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U.S. Department of Commerce
Juanita M. Kreps, Secretary

National Oceanic and Atmospheric Administration,
Richard A. Frank, Administrator

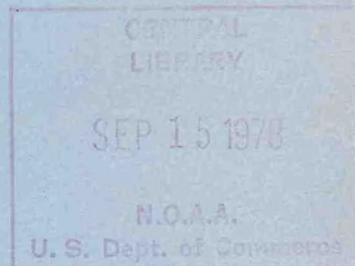


OPERATIONAL CONSIDERATIONS FOR SITE SELECTION OF A WESTERN REGIONAL CENTER

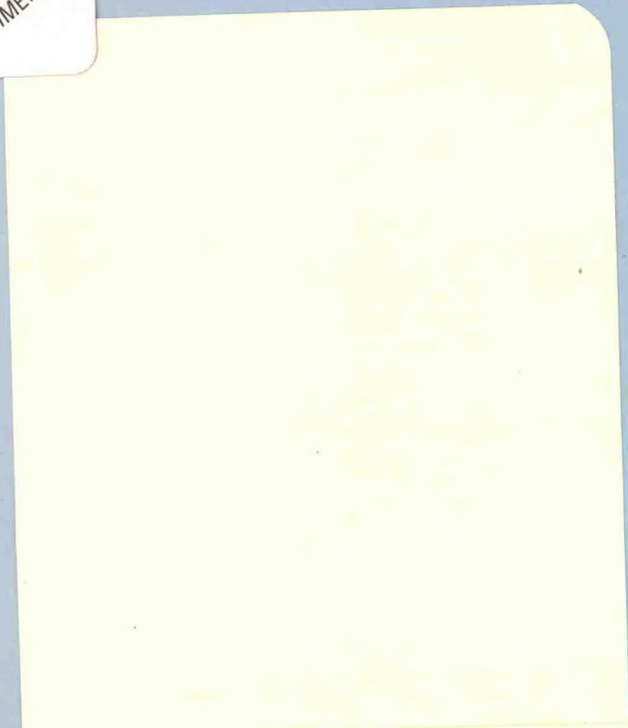
Prepared By

U.S. Western Regional Center Project Office
National Oceanic and Atmospheric Administration

Seattle, Washington
July, 1978



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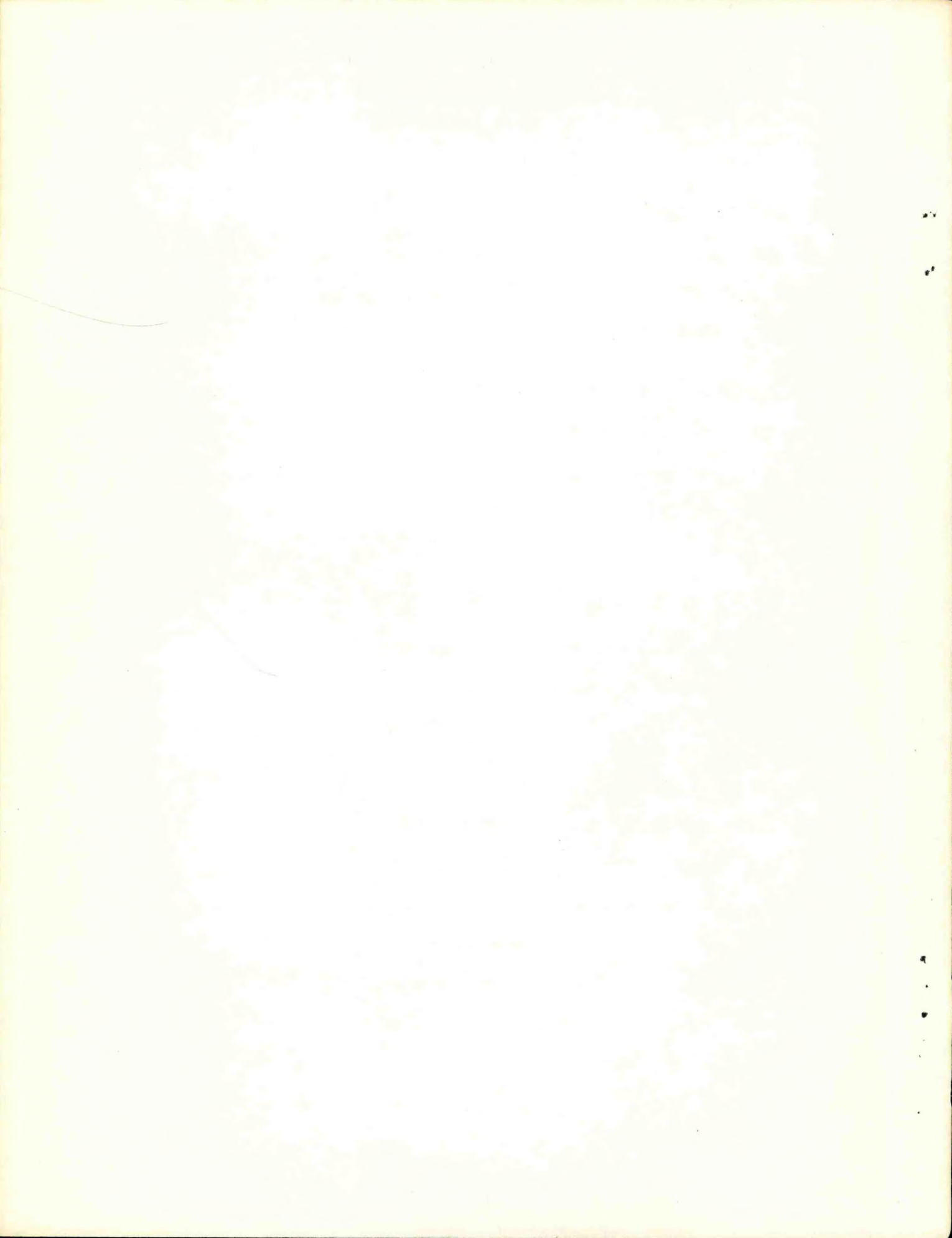


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OPERATION CONSIDERATIONS FOR SITE SELECTION
OF A WESTERN REGIONAL CENTER

1. INTRODUCTION

The thrust of the National Environmental Policy Act (NEPA) of 1969 (PL91-190), as well as of subsequent executive orders, Council on Environmental Quality (CEQ) guidelines, and numerous federal agency procedures, is to ensure that balanced decision making occurs in the total public interest⁽¹⁾. Balanced decision making typically should include the integrated consideration of environmental, technical, social, organizational, economic, and other factors. It is NOAA's firm intent that such consideration will be the basis of an environmentally acceptable and managerially sound decision in selecting the best possible site(s) on which to develop a Western Regional Center.

URS Company, under contract, is assisting NOAA in the preparation of a supplement to the Final Environmental Impact Statement⁽²⁾ that discusses and compares environmental factors of a NOAA development at alternative consolidated and split-site locations. It further assesses the navigational risks associated with NOAA vessel transits to each of these locations. To ensure balanced decision-making takes place, two management document documents also are being prepared by NOAA. The first report by the Management Analysis Division discusses the subject of consolidation versus split-site options⁽³⁾. The following report provides a discussion of the technical and economic factors of seven (7) alternative consolidated and four (4) alternative split sites and compares each site to another to form a site ranking based on each factor. It is intended that the environmental assessment together with the two NOAA reports and public input via the public hearing process, will form the basis for selection of a final site or sites for the NOAA Western Regional Center.

The management factors discussed in this report are combined into four factor groups as listed below:

FACTOR GROUP I: SITE CHARACTERISTICS

Site Development
Site Suitability
Facilities Contract Services

-
- (1) "The National Environmental Policy Act of 1969", PL 91-190, 91st Cong., S.1075, Jan. 1, 1970
 - (2) "Final Environmental Impact Statement for the Proposed Western Regional Center Development, Sand Point, Seattle, Washington", U. S. Department of Commerce, NOAA, January 30, 1976
 - (3) "Management Considerations for A Western Regional Center", NOAA Management Analysis Division, Rockville, MD., July 1978

FACTOR GROUP II: SITE PROXIMITY

Proximity to the University of Washington
and the NMFS Montlake Laboratory

Proximity to User Groups of NOAA

FACTOR GROUP III: SHIP ACTIVITIES

FACTOR GROUP IV: COST CONSIDERATIONS

Property Acquisition
Employee Relocation/Loss of Employees
Relocation of Government Property
Annual Facility Maintenance & Operation

2. BACKGROUND

On February 24, 1978 the United States District Court for the Western District of Washington granted a preliminary injunction enjoining NOAA from proceeding further with construction of facilities for the berthing of ocean-going vessels at Sand Point and from expanding the use of Sand Point for moorage of NOAA vessels. The order granting the injunction was based on a decision by the Court that at a trial on the merits the plaintiffs, Save Lake Washington, would prevail on two of their eight substantive issues. Specifically, 1) that the FEIS did not adequately discuss navigational risks, and 2) that alternative sites, including split-site alternatives, were not adequately discussed. On March 16, 1978 the Deputy Administrator announced that NOAA would not appeal the Judge's order but would instead prepare a supplement to the FEIS that fully addressed the two primary issues. URS Company, a multidisciplinary environmental firm, was subsequently contracted to assist in the preparation of the supplemental statement.

The decision also was made to re-examine the original management decision to consolidate NOAA activities at Sand Point. This re-examination would entail a conceptual investigation of the operational and organizational considerations relative to split-site versus consolidated-site development by the NOAA Management Analysis Division and a comparison of presently available sites on the basis of other than environmental factors to be completed by the Western Regional Center Project Office.

Through a property identification and program screening process, seven (7) alternative consolidated and four (4) alternative split sites were identified as available candidate locations capable of accommodating a NOAA development. Figure 1 shows the location of these sites. URS Company is subjecting these sites to environmental and navigational risk assessments. That effort will constitute a supplemental environmental impact statement. To consider the technical and economic aspects of the sites, a list of operational factors was developed by representatives of the Project Office, NASO, PMC⁽¹⁾, and NW Regional Counsel and reviewed by the Sand Point Building Committee. These factors were identified as important management considerations that ultimately would be weighted with environmental factors and public input to achieve well-balanced decision making. Like the environmental assessment, each of these operational management considerations are discussed primarily in qualitative rather than quantitative terms. The alternative sites are either compared to one another to form a site ranking or compared individually to a standard and are identified as most, least, etc. Based on information discussed in this report, specific site recommendation for the proposed action of either consolidation or split-site options is made in Section 4. To emphasize once again, this report is not the NOAA final decision, but only a recommendation which forms an integral part of the proposed action to be included in the supplemental environmental impact statement.

Section 3 discusses the non-environmental factors and summarizes the results of the site comparisons. Subsequent sections describe in some detail each of the factors, the method of comparison, and the conclusions.

(1) Northwest Administrative Service Office (NASO), Pacific Marine Center (PMC)

