliance with its HARP Plan. This plan requires on-site monitoring by a professional archaeologist during excavation in undisturbed areas or during construction that would penetrate below the previously disturbed surface.

Under the preferred alternative, all plans for demolition of Building 222 would require review and approval by the SHPO.

Under the no-action alternative, existing buildings will be maintained as specified in the HARP plan for Sand Point Naval Station.

3.3 RECREATION

This section describes available recreational uses at Sand Point Naval Station, as well as recreational and park facilities in the study area shown on Figure 3-6. Magnuson Park is described in more detail than other parks in the vicinity because it is adjacent to the site. This section also discusses federal and City policies and standards concerning parks and open space and addresses the environmental consequences related to recreation posed by the preferred (interim lease), minimal office, and no-action alternatives.

3.3.1 Affected Environment

This section describes the existing recreational opportunities on and off base and federal and City policies and standards for parks and recreation, with particular reference to *Seattle's Park and Recreation COMPLAN* (City Parks 1993). Table 3-7 describes existing recreational facilities at Sand Point and in neighborhood parks. Table 3-8 lists proposed capital improvement project priorities for recreational opportunities in the City's

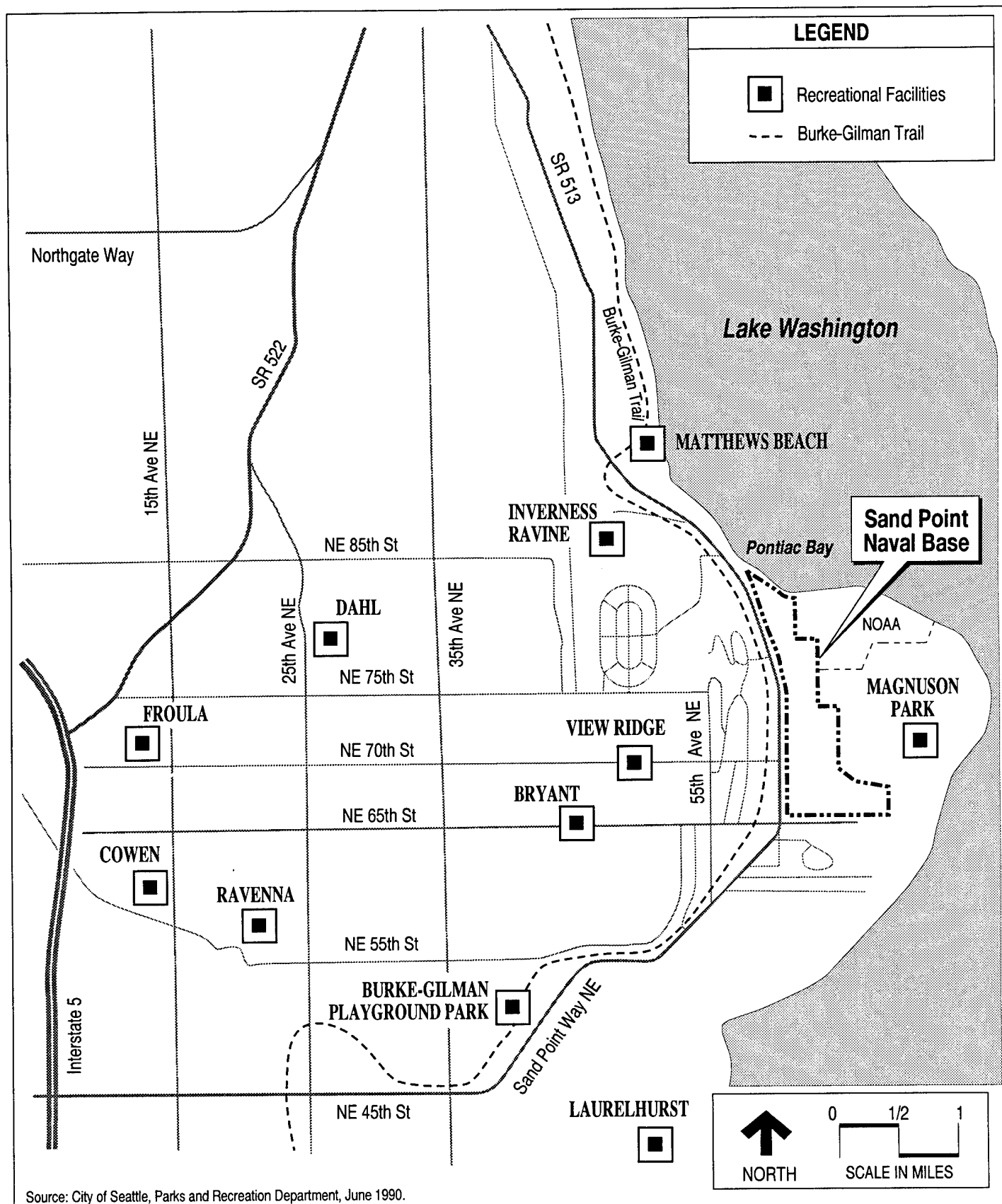


Figure 3-6
Recreational Facilities Near Sand Point Naval Base

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Northeast Subarea near Sand Point Naval Station. The Northeast Subarea is approximately the area shown on Figure 3-6.

Recreational Opportunities On and Off Base

Seattle's park system is composed of approximately 4,811 acres (1,948 hectares) (about 8.9 percent of the city's land area, excluding submerged lands). The park system includes 224 parks, more than 1 million square feet (92,900 m²) of buildings, 130 playfields, 8 indoor and 1 outdoor (summer season only) swimming pools, 25 wading pools, studios, boat ramps, moorages, fishing piers, golf courses, camps, viewpoints and nature trails, an archery range, a tennis center, a mountain climbing site, a conservatory, a classic Japanese garden, an innovative zoo, and an aquarium. The park facilities described in Table 3-7 are at the naval station, in Magnuson Park, or near the base. See Table 3-3 for information regarding frequency of use of recreational facilities on the base. No information was available at the time of this writing on the number of people using city recreational facilities.

Recreational Facilities at Sand Point Naval Station. Recreational facilities on base are listed in Table 3-7, and their locations are shown on Figure 3-7. These facilities (except for the ballfields and during special events) were not available to the general public when the base was open. The north shoreline recreational facilities, including the marina area, comprise the following structures: Pier 1 (Building 321), with 17 uncovered moorage slips; a boathouse (Building 31), including five covered moorage slips; a floating boathouse (Building 402); a small craft boathouse (Building 275); and a recreational pavilion/picnic area (Building 410). The Sea Scouts currently use the marina area for training and drills. A portable pistol shooting range administered by the University of Washington is an extension of the main boathouse (Building 31). The range was for Navy Reserve Officer Training Candidates (NROTC) and is not regarded as a recreational facility. It is not yet known whether the shooting range will remain on site after the Navy leaves the base. Other recreational facilities on the base include a bowling alley (Building 6), tennis courts, a theater and recreation center (Building 47), a gymnasium, and a crafts/hobby shop (Building 15).

Warren G. Magnuson Park. Magnuson Park was created in 1977 after the City of Seattle received approximately 195 acres (79 hectares) of land, including approximately 1 mile (1.61 km) of waterfront, from the decommissioned Naval Reserve Air Station (now Sand Point Naval Station). The park adjoins Sand Point Naval Station (west), NOAA (north), and NBS facilities (south), and is accessed via N.E. 65th St.

Table 3-7
Park and Recreational Facilities at
Sand Point Naval Station and Surrounding Neighborhood

Park	Location	Facilities
Sand Point	Naval station	Two softball fields, one multiuse field for soccer and other field sports, double gymnasium, five-lane swimming pool, 600-seat theater, exercise and locker rooms, game room, eight-lane bowling alley, four indoor tennis courts, three outdoor unlighted tennis courts, outdoor basketball area, three recreational pavilions, children's playground, craft/hobby shop, parking garage, and marina. These facilities, except for the ballfields or during special events, have not been available to the general public.
Magnuson	Sand Point Way N.E. and N.E. 65th St.	Two softball fields, two soccer fields, six unlit outdoor tennis courts, two picnic areas, play areas, three sets of restrooms, permanent float at the swimming beach, boat launch site (three piers, two launching lanes), and paved and informal trails
Bryant	N.E. 65th Street and 45th Ave. N.E.	Two unlit tennis courts
Burke-Gilman Trail	Various locations	Walking and biking trails, picnic areas, play areas, and restrooms
Cowen	University Way N.E. and N.E. Ravenna	Play areas, picnic areas, and restrooms
Dahl	25th Ave. N.E. and N.E. 77th Street	One baseball and two softball fields, two soccer fields, and one lighted softball field
Froula Playground	N.E. 72nd St. and 12th Ave. N.E.	Two unlit tennis courts
Inverness Ravine	Inverness Dr. N.E. off N.E. 85th St.	Greenbelt area (2.9 acres [1.1 hectares])
Laurelhurst	N.E. 41st Street and 48th Ave. N.E.	One soccer field, two softball fields, and four lighted tennis courts
Matthews Beach	N.E. 93rd St. and Sand Point Way N.E.	Play areas, restrooms, beach access, and picnic areas
Ravenna	20th Ave. N.E. and N.E. 58th St.	Wading pool, softball field, soccer field, picnic areas, play areas, and restrooms
View Ridge	N.E. 70th St. and 45th Ave. N.E.	One baseball and two softball fields

Source: City Parks 1990

Table 3-8
Northeast Subarea Neighborhood Capital Improvement
Priorities Near Sand Point Naval Station

Site	Project	Comment
Magnuson Park	Update master plan and implement improvements	Some shoreline improvements (likely part of SPIF)
Burke-Gilman Trail	Conduct safety survey and implement recommendations	Joint works by DPR, SED, and Cascade Bicycle Club
Magnuson Park/Burke-Gilman Connector	Complete this connector	Magnuson Park entry corridor improvements expected to provide connector
Laurelhurst Community Center	Expand, including new gymnasium (particular community concern about lack of gymnasium space in north city area)	Priority COMPLAN project; gymnasium siting difficult
Dahl Playfield	Improve field conditions	COMPLAN sports field project
Burke-Gilman Playground Park	Redesign and rebuild park and play area	COMPLAN proposal for overhaul
Ravenna and Cowen Parks	Upgrade sports fields and refurbish tennis courts	Refurbished tennis courts (CRF); COMPLAN proposal for overhaul (Cowen Park)

Notes:

COMPLAN Seattle's Park and Recreation Comprehensive Plan
 CRF Cumulative Reserve Fund
 DPR Department of Parks and Recreation
 SED Seattle Engineering Department
 SPIF Shoreline Park Improvement Fund

Source: City Parks 1993

The Sand Point Park Citizens' Advisory Committee, now the Sand Point Community Liaison Committee, was established when the Navy land was transferred to the City for a park. This committee is committed to using the park for enhanced wildlife habitat and for passive and active recreation. It provides input to the park administrator, the City of Seattle Parks and Recreation Department.

The original plan for the present-day Magnuson Park was prepared in 1975 as the Sand Point Park master plan (Jones and Jones 1975). The park was initially developed between 1976 and 1978 when swimming beach, boat launching, and sportsfield areas

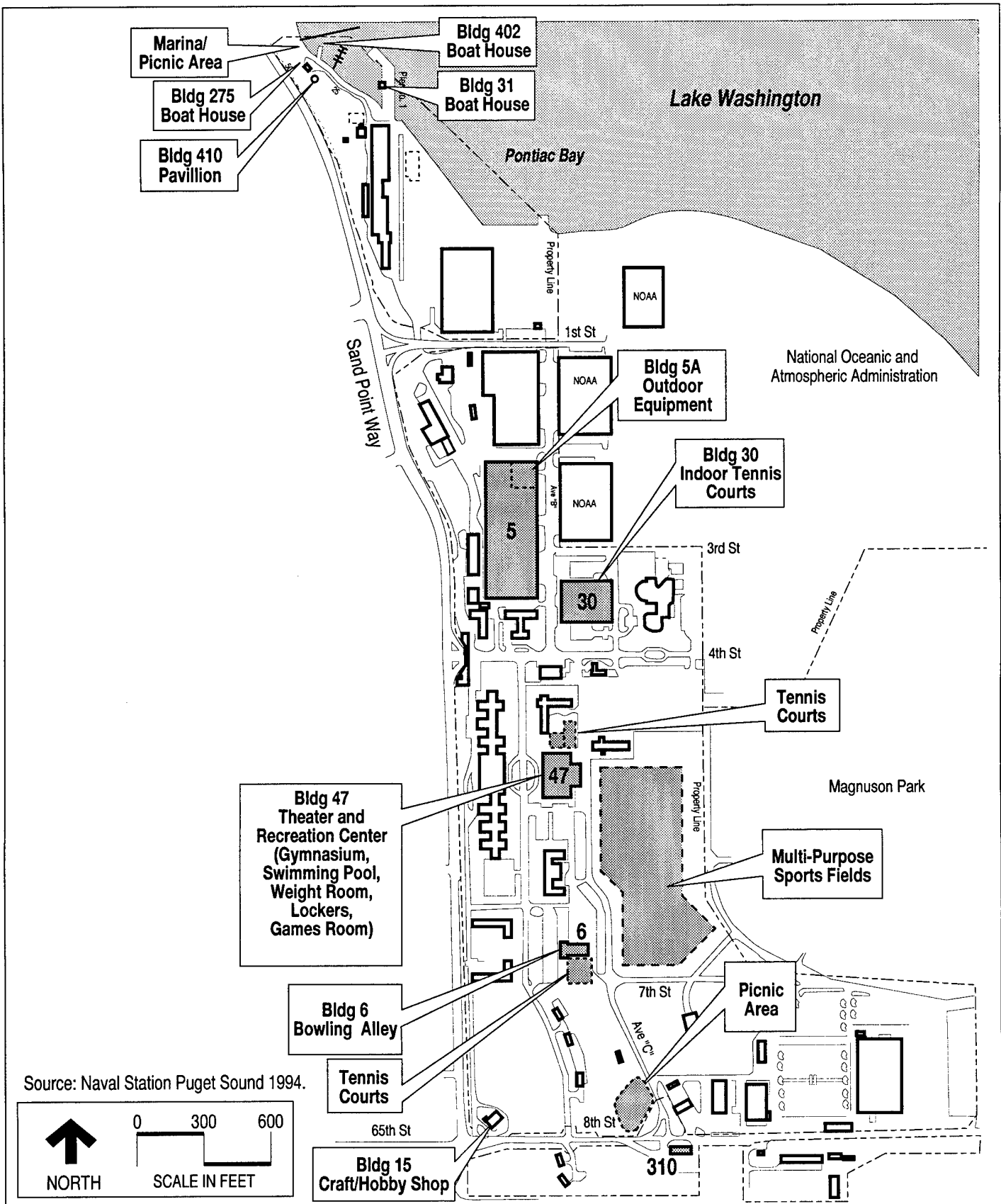


Figure 3-7
Recreational Facilities on Sand Point Naval Station

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were built after old runway pavements were demolished. A draft master plan update was later prepared (Worthy and Associates 1988) before further improvements were made to the boat launching facilities and swimming beach. A summary of existing facilities is presented in Table 3-7 (under Magnuson Park).

As part of the reuse planning for Sand Point Naval Station in 1993, the City prepared a plan for expansion of Magnuson Park based largely on the previous park plans. This park expansion plan was adopted by the Seattle City Council in late 1993 as part of the *City of Seattle Community Preferred Reuse Plan for Sand Point* (City Planning 1993a).

National Policies and Standards

The National Parks and Recreation Association (NPRA) has conducted nationwide studies to determine the "appropriate" number of parks and the amount of open space for a given area or population. NPRA recommends a range of 6.25 to 10.5 acres (2.53 to 4.25 hectares) of developed park land per 1,000 people. Given Seattle's 1990 population of 516,259, between 3,227 acres (1,306.5 hectares) and 5,421 acres (2,195 hectares) would be considered appropriate by the NPRA. Park land that is controlled by the City of Seattle Parks and Recreation Department and is within the Seattle city limits covers 4,811 acres (1,947.77 hectares). Of this total, approximately 86 percent (4,137 acres [1,675 hectares]) is considered developed. The remaining acreage is undeveloped or considered open space. Therefore, Seattle is within the range of park and open space acreage recommended at the national level.

City Policies and Standards

Seattle is nationally recognized for its park system and for the diversity and number of recreational facilities. In May 1993, the City adopted a functional plan to guide decisions on park and recreation issues. *Seattle's Park and Recreation COMPLAN* broadly addresses open space and park and recreation needs for a 10- to 20-year period (City Parks 1993).

The background report on public utilities for the *Comprehensive Plan Framework Policies, Community Services and Facilities* (City of Seattle 1990) acknowledges that the Lake Washington shoreline parks in Seattle are among those facilities seriously needing rehabilitation.

The COMPLAN's vision is to create a neighborhood-based park and recreation system for Seattle. The system will be connected by open space, boulevards, trails, public transportation, and "green" streets. Despite the fact that, by NPRA standards, Seattle

has adequate park land, the COMPLAN notes that northeast Seattle particularly needs public open space and that public access to shorelines is important.

The desirable COMPLAN guideline for neighborhood parks is 0.5 acre (0.20 hectare) within 0.5 mile (0.80 km) of households in single-family areas, and 0.25 acre (0.10 hectare) within 0.25 mile (0.40 km) of households in multifamily areas. The COMPLAN's guidelines define acceptable breathing room open space (total dedicated open space regardless of access restrictions) as 0.33 acre (0.13 hectare) per 100 residents. Desirable breathing room is 1 acre (0.40 hectare) per 100 residents. An analysis of existing park land shows that the Northeast Subarea, of which Sand Point Naval Station is a part, has 0.66 acre (0.27 hectare) of total breathing room per 100 residents. Twelve census tracts in the Northeast Subarea have less than 0.33 acre (0.13 hectare) of open space per 100 residents: Census Tracts 21, 24, 26, 37, 38, 40, 41, 42, 45, 52, 53.01, and 53.02. Census Tracts 40 and 41, which adjoin Sand Point Naval Station, have 0.13 acre (0.05 hectare) and 0.18 acre (0.07 hectare), respectively, of park per 100 residents.

The COMPLAN identifies Magnuson Park as an incomplete major park that needs a renovation plan or master plan update. Major parks are defined as parks serving a citywide or regional population. The shoreline area between Pontiac Bay and Matthews Beach lacks public access. The City is currently investigating updates to plans proposed for Magnuson Park.

The following proposed improvements to Magnuson Park are outlined in the COMPLAN:

- Update the Magnuson Park master plan
- Expand boat launching facilities
- Develop a sailing facility on Pontiac Bay
- Add a new fishing pier
- Conserve natural areas
- Construct a nature interpretive center, additional ballfields, indoor tennis courts, improved bicycle and pedestrian access, running facilities, and a children's play area

View Ridge Neighborhood Needs Assessment

In 1993, the View Ridge Community Club, Inc., assessed the recreation and community facility needs, preferences, and priorities of the people who live in the View Ridge neighborhood (roughly Census Tracts 39 and 40) near Sand Point Naval Station. This assessment was a response to the reuse planning processes for the base. The View

Ridge neighborhood recreation and community facility needs assessment included a survey distributed to approximately 1,800 households in the View Ridge neighborhood. Much of the study area is not served by any existing community centers or public aquatic facilities. Survey respondents reported high recreational activity levels, relatively low levels of satisfaction with existing facilities and services, and strong support for new community and park facilities. This response indicates demand for recreation and other community services. Sand Point Naval Station was recommended as the best current opportunity to address community needs, as identified in the needs assessment report.

3.3.2 Environmental Consequences

Preferred and Minimal Office Alternatives

Lease of the ballfields north of Building 47 would increase the number of sports fields available to the public in the North Seattle area. In the past, these ballfields were not only used by base personnel, but also by the Seattle Parks and Recreation Department for Little League and softball league play in the spring and summer. Building 47 (former gym) would be used by Seattle Community College and possibly Ballard High School for educational/recreational purposes. It contains a theater, gymnasium, swimming pool, weight room, lockers, and games room. In general, the overall effect of the preferred alternative would be positive because of the increased number of facilities available for recreational use.

No-Action Alternative

The no-action alternative will not affect the City's recreational areas and open space because recreational facilities at the station would not be used.

3.3.3 Mitigating Measures

Implementing the preferred and minimal office alternatives would increase the amount of open space available for public use in the Northeast Subarea; therefore, mitigating measures are not required. The no-action alternative will have no environmental impacts on recreation; therefore, mitigating measures are not required.

3.4 TRANSPORTATION

This section describes existing transportation conditions in the area potentially most affected by the Sand Point Naval Station closure. This section also discusses potential

environmental consequences for the transportation system attributable to the preferred alternative (interim lease), the minimal office alternative, and the no-action alternative and suggests measures to mitigate transportation-related impacts. It includes information from the *Traffic Impact Study for City of Seattle Interim Lease for Sand Point* (URS 1996), which is included in Appendix A. Consult this document for more detailed information on the transportation analysis.

The transportation study area is bounded by N.E. 95th St. to the north, Sand Point Way N.E. to the east, N.E. 45th St. to the south, and 35th Ave. N.E. to the west (Figure 3-8). Eight major intersections were analyzed within the study area:

- N.E. 95th St./35th Ave. N.E.
- N.E. 95th St./Sand Point Way N.E.
- N.E. 65th St./35th Ave. N.E.
- N.E. 65th St./Sand Point Way N.E.
- Sand Point Way N.E./North Base Access
- Sand Point Way N.E./Princeton Ave. N.E. (N.E. 55th)
- Montlake Boulevard N.E./N.E. 45th St.
- Montlake Boulevard N.E./25th Ave. N.E.

All intersections are signalized, except for the N.E. 95th St./Sand Point Way N.E. intersection. (Please note that impacts to the Montlake Bridge were also analyzed.)

3.4.1 Affected Environment

This section discusses existing traffic conditions and describes current transportation systems in the area potentially most affected by the Sand Point Naval Station interim lease.

Arterial Classifications and Conditions

According to the City of Seattle Comprehensive Plan (City Planning 1994), the roadways near Sand Point Naval Station are classified as follows:

- **Sand Point Way N.E. (N.E. 65th St. to N.E. 95th St.)—Minor Arterial.**
Minor arterials usually consist of a two- to four-lane section. This roadway section currently varies from two to four lanes.
- **Sand Point Way N.E. (N.E. 65th St. to N.E. 45th St.)—Principal Arterial.**
Principal arterials usually consist of a four- to six-lane section, with two to

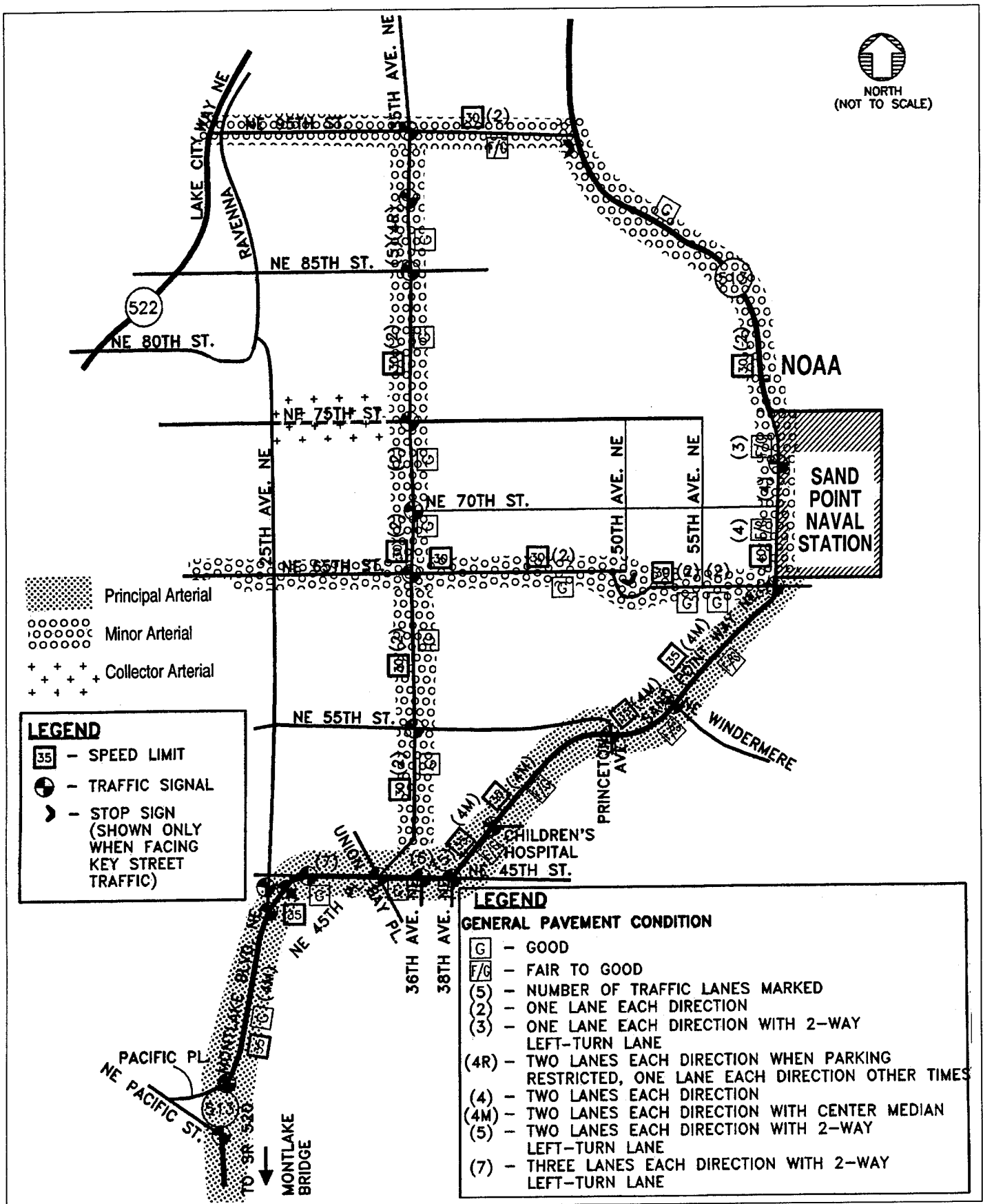


Figure 3-8
Traffic Control and Roadway Characteristics

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three lanes traveling in each direction. This roadway section currently consists of four lanes.

- **Montlake Boulevard N.E. (N.E. 45th St. to Montlake Bridge)—Principal Arterial.** This roadway is currently four lanes plus a center median.
- **35th Ave. N.E. (N.E. 45th St. to N.E. 125th St.)—Minor Arterial.** This roadway is currently a two-lane section.
- **N.E. 95th St. (Lake City Way N.E. to Sand Point Way N.E.)—Minor Arterial.** This roadway is currently a two-lane section.
- **N.E. 75th St. (25th Ave. N.E. to 35th Ave. N.E.)—Collector Arterial.** Collector arterials generally have two lanes. This roadway is currently two lanes.
- **N.E. 65th St. (N.E. Ravenna Blvd. to Sand Point Way N.E.)—Minor Arterial.** This roadway is currently two lanes.
- **N.E. 45th St. (25th Ave. N.E. to Sand Point Way N.E.)—Principal Arterial.** This roadway section currently consists of two or three lanes traveling in each direction, with a center dual left-turn lane.
- **N.E. 45th Pl. (N.E. 45th St. to 35th Ave. N.E.)—Minor Arterial.** This roadway is currently two-lanes.

Figure 3-8 shows the existing roadway characteristics and types of traffic control in the vicinity.

Transit

Bus routes in the transportation study area are shown on Figure 3-9. Current transit access to the base is provided along Sand Point Way N.E. by Metro express Routes 41 and 74 and by non-express Route 75. Route 41 carries an average of 2,250 riders, during 58 daily trips, between Sand Point Naval Station and downtown Seattle via Northgate. During peak hours, the route runs at intervals of 15 to 20 minutes (a.m.) and 10 to 20 minutes (p.m.). There are no midday trips. Route 74 carries an average of 2,100 riders, during 52 daily trips, between the NOAA facility at Sand Point Naval Station and downtown Seattle via the University District. The route runs at 30-minute intervals during off-peak periods and at 10- to 20-minute intervals during peak periods. Route 75

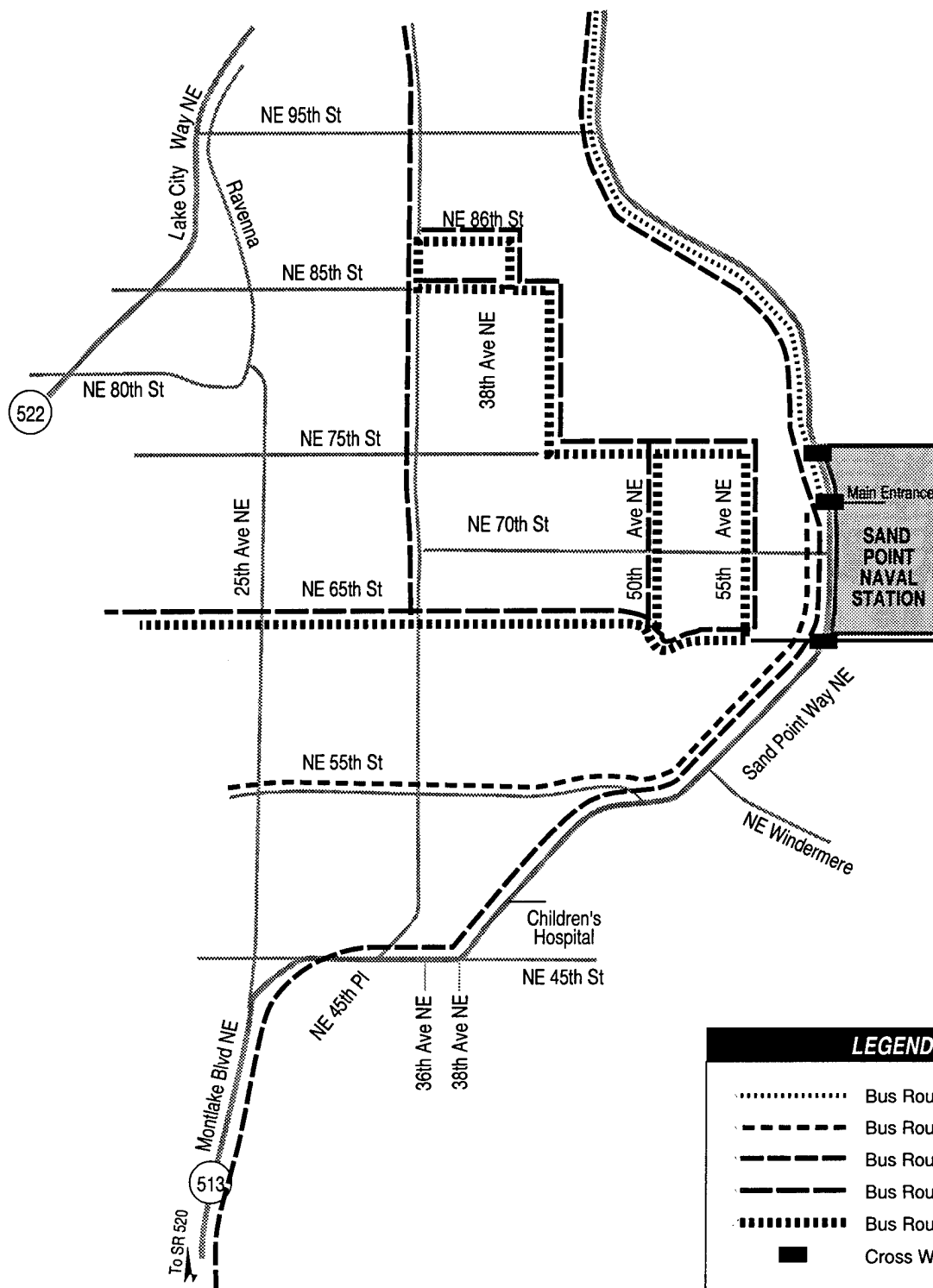


**Figure 3-9
Bus Routes**

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carries an average of 1,050 passengers, during 52 daily trips, between Northgate and downtown Seattle via Sand Point Way N.E. Intervals vary during the day: 15 to 25 minutes for the a.m. peak, 30 minutes for midday, and 30 to 60 minutes for the p.m. peak.

Metro Routes 71 and 76 provide service along N.E. 65th St. and 55th Ave. N.E., west of the base. Service is provided throughout the day at approximately 30-minute intervals.

High Occupancy Vehicles

The City of Seattle has a network of high occupancy vehicle (HOV) facilities. There are no designated HOV lanes on city streets in the Sand Point Naval Station area. The nearest HOV lanes are located on Pacific Avenue, extending over the Montlake Bridge and including the on-ramp to eastbound State Route 520. HOV lanes are also located on Interstate 5 north and south.

Nonmotorized Modes of Transportation

Bicycle Routes. The City of Seattle has an extensive network of bicycle routes; those in the transportation study area are depicted on Figure 3-10. The Burke-Gilman Trail is a heavily used walking and biking trail that parallels Sand Point Way N.E. to the west. The trail crosses Sand Point Way N.E. at 95th Street and extends in a northerly direction parallel to Lake Washington. Sand Point Way N.E. is designated an alternative route to the Burke-Gilman Trail. No separate pedestrian/bicycle trail connects Magnuson Park with the Burke-Gilman Trail.

Sidewalks/Crosswalks. As shown on Figure 3-11, sidewalks are fairly complete along the length of Sand Point Way N.E. south of the north entrance to the base. No sidewalks are currently in place along Sand Point Way N.E. north of this location. Generally, sidewalks in the transportation study area are along routes with on-street parking. Three crosswalks are located near the base: at N.E. 65th Street, N.E. 74th Street, and N.E. 75th Street.

Traffic Volumes

Site-Generated Traffic. Based on historical 24-hour traffic counts conducted by the City of Seattle Engineering Department (SED; also referred to as City Engineering), the weekday p.m. peak hour is the time period when the greatest total traffic demands are placed on the surrounding street system; therefore, this time period was chosen for the

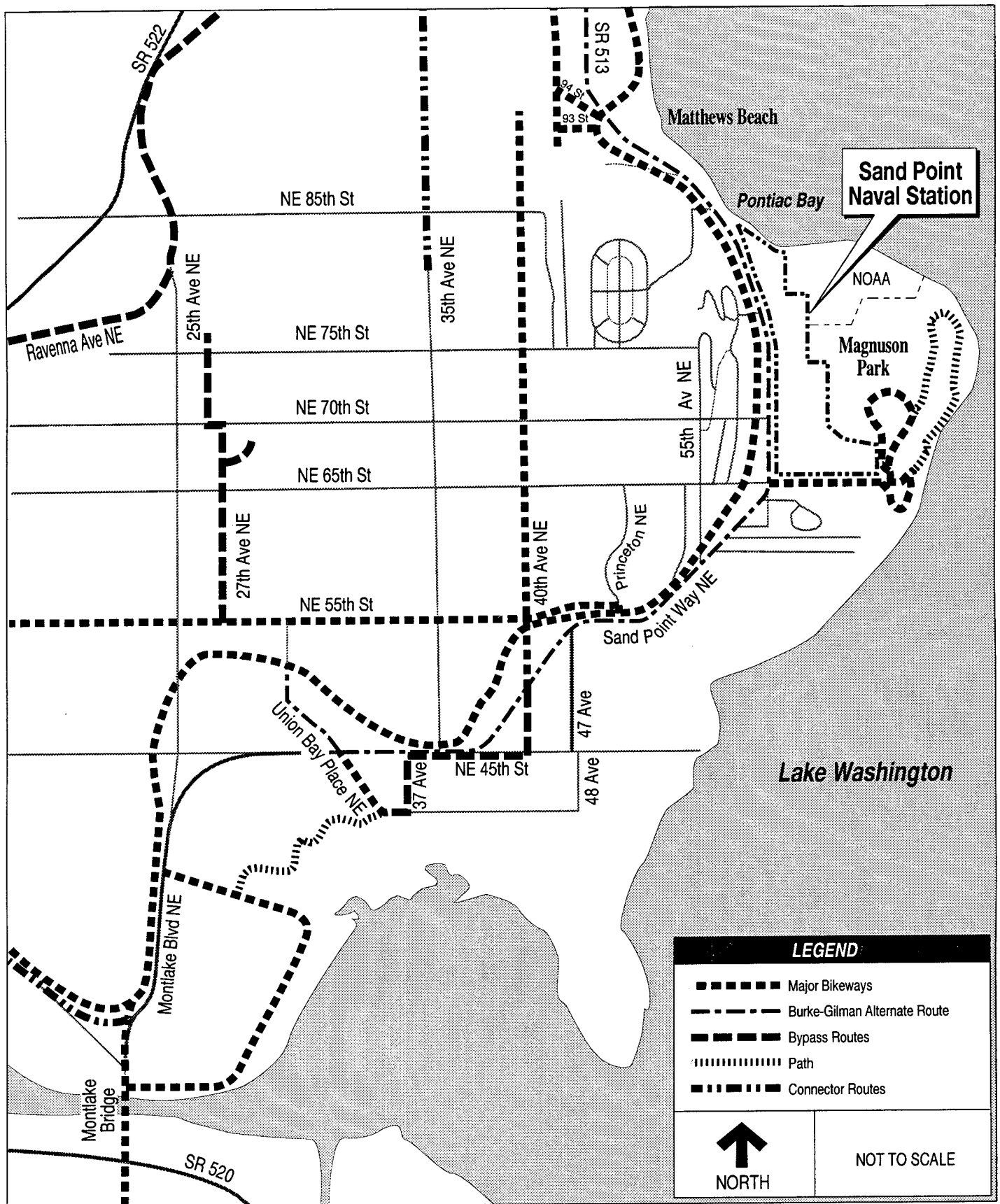


**Figure 3-10
Bicycle Routes**

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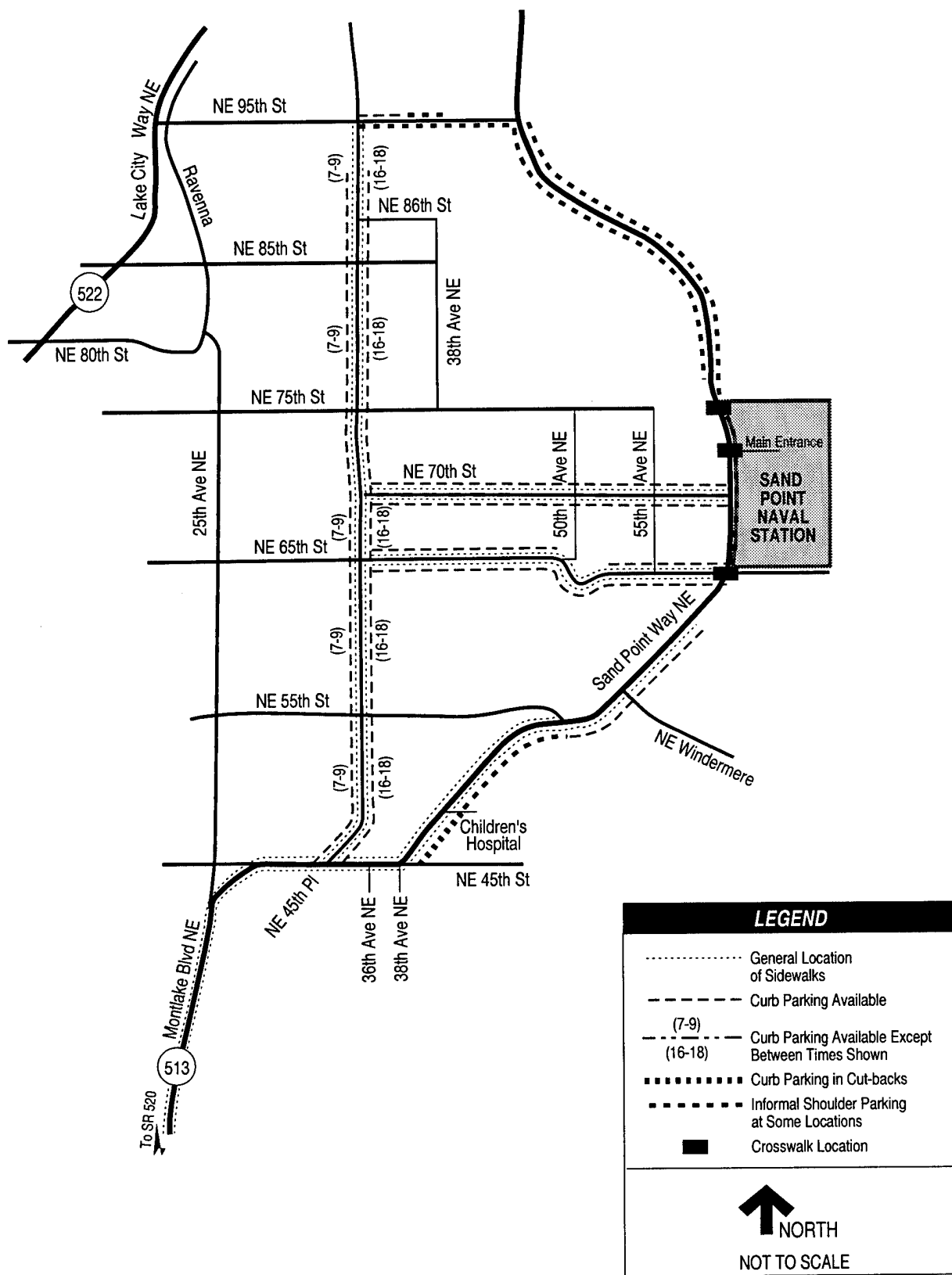


Figure 3-11
Street Parking and Sidewalks

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traffic analyses. Traffic operations in the surrounding street system will likely be better during all other times of the day and on weekends.

Figure 3-12 shows the weekday p.m. peak-hour traffic volumes in the transportation study area. Based on results of manual turning-movement counts taken November 16 to 18, 1993, it was determined that the evening peak hour in the area is generally between 4:30 and 5:30 p.m.

Average daily traffic (ADT) volumes were counted throughout the entire year by the SED. ADT volumes represent typical weekday, 24-hour traffic volumes. Figure 3-13 shows the 1992 ADT volumes on key streets in the transportation study area.

Table 3-9 shows data from previous studies that characterize the magnitude of past traffic associated with the base.

Since the number of personnel at the base decreased by 33 percent between 1989 and 1993, recent traffic volume counts do not reflect volumes that existed when the base was in full operation. No ADT counts that reflect base-only volumes (either current or when the base was in full use) are available.

Intersection Level of Service. To assess the traffic conditions at key intersections in the study area, capacity analyses were conducted using the Federal Highway Administration's Highway Capacity Software (HCS) programs, which are based on information given in the 1995 *Highway Capacity Manual* (Transportation Research Board 1995). Based on the capacity analysis, a level of service (LOS) is derived for each movement of traffic to reflect how much traffic congestion or vehicle delay will result. LOS is a concept developed by the transportation profession to quantify the degree of comfort (including such elements as travel time, number of stops, total amount of stopped delay, and impediments caused by other vehicles) afforded to drivers as they travel through an intersection or roadway segment. LOS is expressed as a letter grade that ranges from A to F.

At signalized intersections, LOS A typically indicates that no vehicle waits longer than one red light, and LOS B means that occasionally the green light is fully used (vehicles use the entire green light time to cross through the intersection). LOS C means that occasionally there is some backup, and LOS D means approaching instability with substantial delays during short peaks during rush hour. LOS E represents full use of every green light, long queues of waiting vehicles, and delays of up to several cycles. LOS F represents jammed conditions with long delays. LOS D is considered the minimum acceptable LOS grade at signalized intersections.

