DRAFT ENVIRONMENTAL IMPACT STATEMENT

FOR

PORT LUDLOW DEVELOPMENT PROGRAM

JEFFERSON COUNTY

Prepared for the Review and Comments of Citizens, Groups and Governmental Agencies

In Compliance With
The Washington State Environmental Policy Act of 1971
Revised Code of Washington Chapter 42.31C
Revised SEPA Guidelines, Effective April 4, 1984
Chapter 197-11, Washington Administrative Code, and
Jefferson County SEPA Implementing Ordinance

Date of Issue: October 26, 1992
Comments Due: November 24, 1992
FACT SHEET

The Draft Environmental Impact Statement for the Port Ludlow development program has been prepared pursuant to provisions set forth in WAC 197-11. Jefferson County is requesting review and comment from local, State and Federal agencies, any affected tribes and the general public.

NATURE AND LOCATION OF PROPOSAL

The proposed program analyzed in this document is the proponent's overall plan for phased development of the Port Ludlow community over the next ten years. It includes the following elements: 700 residential units, 47,500 square feet of additional commercial space, a 36-room Inn, expansion of the existing marina by 100 slips, construction of a new golf course clubhouse, approximately 815 acres of open space and recreation areas, and supporting infrastructure including roads and utilities.

The program site encompasses 1,200 acres of primarily undeveloped land in the Port Ludlow community.

PROPOSED DATE OF IMPLEMENTATION

Construction would begin in 1993. Buildout would occur over a minimum 10-year period.

LEAD AGENCY

Jefferson County Board of County Commissioners

RESPONSIBLE OFFICIAL

Jefferson County Board of County Commissioners

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PERMITS AND LICENSES REQUIRED

Jefferson County

Subdivision Approval
Road and Stormwater System Designs
Permits to Work in County Right-of-Way
Building Permits (Residential, Commercial)
Shoreline Management Substantial Development Permit

Other Permits (as applicable)

Section 10 Permit (U.S. Army Corps of Engineers)
Hydraulic Project Approval (State Fisheries or Wildlife)
Sanitary Sewer System Design (State Department of Ecology)
Domestic Water System Design (State Department of Health)

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DATE OF ISSUE OF DRAFT EIS: October 16, 1992

DATE COMMENTS ARE DUE: November 24, 1992

Submit written comments to:

Jefferson County Board of County Commissioners
P.O. Box 1220
Port Townsend, WA 98368

LOCATION OF BACKGROUND DATA

Background data for this EIS is available for review at the following locations:

Jefferson County Planning & Building Dept. The Ferris Company
County Courthouse 10655 NE 4th, Suite 506
P.O. Box 1220 Bellevue, WA 98004
Port Townsend, WA 98368

COST TO THE PUBLIC FOR COPY OF DRAFT EIS

Copies of the Draft EIS from the first printing of the document are available to the public at no cost. If additional printing is required, the cost will be based on the actual cost of printing.
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SUMMARY

INTRODUCTION

This chapter provides a summary of the proposed action, its alternatives, their environmental impacts and mitigating measures. Chapter 2 contains a more detailed description of the proposal and the alternatives. Chapter 3 provides a complete identification of the existing conditions, the anticipated environmental impacts due to implementation of the proposal or its alternatives, and mitigating measures.

SPONSOR'S STATED OBJECTIVES

The sponsor's objectives for the Port Ludlow Overall Development Program are to:

0 Optimize capacity and amortize costs of major infrastructure components such as the secondary sewage treatment plant, water system, recreation center, marina and golf course;

0 Develop real estate products which meet a market characterized by predominantly active adults, age 50+, retired and semi-retired, and of moderate to upper-income levels;

0 Develop property in concert with natural site characteristics such as topography, soils, views, wetlands and critical wildlife habitat;

0 Respond to objectives of the Growth Management Act. Develop in accordance with the land use goals, policies and standards of Jefferson County including, but not limited to, those articulated in the Jefferson County Comprehensive Plan.

PROPOSED ACTION

The proposed action is the proponent's overall plan for phased development of the Port Ludlow community over the next ten years. It includes the following elements on a 1,200-acre site: 700 residential units, 47,500 square feet of additional commercial space, a 36-room Inn, expansion of the existing marina by 100 slips, construction of a new golf course clubhouse, development of recreational trails, and supporting infrastructure including roads and utilities. Approximately 815 acres would remain as permanent open space, including environmentally-sensitive areas such as steep slopes, stream corridors, saltwater shorelines, wetlands, and wildlife habitat.
Residential development would include 531 single-family residences and 169 multifamily residences, with a gross residential density of approximately 0.6 units per acre. Single-family lots would range in size from 6,000 square feet to 10 acres (435,600 square feet).

Approximately 45,000 square feet of additional commercial space would be added to the existing retail center at the Oak Bay Road/Paradise Bay Road intersection. Future tenants could include general retail, medical offices, cafe, grocery, and hardware stores. Approximately 2,500 square feet of retail space would be developed in conjunction with the development of the Inn at Port Ludlow; uses could include a souvenir shop and a bakery.

ALTERNATIVES

Two alternatives to the proposal are evaluated in this Draft EIS. They include:

Alternative 1: No Action

Under this alternative, the site would remain in its existing state. No further development would be proposed at this time, but future proposals would be anticipated. In the interim, commercial logging could occur on portions of the site, depending on the suitability of the wood for harvesting. The amount and timing of such potential logging is unknown at this time. Harvesting practices would be consistent with Forest Practices Act rules and regulations.