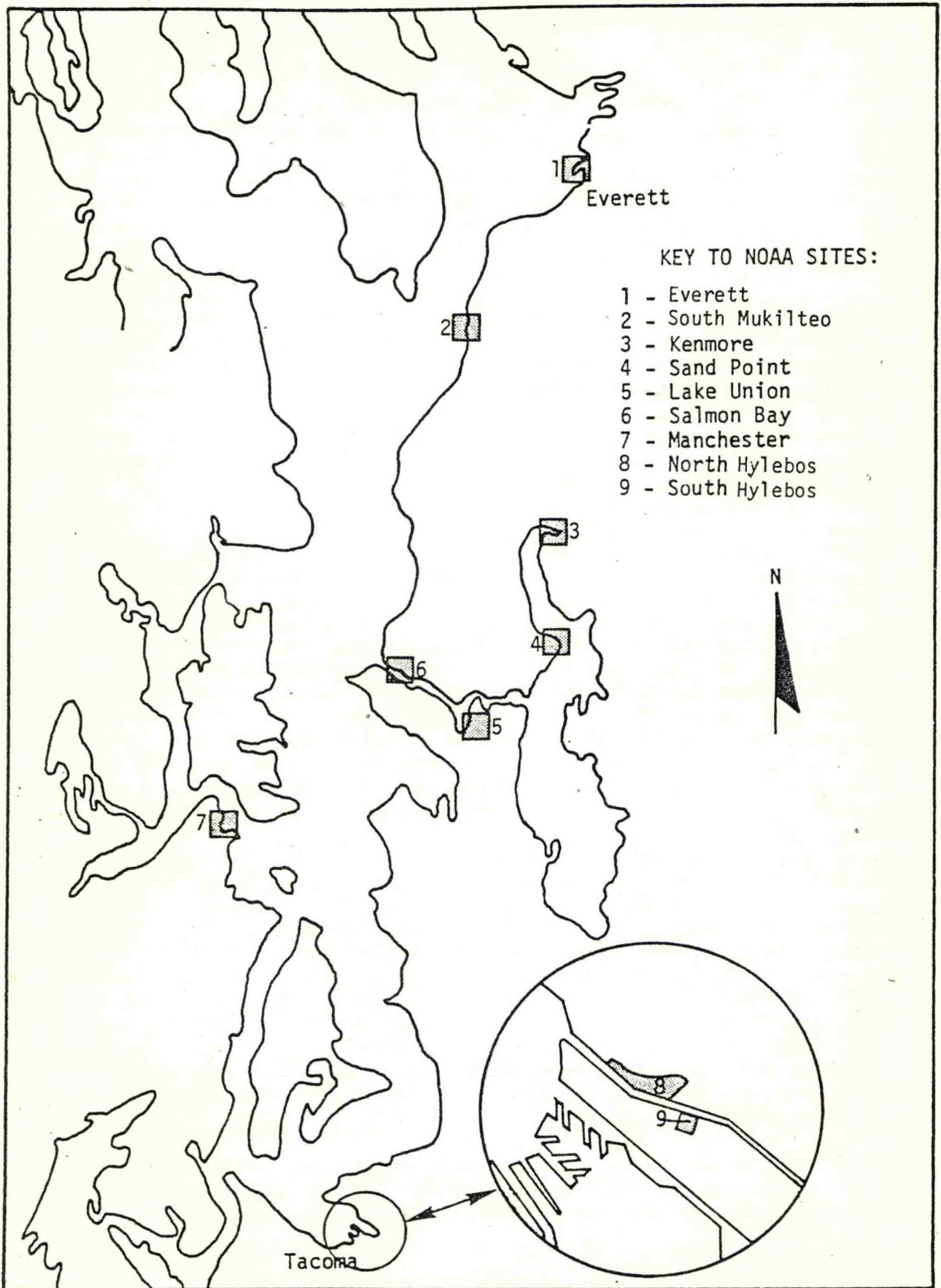


Figure 1. Location of NOAA Candidate Sites

3. EXECUTIVE SUMMARY

To consider objectively the various alternative sites from a non-environmental viewpoint, a list of factors was developed by the WRC Project Office and reviewed and modified by NASO and regional representatives of NOAA's General Counsel. The resulting list was then presented to the Sand Point Building Committee on May 8, 1978 for their comment and concurrence. Information on each factor is important in the overall understanding of the sites; their uniqueness, desirability, and shortcomings in meeting the needs for a NOAA development.

Factor Group I includes both the tangible site development factors (dredging, demolition, utilities) that differ between sites and the overall site suitability which is an "all inclusive" consideration. Availability of nearby facility contract services such as equipment maintenance, janitorial, and food service is also included.

The relationships between NOAA's scientific programs, public services, and area institutions such as the University of Washington, government agencies, and private corporations are included under Factor Group II. A location close to these user groups will minimize adverse effects on existing working relationships.

Under Factor Group III, the qualities of the sites as they relate only to ship activities are considered. In terms of these qualities alone, a site offering easy ship accessibility, convenient maintenance services, and adequate logistic support is preferable to other sites.

Procedures, time, and costs involved in property acquisition are presented in Factor Group IV. Those sites currently owned or easily procurable by the government are considered more attractive than those which must be leased or possibly involve the process of eminent domain. There exists a probability of losing some employees and increasing economic cost of relocation as site consideration moves beyond present office and residence locations. Relative differences in facility maintenance and operation costs also are included in this group.

Site comparisons for each non-environmental consideration is summarized in Tables 1 and 2. Significant qualities of each site are summarized in Appendix 1.

CONSOLIDATED SITES

Everett

S. Mukilteo

Kenmore

Sand Point

N. Hylebos

S. Hylebos

Manchester

FACTOR GROUP I

| | | | | | | | |
|------------------|---|-----|-------------|---|---|---|---|
| Site Development | 5 | 7 | 3 | 4 | 1 | 2 | 6 |
| Site Suitability | 2 | 4 | 5 | 1 | 3 | 7 | 6 |
| Contract Svcs. | | NOT | SIGNIFICANT | | | | |

FACTOR GROUP II

| | | | | | | | |
|---------------------------------|--------------|------|------|------|----------------|---|---|
| Proximity-U of W & Montlake | 4 | 3 | 2 | 1 | 5 | 5 | 7 |
| Proximity-User (Adverse Impact) | Considerable | Some | None | None | (Considerable) | | |

FACTOR GROUP III

| | | | | | | | |
|---------------|---|---|---|---|---|---|---|
| Ship Activity | 1 | 6 | 5 | 4 | 1 | 3 | 7 |
|---------------|---|---|---|---|---|---|---|

FACTOR GROUP IV

| | | | | | | | |
|-------------------|----------|----------|-------|----------|--------|--------|---------|
| Prop. Acquisition | 5 | 3 | 7 | 1 | 4 | 6 | 2 |
| Rel. of Empl/Loss | 4 | 3 | 2 | 1 | 5 | 6 | 7 |
| Gov't. Property | Least | Least | Least | Least | Higher | Higher | Highest |
| Annual M & O | High-est | High-est | Least | High-est | Higher | Least | Least |

Key: 1 = Best Case
7 = Worst Case

Least = Lowest cost. Several sites may be rated Least where there is no appreciable difference between sites.

Higher = Cost is greater than sites rated Least

Highest = Greatest cost

TABLE 1

SPLIT-SITES

Lake Union-PMC

Lake Union-Drydock

Salmon Bay

Kenmore

FACTOR GROUP I

| | | | | |
|------------------|-----------------|---|---|---|
| Site Development | 3 | 2 | 4 | 1 |
| Site Suitability | 2 | 3 | 1 | 4 |
| Contract Svcs. | NOT SIGNIFICANT | | | |

FACTOR GROUP II

| | | | | |
|-------------------------------|-----------|--|--|--|
| Proximity - U of W & Montlake | NO IMPACT | | | |
| Proximity - User | NO IMPACT | | | |

FACTOR GROUP III

| | | | | |
|---------------|-----|-----|---|---|
| Ship Activity | 2.5 | 2.5 | 1 | 4 |
|---------------|-----|-----|---|---|

FACTOR GROUP IV

| | | | | |
|-------------------|--------|--------|--------|------|
| Prop. Acquisition | 1 | 2 | 4 | 3 |
| Rel. of Empl/Loss | (SAME) | | (SAME) | |
| Gov't Property | LESS | (SAME) | | |
| Annual M & O | (SAME) | | | MORE |

Key: 1= Best Case
 4= Worst Case
 Same = No appreciable difference was found between sites
 More = Additional cost
 Less = Reduced cost

TABLE 2

4. RECOMMENDATIONS

This study has provided a description and comparison of each of the sites being considered as locations for a NOAA development. Both positive and negative features for each site have been identified. Based on this information, it is evident that some sites possess negative non-environmental features that are either so significant or so numerous that they clearly outweigh any positive non-environmental feature and, therefore, are not reasonable locations to develop. The sites found unreasonable to consider further and their significant negative features are:

Consolidated Sites:

- South Mukilteo
 - waterfront separated from upland by railroad tracks
 - significant offshore dredging and breakwater
 - no near-site utilities or services
 - poor location for ship activities
- Kenmore
 - not available for purchase
 - insufficient amount of property
 - extensive waterfront excavation and dredging
 - conflicting water usage
- South Hylebos
 - insufficient amount of property
 - property separated by railway and road
- Manchester
 - very extensive waterfront construction and dredging
 - no near-site utilities or services
 - greatest adverse impact on proximity relationships
 - greatest potential of relocation/loss of employees

Split Sites:

- Kenmore
 - not available for purchase
 - extensive waterfront excavation and dredging
 - conflicting water usage
- Salmon Bay
 - 75% of property currently under lease
 - not available for purchase
 - owners not interested in sale

Distinguishing features amount the other consolidated sites are less apparent. However, by noting the factors and ratings shown in Table 1 (Section 3), it is evident that of the remaining consolidated sites, Sand Point is rated better in more factors than the other two sites. Sand Point offers the greatest advantages in terms of proximity, property acquisition, potential relocation/loss of employees. However, it does require somewhat more development and is, except for Kenmore, the least accessible to NOAA vessels which must transit the Lake Washington Ship Canal.

Of the two remaining split sites (Table 2), the existing PMC location on Lake Union is preferred. This is because NOAA operations are presently well established there, the property is reportedly available for either purchase or lease, and the

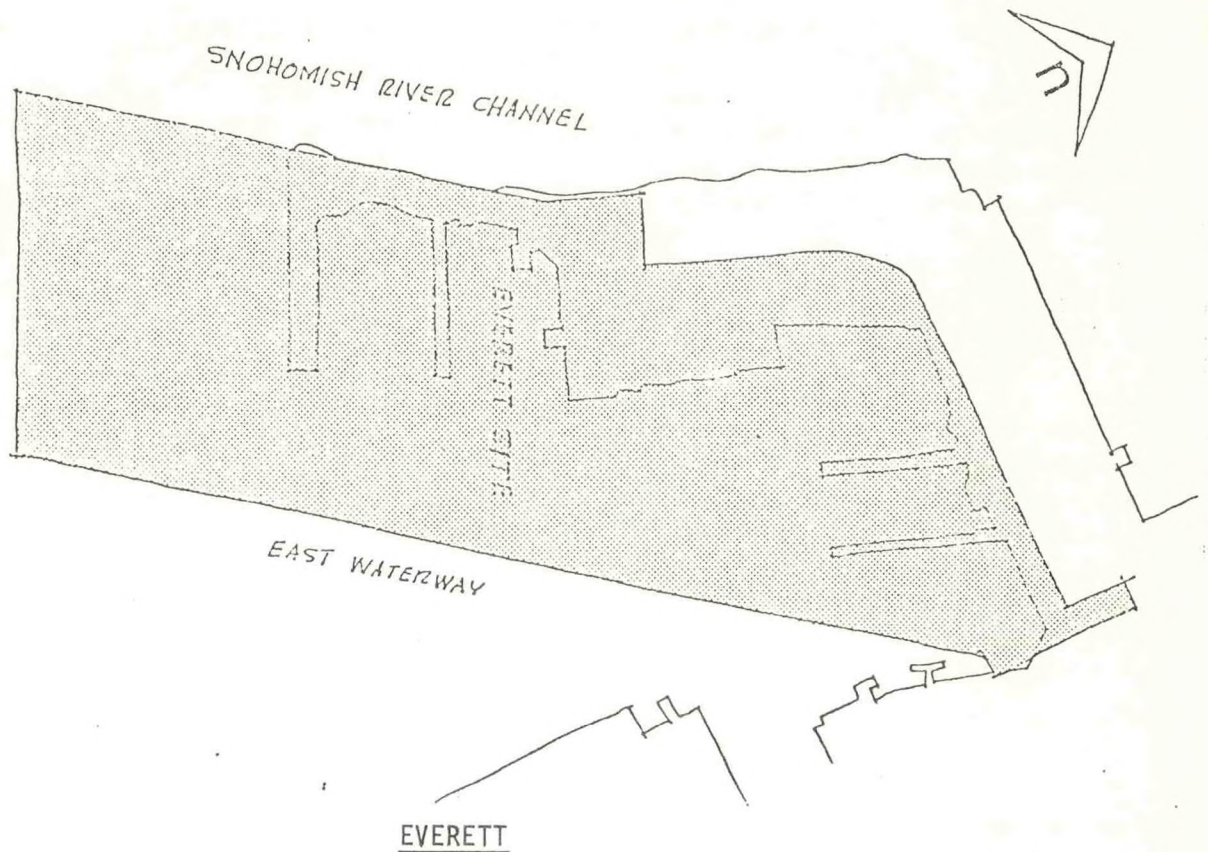
present piers are in acceptable condition and need not be replaced in the near future(1).

For purposes of stating the proposed action in the introductory section of the supplemental environmental impact statement, it is recommended, based on the non-environmental and operational factors considered in this report, that Sand Point be identified as the proposed site for consolidated NOAA development. Further, that a combination of the existing PMC site on Lake Union (for waterfront activities) and Sand Point be identified for the proposed split site development.