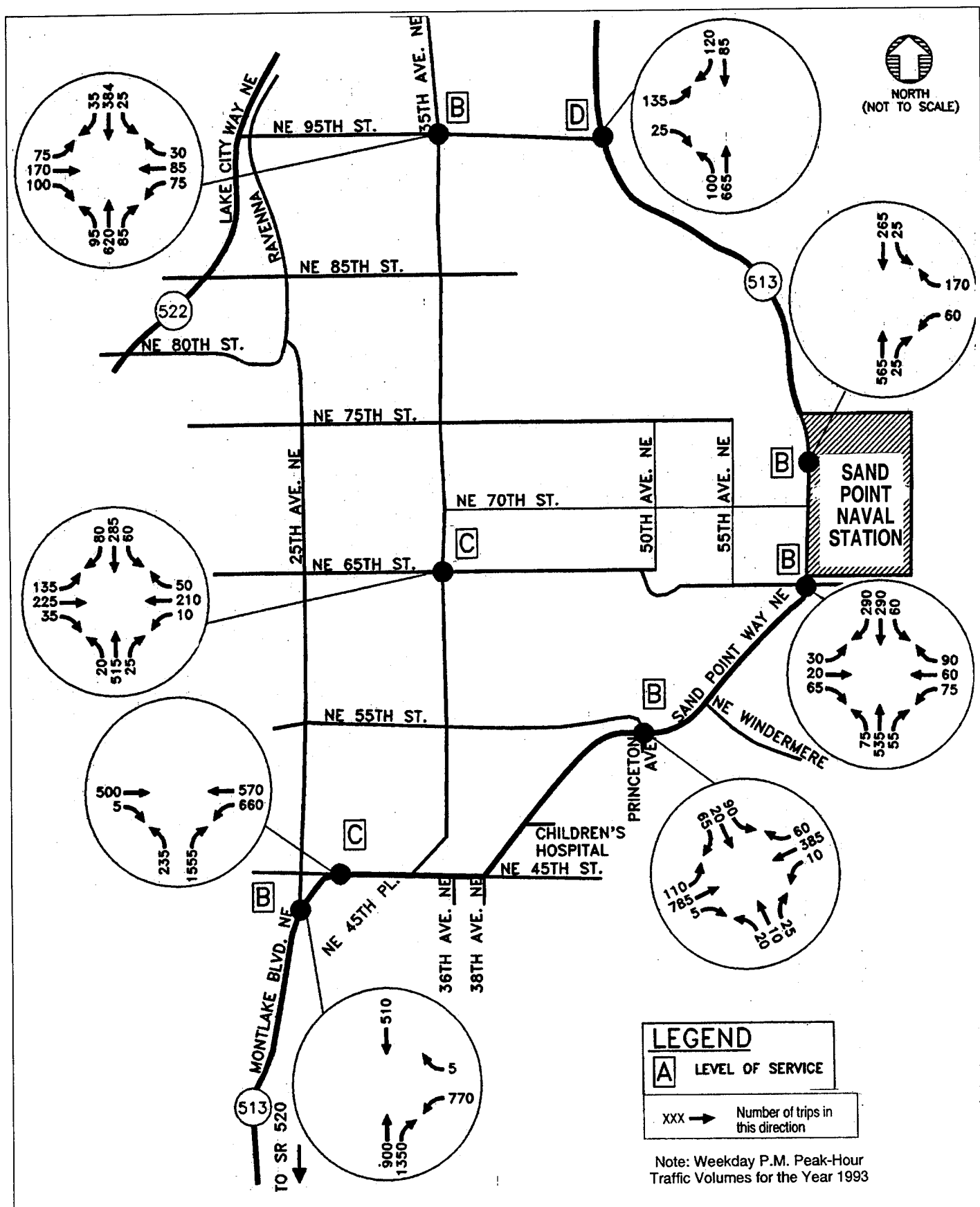


Figure 3-12
Existing P.M. Peak-Hour Traffic
Volumes and Level of Service

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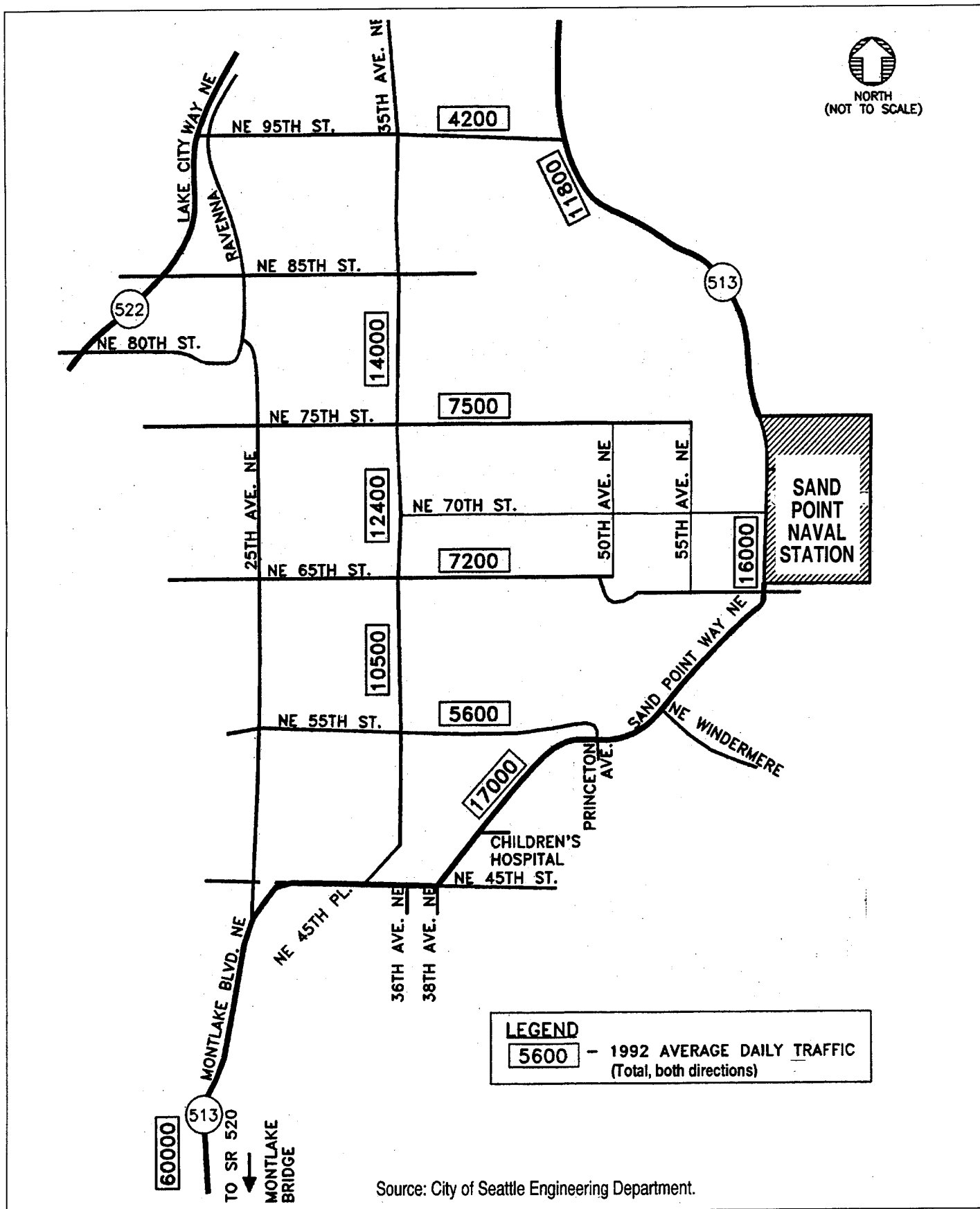


Figure 3-13
1992 Average Daily Traffic Volumes

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Table 3-9
Existing Sand Point Naval Station Traffic Volumes

Location	Area(s) Included	Year	ADT	P.M. Peak (In/Out)	Reference
Sand Point Way N.E./ NOAA	NOAA	1988	NA	27/210	City Engineering 1993
Sand Point Way N.E./ North Entrance	Naval station	1993	NA	50/230	Kittelson 1993
Sand Point Way N.E./ N.E. 65th St.	Naval station	1993	NA	135/225	Kittelson 1993
Sand Point Way N.E.	Naval station commissary/exchange	1993	4,762	NA	Kittelson 1994
Sand Point Way N.E.	Naval station and Magnuson Park	1993	7,600	NA	City Planning 1993a

Notes:

ADT Average daily traffic

NA Data not available

NOAA National Oceanic and Atmospheric Administration

At unsignalized intersections, LOS is defined using a concept referred to as "reserve capacity." Reserve capacity applies only to an individual traffic movement or to shared lane movements. Once LOS, capacity, and expected delay of all the individual movements have been calculated, an overall evaluation of the intersection can be made. Normally, the movement with the worst LOS defines the overall evaluation, but this may be tempered by engineering judgment. LOS D is considered the minimum acceptable LOS grade at unsignalized intersections. Past experience with the unsignalized analysis procedure indicates that this methodology is very conservative because it tends to overestimate the magnitude of potential problems.

Table 3-10 shows LOS for the weekday p.m. peak hour at each of the intersections included in this analysis. The LOS is also shown on Figure 3-12.

As shown in Table 3-10, all signalized intersections are operating at LOS C or better, which is considered acceptable. The unsignalized intersection of N.E. 95th St./Sand Point Way N.E. is currently operating at LOS D during the weekday p.m. peak hour, which is the worst LOS at any of the study area intersections.

Table 3-10
Existing Peak-Hour Levels of Service by Intersection

Intersection	Level of Service	Volume/ Capacity Ratio	Average Delay (sec)
N.E. 95th St./35th Ave. N.E.	B	0.52	10.1
N.E. 95th St./Sand Point Way N.E.	D (168) ^a	D (168) ^a	NA
N.E. 65th St./35th Ave. N.E.	C	0.91	21.8
N.E. 65th St./Sand Point Way N.E.	B	0.35	7.7
North Sand Point Way N.E./Base Access	B	0.46	10.4
Sand Point Way N.E./Princeton Ave. N.E.	B	0.45	8.1
Montlake Blvd. N.E./N.E. 45th St.	C	0.80	15.2
Montlake Blvd. N.E./25th Ave. N.E.	B	0.58	13.3

^a(168) Reserve Capacity for this unsignalized intersection. All other intersections are signalized.

Note: NA Not applicable

Source: Kittelson 1993.

Traffic Safety

As part of the traffic safety analysis, the recent 3.5-year accident history (January 1, 1990 through June 30, 1993) was investigated for the surrounding street system.

The SED defines a high-accident location as a signalized intersection with 10 or more accidents per year or an unsignalized intersection with 5 accidents per year for the past 3 years. As shown on Figure 3-14, all of the intersections in the study area are below the SED threshold for high-accident locations. However, the City considers the signalized intersection of N.E. 45th Pl./Montlake Boulevard N.E. (at which an average of six accidents occur per year) a high-accident location. No fatalities occurred in the transportation study area during the period investigated.

Parking

An estimated 2,010 parking spaces are available at Sand Point Naval Station. Approximately 450 of these spaces are located around the commissary/exchange building (Building 183) in the southern portion of the site; the remaining spaces are distributed throughout the site. Off-site curb parking areas are shown on Figure 3-11.

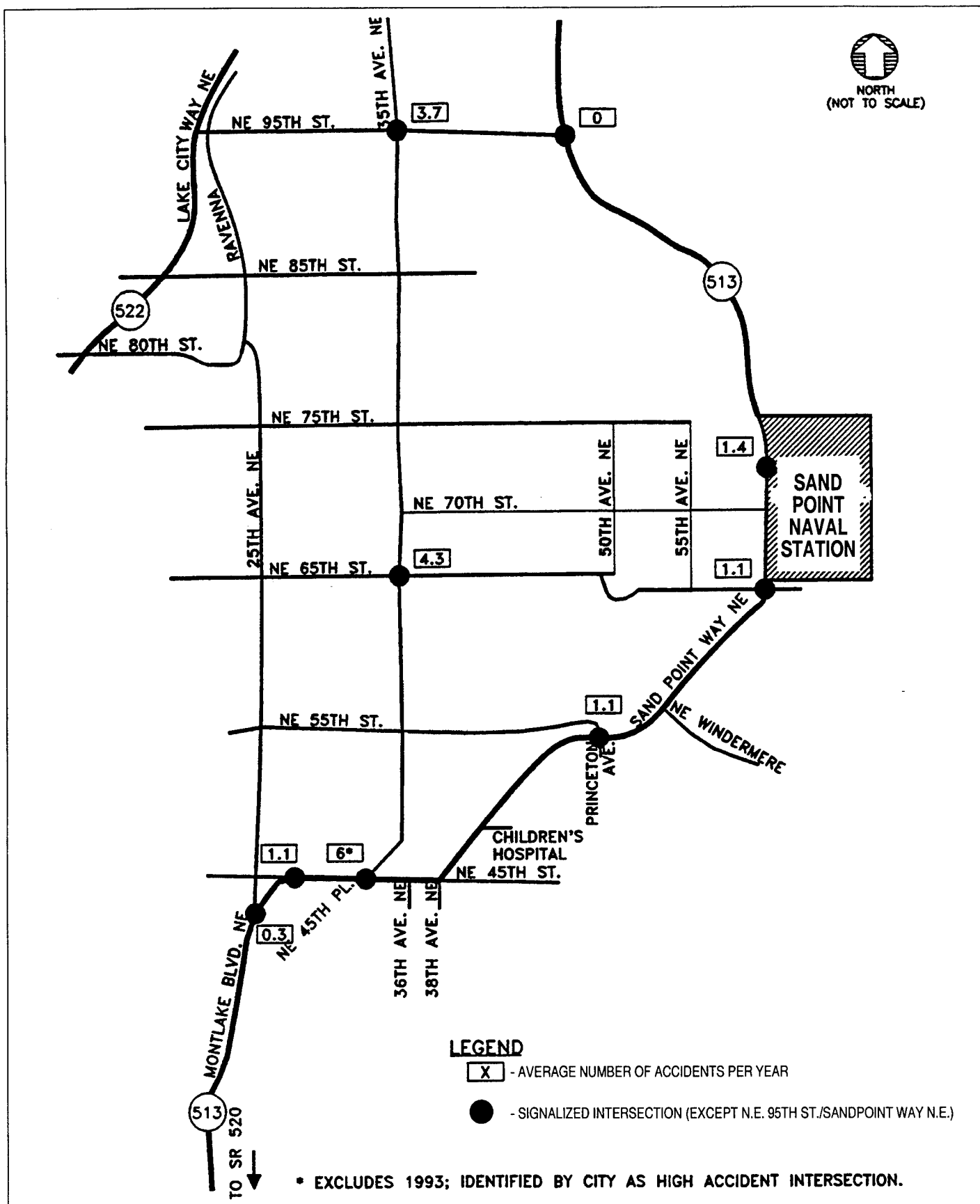


Figure 3-14
Accident History
January 1990 to June 1993

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3.4.2 Environmental Consequences

This section discusses the potential impacts of the preferred alternative (interim lease activities), the minimal office alternative, and the no-action alternative on transportation for the area potentially most affected by the Sand Point Naval Station interim lease.

Forecasted Traffic Volumes for the Year 2000

Projected traffic volumes under the preferred and the minimal office alternatives are calculated based on background (non-site-produced) traffic volumes, as well as traffic volumes resulting from site development. For this analysis, it was assumed that both scenarios of both phases of the preferred alternative will be developed by the year 2000. Traffic volumes for the no-action alternative were calculated based on existing traffic volumes, applying a growth factor of 1 percent per year (City Engineering 1993) and rounding the value to the nearest 50 vehicles. The City considers this 1 percent growth rate to be a worst-case assumption.

To develop projections of traffic generated from the preferred and the minimal office alternatives, information about future site land uses, as well as expected travel patterns, must be known. The more specific the land use description, the more accurate the projection will be. In cases where the land use description is less specific, assumptions were made regarding the type and intensity of the use.

Based on the land use types proposed in the preferred and the minimal office alternatives, along with trip generation rates taken from the Institute of Traffic Engineers' (ITE) *Trip Generation* (ITE 1991), site-generated traffic was determined. Because some of the proposed land uses do not correlate exactly with ITE categories (e.g., baseball fields, low-income housing), professional judgment was used to choose the most appropriate trip rates. ITE peak-hour rates were then used to determine the expected peak-hour volumes. Table 3-11 summarizes the average number of vehicle trips for both phases of Scenarios 1 and 2 of the preferred alternative. Table 3-12 summarizes trip information for the minimal office alternative.

Trip Distribution

Trip distribution describes the percent of site-generated trips that enter and exit the site through the external roadway system. The site trips for the preferred and the minimal office alternatives (entering and exiting the site) were distributed between the main entrance (N.E. 74th St.) and the N.E. 65th St. entrance. The percentages of vehicle distribution to the north, west, and south were 40, 25, and 35 percent, respectively. For

Table 3-11
Average Weekday Traffic Volumes for Scenarios 1 and 2,
Preferred Alternative

Scenario	Daily Volume	In	Out	A.M. Peak Trips	A.M. In	A.M. Out	P.M. Peak Trips	P.M. In	P.M. Out
Scenario 1—Phase I (with high school)	6,036	3,019	3,019	1,093	813	280	710	243	467
Scenario 1—Phase II (with community college only)	5,058	2,531	2,531	681	545	136	646	235	411
Difference	+978	+488	+488	+412	+268	+144	+64	+8	+56
Scenario 2—Phase I (smaller community college)	4,562	2,282	2,282	650	514	135	625	219	406
Scenario 2—Phase II (larger community college)	5,058	2,531	2,531	681	545	136	646	235	417
Difference	-496	-249	-249	-31	-31	-1	-21	-16	-5

Table 3-12
Average Weekday Traffic Volumes for Minimal Office Alternative

Daily Volumes			AM Peak Hour			PM Peak Hour		
Total	In	Out	Total	In	Out	Total	In	Out
3,696	1,880	1,880	374	261	113	355	203	152

the no-action alternative, no traffic would enter or exit the site via these entrances because no trips would be generated. Appendix A details the distribution of traffic entering and exiting the site.

Trip Assignment

A transportation model was developed from background volume, trip generation, and distribution information to estimate expected traffic volumes on roadways outside site

boundaries. The traffic forecasting software package IMPAX was used to develop the model and predict expected vehicle volumes.

For the preferred alternative, the traffic forecasting model was run only for Phase II since it is the ultimate build out and represents worst case for both scenarios as explained below. Phase II is the same under both scenarios (i.e., use by the community college for 300 weekday and 375 evening students).

- Scenario 1, Phase I is the Ballard High School option and while it would generate more daily traffic than Phase II, there would be lower background traffic volumes during the 1997-1999 period. In addition, during the p.m. peak-hour period, identified by SED as worst case, only 64 more trips would be generated.
- Scenario 2, Phase I (smaller community college) would generate less traffic than Phase II.

Figure 3-15 shows forecasted peak-hour p.m. traffic volumes for the year 2000 for the preferred alternative, not including the high school. Figure 3-16 shows the minimal office alternative peak-hour traffic volumes. Figure 3-17 shows forecasted peak-hour traffic volumes for the no-action alternative. Figure 3-18 shows site-generated and background ADT volumes for the year 2000 for the preferred alternative. Figure 3-19 depicts this information for the minimal office alternative.

Based on the uses proposed for the site, the preferred alternative is expected to generate an ADT of about 5,058, approximately 30 percent of which is a result of educational uses. The minimal office alternative is expected to generate 3,696 trips per day, of which more than 40 percent result from educational uses (Table 3-12). Peak a.m. and p.m. volumes for all three alternatives are listed in Table 3-13.

Table 3-13
Year 2000 Site-Generated A.M. and P.M. Peak-Hour Trips

City Plan	ADT	A.M. Peak (In/Out)	P.M. Peak (In/Out)
Preferred alternative	5,056	545/136	235/411
Minimal office alternative	3,696	261/113	203/157
No-action alternative	0	0/0	0/0

Note:

ADT Average daily traffic

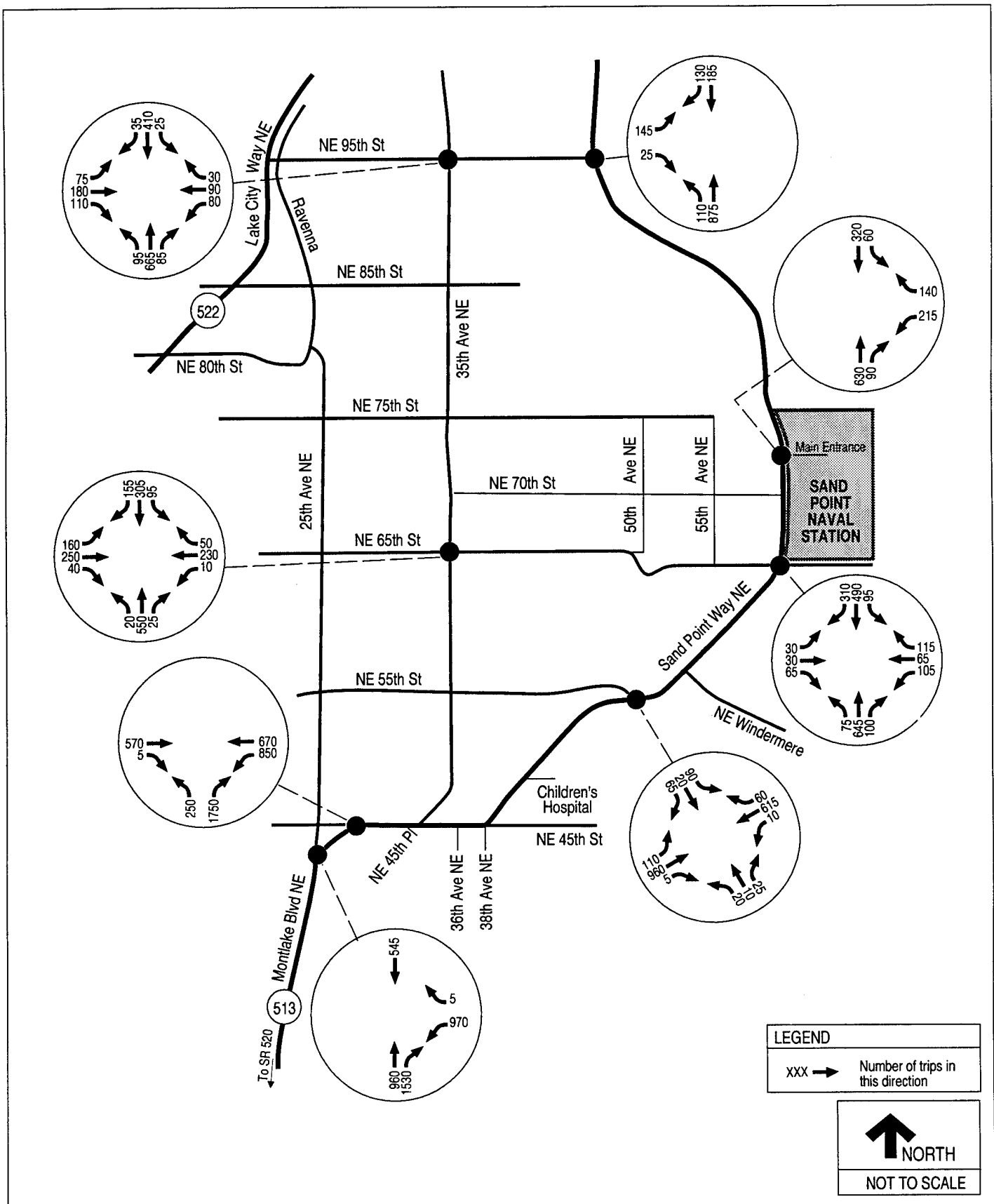


Figure 3-15
Forecasted Peak-Hour Traffic Volumes—Preferred Alternative

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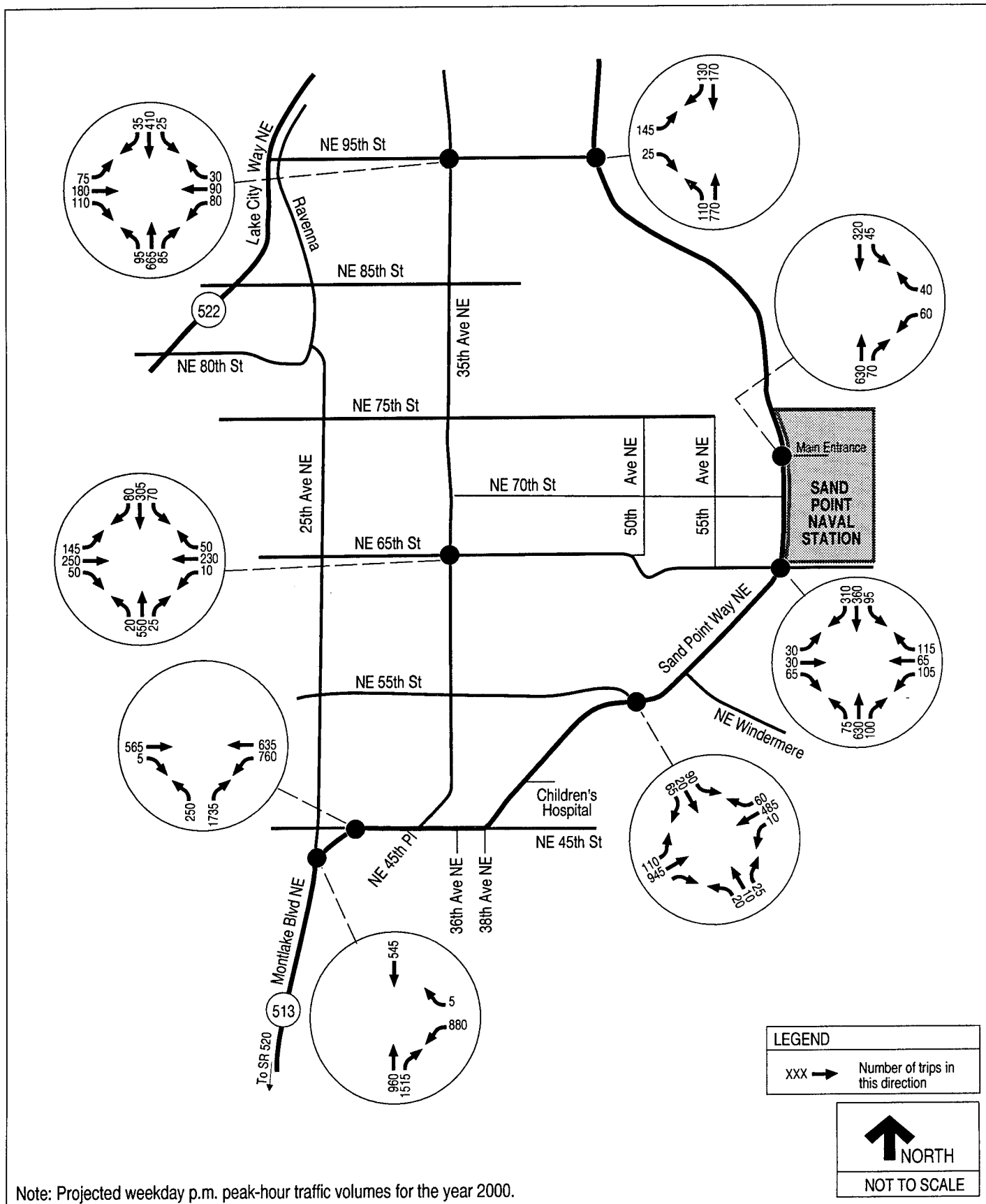
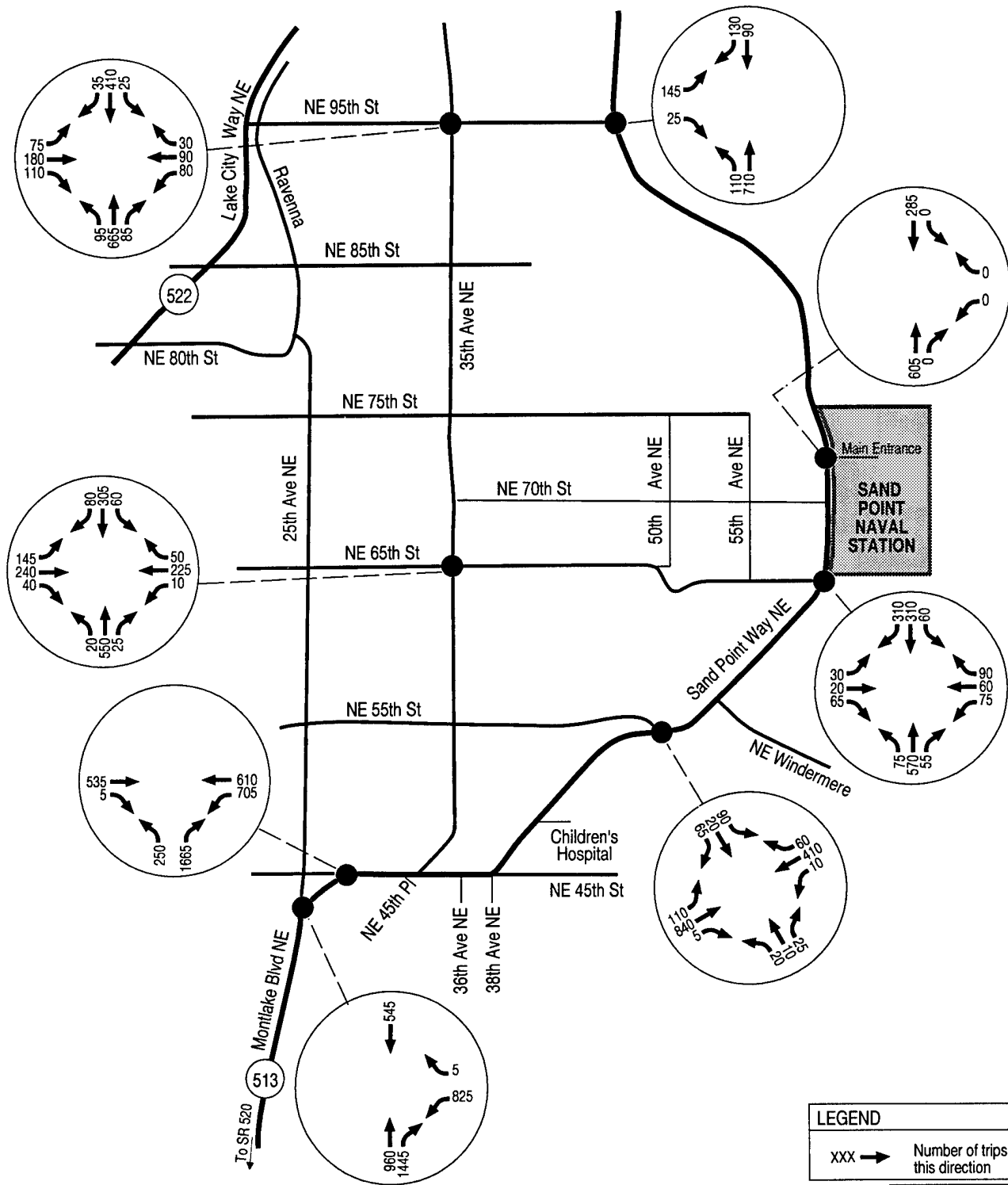


Figure 3-16
Forecasted P.M. Peak-Hour Traffic Volumes—Minimal Office Alternative

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LEGEND

xxx → Number of trips in this direction

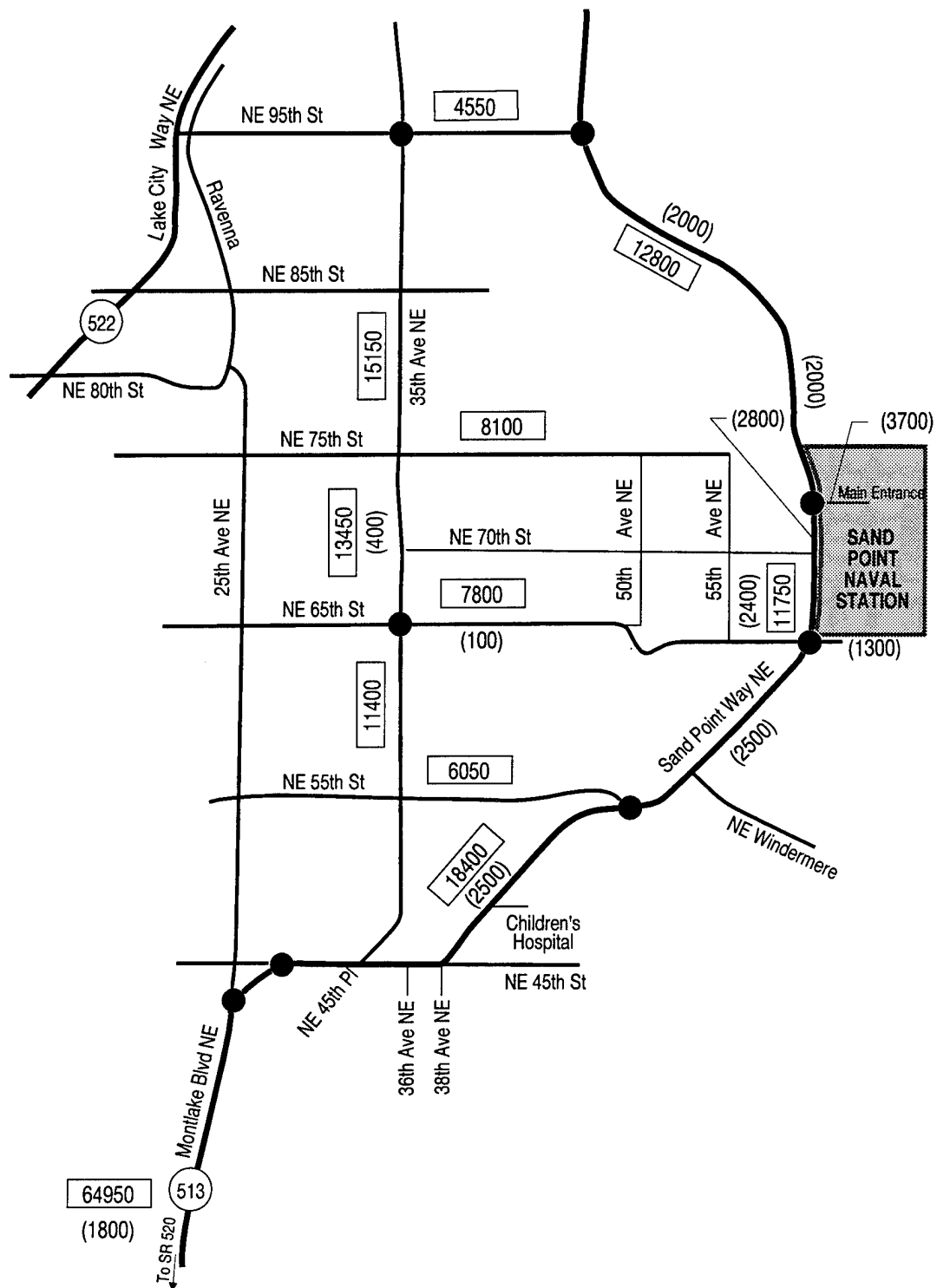
NORTH

NOT TO SCALE

Note: Projected weekday p.m. peak-hour traffic volumes for the year 2000.

Figure 3-17
Forecasted P.M. Peak-Hour Traffic Volumes—No-Action Alternative

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Note: Projected average daily traffic volumes for the year 2000.

LEGEND

5600
(1200)

Background Average Daily Traffic
Site Only Average Daily Traffic



NORTH

NOT TO SCALE

Figure 3-18
Forecasted Average Daily Traffic Volumes--Preferred Alternative

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The no-action alternative would generate only minimal traffic from maintenance-related activities occurring at the base.

Level of Service

Table 3-14 compares existing LOS with expected LOS (for the year 2000) for the eight major intersections in the transportation study area. The existing LOS will improve for some intersections. This analysis assumes no modification of existing roadways; however, analysis did assume some signal timing enhancements had been performed.

Table 3-14
Existing and Projected (Year 2000) P.M. Peak-Hour Levels of Service

Intersection	Level of Service			
	Preferred Alternative (2000)	Existing (1993)	Minimal Office Alternative (2000)	No-Action Alternative (2000)
N.E. 95th St./ 35th Ave. N.E.	B	B	B	B
N.E. 95th St./ Sand Point Way N.E.	D ^a	F ^a	F ^a	E ^a
N.E. 65th St./ 35th Ave. N.E.	C	B ^b	B ^b	B ^b
N.E. 65th St./ Sand Point Way N.E.	B	C	C	B
Sand Point Way N.E./ North Base Access	B	B	B	—
Sand Point Way N.E./ Princeton Ave.	B	B	B	B
Montlake Blvd. N.E./ N.E. 45th St.	C	C	C	C
Montlake Blvd. N.E./ 25th Ave. N.E.	B	C	B	B

^aUnsignalized

^bLOS improved by modifying signal timing

Note: See Section 3.4.1 for definitions of levels of service.

Table 3-14 suggests that the preferred and the minimal office alternatives alone would not cause the street network to operate under unacceptable conditions. In some cases, modifications to signal timing would be necessary to ensure the intersections can operate at acceptable levels. Under both alternatives, intersection LOSs are expected to remain at C or better, except for N.E. 95th St./Sand Point Way N.E., which is projected to operate at level F under the preferred and the minimal office alternatives and level E under the no-action alternative.

Roadways

In 1994, the City of Seattle passed a concurrency ordinance to comply with the State Growth Management Act. Concurrency requires the City to monitor projected growth from new development and to have adequate transportation facilities to accommodate new growth. The City uses aggregate volume-to-capacity (V/C) ratios as a level-of-service measure for concurrency. Volume is the number of vehicles per hour traveling a section of roadway. Capacity is the maximum hourly rate at which vehicles can reasonably be expected to travel a section of roadway. The V/C ratio represents the volume of vehicles compared to the capacity. Table 3-15 shows the maximum allowed V/C ratios under the concurrency ordinance and the expected V/C ratios for the two alternatives within the transportation study area. None of the alternatives violates the concurrency ordinance.

An estimate of the amount of traffic each alternative is expected to contribute to the Montlake Bridge in the year 2000 is shown in Table 3-16. Hourly traffic counts taken on the bridge in October 1993 revealed that 3,876 vehicles crossed during the a.m. peak hour and 6,540 vehicles crossed during the p.m. peak hour (City Engineering 1993). These counts include an hourly volume breakdown. Each hour's percentage of the ADT was determined and applied to the projected ADT volumes for each reuse plan. These reuse plan volumes were totaled for each peak period.

As shown in Table 3-15, volumes on the bridge would begin to approach a V/C ratio of 1.0 even under the no-action alternative. The preferred alternative pushes the volumes even closer to a V/C ratio of 1.0 by increasing traffic on the bridge by 3 percent. The minimal office alternative increases bridge traffic 2 percent. These volumes do not exceed the maximum allowed V/C ratios and, therefore, are not considered significant.

Table 3-15
Traffic Volume-to-Capacity Ratio Comparisons in Transportation Study Area

Location	Direction	Peak-Hour Capacity	Max. V/C	Preferred Alternative V/C	Minimal Office Alternative V/C	No-Action Alternative V/C
Montlake Bridge and University Bridge	NB	4,300	1.20	0.96	0.96	0.94
	SB	4,300	1.20	0.92	0.90	0.89
North-south routes, south of NE 75th St.	NB	4,300	1.0	0.64	0.63	0.61
	SB	4,300	1.0	0.38	0.35	0.33
East-west routes (65th St. and N.E. 80th St.)	EB	5,540	1.0	0.39	0.39	0.38
	WB	5,540	1.0	0.37	0.37	0.36
East-west routes between N.E. Pacific and N.E. Ravenna Blvd.	EB	6,760	1.0	N/A	N/A	0.53
	WB	6,760	1.0	N/A	N/A	0.65

Notes:

NA Not applicable SB South bound
 NB North bound V/C Volume-to-capacity
 EB East bound WB West bound

Table 3-16
Forecast of Montlake Bridge Peak-Period Traffic Volumes Generated by Each of the Alternatives

Alternative	A.M. Peak Period 7:00 - 9:00 a.m. Total (Site-Generated)	Afternoon Peak Period 3:00 - 6:00 p.m. Total (Site-Generated)
Preferred	9,142 (238)	14,137 (372)
Minimal Office	9,078 (174)	14,036 (271)
No-action	8,904 (0)	13,765 (0)

Note: Volumes reflect 1 percent growth per year.

Transit

The preferred and the minimal office alternatives would result in increased bus transit ridership because housing and educational uses are expected to generate additional riders. However, this impact is not expected to be significant.

Additional Metro bus service into the site could attract riders and reduce overall impacts of the preferred alternative to local roads, including the Montlake Bridge. The transit service should be designed and implemented to meet the needs of students and low income residents who are strong candidates for transit use. This service may result in a reduction in the number of vehicle trips projected for the site. Other transit modes, such as commuter vans, may be appropriate. A study of transit needs of future users should be completed to determine the most appropriate and cost-effective transit service for the proposed uses.

High Occupancy Vehicles

There is no HOV infrastructure within the immediate study area; therefore, no impacts are anticipated. Although the preferred and the minimal office alternatives will result in an increase in vehicular traffic, the contribution represents a fraction of regional traffic using HOV lanes and therefore is not significant.

Nonmotorized Modes of Transportation

Use of the Burke-Gilman Trail and other bicycle and pedestrian routes remains popular and will continue to increase as the regional population increases. SED estimates that 40 percent of city residents participate in bicycling, and 70 percent of city residents participate in walking. The preferred and the minimal office alternatives would contribute to recreational and commuter use of the Burke-Gilman Trail and other area trails. However, this impact is not expected to be significant.

Pedestrian and bicycle amenities (such as bicycle storage racks) could reduce vehicle trips to and from the base, as well as promote safe nonmotorized travel. Pedestrian and bicycle mobility could also be promoted on the site, given the complementary uses in the area.

Traffic Safety

Trends in traffic accidents and pedestrian, bicycle, and automobile accidents are difficult to estimate. Incidents might increase relative to the increase of vehicular traffic under the preferred and the minimal office alternatives; however, this impact is not expected to be significant.

Parking

Because of the large amount of paved parking at the base, parking is not anticipated to be a problem under the preferred and the minimal office alternatives. As land uses are finalized, specific parking plans should be created. Parking should be restricted, as necessary, to ensure that a sufficient number of spaces are available for either alternative.

The number of vehicles accessing the site might be controlled by limiting parking spaces, reserving spaces for ride-sharing vehicles, or imposing parking fees. This reduction in vehicles would help reduce the number of vehicles using the Montlake Bridge and surrounding roadways.

Construction Traffic

No construction activity will occur under the no-action alternative. The impact of construction traffic is not expected to be significant since construction activities would occur on site and not on off-site roadways. Significant new construction is not proposed under the lease, except for utilities.

Ballard High School

If Scenario 1 occurs, Ballard High School (which is expected to have 1,100 students and 90 staff) may be relocated to Building 9 for approximately 2 years. Because of the typical hours of operation of a high school, minimal impact to traffic is expected during the evening rush hour. Even though more vehicles enter the school during the morning rush hour, school traffic is not expected to have a serious effect on overall traffic volumes since total a.m. peak-hour volumes are lower than p.m. peak-hour volumes.

To predict worst-case impacts for the high school, this EA assumed that only 15 percent of the students would travel by bus. Students and faculty could be encouraged to carpool or use public transportation. This will help alleviate concerns about inadequate parking. Generally, a parking conflict for the high school and community college is not expected because the schools will operate during different hours.

3.4.3 Mitigating Measures

The City will adjust signal timing to reflect changes in traffic conditions as appropriate. The City will prepare additional analysis when Ballard High School occupies the site or

when office space is utilized. The City will signalize and improve the N.E. 95th St./Sand Point Way N.E. intersection if warranted at that time.

3.5 NOISE

This section summarizes information on background environmental noise levels in the vicinity of Sand Point Naval Station, discusses the City of Seattle's noise ordinance and guidance on evaluating noise impacts developed by EPA's regional office in Seattle, and evaluates and compares the existing noise environment around the base with potential noise sources and levels created by activities proposed in the preferred alternative (interim lease) and the minimal office alternative. This section also contains mitigating measures for activities that might otherwise produce a significant impact and concludes that no noise source should be significant after mitigation. Much of the information in this section is adopted from the noise study performed to support the EIS (Yantis 1994).

3.5.1 Affected Environment

A noise study was conducted in the vicinity of Sand Point as part of the EIS on the reuse of the naval station, and existing noise levels were monitored (Yantis 1994). The predominant existing noise sources in the study area were local street traffic, occasional aircraft fly-overs, water craft noise, and crowd noise when sports activities occur in Magnuson Park. The street in the area with the heaviest traffic is Sand Point Way N.E. Existing high noise levels temper potential impacts for residential areas near Sand Point Way N.E. Residences further away from Sand Point Way N.E. have lower noise levels and therefore a greater potential to be impacted by new land/building uses at the base.

Sand Point Naval Station is located in a primarily residential neighborhood characterized by a mixture of single-family homes and multifamily buildings. Magnuson Park, located on the eastern portion of the site, provides recreational facilities and open space. Currently, no industrial or commercial operations exist that would generate high noise levels.

Noise is defined as excessive or unwanted sound. It results from a combination of the intensity, duration, and character of sounds from all sources. Noise, as perceived by humans, is commonly measured on a weighted logarithmic scale (A-scale) in decibels (dBA). Typically, humans can just detect a 3-dBA change and perceive a doubling of sound for a 10-dBA change. Sound from a localized source decreases by about 6 dBA for each doubling of distance, while the sound from a street decreases by about 3 dBA for each doubling of distance. For example, if a machine were to generate 80 dBA of

noise at 50 feet (15 m), the sound would be measured at 74 dBA at 100 feet (30.48 m); however, street noise measured at 80 dBA at 50 feet (15 m) would be measured at 77 dBA at 100 feet (30.5 m). If the number or magnitude of existing noise sources increases, the change in noise levels is relatively imperceptible to humans because the scale is logarithmic. Doubling the volume of traffic while keeping speed and other conditions constant, increases noise by 3 dBA, which is just perceptible to humans.