Alternative 2: Reduced Development Area

Under this alternative, residential development would occur on fewer total acres, 853 compared with 1,200 acres under the proposal. The same number and type of residential units and the same amount and type of commercial development would be developed as under the proposed action.
SUMMARY OF ENVIRONMENTAL IMPACTS, MITIGATING MEASURES, AND SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

EARTH

ENVIRONMENTAL IMPACTS

- Approximately 590,200 cubic yards of grading would occur on site. Most grading would take place in single-family development areas during home site preparation and neighborhood street construction.

- Soils at building sites would be subject to new loads. The presence of moderately compressible soils in certain areas of the site could result in settlement or compression problems unless proper engineering and design technologies are applied.

- Soils would be exposed and compacted during site preparation, grading and construction with the potential for increased runoff and soil erosion into surface waters.

- Based on USLE calculations, potential soil losses without use of erosion control techniques were estimated to range from approximately 0.28 cubic yards per acre to 2.84 cubic yards per acre during the construction phase for the various development areas. Annual soil losses from the entire site would range from 377 cubic yards per year to 1,240 cubic yards per year during the construction years of 1993 through 2001. Potential soil losses following construction would stabilize at 374 cubic yards per year, because area in exposed soils would be reduced. Actual sediment yield to receiving waters, such as Ludlow Creek, other on-site drainages, on-site wetlands and Ludlow Bay would be much less as a result of erosion control techniques employed during construction and post-construction stormwater management facilities (see the WATER section).

- Expansion of the proposed marina would require dredging of an approximately 1 acre area near the eastern shore of the existing marina. Dredging operations would significantly increase turbidity in the area. The turbidity would be temporary, lasting approximately 30 to 45 days, and would subside when dredging is complete.

ALTERNATIVES

Alternative 1: No Action

- Under this alternative, no topographic alterations, soil disturbances or dredging activities would occur. Erosion hazard would be equivalent to existing conditions. At some time in the future, however, it is reasonable to assume that further logging and
development would occur on the site. Future development could lead to impacts on soils such as erosion.

**Alternative 2: Reduced Development Area**

- Alternative 2 would require clearing of approximately 290 acres or 24 percent of the site. Approximately 459,100 yards of soil would be graded under this alternative. Small-volume timber harvest could occur in the 347-acre area not proposed for development during the 10-year development program time-frame. This harvesting could result in some soil erosion and sedimentation impacts. In general, earth-related impacts under this alternative, such as alteration of existing topography and erosion/sedimentation impacts to on and off-site drainages, would be less than under the proposal. While not directly calculated, soil loss under this alternative would relate directly to the reduced development area (approximately 29 percent less).

**MITIGATING MEASURES**

- Erosion and sedimentation control plans would be prepared following development of final site design and construction plans for the individual development areas. Erosion and sedimentation control features would be designed in accordance with accepted best management practices and subject to review and approval by Jefferson County Department of Public Works. Preliminary locations and sizes of water quality ponds have been established (see Appendix D). Locations and sizes would be refined following final site design.

- Erosion and sedimentation control measures would be designed and installed to:
  - control dust and mud and stabilize the construction area, including entrances and roadways;
  - prevent surface water runoff from entering areas to be cleared and graded; slope protection could include piped slope drains, hydrosoneed, subsurface drains, surface roughening, level spreader, interceptor dike/berm and swale, and gradient terraces; drainage protection could include check dams, outlet protection, rip-rap and stream bank stabilization; and
  - provide sediment control prior to off-site discharge, and could include filter (silt) fences, gravel filter berm and storm drain inlet protection.

- Soil disturbance resulting from major grading activities would be minimized during the wet season (November through March) to reduce erosion and sedimentation potential.
A construction phasing plan would be developed to minimize at any one time the amount of disturbed area.

Native vegetation would be maintained on undeveloped areas.

Revegetation would be completed as soon as possible after construction to reduce exposed or erodible soils.

A maintenance program would be implemented during construction to ensure the ongoing function of the erosion/sedimentation control system. Maintenance requirements and frequency vary with each control measure.

A permanent stormwater management system would be installed for all development areas. These would include natural and manmade features to control erosion and sedimentation, such as: catch basins, closed piping, oil/water separators, biofiltration, and detention ponds.

**SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS**

Some fine sediment could be transported into Ludlow Creek, other on-site drainages, and Port Ludlow Bay during construction despite implementation of mitigating measures, resulting in some temporary impacts to water quality. This impact would diminish significantly following construction. See the WATER section for details on the impacts of sedimentation to water resources.
WATER

ENVIRONMENTAL IMPACTS

- Development because of the proposed program would increase impervious surfaces (i.e., decrease area available for stormwater absorption). A total of approximately 10 percent of the site would be covered in impervious surfaces at full buildout.

- Without implementation of mitigating measures, higher peak flows following development could result in some localized flooding in on-site and downstream receiving waters.

- Increased peak flows also resulting from increased impervious surfaces could cause erosion and sedimentation in on-site and downstream receiving waters.