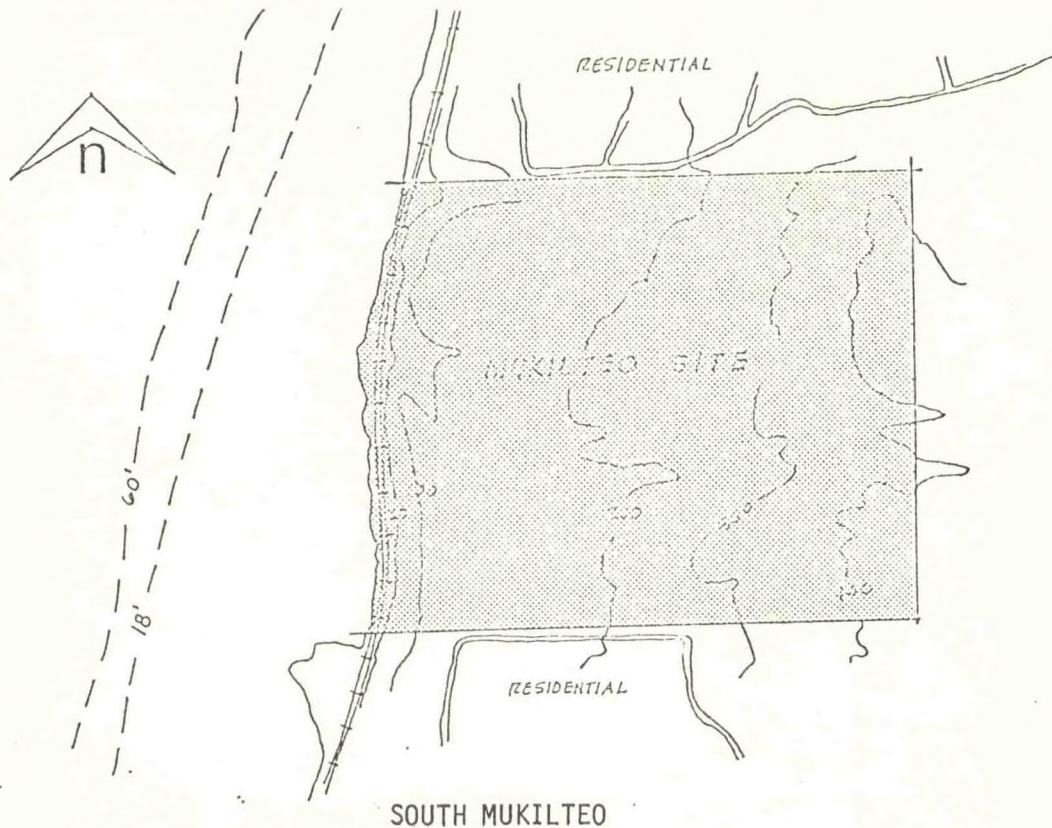
(1) Exact condition of pier pilings at the existing PMC base should be determined by a professional underwater inspection.

5. FACTOR GROUP I: SITE CHARACTERISTICS

This section presents a discussion of four (4) factors under the general category of site characteristics. It is intended to amplify distinguishing features or qualities of each site and comparatively rank them for each factor. Like other sections in this report, no attempt was made to combine all four factors for purposes of identifying best/worst in the overall category of site characteristics. A brief site description and layout plan is first presented for the alternative locations under consideration.



- Size and Major Features:** This site contains 105 acres, of which all but 15 acres of previous fill are underwater. The site is located between a dredged channel and waterway at the end of a peninsula, offering unobstructed views across Puget Sound towards the Olympic Mountains.
- Upland Development:** An estimated 4,000,000 cubic yards of fill would be required to develop the entire site.
- Waterfront Development:** No additional construction dredging would be anticipated. A staging apron of about 120,000 square feet would be provided. Present shoreline is about 5,500 feet of rip-rap and bulkhead if the entire site were developed. Ship maneuvering space is good, depending on pier configuration, and the area is sheltered from wind and waves.
- Utilities and Services:** Utilities and services are present.
- Access:** Ship access is unrestricted. The site is about an hour's driving time from the University of Washington.
- Surrounding Activity:** The surrounding area is heavily industrial (includes paper and pulp mills).



SOUTH MUKILTEO

Size and Major Features: This site of approximately 100 acres is located on a natural, undisturbed hillside on Puget Sound, offering several natural benches, a potential park-like setting, and unobstructed views of the Sound and the Olympic Mountains. The site is separated from the water by Burlington Northern Main line tracks.

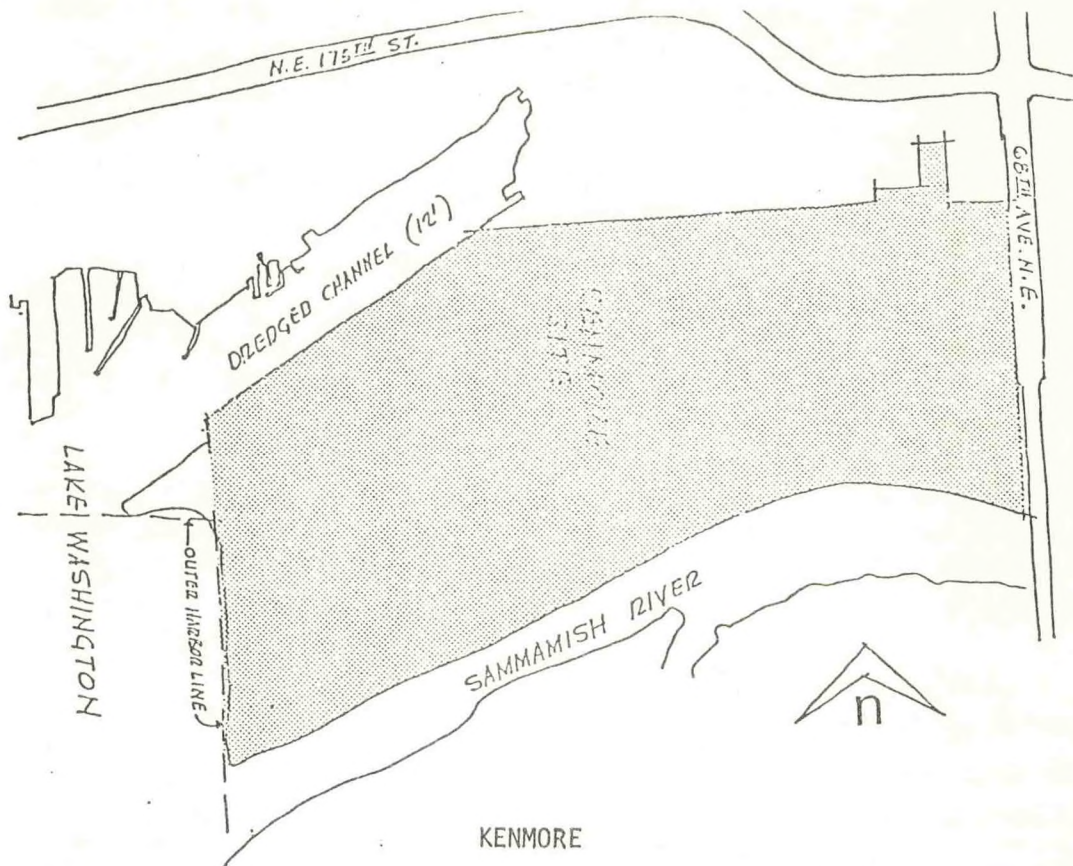
Upland Development: An overpass would be required due to the separation of the upland site from the water by the railroad tracks.

Waterfront Development: Due to shallow water depth off-shore, about 800,000 square feet of bottom would require construction dredging for piers and turning basin inside a rip-rap breakwater approximately 3,000 feet long. There is a long fetch to the south, and 6 foot waves have been reported with a 35 knot wind. Frequent maintenance dredging would be required.

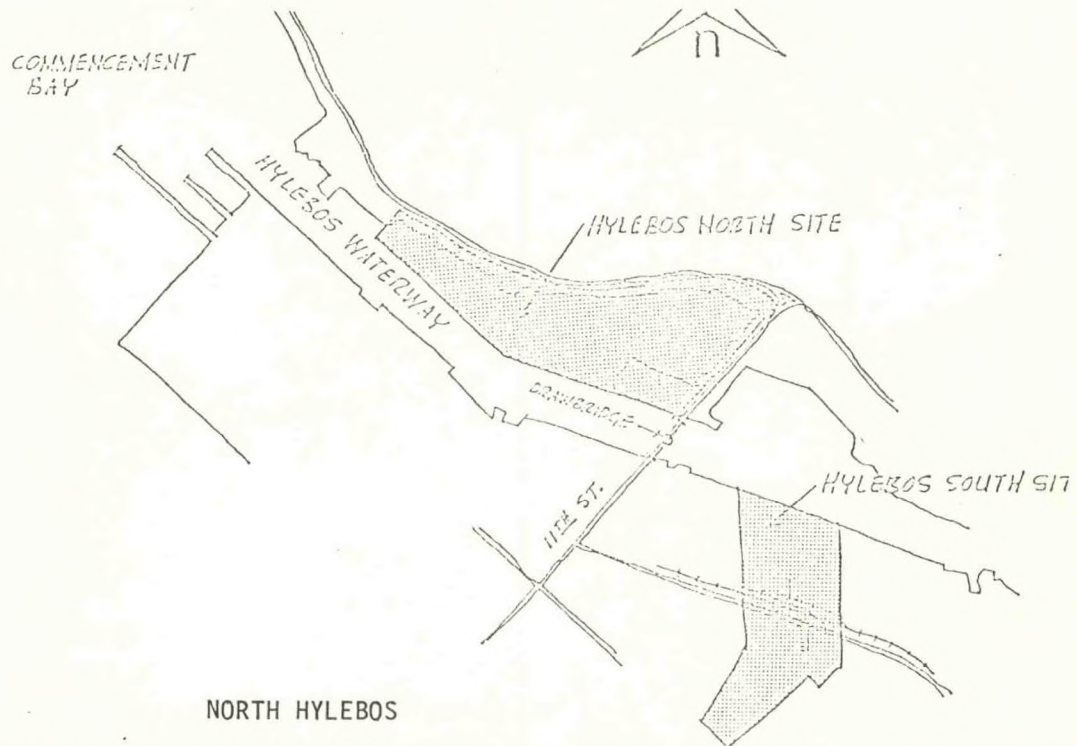
Utilities and Services: Utilities and services are apparently available only at a considerable distance.

Access: There is no acceptable road to the site.

Surrounding Activity: The surrounding area is rural or residential.



- Size and Major Features: This site contains 36 acres, although some of the acreage would be apparently lost to a required greenbelt along the Sammamish River, which forms the southern boundary of the site.
- Upland Development: When approximately 10 acres are dedicated to excavation and 3 acres to a required greenbelt, there remains considerably less than the programmatic requirement for a minimum of 30 acres.
- Waterfront Development: Approximately 10 acres of excavation would be required for piers and bulkheads. Almost 1,200,000 square feet of shallow lake bottom would have to be dredged for construction of an approach channel and turning basin. A new bulkhead would be built to contain the concrete staging apron of 80,000 square feet. Local experience indicates that extensive maintenance dredging would be required due to the proximity of the Sammamish River outfall. Vessel maneuvering space would be adequate after the turning basin is constructed.
- Utilities and Services: Utilities and services are available.
- Access: To reach the site, vessels must transit the locks and four drawbridges.
- Surrounding Activity: The surrounding area is light industry. A conflicting water usage exists with an established seaplane landing and take-off area and a small boat marina.



NORTH HYLEBOS

Size and Major Features: This 69 acre site is presently almost entirely under water and adjacent to a dredged channel.

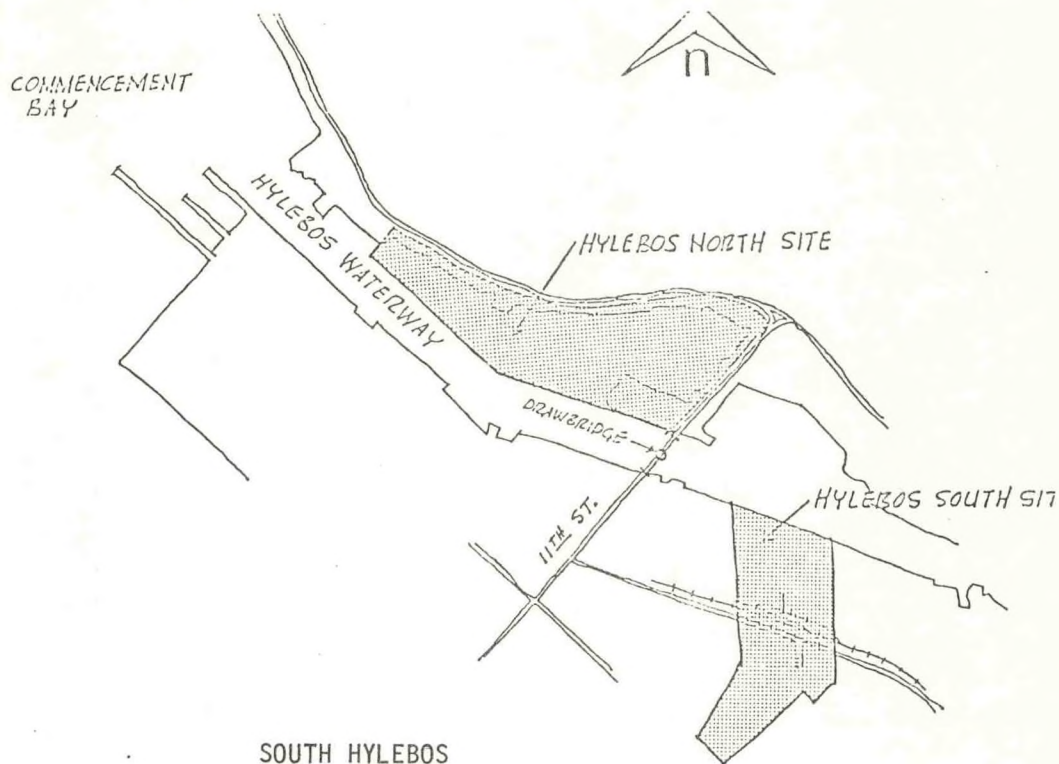
Upland Development: Approximately 10 acres of construction dredging would be required for a pier configuration. The remaining 59 acres would be adequate for development by use of an estimated 800,000 cubic yards of fill to obtain an 18 foot height above sea level.