Noise levels are decreased by distance, by obstructions such as buildings or terrain, and by ground absorption, including vegetation. Noise levels can be increased from reflections off hard surfaces such as pavement or nearby buildings. The effect of noise on people is determined by its level and duration. Equivalent noise level (L_{eq}) is used to measure average noise level over select time periods. Another useful measure, L_{dn} (day-night equivalent sound level), represents an average noise level measured over a 24-hour period, with a 10 dBA penalty applied to nighttime levels.

Noise effects depend on the time and duration of occurrence. For this reason, nighttime noise is considered more problematic than daytime noise. The City of Seattle has a noise ordinance (Seattle Municipal Code [ordinance 106360] 1977) that requires sources to be 10 dBA lower at night if they impact residential areas. The ordinance allows varying noise impacts depending on the source and the receiver. Residential areas are afforded the most protection, and industrial areas are allowed the highest noise levels. Assuming some commercial but no industrial use will occur as a result of the preferred alternative, the noise ordinance can be summarized to allow 57 dBA during daytime (7:00 a.m. to 10:00 p.m.) and 47 dBA during nighttime. Various activities are allowed an additional 5 dBA for 15 minutes per hour, 10 dBA for five minutes per hour, and 15 dBA for one minute per hour. During the daytime, construction equipment (e.g., crawlers, tractors, dozers) is allowed to exceed levels by 25 dBA; portable power equipment (e.g., chainsaws, chippers, hand tools) by 20 dBA; and maintenance equipment (e.g., lawnmowers, snow blowers, composters) by 15 dBA. Very loud, impact-type construction equipment (e.g., piledrivers, jackhammers, sandblasting tools) is allowed to reach 90 dBA for 1 hour, 93 dBA for 30 minutes, 96 dBA for 15 minutes, and 99 dBA for seven and one half minutes. Higher noise levels may be permitted by variance. Motor vehicles, depending on type (car or truck), are allowed to emit noise at levels as high as 86 dBA at speeds up to 35 miles (56 km) per hour. Watercraft within 50 feet of the shoreline cannot exceed 74 dBA (64 dBA at night). In public parks (such as Magnuson Park), the ordinance limits sound from an officially sanctioned outdoor musical event to 95 dBA for one minute measured at 50 feet from the source. The ordinance exempts aircraft in flight, as well as most safety equipment and alarms.

The City's noise ordinance is applicable to specific activities but does not regulate the totality of urban noise sources, particularly the local impacts of street noise in residential areas. As a result, the noise levels measured at many locations in the City are unlikely to achieve levels as low as the ordinance permits for individual activities. When the background noise level exceeds the values specified in the ordinance, the effect of a single new activity that just meets the level allowed may be an imperceptible change in the overall noise environment.

In order to evaluate the impact of sources in areas that currently have a background noise level exceeding those in the City's noise ordinance, this analysis of the alternatives will use the guidance of the EPA Region 10 office (U.S. EPA 1980). EPA concluded that people perceive an increase of 0 to 5 dBA as a slight increase in noise over background levels. Further, EPA determined that increases of 5 to 10 dBA were a significant increase in noise, and increases greater than 10 dBA were very significant (termed "serious").

This EA considers a noise impact significant if one of the following applies:

- In an area that currently experiences lower sound levels than the ordinance allows, noise above the City of Seattle's ordinance is significant.
- In an area that currently has background noise levels in excess of the ordinance, an increase greater than 5 dBA is significant.

The sound levels monitored in the vicinity of Sand Point generally exceed both the daytime and nighttime allowable noise levels given in the City ordinance for activities that impact residential areas (see Figure 3-20). The residential area located just south of Magnuson Park was the only area that met ordinance levels. All of the other monitoring sites are impacted by traffic noise generated by Sand Point Way N.E. and local streets.

3.5.2 Environmental Consequences

Several of the activities proposed in both the preferred and the minimal office alternatives, including the temporary relocation of the high school, the baseball fields, fire department training, and traffic associated with all activities, will generate noise. Quantification of the noise impacts of individual activities, except for those associated with the temporarily relocated high school, has been completed for the City's reuse plan (Yantis 1994). Increased traffic noise is expected to have minimal impact on noise levels because existing traffic generates significant noise, and the change will be slight (as

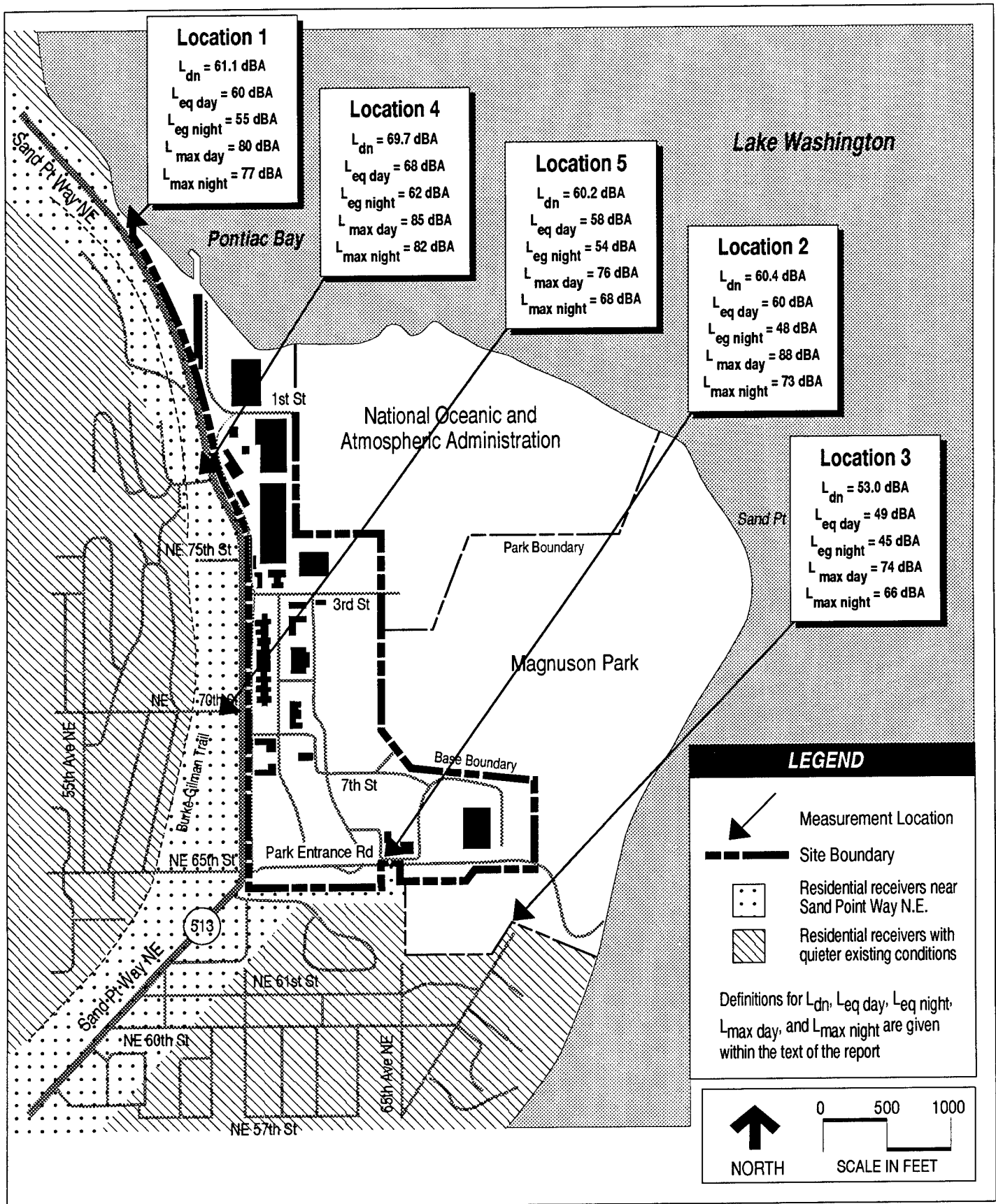


Figure 3-20
Noise Levels at Five Locations Around Sand Point

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defined by the EPA). Table 3-17 shows estimated changes in noise resulting from additional traffic entering Sand Point Naval Station (Yantis 1994).

Table 3-17
Projected Noise Levels From Traffic

Road Section	Equivalent Noise Level (L_{eq}) in dBA		
	Existing Traffic	Preferred Alternative (Interim Lease)	Minimal Office
Sand Point Way north of NOAA entrance	63	65	65
Sand Point Way north of base entrance	67	70	70
Sand Point Way and 65th St.	68	68	68

Note:

NOAA National Oceanic and Atmospheric Administration

Projected noise levels for several sources under the preferred and the minimal office alternatives are given in Table 3-18. Some of the sources (e.g., fire engine alarms) are projected to exceed the acceptable noise levels provided in the City's ordinance. However, although these sources would exceed the ordinance levels, the background noise levels are higher than the ordinance provides. When using a logarithmic scale, the addition of small sources does not result in a measurable change to existing large background values. Some of the noise sources have historically been present on the base (e.g., on-site traffic); therefore, no significant impacts are expected from the preferred alternative.

Noise levels associated with the temporary high school and community college have not been previously quantified. The most current information available characterizes likely significant forms of student and staff noise generated outside of the educational building (Building 9) to be "playground" and "crowd noise," which would have no impact on existing noise levels (Yantis 1994).

Construction noise levels are regulated by the City of Seattle noise ordinance. Noise levels that comply with the maximum allowable noise levels permitted by the Seattle noise ordinance can be as great as 99 dBA for short periods of time. The construction planned for the Sand Point Naval Base is typical for construction projects. Construction noise levels will be slightly audible at the closest residential areas but will not be intrusive most of the time. For brief periods, the noise levels may increase (when

Table 3-18
Projected Noise Levels and Resulting Impacts

Noise Sources	Maximum Allowable Noise Levels per City Ordinance (dBA)	Measured Background Noise Levels at Potential Receivers ^a (dBA)	Minimal Office Alternative (dBA)		Preferred Alternative (Interim Lease) Projected Impact Levels (dBA)	
Construction	L_{eq} 90	$L_{eq \text{ day}}$ 62	NQ	Slight	NQ	Slight
On-site traffic (day)	$L_{max \text{ day}}$ 72	$L_{max \text{ day}}$ 80	80	Slight	80	Slight
On-site traffic (night)	$L_{max \text{ night}}$ 62	$L_{max \text{ night}}$ 77	80	Slight	80	Slight
Heating and ventilating equipment	L_{eq} 47	$L_{eq \text{ night}}$ 58	48	Slight	48	Slight
Children's playground	L_{eq} 57	$L_{eq \text{ day}}$ 62	48	Slight	48	Slight
Fire engine movements	$L_{2.5}$ 72	$L_{max \text{ day}}$ 80	78	Slight	78	Slight

^aMeasured background noise levels at the noisiest location predicted for this source (if the preferred alternative is implemented). The locations were chosen from residential locations across Sand Point Way N.E.

Notes:

dBA Decibel

L_{eq} Equivalent noise level

$L_{eq \text{ day}}$ L_{eq} (13 hrs) from 7:00 a.m. to 8:00 p.m.

$L_{eq \text{ night}}$ L_{eq} (5 hrs) from 7:00 a.m. to 8:00 p.m.

NQ Not quantified

$L_{max \text{ day}}$ is an arithmetic average of L_{max} for each hour between 7:00 a.m. and 8:00 p.m. $L_{max \text{ night}}$ is an arithmetic average of L_{max} for each hour between 8:00 p.m. and 1:00 a.m.

construction activity is closest to the residential property or particularly noisy construction activities occur), and the resulting impact may be intrusive while still complying with the ordinance. It is assumed the construction activities will comply with the noise ordinance and therefore will not result in a significant impact.

No environmental impacts result from the no-action alternative. The existing sources of noise on the base, while it is under caretaker status, comply with the City of Seattle's noise ordinance.

3.5.3 Mitigating Measures

Because construction noise is regulated by City Ordinances, no mitigating measures are required for noise sources under any alternative.

3.6 PUBLIC SERVICES AND UTILITIES

This section discusses affected environment and projected impacts related to the water, wastewater and sanitary sewer, stormwater, solid waste, electric, heating, cable television, and telephone systems on and near Sand Point Naval Station.

3.6.1 Affected Environment

This section describes existing public services and utilities on and near the Sand Point property.

Drinking Water System

Sand Point Naval Station directly connects to City of Seattle's water system, which is supplied by three sources: the Cedar River Watershed, the South Fork of the Tolt River Watershed, and the Highline Well Field. All three sources are outside the Seattle city limits. The Seattle Water Department (SWD) maintains 1,662.6 miles (2,676 km) of distribution mains, 11 distribution reservoirs, 8 standpipes, 4 tanks, 17 pumping stations, and 172,203 metered service lines.

Existing peak capacity of SWD's water sources is 350 million gallons per day (mgd) (1.32 billion liters per day). Existing peak storage capacity is 5,156 mgd (16,937 liters per day). Existing peak capacity of the transmission lines is 335 mgd (1.27 billion liters per day). In 1992, customers in SWD's service area used an average of 100 gallons (379 liters) per capita per day. SWD sells water to other providers in the region; therefore, this figure includes water sold to other purveyors.

When occupied by the Navy, average daily water consumption on the base was 146,000 gallons (552,610 liters) per day. SWD's 16-inch (41-cm)-diameter water main on Sand Point Way N.E. currently provides water to the base. An 8-inch (20-cm)-diameter water line connects with this main in the 6500 block, and an 8-inch (20-cm)-diameter line connects with this main in the 7600 block. Direct fire hydrant connections to the City's main are at the north end of the base. Water for Magnuson Park is supplied through the Sand Point Naval Station lines, with a separate meter for the park.

The looped on-base distribution system contains 28,000 feet (8,534 m) of 1.5- to 16-inch-diameter (3- to 41-cm-diameter) waterlines, of which 99 percent are unlined cast iron with leaded joints. The Navy's utilities report (U.S. Navy 1986) listed the condition of the 50- to 65-year-old system as fair. Preliminary investigation by SWD determined that the system is constructed of substandard materials and often substandard pipe sizes. Horizontal separation of water lines from sewer and storm sewer lines is also substandard, and leakage problems have occurred at the base in the past several years.

Current fire flow at the base is at least 1,000 gallons (3,785 liters) per minute through at least one hydrant. This level meets the City's informal standard for residential areas. A higher value is desirable. The condition of the existing piping system is unknown.

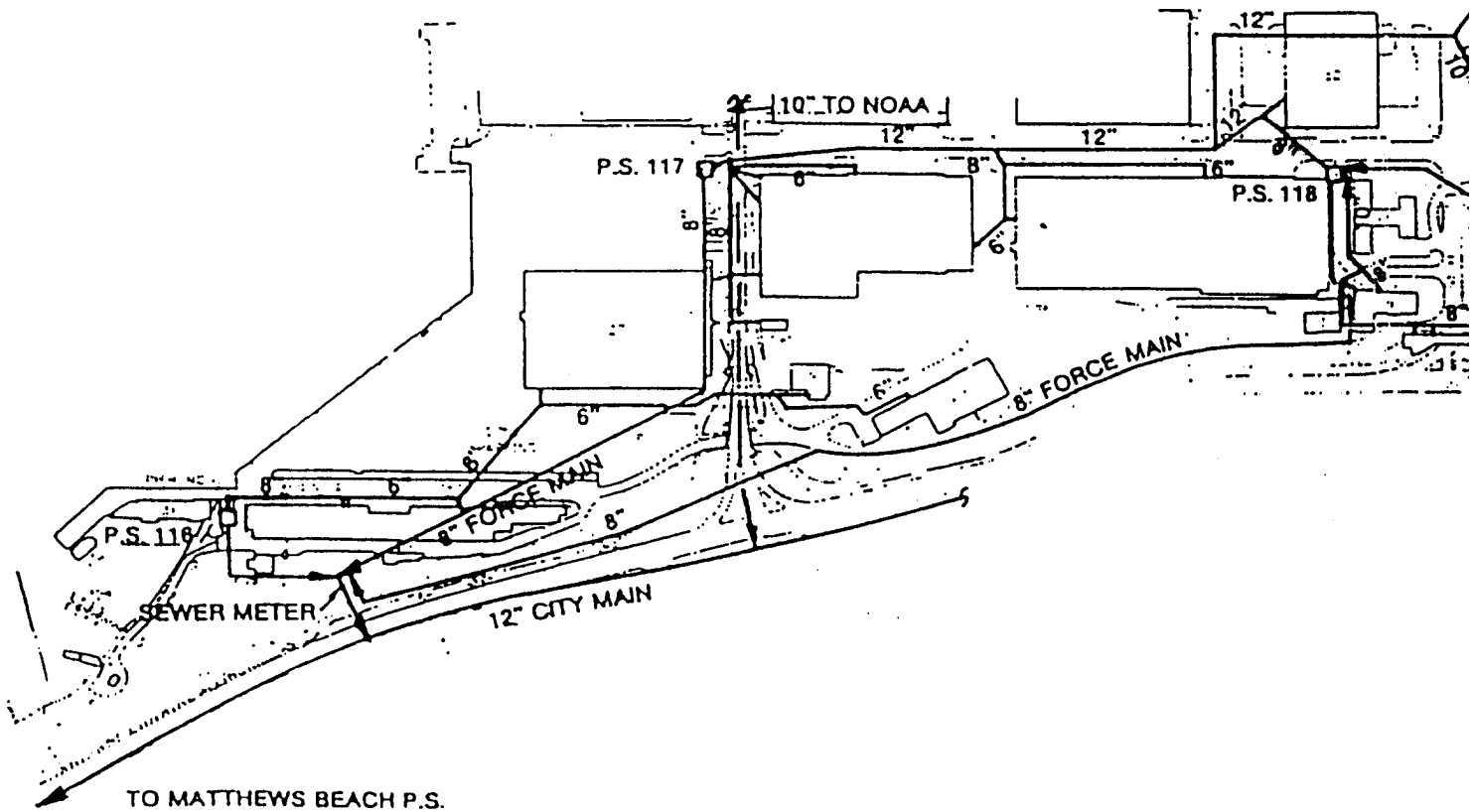
Wastewater and Sanitary Sewerage System

The existing on-base sanitary sewer system was originally installed in the 1940s (Figure 3-21). The system consists of 23,800 linear feet (7,254 m) of pipe and five pump stations. The pipes are a combination of concrete and vitrified tile, varying in diameter from 6 to 15 inches (15 to 38 cm). The pump stations are located near Buildings 2, 5, 11, 193, and 228. Each station has two pumps: the main pump and a backup pump used during shutdown of the main pump and during peak-flow conditions. The pumps are electric and have backup diesel generators capable of providing power for up to 8 hours. However, power transfer is not automatic.

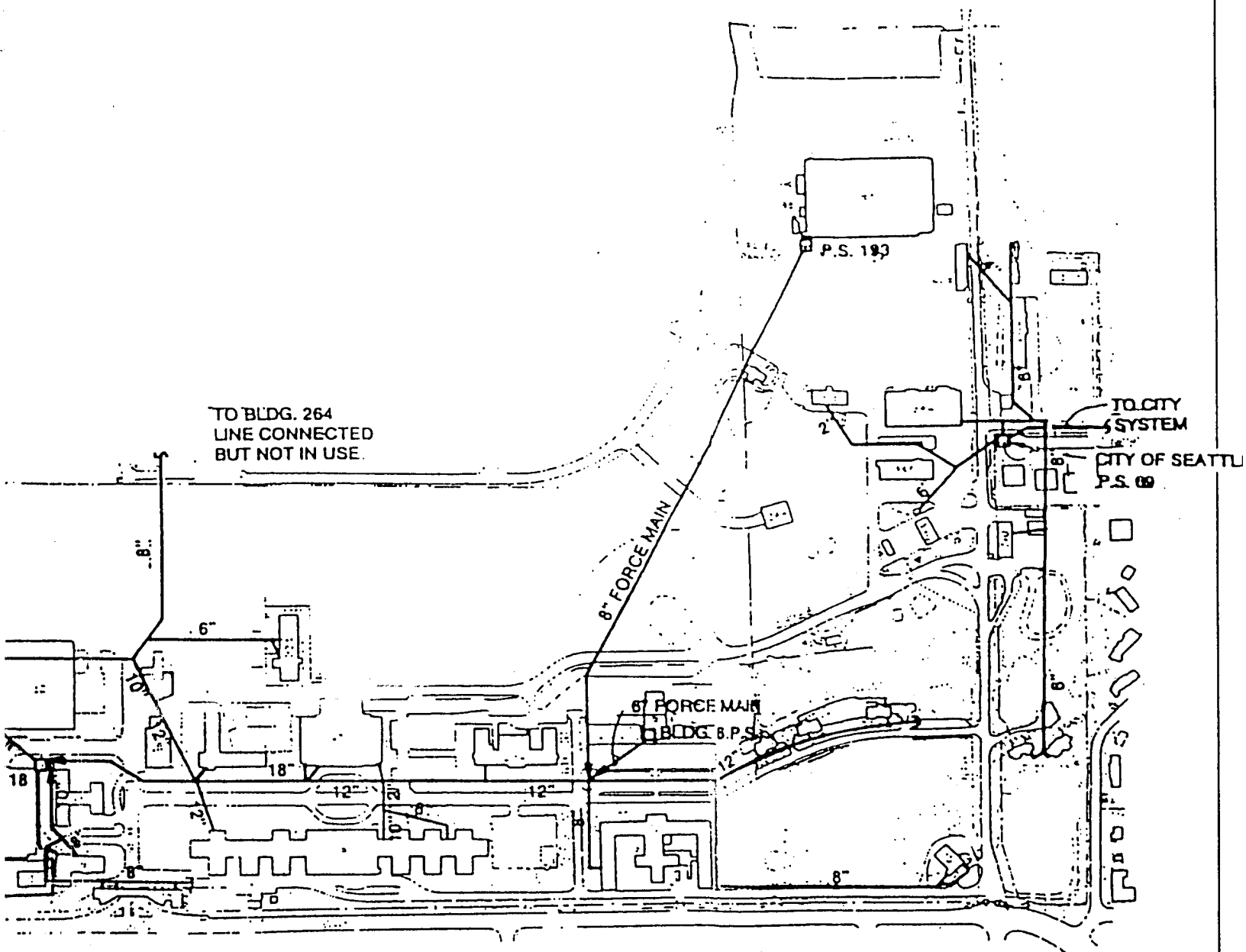
Infiltration of groundwater into the on-base system has been a problem during high-water-table conditions, especially periods of heavy rainfall.

When fully occupied, average daily wastewater flow from the base was approximately 149,000 gallons (563,965 liters) per day. Wastewater is transported from the base's sewer system to the City of Seattle's 12-inch (30.5-cm)-diameter gravity sewer main that runs north along Sand Point Way N.E., west of Building 115. A small section of the south portion of the base connects with the system south of Building 344, which serves adjacent University of Washington housing and then connects with the City's system. The City's system feeds into King County Department of Metropolitan Services' (Metro's) larger lines that convey the wastewater to Metro's West Point treatment plant. Current average daily flow at West Point is approximately 120 mgd (454 million liters per day); the existing capacity is 133 mgd (503 million liters per day). The plant provides primary and secondary treatment to remove 90 percent of solids. A planned expansion in 2006 will increase capacity to 165 mgd (625 million liters per day).

①



2

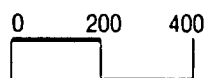


LEGEND:

P.S. Pump Station



NORTH



SCALE IN FEET

Figure 3-21
Sewage Collection System at
Sand Point Naval Station

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3

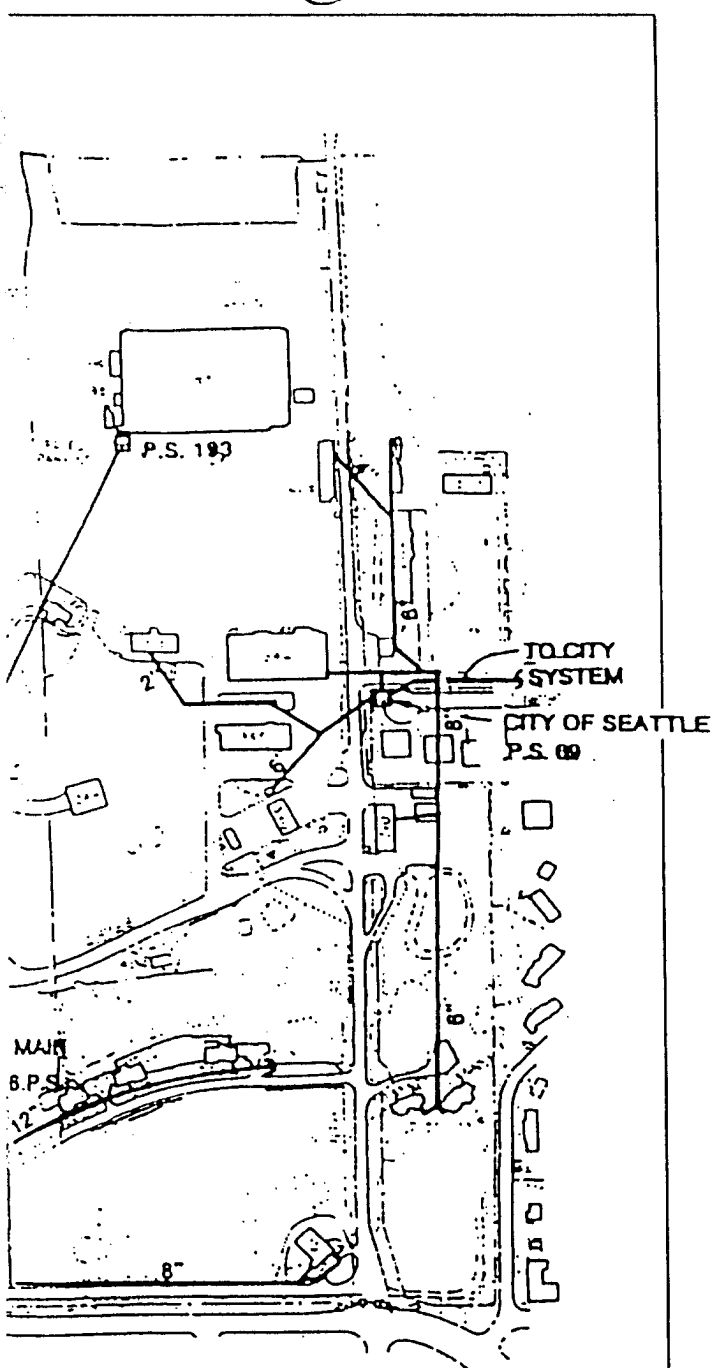


Figure 3-21
Sewage Collection System at
Sand Point Naval Station

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Stormwater Piped System

Approximately two-thirds of the surface area at the Sand Point Naval Station is impervious; the remaining one-third is vegetated. Most of the stormwater runoff from the impervious surface flows to the on-base piped drainage system, which was installed in the 1940s. A portion of the runoff flows on the surface directly to Lake Washington.

Sand Point's drainage system easily accommodates existing stormwater flow. In addition to serving the base (approximately 33 acres [13 hectares] of buildings and 70 additional acres [28 hectares] of impervious surfaces on the base), the drainage system at the Sand Point Naval Station receives runoff from portions of nearby NOAA property, Magnuson Park, and part of Sand Point Way N.E. and an area west of the roadway (Figure 3-22).

The base is divided into four major drainage basins, each with its own outfall to Lake Washington. Trunk lines range from 12 to 48 inches (30.5 to 122 cm) in diameter, with capacities ranging from 28 to 93 cubic feet (0.8 to 2.6 m) per second (cfs). Their combined discharge capacity is approximately 216 cubic feet (6.1 m) per second, which is adequate to handle a 25-year storm flow (approximately 210 cubic feet [6 m] per second). Outfalls that serve more than one building are located west of Building 11 (16-inch [41-cm]-diameter) and north of Building 27 (42-inch [107-cm]-diameter), and four off-site outfalls are located east of the base (two are 30 inches [76 cm] in diameter, one is 48 inches [122 cm] in diameter, and one is 42 inches [107 cm] in diameter). The system currently includes 15 existing oil/water separators that are periodically maintained by the Navy.

Solid Waste (Garbage)

Waste Management, Inc., provides solid waste disposal service at Sand Point Naval Station. Waste from the base is transported to the Columbia Ridge Landfill in Gilliam County, Oregon. The design capacity of this facility is more than 1,000,000 tons (907,200 metric tons) per year. The landfill receives 4,000 to 4,500 tons (3,629 to 4,082 metric tons) of solid waste per day. Landfill life is approximately 32 years. The base generated about 3,800 tons (3,447 metric tons) of solid waste in fiscal year 1992 and about 3,400 tons (3,084.5 metric tons) in fiscal year 1993.

Recycling at the base began in 1991. Navy personnel hauled recyclables to SeaDruNar Recycling twice weekly and metals to Riverside Metals Company as needed.

The City of Seattle has adopted goals to recycle 60 percent of its overall waste by 1998.

Electricity

The base is served by City Light's North Substation, which is rated at 13,000 kVA. The base's current load is 9,800 kVA during the winter peak. As of April 1992, the North Substation operated at 115 percent utilization during winter peak conditions. Once a capacity addition at the Canal Substation (near Fremont) is completed, excess load from the North Substation will be transferred to the Canal Substation.

City Light owns and maintains approximately 2,750 circuit-miles (4,425 km) of distribution lines within the City limits. Approximately 1,800 miles (2,896 km) are overhead and 950 miles (1,529 km) are underground. The peak capacity (as measured during a 1-hour January peak) of City Light-owned energy resources as of August 1992 was 1,573 megawatts (MW). If long-term purchase contract capability is considered, the minimum total confirmed 1-hour capability is 2,049 MW. The amount of energy produced and purchased by City Light in 1991 totals 1,306 average megawatts (aMW). The amount of energy used by consumers is less than the amount of energy produced because of transmission and distribution losses, City Light's own use, and sales to other utilities. Table 3-19 shows the demand for electricity in 1991 by customer type within the City Light service area.

Table 3-19
1991 Electricity Consumption

Type	Number of Customers	Total (MWh)	Per Customer (aMW)
Residential	296,886	3,348,694	382.1
Commercial and government	30,305	4,160,805	474.7
Industrial	297	1,460,796	166.7
Total	327,488	8,970,295	1,023.5

Notes:

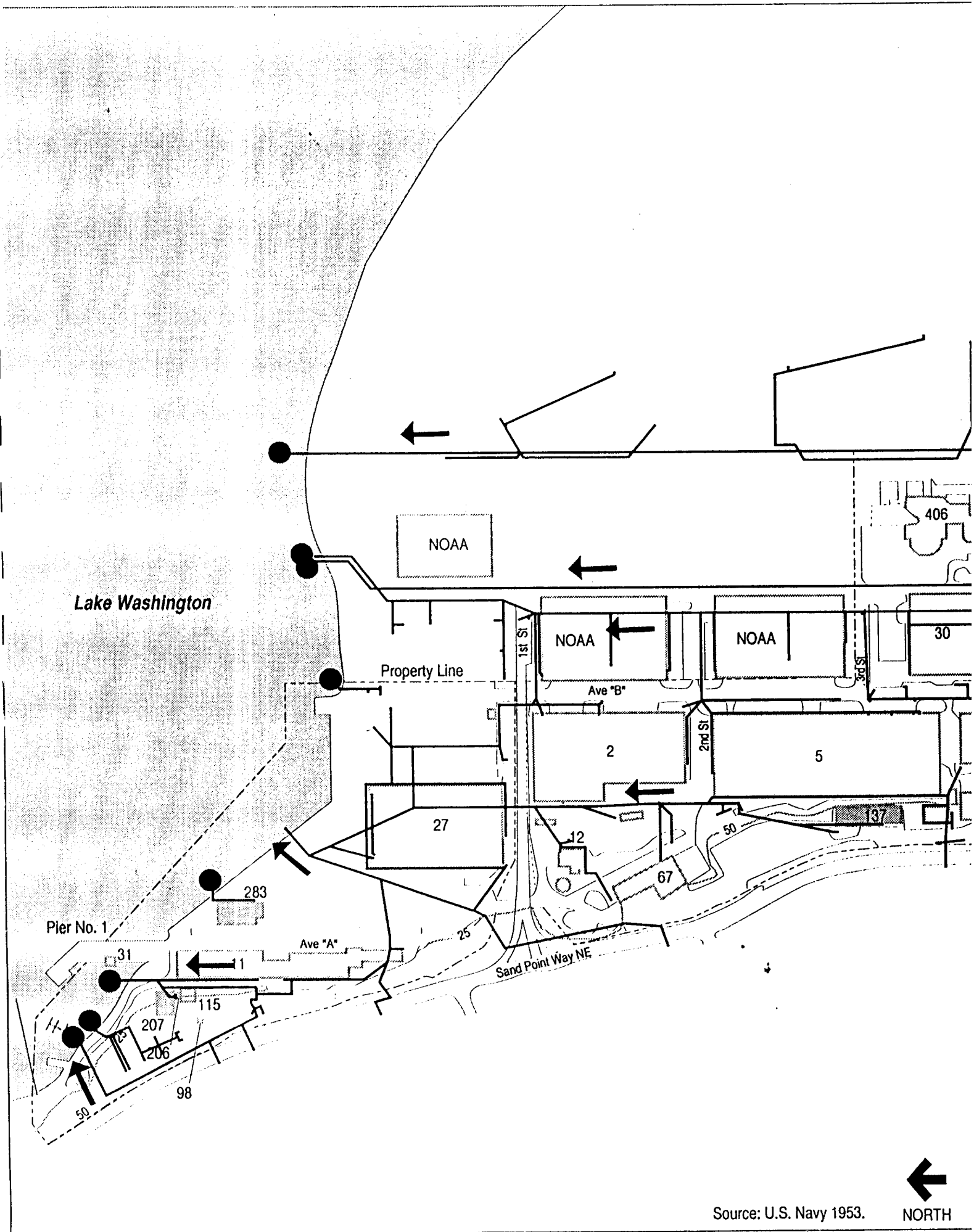
MWh Megawatt-hours

aMW Average megawatts

Source: City Planning 1993

The Navy and Seattle City Light (City Light) upgraded electrical service to the base in 1980. All buildings on base are currently served by a City Light transformer located near the main gate. Electricity consumption is measured at the City Light meter between the transformer and the Navy's main switchgear. The underground distribution system is adequate to serve the Navy's uses.

①

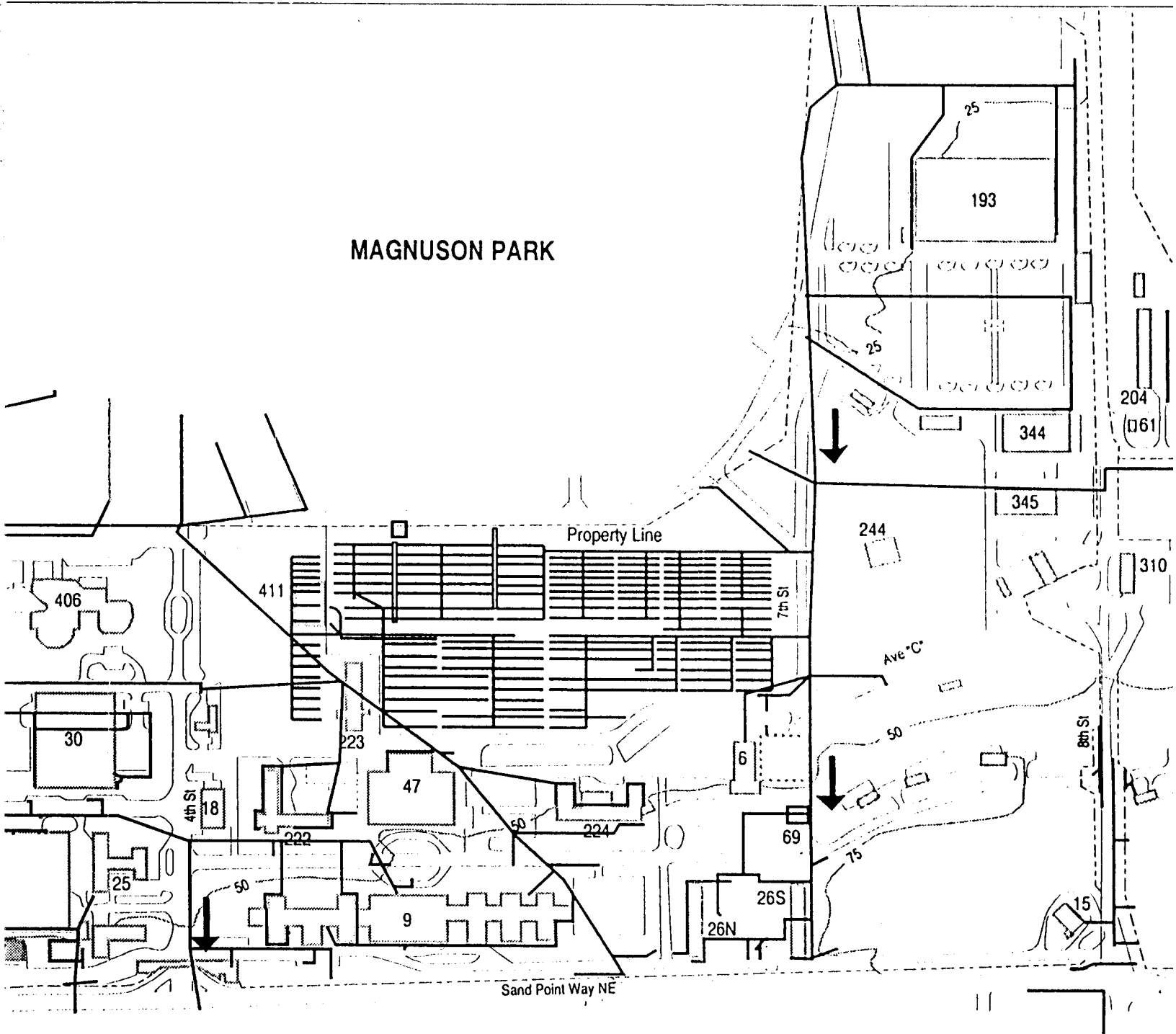


Source: U.S. Navy 1953.



2

MAGNUSON PARK



LEGEND:

- Property Line
- Foundation Only
- Bldg Location and Number
- Elevation Contours in Feet Above Mean Sea Level
- Direction of Drainage
- Storm Drain Outfall

Figure 3-22
Stormwater Drainage System at
Sand Point Naval Station

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NORTH
0 150 300
SCALE IN FEET

3

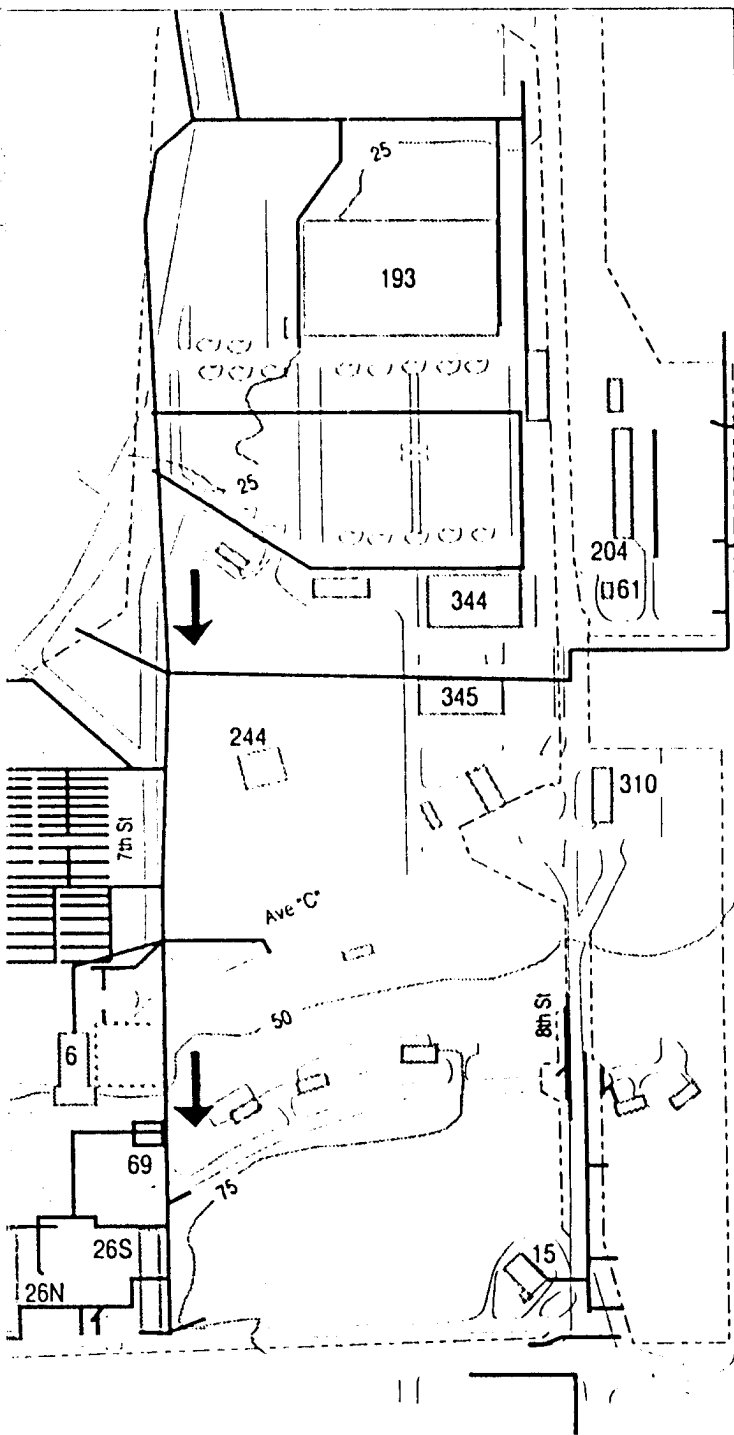


Figure 3-22
Stormwater Drainage System at
Sand Point Naval Station

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City Light serves Sand Point Naval Station through a 26-kilovolt (kV) underground cable that feeds a 5,000-kilovolt ampere (kVA) transformer system. The transformer provides a 4,160-volt (V) secondary server. The transformer is owned by City Light but the switching equipment is owned by the Navy. In fiscal year 1992, the base used 10,938 megawatt-hours/year (MWh/yr) of electricity. Service to individual structures is provided by underground wiring, which was upgraded in 1980. Magnuson Park, NOAA, and NBS buildings have separate electrical service.

Heating System

All buildings on Sand Point Naval Station are currently heated by the base's central steam plant located in Building 12. This heating plant houses three boilers that are rated at 27,000, 40,000, and 20,000 pounds of steam per hour (pph) (12,245, 18,141, and 9,070 kg/h, respectively). All three boilers are reportedly in good condition; the oldest should not need replacement until 2001. Boiler use is alternated to allow time for preventive maintenance.

The system's primary fuel supply is interruptible natural gas. During periods of high demand when natural gas is not available, the plant switches to a backup supply of No. 2 fuel oil. The boilers operate at 100 pounds per square inch gauge (psig) and can burn a maximum of 8,000 gallons (30,280 liters) of fuel oil per day; the normal average consumption during winter is about 6,000 gallons (22,710 liters) per day. Natural gas consumption at the base is approximately 100 million cubic feet (3 million cubic meters) per year.

Steam is distributed to 43 buildings through underground insulated piping. Condensate is returned by gravity and pumping through underground pipelines. The majority of the piping, installed in the 1940s, is reportedly in fair condition, with an 80 to 90 percent condensate return to the plant. The remaining 10 to 20 percent condensate is derived from City domestic water.

The three boilers were installed consecutively in 1977, 1983, and 1989. The design life of the boilers is 20 years, but normal life expectancy with good maintenance is 30 to 40 years. The boilers and controls have been upgraded to meet all national and local emission standards and have a good thermal efficiency of 82 percent. Some piping in the building is still insulated with asbestos-containing material; the lagged boiler casings have been abated and reinsulated with non-asbestos-containing materials.

Natural Gas. Washington Natural Gas (WNG) provides interruptible service to the base via a 6-inch (15-cm)-diameter, steel-wrapped main on Sand Point Way N.E. A 4-inch (10-cm)-diameter line connects to the boiler (Building 12) to provide heating fuel for steam heat for all buildings at Sand Point Naval Station. Natural gas use at the base during occupancy was at capacity (1.2 million therms per year).