- Soils would be exposed and compacted during site preparation and construction with the potential for increased runoff and sediment erosion into surface waters. Sediment loading to receiving waters (i.e., Ludlow Creek, other on-site drainages, and Port Ludlow Bay) would range from approximately 41 cubic yards per year to 69 cubic yards per year during construction versus the approximately 42 cubic yards per year under existing conditions and 42 cubic yards per year following site stabilization. Sedimentation and other potential water quality impacts to Shine Creek and Squamish Harbor would be minimal due primarily to the greater distance of these waters from the site.

- Following development, soil sediment; oil and grease; metals; nutrients in fertilizers, herbicides and pesticides; and fecal coliforms would enter stormwater runoff and ultimately surface waters.

- Concentrations of pollutants in runoff would be highest during construction. Stormwater pollutant loadings in Ludlow Creek during a typical storm event would result in fecal coliform levels which exceed Class AA fresh water criteria during the construction phase and following development. However, fecal coliform levels also exceed the criteria under existing conditions. All other constituents would meet the Class AA fresh water criteria.

- Water quality in the inner portion of Port Ludlow Bay during and following construction would meet the Class AA (Extraordinary) marine water criteria.

- Overall impacts to water quality and fisheries resources in Ludlow Creek and Port Ludlow Bay would be minimal due to the dilution factors in those waters.
Increased boater use of the marina resulting from the proposed expansion could increase fecal coliform levels in both water and shellfish in Port Ludlow Bay. State DOE water standards for fecal coliforms could be exceeded during high use weekends, as is presently the case. However, over the course of the recreational season, DOE standards would be met.

Fuel dock usage, and correspondingly fuel spillage, is expected to increase by approximately 35 percent due to the proposed marina expansion. This spillage and surfactants used to disperse spilled oil could adversely impact localized fisheries resources. However, no known fish kills have been reported in the vicinity with present spillage and surfactant use.

Dredging which could be required for marina expansion, would temporarily increase turbidity in the vicinity. However, no major impacts to water quality or fisheries resources are anticipated because of local water circulation and because construction activity could temporarily displace fish from the marina area.

The capacity of the existing known aquifers is adequate for yearly and peak quarterly use for development of the proposal and other unbuilt Port Ludlow development. A short-term deficit of 53 gpm would result for the peak day use at buildout of the program.

Minimal impacts to the other major and minor wells in the South Aquifer would result from the added demand on groundwater resources from the proposal and other unbuilt Port Ludlow projects.

**ALTERNATIVES**

**Alternative 1: No Action**

Under the No-Action Alternative, no on-site stormwater control improvements or overall development would occur immediately. Lack of grading and exposed soils on the site would result in no significant additional loadings of suspended solids, to streams or marine waters. Concentrations and loadings of metals, nutrients, fecal coliforms and other pollutants would remain at existing levels.

At some time in the future, further logging and development could occur on portions of the site which could result in potential erosion and sedimentation impacts to receiving waters.
Alternative 2: Reduced Development Area

- Under Alternative 2, approximately 7 percent of the site would be covered in impervious surfaces versus the 10 percent coverage under the proposal. Potential water quantity impacts would be reduced slightly as a result of less area in impervious surfaces.

- Approximately 110 fewer acres of clearing and 41,100 cubic yards less grading would be required, resulting in less erosion and sedimentation impacts to receiving waters. It is estimated that soil loss and potential for sedimentation would be reduced by approximately 29 percent.

- Water quality impacts from marina expansion would be the same as those under the proposal.

- Impacts to groundwater resources would be similar to those under the proposal, since the number of multifamily and single-family units and area in commercial uses would be the same.

MITIGATING MEASURES

- Temporary erosion and sedimentation control plans would be prepared following development of final site design and construction phasing plans for the individual development areas. Temporary erosion and sedimentation control features would be designed in accordance with accepted best management practices (BMPs) and could be made subject to review and approval by Jefferson County Public Works Department (see the EARTH section for examples of these features). Preliminary locations and sizing of ponds have been established (see Appendix D). The sizes and locations would be refined following final site design during specific design of individual development projects.

- A qualified (i.e., trained, experienced individual would be accountable for correctly installing BMP devices; making sure BMP methods and maintenance schedules are followed; and monitoring and evaluating the effectiveness of practices. Modifications to the devices or methods would be made as necessary if monitoring reveals that practices are not effective. A third party would periodically inspect the erosion control system.

- Underwater silt screens would be installed on the perimeter of the marina dredging area to reduce the temporary sedimentation impacts to this area of Port Ludlow Bay.

- Spoils from dredging for the marina expansion would be analyzed to determine whether on or off-site disposal is appropriate.
A permanent stormwater drainage system would be developed to control stormwater runoff in accordance with accepted best management practices. This system would be subject to review and approval by Jefferson County Department of Public Works. The system would include detention ponds sized in accordance with applicable, adopted Department of Fisheries, Department of Ecology, and Jefferson County standards.

The permanent stormwater drainage system would include a number of water quality control features, such as oil/water separators, biofiltration ponds and grass-lined swales.

The drainage system would largely maintain water drainage routes in on-site sub-basins to minimize hydrologic impacts to wetlands and streams.