Waterfront Development: Approximately 10 acres of construction dredging would be required. A staging apron of about 120,000 square feet would be provided. The present shoreline of about 6,000 lineal feet is on inter-tidal sand-mud flats. It would be replaced by a new shoreline of about 4,000 feet consisting largely of bulkhead and rip-rap. Ship maneuvering space is adequate if the bulkhead line is 100 feet inshore of the pierhead line. The site is sheltered from wind and waves.

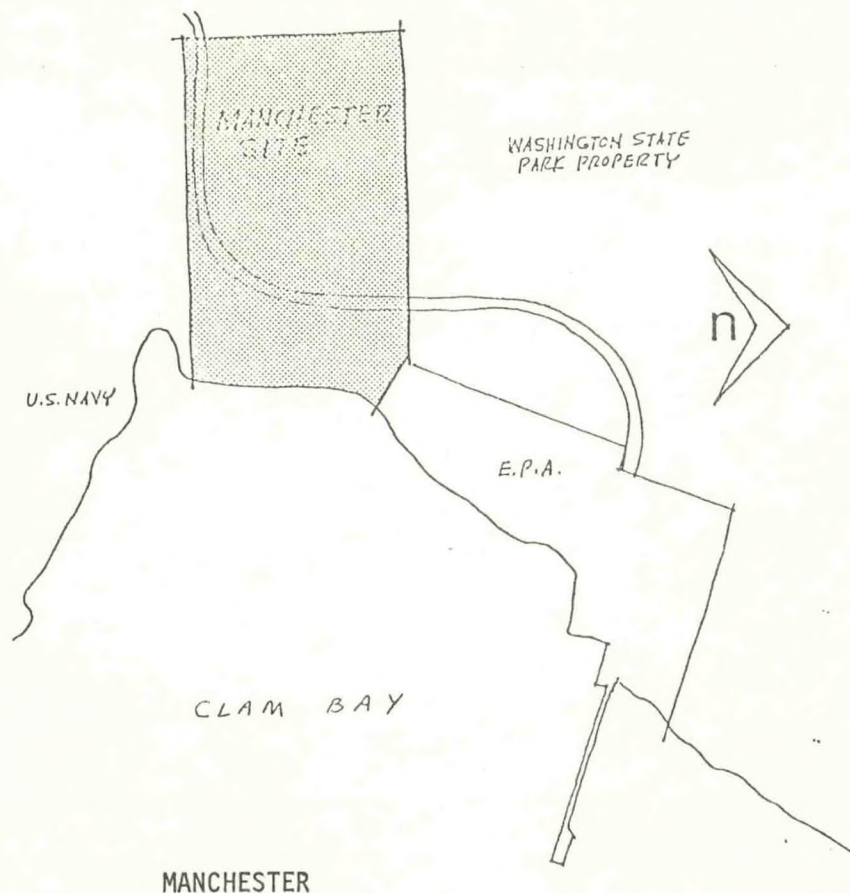
Utilities and Services: Utilities and services are available.

Access: Ship access through Commencement Bay. The site is an hour's driving time from the University of Washington.

Surrounding Activity: The surrounding area is heavily industrial (includes an active paper mill).



- Size and Major Features:** This site is approximately 28 acres located entirely on land. About 10 acres would be dedicated to excavation for slip construction. The south 8 acres of the remaining 18 acre portion are divided from the rest by a railroad and road, neither of which could be closed.
- Upland Development:** Only 18 acres would be available for upland development, considerably less than the programmatic requirement for 30 acres.
- Waterfront Development:** 10 acres of excavation and 1 acre of construction dredging of the existing waterway would be required to provide moorage for 12 ships and small boats. The existing 1,100 feet of rubble fill shoreline would be replaced by 3,000 feet of bulkhead and rip-rap with an 80,000 square foot staging area. Ship maneuvering space would be adequate, depending on pier design.
- Utilities and Services:** Utilities and services are available on site.
- Access:** Ships must pass through the 11th Street drawbridge to reach the site.
- Surrounding Activity:** The surrounding area is heavily industrial.



Size and Major Features: This 22.5 acre site is a combination of meadows and woods. The shoreline consists of reinforced concrete Navy structures which would have to be removed. The property has a 700 foot frontage on a large, very shallow bay, which is reported to be rich in marine life. There is large fish-rearing pen in the bay.

Upland Development: The size of this site is short of the required minimum of 30 acres. Additional adjacent properties would need to be acquired to accommodate NOAA programs and expansion requirements.

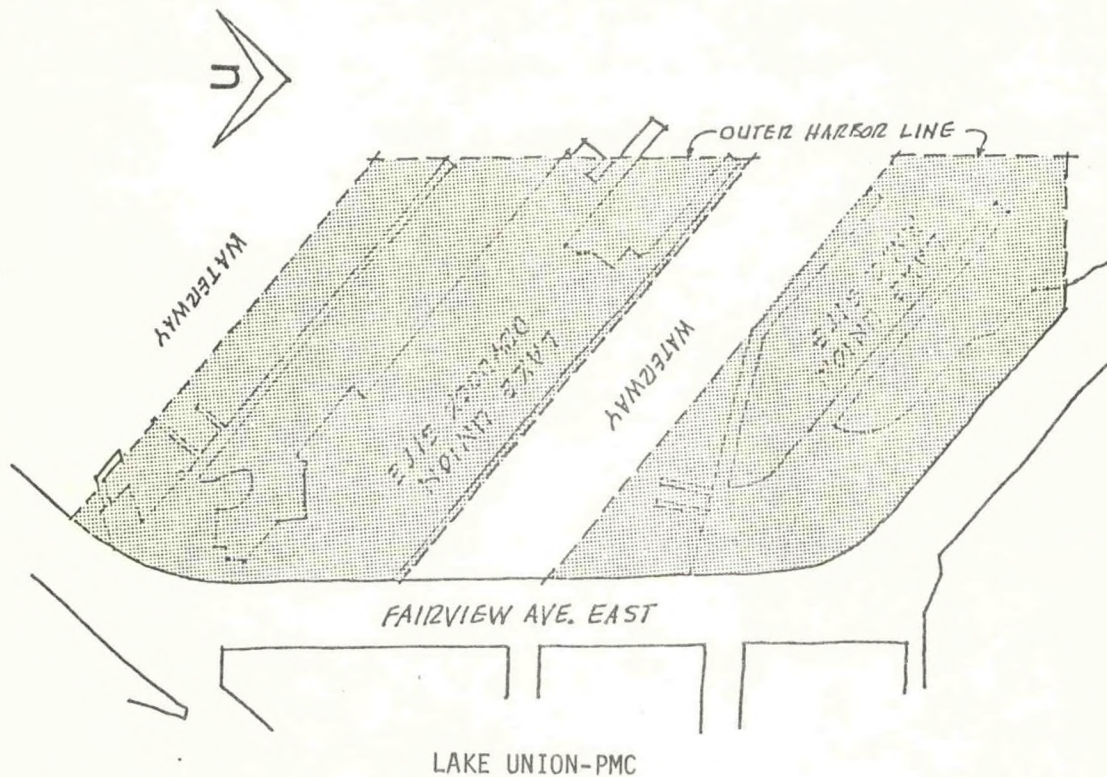
Waterfront Development: The narrow (700 foot) shoreline drops off very slowly and runs into a large, very shallow bay with several hundred yards exposed at low tide. This will necessitate either a great amount of dredging or very long piers, or a combination of both. In either case, the piers will probably be separated considerably from the staging area and energy plant. Navigation aids will be required, and possibly a breakwater. Information is lacking at present on possible legal restriction on building piers, etc., into the bay which would impair access to the neighboring shore.

Utilities and Services: Utilities on the scale required for this project are non-existent on the site and would have to be brought in at least a mile. A new sewage treatment plant must be built.

MANCHESTER (continued)

Access: Vessel access is adequate.

Surrounding Activity: The surrounding area is rural.



Size and Major Features: Present land area is approximately 2.5 acres.

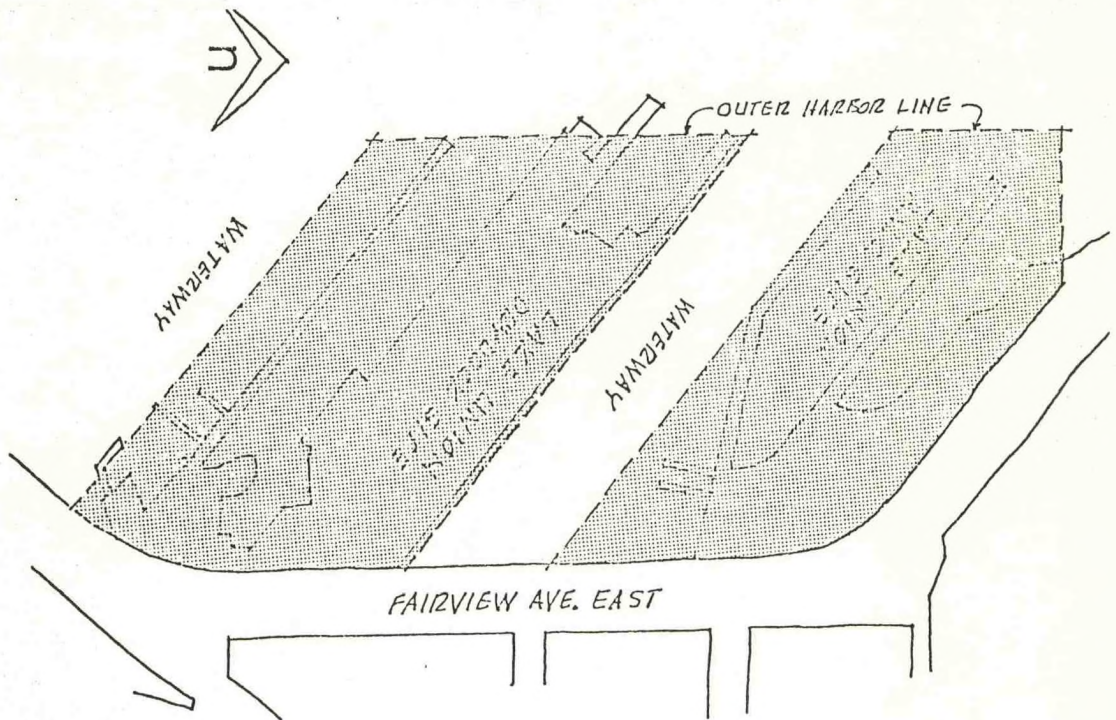
Upland Development: To provide a facility with a 40-year life; construction would include new piers and staging area. It is recommended that the piles upon which the present shore facility is built be replaced with fill to a sheet piling and rip-rap bulkhead at the present edge of the staging area. It is also recommended to fill another area to the south to accommodate future expansion (approximately 3 acres).

Waterfront Development: It is assumed that the new pier and staging area would follow the general configuration of the present facility expanded to berth 12 ships, although realignment may provide more berthing space (possibly at the loss of small boat moorage). The new piers would be concrete on concrete piling, as would the staging area. Approximately 500 feet by 100 feet along the north side would require construction dredging. Existing shoreline is about 1,300 feet of rip-rap and the new shoreline would be about the same. Ship maneuvering space appears adequate, and the site is well sheltered.

Utilities and Services: This site has limited parking areas, a shortage of office and warehouse space, and limited staging area for contract workers.

Access: To reach the site, vessels must transit locks and two drawbridges.

Surrounding Activity: Surrounding area is light industry and residential.



LAKE UNION-DRYDOCK

Size and Major Features: This 15 acre site immediately south of the PMC site is almost entirely underwater.