The existing natural gas supply to Sand Point Naval Station has insufficient capacity to provide constant service to the base. During peak-demand time (6:00 to 8:00 a.m.) or when the temperature drops below 32°F (0°C), the gas demand exceeds the capacity of the existing pipeline and the current WNG system cannot provide sufficient gas to maintain a boiler fire. WNG normally gives at least 2 hours notice before curtailing gas service. When gas is curtailed, the boiler is shut off and the unit is refired on oil. Four aboveground oil tanks are the only supply of fuel during gas interruption, which normally lasts from 3 to 4 hours, but in extremely cold weather can last several days. Gas curtailments of up to 2 weeks have occurred at Sand Point Naval Station during gas line maintenance by WNG.

Fuel Oil Tank. No. 2 heating oil is currently stored in four 8,000-gallon (30,280-liter) steel double-walled aboveground storage tanks (ASTs) built in 1994 and located on the east side of the central steam plant in Building 12. The tanks are maintained as a backup fuel supply that comes into use when the natural gas system cannot provide sufficient gas to maintain a boiler fire. The amount of oil consumption at the base depends on the weather and the frequency of interruption of the natural gas service. In 1993, approximately 90,000 gallons (340,650 liters) of No. 2 fuel oil were used, with maximum use of about 8,000 gallons (30,280 liters) per day. Fuel oil is delivered by tank truck and is pumped to the steam plant through a 3-inch (8-cm)-diameter steel pipe. Lighting is provided at the side of the steam plant to permit night tank filling.

Cable Television

Cable service to all residential buildings is provided by Viacom Cablevision. The office, earth station, and area receiving center for the north end of Seattle, including Sand Point Naval Station, are located at N.E. 89th St. and Roosevelt Way N.E. The overall trunk and distribution system is considered in good condition. The on-site receiving point is in Building 5.

Telephone

Telephone service is provided by U S WEST Communications. One thousand telephone lines with the 526 prefix were reserved for Navy use at Sand Point Naval Station. When

fully occupied by the Navy, 652 lines were in use. Now these lines are available for other users in the U S WEST system. The U S WEST Lakeview central switching office at N.E. 64th St. and 11th Ave. N.E. serves Sand Point Naval Station. Data regarding capacity of this facility are unavailable. Main feeder lines run along Sand Point Way N.E. and provide service to the base. The existing system was upgraded with fiber optics.

Building Utility Systems

The buildings on site range from early 1930s to mid-1980s construction. Most of the major buildings have had some form of utility system upgrade through the years, but few have been upgraded in the past 10 years and most do not meet current codes. Few buildings have fire sprinkler systems. Electrical distribution in several buildings has been upgraded, but most of the wiring does not meet current codes.

3.6.2 Environmental Consequences

Off-Site Utility Systems

Neither the preferred, the minimal office, or the no-action alternative will have any significant impacts on the supply of public services and utilities, including energy supply, for the site. The utility demand expected for the preferred and the minimal office alternatives is within the range of the demand under the Navy use in the last 10 years. Therefore, significant impacts to off-site utility systems are not anticipated. The existing systems servicing the site are adequate for the no-action alternative.

The off-site utility systems are upgraded as a normal part of area growth by the responsible utility and generally are budgeted as maintenance by the utility.

On-Site Utility Systems

On a short-term basis, the on-site utility systems are adequate to serve the activities proposed under all three alternatives with no significant impacts. The preferred and minimal office alternatives propose upgrades to the on-site utility systems. No significant impacts are expected.

For those systems that require improvement, the City will inspect and then repair or upgrade the system. The following paragraphs briefly outline *expected* upgrades by the City.

- The existing on-site water system is expected to be upgraded to current standards.
- The preferred and the minimal office alternatives would not result in any significant increase in paved areas. Therefore, the amount of stormwater would not increase and the need for larger systems is not warranted. However, the condition of the system should be analyzed because of the age of the system. The location of the oil/water separators, with respect to parking areas and discharge of stormwater to Lake Washington, would also need further evaluation when parking/vehicle access is established. The City will have to maintain and operate the oil/water separators and the storm drainage system to ensure collected oil is removed prior to the oil reservoir overflow and that stormwater pipelines are kept open and flowing.
- The existing sanitary sewer system piping is of an age at which upgrades are generally required. The age and condition of the pumps would also have to be assessed.
- For the no-action alternative, current solid waste removal by the Navy would continue as described in Section 3.6.1.
- The electric service distribution was upgraded in 1980. Continued use of these systems is expected with some upgrades.
- Continued use of the central steam plant for the long term may not be economical. Individual buildings may be upgraded with HVAC equipment that specifically meets the requirements of the building and occupants. The individual HVAC equipment will eliminate steam line losses, thus reducing fuel consumption. In addition, the interim lease would result in a net reduction in heated building space after the demolition of 300,000 square feet (27,870 m²) of building. The new aboveground fuel storage tanks at the steam plant were chosen because they could be moved to other buildings, thus making the fuel supply system more flexible.
- The cable television service at the base was at capacity during base activity. Cable companies are upgrading in all areas to fiber optics and it is anticipated that when this improvement occurs, the system capacity for this area will increase.

For the interim lease, all occupants of the site will be required to contract with one of two state-approved solid waste disposal firms that are currently licensed to pick up solid waste in the City of Seattle. The approved firms are Waste Management of Seattle and Emerald City Disposal and Recycling.

The volume of solid waste generated by the preferred and the minimal office alternatives will not exceed the average volume disposed of by the Navy over the past 10 years.

Building Utility Systems

Because many of the buildings on site do not have fire sprinkler systems, and most of the electrical wiring does not meet current city codes, upgrades may be necessary. This is particularly true for the buildings proposed for educational uses.

3.6.3 Mitigating Measures

Off-Site Utility Systems

No improvements to off-site utility systems are required; therefore, no mitigating measures are required.

On-Site Utility Systems and Building Utility Systems

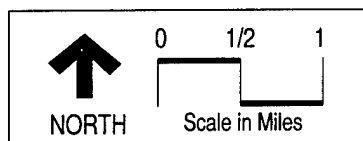
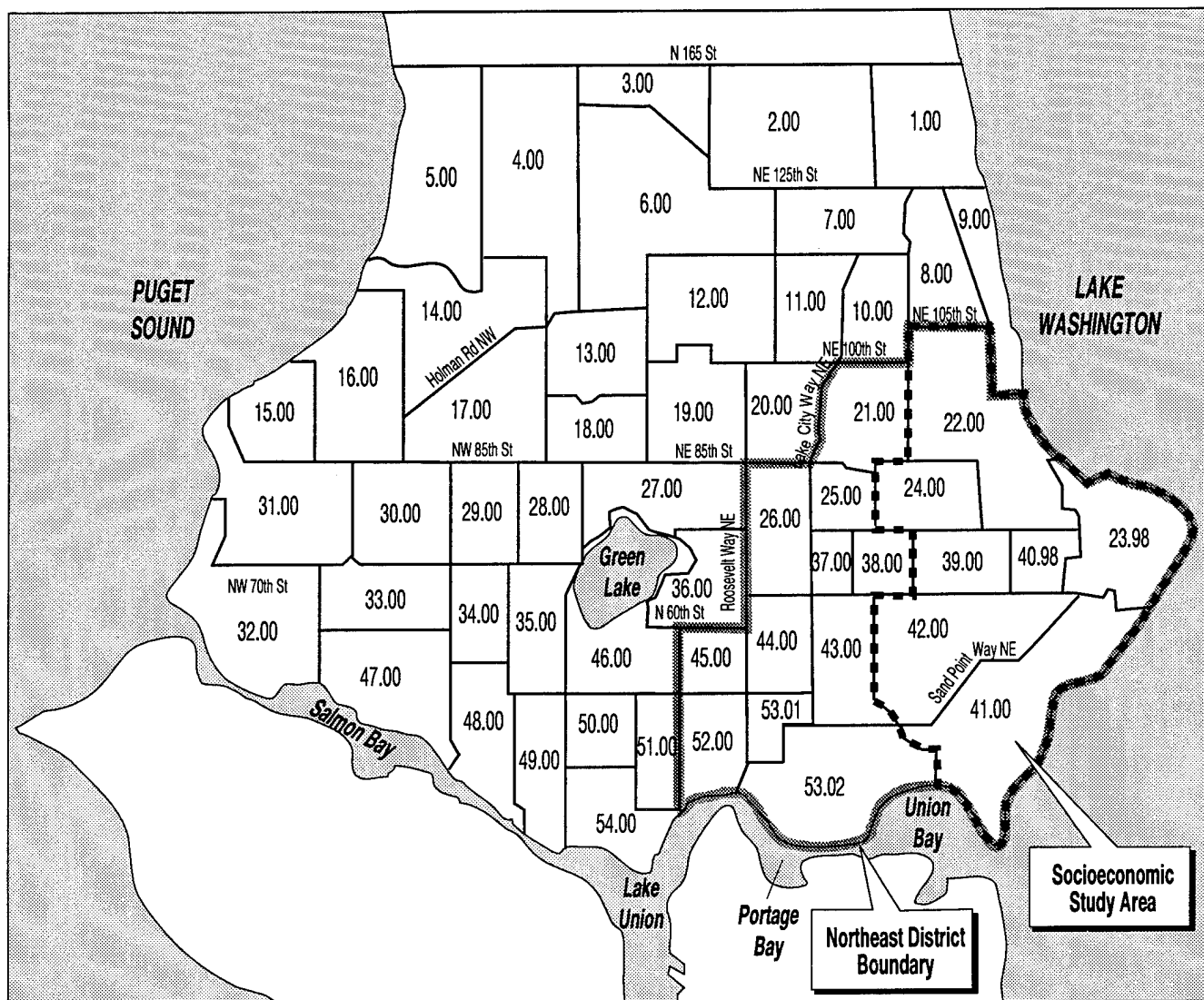
No mitigating measures are required because system installations are regulated by local and state codes.

3.7 CRIME AND LAW ENFORCEMENT

This section evaluates crime trends and law enforcement in the study area shown on Figure 3-23 and describes the environmental consequences and mitigating measures for crime resulting from implementing the preferred, the minimal office, and the no-action alternatives.

3.7.1 Affected Environment

A technical report addressing crime-related issues was prepared and is included as Appendix B. The results of that study are incorporated into the following discussion.



Note: 38.00 - Census Tract Number

----- Socioeconomic Study Area Boundary
 ===== Northeast District Boundary

Source: City of Seattle Planning Department, April 8, 1990

Figure 3-23
City of Seattle 1990 Census Tracts—Study Area
for Crime and Law Enforcement

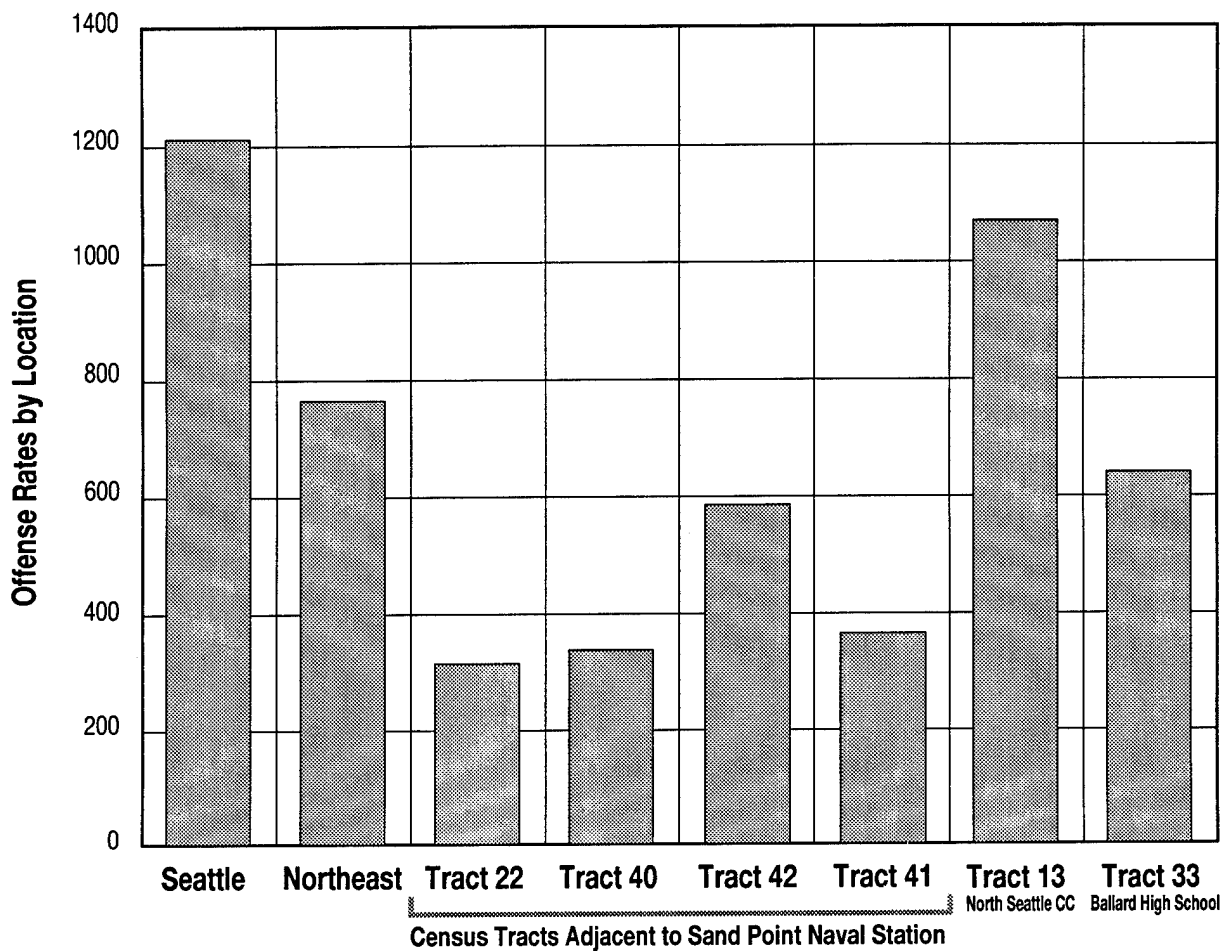
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An analysis of crime trends citywide and in the census tracts adjacent to Sand Point Naval Station revealed that serious crime (referred to as Part I offenses, which include murder, rape, robbery, assault, burglary of a home or business, vehicle theft, other forms of theft, and arson) has remained fairly constant over the past 10 years. Property crimes have decreased; violent offenses, which constitute a much smaller proportion of total crime, have fluctuated up and down over the years. In the census tracts adjacent to the base, the number of reported offenses is very low and stable compared with the city as a whole. Figure 3-24 shows 1993 offense crime rates for the city, northeast Seattle, and census tracts in the Sand Point Naval Station area, near North Seattle Community College, and near Ballard High School. Figure 3-23 shows the location of the census tracts.

The North Precinct of the City of Seattle Police Department, with jurisdiction over all of Seattle north of the water boundary of Union Bay, Portage Bay, Lake Union, and Salmon Bay, provides police protection for the abovementioned census tracts. The precinct has been divided into three sectors. The Sand Point Naval Station area is served by the U sector, which covers the area from Lake Washington, Union Bay, and Lake Union north to N.E. 85th St., and from Aurora Ave. N. (SR 99) east to Lake Washington. This area has been further divided as shown on Figure 3-25.

In the U sector, between five and nine squad cars are generally on patrol, depending on the time of day and day of the week. Services from the precinct station at 10049 College Way N. include patrol, traffic, and investigation. Police response time varies with traffic conditions and other factors, including the type of call (nuisance versus emergency). The citywide average emergency response time for 1993 and the first half of 1994 was approximately 9 minutes (Pirak 1995). If an officer from the U sector cannot respond to a call, then an officer is dispatched from another sector.

Since the base closure in 1995, the Navy has contracted with the police department for security services. In the past, the Navy provided its own law enforcement personnel (military police and shore patrol) for security patrol (i.e., 24 military and 12 civilian personnel). Response time was 3 to 4 minutes. In 1993, the naval base police force responded to the following incidents: 69 cases of property larceny; 32 cases of property destruction; 22 vehicle accidents; 6 cases of trespassing; 6 cases of sexual misconduct; 5 assaults; 5 forced entries; 4 thefts; and 4 domestic disturbances. Police also responded to one of each of the following incidents: arson, sexual assault, medical emergency, forgery, driving under the influence, firearms violation, and telephone threat.



Source: Fehr and Tjaden 1994.

Figure 3-24
Comparison of 1993 Citywide and Study Area Crime Rates

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3.7.2 Environmental Consequences

The uses envisioned under the preferred and minimal office alternatives are, with one exception, similar or identical to previous uses at Sand Point Naval Station (e.g., the ballfield use is identical to the use by the Little League). Therefore, these activities will not result in significant impact on crime rates or law enforcement. The one exception is the temporary relocation of Ballard High School.

Ballard High School is now located in Census Tract 33, which is bordered by N.W. 60th Street and N.W. 70th Street to the north and south, respectively, and 8th Ave. N.W. and 24th Ave. N.W. to the east and west, respectively. As shown in Table 3-20, crime rates in this tract are similar to rates in the northeast sector of the city. Table 3-21 provides the demographic characteristics of Seattle, the Northeast Subarea, and Census Tract 33. Crime rates in the Northeast Subarea are about one half those found in the city. Crimes typically associated with youth offenders, such as burglary and theft, have lower rates in Census Tract 33 than in the northeast. The rate of all Part I offenses is also lower in Census Tract 33 than in the Northeast Subarea, which suggests that the presence of high school students in a given location does not necessarily result in higher crime rates.

Table 3-20
Crime Rates for Seattle, the Northeast Subarea, and Census Tract 33
(Ballard High School)

Offense	Citywide		Northeast		Tract 33 (Ballard HS)	
	Number	Rate/10,000 Population	Number	Rate/10,000 Population	Number	Rate/10,000 Population
Murder/Homicide	65	1.26	2	0.29	1	1.76
Rape	328	6.35	16	2.35	2	3.52
Robbery	2,653	51.39	149	21.87	8	14.10
Aggressive Assault	4,313	83.54	239	35.09	22	38.77
Burglary of Residence	5,649	109.42	637	93.52	44	77.55
Burglary of Nonresidence	3,581	69.36	223	32.74	17	29.96
Theft	38,818	751.91	3,401	499.30	211	371.87
Theft of Vehicle	6,718	130.13	491	72.08	44	77.55
Arson	317	6.14	32	4.70	3	5.29
Part I Total	62,442	1,209.51	5,190	761.95	352	620.37

Note: 1993 data are used in this table.

Table 3-21
Demographic Characteristics of Seattle, Northeast Subarea, and Census Tract 33

Population	Seattle		Northeast Subarea		Census Tract 33	
	Number	% of Total	Number	% of Total	Number	% of Total
Total	516,259	—	68,115	—	5,674	—
Ages 5-17	55,252	10.70	—	—	589	10.38
Ages 18-24	61,403	11.89	—	—	466	8.21
Per capita income	\$18,318	—	—	—	\$15,726	—
Household income	\$28,353	—	—	—	\$27,521	—
Owner-occupied housing	—	46.46	—	—	—	37.00

Notes:

1990 census data area used in this table.

— Information not available.

Such findings should not be unexpected. Teens are more prone to committing crimes than adults; however, young people who are committed to academic work and involved in school activities are less likely to participate in crime. In addition, offenses are most frequently committed during leisure time, rather than during school hours (Kratcoski and Kratcoski 1996). Indeed, recent studies have challenged media portrayal of schools as being terrorized by crime and violence (McLean 1996).

Ballard High School reports criminal offenses occurring on school property to the school district. During the 1994-95 school year, there were 104 such incidents. These incidents ranged from assault to theft; however, most frequently, reports were for alcohol and drug possession. It is not known at this time how many, if any, of these incidents were reported to police.

While there is a great deal of research literature available regarding high-school-age youth and crime, very little explores the location of offenses in relation to the school. Only one study completed a decade ago assessed the effect of high schools on crime in the surrounding neighborhoods. That study found that increases in crime are limited to city blocks immediately adjacent to high schools (Roncek and Faggiani 1985).

Other studies cover a wide range of issues with some relevance to the discussion of mitigating factors. These studies suggest that schools can have an influence on the criminal behavior of their students. For example, Jenkins' (1995) work reinforces the belief that keeping students motivated and committed to school has a positive effect on their noninvolvement in delinquent activities. High-risk students may have more success in alternative schools (Cox, Davidson, and Bynum 1995). Other research demonstrates the importance of weapons control (especially for guns) in preventing aggressive behavior (Webster, Gainer, and Champion 1993) and violent outcomes (Sheley, McGee and Wright 1992).

Analysis of crime rates and research literature suggests that the temporary relocation of Ballard High School to Sand Point Naval Station will have little effect on crime rates at the site and minute impact on the adjacent neighborhoods. A comparison of crime rates for the tract where Ballard High School is currently located with tracts containing colleges revealed that the rates are similar. Therefore, the impact of relocating the high school on crime rates is projected to be similar to accommodating a community college, but is adjusted for the difference in the size of the student populations.

As a final note, it is important to remember that the crime analysis in these documents is limited to Part I offenses as reported to the Seattle Police Department. These are the serious crimes about which citizens are most concerned. Local reactions to high school students, especially among merchants located close to a school, often relate to petty or nuisance offenses such as shoplifting, loitering, parking violations, and traffic infractions. While these types of behavior are not the subject of this report, when they are of concern, they are typically limited to commercial establishments and thoroughfares immediately adjacent to a school (Fehr and Tjaden 1996).

The anticipated impact on crime rates of temporarily relocating Ballard High School to Sand Point Naval Station should be minimal. The projected impact to the site will be an increase of approximately 20 to 40 additional offenses per year.

In educational settings, students are not only potential perpetrators of crime, but victims as well. School assets can also become the target of property crimes. However, the anticipated impact of the preferred alternative on crime rates, including the temporary relocation of Ballard High School, will not be significant.

3.7.3 Mitigating Measures

No mitigating measures are required.

3.8 ENVIRONMENTAL HEALTH

The following section addresses environmental health issues associated with naval station property and describes environmental consequences and mitigating measures associated with the preferred, the minimal office, and no-action alternatives.

3.8.1 Affected Environment

For purposes of discussion, this section is divided into two parts: Buildings and Grounds.

Buildings

Thirteen former Sand Point Naval Station buildings are considered for preferred alternative (interim lease) activities (see Figure 2-1). Twelve complete buildings and one half of Building 5 are considered under the minimal office alternative (see Figure 2-2).

These structures, which were primarily built during the 1930s, '40s, and '50s, were constructed with a variety of building materials, some of which could pose a threat to building occupants or the environment. The primary building materials of concern are asbestos, lead, and polychlorinated biphenyls (PCBs). The following provides a brief summary of the issues associated with each material, along with a review of current environmental survey information pertaining to the buildings included under the preferred and the minimal office alternatives.

Asbestos. Asbestos was added to a wide variety of building materials to increase durability and fire resistance. Asbestos-containing material (ACM) is normally found in one of three forms: (1) as surfacing material, which is sprayed or troweled on ceilings and walls; (2) in insulation placed around hot or cold pipe ducts, boilers, and tanks; and (3) in miscellaneous materials such as ceiling tiles, floor tiles, linoleum, adhesives, and roofing materials.

An asbestos survey of 73 nonhousing buildings and areas was completed in September 1993 (Alpha 1993). The survey was conducted by a contractor using state-certified asbestos inspectors. Deficiencies identified correlate with the Navy's Risk Assessment Program (OPNAVINST 5100.23C, Chapter 12, "Deficiency Abatement Program") and the Federal System Safety Standard (MIL-STD-882B, "System Safety Program

Requirements"). The survey assigned a relative risk assessment code (RAC) for asbestos deficiencies by building. Five risk assessment codes were used for the survey:

- RAC 1 = Critical
- RAC 2 = Serious
- RAC 3 = Moderate
- RAC 4 = Minor
- RAC 5 = Negligible

Twelve of the 13 buildings considered for preferred and minimal office alternatives activities were included in the 1993 asbestos survey. (Building 406 was not surveyed for asbestos because it is a relatively new building and was not constructed with ACM.) No buildings were found to have any "critical deficiencies," and only three of the buildings were found to have "serious deficiencies." In addition, deficiencies pertained to discrete areas within each structure and did not necessarily reflect the condition of the entire building.

All serious deficiencies found during the 1993 asbestos survey were abated in the summer of 1994 (Sanders 1994). However, only the specific areas of deficiency were corrected, and all buildings of interest under the preferred and the minimal office alternatives still contain ACM.

Lead. Lead is a potential concern because of its presence in surface coatings such as paint and in lead solder compounds used in water lines and drinking fountains.

A survey of lead-based paint was completed in the summer of 1993. The survey investigated the interiors of some buildings that might be used as residences or child care facilities. Buildings 5, 9, 26, 47, 192, 222, 223, 330, 331, 332, and 406 were included in this survey. Lead-based paint was found in all buildings except the brig (Building 406). Peeling lead-based paint was scraped and surfaces were repainted in three buildings expected to house children (Buildings 330, 331, 332). Facilities containing lead-based paint must comply with the Lead-Based Paint Poisoning and Prevention Act of 1971 and P.L. 102-550, Title 10, the Housing and Community Development Act of 1992.

Drinking water is supplied by the City of Seattle. The City is required to comply with the drinking water standards established by the Washington State Department of Health. It is possible for lead from water lines and water fixtures to leach into the water supply after it leaves the city's distribution point. Six locations at Sand Point Naval Station were tested for lead in drinking water; however, no lead problems were found.

PCBs. Former PCB-containing transformers (33 total) were located at Sand Point either in concrete vaults or in fenced areas on concrete pads. Public Works personnel stated that there may have been spills or fires at some of the transformer locations (URS 1991). Fire department records have been archived in Washington, D.C., and are unavailable for confirmation.

In 1984, Sand Point Naval Station began phasing out the use of PCB-containing transformers. The transformers and associated PCB-containing fluids were shipped off and disposed of in accordance with EPA regulations. Review of Public Works documents shows that the last group of PCB transformers were shipped in 1988 (URS 1991). The facility no longer has PCB-containing transformers (URS 1991).

The former transformer pads were sampled for PCBs (URS 1993a); however, no PCBs were detected, which indicates the cleanup of transformer pads was complete (URS 1993b). However, PCBs were detected in two roof samples (URS 1994e).

Fluorescent light ballasts contain small capacitors that, if manufactured before 1978, may contain small amounts of PCBs.

Grounds

Ballfields. The baseball fields are located in the central section of Sand Point Naval Station (Figure 3-7). The ballfields have been used in the past (from March through August) for Little League and softball league games. Catch basins at the ballfields were sampled for chemicals. Based on the sampling, no chemicals exceeding MTCA cleanup levels are expected to occur in the ballfield soils.

Utility Construction. Drinking water, sanitary sewage, stormwater drainage, and electrical utilities are present on site (see Section 3.6). Many of the existing corridors are located underground. Therefore, modifications to the underground utilities involves disturbing the soils.

Based on known historical operations, areas of spills and disposal areas have been investigated and remediated prior to closure of the base. Areas where known contamination remains will have future land use restricted through deed restrictions. These areas include soils beneath the foundations of Buildings 137, 2, and 345, near Building 30, and beneath the tarmac east of Building 11.

3.8.2 Environmental Consequences

Buildings

Asbestos. Long-term exposure to airborne asbestos fibers is associated with several chronic diseases, including asbestosis (a disease similar to emphysema), lung cancer, and mesothelioma (cancer of the membrane enclosing the heart, lungs, or abdominal cavity). However, symptoms typically do not occur for 20 to 30 years following significant exposure.

The mere presence of ACM in a building does not constitute an imminent hazard to the building's occupants. For ACM to be a hazard, asbestos fibers must first be released into the air. Materials of greatest concern are those that contain a high percentage of asbestos (such as pipe insulation or sprayed-on fire insulation), are easily crumbled or damaged, or are found in high-occupancy areas. Under the preferred and minimal office alternatives, activities such as routine maintenance, construction, or demolition may create conditions where large quantities of asbestos fibers are released into the air. As a result, ACM must be identified and maintained or removed and disposed of properly. Asbestos-containing materials are of no consequence under the no-action alternative since the buildings will not be used.

Lead. Lead-based paint that remains unremediated in structures proposed by the preferred and minimal office alternatives to house children (residential or day care) may pose a health risk to children. Children are especially susceptible to lead poisoning. Exposure to low levels of lead during childhood is known to impede development and may cause learning and behavioral problems.

PCBs. PCBs have been shown to cause cancer in laboratory animals. Although there has been no evidence showing PCBs cause cancer in humans, it is considered a potential human carcinogen because it is an animal carcinogen. In animals, PCBs cause adverse reproductive and developmental effects, as well as toxic effects in fish at very low levels.

During a building survey to identify other environmental hazards, the City will check fluorescent light fixtures to identify PCB-containing capacitors and determine whether they are leaking PCB dielectric fluid. Leaking capacitors must be disposed of as hazardous waste, pursuant to EPA regulations.

Since all other PCB-containing equipment has been removed from the base, no significant environmental consequences are expected with any of the alternatives.

Grounds

Ballfields. The proposed use under the preferred and minimal office alternatives would be similar to the area's past use. Individuals will not be exposed to contaminated soil under any of the alternatives because no such soil is known to exist at the ballfields.

Utility Construction. As a result of Sand Point Naval Station's diverse industrial use, the potential exists for chemicals from accidental spills and historical disposal areas to remain in areas that were not identified through the review of historical operations. Therefore, modification to existing underground utilities or installation of new utilities could result in the excavation of soil in an area where hazardous materials remain but have not been identified. Based on available historical information, significant impacts are not expected.

3.8.3 Mitigating Measures

Adherence to Washington Industrial Safety Health Act (WISHA), Puget Sound Air Pollution Control Agency (PSAPCA), and U.S. Department of Ecology (DOE) regulations is required; therefore, no further mitigating measures are required.

3.9 WATER

This section describes water issues for the preferred, the minimal office, and the no-action alternatives and suggests means for mitigating potential environmental consequences or impacts.

3.9.1 Affected Environment

Shallow groundwater at the former Sand Point Naval Station occurs primarily within the relatively permeable fluvial interglacial deposits contained within or between the low-permeability till units that underlie the site. The continuity of these units has not been well defined. Groundwater generally flows east toward Lake Washington from a recharge area in the uplands west of the base. The water table lies about 10.5 feet (3.2 m) below ground surface. Groundwater in the lower areas of the base flows under artesian conditions. The water moves up through discontinuous areas of the till unit and enters Lake Washington. Surface water filtering through the fill material seasonally becomes trapped on top of the till unit in low areas (URS 1993a).

Information about the groundwater system at the base is limited. U.S. Geological Survey studies and URS investigations conducted in the area focused on possible contamination of the shallow groundwater; however, investigations were limited to specific sites. No deep drilling was conducted in the area.

Well data compiled from information available at Ecology indicated no wells or borings were located within a 2-mile (3-km) radius of the base. The low permeability and limited extent of isolated water-bearing units in the shallow subsurface limit their usefulness as viable drinking water sources.

No perennial streams or freshwater bodies are located within the boundaries of the base. The nearest stream is Thornton Creek, which is approximately 0.25 mile (0.40 km) northwest of the facility (URS 1993a). Lake Washington abuts the base to the north.

The lowering of the lake's level in 1916, which was caused by the construction of the Lake Washington Ship Canal, significantly altered the shoreline configuration in the Sand Point area, diminishing the size of Mud Lake and Pontiac Bay. Subsequently, during the initial phase of naval base construction in the late 1920s and 1930s, the Sand Point landscape was leveled, and Mud Lake and part of Pontiac Bay were filled to accommodate runways and buildings. Drainage from the site and all neighborhoods west of the base discharges to Lake Washington through Sand Point, the NOAA facility, or Magnuson Park via outfalls and overland runoff. The stormwater drainage system at the base was described in Section 3. Historically, the primary water quality concern was algae and its effect on water color and clarity; however, today the water quality of Lake Washington is excellent.

3.9.2 Environmental Consequences

The amount and type of pollutants in stormwater runoff can be modified by changes in the amount of impervious surface, type of activity, or both. The change in activity can be evaluated from two perspectives—actual change in use or a change in traffic—because most pollutants washed from paved surfaces to water bodies originate from automobiles.

To the extent that the amount and type of pollutants transported to Lake Washington change, the water quality of the lake may change. For the preferred and minimal office alternatives (interim lease), excavation and demolition activities during construction could result in increased sedimentation in the lake.

Preferred and Minimal Office Alternatives

The impervious area in the preferred and minimal office alternatives remains approximately the same as the existing conditions; therefore, the amount of potential pollutants would be approximately the same.

Traffic volumes probably will not change significantly compared to levels when the base was in full operation (Section 3.4). Therefore, traffic-related pollutants should not significantly increase.

Additional excavation activities resulting from renovation (or demolition) of the buildings and utility construction could produce sedimentation in the lake. However, this potential increase is not anticipated to be significant.

No-Action Alternative

No impacts are anticipated.

3.9.3 Mitigating Measures

None required.

3.10 AIR QUALITY

This section presents information on existing air quality conditions and the environmental impacts of the preferred and minimal office alternatives. Supporting data for this section were obtained from PSAPCA, NOAA, Ecology, and the U.S. Environmental Protection Agency (EPA).

3.10.1 Affected Environment

The climate for Sand Point is characterized as mid-latitude marine temperate (or maritime), with warm summers and cool, moist winters. The Olympic Mountains to the west shield the area from intense Pacific Ocean storms, and the Cascade Mountains to the east protect the area from the extreme temperature regimes that occur in eastern Washington. Summer temperatures average about 64°F (18°C), but occasionally reach 90°F (32.5°C) or more. Winter temperatures drop below freezing an average of only 15 days per year.

Ecology maintains a meteorological station at Sand Point Naval Station on NOAA property. The station's instrumentation continuously monitors temperature, wind speed, wind direction, standard deviation of wind speed and wind direction, atmospheric mixing height, and precipitation. The prevailing wind direction is from the south to southwest during fall and winter and shifts to the west and northwest during late spring and summer. Annual rainfall averages 36.2 inches (920 mm). The wettest months are November, December, and January, with monthly rainfall averaging between 5 and 7 inches (130 and 180 mm).

The PSAPCA is primarily responsible for measuring air pollution concentrations and regulating local sources of air pollutant emissions. The PSAPCA monitors air quality at a number of locations in Seattle, primarily for the six major criteria air pollutants: carbon monoxide (CO), particulate matter, ozone (O₃), sulfur dioxide (SO₂), lead (Pb), and nitrogen dioxide (NO₂). Based on this monitoring, the region has long complied with National Ambient Air Quality Standards (NAAQS) for SO₂, Pb, and NO₂, which were designed to protect public health and welfare. The entire area is officially designated as an attainment area for those pollutants. In past years, monitoring data for some portions of the Puget Sound region have exceeded NAAQS for CO, particulate matter, and O₃. Although recent data comply with NAAQS for these pollutants, portions of the Puget Sound region are officially designated nonattainment areas for these pollutants, pending demonstration of adequate air pollution control measures to prevent future problems. Until the area is designated as attaining all of the NAAQS for the six air pollutants, some additional review requirements will be imposed on new projects to ensure that they will not contribute to future nonattainment conditions. In particular, projects that attract large numbers of vehicles or consume large quantities of fossil fuels might contribute excessive emissions. Vehicles emit carbon monoxide directly, as well as volatile organic compounds (VOCs) and oxides of nitrogen (NO_x), which contribute to photochemical formation of ozone during hot, sunny days. Sources that burn fossil fuel also emit these pollutants, and along with some industrial processes, emit particulate matter.

3.10.2 Environmental Consequences

Both the preferred alternative proposed by the City of Seattle and the minimal office alternatives will not cause new sources of air pollution to be introduced to Sand Point or the city. The present heating system will provide for the utilized buildings, and no industrial processes are planned that could result in emissions to the atmosphere. Additional vehicle traffic will be generated in the vicinity of Sand Point; however, the air quality will not be impacted by this change in traffic volume. Overall air quality will not

be impacted perceptibly, and the region has attained all applicable standards for several years.

The closest area to Sand Point that has traditionally experienced air quality problems is the University Avenue area located west of the University of Washington campus. This commercial area, which has narrow streets, is subject to high vehicular and pedestrian traffic volumes, which contribute to slow vehicle speeds and consequently higher-than-normal localized air emissions. Some of the traffic congestion problems of the University area are also present in the Montlake area and around Husky Stadium. However, the traffic volumes are not as great, and air flows are not as restricted. Given that University Avenue has not experienced exceedances of the NAAQS for carbon monoxide for several years, the preferred and the limited office alternatives for Sand Point Naval Station will have no adverse impact on local air quality.

The no-action alternative has no impact on existing air quality. The predominant source of air pollutant emissions on the base would be the power plant that burns natural gas (and oil on occasion). Since there will be a decrease in power plant emissions compared to when the base was in operation (due to a decreased heating demand), there will be no significant impacts.

Section 176 (c) of the Clean Air Act requires that federal actions conform to the appropriate state implementation plan (SIP) in air quality nonattainment areas. As defined in the Clean Air Act (as amended in 1990), conformity to a SIP means eliminating or reducing the number and severity of violations of the National Ambient Air Quality Standards. The rule for determining conformity of general federal actions was promulgated by the EPA and became effective in January 1994 (40 CFR Part 93). The Navy is the federal agency responsible for this proposed action, which will take place in an area that is considered to be in attainment of all pollutants with the exception of CO and O₃. This lease will result in direct and indirect emissions of NO_x and VOCs, both ozone precursors, and CO.

Although under 40 CFR Part 93 the lease may be exempt from conformity demonstration requirements, the Navy has chosen to perform a Record of Nonapplicability (RONA). The lease falls under federal actions that the EPA has determined to be exempt. This exemption is "(xi) The granting of leases, licenses such as for exports and trade, permits, and easements where activities conducted will be similar in scope and operation to activities currently being conducted"; (Section 51.853), as explained in Navy guidance (U.S. Navy 1994a). The RONA documents the decision and is included as an appendix to this document.

The region continues to enjoy air quality levels that meet all of the NAAQS to protect human health and welfare. Nonetheless, several measures are being implemented to ensure continuing good air quality in the Puget Sound region. PSAPCA reviews most new sources of air pollution to ensure that they install adequate pollution control systems; Ecology administers the automobile inspection and maintenance program that measures vehicle emissions and requires repairs of excessive emissions; and the U. S. Environmental Protection Agency reviews and approves plans developed by PSAPCA and Ecology for adequacy and consistency to achieve national air quality standards and objectives.

3.10.3 Mitigating Measures

No mitigating measures are necessary for the preferred or the minimal office alternatives.

No mitigating measures are required for the no-action alternative.

3.11 BIOLOGICAL RESOURCES/ENDANGERED SPECIES

Biological resources/endangered species include the plants and animals that may be affected by the preferred, the minimal office, and no-action alternatives. For purposes of this report, biological resources/endangered species are divided into vegetation, wildlife, sensitive habitats, and endangered species.

The following discussion is based on a field visit to Sand Point Naval Station in March 1994, aerial photographs, contacts with federal and state agencies, and published information. In addition, an updated list of endangered and threatened species and candidate species was obtained from the U.S. Fish and Wildlife Service (USFWS). The list was attached to a letter sent to the Navy (EFA Northwest) on June 12, 1996, and is included in Appendix D. Information was also obtained from a 1995 Biological Assessment prepared for the proposed relocation of the Armed Forces Reserve Center in Seattle, which included an alternative at Sand Point. This report included a letter from USFWS to Kyle Herren, Mangi Environmental Group, Inc., (1995) listing threatened and endangered species for the Sand Point alternative.

3.11.1 Affected Environment

Vegetation, Wildlife, Sensitive Habitats

Vegetation. There is little naturally occurring vegetation at Sand Point Naval Station. The ground surface is largely paved except for manicured lawns. Native tree species, which include big leaf maple (*Acer macrophyllum*), cottonwood (*Populus trichocarpa*), red alder (*Alnus rubra*), western red cedar (*Thuja plicata*), and madrone (*Arbutus menziesii*), can be found on the southwest end of the site and along the road entering Magnuson Park. A commemorative white spruce (*Picea glauca*) was planted near the southeast corner of Building 25 in 1931. This tree is dedicated to "The Sons of Washington and all Prisoners of War Missing in Action." Ornamental tree plantings, such as deodar cedars (*Cedrus deodora*), that line the street in the vicinity of Building 9 contribute to the landscape character of Sand Point. Brush species found on the north end of the site adjacent to the boathouse include hazel, elderberry, and snowberry. Gorse, an extremely noxious weed, was identified in 1992 on the north end of Sand Point.

Wildlife. No native wildlife habitat exists at Sand Point. During the 1994 site visit, the only three species observed on the base were the northwestern crow, European starling, and rock dove. These are common species in urban areas with minimal quantity and diversity of vegetation. The base, which has shoreline adjacent to Pontiac Bay, provides habitat and shelter from high winds and waves for many seabirds and waterfowl. During the site visit, gadwall, American widgeon, American coot, mallard, bufflehead, horned grebe, and double-crested cormorant were observed along the shore in Pontiac Bay. The cormorants, grebes, and bufflehead were actively feeding 30 feet off shore. Many American coot and American widgeon were foraging on a small area of grass along the shoreline of the NOAA property.

A comprehensive listing of wildlife on the site does not exist. However, Appendix D lists wildlife either observed or generally known to inhabit the area around the base or within Seattle city limits. The animals listed in Appendix D should be considered potential inhabitants of the Sand Point Naval Station vicinity. In addition to these species, many migratory waterfowl species and fish-eating species of birds inhabit the Lake Washington area.

Many wildlife species occur on the edges of Sand Point Naval Station. Near the base boundary north of 3rd Street, NOAA maintains a large open field of unmanicured grass and weed species. Signs of small mammals were noted in this field. Grass clippings found in an extensive runway system beneath the matted grass indicated the likely presence of a dense population of voles (*Microtus* sp.). The presence of these small

mammals attracted two red-tailed hawks, which were observed hunting in the area. Two snipe were also observed in this area during the site visit.

The eastern side of Magnuson Park borders Lake Washington and thus provides habitat for a number of water birds, including diving ducks, gulls, Barrow's goldeneyes, and, occasionally, loons. Although this area may be used by water birds for feeding and resting during good weather, Pontiac Bay appears to be more heavily used for shelter during inclement weather. The presence of people, dogs, and cats is likely to deter the use of the near shoreline area by species not adapted to humans.

Lake Washington also provides habitat for many species of fish and amphibians. Fish species common to Lake Washington include resident and anadromous varieties of cutthroat and rainbow trout, three species of salmon (chinook, coho, and sockeye), white sturgeon, longfin smelt, carp, goldfish, squawfish, tench, reidside shiner, longnose dace, peamouth, brown bullhead, largemouth and smallmouth bass, black crappie, yellow perch, and crayfish. Amphibian species include the painted turtle, the red-legged frog, and the Pacific tree frog.

Sensitive Habitats. Two wetlands are located within the current boundaries of the base. The most prominent wetland is Lake Washington, classified as limnetic, open water, and permanently flooded. The landward boundary of this wetland on the base is the water line. Another wetland exists in the drainage ditch below the officer quarters (Buildings 330, 331, and 332); it is classified as palustrine (not lake associated) with emergent vegetation and a saturated, semipermanent, or seasonal hydrologic regime.

Endangered Species

Species with declining populations are provided legal protection through the federal Endangered Species Act. This act affords protection by requiring consultation with USFWS for projects with potential impacts to species that have been formally listed as threatened or endangered and species that have been proposed for listing and are awaiting final rulemaking. Candidates for federal listing are not protected by law, although some federal agencies do accord some level of nonmandatory protection or management considerations to these species. The State of Washington lists species as endangered, threatened, and sensitive and also designates candidates that are under review for potential listing.

A Biological Assessment was prepared for alternative sites being considered for construction of an Armed Forces Reserve Center in Seattle (1995). Alternative 4 in the report includes the excess NOAA property at Sand Point immediately adjacent to the

Sand Point Naval Station. The potential impacts of the Resource Center project on endangered and threatened species in the Sand Point vicinity are analyzed in Alternative 4 of the report. Since the analysis and listing of the endangered and threatened species in the biological assessment was completed within the past year, it remains current.

Bald eagles, a state-listed threatened species, are present in the Sand Point vicinity. The closest known nest location is approximately three miles from the site in Denny Park on the east shore of Lake Washington. A nest is under construction in a new territory near the University of Washington Arboretum, about three miles southwest of Sand Point (Biological Assessment 1995). A nest is also located in Seward Park along the shores of Lake Washington south of Interstate 90. The eagles range widely in their foraging for fish or waterbirds in or over salt and freshwater, and have been sighted flying over Sand Point or occasionally perching on parking lot light poles on the NOAA site (Biological Assessment 1995). The Sand Point Naval Station provides no habitat that could satisfy basic needs of bald eagles. Currently, the few large trees in the area are limited to the extreme southern and northern edges of Magnuson Park. These trees are thin and structurally inadequate to support bald eagle nesting or roosting. In addition, the few pine trees in the area would not be adequate to provide shelter and lack easy access for a large raptor such as the bald eagle.