An expansion of the current water quality monitoring and contingency plan would be developed with Jefferson County prior to issuance of the Final EIS on the development program. This plan would be instituted during and following construction to insure the performance of water quality control features and provide for upgrading as necessary. The program would include monitoring at appropriate background stations (i.e., Ludlow Creek and the intermittent streams on site and inner Port Ludlow Bay). On-going monitoring would include analysis of effluent from the sewage treatment plan, evaluation of the proposed BMPs and testing of shellfish and sediment. Ambient monitoring and storm event monitoring would be conducted.

Water quality monitoring data obtained during construction would be submitted to the County on a quarterly basis; monitoring data obtained following construction would be submitted annually.

Erosion control structures would be inspected at least once per week, and sediment removed from sedimentation ponds following heavy storms.

Withdrawal of groundwater from the North Aquifer could be reduced from its present average rate of 85 gpm to 65 gpm to address declining water levels. Reduction of withdrawal from the North Aquifer could be offset by increased production from the South Aquifer via an inter-tie which is already in place.

The short-term groundwater capacity deficit of 53 gpm resulting during peak day use at buildout of the program could be eliminated by: 1 - use of Well 12 in the South Valley Aquifer; 2 - drilling of a new well, likely in the South Aquifer; or, 3 - provision of additional storage.
The groundwater-level monitoring program currently conducted by Port Ludlow utilities should be continued through the ten-year buildout of the proposal. Monitoring of Well 14 should also be added to this program (see Appendix E for details.) This continued monitoring program would describe the effects of well pumping and Port Ludlow Utilities' conservation program on the aquifers.

Forty (40) guest slips would be allocated in the marina which would encourage the use of pump-out facilities and reduce impacts from fecal coliforms on Port Ludlow Bay.

Boaters would be encouraged to use pump-out facilities at the marina through signs explaining the negative impacts of illegally discharging sewage into the bay (i.e., elevated fecal coliform levels, particularly during peak boater use weekends). Lease terms would include pump-out and holding tank use commitment.

Educational materials could be distributed to boaters and gas attendants, particularly on peak boater use weekends, explaining the potential impacts of gas spillage and use of surfactants.

A no-discharge rule for boaters could be tested by injecting dye into boat holding tanks and inspecting the resultant plumes in the bay.

SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

Some impacts to water quality in Ludlow Creek, other on-site drainages and Port Ludlow Bay could occur due to sedimentation during construction, even with proper mitigation. This increased sediment loading would be temporary, however, and would decrease following construction as a result of site stabilization and permanent stormwater treatment features.

Discharges from stormwater runoff would contain pollutants, such as: heavy metals, oils and sediments from roadways; and fecal coliforms, nutrients and pesticides primarily from residential areas. Discharge of these pollutants into receiving waters would not significantly impact water quality and fisheries resources if water quality control features are properly designed, installed, and maintained.
PLANTS AND ANIMALS

ENVIRONMENTAL IMPACTS

- The proposed development would convert about 428 acres, or 34 percent of the site, from existing plant communities to residential, commercial or mixed uses. Impervious surfaces would cover about 120 acres or 10 percent of the site. The development would predominantly impact upland forest communities.

- The majority of the site (815 acres, or 66 percent) would be retained in natural permanent open space, including most wetland acreage and adjacent uplands.

- Program development would largely avoid direct alteration of wetlands, but some alteration would be needed at road crossings necessary for access and circulation. Total acreage of potential wetland fill is not known because precise road alignments are not yet available, and some wetlands have not yet been surveyed and delineated.

- The primary wetland vegetation cover types affected by road development would include palustrine forested, palustrine emergent and palustrine scrub-shrub. Because the majority of all wetland cover types would be retained, expected wetland losses would have a relatively minor impact on the total wetland resource.

- Program development would modify site hydrologic characteristics such as runoff routes, rate, peak volumes and recharge to aquifers. If unmitigated, these changes could modify wetland functions. Project-specific future analysis would identify more detailed wetland and drainage impacts. Implementation of permanent stormwater drainage control measures for each development would reduce the potential for significant hydrological impacts.

- Wetlands would likely receive some additional sedimentation due to clearing and grading activities, despite implementation of erosion and sedimentation controls.

- Impacts to wildlife communities on the site would include habitat loss, alteration, and disturbance due to construction and occupation of the site. Species least tolerant of disturbance would include ground and shrub-nesting birds, ground-dwelling mammals and carnivores in upland forest habitats. Species more tolerant of urban environments would probably increase with development.

- An overall reduction in on-site wildlife populations and possible loss of some species in non-wetland habitats would be anticipated.

- Road and residential development would increase fragmentation of habitats and discourage movement of less mobile animals.
Increased human activity in the marina during busiest periods, such as weekends, spring, and summer, would discourage waterfowl use. In response to more activity, waterfowl would move to other areas of the bay. The marina expansion and associated increases in activity may also increase the amount of pollutants that enter the bay.

Marina construction activities such as dredging and pile driving would result in short-term temporary impacts on local wildlife, due to increased disturbance that would discourage wildlife use of the marina vicinity. Dredging and pile-driving would occur.

ALTERNATIVES

Alternative 1: No Action

Under Alternative 1, no plant or animal impacts would occur in the short-term. Possible future logging could convert some remaining forestland to early successional shrubland plant communities, unless conifer seedlings were planted and invasive species were controlled with herbicides.

Alternative 2: Reduced Development Area

Under Alternative 2, about 290 acres of the site would be cleared, 110 acres less than under the proposed action. Thus, less native vegetation cover would be converted to urban uses and more acreage would remain in open space.