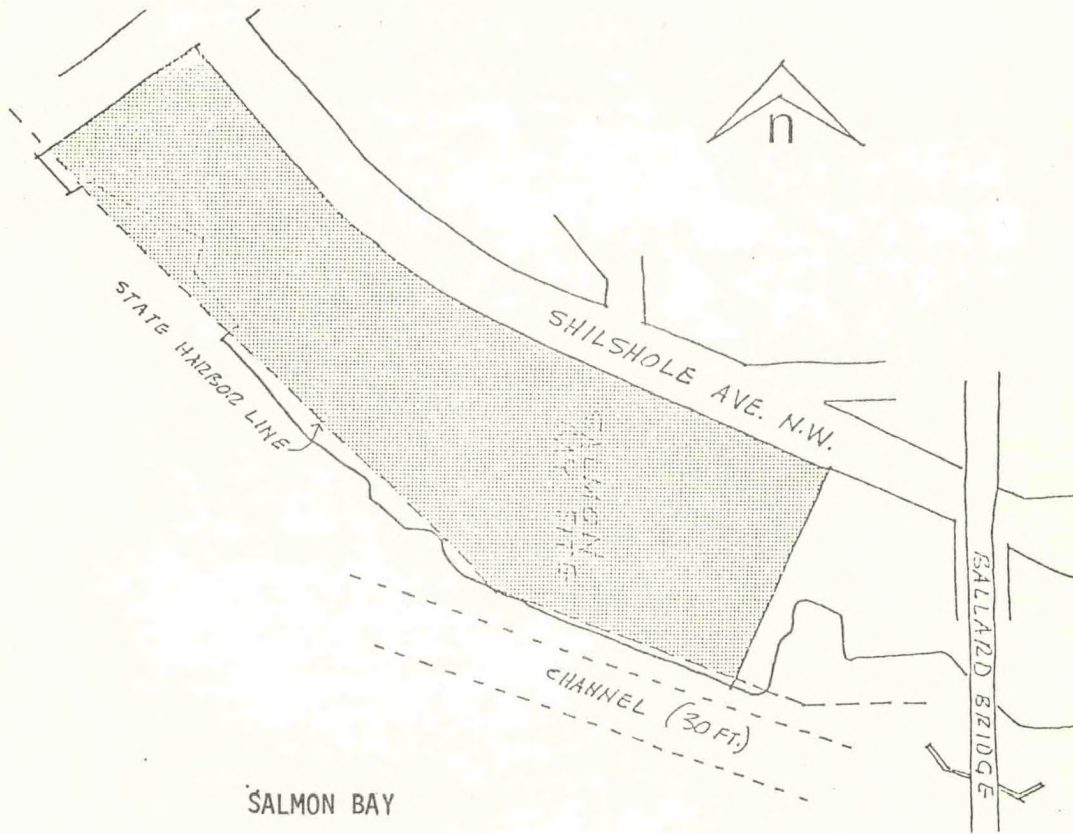
Upland Development: The present facility would have to be completely demolished. It is recommended, due to water depth, that except for a small transition area of about one-half acre of fill with rip-rap to accommodate the grade change, the entire new facility be built entirely on concrete piles, including parking, staging area, and back-up facilities.

Waterfront Development: Some minor construction dredging may be required. Existing shoreline is about 700 lineal feet and would be increased by about 200 feet. Ship maneuvering space is adequate. Ample space exists for moorage for 12 ships plus small boats.

Utilities and Services: Utilities and services are available on site.

Access: To reach the site, vessels must transit locks and two drawbridges.

Surrounding Activity: Surrounding area is light industry and residential.



Size and Major Features: The location of this 12 acre site is just west of the Ballard Bridge on the Lake Washington Ship Canal. The site appears to be largely covered with industrial fill and is oriented with about 1,500 feet along the canal.

Upland Development: Some demolition of existing buildings would be required.

Waterfront Development: Ship access and maneuvering space are adequate. There appears to be ample space for piers with construction dredging and excavation (about 150,000 square feet) into the fill and retained along with the staging area by bulkhead. A certain amount of construction dredging would likely be required between the dredged channel and a property line bulkhead.

Utilities and Services: Utilities and service are available.

Access: Ship access is adequate.

Surrounding Activity: Surrounding area is light industrial.

5.1 Site Development Factors

An important management consideration for site selection is the comparable amount of development each site would require in order to accommodate the planned facilities.

Background and Rationale:

The most thorough manner of gathering information on the eleven (11) alternative sites would be to develop complete pre-concept site designs and cost estimates for each site. This would require the services of an Architect-Engineer firm cognizant of NOAA's plans, soil borings at each site, several man-months of time, at a gross cost estimate in excess of \$75,000. Such an approach would not be a justifiable use of resources for purposes of a relative site comparison. Instead, a multi-disciplinary committee consisting of representatives of NOAA, General Services Administration, Naramore Bain Brady and Johanson and their consultants was formed to visit each of the sites and make recommendations on the required extent of waterfront and upland site development.

At the conclusion of the site visits, the committee met to identify those factors of site development that vary considerably between sites. In other words, to identify those development or construction factors that are an exception rather than a standard among sites. Certain developmental requirements were excluded as they were considered necessary at all sites. Examples are buildings and berthing, (i.e., all consolidated sites will require 550,000 sq. ft. of building space and moorage of 12 vessels).

The development factors agreed on by the committee were:

- Availability of utilities
- Required demolition
- Necessary waterfront/modifications separated into
dredging
fill
breakwater
- Necessary site preparation, separated into
excavation
grading

The committee subsequently met to rate each site against the other in terms of these development factors.

Methodology:

A weighting-scale technique similar to the method described by Solomon⁽¹⁾ was used to subjectively compare the site alternatives. Two groupings were compared; consolidated sites and split sites. The procedure was to give the site requiring the greater amount of development (more extensive or comprehensive) the number 1 and the lesser site, 0. If both sites were considered equal, then each site was given 0.5. The numerical score was totalled and normalized to 1.00 for the Alternative Score.

(1) Solomon, R.C. et al, "Water Resources Assessment Methodology (WRAM) -- Impact Assessment and Alternative Evaluation", Technical Report Y-77-1, U.S. Army Waterways Experiment Station, P.O. Box 631, Vicksburg, MS, February 1977.

Alternative Scores were computed for each development factor and multiplied by a Relative Importance Co-efficient (RIC) to compute Composite Scores for each site. The RIC is a weighting factor identifying the relative importance between the four main development factors as derived by the committee.⁽¹⁾

Results:

The numerical results of the evaluations are shown in Tables 3 and 4. In terms of the development factors, the consolidated sites are ranked as follows with the site requiring the least development first and the site requiring the greatest development last.

1. North Hylebos
2. South Hylebos
3. Kenmore
4. Sand Point
5. Everett
6. Manchester
7. South Mukilteo

Similarly, the split-sites are ranked as follows:

1. Kenmore
2. Lake Union-Drydock
3. Lake Union-PMC
4. Salmon Bay

(1) Adjusting or eliminating the RIC affected only those sites requiring approximately equal development. Sites requiring greatest or least development remained unchanged.

SUMMARY
CONSOLIDATED SITES

| DEVELOPMENT FACTORS | ALTERNATIVE SCORE (AS) | | | | | | | COMPOSITE SCORE (RIC x AS) | | | | | | | |
|---------------------|------------------------|--------|------|------|--------|--------|------|----------------------------|--------|------|------|--------|--------|------|-------|
| | RIC | S.MUK. | S.P. | KEN. | N.HYL. | S.HYL. | MAN. | EVER. | S.MUK. | S.P. | KEN. | N.HYL. | S.HYL. | MAN. | EVER. |
| UTILITIES | 0.4 | .40 | .04 | .04 | .04 | .04 | .40 | .04 | .160 | .016 | .016 | .016 | .016 | .160 | .016 |
| DEMOLITION | 0.2 | .05 | .20 | .09 | .07 | .14 | .20 | .25 | .010 | .040 | .018 | .014 | .028 | .040 | .050 |
| WATERFRONT | | | | | | | | | | | | | | | |
| -DREDGING | | .18 | .14 | .21 | .11 | .07 | .25 | .04 | | | | | | | |
| -FILL | | .14 | .07 | .07 | .21 | .07 | .18 | .25 | | | | | | | |
| -BREAKWATER | | .76 | .04 | .04 | .04 | .04 | .04 | .04 | | | | | | | |
| TOTAL | | 1.08 | .25 | .32 | .36 | .18 | .47 | .33 | | | | | | | |
| AVERAGE | 0.3 | .36 | .08 | .11 | .12 | .06 | .16 | .11 | .108 | .024 | .033 | .036 | .018 | .048 | .033 |
| SITE PREPARATION | | | | | | | | | | | | | | | |
| -EXCAVATION | | .18 | .14 | .23 | .07 | .23 | .07 | .07 | | | | | | | |
| -GRADING | | .76 | .04 | .04 | .04 | .04 | .04 | .04 | | | | | | | |
| TOTAL | | .94 | .12 | .27 | .11 | .27 | .11 | .11 | | | | | | | |
| AVERAGE | 0.1 | .47 | .09 | .14 | .06 | .14 | .06 | .06 | .047 | .009 | .014 | .006 | .014 | .006 | .006 |

TOTAL: .325 .089 .081 .072 .076 .254 .105
RANKING: 7 4 3 1 2 6 5

(HIGHER NUMBERS = MORE DEVELOPMENT REQUIRED)

TABLE 3

SUMMARY
SPLIT-SITE

| DEVELOPMENT FACTORS | RIC | ALTERNATIVE SCORE (AS) | | | | COMPOSITE SCORE (RIC X AS) | | | |
|---------------------|-----|------------------------|-----|--------|-------|----------------------------|------|--------|-------|
| | | KEN. | PMC | DRY D. | SALM. | KEN. | PMC | DRY D. | SALM. |
| UTILITIES | 0.4 | .25 | .25 | .25 | .25 | .100 | .100 | .100 | .100 |
| DEMOLITION | 0.2 | .10 | .20 | .40 | .30 | .020 | .040 | .080 | .060 |
| WATERFRONT | | | | | | | | | |
| - DREDGING | | .40 | .20 | .20 | .20 | | | | |
| - FILL | | .10 | .40 | .20 | .30 | | | | |
| TOTAL | | .50 | .60 | .40 | .50 | | | | |
| AVERAGE | 0.3 | .25 | .30 | .20 | .25 | .075 | .090 | .060 | .075 |
| SITE PREPARATION* | 0.1 | .40 | .25 | .10 | .25 | .040 | .025 | .010 | .025 |

TOTAL: .235 .255 .250 .260

RANKING: 1 3 2 4

(HIGHER NUMBERS = MORE DEVELOPMENT REQUIRED)

*INCLUDES EXCAVATION AND GRADING

TABLE 4

5.2 Site Suitability

Section 5.1 entitled "Site Development Factors" provided a discussion of four tangible development factors for each alternative site and compared one site to another to form a site ranking. The factors considered in that section were only those that varied considerable between sites. This section presents a discussion of both tangible and intangible factors (or conditions) relating to a total project development for each site. A comparison technique is used to rank the sites in terms of their overall suitability or, in other words, in terms of their relative ease of accepting a NOAA development. The results of this ranking are then compared with the results of the previous section.

Site Comparison:

The same multi-disciplinary committee which previously visited each of the alternative sites and made recommendations on site development was called upon to rate the sites on their ability to accept a NOAA development. Considering such tangible factors as amount of dredging, acreage lost due to pier and slip excavation, demolition, and utilities, with such intangible factors as aesthetics of surrounding activities, ability to create a satisfactory research environment, project acceptability, and overall site development, the committee compared each of the sites to one another. The technique was similar to the one in Section 5.1 where the site being more difficult to develop was given a 1 and the easier site given a 0. A weighting factor was not required since the evaluation involved only one factor, i.e., suitability.

Results:

The results of the site comparison are shown below with the site being most suitable first and the site least suitable last.

Consolidated Sites:

1. Sand Point
2. Everett
3. North Hylebos
4. South Mukilteo
5. Kenmore
6. Manchester
7. South Hylebos

Split Sites:

1. Salmon Bay
2. Lake Union-PMC
3. Lake Union-Drydock
4. Kenmore

Development vs. Suitability:

It is interesting to compare the results of Section 5.1 which considered four development factors (utilities, demolition, waterfront, and site preparation) with these results on overall site suitability. The two results are repeated below. Again, best is first and worst is last.