Peregrine falcons, a state-listed endangered species (currently under consideration by USFWS for downlisting to threatened), are reported to occur as spring and fall migrants in the Sand Point vicinity (Biological Assessment 1995). Peregrine falcons have nested periodically on the Washington Mutual Tower Building in downtown Seattle since 1994. Other peregrines migrate through the Puget Sound region to stop or overwinter. Peregrines prey predominantly on birds in flight such as rock doves or starlings although occasionally they eat small mammals and insects (Biological Assessment 1995).

Wintering peregrine falcons are seen occasionally in the Sand Point vicinity (Biological Assessment 1995). The open grasslands in the vicinity along with an abundant prey source could provide suitable foraging habitat. The pines or poplars in the area could provide perching sites but there are no tall buildings or cliffs that peregrines could use for nesting sites (Biological Assessment, 1995).

The only candidate species listed in the Sand Point vicinity is the Spotted frog (USFWS letter, 1996). However, the lack of marshes and ponds and the presence of blackberries and open grasslands on the lakeshore in Sand Point provide no suitable habitat for the frog, and it is unlikely to be present at Sand Point. Species of concern in the Sand Point vicinity include the Long-eared myotis, Long-legged myotis, Northwestern pond turtle, Olive-sided flycatcher, and Pacific western big-eared bat (USFWS letter, 1996). These

species are unlikely to be present at Sand Point due to lack of suitable habitat (riparian, forests, etc.). There are no known reports of any of the bats roosting in the Sand Point Naval Station buildings.

3.11.2 Environmental Consequences

Preferred and Minimal Office Alternatives

The preferred and the minimal office alternatives will not have significant environmental consequences related to vegetation, wildlife, or sensitive habitats. Little or no vegetation will be removed. Native wildlife habitat does not exist at Sand Point and will not be impacted. Existing sensitive habitats will not be impacted. Construction and operation activities proposed for the site under the preferred and minimal office alternatives would not be expected to affect endangered or threatened species (peregrine falcon, bald eagle) because there would be no effect on critical habitat or the distribution or abundance of potential prey species. Construction noise would be localized and short term and is not expected to be disruptive to either species.

3.11.3 Mitigating Measures

Mitigating measures are not required since the preferred, the minimal office, and the no-action alternatives will not have an impact on vegetation, wildlife, sensitive habitats, or endangered species.

3.12 SOCIOECONOMICS

This section analyzes the socioeconomic impacts associated with the preferred, the minimal office, and the no-action alternatives. This socioeconomic analysis includes the topics of demographics (population, age structure, race, household, and family structure), housing (housing units, household size, housing costs, assisted housing, and homelessness), economy (employment, income, and property values), social services (on base and in the area), and schools.

3.12.1 Affected Environment

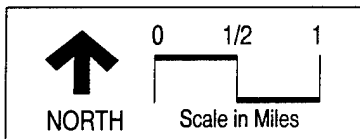
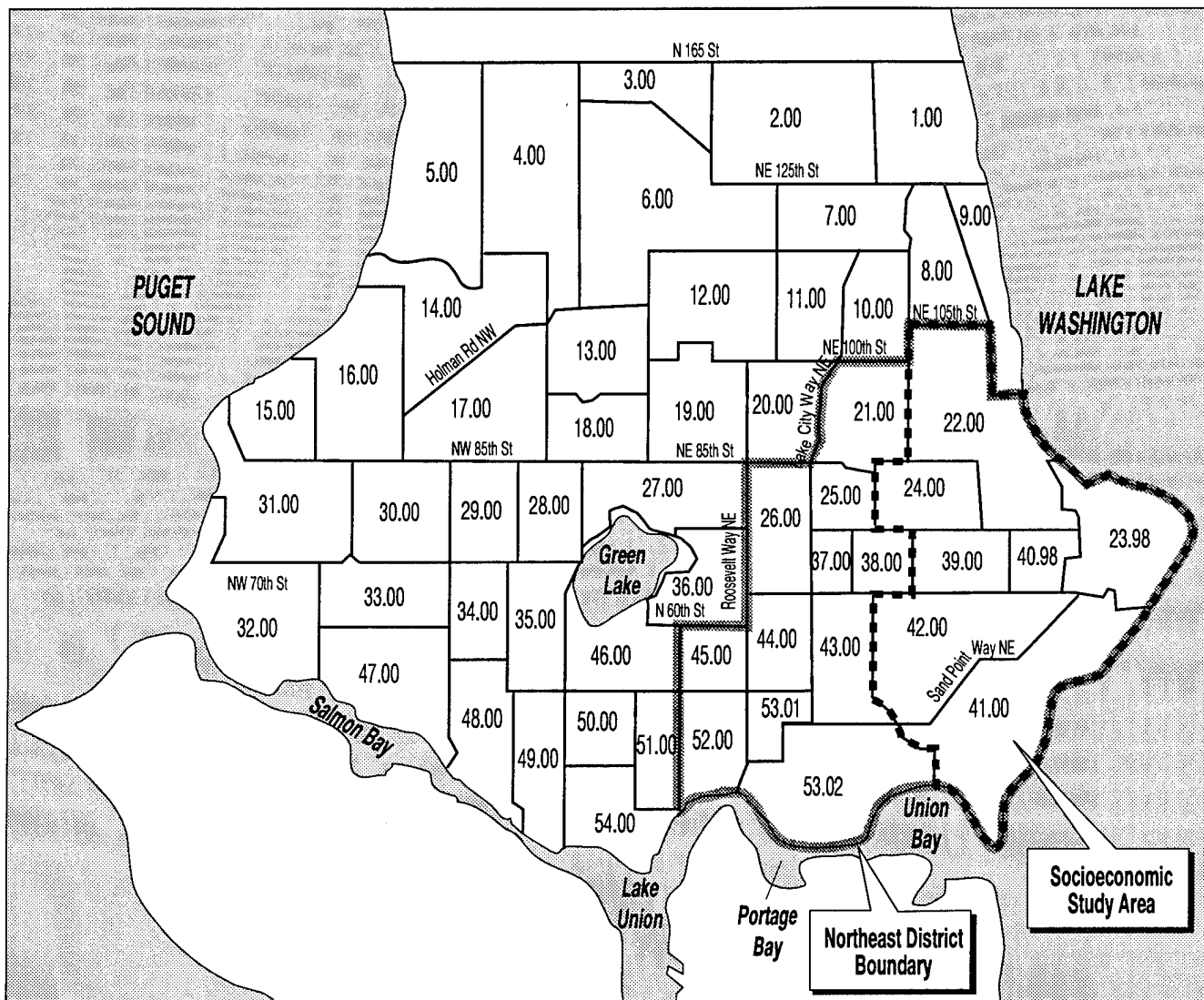
This section describes the regional socioeconomic setting related to the Sand Point Naval Station when the base was occupied. Census data were obtained from the 1990 census. All of Naval Station Puget Sound lies in Census Tract 23.98, as described by the 1990 census. Figure 3-26 shows the census tract map for north Seattle, including Naval

Station Puget Sound. The socioeconomic study area for this section includes Census Tracts 22, 23.98, 24, 39, 40.98, 41, and 42. These census tracts constitute the neighborhood around the Sand Point Naval Station (hereinafter referred to as the "socioeconomic study area").

Demographics

Population. In 1990, the population of the City of Seattle was 516,259 people, which was 34.3 percent of King County's 1990 population of 1,507,319. Seattle's share of the county population has declined over the past 30 years because of more rapid growth outside the city limits. Population in the socioeconomic study area was 27,303 in 1990 (5.3 percent of the city). The 1990 census indicates that 179 persons lived in Census Tract 23.98. The City projects an increase in population in the northeast district of Seattle (which includes the socioeconomic study area and other Census Tracts shown on Figure 3-26) of 4.5 percent between 1990 and 2010 (compared to citywide growth of 5 percent).

Age Structure. The largest demographic group in the socioeconomic study area ranges from ages 25 to 44 (9,570 persons or 35 percent of the socioeconomic study area population). Citywide, this age group represents 40 percent of the population. In Census Tract 23.98, this age group represents 38.5 percent of the population. Citywide, young people (under 5 to 15 years) and those in midlife (45 to 64 years) are less likely to live in Seattle than people in other age groups (City Planning 1992a). Table 3-22 shows the population breakdown by age in the three geographic areas.



Note: 38.00 - Census Tract Number

----- Socioeconomic Study Area Boundary
 ————— Northeast District Boundary

Source: City of Seattle Planning Department, April 8, 1990

Figure 3-26
City of Seattle 1990 Census Tracts

SAND POINT
 ENVIRONMENTAL
 ASSESSMENT
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Table 3-22
Population Comparison by Age Group and Area

Age	Census Tract 23.98		Socioeconomic Study Area		Citywide	
	Population	Percent	Population	Percent	Population	Percent
Under 5	0	—	1,786	6.5	29,269	5.7
5-15	2	1.1	2,946	10.8	47,701	9.2
16-24	94	52.5	2,334	8.5	70,203	13.6
25-34	46	25.7	4,729	17.3	112,098	21.7
35-44	23	12.8	4,841	17.7	93,285	18.1
45-64	11	6.1	5,583	20.4	85,303	16.5
65-84	3	1.7	4,631	17.0	69,129	13.4
85+	0	—	453	1.7	9,271	1.8
Totals	179	100	27,303	100	516,259	100

Sources: City Planning 1992a, 1993e; Puget Sound Council of Governments 1991

Race. Census Tract 23.98 has a higher percentage of minorities (27.9 percent) than the socioeconomic study area (10.6 percent) and the City as a whole (24.7 percent). Seattle has become increasingly diverse over the past several decades. Between 1980 and 1990, the white population declined by almost 2 percent, and the nonwhite population increased more than 23 percent. Census Tract 23.98 had a higher percentage of minority population than any other Census Tract in the socioeconomic study area. This higher minority percentage most likely reflects the proportion of minorities serving in military operations at the Sand Point Naval Station. Table 3-23 shows the breakdown of population by race.

Household and Family Structure. Compared with the city as a whole, households in the socioeconomic study area have more married-couple families (56.3 percent compared to 36.6 percent), fewer single-person households (27.1 percent compared to 39.8 percent), fewer single-parent households (9.3 percent compared to 11.4 percent), and a smaller proportion of households composed of a group of unrelated persons (34.4 percent compared to 51.9 percent). Persons living in group quarters are not considered households in the census. When the Navy occupied the base, Census Tract 23.98 contained 164 persons, living in group quarters. Table 3-24 shows household sizes and types.

Table 3-23
Population Comparison by Race and Area

Race	Census Tract 23.98		Socioeconomic Study Area		Citywide	
	Population	Percent	Population	Percent	Population	Percent
White	129	72.1	24,422	89.4	388,858	75.3
African-American	36	20.1	389	1.4	51,948	10.1
American Indian, Eskimo, or Aleut	3	1.7	219	0.8	7,326	1.4
Asian or Pacific Island	7	3.9	2,105	7.7	60,819	11.8
Other race	4	2.2	168	0.6	7,308	1.4
Totals	179	100	27,303	100	516,259	100

Sources: City Planning 1992a, 1993e; Puget Sound Council of Governments 1991

Table 3-24
Household Size and Type: Comparison by Area

Household Type ^a	Census Tract 23.98		Socioeconomic Study Area		Citywide	
	Households	Percent	Households	Percent	Households	Percent
One person	0	—	3,203	27.1	94,139	39.8
Two or more persons	5	100	8,595	72.9	142,769	60.2
Married couple	5	100	6,640	56.3	86,719	36.6
Male householder	0	—	241	2.0	6,684	2.8
Female householder	0	—	857	7.3	20,453	8.6
Nonfamily households	0	—	4,060	34.4	123,052	51.9

^aExcludes persons living in group quarters

Sources: City Planning 1992a, 1993e; Puget Sound Council of Governments 1991

Two-thirds of homeless family households served by Seattle shelters are single women with children. Two-parent homeless households average 2.2 children, whereas single-parent households average 2.0 children (City of Seattle Department of Housing and Human Services 1993).

Housing

On-base housing consisted of five officer houses and 277 rooms in barracks. The barracks contained more than 500 beds.

Census Tract 23.98 data are excluded from the following analysis because most of the people living in Census Tract 23.98 were in group quarters (164 of 179). Comparisons of housing data in this census tract with citywide or district data would not be particularly meaningful.

Housing Unit Types. Housing units in the socioeconomic study area are more likely to be owner occupied than the city average (74.2 percent in the Sand Point area versus 46.5 percent citywide) and more likely to be single-family structures (78.4 percent versus 53.1 percent citywide). Table 3-25 shows housing units by type. Vacancy rates in the socioeconomic study area tend to be lower than citywide rates (Table 3-26).

Table 3-25
Housing Unit Type: Comparison by Area

Unit Type	Socioeconomic Study Area		Citywide	
	No. of Units	Percent	No. of Units	Percent ^a
Single-family	9,375	77.9	132,330	53.1
Multifamily	2,547	21.2	113,146	45.4
Other	112	0.9	3,556	1.4
Totals	12,034	100	249,032	100

^aPercents are rounded to nearest 0.1 percent.

Sources: City Planning 1992a, 1993e; Puget Sound Council of Governments 1991

From 1990 to 2010, the City of Seattle projects an increase of 11 percent in the number of households and housing units in the northeast part of Seattle. For the socioeconomic study area, an 11 percent increase in housing units translates to a net increase of 1,324 units, or an average of 66 units per year.

Household Size. Households in the socioeconomic study area tend to be slightly larger than those citywide—2.3 persons per household compared to 2.1. Table 3-27 breaks down the number of persons per unit.

Table 3-26
Housing Unit Vacancy by Type and Area

Unit Type	Socioeconomic Study Area		Citywide	
	No. of Units	Percent ^a	No. of Vacant Units	Percent ^a
Single-family	161	1.7	4,288	3.2
Multifamily	124	4.9	7,798	6.9
Other	6	0.5	244	6.9

^aPercent of all units of same housing type

Sources: City Planning 1992a, 1993e; Puget Sound Council of Governments 1991

Table 3-27
Comparison of Average Number of Persons per Occupied Housing Unit by Type and Area

No. of Housing Units per Residential Structure	Average Number of Persons per Unit	
	Socioeconomic Study Area	Citywide
Single-family (all)	2.45	2.49
Multifamily (all)	1.86	1.61
2 units	2.25	2.18
3-4 units	2.26	1.93
5-9 units	1.72	1.66
10-19 units	1.67	1.59
20-49 units	1.55	1.46
50+ units	1.45	1.31

Sources: City Planning 1992a, 1993e; Puget Sound Council of Governments 1991

Housing Costs. In the socioeconomic study area, median rent in 1990 was \$548 per month, and median 1989 household income was \$44,630. Citywide, median 1990 rent was \$425 per month, and median 1989 household income was \$29,353.

Assisted Housing. Assisted housing includes housing units owned and operated by the Seattle Housing Authority, units owned by for-profit and nonprofit organizations that receive a federal subsidy, units subsidized by the Washington State Housing Finance Commission, and other units subsidized by the City. Citywide, approximately 7 percent

of all housing units are assisted housing. There are 95 assisted housing units in the Sand Point area, which is less than 1 percent of all housing units in the area.

Homelessness. As of January 1993, the City estimated that there were 3,918 to 4,288 homeless persons per night in Seattle. Table 3-28 indicates the estimated status of homeless persons in Seattle. Statistically, families with small children are the fastest growing segment of homeless populations, representing 40 percent of the homeless.

Table 3-28
Status of Homeless Population of Seattle

Population Characteristic	Population (persons)
Persons in the city's shelters and transitional housing	2,650
Persons in the County Alcohol Detoxification Center or at Harborview Medical Center	50
Persons sleeping on streets in downtown, lower Queen Anne, and First Hill (as established by the annual street count conducted by the City and human services agencies each November)	538
Urban campers sleeping in parks, greenbelts, and public rights of way in other neighborhoods	300-500
Runaways and street youth	350-500
Family members living in cars and buses	30-50
Total	3,918-4,288

Economy

Employment. Employment at the Sand Point Naval Station decreased from 1989 to 1995. In 1991, employment was approximately 1,240, not including reservists. In 1993, employment was approximately 960, again not including reservists.

Of the males age 16 or over living in Census Tract 23.98 in 1990, 70.4 percent were in the military; the remaining 29.6 percent were not in the labor force. Of the females age 16 or over living in Census Tract 23.98, 53.8 percent were in the military; the other 46.2 percent were not in the labor force. No persons living in Census Tract 23.98 in 1990 reported working in the civilian labor force. In the socioeconomic study area, the

unemployment rate was 2.8 percent; citywide unemployment was 4.9 percent. Table 3-29 shows employment by industry in Seattle. The socioeconomic study area had a higher proportion of jobs in the government, finance, insurance, real estate, and services sectors than citywide (67.1 percent compared to 53.6 percent).

Table 3-29
Employment Comparison by Industry and Area

Industry	Socioeconomic Study Area		Citywide	
	Employed Persons	Percent ^a	Employed Persons	Percent ^a
Agriculture, forestry, and fisheries	185	1.3	3,838	1.4
Mining	0	0.0	174	0.0
Construction	432	3.0	12,023	4.2
Manufacturing				
Nondurable goods	397	2.8	12,664	4.5
Durable goods	997	7.0	24,997	8.8
Transportation	344	2.4	13,896	4.9
Communications and other public utilities	276	1.9	7,002	2.5
Wholesale trade	639	4.4	11,743	4.1
Retail trade	1,438	10.0	45,891	16.1
Finance, insurance, and real estate	1,557	10.9	24,357	8.6
Services				
Business and repair services	537	3.7	16,783	5.9
Personal services	273	1.9	9,007	3.2
Entertainment and recreation	276	1.9	6,019	2.1
Professional and related services				
Health services	1,950	13.6	27,536	9.7
Educational services	2,355	16.4	25,775	9.1
Other professional and related services	2,124	14.8	31,442	11.1
Public administration	564	3.9	11,013	3.9
Total	14,344	100	284,160	100

^aPercentage is rounded to nearest 0.1 percent

Source: City Planning 1992a

Personal Income. Median household income in Census Tract 23.98 exceeded that of the socioeconomic study area, Seattle, and King County, but per capita income was lower than elsewhere. Median family income was intermediate (Table 3-30). In Census Tract 23.98, income is generated exclusively from military activity, and no individuals have an income below the poverty level.

Table 3-30
Personal Income and Poverty Comparison by Area

Type of Income	Census Tract 23.98 (\$)	Socioeconomic Study Area (\$)	Citywide (\$)	King County (\$)
Median household income	48,750	44,630	29,353	36,179
Median family income	48,750	55,010	39,860	44,555
Per capita income	14,997	26,846	18,308	18,587
Percent below poverty level	0%	7.1%	12.4%	8.0%

Sources: City Planning 1992a, 1993c; Puget Sound Council of Governments 1992a

In Seattle, over half of the homeless have no income when they enter a shelter. The primary income option for the homeless is public assistance (City of Seattle Department of Housing and Human Services 1993).

Property Values. A study of impacts of proposed alternatives on property values in the Sand Point neighborhood was completed for the Draft EIS for the reuse of Sand Point Naval Station (scheduled for May 1996). Based on an analysis of 150 home sales, the study found that homes fronting on Sand Point Way N.E. sold for 2 to 3 percent less than other neighborhood homes. These homes took longer to sell because they are on an arterial, and the owners reduced the prices in order to sell.

Social Services

On-Base Services. A family center, education services office, medical and dental facilities, and chapel were formerly on base to serve military personnel. Naval Station Everett will eventually provide these services.

Homeless Shelters. More than 30 shelters and transitional housing programs provide up to 1,800 beds on any given night in Seattle. In the past 3 to 4 years, transitional housing in Seattle/King County has expanded. Of the 1,800 beds, approximately 450 beds are available to homeless persons for transitional housing (City of Seattle Department of Housing and Human Services 1993). The objective of transitional housing is to bridge the gap between emergency shelter and independent housing. In addition to accommodations, transitional housing includes services such as employment assistance, income access, outreach and treatment, and case management.

According to Seattle's Comprehensive Housing Affordability Strategy, housing costs too much for certain very low income households: "Households at 30 percent of median income cannot afford average rent levels in any neighborhood. Persons living on public assistance must find subsidized housing or pay a very high percent of their income for rent" (City of Seattle Department of Housing and Human Services 1993).

Unemployment Counseling and Job Training. Of the employment and job training agencies located in Seattle, two are close to the Sand Point Naval Station—the Washington State Job Service Center, 12550 Aurora Ave. N., and the Family Independence Program/JOBS, 11536 Lake City Way N.E.

Childcare. In Seattle, an estimated 24,000 children need care but only 12,500 are served by the 650 licensed childcare facilities. In zip code areas 98105, 98115, and 98103 (the three closest to the Sand Point Naval Station), 117 licensed childcare facilities have the capacity to serve up to 3,027 children. Therapeutic child care targeted to homeless children is also needed. There are approximately 2,400 homeless children in Seattle.

State Department of Social and Health Services. The Department of Social and Health Services office closest to the Sand Point Naval Station is located at N.E. 115th Street and Lake City Way N.E.

Schools

Seattle School District. The Seattle School District has 61 elementary schools, 10 middle schools, 10 high schools, and 16 alternative schools and programs. The District also has 46 all-day kindergartens, 13 parent-funded extended-day kindergartens in 13 other schools, and 40 privately operated childcare centers in Seattle schools. Seven elementary schools, one middle school, two high schools, and two alternative schools are located near the Sand Point Naval Station, as shown on Figure 3-27.

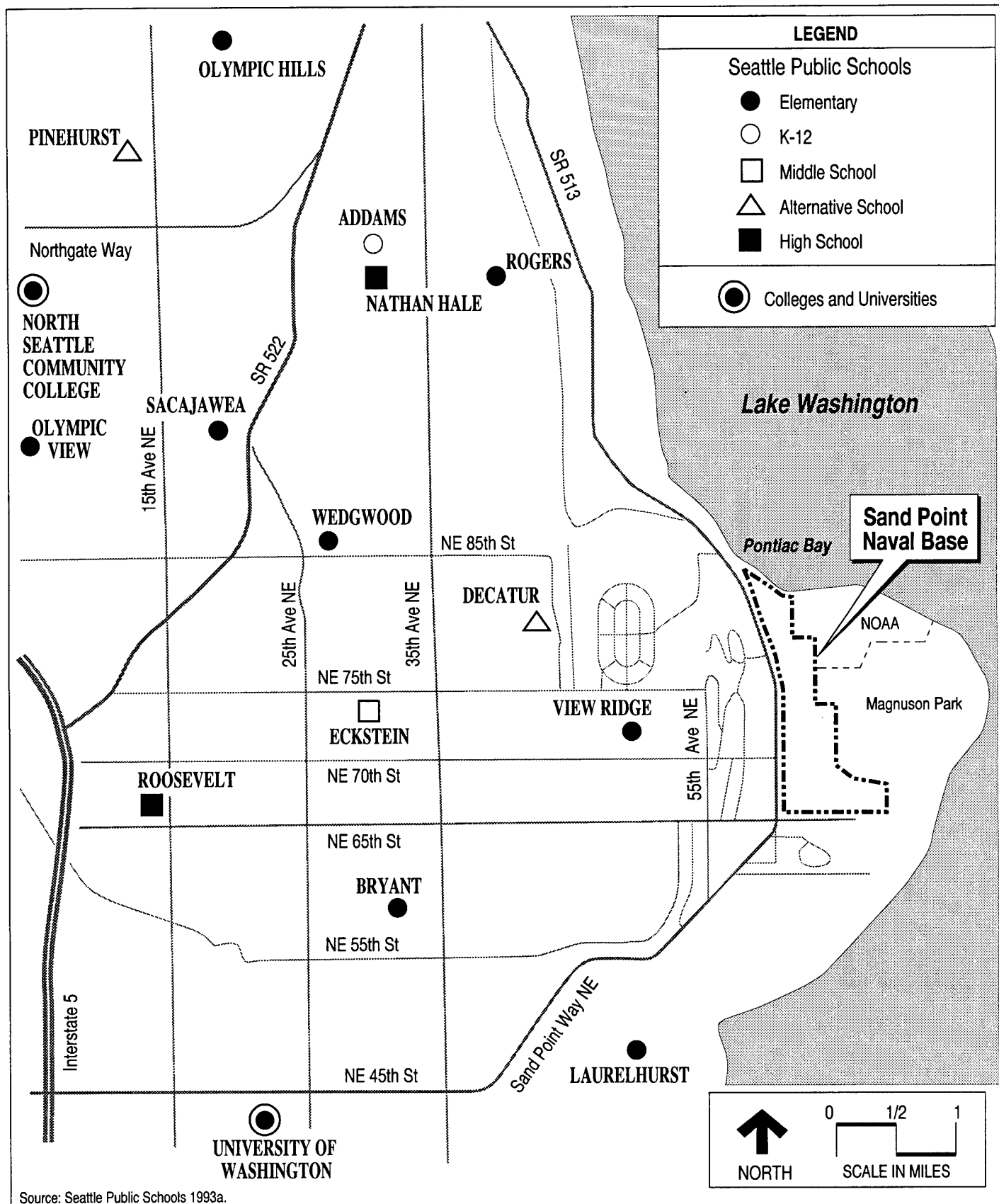


Figure 3-27
Area Schools

SAND POINT
ENVIRONMENTAL
ASSESSMENT
June 1996

Current 1995 city-wide enrollment is 46,109 students. The District forecasts growth of approximately 10 percent over the next 5 years.

North Seattle Community College. North Seattle Community College (NSCC) is a 2-year college with a current enrollment of 8,100 full-time equivalents (Figure 3-27). NSCC, located at 9600 College Way N. in the Northgate area, had leased the Sand Point Elementary School from the Seattle School District for approximately 3 years when the lease was canceled in December 1993. NSCC provided approximately 70 classes at the leased facility during a typical quarter, enrolling more than 1,000 students (80 percent of the NSCC continuing education program). Programs included those for seniors, business and nonprofit training, parenting of infants, and job readiness. The job readiness program was offered through women's studies in cooperation with the NSCC continuing education program. Three community-based organizations were also active at the former Sand Point Elementary—Children's Work Montessori Preschool, North Seattle YMCA Before and After School project, and the Children's Kitchen.

University of Washington. The University of Washington, the largest university in the state, lies about 3 miles southwest of the Sand Point Naval Station (Figure 3-27). Projected enrollment in average annual full-time equivalents (FTEs) is shown in Table 3-31.

Table 3-31
1995–2000 University of Washington Projected Enrollment

Academic Year	Number of Students
1995-1996	30,302
1996-1997	30,847
1997-1998	30,821
1998-1999	31,944
1999-2000	32,263

3.12.2 Environmental Consequences

Demographics

Preferred Alternative. Under the preferred alternative, up to 104 units of housing will be provided for homeless and low income families and homeless individuals and youths. These housing units include Buildings 26N, 26S, 224, 330, 331, and 332 (see Figure 2-1).

Subtracting the projected population of 168 from the 179 base residents (1990 census) results in a net population decrease of approximately 11 residents. However, an additional 200 people would be housed in Building 9; a portion of this building would be converted to community college dormitories. Thus, the population in the socioeconomic study area (Figure 3-26) will increase by less than 1 percent.

The Low Income Housing Institute projects that the population to be housed under the preferred alternative will consist of the following households (approximate percentages): two-parent families (6 percent); women with children (50 percent); men with children (1 percent); single women (14 percent); single men (24 percent); and minor alone (5 percent) (Low Income Housing Institute 1996).

Because the preferred alternative provides additional student housing, it is expected that the population will be somewhat younger than that currently found in the Sand Point area (see Table 3-22).

Because approximately 60 percent of current homeless shelter users in the city are minorities, it is expected that minorities will constitute 60 percent of those housed under the preferred alternative (62 of the homeless people). The proportion of minorities in the student housing is unknown. Subtracting the 50 minority residents who moved from the base after closure would result in a net increase of 12 minorities. Thus, the current (1990 census) minority population of approximately 10.5 percent in the socioeconomic study area would increase to approximately 10.6 percent, which is still less than the 24.7 percent minority population of the City.

Because the projected population under the preferred alternative would be comparable to the Sand Point Naval Station population when the base was in operation, no significant impacts on demographics are expected.

Minimal Office Alternative. Housing proposed under this alternative is the same as under the preferred alternative; therefore, no significant impacts are anticipated.

No-action Alternative. The socioeconomic study area population would decrease by the number of military personnel living at the Sand Point Naval Station in 1990 (179 individuals), a 0.6 percent decrease.

Housing

Base residents have moved to other bases or to civilian housing. Significant impacts of all alternatives on areas off the site are not expected because of the small number of people and units (five officer houses and less than 500 beds in barracks).

Preferred Alternative. The preferred alternative would provide up to 104 units of housing for homeless and low-income (up to 80 percent of median household income) persons and families.

Currently, less than 1 percent of the housing units in the socioeconomic study area is assisted housing. Under the preferred alternative, the percentage of assisted housing in the area would increase to approximately 1.9 percent. The preferred alternative will also increase the capacity of transitional housing for homeless people in Seattle.

The preferred alternative will also provide housing for 22 homeless youth and 6 teen mothers and their infants. It is estimated that 500 to 800 youth live on the streets of Seattle (City of Seattle Department of Housing and Human Services 1993). This housing would benefit teen parents and runaway or street youths.

In addition to the above, additional 200 beds of dormitory housing would be provided for North Seattle Community College students. This would be a beneficial impact to students, since they will be able to live on campus. Because of the on-campus housing, increased use of the base by the North Seattle Community College would not cause adverse impacts to off-site housing.

Minimal Office Alternative. This is the same as the preferred alternative.

No-action Alternative. No potential user groups will use the housing at the Sand Point Naval Station.

Economy

The approximately 960 jobs at the Sand Point Naval Station before to base closure were transferred to the Naval Station Everett and other Navy facilities; therefore, the current employment level in the region did not change. No significant impacts are expected on the regional economy because there was no net loss of jobs. The property value study analyzed how reuse of the property could affect property values in the area surrounding Sand Point Naval Station. The study reported the results of related economic studies and analyzed matched pairs—the difference in property values between different pairs of

properties (e.g., one property located near subsidized housing and the other property located away from that land use).

Preferred Alternative. The Seattle Conservation Corps, a City-operated program, is proposed to locate at the Sand Point Naval Station. Under this program, the corps would hire, train, and employ homeless people for construction-related jobs. At the Sand Point Naval Station, this work could entail demolition and construction activities and sports field renovation. The plan does not provide specific information on the type or number of jobs that may be created, but most are expected to be relocated to the Sand Point Naval Station from other areas of Seattle (Friedli 1996c). Therefore, the impact on jobs is not considered significant.

The property value study found that housing for the homeless can be absorbed into neighborhoods without impact to property values. Property values would not be expected to change unless more than 3 to 5 percent of the housing stock was involved. Currently, approximately 1 percent of the housing units in the socioeconomic study area represent assisted units. Assuming that all of the proposed 104 housing units are assisted, the proportion of assisted housing in the socioeconomic study area would increase to approximately 1.9 percent, well within the range of absorption without lowering property values. Provided that the design for the housing is in character with the neighborhood, property values would not be affected significantly.

According to the City Office of the Management and Planning, there have been no designs for new housing, except for concepts to assist in the discussion of density. "Any design for new housing will be decided upon after careful consideration for need, appropriateness, and the desires of the surrounding community, not to mention specific environmental review" (Friedli 1996b).

The property value study found that traffic generated by the preferred or the minimal office alternatives will have little or no effect on property values. The increased use of Sand Point Naval Station by North Seattle Community College would also be expected to have little impact on property values.

The preferred alternative also proposes temporary use of Building 9 by Ballard High School during the school years of 1997-1998 and 1998-1999. Schools can affect property values since they can be perceived as nuisances due to possible increased noise, litter, and traffic. However, any possible impact would only affect houses on the market when the high school is in operation. Because any effect would be temporary, it is difficult to quantify.

Minimal Office Alternative. This alternative is similar to the preferred alternative; however, employment at the site may be slightly lower due to the reduced office space. No significant impacts are anticipated.

No-Action Alternative. The no-action alternative will not significantly affect the regional or local economy.

Social Services

Formerly on-base social services for current and retired military members were transferred to Naval Station Everett. Moving the services from Seattle will affect the individuals currently using these services by increasing travel time or requiring them to seek alternatives. This impact is a result of all alternatives, but would not be significant.

Preferred Alternative. The preferred alternative will provide social services to the public and the homeless. Services proposed include child care, health services, employment counseling and placement, case management, and a senior center. Because the preferred alternative would expand existing services, it is expected to increase the availability of assistance programs and help meet increasing needs.

Therefore, no significant adverse social service impacts will result from the preferred alternative.

Minimal Office Alternative. This is the same as the preferred alternative.

No-action Alternative. There will be no significant social services impacts specific to the no-action alternative.

Schools

Preferred Alternative. Proposed educational programs include North Seattle Community College classrooms, Ballard High School (temporary), and a training center for the Seattle Fire Department.

The preferred alternative provides housing for approximately 36 children, half of them of school age. These children are currently served by a variety of temporary housing facilities across the city and the Seattle School District, which transports these children from their temporary housing facility to their "home" school. Transportation and the home school program are designed to stabilize schooling for children whose lives are not stable. If bus transportation is not available for these children, then the District pays for

taxi services to and from school. This program will continue under the preferred alternative, but the cost of transportation for the District will be reduced by decreasing the number of children transported by taxi and providing scheduled bus service. By providing permanent housing, the preferred alternative will also increase stability for the children, which will, in turn, facilitate their education. Because the children are already enrolled in the Seattle School District, the plan should not change enrollment.

The presence of North Seattle Community College at Sand Point Naval Station would have a positive impact on schools by expanding the space for educational uses and the educational opportunities in the Sand Point area. The proposed temporary use of Building 9 by Ballard High School for 2 years (1997-1999) is not expected to have any adverse impact on schools.

Therefore, there will be no significant adverse impacts on schools resulting from the preferred alternative.

Minimal Office Alternative. This is the same as the preferred alternative.

No-Action Alternative. There will be no significant impacts on schools under the no-action alternative.

3.12.3 Mitigating Measures

No mitigating measures are required under any of the alternatives.

4.0 CUMULATIVE AND LONG-TERM ENVIRONMENTAL IMPACTS

This section describes the cumulative environmental impacts of the preferred alternative (interim lease), the minimal office alternative, and the no-action alternative. Cumulative impacts are typically defined as two or more individual effects that, when considered together, compound or increase other environmental impacts. Cumulative impacts can result from the individual effects of a single project or action on various resources or the effects of several past, present, and/or future projects or actions on these resources. Thus, cumulative impacts can result from individually minor but collectively significant actions taken over a period of time.

4.1 CUMULATIVE IMPACTS

Cumulative impacts are described below for each resource area. In several cases, there would be none and it is so noted.

4.1.1 Land Use

The proposed land uses under the preferred and minimal office alternatives are not expected to have cumulative and long-term impacts because they would be temporary (e.g., proposed Ballard High School use) or similar to previous uses on site. No impacts are expected under the no-action alternative.

4.1.2 Historic and Cultural Resources

No cumulative impacts on historic or archaeological resources would result from the preferred, minimal office, or no-action alternatives.

4.1.3 Recreation

No negative or adverse cumulative impacts are expected because the proposed activities would reduce potential impacts on other nearby facilities. The recreational uses would contribute to the citywide park system, furthering the policies in the City of Seattle Parks and Recreation Department COMPLAN that call for an increase in recreational and open space (City Parks 1993). No cumulative impacts are expected under the no-action alternative.

4.1.4 Transportation

Under all alternatives, traffic is projected to increase 1 percent per year in Seattle in the worst case. The preferred and minimal office alternatives would add trips to this increasing traffic in the Sand Point area (study area). However, the cumulative impacts would not be significant. No cumulative impacts are expected under the no-action alternative.

4.1.5 Noise

The preferred alternative would add noise to an area that is already experiencing noise levels above those specified under the City ordinance for residential receiving properties. However, the cumulative impact of noise sources at Sand Point Naval Station under the preferred and minimal office alternatives would be insignificant for all of the activities. No cumulative impacts are expected under the no-action alternative.

4.1.6 Public Services and Utilities

Since the preferred and minimal office alternatives propose upgrades to the on-site utilities, no significant cumulative impacts are expected. No cumulative impacts would result from the no-action alternative.

4.1.7 Crime and Law Enforcement

No cumulative impacts are expected under the preferred alternative, the minimal office alternative, or the no-action alternative.

4.1.8 Environmental Health

No cumulative impacts are expected on levels of asbestos, lead, or PCBs; the ballfields; or utilities under the preferred alternative, the minimal office alternative, or the no-action alternative.

4.1.9 Water

No cumulative impacts are expected under the preferred alternative, the minimal office alternative, or the no-action alternative.

4.1.10 Air Quality

The cumulative impacts on local and regional air quality for the 10-year lease would be negligible. The no-action alternative would have no cumulative impacts on local and regional air quality.

4.1.11 Biological Resources/Endangered Species

No cumulative impacts are expected on vegetation, wildlife, sensitive habitats, or endangered species under the preferred alternative, the minimal office alternative, or the no-action alternative.

4.1.12 Socioeconomics

No cumulative impacts are expected on socioeconomics under the preferred alternative, the minimal office alternative, or the no-action alternative.

4.2 IRREVERSIBLE OR IRRETRIEVABLE COMMITMENT OF RESOURCES

This section evaluates the impact of the preferred and minimal office alternatives on nonrenewable resources and the impacts that the use of these resources will have on future generations. Irreversible effects primarily result from use or destruction of a specific resource, such as energy that cannot be replaced within a reasonable time frame. Irretrievable resource commitments involve the loss in value of an affected resource that cannot be restored as a result of the action, such as extinction of a threatened or endangered species or the disturbance of a cultural site.

The use of energy is addressed in Section 3.6. Although the use of energy resources, such as electricity, is irretrievable, energy supplies will not be significantly affected by the implementation of the preferred or minimal office alternatives. Irreversible and irretrievable commitment of resources includes energy required during construction or demolition activities, and energy required during operation of proposed uses (lighting, heating and cooling, electrical appliances, and cooking).

Natural resources such as sand and gravel may be used during utility construction or modification. Although such resources are not replaceable, their use will not significantly affect available supplies.

4.3 RELATIONSHIP BETWEEN SHORT-TERM USES AND LONG-TERM PRODUCTIVITY

This section evaluates the effect of the preferred and minimal office alternatives on productivity (agriculture, mineral extraction, or timber production) of land that is already developed by the Navy. Because Sand Point Naval Station is developed, it is not currently productive. The preferred and minimal office alternatives would not restore or decrease short- or long-term commercial and natural productivity.

5.0 ENVIRONMENTAL JUSTICE

Executive Order 12898 requires that environmental impacts to minority and low-income persons be assessed and that disproportionately high and adverse human health or environmental effects be addressed, as appropriate. This process is referred to as environmental justice. In accordance with this order, impacts to minority and low-income persons have been assessed; no significant adverse effects were identified. In fact, implementation of activities under the interim lease would have an overall beneficial effect on these groups through the incorporation of housing proposed by the Seattle-King County Coalition for the Homeless.

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APPENDIX A

TRAFFIC IMPACT STUDY FOR SAND POINT INTERIM LEASE

**TRAFFIC IMPACT STUDY
FOR
CITY OF SEATTLE INTERIM LEASE FOR SAND POINT**

**Engineering Field Activity
Naval Facilities Engineering Command
Poulsbo, Washington**

**Prepared by
URS Consultants, Inc.
Seattle, Washington**

June 1996

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ABBREVIATIONS AND ACRONYMS

ITE	Institute of Transportation Engineers
LOS	level of service
NOAA	National Oceanic and Atmospheric Administration
V/C	volume-to-capacity ratio

1.0 PURPOSE AND SCOPE

The purpose of this study is to evaluate the traffic impacts of the interim lease for Naval Station Puget Sound, Seattle (Sand Point Naval Station).

The scope of this traffic impact study includes determination of the ability of the external system of local and collector streets to serve the community with the interim uses of Sand Point Naval Base in place.

2.0 BACKGROUND INFORMATION

As shown on Figure A-1, Sand Point Naval Station is located in King County in the northeastern section of Seattle. Adjacent to the National Oceanic and Atmospheric Administration (NOAA) and Magnuson Park, on the west bank of Lake Washington, it comprises approximately 151 acres of land. The base has nearly 1.6 million square feet of facilities that used to provide naval support and billeting facilities for the Northern Pacific Fleet. There were no industrial operations or aviation support activities at the base.

The base is primarily surrounded by NOAA and Magnuson Park to the east, and residential land uses to the north, south, and west. The nearby nonmilitary residents are not allowed on the base, which has security-controlled access locations. Figure A-2 shows the existing site and land uses around the base.

The base was closed in September 1995 and is proposed for transfer to the City of Seattle in the near future. All Navy functions have been transferred to other naval facilities. The interim lease being considered for the Navy property and facilities is described in the following section of this report.