Wetland alteration would occur only at road crossings of Wetland 5 and narrow drainages in Development Area 42.

Potential hydrologic impacts to wetlands would be similar in type but lesser in magnitude than for the proposed action. Lesser amounts of earthwork would reduce potential sedimentation in wetlands.

Impacts to wildlife habitats and movement patterns would be similar to the proposed action but limited to a smaller development area (29 percent less area than for the proposal).

MITIGATING MEASURES

Approximately 815 acres of native growth (66 percent of the site), including nearly all wetland acreage, would be retained and dedicated as open space.

Wetland fill would be limited to crossings required for arterial roadways or utilities. Although precise alignments have not been determined to date, crossings would be
aligned to minimize wetland fill. Further studies, delineation and permitting (such as from the U.S. Army Corps of Engineers and Department of Ecology, for example) would be necessary to gain approval for road alignment, wetland fill, and mitigation; as necessary, additional wetland studies would occur on a case-by-case basis for each development area.

Stormwater drainage facilities would feature biofiltration measures to help protect wetlands from adverse water quality impacts, including sedimentation.

Contiguous areas of native vegetation between development areas and around wetlands and streams would serve as corridors of movement for wildlife species.

Native forest near Wetland 9 would be retained as open space to protect an existing heron rookery. No residential development would occur within several hundred feet of the existing rookery, and the nearest human activity would be on the new nine-hole golf course recently constructed. Construction activities in the nearest development parcels would be scheduled to avoid disturbance during the heron breeding season.

Development within Area 17 would be located and timed to avoid adverse impacts to the resident osprey.

Wetland buffers would be determined and established on a case-by-case basis, depending on size and complexity of the wetland and its context (such as slopes, adjacent vegetation cover, and proposed adjacent land use).

As possible, clearing, grubbing, and grading activities could be scheduled during drier times of the year (April through September) to minimize potential erosion and sedimentation impacts on wetlands. Erosion control devices would be installed and made fully functional prior to clearing and grading. As appropriate for each development area, special precautions would be taken during wetter times of the year (October through April).

Protection of wetlands within individual development areas would be in compliance with all requirements of Jefferson County’s Critical Areas Regulations pursuant to the State Growth Management Act. Said regulations pertain to "Fish and Wildlife Habitat Conservation Areas" as well as wetlands. The regulations could include standards for wetland buffer widths and compensation for wetland alteration.

Where past clearing and grading have eliminated native wetland buffers, vegetation could be replanted to provide effective buffers.
To the extent feasible, residential development could be clustered in areas that were
logged in the past and are now in an early stage of development (i.e., bare ground,
herbs, or shrubs and young trees). Open space could be linked together wherever
practical to minimize edge effects and fragmentation and facilitate wildlife
movements.

The amount of vegetation retained within lots would be maximized to the extent
possible. Efforts would be focused on groups of conifer trees or persistent
hardwoods such as big leaf maple that provide the best habitat value, and on
retention of as many downed logs and snags as feasible, given safety considerations.

Interpretive or education materials could be developed to foster an understanding
and appreciation of local wildlife habitat. Materials could include signs placed along
trails at strategic points that identify special habitats such as wetlands and summarize
their functions and values. Written materials could be made available in the golf
course clubhouse and recreation center.

In order to minimize marina construction impacts to wildlife, dredging and pile-
driving would be limited to non-migration periods for migratory species. Pile driving
would further be scheduled to occur during three pre-defined limited time periods
rather than throughout the entire construction period. Dredge spoils would be
analyzed to determine suitability for on- or off-shore disposal.

SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

Development of the proposed or alternative programs would result in the following
unavoidable adverse impacts: permanent reduction in vegetative productivity where
existing soils are covered by filling, grading, and impervious surfaces; loss of a substantial
portion of the existing native upland forest communities and replacement by non-native
communities; fragmentation of retained native plant communities within the developed
residential portion of the site; reduction and displacement of local populations of most
wildlife species due to loss of habitat; and, increased disturbance of remaining habitat due to
adjacent increased human occupation.
HOUSING

ENVIRONMENTAL IMPACTS

- The program would add 700 residential units to the Port Ludlow community over a ten-year period, of which 531 would be single-family and 169 multifamily units.

- The new residential units could be occupied by permanent residents, seasonal residents, full-time renters or other types of tenure. The sales value of the residences would be higher than the median value of residences in the Oak Bay Census Division. Rental values would be higher than the $312 median rental value identified in the 1990 Census.

- An estimated 83 new employees would be added due to the program, but the net change in employment at buildout would be 51 new employees due to the gradual diminishing of need for "development/sales" employees. The new employees might be drawn from the existing local labor force or from new residents attracted from outside the region.

- New employee households would likely seek housing at prices commensurate with their ability to pay. Given typical retail and service wage levels, new employee households would contribute to the demand for affordable rental housing at or below median rent levels. If new affordable rental units are not added to the housing supply, the existing shortage of affordable units would increase.

- Further new housing demand could be generated by new spin-off employment in businesses attracted to Jefferson County by increased populations or businesses that might expand as a result of new growth.

- No additional housing impacts would be expected due to construction employment because expected program-related construction employment would remain at approximately the same level as existing conditions.