Consolidated Sites

Site Development

1. North Hylebos
2. South Hylebos
3. Kenmore
4. Sand Point
5. Everett
6. Manchester
7. South Mukilteo

Site Suitability

1. Sand Point
2. Everett
3. North Hylebos
4. South Mukilteo
5. Kenmore
6. Manchester
7. South Hylebos

Split Sites

1. Kenmore
2. Lake Union-Drydock
3. Lake Union-PMC
4. Salmon Bay

1. Salmon Bay
2. Lake Union-PMC
3. Lake Union-Drydock
4. Kenmore

Site selection based only on these two considerations would involve a tradeoff between the primarily economic factor of site development and the more intangible factor of site suitability. If some of the more obvious development factors are given sufficient importance, it is reasonable to remove four of the seven consolidated sites from further consideration. These "ruled out" sites and the reasons are:

- South Mukilteo -- Requires considerable dredging (800,000 sq. ft.) and a breakwater for large vessel protection. Hillside terrain costly to develop.
- Kenmore -- Requires considerable initial dredging and high maintenance dredging due to outfall of Sammamish River. Excavation for slips greatly reduces upland land area available for development. Offers no advantages over Sand Point.
- Manchester -- Highest required dredging of any site. No utilities on the required scale are available. Breakwater may be needed for large vessel protection.
- South Hylebos -- Excavation for slips greatly reduces upland land area available for development. Offers no advantages over North Hylebos.

Consideration of site development versus site suitability thus becomes more straight forward for the three remaining practical alternative consolidated sites.

Development

1. North Hylebos
2. Sand Point
3. Everett

Suitability

1. Sand Point
2. Everett
3. North Hylebos

Likewise, the three remaining split sites would be:

| <u>Development</u> | <u>Suitability</u> |
|-----------------------|-----------------------|
| 1. Lake Union-Drydock | 1. Salmon Bay |
| 2. Lake Union-PMC | 2. Lake Union-PMC |
| 3. Salmon Bay | 3. Lake Union-Drydock |

5.3 Facilities Contract Services

This section provides a discussion of the availability and accessibility (ease) in obtaining facility support services. The types of services this includes are general and technical/specialized services such as fisheries research consultant work, repair and maintenance of research and ships' equipment, equipment procurement/lease, building and grounds maintenance, janitorial services, food service, security, utilities, etc. Selecting a site where such services are not readily available would increase contract costs because of the added distances between the contractor's office and the NOAA site. Therefore, to minimize such added costs, it would be necessary to select a site where such services are generally available.

Discussion:

To determine the significance of site location on facilities contract services, contact was made with the General Services Administration's Building Management Division and the NASO Administrative Operations Division, Contracting Section. Based on their past experience, it was the consensus of both GSA and NOAA that the ten sites under consideration are with such close proximity to the Seattle metropolitan area that the availability and accessibility of facilities services would not significantly differ from any one of the sites. It was noted, however, that a cost increase would result as distance from Seattle or a major supply area is increased. It is anticipated that most competitive bids for contract services would be submitted from the Seattle market regardless of the site selected.

Since only a portion of NOAA procurement and contracting records are kept locally, it would be very difficult to quantify cost differences for the alternate sites. However, it can be stated that since the basis for on-call services is portal to portal time, any increase in distance between contractors' facilities and the NOAA location will definitely be reflected as added costs. This increase would be minimized if the immediate local markets could be drawn upon to provide as many of the required services as possible. Again, it is anticipated that the Seattle metropolitan area would be the primary source of services.

Summary:

Although availability and accessibility of contract services does not significantly differ among the ten sites being considered, an identifiable cost increase would result as the distance to the alternative sites from the contractors' facilities

is increased. Three alternative consolidation sites, Mukilteo, Manchester, and Everett, are identified as cost increasing due to their increased mileage distances from the major market service areas of Seattle and Tacoma. However, this increase is not considered significant and should not be viewed as an overriding factor in the site selection process. There are no discernable contract cost differences between the remaining four alternative consolidations or the four alternative split sites.

6. FACTOR GROUP III: SITE PROXIMITY

6.1 Proximity to the University of Washington and to the NWAFC Montlake Laboratory

The proposed development of a Western Regional Center would consolidate eight major NOAA components presently dispersed at eight locations in the Seattle area. An alternative is split development where non-water oriented (upland) facilities would be located at Sand Point and ships and their support facilities would be located at some other site. In either development plan, some of 170 of the 375 employees of the Northwest and Alaska Fisheries Center (NWAFC) including the Directorate's office will remain at the Montlake facilities. (The decision to retain these facilities was based on several factors including the unique characteristics of the laboratory buildings designed especially for fishery research needs, its immediate proximity to the University of Washington, and the fact that the facilities are already NOAA-owned.) Distance between the NWAFC and the Western Regional Center impacts the working relationship among the divisions and affects fishery programs.

An equally important relationship for many NOAA units is with the personnel and facilities of the University of Washington (Seattle). Through several NOAA contracts, the University provides unique research, computer, and technical services that could not be provided by other area institutions. It also provides a source of temporary student workers. Several NOAA scientists hold positions with the University (affiliate faculty) and lecture various courses. This interdependence for intellectual, scholarly, and programmatic support is important for effective program execution.

To better define these proximity requirements to the University of Washington and the NWAFC, a questionnaire was completed by each of the NOAA divisions. The following provides a summary of the questionnaire results and ranks the alternative sites by the travel times to these facilities.

Discussion:

The questionnaire asked each component to define their professional relationship with the University of Washington and NWAFC and to identify unique capabilities and expertise that are not now duplicated by other area institutions. The responses have been combined and are briefly summarized below for each facility.

Proximity to the University of Washington-

It was found that currently twenty one NOAA scientists hold positions with the University (affiliate faculty) and occasionally teach various Graduate level courses. There is also active NOAA involvement in their various Graduate Study Programs. In return, the University holds sixteen major contracts totalling to more than \$1.2M that provide NOAA with unique research, computer, and technical services that could not be provided by other area institutions. The questionnaire results indicated that there is almost daily interaction between NOAA and the University departments of Atmospheric Sciences and Oceanography, College of Fisheries, Sea Grant Programs, and Applied Physics. There is also considerable use of the

University's comprehensive libraries. On an average, some 75 NOAA scientists make more than 80 visits to the University each week. It also indicated that 50% of NOAA's temporary workforce is recruited from the University and there are several ongoing co-op student programs with other NOAA components. The optimal distance would be for the University to be within a convenient walking distance. However, the average acceptable distance was indicated as a 20-minute (about 12 mile) driving time.

Proximity to the NWAFC at Montlake-

The results from the second portion of the questionnaire found that NOAA elements frequently use the resources that are available at the Montlake laboratory including small boats, scientific equipment, fishery library, the computer center, and conference rooms. Montlake personnel occasionally conduct research for other NOAA components in Seattle. There is also heavy interaction between Center personnel and the Contracting, Personnel, and Finance service of NASO now located at Lake Union.

An equal concern to that of NOAA's proximity to Montlake is any increase in the separation of Fisheries personnel between Montlake and the site of the Western Regional Center. One response indicated that should the distance exceed 5 miles, the Center may reconsider the number of staff it plans to relocate at the new development in order to avoid operational problems. The average optimal driving time between NOAA components and Montlake Laboratory was found to be 10 minutes. The average acceptable distance would be a driving time of 30 minutes (about 18 miles).

It should be noted that the program criteria used by URS to screen potential alternative sites stated a proximity requirement of 60 minutes. This time limit is shown to be generous by the questionnaire responses which indicated an acceptable distance of 20 to 30 minutes.

Ranking:

Many NOAA components closely interact with and depend on the University of Washington to provide important expertise and service that cannot be readily duplicated by other educational institutions in the Puget Sound region. There also exists a need for daily interaction between the various divisions of the NWAFC and the Fisheries Regional Office. Ranking the alternative consolidation sites in terms of their proximity to these two facilities can be accomplished by comparing the approximate driving times between locations.

The consolidated sites and their approximate driving times are shown in order below.

| | <u>Distance</u> | <u>Driving Time</u> |
|----------------------------|-----------------|---------------------|
| 1. Sand Point | 3 mi. | 6 minutes |
| 2. Kenmore | 9 mi. | 18 minutes |
| 3. So. Mukilteo | 21 mi. | 35 minutes |
| 4. Everett | 27 mi. | 50 minutes |
| 5. No. Hylebos/So. Hylebos | 36 mi | 60 minutes |
| 6. Manchester | 20 mi | 75 minutes* |

*by ferry

No distinction can be made between the individual split sites since they are approximately equal-distant to the University and NWAFC-Montlake.

6.2 Proximity to User Groups

It is important to understand the relationship NOAA has with its user groups and how these relationships may be affected by the NOAA relocation. A site that would not adversely affect NOAA's relationship to its user groups would be more advantageous than other sites.

Discussion:

A questionnaire was used to gather information on NOAA's working relationship with public and private user groups and on how this might be affected by the NOAA relocation.

In general, it was found that NOAA Seattle elements primarily interact with user groups also located in Seattle. These groups include a number of Federal agencies mostly in the Federal Building, City and County agencies, public media, and industry and laboratory representatives in the fisheries' field. There is some interaction with various State agencies located in Olympia, 60 miles from Seattle, however, it is limited.

Responses showed that direct NOAA services include briefing television and radio weathermen and area fishermen associations, providing climatic data and a convenient chart sales office, and coordinating marketable fishery products. In return, NOAA receives valuable feedback on the quality and usefulness of these services. It is estimated that the number of personal visits between user group representatives and NOAA are over 100 per week. It is also noted that the presence of a NOAA facility in a populated area potentially offers the public a greater appreciation of NOAA's mission in oceanic and atmospheric areas. NOAA would plan to make seminar and auditorium spaces available for periodic public use.

One response indicated that the NMFS Regional Office issues the "Fisheries Market News" three times a week to 900 subscribers. Four NMFS reporters visit the Seattle waterfront daily to gather information on current prices, quantity of landings, etc., that are important to the fishing industry. If NOAA were located outside the Seattle metropolitan area, NMFS would need to establish a Seattle field office for their reporters in order to maintain close interaction with the fishing community. Another Fisheries Branch, NMFS Enforcement, closely interacts with the U. S. Coast Guard offices in the Seattle Federal Building and the U. S. Customs Department. If NOAA were to relocate outside of Seattle, NMFS respondents indicated that it would be necessary to establish Fisheries Enforcement field office in Seattle.

Six of the fifteen NOAA units responding to the questionnaire indicated there would be little or no effect on their present user group relationships should NOAA locate away from the Seattle metropolitan area. (Such effects were limited to added minor inconveniences). However, the remaining nine elements indicated more serious impacts on their operations. These ranged from less opportunity for personal interaction to establishing field offices and a loss of immediate access to the State's largest labor pool which may have secondary effects on minority participation in NOAA employment.

Summary:

Proximity to the majority of NOAA's user groups would best be maintained if NOAA would remain within a 30-minute driving distance of central Seattle. As distance and travel time increases, it is anticipated that the relationship and interaction between NOAA and its present user groups would suffer. The impact on this relationship can be equated to site proximity. Therefore, the alternative sites have been compared in terms of their driving distance to Seattle and are ranked as follows:

No adverse impact: Sand Point
Kenmore (consolidated and split)
Lake Union - PMC
Lake Union - Drydock
Salmon Bay

Some adverse impact: South Mukilteo

Considerable impact: Everett
North Hylebos
South Hylebos
Manchester

7. SHIP ACTIVITIES

This section contains a discussion of criteria that are pertinent to the operation and berthing of the NOAA fleet at or near a proposed Western Regional Center.

Discussion:

The NOAA fleet, under management of the National Ocean Survey/Pacific Marine Center, has operational, maintenance and logistical requirements which are unique in providing effective ship support to the varied marine and atmospheric programs of NOAA. These requirements are an important consideration in the waterfront activity location, associated with establishment of a Western Regional Center.

These important requirements by activity are defined as follows:

Ship Accessibility to Site indicates the degree of difficulty associated with ship movements in reaching each candidate site.

Ship On-Site Conditions considers impact on inport ship activities, such as docking and undocking, differences in ship security because of tides, currents, and weather and related operational problems.

Ship Repair - Site Compatibility indicates the degree of compatibility of the types of repair activities required to support ship operations in relation to the existing and planned use of the candidate sites.

Ship Repair - On-Site Contractors Accessibility reflects relative difficulty in obtaining timely marine repair contractual services for dockside maintenance at the candidate sites.

Ship Repair - Access to Shipyard is a measure of relative difficulty in dispatching ships to an adequate shipyard repair facility for drydocking and major repair.

Ship Efficiency/Productivity rates the proposed sites in terms of marginal cost of ship and project accomplishment.

Ship Logistical Support considers relative ease or difficulty in provisioning the ship. (Food, fuel, supplies).

Rating:

Each alternative site was rated by PMC for each of the above requirements. The results are shown in Table 5.

Considering these seven ship activity requirements alone, the alternative sites are ranked as follows with the more favorable sites first and the least favorable last.