3.0 PREFERRED ALTERNATIVE

In 1993, the City of Seattle adopted a reuse plan for Sand Point Naval Station (City Planning 1993a). Under the preferred alternative, the City would begin implementation of this plan. The lease emphasizes educational and community facilities and opportunities for affordable housing. There are three alternatives: the preferred, the

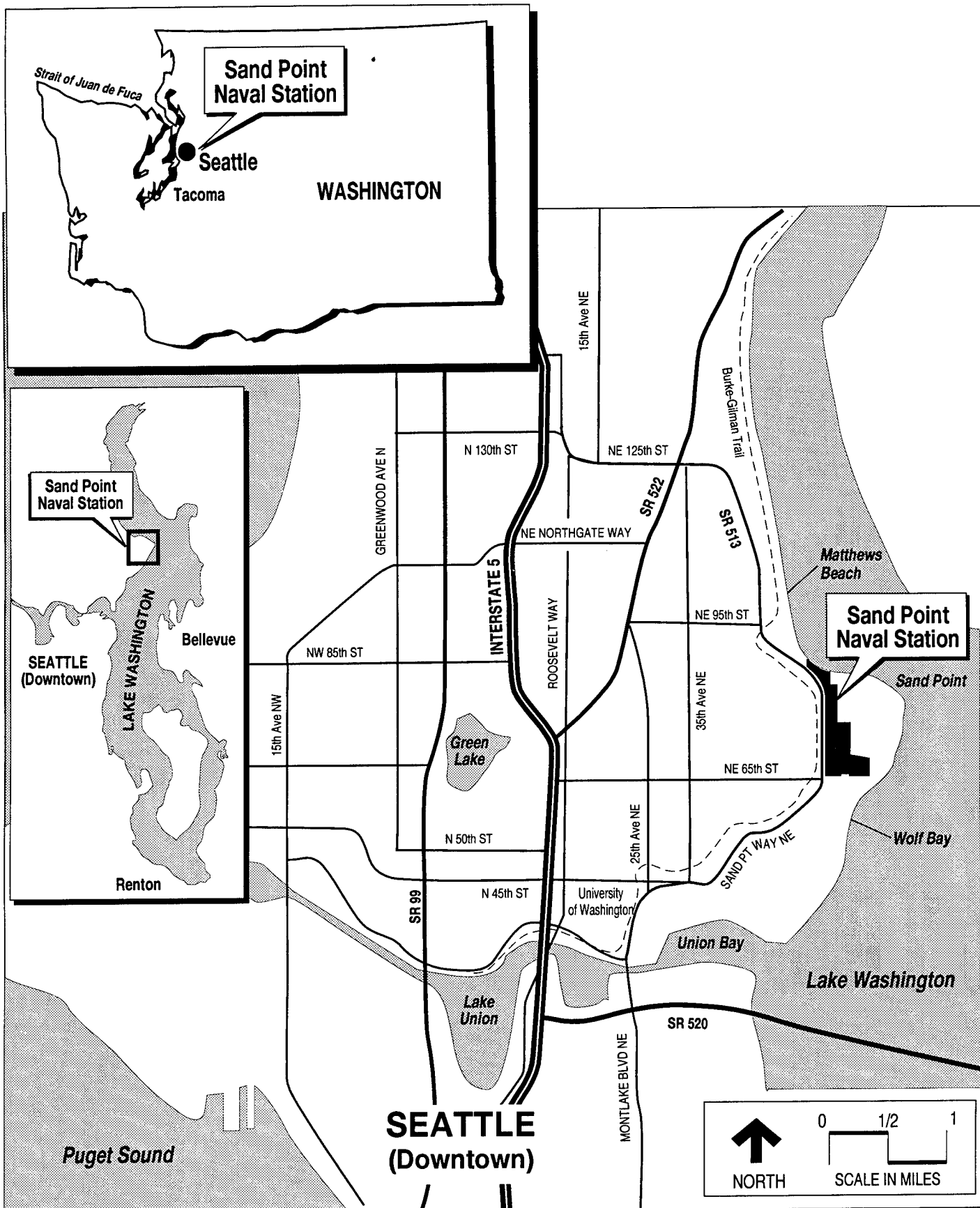


**Figure A-1
Vicinity Map**

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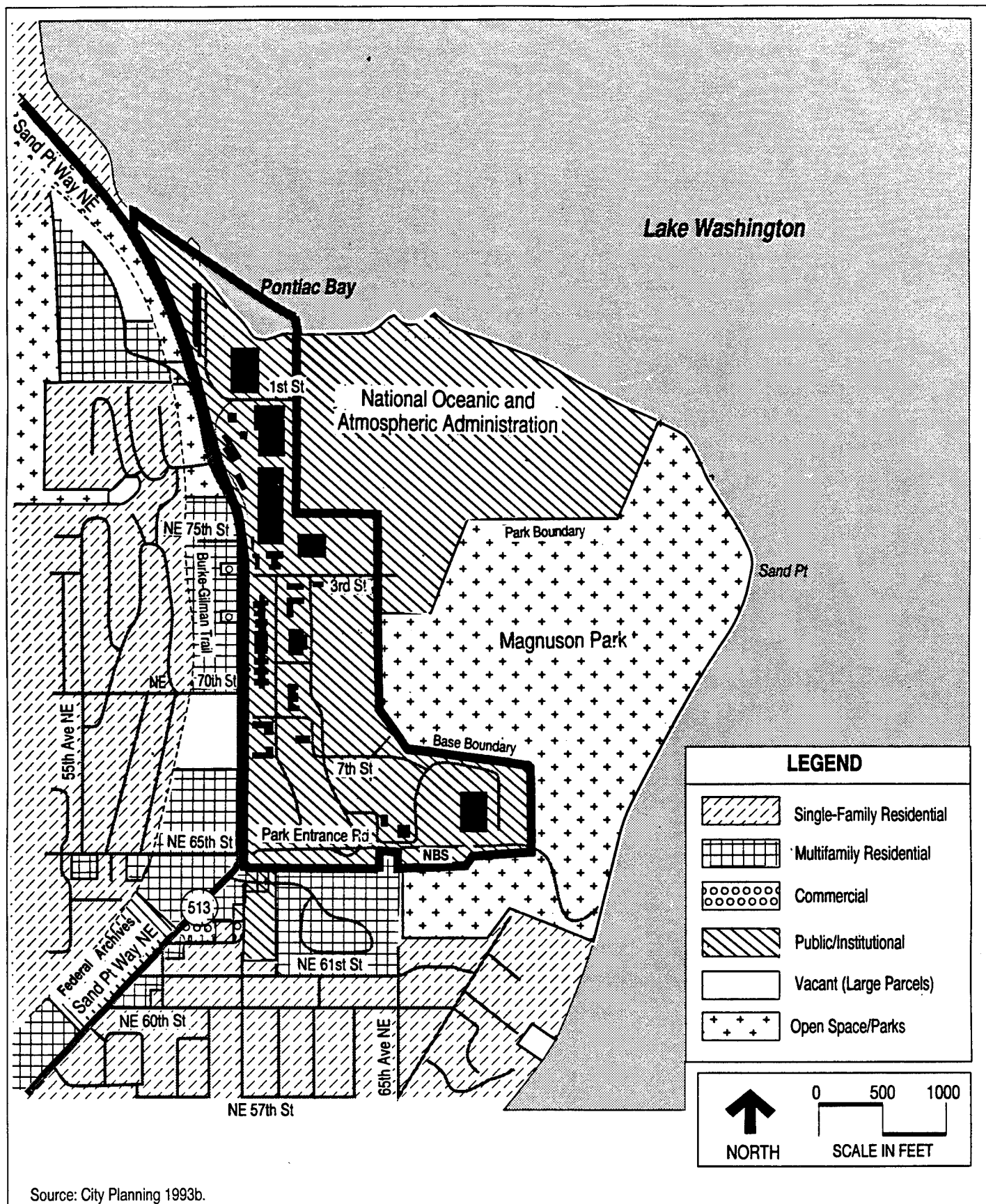


Figure A-2
Current Neighborhood Land Uses

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minimal office, and the no action alternatives. The preferred alternative develops educational uses in one of two possible scenarios. Scenario 1 would temporarily install a high school and limited community college use in Building 9, with subsequent full use by the community college. Scenario 2 would convert Building 9 into community college use only (beginning with a few classes and expanding over time). The second alternative, the minimal office alternative, incorporates Scenario 2 and limits office uses to Building 138, as well as keeping Building 222 vacant.

4.0 TRAVEL FORECAST

Travel forecasting, or projection of future traffic volumes, is based upon background (nonsite-produced) traffic volumes, plus the traffic volumes resulting from the site development (preferred alternative). For this project, analysis assumes that the interim lease alternatives will be implemented by year 2000. Following are detailed descriptions of the elements of the travel forecasting process.

4.1 BACKGROUND TRAFFIC VOLUMES

Information on background, or nonsite-generated traffic, was provided by the existing conditions traffic analysis prepared for the Sand Point Naval Station environmental impact statement (Kittleston 1993). This report provided the background forecasted PM peak-hour turning volumes for the year 2000. Background forecasted average daily traffic (ADT) was determined by increasing existing ADT volumes to the year 2000 using a growth factor of 1 percent per year, and rounding the value to the nearest 50 vehicles.

4.2 SITE-GENERATED TRAFFIC VOLUMES

In order to develop site-generated traffic volumes, site land use must be known for use in trip generation and expected travel patterns determined for use in trip distribution.

4.2.1 Trip Generation

Based on the site land use proposed in the preferred and the minimal office alternatives (both Scenario 1 and Scenario 2) and trip generation rates from the Institute of Traffic Engineers (ITE) (ITE 1991), site-generated average vehicle trips per day and peak-hour traffic were determined.

When proposed land uses do not correlate exactly with ITE categories, professional judgement is commonly used to choose the most appropriate ITE trip rate. Uses such as low income housing and baseball fields do not fit the ITE categories, and judgement was used to assign these trip generation rates. Care was taken to account for the hours of operation of the different facilities and for the use of ridesharing and transit ridership typical for the educational uses. Tables A-1, A-2, A-3, and A-4 summarize the land use, building number(s), and expected number of generated vehicle trips for the year 2000. Table A-1 includes the preferred alternative Phase I (with the high school); Table A-2 reflects Scenario 2, Phase I (without the high school). Table A-3 reflects both scenarios, Phase II (ultimate build out with the community college). Table A-4 summarizes the minimal office alternative. Numbers in brackets reflect the ITE trip generation category. A site map with building numbers and locations is located in Attachment A-1 (Figure 1).

Further traffic analysis was for Phase II because Phase I is expected to last only a few years.

4.2.2 Trip Distribution

Trip distribution determines the percentage of site-generated trips that enter and exit the site through the external roadway system. The site trips were distributed entering and exiting the site via the main entrance (N.E. 74th Street - 3rd Street) and the N.E. 65th Street entrance. The distribution of vehicles to the north, west, and south was 40 percent, 25 percent, and 35 percent, respectively. Figure 2 in Attachment A-1 details the distribution entering and exiting the site.

4.3 TRIP ASSIGNMENT

Using the background volumes, trip generation, and distribution information, a transportation model was developed to estimate expected traffic volumes on external roadways. The traffic forecasting software package IMPAX was used to develop the model and produce expected vehicle volumes. Figure A-3 shows year 2000 PM peak-hour site-generated and total traffic, and Figure A-4 shows year 2000 site-generated and background ADT volumes. Figures A-5 and A-6 show the same information for the minimal office alternative.

Table A-1
Preferred Alternative—Scenario 1, Phase I, Volumes (Projected for Year 2000)
Vehicular Trip Generation—Average Weekday

ITE Trip Generation Category	Land Use	Buildings	Size	Daily Volume	In 50%	Out 50%	AM Peak Trips	AM In	AM Out	PM Peak Trips	PM In	PM Out
Mini-storage [221]	Storage	5	208,734 sq. ft.	535	268	268	48	23	25	54	28	26
Corporate headquarters [714]	Office	5, 138	221,540 sq. ft.	1,486	743	743	326	303	23	309	34	275
High school [530]	High school	9	1,105 Students	1,538	769	769	453	308	145	88	26	62
Community college [540]	Community college	9	105 Students	119	59	59	0	0	0	5	4	1
Community college [540]	Education	18, 47	64,197 sq. ft.	826	413	413	142	138	4	68	51	17
Mobile home park [240]	Housing	26N, 26S, 224, 330, 331, 332	250 Units	1,183	592	592	85	18	67	135	84	51
Community center [495]	Senior activities	406	29,270 sq. ft.	216	108	108	32	20	12	40	11	29
Tennis center [491]	Baseball fields		4 Fields	133	67	67	7	3	3	11	5	6
Project Total				6,036	3,019	3,019	1,093	813	280	710	243	467

Note:
ITE Institute of Traffic Engineers

Table A-2
Preferred Alternative—Scenario 2, Phase I, Volumes (Projected for Year 2000)
Vehicular Trip Generation—Average Weekday

ITE Trip Generation Category	Land Use	Buildings	Size	Daily Volume	In 50%	Out 50%	AM Peak Trips	AM In	AM Out	PM Peak Trips	PM In	PM Out
Mini-storage [221]	Storage	5	208,734 sq. ft.	535	268	268	48	23	25	54	28	26
Corporate headquarters [714]	Office	5, 138	221,540 sq. ft.	1,486	743	743	326	303	23	309	34	275
Community college [540]	Community college (day)	9	75 Students	64	32	32	10	9	1	3	2	1
Community college [540]	Community college (evening)	9	105 Students	119	59	59	0	0	0	5	4	1
Community college [540]	Education	18, 47	64,197 sq. ft.	826	413	413	142	138	4	68	51	17
Mobile home park [240]	Housing	26N, 26S, 224, 330, 331, 332	250 Units	1,183	592	592	85	18	67	135	84	51
Community center [495]	Senior activities	406	29,270 sq. ft.	216	108	108	32	20	12	40	11	29
Tennis center [491]	Baseball fields		4 Fields	133	67	67	7	3	3	11	5	6
Project Total				4,562	2,282	2,282	650	514	135	625	219	406

Note:
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Table A-3
Preferred Alternative—Scenario 1, Phase II, and Scenario 2, Phase II, Volumes (Projected for Year 2000)
Vehicular Trip Generation—Average Weekday

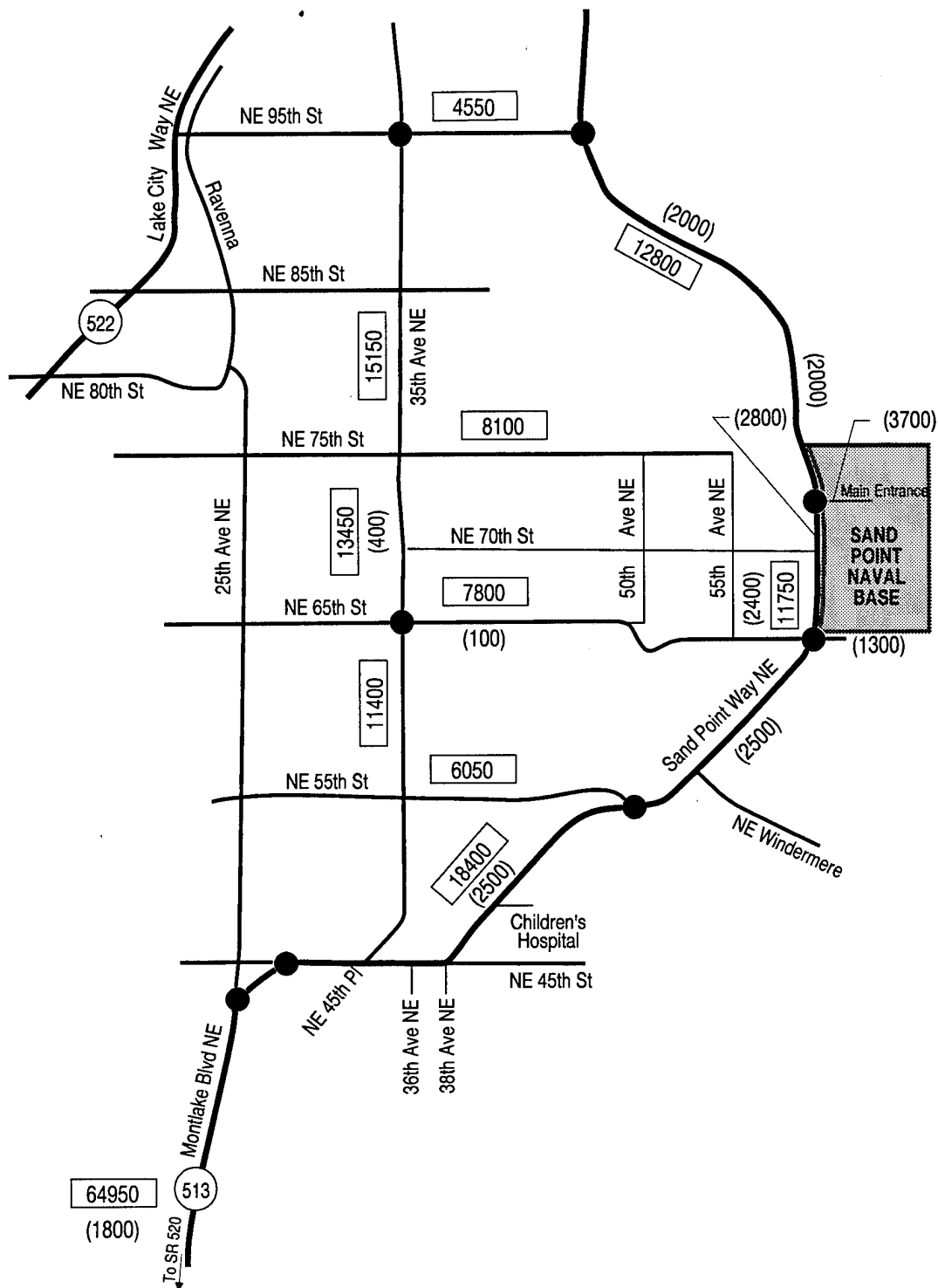
ITE Trip Generation Category	Land Use	Buildings	Size	Daily Volume	In 50%	Out 50%	AM Peak Trips	AM In	AM Out	PM Peak Trips	PM In	PM Out
Mini-storage [221]	Storage	5	208,734 sq. ft.	535	268	268	48	23	25	54	28	26
Corporate headquarters [714]	Office	5, 138	221,540 sq. ft.	1,486	743	743	326	303	23	309	34	275
Community college [540]	Community college (day)	9	300 Students	255	128	128	41	40	1	13	10	3
Community college [540]	Community college (evening)	9	375 Students	424	212	212	0	0	0	16	12	4
Community college [540]	Education	18, 47	64,197 sq. ft.	826	413	413	142	138	4	68	51	17
Mobile home park [240]	Housing	26N, 26S, 224, 330, 331, 332	250 Units	1,183	592	592	85	18	67	135	84	51
Community center [495]	Senior activities	406	29,270 sq. ft.	216	108	108	32	20	12	40	11	29
Tennis center [491]	Baseball fields		4 Fields	133	67	67	7	3	4	11	5	6
Project Total				5,058	2,531	2,531	681	545	136	646	235	411

Note:
ITE Institute of Traffic Engineers

Table A-4
Minimal Office Alternative (Projected for Year 2000)
Vehicular Trip Generation—Average Weekday

ITE Trip Generation Category	Land Use	Buildings	Size	Daily Volume	In 50%	Out 50%	AM Peak Trips	AM In	AM Out	PM Peak Trips	PM In	PM Out
Mini-storage [151]	Storage	5	208,734 sq. ft.	535	268	268	48	23	25	54	28	26
Corporate headquarters [714]	Office	138	12,806	124	62	62	19	18	1	18	2	16
Community college [540]	Community college (day)	9	300 Students	255	128	128	41	40	1	13	10	3
Community college [540]	Community college (evening)	9	375 Students	424	212	212	0	0	0	16	12	4
Community college [540]	Education	18, 47	64,197 sq. ft.	826	413	413	142	138	4	68	51	17
Mobile home park [240]	Housing	26N, 26S, 224, 330, 331, 332	250 Units	1,183	592	592	85	18	67	135	84	51
Community center [495]	Senior activities	406	29,270 sq. ft.	216	108	108	32	20	12	40	11	29
Tennis center [491]	Baseball fields		4 Fields	133	67	67	7	3	4	11	5	6
Project Total				3,696	1,880	1,880	374	261	113	355	203	152

Note:
ITE Institute of Traffic Engineers



LEGEND

5600
(1200)

Background Average Daily Traffic
Site Only Average Daily Traffic



NORTH

NOT TO SCALE

Figure A-4
Forecasted Average Daily Traffic Volumes-Preferred Alternative

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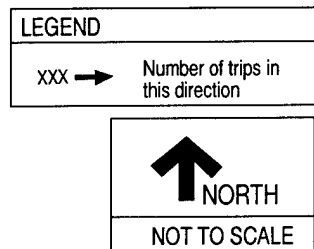
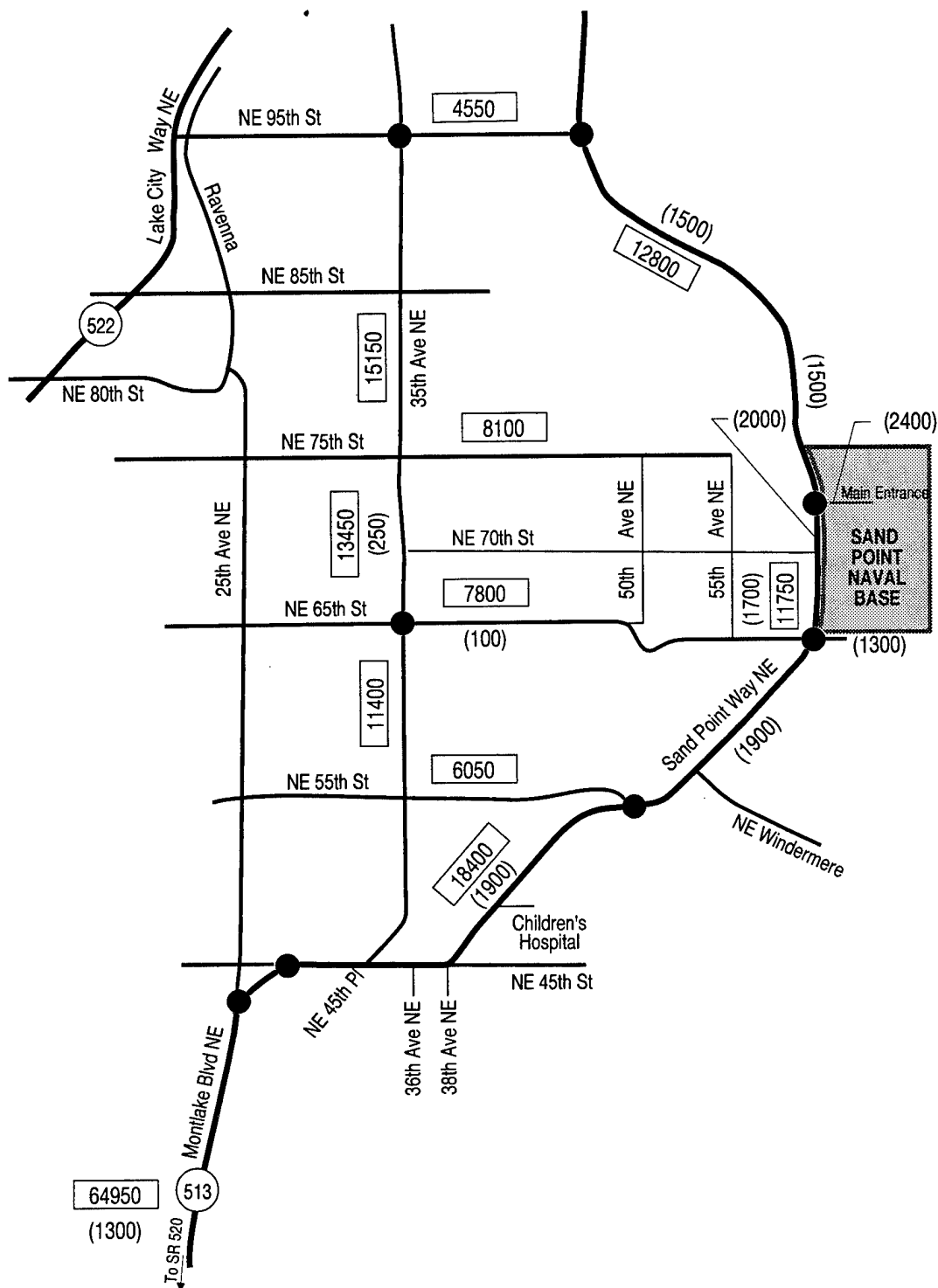


Figure A-5
Forecasted P.M. Peak-Hour Traffic Volumes—Minimal Office Alternative

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LEGEND

5600
(1200)

Background Average Daily Traffic
Site Only Average Daily Traffic

↑ NORTH
NOT TO SCALE

Figure A-6
Forecasted Average Daily Traffic Volumes—Minimal Office Alternative

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5.0 CAPACITY ANALYSIS

The expected operations of the external roadways are analyzed by the capacities of roadway sections and by intersection operations. The analysis was based on existing roadway and intersection laneage.

5.1 ROADWAY

According to the City of Seattle comprehensive plan (City Planning 1994a, 1994b) draft arterial planning map, the roadways external to the Sand Point site are expected to be classified as follows:

- **Sand Point Way N.E. (N.E. 65th Street to N.E. 95th Street)—Minor Arterial.** Minor arterials usually consist of a two- to four-lane section. This roadway is currently a two-lane to four-lane section.
- **Sand Point Way N.E. (N.E. 95th Street to N.E. 45th Street)—Principal Arterial.** Principal arterials usually are a four- to six-lane section, two to three lanes per direction. This roadway section currently consists of four lanes with a center median.
- **Montlake Boulevard (N.E. 45th Street to Montlake Bridge)—Principal Arterial.** Currently the roadway consists of four lanes plus a center median.
- **35th Avenue N.E. (N.E. 45th Street to N.E. 125th Street)—Minor Arterial.** The road currently is a two-lane section.
- **N.E. 95th Street (Lake City Way N.E. to Sand Point Way N.E.)—Minor Arterial.** Currently this is a two-lane section.
- **N.E. 75th Street (25th Avenue N.E. to 35th Avenue N.E.)—Collector Arterial.** Collector arterials generally have two lanes. Currently, N.E. 75th Street has two lanes.
- **N.E. 65th Street (N.E. Ravenna Blvd. to Sand Point Way N.E.)—Minor Arterial.** This roadway section is currently two lanes.

- **N.E. 45th Street (25th Avenue N.E. to Sand Point Way N.E.)—Principal Arterial.** Currently this roadway section consists of two or three lanes each direction with a center dual left-turn lane.

The capacities of some of these roadways are expected to be increased in the future. Even without these improvements, the existing roadways can accommodate the new traffic generated by the interim lease. Any planned improvements in capacity will only improve overall expected operations.

5.2 INTERSECTION

Intersection capacity was evaluated using the methodologies in *1995 Highway Capacity Manual*. The roadway and intersection configurations were assumed to be the same as existing. Resulting PM peak-hour levels of service (LOSs) for the interim lease (preferred alternative), the minimal office alternative, the no-action alternative, and existing conditions, are shown below in Table A-4. The no-action alternative assumes there is no redevelopment at Sand Point—it generates no traffic. An LOS of A, B, C, or D is considered acceptable.

It should be noted that, with the exception of N.E. 95th Street/Sand Point Way N.E., all intersections are signalized and were analyzed operating at a 100-second cycle length. Currently the N.E. 95th Street/Sand Point Way N.E. intersection is not signalized and operates at an LOS of D. Vehicles attempting to turn left onto Sand Point Way N.E. from N.E. 95th Street have difficulty finding gaps in the traffic stream to allow them to make their turn. This problem is expected to become more severe in the future, operating at an LOS of E or F. Signalization would help alleviate this problem in both scenarios, resulting in an LOS of B. Attachment A-2 contains the capacity analysis worksheets for these signalized and unsignalized intersections.

5.3 ROADWAY VOLUME-TO-CAPACITY

In 1994, the City of Seattle passed a concurrency ordinance to comply with the State Growth Management Act. Concurrency requires the City to monitor projected growth from new development and have adequate transportation facilities to accommodate new growth. The City uses aggregate volume-to-capacity (V/C) ratios as a level-of-service measure for concurrency. Capacity is the maximum hourly rate at which vehicles can reasonably be expected to travel a section of roadway. The V/C ratio represents the

volume of vehicles compared to the capacity. Table A-5 shows the expected V/C ratios for the two alternatives within the traffic analysis area and the maximum allowed V/C ratios.

Table A-5
PM Peak-Hour Levels of Service

Intersection	Existing (Year 1993)	Preferred Alternative (Year 2000)	Minimal Office Alternative	No Action (Year 2000)
N.E. 95th St./ 35th Ave. N.E.	B	B	B	B
N.E. 95th St./ Sand Point Way ^a N.E.	D	F	F	E
N.E. 65th St./ 35th Ave. N.E.	C	B	B	B
N.E. 65th St./ Sand Point Way N.E.	B	C	C	B
Main Access/ Sand Point Way N.E.	B	B	B	-
Sand Point Way N.E./ Princeton Ave.	B	B	B	B
Montlake Blvd./ N.E. 45th St.	C	C	C	C
Montlake Blvd./ 25th Ave. N.E.	B	C	B	B

^aUnsignalized

None of the alternatives violates the concurrency ordinance.

Estimates of the amount of traffic that the preferred action, the minimal office, and the no-action alternatives are expected to contribute to the Montlake Bridge are shown in Table A-6. These values were determined by using traffic counts taken on the bridge in October 1993. These counts include an hourly volume breakdown. Each hour's percentage of the ADT was determined and applied to the projected ADT volumes, as shown in Table A-7. The interim lease volumes were totaled for each peak period. The peak periods for the bridge are 7:00 to 9:00 a.m. and 3:00 to 6:00 p.m. (Table A-8).

Table A-6
Comparison of Traffic Volume-to-Capacity Ratios in Transportation Study Area

Location	Direction	Peak-Hour Capacity	Maximum V/C	Preferred Alternative V/C	Minimal Office Alternative V/C	No Action V/C
Montlake Bridge	NB	4,300	1.2	0.96	0.96	0.94
	SB	4,300	1.2	0.92	0.90	0.89
North-south routes (Sand Point Way N.E., 35th Ave. N.E., and 25th Ave. N.E.)	NB	4,300	1.0	0.64	0.63	0.61
	SB	4,300	1.0	0.38	0.35	0.33
East-west routes (N.E. 75th St., N.E. 65th St., and N.E. 55th St.)	EB	6,760	1.0	0.55	0.55	0.53
	WB	6,760	1.0	0.68	0.66	0.65

Note:

V/C Volume-to-capacity ratio

Table A-7
Forecast of Montlake Bridge Hourly Volumes
Generated by the Preferred and the Minimal Office Alternatives

Time Period	1993 Percentage of ADT	Preferred Alternative Volume	Minimal Office Alternative Volume
7:00-8:00 am	6.3	112	82
8:00-9:00 am	7.1	126	92
1:00-2:00 pm	6.2	110	81
2:00-3:00 pm	6.3	112	82
3:00-4:00 pm	6.6	117	86
4:00-5:00 pm	6.9	123	90
5:00-6:00 pm	7.3	130	95

As shown in Table A-6, volumes on the bridge would begin to approach a V/C ratio of 1.0 even under the no-action alternative. The interim lease pushes the volumes even closer to V/C 1.0. The preferred alternative would increase traffic on the bridge by approximately 3 percent. The minimal use alternative would increase bridge traffic by

Table A-8
Forecast of Montlake Bridge Peak-Hour Volumes Generated by Alternatives

Alternative	A.M. Peak 7:00 to 9:00 a.m. Total (Site-Generated)	P.M. Peak Total 3:00 to 6:00 p.m. (Site-Generated)
Interim Lease	9,142 (238)	14,135 (370)
Minimal Office	9,078 (174)	14,036 (271)
No action	8,904 (0)	13,765 (0)

Note: Volumes reflect 1 percent growth per year

approximately 2 percent. These volumes do not exceed the maximum allowed V/C ratios and, therefore, is not considered significant.

6.0 CONCLUSIONS

Based on the analysis performed for this study, the following conclusions can be made.

- The unsignalized N.E. 95th Street/Sand Point Way N.E. intersection currently operates at barely acceptable levels and is expected to operate poorly in the future under all three alternatives and scenarios, including Scenario 1 of the preferred alternative. It is recommended that this intersection be considered for signalization or other geometric improvements in the future to result in safety and operational improvements.
- Approximately 5,060 trips per day are expected to be generated by the preferred alternative and 3,695 by the minimal office alternative. In both cases, all analyzed intersections are expected to operate at acceptable levels except for the N.E. 95th Street/Sand Point Way N.E. intersection.
- Both the preferred alternative and the minimal office alternative would increase traffic on the Montlake Bridge. However, because this increase does not violate the City-adopted V/C criteria, the impact due to the increase is not considered significant.

7.0 REFERENCES

- City of Seattle Planning Department (City Planning). 1994a. *The City of Seattle Comprehensive Plan—Toward a Sustainable Seattle*. Seattle, Washington. July 25, 1994.
- . 1994b. *The Mayor's Recommended Comprehensive Plan*. Seattle, Washington. March 1994.
- . 1993a. *City of Seattle Community Preferred Reuse Plan for Sand Point*. November 1993.
- . 1993b. *Geographic Information System Land Use Maps*. Seattle, Washington. July 21, 1993.
- Institute of Transportation Engineers (ITE). 1991. *Trip Generation*. 5th ed.
- Kittleson & Associates, Inc. (Kittleson). 1993. *Sand Point Existing Conditions Study Transportation Analysis*. December 1993.
- Transportation Research Board. 1995. *Highway Capacity Manual*.

ATTACHMENT A-1

BUILDING LOCATION MAP AND TRIP DISTRIBUTION

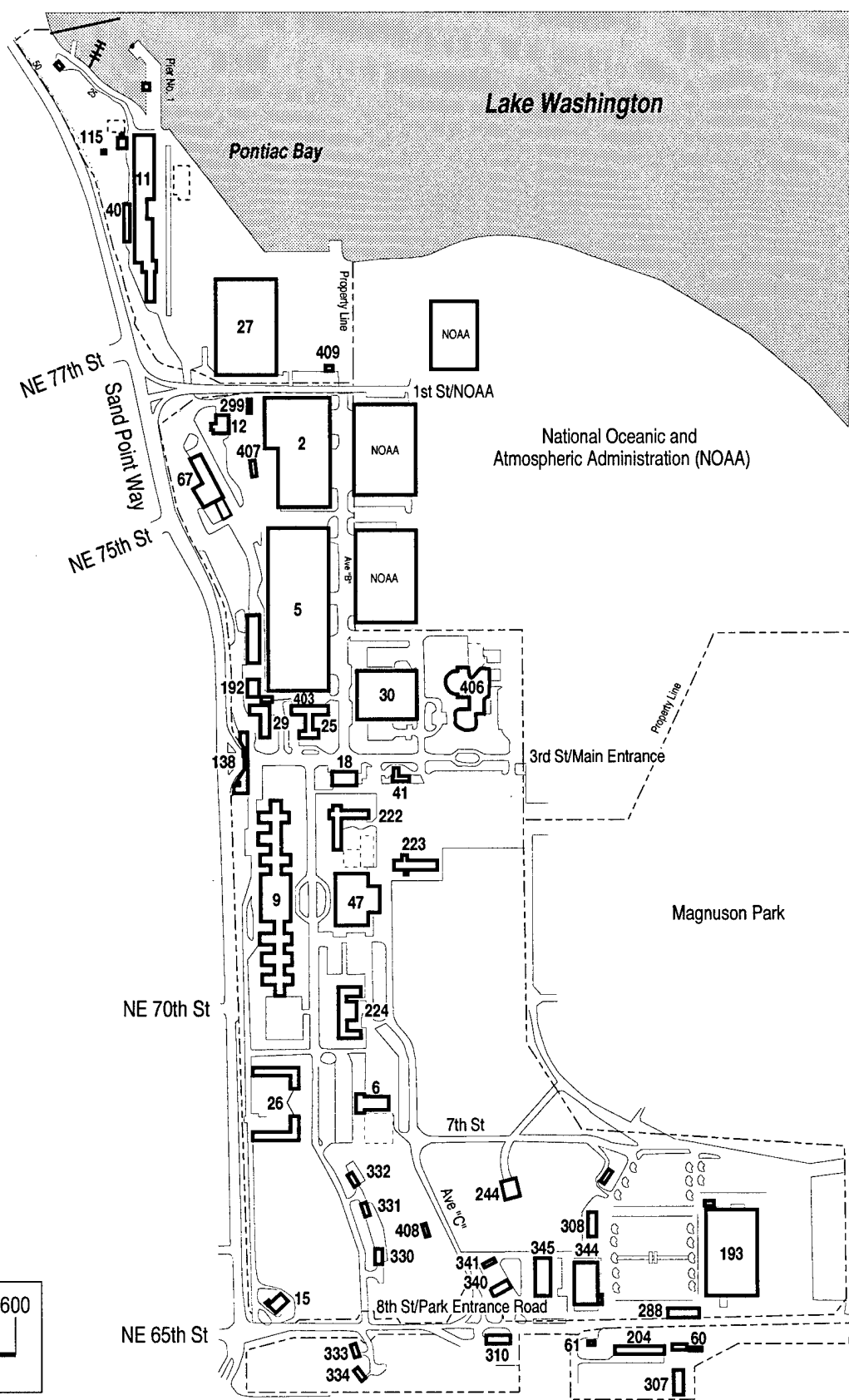


Figure 1
Building Location Map

SAND POINT
ENVIRONMENTAL
ASSESSMENT
June 1996

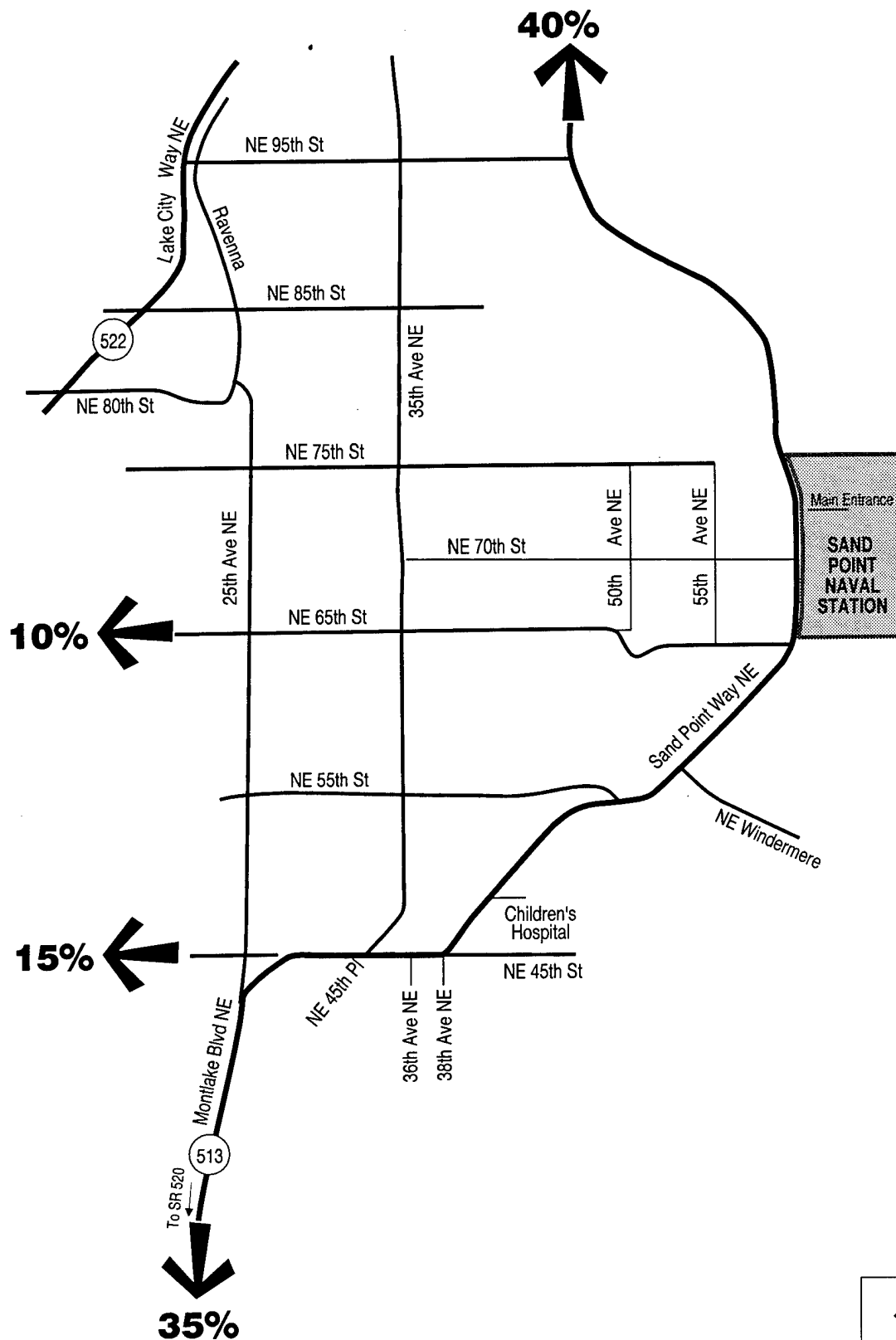


Figure 2
Trip Distribution

SAND POINT
ENVIRONMENTAL
ASSESSMENT
June 1996

ATTACHMENT A-2
HCS CAPACITY ANALYSIS

Streets: (E-W) 95th Street (N-S) 35th Avenue
Analyst: JFV File Name: 9535C2.HC9
Area Type: Other 6-10-96 PM Peak
Comment: Minimal Office Year 2000

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	>	2	<	>	2	<	1	2	<	1	2	<
Volumes	75	180	110	80	90	30	95	665	85	25	410	35
Lane Width	12.0			12.0			12.0	12.0		12.0	12.0	
RTOR Vols			0			0			0			0
Lost Time	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	*				NB Left	*		
Thru	*				Thru	*		
Right	*				Right	*		
Peds					Peds			
WB Left	*				SB Left	*		
Thru	*				Thru	*		
Right	*				Right	*		
Peds					Peds			
NB Right					EB Right			
SB Right					WB Right			
Green	42.0P				Green	50.0P		
Yellow/AR	4.0				Yellow/AR	4.0		
Cycle Length: 100 secs Phase combination order: #1 #5								

Intersection Performance Summary

	Lane	Group:	Adj Sat	v/c	g/C	Delay	LOS	Approach:	
								Delay	LOS
	Mvmts	Cap	Flow	Ratio	Ratio				
EB	LTR	1307	3040	0.308	0.430	14.3	B	14.3	B
WB	DfL	327	761	0.257	0.430	14.0	B	13.6	B
	TR	771	1793	0.165	0.430	13.3	B		
NB	L	342	670	0.293	0.510	10.9	B	11.8	B
	TR	1869	3664	0.443	0.510	11.9	B		
SB	L	167	327	0.156	0.510	9.9	B	10.5	B
	TR	1877	3681	0.262	0.510	10.5	B		

Intersection Delay = 12.1 sec/veh Intersection LOS = B
Lost Time/Cycle, L = 6.0 sec Critical v/c(x) = 0.381

Center For Microcomputers In Transportation

HCS: Unsignalized Intersection Release 2.1 Page 1

File Name 95SPC2.HC0
 Streets: (N-S) Sand Point Way (E-W) NE 95th St.
 Major Street Direction.... NS
 Length of Time Analyzed... 60 (min)
 Analyst..... JFV
 Date of Analysis..... 6/10/96
 Other Information..... Minimal Office Year 2000

Two-way Stop-controlled Intersection

	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	0	0	1	1	0	0	0	1	0	1
Stop/Yield			N			N						
Volumes	110	770		170	130					145		25
PHF	.945	.945		.945	.945					.945		.945
Grade		0		0			0			0		
MC's (%)	0	0		0	0					0		0
SU/RV's (%)	0	0		0	0					0		0
CV's (%)	0	0		0	0					0		0
PCE's	1.1	1.1		1.1	1.1					1.1		1.1

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.00	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.00	3.30
Left Turn Minor Road	6.50	3.40

WorkSheet for TWSC Intersection

Step 1: RT from Minor Street	WB	EB
Conflicting Flows: (vph)	770	
Potential Capacity: (pcph)	564	
Movement Capacity: (pcph)	564	
Prob. of Queue-free State:	0.95	
Step 2: LT from Major Street	SB	NB
Conflicting Flows: (vph)		300
Potential Capacity: (pcph)		1233
Movement Capacity: (pcph)		1233
Prob. of Queue-free State:		0.90
Step 4: LT from Minor Street	WB	EB
Conflicting Flows: (vph)	1050	
Potential Capacity: (pcph)	261	
Major LT, Minor TH		
Impedance Factor:	0.90	
Adjusted Impedance Factor:	0.90	
Capacity Adjustment Factor		
due to Impeding Movements	0.90	
Movement Capacity: (pcph)	234	

Intersection Performance Summary

Movement	FlowRate v(pcph)	MoveCap Cm(pcph)	SharedCap Csh(pcph)	Avg.Total Delay	LOS	Delay By App
WB L	168	234		51.9	F	45.3
WB R	29	564		6.7	B	
NB L	128	1233		3.3	A	0.4

Intersection Delay = 5.7

Streets: (E-W) 95th Street (N-S) Sand Point Way
Analyst: JFV File Name: 95SPC2.HC9
Area Type: Other 6-10-96 PM Peak
Comment: Minimal Office Plan (Assumed Signalized)

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1		1				1	1		1	1	
Volumes	145		25				110	770		170	130	
Lane Width	12.0		12.0				12.0	12.0		12.0	12.0	
RTOR Vols			5						0		35	
Lost Time	3.00		3.00				3.00	3.00		3.00	3.00	

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	*				NB Left	*		
Thru					Thru	*		
Right	*				Right			
Peds					Peds			
WB Left					SB Left			
Thru					Thru	*		
Right					Right	*		
Peds					Peds			
NB Right					EB Right			
SB Right					WB Right			
Green	30.0P				Green	62.0P		
Yellow/AR	4.0				Yellow/AR	4.0		
Cycle Length: 100 secs Phase combination order: #1 #5								

Intersection Performance Summary

	Lane	Group:	Adj Sat	v/c	g/C	Delay	LOS	Approach:	
	Mvmts	Cap	Flow	Ratio	Ratio			Delay	LOS
EB	L	549	1770	0.279	0.310	19.9	C	19.7	C
	R	491	1583	0.043	0.310	18.3	C		
NB	L	707	1122	0.164	0.630	5.8	B	9.9	B
	T	1174	1863	0.691	0.630	10.4	B		
SB	T	1174	1863	0.153	0.630	5.8	B	5.7	B
	R	997	1583	0.100	0.630	5.6	B		

Intersection Delay = 10.3 sec/veh Intersection LOS = B
Lost Time/Cycle, L = 6.0 sec Critical v/c(x) = 0.555

Streets: (E-W) 65th Street (N-S) 35th Avenue
Analyst: JFV File Name: 6535C2.HC9
Area Type: Other 6-10-96 PM Peak
Comment: Minimal Office Year 2000

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	> 2	<		> 2	<		> 2	<		> 2	<	
Volumes	145	250	50	10	230	50	20	550	25	80	305	70
Lane Width	12.0			12.0			12.0			12.0		
RTOR Vols			0			0			0			0
Lost Time	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	*	*			NB Left	*		
Thru	*	*			Thru	*		
Right	*	*			Right	*		
Peds					Peds			
WB Left		*			SB Left	*		
Thru		*			Thru	*		
Right		*			Right	*		
Peds					Peds			
NB Right					EB Right			
SB Right					WB Right			
Green	12.0P	32.0P			Green	46.0P		
Yellow/AR	2.0	4.0			Yellow/AR	4.0		
Cycle Length: 100 secs Phase combination order: #1 #2 #5								

Intersection Performance Summary

	Lane Group:	Mvmts	Cap	Adj Sat Flow	v/c Ratio	g/C Ratio	Delay	LOS	Approach:	
									Delay	LOS
EB	LTR	1552		3302	0.317	0.470	12.6	B	12.6	B
WB	LTR	1075		3258	0.299	0.330	19.0	C	19.0	C
NB	LTR	1543		3284	0.426	0.470	13.5	B	13.5	B
SB	LTR	1064		2263	0.473	0.470	14.0	B	14.0	B