ALTERNATIVES

Alternative 1: No Action

- No new impacts to housing availability would occur.

Alternative 2: Reduced Development Area

- Housing impacts would be similar to those under the proposed action.
MITIGATING MEASURES

- The proponent could commit to the development of a mobile home park within commuting distance of Port Ludlow to provide affordable housing opportunities for employees generated by the proposed development program.

- A minimum of 20 spaces at the proponent’s existing RV park in the Port Ludlow commercial area could be committed on a year-round basis for use by construction workers or other short-term or seasonal workers. An additional 10 spaces could be committed for such use during the off-peak winter season.

SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

None are anticipated.
ARCHAEOLOGICAL RESOURCES

ENVIRONMENTAL IMPACTS

0 Program-level site inspections identified previously unrecorded archaeological sites (shell middens) within Development Areas 44 and 45. In both areas, further study would determine the physical extent of the archaeological resource. Future design of specific development proposals would incorporate safeguards and/or avoid development in relevant areas.

0 In Development Areas 48 and 18 through 39, future construction activities could unearth and possibly damage unknown archaeological resources. In the latter areas, locations with the highest potential are predominantly located in or near wetlands (where roots and fibers used by Native Americans were found). The preservation of most wetlands as open space would reduce the chances of accidental disturbance of archaeological resources. Potential resources in Development Area 48 would likely be shell middens associated with old shoreline areas (buried at least 12 feet deep under fill areas).

ALTERNATIVES

Alternative 1: No Action

0 No program development would occur, but the limited amount of potential future logging could unearth such resources, to the extent that they might be present in forest areas. Rules and regulations of the State Forest Practices Act address treatment of cultural resources in harvest areas.

Alternative 2: Reduced Development Area

0 The reduction in development area for Alternative 2 would reduce the potential for impacts to archaeological resources that might be present in upland portions of the site. Potential impacts to archaeological resources detected in Development Areas 44 and 45 would be the same as for the proposed action since similar numbers of units are proposed. Potential impacts to unknown but possibly present archaeological resources in Development Area 48 would be the same as for the proposed action.

MITIGATING MEASURES

0 A shell midden boundary line would be staked out on the ground by a qualified archaeologist prior to earth moving activities in Development Areas 44 and 45.
Seaward of this line, development (if any were planned) would be designed to avoid disturbance of archaeological resources.

- Test excavations would occur in order to define the extent of the detected midden in Development Area 44.

- Should development occur over known midden areas in Development Areas 44 and 45, excavation would be minimized, and design and construction techniques would be employed to minimize subsurface disturbance in accordance with recommendations by a qualified professional archaeologist.

- If archaeological resources are detected during construction in Development Area 48, a qualified archaeologist would be hired to systematically analyze and describe the findings. The State Office of Archaeology and Historic Preservation would be informed of such findings.

- Potential remaining archaeological materials in Development Area 48 (if any were detected) would be protected by a covering of geotextile cloth and barrier fill material to avoid further disturbance.

- The proponent would comply with all regulations of the state Shoreline Management Act, RCW 27.44.040, RCW 27.53.060, and WAC 25-489 regarding archaeological sites. These regulations prohibit knowing disturbance of archaeological or burial sites without prior approval, and provide protocols for actions following discovery of such sites.

**SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS**

Given compliance with established regulations and procedures, none are anticipated.
TRANSPORTATION

ENVIRONMENTAL IMPACTS

- At buildout in 2002, the program would generate about 5,911 vehicle trips per day, including 367 trips during the morning peak hour and 583 trips during the evening peak hour.

- Residential-related trips would be predominantly to/from the north and to/from eastern portions of SR-104. Marina-related and retail-related trips would be predominantly to/from Port Ludlow sources.

- The roads expected to experience the greatest morning and evening peak-hour increases in traffic would be SR-104 at the Hood Canal Bridge (98 AM and 135 PM peak hour trips), Paradise Bay Road (90 AM to 133 PM peak hour trips) and Oak Bay Road westward through the site (84 AM to 119 PM peak hour trips).

- Anticipated 2002 cumulative volumes (both development program and community background traffic together) on Paradise Bay Road would be within the roadway's physical capacity range. Cumulative daily traffic on Oak Bay Road north of the program area would also be well within the road’s capacity. Cumulative SR-104 traffic in 2002 would be nearing its capacity range at the Hood Canal Bridge.

- Levels of service at Teal Lake Road's and Paradise Bay Road's intersections with SR-104 would drop such that left turning movements from these roads to SR-104 would operate at LOS F in 2002 with or without program development.

- The traffic analysis examined a scenario in which Teal Lake Road is improved to increase its attractiveness as a route to/from SR-104 and decrease future volumes on Paradise Bay Road. The analysis indicated that even if forty percent of program-related traffic used Teal Lake Road instead of Paradise Bay Road, left turns at the SR-104/Paradise Bay Road intersection during the 2002 PM Peak Hour would still be at LOS F. Also, the traffic increases on Teal Lake Road would create comparatively greater left turn congestion problems at SR-104/Teal Lake Road. In order to achieve the minimum LOS E at SR-104/Paradise Bay Road, eighty percent of program-related trips would have to choose Teal Lake Road over Paradise Bay Road. This situation is most unlikely and would not sufficiently resolve long-term capacity needs at SR-104/Paradise Bay Road.