Consolidated Sites

Everett/North Hylebos (tied)
South Hylebos
Sand Point
Kenmore
South Mukilteo
Manchester

Split Sites

Salmon Bay
Lake Union-PMC/Lake Union-Drydock (tied)

| ACTIVITY | SPLIT SITES | | | | | CONSOLIDATED SITES | | | | |
|---|-------------|----------------|--------------------|------------|------------|--------------------|---------------|---------------|------------|----------------|
| | PMC | Lake Union-PMC | Lake Union-Drydock | Salmon Bay | Sand Point | Kenmore | North Hylebos | South Hylebos | Manchester | South Mukilteo |
| Ship Accessibility to Site | 2 | 2 | 1 | 4 | 5 | 2 | 3 | 1 | 1 | 1 |
| Ship On-Site Conditions | 1 | 1 | 2 | 2 | 3 | 2 | 3 | 4 | 4 | 2 |
| Ship Repair - Site Compatibility | 2 | 2 | 1 | 4 | 3 | 1 | 1 | 4 | 4 | 1 |
| Ship Repair - On-Site Contractors Accessibility | 1 | 1 | 1 | 3 | 4 | 2 | 2 | 5 | 4 | 2 |
| Ship Repair - Access to Ship Yard | 2 | 2 | 1 | 3 | 3 | 3 | 3 | 4 | 4 | 3 |
| Ship Efficiency/Productivity | 2 | 2 | 1 | 4 | 4 | 1 | 2 | 5 | 5 | 2 |
| Ship Logistical Support | 1 | 1 | 1 | 2 | 3 | 2 | 2 | 5 | 4 | 2 |
| TOTAL POINTS | 11 | 11 | 8 | 22 | 25 | 13 | 16 | 28 | 26 | 13 |

Key: 1 Excellent
 2 Good
 3 Satisfactory
 4 Marginal
 5 Poor

TABLE 5

8. FACTOR GROUP IV: COST CONSIDERATIONS

8.1 Property Acquisition

This section provides a discussion of the main factors involved in property acquisition including procedures, time, and costs.

Discussion:

Table 6 shows the present availability of the ten (10) sites NOAA is considering. Two of the ten sites are currently owned and partially occupied by NOAA. Sand Point with its 114 acres has sufficient area to accept a NOAA consolidated development. No property acquisition or legislative approval need be obtained before development could proceed. NOAA also owns 22.5 acres at Manchester. This area, in itself, is only marginally sufficient for consolidated development. A minimum of approximately 10 additional acres are needed to make this a more acceptable site capable of accommodating limited expansion. There may be an opportunity to acquire additional federal lands by transfer of adjacent properties from the Environmental Protection Agency. If this was unsuccessful, then acquiring adjacent private properties would be necessary.

The other eight sites under consideration are not owned by the federal government and would need to be acquired by either lease or fee simple (purchase). The basic procedures for accomplishing this are summarized below.⁽¹⁾

Many of the same procedures and time constraints are involved in either lease acquisition, or purchase acquisition. After clearly establishing a need, each proposal requires investigation of all potential sites leading to an identification of the preferred location. Government appraisals are necessary and a prospectus or a development plan is prepared and submitted to Congress. It is estimated that Congressional approval normally requires approximately 18 months lead time after the prospectus or plan has been submitted.

Acquisition By Purchase:

Acquisition of any interest is based on fair market value and/or the lowest offer obtainable. Negotiations to achieve an equitable agreement for both parties are often long and tedious. Favorable conditions would result in consummating a sale and transfer of title without complication. Estimated time needed to reach this point is on the order of two years after the prospectus is submitted to Congress. If, however, the land owner expresses an unwillingness to negotiate in good faith and the government remains firm in its intent to purchase the property, then the federal process of condemnation (eminent domain) can be pursued. Condemnation involves the following procedures.⁽²⁾ If NOAA were to conclude that further attempts

(1) Information obtained from Mr. Del Lindsey, Chief, Acquisition Branch, GSA, Region 10.

(2) Private communication with William Rubridge. U.S. Attorney's Office, Seattle Federal Building.

SITE AVAILABILITY

| | NOAA OWNED | LEASE BOTH PROPERTY AND FACILITIES | LEASE PROPERTY ONLY | PURCHASE PROPERTY |
|-------------------------------|------------|------------------------------------|---------------------|-------------------|
| <u>Consolidated Sites</u> | | | | |
| EVERETT | | X | | X |
| SOUTH MUKILTEO | | | | X |
| KENMORE ⁽¹⁾ | | | X | |
| SAND POINT | X | | | |
| NORTH HYLEBOS | | | | X |
| SOUTH HYLEBOS | | | | X |
| MANCHESTER | X | | | |
| <u>Split Sites</u> | | | | |
| LAKE UNION/PMC ⁽²⁾ | | X | | X |
| LAKE UNION/DRYDOCK | | X | | X |
| SALMON BAY | | | X | |

(1) This property may become available for purchase at some future date.

(2) Part-owner of property expressed a feeling that a sale could be negotiated. (Private communication with Mr. Pete Haug, June 20, 1978)

TABLE 6

to negotiate equitable terms would, most likely, fail, NOAA must file a Declaration of Taking Act with the Department of Justice with a check in the amount of the government's appraisal. Justice then prepares an Order of Possession, transfers title to the government, and notifies the owner of such action. Notice to vacate is given to any users located on the property. Once vacated, the property would be available for the government's use.

The property owner has two recourses in a condemnation procedure. The owner can either contest the government's action as being arbitrary and capricious, which is rarely done, or contest the appraised value. Subsequent court trials and jury decisions have, on occasion, awarded the owner a property payment higher than the government's estimate. In addition to actual property costs, the government also is responsible for relocation assistance payments under the Federal Relocation Act.

To generalize, condemnation is an unpopular procedure in the public's eye even though an argument can be made that it allows the government to operate more economically and provide better services. Condemnation is expensive and involves some degree of risks in terms of final settlement costs. Condemnation could add about one year to the acquisition process.

Because of these factors, NOAA has concluded that condemnation should be avoided if other reasonable alternatives are available. Exclusion of condemnation was listed as factor in the Program Criteria used by URS to screen potential alternative sites.

Acquisition By Lease:

Two properties at Kenmore and Salmon Bay are available for lease only. In both cases, the owners' representative has indicated an inability to construct and subsequently lease facilities designed to NOAA needs. All but 3.5 acres and 350 feet of waterfront of the 12-acre site at Salmon Bay is presently tied up in leases or under demolition. The owners of this property are currently studying their land use plans and are not anxious at this time to commit their land in long-term lease contracts. Their only interest is to lease 3.5 acres to a light-industrial use for a three-year term. In about five years they may be more receptive to the government acquiring the full 12 acres by a long-term lease.

Representatives of the Kenmore site felt it would be virtually impossible to secure the necessary capital to construct a consolidated NOAA facility. Although they are only interested in a property lease at this time, they did indicate a possibility of negotiating a sale with the government in several years.

Under the Economy Act (Title 40 USC Sec.278A), the Federal government is prohibited from making substantial modifications to non-Federally owned property. It states that the cost of such modifications cannot exceed 25% of the net first year's rent under the lease terms. A more recent Comptroller General's ruling stated that no improvements can be made on property not owned outright by the government or under its complete control. The Comptroller stated that no ground lease,

regardless of its terms, is to be construed as complete control. If NOAA were intent in its desire to construct at either one of these two locations, then condemnation and subsequent taking of land would be required.

A representative of the Port of Everett has indicated a willingness to either sell the property under consideration or construct and lease both property and facilities. The Port believes it would have the bonding capability to secure the necessary capital and be able to amortize the cost over the term of the lease. The Port decision to enter into such an agreement rests with the Port Commissioners.

It should be noted that the Federal Property and Administrative Services Act (40 USC 486(d)) limits the General Services Administrations long-term lease authority to 20 years, and it is questionable whether an Everett facility could be acquired without a longer firm lease term. Authority to do this would require special enabling legislation.

Representatives of both Lake Union sites indicated a willingness to consider proposals to construct and lease back waterfront facilities to NOAA, as well as to negotiate a sale.

The decision whether to lease or purchase real property can be based primarily on a comparative cost analysis following the provisions of OMB Circular No. A-104. This analysis is required in all prospectuses, proposed legislation, and budget justifications submitted to the OMB and the Congress. Costs in the comparison include,

Purchase alternative: design and construction management
construction
property acquisition
operations and maintenance (1)

Lease alternative: lease payments
operations and maintenance (if not included in lease payments)

Acquisition Cost:

The General Services Administration was asked to provide estimated acquisition costs for the eight sites not presently owned by NOAA. (The estimated costs are not to be considered official government property appraisals). In cases where the property is not available for sale, then information was provided on lease costs.(1)

| | |
|----------------|---|
| Everett: | Lease - lease of property only up to 50 years at \$234,000 per annum |
| | Purchase - \$2.6M |
| South Mukilteo | Purchase - \$1.3M |

(1) Operations and maintenance costs may be excluded if they are estimated to be the same for either alternative.

Kenmore: Lease - available for a 25 to 50 year lease at
\$250,000 per annum

Salmon Bay: Information not available

Lake Union/PMC: Lease - property and facilities currently leased
by GSA at \$176,400 per annum
Purchase - \$3.1M

Lake Union/
Drydock: Lease - Information not available
Purchase - \$3.4M

North Hylebos: Purchase - \$2.07M

South Hylebos: Purchase - Asking price of property is \$3.0M

(1) Information provided by Louis Fiala, Appraisal Staff, Public Buildings
Services, GSA

Summary:

Ranking the various alternative sites in the economic term of acquisition cost should include equally important factors of time and procedure required for acquisition. It can be stated generally that it is most economical (in terms of time and expense) to construct on property currently owned by the federal government and that such sites would be preferable to others. Further, that as expressed in this section, purchase of property, in fee simple, would be a better method of acquiring land than leasing, provided it excludes condemnation. Owning property provides greater flexibility in deciding how the property is used and for later modifications, expansions, etc. Also, there is no concern for such possible constraints as lease terms, renewability, and periodic renegotiations.

Table 7 ranks the sites with factors of cost, time, and procedure. It assumes those sites identified as available for purchase would not require condemnation and that with all other factors being equal, purchase of property and construction is preferable to leasing both facilities and property.

PROPERTY ACQUISITION

| <u>Alternative Sites</u> | Cost | Procedure | Time | Remarks |
|--------------------------|-------------|--------------|---------|--|
| Sand Point | Owned | - | 0 | |
| Manchester | Owned | - | 1 year | Requires PDP(1), and purchase of add'l. property for any expansion |
| South Mukilteo | \$1,300,000 | Purchase | 2 years | |
| North Hylebos | \$2,070,000 | Purchase | 2 years | |
| Everett | \$2,600,000 | Purchase | 2 years | |
| South Hylebos | \$3,000,000 | Purchase | 2 years | |
| Lake Union/PMC | \$3,100,000 | Purchase | 2 years | If current lease is replaced by purchase |
| Lake Union/Drydock | \$3,400,000 | Purchase | 2 years | |
| Kenmore | - | Condemnation | 3 years | |
| Salmon Bay | - | Condemnation | 3 years | Property currently under lease to others. |

(1) PDP - Property Development Plan requiring Congressional review and approval.

TABLE 7

8.2 Employee Relocation/Loss of Employees

Relocation of employees and the potential loss of employees are important in that their occurrence resulting from a new NOAA development would represent a significant cost to the government. The cost of relocating an employee outside Seattle city limits could range from approximately \$600 for a single employee renting an apartment (shipment of household goods plus \$100 miscellaneous) to approximately \$9000 for an employee with dependents owning a home (real estate expenses, shipment of household goods plus \$200 miscellaneous). Total relocation costs per site could be quantified only by knowing such information as amount of household goods, real estate values, number of dependents, etc., for each employee eligible for reimbursement. A far more difficult economic consideration to quantify is the loss of employees. Placing a dollar value on this would involve such elements as employee worth, recruitment, training, loss of production, etc. Such a loss of human resources would not only affect NOAA, but also affect local unemployment figures and place previously employed personnel into the competitive labor market. A sampling of employees was made to determine a relative percentage of total employees who would be expected to resign from their positions or be relocated at government expense.

Methodology:

Deductive reasoning indicates that the need to relocate employees at government expense and the potential of losing employees who choose to resign rather than relocate can be directly related to distance between the employee's office and residence. To test this reasoning, a sampling of present employees whose offices are part of the development project were asked for each alternate site whether or not they would continue to work for NOAA and be entitled to relocation reimbursement. The sampling was chosen from permanent General Service employees (part-time and full-time) listed on the NOAA Personnel roster, distributed among three GS level groupings (GS/4 and below GS/5-10, and GS/11 and above). Only permanent employees were questioned, as other than permanent employees would not be eligible for reimbursement of relocation expenses. Sixty employees were given questionnaires to complete. Of these, 40 were answered and returned, representing approximately 5% of the total number of permanent employees (approximately 860) who would be affected by the NOAA development. Percentages were calculated on those submitted responses. A more definitive or statistically significant sampling could be obtained by considering other relevant factors such as whether or not employee is the head of the household, age, sex, number of children in school, location of present residence, and position held by employee. No effort was made to query permanent shipboard personnel (Wage Grade) or NOAA Corps officers, however, they would be eligible for similar reimbursement of relocation expenses and have been included in the total number of permanent employees.