Intersection Delay = 14.3 sec/veh Intersection LOS = B

Lost Time/Cycle, L = 6.0 sec Critical v/c(x) = 0.395

```
Streets: (E-W) 65th St./Park      (N-S) Sand Point Way
Analyst: JFV                      File Name: 65SPC2.HC9
Area Type: Other                  6-10-96 PM Peak
Comment: Minimal Office Year 2000
```

[illegible]

Signal Operations

Phase Combination		1	2	3	4	Signal operation		5	6	7	8
EB	Left	*				NB	Left	*		*	
	Thru	*					Thru			*	
	Right	*					Right			*	
	Peds						Peds				
WB	Left	*				SB	Left	*	*	*	
	Thru	*					Thru		*	*	
	Right	*					Right		*	*	
	Peds						Peds				
NB	Right					EB	Right				
SB	Right					WB	Right				
Green	34.0P					Green	7.0P	9.0P	38.0A		
Yellow/AR	4.0					Yellow/AR	2.0	2.0	4.0		
Cycle Length: 100 secs Phase combination order: #1 #5 #6 #7											

Intersection Performance Summary

	Lane	Group:	Adj Sat	v/c	g/c			Approach:	
	Mvmts	Cap	Flow	Ratio	Ratio	Delay	LOS	Delay	LOS
	-----	-----	-----	-----	-----	-----	---	-----	---
EB	LTR	943	2695	0.147	0.350	16.9	C	16.9	C
WB	LTR	961	2745	0.328	0.350	18.2	C	18.2	C
NB	L	257	1770	0.307	0.120	12.3	B	18.0	C
	TR	1422	3647	0.567	0.390	18.6	C		
SB	L	377	1770	0.265	0.370	8.6	B	11.8	B
	TR	1734	3468	0.427	0.500	12.2	B		

Intersection Delay = 15.6 sec/veh Intersection LOS = C
Lost Time/Cycle, L = 9.0 sec Critical v/c(x) = 0.431

Streets: (E-W) Main Entrance (N-S) Sand Point Way
Analyst: JFV File Name: MAINSPC2.HC9
Area Type: Other 6-10-96 PM Peak
Comment: Minimal Office Year 2000

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes				1		1	2		1	> 2		
Volumes				60		40	630		70	45		320
Lane Width				12.0		12.0	12.0		12.0			12.0
RTOR Vols						35			25			0
Lost Time				3.00		3.00	3.00		3.00	3.00		3.00

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left								
Thru						*		
Right					*	*		
Peds								
WB Left		*			*	*		
Thru					*	*		
Right		*						
Peds								
NB Right								
SB Right								
Green	36.0P				12.0P	40.0P		
Yellow/AR	4.0				4.0	4.0		
Cycle Length: 100 secs Phase combination order: #1 #5 #6								

Intersection Performance Summary

	Lane	Group:	Adj Sat	v/c	g/C	Delay	LOS	Approach:	
	Mvmts	Cap	Flow	Ratio	Ratio			Delay	LOS
WB	L	655	1770	0.096	0.370	15.6	C	15.6	C
	R	586	1583	0.009	0.370	15.1	C		
NB	T	1527	3725	0.456	0.410	16.4	C	15.8	C
	R	902	1583	0.053	0.570	7.2	B		
SB	LT	1936	3397	0.208	0.570	8.0	B	8.0	B

Intersection Delay = 13.2 sec/veh Intersection LOS = B
Lost Time/Cycle, L = 6.0 sec Critical v/c(x) = 0.164

Streets: (E-W) Sand Point Way (N-S) Princeton/55th St.
Analyst: JFV File Name: PSPC2.HC9
Area Type: Other 6-10-96 PM Peak
Comment: Minimal Office Year 2000

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	2	<	1	2	<	>	1	<	>	1	<
Volumes	110	945	5	10	485	60	20	10	25	90	20	65
Lane Width	12.0	12.0		12.0	12.0		12.0			12.0		
RTOR Vols			0			0			0			0
Lost Time	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	*	*			NB Left	*		
Thru	*	*			Thru	*		
Right	*	*			Right	*		
Peds					Peds			
WB Left		*			SB Left	*		
Thru		*			Thru	*		
Right		*			Right	*		
Peds					Peds			
NB Right					EB Right			
SB Right					WB Right			
Green	10.0P	48.0P			Green	32.0P		
Yellow/AR	2.0	4.0			Yellow/AR	4.0		
Cycle Length: 100 secs Phase combination order: #1 #2 #5								

Intersection Performance Summary

	Lane	Group:	Adj Sat	v/c	g/C	Delay	LOS	Approach:	
								Delay	LOS
EB	L	373	1770	0.311	0.210	6.9	B	8.0	B
	TR	2272	3725	0.462	0.610	8.2	B		
WB	L	109	222	0.101	0.490	10.4	B	11.8	B
	TR	1795	3664	0.336	0.490	11.9	B		
NB	LTR	432	1310	0.134	0.330	17.9	C	17.9	C
SB	LTR	446	1350	0.413	0.330	20.1	C	20.1	C

Intersection Delay = 10.6 sec/veh Intersection LOS = B
Lost Time/Cycle, L = 6.0 sec Critical v/c(x) = 0.445

```
Streets: (E-W) 45th St.      (N-S) Montlake
Analyst: JFV                 File Name: 45MC2.HC9
Area Type: Other             6-10-96 PM Peak
Comment: Minimal Office Year 2000
```

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes		2	<	2	1		1		2			
Volumes		565	5	760	635		250		1735			
Lane Width		12.0		12.0	12.0		12.0		12.0			
RTOR Vols			0			0			875			
Lost Time		3.00	3.00	3.00	3.00		3.00		3.00			

Signal Operations

Phase Combination 1		2	3	4			5	6	7	8
EB	Left				NB	Left	*			
	Thru	*				Thru				
	Right	*				Right	*			
	Peds					Peds				
WB	Left	*	*		SB	Left				
	Thru	*	*			Thru				
	Right					Right				
	Peds					Peds				
NB	Right				EB	Right				
SB	Right				WB	Right				
Green	18.0P	27.0P			Green	45.0P				
Yellow/AR	2.0	4.0			Yellow/AR	4.0				
Cycle Length: 100 secs Phase combination order: #1 #2 #5										

Intersection Performance Summary

	Lane	Group:	Adj Sat	v/c	g/C			Approach:	
	Mvmnts	Cap	Flow	Ratio	Ratio	Delay	LOS	Delay	LOS
	-----	-----	-----	-----	-----	-----	---	-----	---
EB	TR	1042	3720	0.605	0.280	24.4	C	24.4	C
WB	L	942	3539	0.875	0.370	21.2	C	20.0	C
	T	894	1863	0.747	0.480	18.4	C		
NB	L	814	1770	0.323	0.460	13.1	B	16.6	C
	R	1457	3167	0.702	0.460	17.4	C		

Intersection Delay = 19.5 sec/veh Intersection LOS = C
Lost Time/Cycle, L = 6.0 sec Critical v/c(x) = 0.740

(N-S) Montlake
File Name: 25MC2.HC9
6-10-96 PM Peak

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes				2	1	<		2	2		2	
Volumes				880	1	5		960	1515		545	
Lane Width				12.0	12.0			12.0	12.0		12.0	
RTOR Vols						0			385			0
Lost Time				3.00	3.00	3.00		3.00	3.00		3.00	

Signal Operations

Phase Combination 1		2	3	4	Phase Combination 2		5	6	7	8
EB	Left				NB	Left				
	Thru					Thru	*			
	Right					Right	*			
	Peds					Peds				
WB	Left	*			SB	Left				
	Thru	*				Thru	*			
	Right	*				Right				
	Peds					Peds				
NB	Right				EB	Right				
SB	Right				WB	Right				
Green	40.0P				Green	52.0P				
Yellow/AR	4.0				Yellow/AR	4.0				
Cycle Length: 100 secs Phase combination order: #1 #5										

Intersection Performance Summary

		Intersection Performance Summary						Approach:	
	Lane	Group:	Adj Sat	v/c	g/C			Delay	LOS
	Mvmts	Cap	Flow	Ratio	Ratio	Delay	LOS		
	-----	-----	-----	-----	-----	-----	---	-----	---
WB	L	1451	3539	0.657	0.410	18.9	C	18.9	C
	TR	669	1631	0.009	0.410	13.3	B		
NB	T	1974	3725	0.538	0.530	12.0	B	14.6	B
	R	1679	3167	0.801	0.530	16.6	C		
SB	T	1974	3725	0.305	0.530	10.0	B	10.0	B

Intersection Delay = 14.9 sec/veh Intersection LOS = B
Lost Time/Cycle, L = 6.0 sec Critical v/c(x) = 0.739

APPENDIX B

CRIME IMPACT ANALYSIS

OPTIONS TO THE CITY PLAN FOR SAND POINT

CRIME IMPACT ANALYSIS

OPTIONS TO THE CITY PLAN FOR SAND POINT

submitted to

URS Consultants, Inc.

prepared by

Larry M. Fehr, M.P.A. and Claus Tjaden, Ph.D.

April 8, 1996

CRIME IMPACT ANALYSIS OF OPTIONS TO THE CITY PLAN

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SAND POINT CITY PLAN OPTIONS CRIME IMPACT ANALYSIS

I. Introduction

This report provides crime-related impact information associated with proposed options to the "City Plan" for the Naval Station Puget Sound at Sand Point in Seattle, Washington. This project supplements the crime impact analyses provided previously (Fehr and Tjaden, 1994). The current analysis utilizes the same technical projection methodology ("components of change" model) as employed in the earlier report. The analysis of options to the "City Plan" is provided in two sections, with and without the temporary relocation of Ballard High School. The analysis compares the three alternatives described in the Preliminary Draft Environmental Impact Statement; namely, the City Plan, the Muckleshoot Plan, and the No-Action Alternative. Information from the report is presented in the following outline for both of the sections: direct and indirect impacts, mitigating measures, unavoidable impacts, and cumulative impacts.

II. Proposed Changes, Excluding High School Relocation

A. Revised Crime Impact Analysis

Issues of higher education and crime are discussed in the "Crime Impact Technical Report" prepared by Fehr and Tjaden in April 1994. The issues and methodological discussion ("components of change" model) in that report are not repeated here, but they are applicable. Location of North Seattle Community College at Sand Point would result in an impact similar to that of the Muckleshoot Plan, but to a lesser degree due to a fewer students. While the Muckleshoot plan projected 5,000 to 7,000 students, the North Seattle Community College plan anticipates 420 to 750 students with dormitories for 100 to 200 students. The projected crime impact of

this proposal will be only about 10 percent of that identified for the Muckleshoot plan.

The crime analysis, research and interviews presented in the initial report all suggested that locating an institution of higher learning at Sand Point will have a minimal impact on crime rates. Similar to people going to work at jobs, students arrive for classes and leave the location when they are done. Thus, crime opportunity is restricted.

Incidents of crime, however, do increase almost anywhere there are people. Students are not only potential crime perpetrators, but crime victims as well. In the same fashion, school assets can become the target of property crimes.

The initial "Crime Impact Report" documented that the yearly number of crimes at the larger higher education institutions varied from 99 per year at the University of Washington to 202 at Seattle University. The characteristics of neighborhoods in which these schools are located vary dramatically. The crime rates for census tracts in which the Seattle Community Colleges are located fall between the rates for the University of Washington (212 for tract 5302) and Seattle University (2010 for tract 86). As shown in *Table A*, the rate for tract 13, in which the North Seattle Community College is located, is 1069 Part I offenses per 10,000 population. This rate is less than the city average.

1. Direct and Indirect Impacts

Given the relatively low number of community college students anticipated for the Sand Point location, the crime impact will be minimal. Since the proposed student population is about ten percent of the Muckleshoot plan, the projected impact at Sand Point will be proportionate, between about 10 and 20 additional offenses per year. *Table B* presents this projected impact by adding the impact to the initial offense projections for City Plan. The projected total impact is allocated to specific crimes according to the proportion of occurrence in the Northeast sector of the city.

2. Mitigating Measures

Same as Muckleshoot Plan. (See extended discussion in Fehr and Tjaden, 1994).

3. Unavoidable Adverse Impacts

Incidents of crime increase almost anywhere there are people. In educational settings, students are not only potential crime perpetrators, but crime victims as well. In the same fashion, school assets can become the target of property crimes. However, the relatively small number of students anticipated at the site suggests that the impact will be restricted.

4. Cumulative Impacts

None

B. Comparison to Other Options

1. City Plan

Crime is projected to increase by 10 to 20 offenses beyond that anticipated for the initial city plan.

2. Muckleshoot Plan

Given the lower number of students in this option, the number of additional offenses is projected at about ten percent of the projection for the Muckleshoot plan.

3. No-Action Alternative

Crime is projected to increase by 10 to 20 offenses in addition to the anticipated increase for the initial city plan.

III. Ballard High School Temporary Relocation

A. Revised Crime Impact Analysis

Ballard High School is located in census tract 33 bordered by NW 60th and NW 70th Streets to the north and south and 8th Ave. NW

and 24th Ave. NW to the east and west. As shown in *Table A*, crime rates in this tract are more reflective of the Northeast sector of the city. The Northeast area has crime rates about one half of the city rate. Crimes typically associated with young offenders, such as burglary and theft, are lower in tract 33 than the Northeast. The total Part I offenses also are lower. This suggests that the presence of high school students in a given location do not necessarily result in higher crime rates.

Such findings should not be unexpected. Teens are more crime prone than adults, but young people who are committed to academic work, and actively involved in related school activities, are less likely to be engaged in criminal activity. In addition, offenses are most frequently committed during leisure time, rather than during school hours (Kratcoski and Kratcoski, 1996). Indeed, there appears to be a growing literature that challenges the media and electoral imagery of schools terrorized by crime and violence (McLean, 1996).

Ballard High School reports to the school district "criminal offenses" occurring on school property. In the 1994-95 school year, there were 104 such incidents. These incidents ranged from assault to theft, but most frequently reports were for alcohol and drug possession. We do not know how many, if any, of these incidents were reported to police.

While there is a great deal of research literature available regarding high school aged youths and crime, very little explores the location of offenses in relation to the school. Only one study completed a decade ago assessed the effect of high schools on crime in the surrounding neighborhoods. That study found that increases in crime are limited to city blocks immediately adjacent to high schools (Roncek and Faggiani, 1985).

Other studies cover a wide range of issues that have some relevance to the discussion of mitigating factors. They suggest that schools can have an influence on the criminal behavior of their students. For example, Jenkins' (1995) work reinforces the belief that keeping students motivated and committed to school has a positive effect on their noninvolvement in delinquent activities. High risk students may have more success in alternative schools (Cox, Davidson and Bynum, 1995). Other research demonstrates

the importance of controlling weapons, especially guns, in preventing aggressive behavior (Webster, Gainer and Champion, 1993) and violent outcomes (Sheley, McGee and Wright, 1992).

Analysis of crime rates and research literature suggest that the temporary relocation of Ballard High School to Sand Point will have little effect on crime rates at the site and minute impact on the adjacent neighborhoods. A comparison of crime rates for the tract where Ballard High School is currently located with tracts containing colleges, show that the rates are not dissimilar. Therefore, the crime impact of relocating the high school is projected to be similar to accommodating a community college, but adjusted for differences in the size of the student populations.

As a final note, it is important to remember that the crime analysis in these documents is limited to Part I offenses as reported to the Seattle Police Department. These are the serious crimes about which citizens are most concerned. Local reactions to high school students, especially among merchants located close to a school, often relate to petty or nuisance offenses such shoplifting, loitering, parking violations, and traffic infractions. While these types of behaviors are not the subject of this report, when they are of concern, they are typically limited to commercial establishments and thoroughfares immediately adjacent to a school.

1. Direct and Indirect Impacts

The anticipated crime impact of relocating Ballard High School to the Sand Point location should be minimal. Since the proposed high school student population is about twice that of the community college option, the projected impact at Sand Point will be proportionate, between about 20 and 40 additional offenses per year. *Table B* presents this projected impact by adding the impact to the initial offense projections for City Plan. The projected total impact is allocated to specific crimes according to the proportion of occurrence in the Northeast sector of the city.

2. Mitigating Measures

Mitigating measures can reduce the projected crime impact to the lower end of the range. Such measures are already being used, to some extent, at the current Ballard High School location. Examples of mitigating measures include weapons control practices, crime prevention education and service learning activities (e.g., implementing the nationally recognized *Teens, Crime and the Community* curriculum), conflict resolution training, violence reduction curricula, establishing a strong security and police presence (including the possibility of a sub-station on campus), considering educational policies such as creating a "closed campus," alternative programs for high risk students, and consideration of principles and techniques of Crime Prevention Through Environmental Design (see extended discussion in Fehr and Tjaden, 1994).

Research has found a significant positive relationship between the level of deterrents and school campus crime rates (Morris, 1993). School facility planners have long recognized the importance of safety considerations in locating and relocating high school facilities (Castaldi, 1994).

The U.S. Department of Education has identified six key characteristics of safe, disciplined and drug-free schools: (1) recognizing, assessing, and monitoring drug and safety problems, (2) setting, implementing and enforcing a clear disciplinary policy, (3) developing and implementing a substance abuse education and prevention program, (4) educating and training staff in safety, (5) promoting parent involvement and providing parent education, and (6) interacting and networking with community groups and agencies (U.S. Department of Education, 1995).

In Washington, an evaluation of the state's "School Safety Enhancement Program," the goal of which was to improve safety and security in schools, found that in all fifteen school districts in which the program was implemented during the 1991-93 biennium, the current school year was safer than the preceding years (Yap, 1994).

Implementing mitigating measures such as those identified above would have a salutary impact on criminal incidents should the high school be temporarily relocated to the Sand Point site.

3. Unavoidable Adverse Impacts

Incidents of crime increase almost anywhere there are people. In educational settings, students are not only potential crime perpetrators, but crime victims as well. In the same fashion, school assets can become the target of property crimes. However, the anticipated impact will be minimal.

4. Cumulative Impacts

None

B. Comparison to Other Options

1. City Plan

Crime is projected to increase by 20 to 40 offenses beyond that anticipated for the initial city plan.

2. Muckleshoot Plan

Given the lower number of students in this option, the number of additional offenses is projected at about twenty percent of the projection for the Muckleshoot plan.

3. No-Action Alternative

Crime is projected to increase by 20 to 40 offenses in addition to the anticipated increase for the initial city plan.

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Table A

Crime Rates for Seattle, the Northeast Area and Tract 33 (Ballard High School)

(1993 Crime and 1990 Census Data)

	Citywide		Northeast		Tract 13 North Seattle CC		Tract 33 Ballard HS	
OFFENSE	N	Rate / 10,000	N	Rate / 10,000	N	Rate / 10,000	N	Rate / 10,000
Murder/Homic.	65	1.26	2	0.29	0	0	1	1.76
Rape	328	6.35	16	2.35	5	12.91	2	3.52
Robbery	2653	51.39	149	21.87	14	36.16	8	14.10
Aggr. Assault	4313	83.54	239	35.09	34	87.81	22	38.77
Res. Burglary	5649	109.42	637	93.52	26	67.15	44	77.55
NonRes. Burg.	3581	69.36	223	32.74	20	51.65	17	29.96
Theft	38818	751.91	3401	499.30	261	674.07	211	371.87
Theft of Veh.	6718	130.13	491	72.08	42	108.47	44	77.55
Arson	317	6.14	32	4.70	2	5.17	3	5.29
Part I Total	62442	1209.51	5190	761.95	414	1069.21	352	620.37

POPULATION	N	%	N	%	N	%	N	%
Total	516259		68115		387		5674	
5-17	55252	10.70			242		589	10.38
18-24	61403	11.89			544		466	8.21
per cap. income	\$18,318				\$14,432		\$15,726	
household inc.	\$28,353				\$24,929		\$27,521	
owner occupied housing		46.46				34.00		37.00

Table B

Projected Number of Offenses per year for Census Tract 23 for Proposed Plans and Options

OFFENSE	No New Use ¹		Muckleshoot Plan ²		Original City Plan ³		Options to City Plan Without High School ⁴		Options to City Plan With High School ⁵	
	Mitigating Measures	Without Mitigation	Mitigating Measures	Without Mitigation	Mitigating Measures	Without Mitigation	Mitigating Measures	Without Mitigation	Mitigating Measures	Without Mitigation
Murder/Homic.	0	0	0	0	0	0	0	0	0	0
Rape	0	0	0	1	0	1	0	0	0	0
Robbery	2	4	3	8	4	6	4	7	4	7
Aggr. Assault	3	6	5	12	6	9	7	11	7	12
Res. Burglary	8	18	12	33	15	25	16	26	17	29
NonRes. Burg.	3	6	4	11	5	9	5	9	6	10
Theft	44	88	66	175	81	131	87	145	94	158
Theft of Veh.	6	13	9	25	11	19	12	20	13	22
Arson	0	1	1	2	1	1	1	2	1	2
Part I Total	67	134	100	267	122	200	132	220	142	240

Total Part I offenses are projected.

Individual offenses are proportioned based on proportions for the Northeast area of the city.

¹ Projections for no new use reflects the number of offenses currently reported with a doubling without mitigation.

² Projections for the Muckleshoot plan is primarily based on the addition of 5,000 to 7,000 college students.

³ Projections for the original city plan is primarily based on the addition of 553 new residents

⁴ Projections for this option is based on the addition of 500 community college students

⁵ Projections for the Ballard HS option is based on the addition of 1000 high school students.

APPENDIX C

**PERTINENT CITY OF SEATTLE AND DEPARTMENT OF THE
NAVY CORRESPONDENCE**

City of Seattle

Executive Department—Office of Management and Planning

Thomas M. Tierney, Director
Norman B. Rice, Mayor



March 7, 1996

Robert K. Uhrich, Director
Real Estate Division, Department of the Navy
Engineering Field Activity, NW
Naval Facilities Engineering Command
19917 Seventh Avenue NE
Poulsbo, WA 98370-7570

Dear Bob,

Following is a list of activities that the City may want to allow for in an interim lease for Sand Point:

- Rehabilitate and occupy buildings 224, 26N, 26S, 330, 331, 332 for housing.
- Rehabilitate and occupy the northern portion of building 9 as a temporary high school and for some evening community college courses.
- Baseball fields for summer league play.
- Infrastructure upgrades sitewide - water, sewer, drainage, electrical, natural gas, telephone.
- Various roads and parking lots for fire department training activities.
- Occupy buildings 5B and 5C for office, storage, and training activities.
- Occupy building 138 for site project office.
- Occupy building 406 for senior center activities.

I understand that before entering into an interim lease you will need to prepare an environmental assessment. Please let me know what additional information you need to complete that assessment.

Sincerely,

Eric Friedli
Sand Point Reuse Project Manager

cc: Linda Cannon, OIR
Mary Kay Doherty, Law

uhrich3.doc

additional bldgs. for Educ. use
+ #1, 18, 222, 47
Demolition of Bldg 222 + 193

NORTH SEATTLE COMMUNITY COLLEGE

CONTINUING EDUCATION

MEMORANDUM

Date: February 13, 1996
To: Eric Friedli
From: Katherine Riley 
Re: Information for Environmental Analysis

We have compiled the information you have requested. Because this is a new direction for NSCC and the District, the information is as accurate as we can make it.

Number of students that may live in the dorm space.

The District believes that approximately 200 students could be accommodated in the dormitory portion of Building 9; however, our goal would be an occupancy rate of approximately 100 persons per night resulting in 20 to 30 vehicles.

Number of classes expected to be taught by time of day and anticipated attendance.

There are two possible scenarios that affect this figure:

- (1) Ballard High School relocates into Building 9 from Fall, 1997, to September, 1999; or
- (2) Ballard High School does not relocate into Building 9.

Assuming scenario (1), the following could be expected:

- a) High school classes for approximately 1100 students from 9 am to 3 pm, Monday through Friday; and
- b) 5 to 7 community based classes from 3 pm to 9 pm, Monday through Thursday for 75 to 105 students, and 1 or 2 classes from 9 am to 1 pm on Saturday for 15 to 30 students.

After the high school moves to its new building in September, 1999, the following could be expected:

- a) 10 to 20 college transfer and senior courses from 9 am to 5 pm, Monday through Friday for 150 to 300 students; and
- b) 15 to 25 community based courses from 5 pm to 9 pm, Monday through Thursday for 225 to 375 students, and 3 to 5 classes from 9 am to 1 pm on Saturday for 45 to 75 students.

Please note that the bulk of the evening students would arrive around 7 pm and leave at 9 pm.

Assuming scenario (2), the following could be expected:

- a) 3 to 5 Senior classes from 9 am to 5 pm, Monday through Friday for 45 to 75 students; and
- b) 5 to 7 community based classes from 3 pm to 9 pm, Monday through Thursday for 75 to 105 students, and 1 or 2 classes from 9 am to 1 pm on Saturday for 15 to 30 students.

This would last while the building was being renovated. Full utilization of the north end of the building would take approximately 3 to 5 years depending upon funding. Once the renovation was complete, we would anticipate the following:

- a) 10 to 20 college transfer and senior courses from 9 am to 5 pm, Monday through Friday for 150 to 300 students; and
- b) 15 to 25 community based courses from 5 pm to 9 pm, Monday through Thursday for 225 to 375 students, and 3 to 5 classes from 9 am to 1 pm on Saturday for 45 to 75 students.

Please note that the bulk of the evening students would arrive around 7 pm and leave at 9 pm.

Number of employees expected to use administrative office space.

Assuming that the high school temporarily relocates into Building 9, the following could be expected:

- 1. 5 to 10 offices which would be shared by the high school administration and NSCC staff; and
- 2. 1 to 2 offices for residential administration in the dormitory area.

After September, 1999, it is possible that the Seattle Community College District VI offices could relocate to Building 9. This is not an issue that has been decided, it is only being discussed as an option at this time. If this move did occur, it would add approximately 70 employees to the site and require additional office space.

Anticipated parking demand .

As might be expected, this is a very difficult figure to extrapolate. Our best estimate is approximately 150 spaces for NSCC use if the high school temporarily relocates in Building 9. It is unknown what parking requirements the high school would have. After the high school moves to its new building, parking requirements would increase to approximately 150 spaces during the day and 350 spaces during the evening class hours.

If the District offices were to relocate to Building 9, then the parking demand during the day would be approximately 200 spaces. The evening demand would stay the same at 350 spaces.

Anticipated peak hour commute trips.

It is anticipated that very little traffic would be added during rush hours. The bulk of trips during the day would be between 9 am and 1 pm because students take most of their classes during the morning and early afternoon hours. Most of the evening traffic would be between the hours of 7 pm and 9 pm, with a nominal amount of students arriving for classes at 5 pm.

Current use of carpooling or bus trips by North Seattle Community College's students, faculty and staff.

Currently, approximately 15% to 30 % of North-Seattle Community College's students, faculty and staff take the bus or carpool to campus.

DATE: March 12, 1996
TO: Mike Usen
FROM: Woody Wilkinson
SUBJECT: Sportsfields at Sand Point

The Department of Parks and Recreation request for ballfield space at Sand Point is based on past uses of the same spaces. We are proposing the same use for the space as has been the case for a number of years.

In the Spring, from mid-March to early June, the fields are used for Little League play. In the later part of the spring and into the summer, they are used for softball league play. They have been treated as an extension of Magnuson Park by the City and the Navy for these purposes. You asked that I address specific areas and needs:

1. What area is being requested and for what purposes?

The areas were indicated on a map which we sent to the Navy. The areas basically are the existing ballfields to the East and South of the Recreation Center and the grassy areas farther south of the ballfields, including the picnic area.

The ballfields are used for the actual little league practices and games. The grassy area is used for T-ball and for Coach-pitch games for the younger children. Since these tend to be younger families with toddlers, the picnic area is a place for young mothers to get away from the activity, to change diapers and the like.

2. Do we need lights?

No. Never have had them. Don't plan to have them.

3. What about parking?

Typically, the participants have parked in the commissary parking lot. We would anticipate fencing that would include a part of the parking lot for that purpose again.

4. What about restroom needs?

In the past, the park department has located several sanitation facilities near these facilities. Magnuson Park has restrooms as well.

5. How soon is the space needed?

We provided funds to upgrade the backstops and wing fences to make them conform to City standards. We also included funds for top dressing the fields. The sooner we can do the work, the better for having the fields "mature" for usage. We are already behind schedule.

6. What kind of traffic impacts are there?

Magnuson Park is a major park with peak uses on Summer weekends. The Little League and other league uses have a modest impact relative to warm day beach use. Anticipating two teams for each for two practice sessions and a schedule of four games each on Saturday and Sunday would suggest six to seven cars every two hours per team on weekdays and fifteen to twenty for each team per game on weekends. The unstructured play of the younger players might double the numbers at most. Since this is simply a continuation of past practices, there is no net increase in traffic from past years.

7. Other concerns?

The Little League carries liability insurance and is willing to write the U.S. Navy and the City in on their coverage.

There is a crying need for these fields. Anything you can do to help us expedite the resolution of the issue will be greatly appreciated.

It is important to note that the uses proposed are consistent with the approved re-use plan. The plan, which has been reviewed by the community and adopted by the City Council, actually contemplates a more extensive development of fields and facilities in the long run. Our current use proposal is much more limited than the level the community is advocating. We will not start making any significant capital improvements until we have title to the property.

City of Seattle

Executive Department—Office of

Thomas M. Tierney, Director
Norman B. Rice, Mayor

NATURE SAVER™ FAX MEMO 01816		Date	3/12/96	Page	2
To	CINDY BAKER		From	ERIC FRIEDL	
Co. Dept.	U29		Co.	CITY	
Phone #			Phone #	6848369	
Fax #	2339570		Fax #		

February 12, 1996

Robert K. Uhrich, Director
Real Estate Division, Department of the Navy
Engineering Field Activity, NW
Naval Facilities Engineering Command
19917 Seventh Avenue NE
Poulsbo, WA 98370-7570

RE: Seattle Fire Department Interim Use of Sand Point

Dear Mr. Uhrich,

This letter is to provide additional information concerning the proposed interim use of Sand Point by the Seattle Fire Department Training Division.

The Seattle Fire Department Training Division requests the use of Sand Point streets and unused parking areas for driver training for Recruit Firefighters. Recruit Firefighters and their Instructors would practice driving fire apparatus on the streets and in large, unused parking areas (such as that to the Southwest of Building #67). There would be no use of red lights or sirens. This would occur during the first week of May and the first week of September, 1996.

They also request the use of restroom facilities and a lunch/ break area in Building #67 during these same time periods for the use of Recruit Firefighters and their Instructors.

The Seattle Fire Department Training Division may also need to use the streets and unused, large parking areas for hose drills by Recruit Firefighters. The Training Division is training an unusually large number of Recruit Firefighters during calendar 1996. The normal training area at Fire Station 14 is badly overcrowded under these conditions and there is a need for an additional, remote drilling site. At present, they are using a public street right of way on Harbor Island, but this may not be available during the later spring and summer Recruit Classes.

If necessary, the Training Division requests the use of Sand Point for this purpose. Recruit Firefighters and their Instructors would lay fire hose, hook up to fire hydrants, and perform other, similar hose training. These drills would be during the following

Robert K. Uhrich
February 12, 1996
page 2

periods: May 6-31, 1996, and September 9-October 4, 1996. There would be no use of red lights or sirens.

These activities would be on an "as-needed" basis. They also request the use of restroom facilities and a lunch/break area in Building #67 during these same periods.

Thank you for your consideration of this request.

If you have questions concerning the specific details of this request, please feel free to contact Deputy Chief Byron L. Braden, Chief of Training, at 386 1780. Please contact me about what next steps need to be taken to accomplish this temporary use of the Sand Point facility

Sincerely,



Eric Friedli
Sand Point Project Manager

CC: Byron Braden, Chief of Training, Seattle Fire Department
Mike Usen, Office of Management and Planning

EF:BLB



DEPARTMENT OF THE NAVY
ENGINEERING FIELD ACTIVITY, NORTHWEST
NAVAL FACILITIES ENGINEERING COMMAND
19917 7TH AVENUE N.E.
POULSBORO, WASHINGTON 98370-7570

4330

Ser 04BSJS/270

3 November 1994

From: Commanding Officer, Engineering Field Activity, Northwest
To: Commanding Officer, Naval Station, Everett

Subj: ENGINEERING EVALUATION OF BUILDING NO. 222

1. EFA Northwest completed a field investigation of Building No. 222 on 19 October 1994 to inspect a large crack discovered in the foundation supporting the brick facade at the front entrance. This, and other foundation cracks, raised questions about the capacity of the foundation to support the brick and the safety of the structure.

2. Building No. 222 is a large two story wood frame structure built in 1939. The structure is formed of two wings which almost form an "L". The area of inspection was limited to the basement in the west part of the structure. Drawings of the building are not available. The basement foundation wall in the inspected area is 8'-11" in height and is constructed of unreinforced concrete. The floor system of wood joists and beams is supported on 6 x 8 wood columns. The exterior walls are sided with asbestos shingles with the exception of the front entrance which has a brick facade.

3. The inspection of the foundation identified the following problems:

a. Many large active cracks exist in the foundation. Many of these cracks were patched approximately 2-1/2 years ago and have reopened. New cracks have also formed since the repair work was completed.

b. The concrete foundation wall has deflected excessively inwards on the west and south ends of the building.

c. The interior wood columns have overturned in the same direction as the west exterior foundation wall. Recent structural modifications have been completed to resist this lateral movement within the open unfinished end of the basement. Existing basement partition walls are non-structural and are severely cracked.

d. The base of the timber columns are not physically secured to the concrete pedestals as necessary to resist lateral and vertical loads from unseating them. At the column cap only two lag bolts make the connection between the column and underside of the floor beam.



Subj: ENGINEERING EVALUATION OF BUILDING NO. 222

4. Structural defects are assessed as follows:

a. Do the observed defects represent actual damage to the load-bearing portion of the building?

The damage to the foundation walls and floor columns is to the load-bearing portion of the building. The building is not in compliance with current seismic codes or engineering practice. The modifications completed in the basement will not prevent serious damage to the building and/or collapse in a seismic event. The foundation wall along the west and south ends of the building have already deflected excessively from the lateral earth pressure which the foundation walls and floor diaphragm were unable to restrain. This movement is the principal cause for the cracks in the foundation wall and for the damage to the crack repairs completed previously. At the entrance to Building No. 222 the foundation jog forms a natural lateral restraint as the wall turns at right angles. However, the stress caused by the lateral movement along the entire basement wall has caused a hinge to form at the point of this jog resulting in the excessively large crack and differential displacement.

b. Do the defects affect the load-bearing capacity of any structural components of the building such that the load-bearing system can no longer support the design load?

The building foundation is not properly designed and reinforced to restrain the active soil pressure. Failure has occurred and collapse may be imminent if the walls continue to move. As the foundation continues to deflect laterally the vertical loads will become more eccentric thus increasing the overturning moment on the wall and accelerating the rate of movement until collapse occurs. The floor diaphragm has not developed the stiffness necessary to restrain the foundation from moving as evidenced by the continued cracking.

The basement columns were not found to be attached to the concrete pedestals, and have also deflected at the first floor level approximately 1-1/4 inches. In a seismic event the columns may lose their seat on the pedestals and thereby lose their vertical load capacity. The connection between the beam and column also appears inadequate to transfer shear forces without racking the beam it supports. The connections between all structural members need to be evaluated and upgraded as required to meet current design criteria.

c. Do the defects vitally affect the use of the building in a way that it cannot now be used for the purpose it was intended?

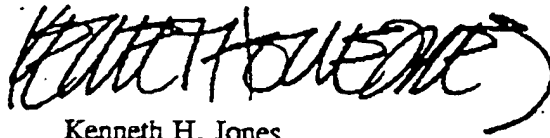
Yes! The building is now unoccupied and should be left unoccupied until the problems are resolved.

5. EFA Northwest recommends that Building No. 222 be condemned. The inspection of the structure shows that serious structural problems exist in the west wing of the building that must

Subj: ENGINEERING EVALUATION OF BUILDING NO. 222

be repaired and modified. We believe, considering the age of the building and construction practices common in 1939, that major modifications are necessary throughout the building to upgrade it to current design criteria. In addition, replacing and repairing the failed foundation will be very costly. A more thorough structural inspection, analysis, and cost estimate should be completed to assist the Navy in the decision to restore the building and/or demolish the structure. Until that time that the problems are resolved the building should be kept locked and unoccupied by any tenant.

6. The above recommendation is offered for your assistance. If you have any comments please contact Mr. Stephen Stanek at (206)396-0217.



Kenneth H. Jones
By direction



Blind copy to:
09A1
09A1RS

APPENDIX D

BIRD AND MAMMAL SPECIES OBSERVED IN THE CITY OF SEATTLE

Table D-1
Mammals Observed in the City of Seattle

Common Name	Scientific Name
Brush rabbit	<i>Sylvilagus bachmani</i>
Bushy-tailed woodrat	<i>Neotoma cinerea</i>
California redback vole	<i>Clethrionomys occidentalis</i>
Chickaree	<i>Tamiasciurus douglasi</i>
Coyote	<i>Canis latrans</i>
Deer mouse	<i>Peromyscus maniculatus</i>
Dusky shrew	<i>Sorex obscurus</i>
European rabbit	<i>Oryctolagus cuniculus</i>
Feral cat	<i>Felis silvestris</i>
Feral dog	<i>Canis familiaris</i>
House mouse	<i>Mus musculus</i>
Little brown myotis	<i>Myotis lucifugus</i>
Long-tailed vole	<i>Microtus longicaudus</i>
Long-tailed weasel	<i>Mustela frenata</i>
Mountain beaver	<i>Aplodontia rufa</i>
Muskrat	<i>Ondatra zibethicus</i>
Norway rat	<i>Rattus norvegicus</i>
Oregon vole	<i>Microtus oregoni</i>
Pacific mole	<i>Scapanus orarius</i>
Raccoon	<i>Procyon lotor</i>
River otter	<i>Lutra canadensis</i>
Shorttail weasel	<i>Mustela erminea</i>
Spotted skunk	<i>Spilogale putorius</i>
Striped skunk	<i>Mephitis mephitis</i>
Townsend's chipmunk	<i>Tamias townsendii</i>
Townsend's mole	<i>Scapanus townsendii</i>
Vagrant shrew	<i>Sorex vagrans</i>
Virginia opossum	<i>Didelphis marsupialis</i>
Western gray squirrel	<i>Sciurus griseus</i>

Table D-2
Species of Birds Sighted in Lake Washington, Magnuson Park, and the
NOAA Western Regional Center Near NSPS Sand Point
as Compiled by Employees of NOAA Through 1991

Common Name	Scientific Name
American coot	<i>Fulica americana</i>
American crow	<i>Corvus brachyrhynchos</i>
American goldfinch	<i>Carduelis tristis</i>
American kestrel	<i>Falco sparverius</i>
American pipit	<i>Anthus rubescens</i>
American robin	<i>Turdus migratorius</i>
American widgeon	<i>Anas americana</i>
Bald eagle	<i>Haliaeetus leucocephalus</i>
Barn owl	<i>Tyoto alba</i>
Barn swallow	<i>Hirundo rustica</i>
Barrow's goldeneye	<i>Bucephala islandrica</i>
Belted kingfisher	<i>Ceryle alcyon</i>
Bewick's wren	<i>Thryomanes bewickii</i>
Black swift	<i>Cypseloides niger</i>
Black-capped chickadee	<i>Parus atricapillus</i>
Blue-winged teal	<i>Anas discors</i>
Bohemian waxwing	<i>Bombycilla garrulus</i>
Bonaparte's gull	<i>Larus philadelphia</i>
Brown-headed cowbird	<i>Molothrus ater</i>
Bufflehead	<i>Bucephala albeola</i>
Burrowing owl	<i>Athene cunicularia</i>
Bushtit	<i>Psaltirparus minimus</i>
California gull	<i>Larus californicus</i>
California quail	<i>Callipepla californica</i>
Canada goose	<i>Branta canadensis</i>
Canvasback	<i>Aythya valisineria</i>
Caspian tern	<i>Sterna caspia</i>
Cedar waxwing	<i>Bombycilla cedrorum</i>
Cinnamon teal	<i>Anas cyanoptea</i>
Cliff swallow	<i>Hirundo pyrrhonota</i>
Common goldeneye	<i>Bucephala clangula</i>
Common loon	<i>Gavia immer</i>
Common merganser	<i>Mergus merganser</i>
Common nighthawk	<i>Chordeiles minor</i>
Common snipe	<i>Gallinago gallinago</i>
Common tern	<i>Sterna hirundo</i>

Table D-2 (Continued)
Species of Birds Sighted in Lake Washington, Magnuson Park, and the
NOAA Western Regional Center Near NSPS Sand Point
as Compiled by Employees of NOAA Through 1991

Common Name	Scientific Name
Common yellowthroat	<i>Geothlypis trichas</i>
Cooper's hawk	<i>Accipiter cooperii</i>
Dark-eyed junco	<i>Junco hyemalis</i>
Double-crested cormorant	<i>Phalacrocorax auritus</i>
Downy woodpecker	<i>Picoides pubescens</i>
Dunlin	<i>Calidris alpina</i>
Eared grebe	<i>Podiceps nigricollis</i>
European starling	<i>Sturnus vulgaris</i>
Evening grosbeak	<i>Coccothraustes vespertina</i>
Fox sparrow	<i>Passerella iliaca</i>
Gadwall	<i>Anas strepera</i>
Glaucous-winged gull	<i>Larus glaucescens</i>
Golden-crowned kinglet	<i>Regulus satrapa</i>
Golden-crowned sparrow	<i>Zonotrichia atricapilla</i>
Great blue heron	<i>Ardea herodias</i>
Greater scaup	<i>Aythya marila</i>
Green-winged teal	<i>Anas crecca</i>
Herring gull	<i>Larus argentatus</i>
Hooded merganser	<i>Lophodytes cucullatus</i>
Horned grebe	<i>Podiceps auritus</i>
House finch	<i>Carpodacus mexicanus</i>
House sparrow	<i>Passer domesticus</i>
Hutton's vireo	<i>Vireo huttoni</i>
Killdeer	<i>Charadrius vociferus</i>
Lapland longspur	<i>Calcarius lapponicus</i>
Least sandpiper	<i>Calidris minutilla</i>
Lesser scaup	<i>Aythya affinis</i>
Lincoln's sparrow	<i>Melospiza lincolnii</i>
Long-billed dowitcher	<i>Limnodromus scolopaceus</i>
Mallard	<i>Anas platyrhynchos</i>
Merlin	<i>Falco columbarius</i>
Mew gull	<i>Larus canus</i>
Mourning dove	<i>Zenaidura macroura</i>
Northern flicker	<i>Colaptes auratus</i>
Northern harrier	<i>Circus cyaneus</i>
Northern pintail	<i>Anas acuta</i>

Table D-2 (Continued)
Species of Birds Sighted in Lake Washington, Magnuson Park, and the
NOAA Western Regional Center Near NSPS Sand Point
as Compiled by Employees of NOAA Through 1991

Common Name	Scientific Name
Northern rough-winged swallow	<i>Stelgidopteryx serripennis</i>
Northern shoveler	<i>Anas clypeata</i>
Northern shrike	<i>Lanius excubitor</i>
Olive-sided flycatcher	<i>Contopus borealis</i>
Orange-crowned warbler	<i>Vermivora celata</i>
Osprey	<i>Pandion haliaetus</i>
Palm warbler	<i>Dendroica palmarum</i>
Peregrine falcon	<i>Falco peregrinus</i>
Pied-billed grebe	<i>Podilymbus podiceps</i>
Pine siskin	<i>Carduelis pinus</i>
Red-breasted merganser	<i>Mergus serrator</i>
Red-breasted nuthatch	<i>Sitta canadensis</i>
Red-eyed vireo	<i>Vireo olivaceus</i>
Red-necked grebe	<i>Podiceps grisegena</i>
Red-tailed hawk	<i>Buteo jamaicensis</i>
Red-throated loon	<i>Gavia stellata</i>
Red-winged blackbird	<i>Agelaius phoeniceus</i>
Ring-billed gull	<i>Larus delawarensis</i>
Ring-necked duck	<i>Aythya collaris</i>
Ring-necked pheasant	<i>Phasianus colchicus</i>
Rock dove	<i>Columba livia</i>
Rough-legged hawk	<i>Buteo lagopus</i>
Ruby-crowned kinglet	<i>Regulus calendula</i>
Ruddy duck	<i>Oxyura jamaicensis</i>
Rufous hummingbird	<i>Selasphorus rufus</i>
Rufous-sided towhee	<i>Pipilo erythrophthalmus</i>
Sandhill crane	<i>Grus canadensis</i>
Savannah sparrow	<i>Passerculus sandwichensis</i>
Sharp-shinned hawk	<i>Accipiter striatus</i>
Short-eared owl	<i>Asio flammeus</i>
Snow bunting	<i>Plectrophenax nivalis</i>
Snow goose	<i>Chen caerulescens</i>
Snowy owl	<i>Nyctea scandiaca</i>
Song sparrow	<i>Melospiza melodia</i>
Spotted sandpiper	<i>Actitis macularia</i>
Steller's jay	<i>Cyanocitta stelleri</i>

Table D-2 (Continued)
Species of Birds Sighted in Lake Washington, Magnuson Park, and the
NOAA Western Regional Center Near NSPS Sand Point
as Compiled by Employees of NOAA Through 1991

Common Name	Scientific Name
Thayer's gull	<i>Larus thayeri</i>
Tundra swan	<i>Cygnus columbianus</i>
Vaux's swift	<i>Chaetura vauxi</i>
Vesper sparrow	<i>Pooecetes gramineus</i>
Violet-green swallow	<i>Tachycineta thalassina</i>
Western grebe	<i>Aechmophorus occidentalis</i>
Western meadowlark	<i>Sturnella neglecta</i>
Western sandpiper	<i>Calidris mauri</i>
Western tanager	<i>Piranga ludoviciana</i>
White-crowned sparrow	<i>Zonotrichia leucophrys</i>
White-fronted goose	<i>Anser albifrons</i>
White-winged scoter	<i>Melanitta fusca</i>
Winter wren	<i>Troglodytes troglodytes</i>
Yellow-headed blackbird	<i>Xanthocephalus xanthocephalus</i>
Yellow-rumped warbler	<i>Dendroica coronata</i>



United States Department of the Interior

FISH AND WILDLIFE SERVICE

North Pacific Coast Ecoregion
Western Washington Office
3704 Griffin Lane SE, Suite 102
Olympia, Washington 98501
(360)753-9440 Fax: (360)753-9008

June 12, 1996

Mr. Donald E. Morris
Engineering Field Activity, Northwest
19917 - 7th Avenue NE
Poulsbo, WA 98370-7570

Subject: Environmental Assessment, Interim Lease of Naval Station Puget Sound, Sand Point
(FWS reference # 1-3-96-SP-337)
(X-ref: 1-3-95-SP-211)

Dear Mr. Morris:

The U. S. Fish and Wildlife Service (Service) has reviewed the subject document and has the following comments. These comments pertain to the threatened and endangered species analysis in the document. Recommendations are included for analysis of fish and wildlife resources and habitat in future environmental analyses.