- At program buildout in 2002, local intersections would continue to operate at LOS A or B, except the northbound movement at Teal Lake Road/Paradise Bay Road which would operate at LOS C, approaching LOS D. The Paradise Bay Road/Boat Drive
intersection and any other intersection in the Paradise Bay Estates community would continue to operate at LOS A in the 2002 PM peak hour.

- Road and utility construction would generate an estimated 360 to 400 construction trips per day. Home and building construction would generate about 370 to 810 trips per day.

**ALTERNATIVES**

**Alternative 1: No Action**

- No new traffic would be generated on the site and local traffic volumes would be the same as projected for 2002 background conditions.

**Alternative 2: Reduced Development Area**

- Under Alternative 2, anticipated transportation impacts to major intersections and regional road segments would be similar to the proposed action because both would have the same uses and number of residential units.

**MITIGATING MEASURES**

- Truck routes could be designated and work hours enforced to lessen temporary construction traffic impacts.

- Left-turn storage lanes on Paradise Bay Road at its intersection with Teal Lake Road could be provided if feasible to improve intersection efficiency, even though levels of service at this location would be adequate. This improvement would likely be needed in the year 2000.

- The proponent could contribute its proportionate share towards improvements at the SR-104/Paradise Bay Road intersection, if improvements are determined to be feasible. The timing of mitigation would depend on when PM peak hour left turn movements for this intersection reach level of service F. According to background traffic growth estimates and proposed development program phasing, this would occur in 1995.

- The proponent could contribute a proportionate share towards improvements at the SR-104/Teal Lake Road intersection. Improvements such as a left-turn storage lane on SR-104 may occur as mitigation for a proposed retail center at this intersection. If left-turn storage is not required in the near future, cumulative traffic (including retail center traffic) would create the need for mitigation by the year 2000.
The proponent would cooperate with Jefferson Transit to locate appropriate transit stops.

SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

Program-generated traffic would contribute to PM peak hour congestion at the Paradise Bay Road/SR-104 intersection at which left turn movements from Paradise Bay Road to SR-104 would already be at level of service F in the year 2002 without the proposal.
PUBLIC SERVICES

Fire/Emergency Medical

ENVIRONMENTAL IMPACTS

- Assuming continuation of existing trends in call generation, the development program would be expected to generate up to 120 calls for District services annually. This estimate assumes a new permanent resident population of 1,400. Actual call volume would likely be lower than 120, due to the seasonal residency of many Port Ludlow homeowners.

- By applying existing District staff-to-population ratios to expected new populations, program development would generate a maximum demand for an additional 2 paid staff and 13 volunteers at full buildout.

- Assuming continuance of existing budget expenditure conditions, the District would require an annual total operating budget increase of about $108,000 to support services for the proposal at program buildout.

- The proposal's annual share of future capital costs of the District, proportionate to its share of future population, would be about one-quarter of estimated capital costs. The proposal's annual share of capital costs would be about $11,232 per year, or a total of $123,552 over the development period.

- Annual property taxes accruing to the fire district from the proposal would increase incrementally over the 10-year buildout period from $4,205 to $151,341 in 2003. These revenues would be more than sufficient to cover operating and capital costs required to provide services to the proposal.

- The proposed marina expansion would increase the need to provide improved emergency access and water supply to the marina.

ALTERNATIVES

Alternative 1: No Action

- No impacts would occur to fire protection or emergency medical services from the undeveloped program site. Annual tax revenues of approximately $4,205 would continue to be generated, and the site would continue to require few or no District services.
Alternative 2: Reduced Development Area

- The impact of this alternative would be similar to the proposal's. Tax revenues generated by the program would be expected to exceed the operating and capital costs required to serve the program.

MITIGATING MEASURES

- Tax revenues generated by implementation of the development program would be more than sufficient to cover the operating and capital costs required of the Fire District to serve the needs of the proposal.

- The proponent would, at its sole expense, design and install water systems with flow volumes and hydrants sufficient to meet fire protection requirements for all residential neighborhoods and commercial development.

- The proponent would, at its sole expense, design and construct roads and accesses to the District’s satisfaction for all residential neighborhoods and commercial development.

- All housing units would have "one-hour" wall construction when adjacent structures are within 10 feet (code is 6 feet).

Marina

- At least two fire hydrants and adequate emergency access would be provided in the area of the proposed marina expansion.

- A portable, self-contained pump/foam apparatus would be provided at the marina for emergency fighting of boat fires.

- Marina personnel and live-aboard residents would receive mandatory training in emergency fire fighting procedures.

- The fire alarm for the marina would be linked to the alarm panel at the Inn, assuring automatic alert of appropriate authorities.

Inn at Port Ludlow

- Certain measures required by fire and building codes will provide fire prevention, detection, containment and suppression in the proposed Inn structure. These include: smoke detection, automatic sprinklers, an electrically-monitored sprinkler
system, one-hour wall construction, elevator lobby smoke detectors, automatic elevator recall, a back-up power source, and a non-combustible roof cover.

Additional advanced technology systems designed to reduce fire risk will be provided in the Inn building design despite the fact that they are not required by code. These include: fast-acting sprinklers, automatic notification of the Fire District, tamper protection by building zones, hose cabinets at each floor, a diesel generator back-up power source, an indicator panel for all building safety systems, smoke detection on HVAC systems, fire hydrants, a stairwell to the roof, and a wet-sprinkler in the building's covered driveway.