Results:

The results of the questionnaire are shown in Table 8. As indicated, the site having the greatest impact in terms of both relocation and loss of employees would be Manchester. The sites ranked in order from least impact to greatest impact would be:

Sand Point
Kenmore
So. Mukilteo
Everett
North Hylebos
South Hylebos
Manchester

It was noted also that none of those employees completing the questionnaire would either resign or expect to be relocated for any of the four split sites under consideration.

Although the sampling is not statistically significant due to the limited number of respondents, it does support the reasoning that as site consideration moves away from present employee residences, there is an increasing chance of having to relocate and potentially losing employees.

| Consolidated Sites | # of question-naire responses indicating a desire to move | | | Projected # of employees represented by this percentage | | |
|--------------------|---|------------------|---|---|------------------|---|
| | # of question-naire responses indicating a desire to move | % of Respondents | Projected # of employees represented by this percentage | # of question-naire responses indicating resignation | % of Respondents | Projected # of employees represented by this percentage |
| 1. S. Mukilteo | 7 | 18% | 155 | 17 | 43% | 370 |
| 2. Kenmore | - | - | - | 10 | 25% | 215 |
| 3. Sand Point | - | - | - | 1 | 2% | 17 |
| 4. Manchester | 14 | 35% | 301 | 25 | 63% | 542 |
| 5. North Hylebos | 11 | 28% | 241 | 23 | 58% | 499 |
| 6. South Hylebos | 11 | 28% | 241 | 24 | 60% | 516 |
| 7. Everett | 11 | 28% | 241 | 15 | 38% | 327 |

NOTES: 1. Percentages based on total number of completed questionnaires (40).

2. Present total permanent employees to be affected by relocation is 860.

8.3 Relocation of Government Property

In September 1976, a study was conducted by the NOAA Travel and Transportation Branch (1) to estimate costs for relocation of government equipment to Sand Point. Based on an estimate of the weight, time, and special equipment needed to relocate all government property, a total of \$663,772 (then-year dollars) was estimated for relocation. (This amount included relocating the Pacific Marine Center from Lake Union to Sand Point.) Assuming that the same amount of equipment would be relocated today, the cost in FY-78 would be \$738,656 (escalated at 8% per annum).

Two local transportation firms were contacted by NASO Administrative Operations Division to obtain information on how moving costs are determined. Varying responses were received but generally local or intercity moves are charged by time and labor costs plus any required special equipment. Intercity moves are defined as being within a 25-mile radius or within a metropolitan area. Costs for these types of moves are determined on an hourly basis (personnel and equipment). When the distance exceeds what is considered a local or intercity move, an intrastate tariff rate by weight and distance (dollars/100 lbs/mile) is used.

It was noted that most of the sites being considered were within the 25-mile radius of current NOAA offices and would be considered local moves at fairly comparable costs. The Everett and South Mukilteo sites (located 27 miles from Seattle) are very close to being within the 25-mile limit and depending upon bids and moving firms could be considered as local moves. The two Tacoma sites are approximately 36 miles from Seattle and would represent an 8 to 10% increase in moving costs. The Manchester site would represent approximately 15 to 20% increase in cost at 60 to 65 miles driving distance from Seattle.

Under the split-site concept, relocation of property to Sand Point and the Pacific Marine Center waterfront location would be at cost comparable to moving all property to a single site since the waterfront sites are located within the Seattle metropolitan area. However, an exception would occur if the present PMC location on Lake Union was selected as the alternative split site. This action would result in the lowest overall relocation costs as it does not require PMC to be moved.

(1) "Seattle Relocation Report" by Charles Ratcliffe, Chief
Travel and Transportation Branch, 1976

Summary:

In terms of cost for relocating government property, the alternative sites are rated as follows:

Consolidated Sites

Split Sites

Least Cost: Sand Point
Kenmore
South Mukilteo
Everett

Higher Cost: North Hylebos
South Hylebos

Highest Cost: Manchester

Least Cost: Lake Union-PMC

Higher Cost: Lake Union-Drydock
Kenmore
Salmon Bay

8.4 Facility Maintenance and Operations (M & O)

Because detailed facility designs required to develop detailed M & O cost estimates for each of the sites were not available, the General Services Administration was requested to provide general information on M & O cost contributing factors based on their experience in buildings and facilities management to allow a relative comparison between sites.

Discussion:

GSA M & O cost estimates are based on standard rate tables for services and average cost of utilities by geographical areas. Because all the sites being considered are close geographically and would have the same occupiable area, the M & O costs for the buildings themselves would be fairly comparable. Likewise, labor rates in the Tacoma and Manchester areas are slightly higher than the Seattle area but, again, would not represent a significant cost increase. The only M & O factor which was identified as significantly cost increasing is the grounds maintenance of a campus-like setting as compared to a high-rise configuration. (The Kenmore, Manchester, and the South Hylebos sites would be suitable only for high-rise construction. The combination of Sand Point and each one of the split-site locations and the consolidated alternatives of Sand Point, Everett, North Hylebos, and South Mukilteo would all be suitable for multiple buildings, campus-like construction.) However, because detailed information on design for all sites is not available, which would identify such features as how much space the buildings and parking areas would occupy, what type of landscaping is anticipated, etc., valid grounds maintenance cost estimates for each site cannot be made.

In 1976 GSA performed an analysis and projections of M & O costs for the proposed Sand Point site. It found that the cost for grounds maintenance (landscaped, open, and paved areas) represented approximately \$263,000 of the total M & O costs based on a ground area of 104 acres (escalated to FY-78). Alternative sites having approximately equal ground area also would have approximately equal grounds maintenance costs. Since grounds maintenance was the only M & O factor which was identified as significantly cost increasing, it can be stated that nearly equal-sized sites would have comparable M & O costs. These sites include Sand Point, Everett, South Mukilteo, and the split-sites located on Lake Union and Salmon Bay.

The 69 acre North Hylebos site would have a somewhat lower M & O cost than Sand Point. The consolidated sites of Kenmore, South Hylebos, and Manchester would be smaller while the split site of Kenmore (in combination with Sand Point) would be the largest.

Summary:

Consolidated Sites

Least Cost: Kenmore (36 acres)
South Hylebos (28 acres)
Manchester (22 acres)

Higher Cost: North Hylebos (69 acres)

Highest Cost: Sand Point (114 acres)
Everett (105 acres)
South Mukilteo (103 acres)

Split Sites

Least Cost: Lake Union-Drydock and Sand Point (129 acres)
Salmon Bay and Sand Point (126 acres)
Lake Union-PMC and Sand Point (117 acres)

Higher Cost: Kenmore and Sand Point (150 acres)

APPENDIX 1

Summary of Significant Site Qualities

The following information is a summary of the significant site qualities that have been identified and discussed in sections of this report.

Consolidated Sites

Everett

This 105 acre site, owned by the Port of Everett, is available for sale at a cost of \$2.6M. Approximately 85% of site is underwater requiring nearly 4,000,000 cubic yards of fill. Ship access and vessel support activity is good to excellent. It is located in a primarily industrial area but by virtue of its frontage on Possession Sound, it does offer pleasant westward views. Being 27 miles from the University of Washington and Montlake laboratories will adversely impact institutional relationship and NOAA user groups. This distance also increases the chance of having to relocate some employees at government expense and possibly losing others. Development will require further environmental assessment and a Corps of Engineers permit.

South Mukilteo

At this 103 acre site there is no convenient access to the water because of the Burlington Northern railroad tracks paralleling the shore. Removal of some 800,000 square feet of bottom material and construction of an offshore break-water would be required for NOAA vessels. Utilities and services are available only at some distance away. The site is in a relatively unspoiled condition and would be very costly to develop. The rolling upland terrain and westward view combine to make the site aesthetically pleasing. The site is being offered for purchase at \$1.3M by Chevron Corporation. Being 21 miles from central Seattle, it will have less of an effect on the relationships between the University of Washington and NOAA user groups than the Everett site. Likewise, there is less of an impact upon relocation/loss of employees. Development would require further environmental assessment and Corps of Engineers permits for dredging and over-water construction.

Kenmore

This 36 acre site is available for lease only. Acquisition by the government would require exercising eminent domain. About 30% of the area would be dedicated to pier excavation leaving only a marginal amount of property available for upland development. An approach channel and turning basin would require 1,200,000 square feet of shallow lake bottom to be dredged. Extensive maintenance

dredging would be required because of the Sammamish River outfall. There would also be a conflicting use of an established sea plane landing and take-off area, small boat marina, and commercial use. Only 9 miles from the University and Montlake laboratories, the site would have little effect on working relationships and little chance of relocation/loss of employees.

Sand Point

Presently owned and partially occupied by NOAA, this site on Lake Washington offers considerable flexibility for development. About 550,000 square feet of lake bottom would need to be removed but could be used to develop land contours compatible with an adjacent city park. Vessel access, while being only fair, in comparison to some other identified sites, is better than Kenmore. The site would maximize University, Montlake, and user group relationships and result in negligible relocation/loss of employees. No permits or additional environmental assessment would be necessary before development could proceed.

North Hylebos

This 69 acre site is presently underwater and will require approximately 800,000 cubic yards of fill. It is being offered for purchase by the Port of Tacoma at an estimated value of \$2.07M. Dredging would not be required as the property is located along a 30 feet depth commercial waterway. Ship access and vessel support facilities would be good to excellent. The area surrounding the site is heavy industrial on three sides and there is no pleasant distant view. The site would have considerable adverse effects on relationships with user groups, Montlake laboratories and the University and there is an increased chance of relocation and loss of employees. Although this area is generally not environmentally sensitive, additional assessment studies would be required before development could proceed. Corps of Engineers permits for filling have not been acquired by the Port of Tacoma.

South Hylebos

This site with about 28 acres would be marginally small for NOAA development even before 10 acres are dedicated to excavation for vessel slips. The property is separated into two parcels by a railway and road, neither of which could be closed. It is offered for sale by Transpacific Realty at \$3.0M. The surrounding area is heavily industrial, similar to the North Hylebos site. Vessel access would be adversely affected as it requires passing through one drawbridge.

Manchester

This 22.5 acre site is currently owned and occupied by the NOAA National Marine Fisheries Service. Additional adjacent lands would have to be acquired to accommodate NOAA development. A great amount of dredging, very long piers, or a combination of both would be required for the vessel activity. The site is rated least desirable in terms of ship activities. Utilities and services are not available and construction of a sewage treatment plant would be necessary. The site is relatively unspoiled. As the most distant site from Seattle, it represents the greatest impact on proximity relationships and potential relocation/loss of employees. Dredging and overwater construction permits would be required as well as a further environmental assessment.

Split Sites

Kenmore

There would be ample space at this site to construct vessel berths and support facilities. Other advantages/disadvantages as discussed above in consolidated sites section would apply.

Lake Union-PMC

The NOAA Pacific Marine Center is presently occupying this site under a GSA lease with the Elmer F. Edwards Company. It is available for either continued leasing (present lease expires in 1983) or purchase at an estimated market value of \$3.1M. To meet GSA guidelines of a 40-year life standard, the present piers would need to be demolished and replaced with new concrete piers and piles. However, it may be desirable for NOAA to survey the pier's present condition and decide whether new construction would be warranted. Continued operation at this Lake Union site would be possible provided additional office and storage space is made available at the upland facility location. Problems associated with restricted parking and contractor work space would remain however. Operation under present conditions would not require any permits or further environmental assessment. Vessel access is good.

Lake Union-Drydock

Located immediately south of the present PMC site is a drydock facility owned by the Lake Union Drydock Company. It is available for purchase at a value of \$3.4M. To develop this property, all present improvements would need to be demolished and new facilities constructed entirely on piles. The site has a narrow 700 foot frontage on Lake Union. Vessel activities are identical to the present PMC site. Demolition and new construction would require Corps of Engineers permits and an environmental assessment study.

Salmon Bay

Only 3.5 of the 12 acre site is presently available for short-term leasing. Acquisition by the government may require condemnation. The owners have not expressed an interest in either selling or long-term leasing of the property at this time. The full 12 acre site is flat and flexible for facility layout. Located just inside the Hiram Chittendon Locks near the Ballard Bridge on the Lake Washington Ship Canal, it is excellent in terms of vessel access. Development would require Corps of Engineers permits and further environmental studies.