On June 3, 1996, Gene Stagner of my office talked to you about the subject document. The Service was seeking clarification as to the source of the endangered species information used in the analysis. You indicated that this information was obtained from a species list (1-3-95-SP-211) that pertained to another project involving Sand Point. Since the source for this information was not clearly documented in the subject Environmental Assessment (EA), we recommend that you cite the source for this information in your final EA. The above species list is over a year old. We consider a species list to be valid for only six months after which time the information should be updated. A current species list should be obtained from the Service for any Federal project that requires an EA or an Environmental Impact Statement (EIS). We have enclosed an updated species list with this letter. It does not vary substantially from the previous list but is accurate as of this date.

Enclosed is a list of listed threatened and endangered species, candidate species, and species of concern (Attachment A), that may be present within the area of the proposed Sand Point lease in King County, Washington. This list fulfills the requirements of the Service under Section 7(c) of the

Endangered Species Act of 1973, as amended (Act). The list reflects changes to the candidate species list published February 28, 1996, in the Federal Register (Vol. 61 No. 40, 7596), and the addition of "species of concern" prepared by the Service's Western Washington Office. We have also enclosed a copy of the requirements for Department of the Navy (Navy) compliance under the Act (Attachment B).

Should the Navy determine that a listed species is likely to be affected (adversely or beneficially) by the project, you should request Section 7 consultation through this office. If the Navy determines that the proposed action is "not likely to adversely affect" a listed species, you should request Service concurrence with that determination through the informal consultation process. Even if there is a "no effect" situation, we would appreciate receiving a copy of your assessment for our information.

Candidate species are those species for which the Service has sufficient information to propose for listing as threatened or endangered under the Act. Species of concern (some of the former Category 1 and Category 2 candidates) are those species whose conservation standing is of concern to the Service, but for which status information is still needed. Conservation measures for species of concern and candidate species are voluntary but recommended. Protection provided to these species now may preclude possible listing in the future.

For information regarding species listed by the National Marine Fisheries, please call (503) 230-5400 in Portland, Oregon.

The *Draft Environment Impact Statement Reuse of Naval Station Puget Sound, Sand Point*, originally scheduled for publication in May 1996, should include a more thorough investigation of the fish and wildlife resources not only on the Sand Point site but also near the site. The analysis of the impacts to these resources should include potential increases in noise, lights, and other human disturbances both to onsite and offsite resources.

Thank you for this opportunity to comment. If you have any questions, please contact Gene Stagner at the letterhead address or call (360) 753-4126.

Sincerely,



So David C. Frederick
Supervisor

gs/jmc
Enclosures
Federal Projects/Navy/1-3-96-SP-337/King
c: WDFW, Region 4
WNHP, Olympia

ATTACHMENT A

**LISTED ENDANGERED AND THREATENED SPECIES AND
CANDIDATE SPECIES WHICH MAY OCCUR WITHIN THE VICINITY OF THE
PROPOSED INTERIM LEASE OF NAVAL STATION PUGET SOUND, SEATTLE
IN KING COUNTY, WASHINGTON
(T25N R04E S2, 11)**

1-3-96-SP-169

X-REF: 1-3-95-SP-211

LISTED

Bald eagle (*Haliaeetus leucocephalus*) - wintering bald eagles occur in the project area from about October 31 through March 31.

Peregrine falcon (*Falco peregrinus*) - spring and fall migrant falcons may occur in the vicinity of the project.

Major concerns that should be addressed in your biological assessment of project impacts to bald eagles and peregrine falcons are:

1. Level of use of the project area by eagles and falcons.
2. Effect of the project on eagles' and falcons' primary food stocks, prey species, and foraging areas in all areas influenced by the project.
3. Impacts from project construction and implementation (e.g., increased noise levels, increased human activity and/or access, loss or degradation of habitat) which may result in disturbance to eagles and falcons and/or their avoidance of the project area.

PROPOSED

None

Attachment A (Continued)

CANDIDATE

The following candidate species may occur in the vicinity of the project:

Spotted frog (*Rana pretiosa*)

SPECIES OF CONCERN

The following species of concern may occur in the vicinity of the project:

Long-eared myotis (bat) (*Myotis evotis*)

Long-legged myotis (bat) (*Myotis volans*)

Northwestern pond turtle (*Clemmys marmorata marmorata*)

Olive-sided flycatcher (*Contopus borealis*)

Pacific western big-eared bat (*Plecotus townsendii townsendii*)

ATTACHMENT B

FEDERAL AGENCIES' RESPONSIBILITIES UNDER SECTIONS 7(a) AND 7(c) OF THE ENDANGERED SPECIES ACT OF 1973, AS AMENDED

SECTION 7(a) - Consultation/Conference

- Requires:
1. Federal agencies to utilize their authorities to carry out programs to conserve endangered and threatened species;
 2. Consultation with FWS when a federal action may affect a listed endangered or threatened species to ensure that any action authorized, funded, or carried out by a federal agency is not likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat. The process is initiated by the federal agency after it has determined if its action may affect (adversely or beneficially) a listed species; and
 3. Conference with FWS when a federal action is likely to jeopardize the continued existence of a proposed species or result in destruction or an adverse modification of proposed critical habitat.

SECTION 7(c) - Biological Assessment for Construction Projects *

Requires federal agencies or their designees to prepare a Biological Assessment (BA) for construction projects only. The purpose of the BA is to identify any proposed and/or listed species which is/are likely to be affected by a construction project. The process is initiated by a federal agency in requesting a list of proposed and listed threatened and endangered species (list attached). The BA should be completed within 180 days after its initiation (or within such a time period as is mutually agreeable). If the BA is not initiated within 90 days of receipt of the species list, please verify the accuracy of the list with our Service. No irreversible commitment of resources is to be made during the BA process which would result in violation of the requirements under Section 7(a) of the Act. Planning, design, and administrative actions may be taken; however, no construction may begin.

To complete the BA, your agency or its designee should: (1) conduct an onsite inspection of the area to be affected by the proposal, which may include a detailed survey of the area to determine if the species is present and whether suitable habitat exists for either expanding the existing population or potential reintroduction of the species; (2) review literature and scientific data to determine species distribution, habitat needs, and other biological requirements; (3) interview experts including those within the FWS, National Marine Fisheries Service, state conservation department, universities, and others who may have data not yet published in scientific literature; (4) review and analyze the effects of the proposal on the species in terms of individuals and populations, including consideration of cumulative effects of the proposal on the species and its habitat; (5) analyze alternative actions that may provide conservation measures; and (6) prepare a report documenting the results, including a discussion of study methods used, any problems encountered, and other relevant information. Upon completion, the report should be forwarded to our Endangered Species Division, 3704 Griffin Lane SE, Suite 102, Olympia, WA 98501-2192.

*"Construction project" means any major federal action which significantly affects the quality of the human environment (requiring an EIS), designed primarily to result in the building or erection of human-made structures such as dams, buildings, roads, pipelines, channels, and the like. This includes federal action such as permits, grants, licenses, or other forms of federal authorization or approval which may result in construction.

ATTACHMENT B

FEDERAL AGENCIES' RESPONSIBILITIES UNDER SECTIONS 7(a) AND 7(c) OF THE ENDANGERED SPECIES ACT OF 1973, AS AMENDED

SECTION 7(a) - Consultation/Conference

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 3. Conference with FWS when a federal action is likely to jeopardize the continued existence of a proposed species or result in destruction or an adverse modification of proposed critical habitat.

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United States Department of the Interior

FISH AND WILDLIFE SERVICE

North Pacific Coast Ecoregion
Western Washington Office
3704 Griffin Lane SE, Suite 102
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(360) 753-9440 FAX: (360) 753-9008

August 21, 1995

Mr. Neil Bass
Director, Environmental Planning Division
Department of the Navy
19917 7th Avenue N.E.
Poulsbo, Washington 98370-7570

FWS Reference: 1-3-95-I-659

Dear Mr. Bass:

This letter is in response to your letter dated June 15, 1995, transmitting your biological assessment in regard to four alternative sites presently being considered for the proposed construction of an Armed Forces Reserve Center within the Seattle area of King County, Washington.

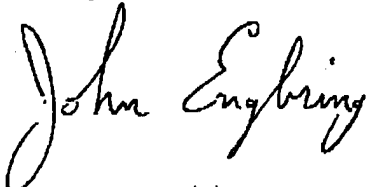
The Department of the Navy (Navy) has determined that construction and operation of the Armed Forces Reserve Center proposed at any of the alternative sites is not likely to adversely affect the bald eagle or the peregrine falcon. In review of the information provided the U.S. Fish and Wildlife Service concurs with the Navy determination.

However, in regard to alternatives 1, 2, and/or 3, and to reduce any chance of impacting the reproductive success of the nesting pair of bald eagles at Discovery Park, the Service recommends the scheduling of major noise producing construction activities outside of the time period that the pair of eagles is known to be present on the nesting territory (November 1 through August 1).

This concludes informal consultation per the regulations implementing the Endangered Species Act of 1973, as amended (Act), (50 CFR§ 402.13). This project should be reanalyzed if new information reveals that the action may affect listed species or critical habitat in a manner or to an extent not considered in this consultation; if the action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this consultation; and/or if a new species is listed or critical habitat is designated that may be affected by this project.

Your interest in endangered species is appreciated. If you have further questions about this letter or your responsibilities under the Act, please contact Jeff Haas (360) 753-6045 or Jim Michaels of my staff at the letterhead phone/address.

Sincerely,

A handwritten signature in cursive script that reads "John Engbring".

for David C. Frederick
Supervisor

jh/mjr

c: WDFW Region 4

APPENDIX E
CORRESPONDENCE



STATE OF WASHINGTON
DEPARTMENT OF COMMUNITY, TRADE AND ECONOMIC DEVELOPMENT
OFFICE OF ARCHAEOLOGY AND HISTORIC PRESERVATION
111 21st Avenue S.W. • P.O. Box 48343 • Olympia, Washington 98504-8343 • (360) 753-4011
May 30, 1996

Mr. Donald E. Morris
Engineering Field Activity, Northwest
Naval Facilities Engineering Command
190917 7th Avenue, N.E.
Puulsbo, Washington 98370-7570

Log: 052396-02-USN
Re: Preliminary Environmental
Assessment, Interim Lease of Naval
Station Puget Sound

Dear Mr. Morris:

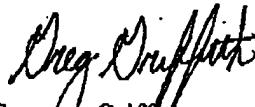
The Washington State Office of Archaeology and Historic Preservation (OAHP) is in receipt of the Preliminary Environmental Assessment (EA) of the Interim Lease of Naval Station Puget Sound in Seattle. From your cover letter, I understand that the purpose of the lease is to allow for immediate use of Naval Station facilities and to comply with the Base Closure and Realignment Act (BRAC). As is indicated in the EA, a historic district eligible for listing in the National Register of Historic Places has been identified at Sand Point.

On behalf of OAHP, I have reviewed the EA and concur with statements regarding potential impacts of the interim lease on the National Register eligible historic district at Sand Point. From the EA, I understand that as components of the lease are carried out, including proposed demolition of Building 222, the City of Seattle and the Navy will comply with all federal historic preservation laws. Further, any maintenance or modifications to buildings within the historic district must be done in accordance with the approaches recommended in the *Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Buildings*. In addition to the above remarks, I also recommend that the City's Landmarks Commission be afforded an opportunity to review and comment on proposed modifications at Sand Point.

Mr. Donald E. Morris
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Thank you for the opportunity to review and comment on the Preliminary EA. Should you have any questions, please feel free to contact me at (360) 753-9116.

Sincerely,

A handwritten signature in dark ink, appearing to read "Greg Griffith". The signature is fluid and cursive, with the first name "Greg" being more prominent than the last name "Griffith".

Gregory Griffith
Comprehensive Planning Specialist

GAG:tjt

cc: Karen Gordon, City of Seattle Historic Preservation Officer

APPENDIX F

RONA

**Record of Non-Applicability of Compliance
with the
Clean Air Act General Conformity Rule**

**Interim Lease of Naval Station Puget Sound
Seattle, Washington**

1.0 Introduction

The Clean Air Act (CAA) Amendments of 1990 require federal agencies to ensure their actions conform to the appropriate State Implementation Plan (SIP). The SIP is a plan that provides for implementation, maintenance, and enforcement of the National Ambient Air Quality Standards (NAAQS) and includes emission limitations and control measures to attain and maintain the NAAQS. Conformity to a SIP, as defined in the CAA, means conformity to a SIP's purpose of reducing the severity and number of violations of the NAAQS to achieve attainment of such standards.

The federal agency responsible for the action is required to determine if its action conforms to the applicable SIP. Thus, the purpose of this analysis is to document the determination of conformity of the proposed interim lease of Naval Station Puget Sound in Seattle, Washington. This determination is being made by showing non-applicability of compliance with the CAA General Conformity Rule. If an action is non-applicable by way of exemption or of being below de minimis emission thresholds (discussed in Section 1.2.1) and is shown not to be "regionally significant," it is presumed to conform with the applicable SIP.

This Record of Non-Applicability (RONA) has been prepared in accordance with the final rule of the U.S. Environmental Protection Agency (EPA), *Determining Conformity of General Federal Actions to State or Federal Implementation Plans*, published in the Federal Register (58 FR 63214) on November 30, 1993. The General Conformity Rule [40 Code of Federal Regulations (CFR) Part 93, Subpart B] was effective January 31, 1994. This RONA has also been prepared in accordance with the Chief of Naval Operations (CNO) *Draft Interim Guidance on Compliance with the Clean Air Act General Conformity Rule* (April 26, 1994).

1.1 Conformity Background Information

Conformity provisions first appeared in the CAA Amendments of 1977. Although these provisions did not define conformity, they did address the association of federal department activities with a SIP. The 1977 provisions stated that no federal agency could engage in, support in any way or provide financial assistance for, license or permit, or approve any activity that did not conform to a SIP after its approval or promulgation.

Section 176(c) of the CAA Amendments of 1990 expanded the scope and content of the conformity provisions by defining conformity to an implementation plan. Specifically, the language asserts that a federal agency cannot approve or support an action that:

- Causes or contributes to new violations of any NAAQS
- Increases the frequency or severity of existing violations of any NAAQS

- Delays the timely attainment of any NAAQS or any required interim emission reductions or milestones

The purpose of Section 176(c) is to make emissions from federal actions consistent with the CAA's air quality planning goals. The intent of the provisions is to foster long-range planning for the attainment and maintenance of air quality standards by evaluating air quality impacts of federal actions before they are undertaken. Federal actions are differentiated into transportation projects and non-transportation related projects. The "transportation conformity" regulations (40 CFR Part 51, Subpart T) govern projects developed or approved under the Federal Aid Highway Program or Federal Transit Act. Non-transportation projects are governed by the "general conformity" regulations discussed above.

1.2 General Conformity Determination Process

The general conformity rule consists of three major parts—applicability, analysis, and procedure. These three parts are described in the following sections.

1.2.1 Applicability

The general conformity rule applies to federal actions in air basins designated as nonattainment for criteria pollutants or in attainment areas subject to maintenance plans (maintenance areas). A criteria pollutant is a pollutant for which an air quality standard has been established under the CAA. The designation of nonattainment is based on exceedances or violations of the air quality standard. A maintenance plan establishes measures to control emissions to ensure the air quality standard is maintained in areas that have been redesignated as attainment from a previous nonattainment status. Federal actions in air basins that are in attainment with criteria pollutants are not subject to the conformity rule. (Criteria pollutants and designation of attainment status are further discussed in Section 3.2.)

To focus conformity requirements on those federal actions with the potential to have significant air quality impacts, threshold (de minimis) rates of emissions were established in the final rule. With the exception of lead, the de minimis levels are based on the CAA's major stationary source definitions for the criteria pollutants (and precursors of criteria pollutants) and vary by the severity of the nonattainment area. A conformity determination is required when the annual total of the direct and indirect emissions from a federal action in a nonattainment or maintenance area equals or exceeds the annual de minimis levels.

Table 1-1 lists the de minimis levels by pollutant applicable to federal actions. Levels applicable to the Puget Sound Area are shown in italics.

A federal action that does not exceed the threshold rates of criteria pollutants may still be subject to a general conformity determination. The direct and indirect emissions from the action must not exceed 10 percent of the total emissions inventory for a particular criteria pollutant in a nonattainment or maintenance area. If the emissions exceed this 10 percent threshold, the federal action is considered to be a "regionally significant" activity and general conformity rules apply. The concept of regionally significant is to capture those federal actions that fall below the de minimis emission levels but have the potential to impact the air quality of a region.

Table 1-1
De Minimis Levels for Criteria Pollutants

Pollutant	Designation	Tons/Year
<i>Ozone (O₃)^a</i>	Serious	50
	Severe	25
	Extreme	10
	<i>Other nonattainment areas outside ozone transport region</i>	100
	Marginal and moderate nonattainment areas inside ozone transport region	50/100 ^b
<i>Carbon Monoxide (CO)</i>	<i>All nonattainment areas</i>	<i>100</i>
Sulfur Dioxide (SO ₂)	All nonattainment areas	100
Lead (Pb)	All nonattainment areas	25
Nitrogen Dioxide (NO ₂)	All nonattainment areas	100
Particulate Matter (PM ₁₀)	Moderate nonattainment	100
	Serious nonattainment	70

^aIncludes precursors of volatile organic compounds (VOCs) and nitrogen oxides (NO_x)

^bVOCs/NO_x

The final rule contains exceptions from the general conformity process. Certain federal actions are deemed by the EPA to conform because of the thorough air quality analysis necessary to comply with other statutory requirements. Examples of these actions include those subject to the New Source Review Program and remedial activities under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

Other federal actions exempt from the conformity process include those that would result in no increase in emissions or in an increase in emissions that is clearly de minimis. Examples include continuing or recurring activities, routine maintenance and repair,

administrative and planning actions, land transfers, and routing movement of mobile assets.

1.2.2 Analysis

The conformity applicability analysis for this proposed federal action examines the net change in the direct and indirect emissions from mobile, stationary and area sources, and emissions from reasonably foreseeable federal actions. Indirect emissions that must be included in the determination are of two types: emissions the federal agency can practicably control and has continuing program responsibility to maintain control of and emissions caused by the federal action later in time and/or farther removed in distance from the action itself but still reasonably foreseeable. Reasonably foreseeable emissions are those from projected future federal actions that can be quantified at the time of the conformity determination. No reasonably foreseeable federal actions with quantifiable emissions are expected and thus no additional analysis for such actions are included in this applicability analysis.

The analysis must be based on the latest planning assumptions derived from population, employment, and travel data acquired for the area where the federal action is to occur; the latest and most accurate emission estimation techniques must be applied, unless written approval to employ modifications or substitutions is obtained from the EPA regional administrator. These techniques include motor vehicle emission models/factors used to prepare or revise the SIP, and factors for non-motor vehicle sources, databases, and models specified and approved by EPA. (The analytical methods are described in Section 4.1.)

1.2.3 Procedure

Procedural requirements of the conformity will allow for public review of a federal agency's conformity determination. Although the conformity determination is a federal responsibility, state and local air agencies are provided notification and their expertise is consulted. No documentation or public participation is required for applicability analyses that result in de minimis determination.

For conformity analysis that goes beyond applicability analyses, the federal agency must provide a 30-day notice of the federal action and draft conformity determination to the appropriate EPA Region and state and local air control agencies. The federal agency must also make the draft determination available to the public to allow the opportunity for review and comment.

The federal agency should consider aligning the conformity public participation requirements with those under the National Environmental Policy Act (NEPA). However, the final rule does not require a concurrent process.

If an action is subject to the rule but is exempt because its calculated total emissions are below the de minimis levels, the assumptions and calculations used to determine the level of de minimis emissions must be explained in a RONA. The RONA is required by Navy policy and must be signed by the commanding officer of the installation sponsoring the action. Consultation with CNO N44E and the Office of the Assistant General Counsel (Installations and Environment) (OAGC [I&E]) is recommended.

RONA are not separately subject to the reporting or public participation requirements of the General Conformity Rule; however, they should be incorporated into any NEPA documentation that is prepared. If calculations are required to determine that emissions resulting from the action would be below de minimis levels, those calculations must be included with the RONA as a "stand-alone" appendix to the NEPA document. This appendix should contain a general description of the proposed action so it can stand alone for regulatory and public review.

2.0 Proposed Action and Alternatives

This section describes alternatives related to the proposed action, including the preferred alternative and no-action alternative. *Alternatives are examined in detail in Section 2.0 of the Environmental Assessment (EA).*

The three alternatives are as follows:

- **The preferred alternative** is to take action to approve an interim lease for use of certain buildings and grounds to provide space for community college classrooms, possible temporary high school classrooms, summer community recreational use, public service training activities, storage and offices, and senior citizen activities. This alternative proposes the demolition of one building.
- **The minimal office use alternative** is to take action to approve an interim lease for use of certain buildings and grounds to provide space for community college classrooms, possible temporary high school classrooms, community summer recreation, public service training activities, some storage and offices, and senior citizen activities. This alternative is similar to the preferred alternative except that minimal office use is proposed. In addition, no buildings are proposed for demolition.
- **The no-action alternative** is to take no action and not provide an interim lease for the proposed activities. The Navy would retain Sand Point Naval Station in caretaker status.

2.1 Proposed Action

The U.S. Department of the Navy (the Navy) proposes to lease to the City of Seattle (City) approximately 136 acres (55 hectares) of the 151-acre (61-hectare) Naval Station Puget Sound, Seattle (Sand Point Naval Station). The lease is consistent with the City's entire reuse plan and would not prohibit other reasonable reuse alternatives under consideration in the Draft Environmental Impact Statement Reuse of Naval Station Puget Sound, Sand Point, scheduled for publication in May 1996. Under the lease, the City would begin limited reuse of the property for residential, recreational, administrative, and educational purposes, as well as utility upgrades. The potential impacts associated with the proposed action are evaluated in the EA pursuant to the requirements of the NEPA and implementation regulations issued by the Council on Environmental Quality (CEQ) (40 CFR 1500).

Sand Point Naval Station is located on the western shore of Lake Washington, approximately 6 miles (10 kilometers) northeast of downtown Seattle. The Navy established the base in 1929 on land acquired from King County. Sand Point Naval Station was initially named Naval Air Station (NAS) Seattle at Sand Point. It served as a Naval Air Reserve training facility until December 7, 1941.

During World War II, NAS Seattle supported air transport and ship outfitting for the Alaskan and Western Pacific areas of operation. In 1945, at the peak of its activity, the base supported more than 4,600 Navy, Marine Corps, and civilian personnel. After the war, the base was designated a Naval Reserve Air Station. From 1945 to 1970, the station maintained Naval Reserve squadrons to supplement active duty forces in the continental United States and abroad. Aviation activities officially ceased on June 30, 1970, and NAS Seattle was decommissioned.

On July 1, 1970, NAS Seattle was redesignated Naval Support Activity, Seattle. Three years later the Navy surplused much of the property. NOAA received 116 acres (47 hectares), including one-third of the runways and 3,500 feet (1,067 meters) of waterfront property. The City of Seattle received approximately 198 acres (80 hectares) comprising the southeast portion of the base, including approximately 1 mile (1.6 kilometers) of waterfront property; this area became Magnuson Park in 1977. The Navy retained the remainder of the base. From 1970 until April 1982, the base provided logistic services to the 13th Naval District, U.S. Department of Defense (DoD), and other federal agencies.

In April 1982, Naval Support Activity, Seattle, was redesignated Naval Station, Seattle, and on October 10, 1986, was redesignated Naval Station Puget Sound. Until recently, the base functioned as a support and billeting facility for the Northern Pacific Fleet.

Given the authority under the Defense Base Closure and Realignment Act of 1990 (BRAC), the Defense BRAC Commission on July 1, 1991, recommended closure of Sand Point Naval Station. Congress approved the recommendation and the station closed in

September 1995. The Navy has maintained the base in caretaker status since that time. All of the Navy's scheduled environmental cleanup actions at the Sand Point Naval Station are complete. Functions formerly housed at Sand Point have been transferred to other facilities, including Naval Submarine Base, Bangor, and Naval Station Puget Sound, Everett.

The Navy proposes to lease approximately 136 acres (55 hectares) of the former naval station property to the City of Seattle on an interim basis before conveyance of the entire property. The interim lease would implement a portion of the reuse plan proposed by the City, the designated local redevelopment authority (LRA). The purpose of the interim lease is to achieve the following goals:

- Support the local redevelopment process in obtaining funding for homeless assistance. The City of Seattle has been awarded a McKinney Act supportive housing grant. One requirement of the grant is that the City have control of the site by July 10, 1996. This lease would allow the City to obtain that site control.
- Put available property to productive use as quickly as possible through leases to spur rapid reuse and reduce the Navy's caretaker costs. The purpose of closing military installations is to prevent the taxpayer from funding infrastructure and maintenance that support a shrinking military. The Department of Defense has chosen to close bases as rapidly as possible and to encourage reuse that will relieve expenditures for maintenance and protection of vacant properties. Conveyance of the property through a lease agreement eliminates the Navy's responsibility to continue in a caretaker status.
- Support the City of Seattle and the Seattle School District in the temporary placement of Ballard High School. Ballard High School is scheduled for renovation to upgrade a deteriorating structure that could potentially create health and safety concerns for the students in attendance. To accommodate the City and the school district's need for a short-term (1997 to 1999) high school site, the district is negotiating to use the Sand Point property. During this time, students will be transported to the Sand Point location.

Under the preferred alternative, the Navy is considering entering into an Interim Lease Agreement with the City of Seattle so that the City can use certain Sand Point Naval Station buildings and grounds. The interim lease would implement a portion of the reuse plan proposed by the City, which is the designated LRA under BRAC laws. As the LRA, the City developed a reuse plan for the base, which will form the basis of the property disposal decision regarding the naval station. The City submitted its reuse plan in November 1993 in response to the property disposal reuse process (City Planning

1993a). As a separate action, the entire reuse plan is being considered in a separate draft environmental impact statement (DEIS) scheduled for publication in May 1996.

The City's reuse plan outlines the use of the entire base. However, the acreage proposed for the City interim lease excludes approximately 15 acres (6 hectares) of property requested by the National Oceanographic and Atmospheric Administration (NOAA) and the National Biological Service (NBS). NOAA requested approximately 11 acres (4 hectares) at the north end of the base, adjacent to their current facilities, approximately 1.2 acres (0.5 hectares) for the access road to their facilities. NBS requested approximately 4 acres (1.5 hectares) at the southeast corner of the base that is currently used by its National Fisheries Research Center. Thus, these areas are not included in this EA.

The proposed activities authorized by the interim lease would be considerably less than the activities proposed by the City's entire reuse plan. The EA does not address the effects of the entire City reuse plan on the environment. Those issues are evaluated in the DEIS for the reuse of Naval Station Puget Sound, Seattle, scheduled to be issued by the Navy in May 1996.

The proposed Interim Lease Agreement (the preferred alternative) with the City of Seattle includes the following activities (Friedli 1996a):

- Rehabilitate and use Buildings 224, 26N, 26S, 330, 331, and 332 for housing
- Rehabilitate and use Building 9 for day and evening community college courses or as a temporary high school
- Rehabilitate and use Buildings 18 and 47 for temporary high school support facilities
- Improve and use baseball fields for summer league play
- Upgrade infrastructure sitewide-water, sewer, drainage, electrical, natural gas, and telephone
- Use various roads, parking lots, and Building 67 for fire department training activities
- Occupy Building 5 (B and C) for vocational training, office, and storage activities
- Occupy Building 138 for a site project office
- Occupy Building 406 for senior center activities

- Demolish Building 222 (a two-story, 30,000-square-foot, wood-frame building)

This RONA will only evaluate the usage of utility services and demolition of Building 222 that have the potential to emit new pollutants not previously part of the emissions inventory on Naval Station Puget Sound. The preferred alternative will involve both utility upgrades and building demolition, while the minimum office alternative involves only utility upgrades and no demolition. The other activities are similar to existing uses and do not require further analysis and inclusion in the RONA. No RONA is required and no analysis is provided here on the no-action alternative, which has no air quality impacts.

3.0 Existing Air Quality—Puget Sound Area

Air quality is characterized by the existing concentrations of various air pollutants in outdoor air. In general, air quality trends for pollutants of most concern (CO and O₃) in the Puget Sound Area are improving (WDOE 1994a). Air quality data in the Washington Department of Ecology's 1994 Annual Air Quality Report contains monitoring data up to the year 1993.

3.1 Criteria Pollutants and Standards

The NAAQS have been established by the U.S. EPA for six pollutants. Criteria pollutants, identified by EPA pursuant to Section 108 of the CAA, are those compounds that cause or contribute to air pollution that could endanger the public health or welfare. In the designation of criteria pollutants, the EPA described the potential health and welfare effects of these pollutants. It is on the basis of these criteria and the health and welfare objectives that standards are set or revised.

The criteria pollutants include O₃, CO, NO₂, SO₂, PM₁₀, and lead (Pb). While O₃ is a regulated criteria pollutant, it is not directly emitted from sources. Ozone forms as a result of VOCs and NO_x reacting with sunlight in the atmosphere. The State of Washington has adopted all the NAAQS with the exception of SO₂, for which a more stringent standard has been adopted. Ambient air quality standards are listed in Table 3-1.

Air quality is determined by comparing ambient air levels with the appropriate primary or secondary standard for each criteria pollutant. National Primary Standards establish the level of air quality necessary to protect the public health from any known or anticipated adverse effects of a pollutant, allowing a margin of safety to protect sensitive members of the population. National Secondary Standards establish the level of air quality necessary to protect the public welfare by preventing injury to agricultural crops and livestock, deterioration of materials and property, and adverse impact on the environment. There is no difference between the primary and secondary standards for

O₃, NO, PM₁₀, and Pb, and there is no secondary standard for CO. The Federal secondary standard for SO_x is 0.5 ppm for a maximum 3-hour concentration while Washington maintains a 1-hour standard of 0.4 ppm.

3.2 Air Quality Control Region

The State of Washington is divided into a number of areas for the purposes of monitoring air quality and regulating sources of pollutant emissions. The proposed project site is located in the Puget Sound Area, which includes the counties of King, Snohomish, Pierce, and Kitsap and is under the authority of the Puget Sound Air Pollution Control Agency (PSAPCA).

**Table 3-1
National and Washington Ambient Air Quality Standards**

Pollutant	Averaging Time	National Standard		State Standard
		Primary	Secondary	Primary
O ₃	1 -hour	0.12 ppm	0.12 ppm	0.12 ppm
CO	8 - hour	9 ppm	9 ppm	9 ppm
	1 - hour	25 ppm	35 ppm	35 ppm
NO ²	Annual	0.05 ppm	0.05 ppm	0.05 ppm
SO ₂	Annual	0.03 ppm	No standard	0.02 ppm
	24 - hour	0.14 ppm	No standard	0.10 ppm
	3 - hour	No standard	0.5 ppm	No standard
	1 - hour	No standard	No standard	0.40 ppm
PM ₁₀	AAM	50 µg/m ³	50 µg/m ³	50 µg/m ³
	24 - hour	150 µg/m ³	150 µg/m ³	150 µg/m ³
Pb	90 day	1.5 µg/m ³	1.5 µg/m ³	<1.5 µg/m ³
TSP	AGM	No standard	No standard	60 µg/m ³
	24 - hour	No standard	No standard	150 µg/m ³

^aNot to be exceeded on more than 1.0 day per calendar year as determined under conditions indicated in chapter 173-475 WAC.

^b0.25 ppm to be exceeded more than two times in any 7 consecutive days.

Notes:

Annual standards are never to be exceeded while short-term standards are not to be exceeded more than once per year unless noted.

ppm - parts per million

µg/m³ - micrograms of pollutant per cubic meter of air

AAM - Annual Arithmetic Mean

AGM - Annual Geometric Mean

Source: WDOE 1994a

3.2.1 Attainment Status

PSAPCA maintains a network of 26 air quality monitoring stations throughout four counties in the Puget Sound region, including King County. In general these stations are located where there may be air quality problems. Other stations are located in remote areas to provide an indication of regional air pollution levels. Based on monitoring information collected over a period of years, Washington Department of Ecology and EPA designate regions as being "attainment" or "nonattainment" areas for particular air pollutants. Attainment status is therefore a measure of whether air quality in an area complies with the federal health-based ambient air quality standards. Table 3-2 provides the current criteria pollutant attainment status of the Puget Sound Area, which encompasses all the alternative sites.

Table 3-2
Attainment Status

Study Location ^a	Pollutant						
	O ₃	CO	NO ₂	SO ₂	PM ₁₀	Pb	TSP
King County	NA ^b	NA ^c	A	A	A	A	A

^aIncludes all of local study area (Ft. Lawton, Sand Point, and Federal Center South)

^bThe project area is a marginal ozone nonattainment area

^cThe project area is a moderate carbon monoxide nonattainment area.

Notes:

NA - nonattainment area

A - attainment area

Source: Federal Register. Vol. 56, No. 215

3.2.1.1 Ozone

In 1990, two monitoring stations recorded ozone levels in King County, one at Lake Sammamish State Park (in Issaquah) and the other at Enumclaw (about 25 miles south of Issaquah). As a result of ozone violations during several days that year, all except a small portion of the northeast corner of King County was designated an ozone nonattainment area by the EPA in 1992 (Federal Register Vol. 57, No.230).

Currently, the Puget Sound Area is classified as a marginal nonattainment area for O₃. Monitoring data for the years 1991 through 1993 demonstrated that air quality in the Puget Sound nonattainment area met the federal health standard for O₃ by November 15, 1995, as required by the Federal CAA (WDOE 1994a). PSAPCA is preparing a plan (a Maintenance Plan) for maintaining compliance with the O₃ standard. The Maintenance Plan will be submitted to EPA upon completion.

3.2.1.2 Carbon Monoxide

The study area is included in the CO nonattainment area that encompasses a large portion of the Seattle-Everett-Tacoma urban area (Federal Register, Vol. 256, No. 215). For CO, there were no observations above the standard in 1993. A revised CO Attainment Plan for the Puget Sound Area was submitted to EPA on January 22, 1993. The plan provided a demonstration that the Puget Sound Area will attain the federal health standard for CO by December 31, 1995, as required by the Federal CAA.

As of December 1994, carbon monoxide was monitored at five locations in King County: Seattle, University Cycle (Zanadu); Seattle, 4th and Pike; Seattle, Northgate Apartments; Seattle, James Street; and Bellevue, Sturtevant's. A new monitoring station has been set up in the Bellevue area and one violation has already been recorded (Benson 1995). The carbon monoxide standard may be exceeded once per year at each monitoring location without violating the standard.

4.0 Analysis and Results

Calculating a project's air emissions in accordance with the General Conformity Rule can differ from the traditional air quality analysis included in NEPA documents. The definition of "indirect emissions" under the conformity is more narrow than NEPA's definition of "indirect impacts." The total direct and indirect emissions are calculated for each nonattainment pollutant (or precursor) in tons per year under the conformity rule. Additionally, under the conformity rule, the assumptions used in calculating emissions should reflect information that is as accurate as possible unlike conservative estimates generally conducted under NEPA. These differences often can result in the presentation of differing sets of air quality data between the NEPA air quality analysis and the General Conformity Rule air quality analysis.

4.1 Analysis Methods

To define the air pollutant emissions, it is required to calculate the utility installation and building demolition emissions for carbon monoxide, nitrogen oxides, and VOCs. Total net emissions were established by assuming that utility installation emissions will occur during trenching for water, sewer, and natural gas lines only in an amount estimated not to exceed 10,000 linear feet of trenching. Similarly, the demolition emissions for the same pollutants will occur during demolition of Building 222, a two-story, 30,000-square-foot, wood-framed building determined to be in poor condition and not worth renovating to modern construction standards.

4.2 Pollutants of Concern

The area affected by the federal action is in moderate nonattainment for CO and marginal nonattainment for O₃ as described in Section 3.2.1. Consequently direct and

indirect emissions of VOCs and NO_x (precursors to O₃) and CO resulting from the federal action are subject to conformity applicability analysis. Thus, the following analysis will focus on only these criteria pollutants.

4.3 Applicability

As discussed in Section 1.2.1, if the net direct and indirect emissions for a criteria pollutant do not exceed the de minimis threshold level specified in the final conformity rule (see Table 1-1) and is not regionally significant, the federal action conforms for that pollutant. Conversely, if the total direct and indirect emissions of a pollutant are above the de minimis levels, a formal general conformity determination is applicable for that pollutant. As shown in the following analysis, net reasonably foreseeable direct and indirect emissions of CO, NO_x, and VOCs (including only indirect emissions that can be practicably controlled due to continuing program responsibility) would remain below the de minimis threshold levels.

If not for a change in emissions associated with utility installation and upgrade and the demolition of Building 222, the proposed interim lease to the City of Seattle of Naval Station Puget Sound lands and facilities of this proposed action would have constituted a "continuing and recurring activity" or an activity that would be "similar in scope and operation to activities currently being conducted" and, thus, would be exempt from General Conformity requirements. The potential change in these short-term, non-recurring emissions and emissions from construction and demolition workers vehicles are analyzed in this section with respect to the General Conformity de minimis threshold levels.

4.3.1 Utility Installation

The looped on-base water supply distribution system contains 28,000 feet (8,534 meters) of 1.5- to 16-inch-diameter (3- to 41-centimeter) waterlines of which 99 percent are unlined cast iron with leaded joints. The system has been determined to be constructed of substandard materials and often substandard pipe sizes. Horizontal separation from sewer and storm lines is also substandard. The existing on-base sanitary sewer system was originally installed in the 1940s and consists of 23,800 linear feet (7,254 meters) of pipe and five pump stations. The pipes are a combination of concrete and vitrified tile, varying in diameter from 6 to 15 inches (15 to 38 centimeters). There is an on-base stormwater piped drainage system that discharges to Lake Washington after passing through oil/water separators.

There is an underground steam distribution system for heating, and natural gas is supplied from a 6-inch (15-centimeter) line under Sand Point Way to the heating plant via a 4-inch (10-centimeter) line. Electricity, cable television, and telephone lines are primarily underground utilities.

Upgrading existing water, sewer, natural gas, and electric lines are planned to support the two alternatives for implementing the proposed action. Utility installation is considered a direct area source of emissions, although of short-term duration, while vehicles supporting construction are considered an indirect mobile source of emissions in calculating the emissions. Estimated emissions from utility installation phase of the proposed interim lease are shown in Table 4-1. Emissions would be identical for both action alternatives and nil for the no-action alternative.

Table 4-1
Utility Installation Emissions

Activity	Pollutant Emissions (tons)		
	VOCs	CO	NO _x
5,000-foot small pipe	0.03	0.09	0.05
5,000-foot large pipe	0.07	1.9	0.09
Total	0.10	2.80	0.14

Source of Emission Factors: U.S. EPA 1985; U.S. EPA 1991

Source of Estimated Construction Schedule: Grant 1995

It is assumed that workers will cut existing asphalt concrete pavements and excavate trenches prior to laying new lines for water, sewer, and natural gas. The reasonable amount of trenching for utility upgrades on the site was determined by engineering staff not to exceed 10,000 linear feet. After new lines are placed, the fill will be replaced and cement or asphalt replaced. Equipment to perform this work will include trenchers and backhoes, trucks, and other construction-related equipment fired by gasoline and diesel fuels. It is assumed a crew of four can trench 400 feet for large diameter pipe per day, and a crew of two can trench 750 feet per day for small diameter pipe (Means 1995).

4.3.2 Building 222 Demolition

Building 222 is a large, two-story, wood frame structure built in 1939 and proposed for demolition under the preferred alternative, but not under the minimal office alternative or the no-action alternative. It is formed by two wings in a nearly L-shaped configuration. An engineering evaluation completed in 1994 determined that large, active cracks exist in the foundation. The concrete foundation wall has moved and leans excessively inward on the western and southern ends of the building. The building is not in compliance with current seismic codes or engineering practice, and modifications completed in the basement will not prevent serious damage to the building and/or collapse in an earthquake. The engineering report recommended that "... Building #222 be condemned. The inspection of the structure shows that serious structural problems exist in the west wing of the building that must be repaired and modified ... the building

should be kept locked and unoccupied by any tenant.” Because of these conditions, the City would demolish the building under the preferred alternative of the interim lease. Estimated emissions from demolition are shown in Table 4-2. It is assumed that eight trucks would be required to remove about 3,000 cubic yards of rubble to calculate emissions (Means 1995).

**Table 4-2
Building 222 Demolition Emissions**

Source	Pollutant Emissions (tons per year)		
	VOCs	CO	NO _x
Equipment	0.08	2.5	0.13
Trucks	1.72	53.5	2.67
Total	1.80	56.0	2.80

Source of emission factors: U.S. EPA 1985

The estimated net change in nonattainment pollutant emissions is substantially less than the General Conformity de minimis thresholds.

4.4 Regional Significance

When the total emissions of the nonattainment criteria pollutants do not exceed the de minimis threshold rates, the emissions must then be compared to the air quality planning inventory for affected portions or the AQCR. This comparison must be performed to determine the regional significance of the federal action. If the amount of emissions is greater than 10 percent of the planning inventory for a particular nonattainment pollutant, then the federal action is considered regionally significant in regards to that pollutant. Regionally significant actions must be further reviewed to determine conformity.

In determining whether the proposed federal action conforms to the applicable SIP, the net total direct and indirect VOC, NO_x, and CO emissions were compared to the VOC, NO_x, and CO planning budgets (1993 inventory) for the Central Puget Sound Region, which includes King, Pierce, and Snohomish counties. This comparison is shown as tons per day with the SIP budget in Table 4-3. As can be seen from the comparison, the estimated emission rates are substantially below 10 percent of the planning inventory and the interim lease would not be regionally significant.

5.0 Conclusion

The proposed interim lease of facilities at Naval Station Puget Sound within the Puget Sound AQCR would conform to the SIP for the Puget Sound Area. The Navy and City

Table 4-3
Proposed Action Emissions Versus Emission Budget

CO (winter)			Tons per seasonal day NO _x (summer)		VOCs (summer)	
Year	Budget	Action	Budget	Action	Budget	Action
1997	2089	58.8	403	2.94	564	1.90

Source of emission budget: PSAPCA 1995

of Seattle are supporting an activity that has been demonstrated by EPA standards not to cause or contribute to new violations of any NAAQS in the affected area, nor increase the frequency or severity of an existing violation. Implementation of this federal action would not delay the timely attainment of the O₃ or CO standards in the Puget Sound Area nor any other required interim emission reductions or other milestones. This conclusion of conformity by way of non-applicability (i.e., emissions would be below de minimis levels) fulfills the Navy's obligation and responsibility under 40 CFR Part 93, Subpart B.

6/28/96
Date


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