An emergency plan would be developed which identifies applicable emergency actions during such unlikely events as fires or earthquakes. It would explain built-in protection fixtures and staff responsibility during an emergency.

Staff at the Inn would be trained about fire behavior, built-in fire and life safety systems, and how to respond to an emergency and to the safety needs of all guests.

A maintenance schedule for fire and life safety equipment would be developed; and, all fire and life safety systems would be tested at least annually in cooperation with Fire District staff.

Records and logs of all maintenance and system tests would be maintained and transmitted to Fire District 3.

Exit maps and instructions on emergency procedures would be installed on the inside of all guest room doors.

A public relations video tape of local activities would be available in all rooms. The beginning of this tape would include building safety features, exit locations and guest responsibility for safety and expected behavior if an emergency were to occur.

The on-site resident manager would be required to participate in the District's EMT training program, allowing for quick response to on-site medical emergencies; other on-site staff would be trained in basic first aid and CPR.

Fundamental emergency aid equipment would be provided at the Inn for staff use.

All multifamily units within Development Area 48 would be provided with quick-response sprinkler systems.

Heat and smoke detectors in all structures on the project site would be hardwired to an alarm system with an autodial alert to appropriate authorities.
Three hydrants would be installed on site to provide adequate water supply for fire fighting.

SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

With implementation of the proposed mitigating measures, none are anticipated.
Schools

ENVIRONMENTAL IMPACTS

0 Buildout of the proposal would result in 61 additional students in the District, including 45 generated on-site and 16 generated by potential new employees.

0 Annual operating and capital costs of $5,164 and $8,800 respectively per student could be incurred by the District. Revenues generated by the proposal would sufficiently off-set these additional costs over the life of program development.

0 If the District expends per student capital costs in advance of incoming students, proposal-generated revenues would not cover District costs of serving the new students in 1994. There would be, however, sufficient space for all students in that year in existing portable classrooms.

0 At buildout of the program, total tax revenues generated by the program would be more than sufficient to cover the operating and capital costs associated with serving program-generated students.

ALTERNATIVES

Alternative 1: No Action

0 No impacts to the District would occur from the undeveloped program site. Annual tax revenues would continue to be generated ($9,802 in 1992) and the site would generate no new students.

Alternative 2: Reduced Development Area

0 This alternative would generate the same number of students and the same amount of revenue as the proposal. Because this alternative would develop more units earlier under the currently proposed phasing schedule, it would have more impact on the District in 1994 and 1995 than the proposal.

MITIGATING MEASURES

0 The proposal would generate sufficient revenue to the District to fully offset the cumulative costs of capital and operating expense to serve students generated by the proposal including those of employees.

0 The proponent could enter into one of several arrangements with the School District to mitigate the projected early-year shortfall in capital funds, including: assistance
with site acquisition; design assistance to improve current campus utilization; or, other methods.

A review of program-generated students and tax revenues could be conducted at an appropriate time during program development. If such a review revealed a short-fall of program-generated revenues over costs, the proponent could enter into discussions with the District over possible solutions.

SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

None are anticipated.
Libraries

ENVIRONMENTAL IMPACTS

- At buildout the program would add about 1,400 people to the library service population, but no facility impacts are anticipated.

- At current levy rates, the program at buildout would contribute approximately $53,000 to annual library revenues through property taxes.

ALTERNATIVES

Alternative 1: No Action

- Under the No-Action Alternative, there would be no increases in demand for libraries from the program site.

Alternative 2: Reduced Development Area

- Under Alternative 2, increases in library demand would be the same as for the proposal.

MITIGATING MEASURES

- Tax revenues generated by development under the proposed program would offset any costs of providing additional library services to the population generated by the program.

SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

None are anticipated.
Hospitals

ENVIRONMENTAL IMPACTS

- New residents resulting from program development would increase demand for all hospital services and generate new patient fees and public tax revenue.

- At present levy rates, annual tax revenues from the development site accruing to the hospital district would total $45,163 in 2003, a significant increase over the site's estimated 1992 hospital tax contribution of $1,255. The site's cumulative tax contribution to the hospital district through 2003 would be $280,308.

- Increasing demand from the proposal and other population growth could allow the hospital to provide new services and attract more physicians to the area because of increased operating revenues.

- If hospital facility expansion plans are delayed by voter disapproval of bond measures, program-related growth along with other population growth would contribute to the continued overburdening of hospital facilities.

ALTERNATIVES

Alternative 1: No Action

- Under Alternative 1, there would be no program-related increases in demand for hospital services or subsequent impacts on medical service providers, nor would there be a $280,308 cumulative tax contribution through 2003.

Alternative 2: Reduced Development Area

- Alternative 2's demand for hospital services would be similar to the proposal's. However, the increase in demand would be slightly faster due to a different development phasing plan.

MITIGATING MEASURES

- Hospital patient fees generated by development program residents would provide operating revenue to Jefferson General Hospital. Patient fees would be expected to cover over 98 percent of operating costs.

- New hospital-related annual property tax revenues generated by program development would also offset possible additional operating costs of providing hospital services to program site residents.
If bond measures to finance necessary capital improvements are passed by voters in the future, program residents would contribute to such funding sources.

SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

None are anticipated.