MAY 2003

BRIGGS VILLAGE MASTER PLAN

FINAL

ENVIRONMENTAL IMPACT STATEMENT

Prepared for:

Community Planning and Developmeht
Cit of Olympia
837 t Avenue SE
Olympia, WA

Prepared by:

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5309 Shilshole Ave. NW, Suite 200
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City of
OLYMPIA

P.O. Box 1967, Olympia, WA 98507-1967

May 1, 2003

Greetings:

SUBJECT: Briggs Village Master Plan Final Environmental Impact Statement

I am pleased to provide you with this copy of the Briggs Village Master Plan Final Environmental Impact Statement (EIS). This final copy includes changes resulting from comments received in response to the draft EIS circulated earlier this year. In addition to this EIS, a separately bound Appendix is available upon request, as are copies of all documents incorporated by reference.

The City of Olympia's environmental review ofthe Briggs Village Master Plan is the first step in the evaluation of this mixed-use "urban village" proposed by the Briggs Development Company at the intersection of Yelm Highway and Henderson Boulevard in southeast Olympia. This EIS addresses the anticipated adverse impacts of the development of this 133-acre site with about 800 new residences and over 200,000 square feet of commercial floor space, plus associated streets, utilities, and open and recreational spaces. Among the wide range of issues examined are traffic congestion, contaminated soils, habitat loss, and burdens on city and school facilities. Optional elements not proposed by the applicant are also evaluated, including a public trail to Ward Lake, street connections to Delta Lane and Pifer Road, the use of roundabouts instead of traffic signals, measures to reduce traffic, and alternative stormwater system designs.

Public meetings of the Olympia Design Review Board to address the compliance of this project with the City's urban village design criteria and the design criteria proposed specifically for this project began at 7:00p.m. on April24, 2003, and will continue at 7:00p.m. on May 1, 2003. The Olympia Hearing Examiner will open a public hearing on the Briggs Village Master Plan at 7:00p.m. on June 9, 2003. This hearing will include consideration of the FEIS and the proposal's environmental impacts. The Board and the Examiner will in turn prepare recommendations to the City Council. All meetings will be held in the Olympia Council Chambers, 900 Plum Street SE. Comments regarding the proposal may be submitted at those meetings or in writing to the address above.

Your interest in this proposal is appreciated.

Sincerely,

TODD STAMM
SEPA Official
Community Planning and Development

FACT SHEET

PROJECT TITLE

Briggs Village Master Plan

PROJECT DESCRIPTION

The City of Olympia Comprehensive Plan designates the Briggs Village site for development as an "Urban Village." A proposal for this site has been presented to the City of Olympia in the form of a Master Planned Development application and General Land Use application, along with supporting documentation. A revised application was submitted to the City in January 2001; this EIS evaluates the revised 2001 version of the application. As proposed, the Briggs Village Master Plan would be a mixed-use development with a variety of single-family housing, multi-family housing, office, retail, and associated uses on the 137-acre site.

At full build out, Briggs Village would contain approximately 810 residential units in a variety of housing types, including single-family detached housing, townhomes, duplexes, apartments, senior housing, and lofts and studios in mixed-use buildings. Other project elements would include a four-acre public neighborhood park, a "commons" (a small village-owned outdoor open-space area as part of each phase of development), a private arboretum with trails, a public overlook ofWard Lake, and infrastructure including internal roads, improvements to existing roads, parking, and public services and utilities. Commercial and multi-family units would be located around a Town Square within a village center near Henderson Boulevard. Lower density residential uses would be located closer to the north and west perimeters of the site.

The applicant proposes five "phases" that could be developed independently of one another. No specific order of development is proposed. The project is likely to be constructed over a period of 18 to 25 years. Specific timing will depend upon economic conditions and homebuyer preferences.

PROJECT LOCATION

The project site is located in the City of Olympia north of the Yelm Highway on both sides of Henderson Boulevard at 4400 Henderson Boulevard SE, Olympia, Washington, about two miles southeast of the state capitol campus. The site is in portions of Sections 35 and 36 of Township 18 North, Range 2, West Willamette Meridian. See Figure 1-2 in Chapter 1.

PROPONENT

Gary E. Briggs, Chief Executive Officer
Briggs Development Company
4407 Henderson Boulevard SE
Olympia, Washington 98501

LEAD AGENCY

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PERMITS AND APPROVALS REQUIRED

Olympia's Design Review Board and Hearing Examiner will review the Master Plan. The Olympia City Council will make the final decision regarding the Master Plan. Prior to construction, the following permits and approvals may be required for the various alternatives being considered:

Federal:

Section 404 Permit (U.S. Army Corps of Engineers)

Washington State:

Section 401 Water Quality Certification (Department ofEcology)
Hydraulic Project Approval (Department ofFish and Wildlife)
National Pollutant Discharge Elimination System (NPDES) Permit (Department of Ecology)

City of Olympia:

Master Plan Approval
Land Use Approvals
Subdivision Plat Approvals
Grading, Building and other construction permits
Utility Permits

Additional permits and approvals may be required from the City of Tumwater.

AUTHORS AND PRINCIPAL CONTRIBUTORS

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DATE FINAL EIS ISSUED

May 1, 2003

ADDITIONAL ENVIRONMENTAL REVIEW

This EIS is limited to an evaluation and action on the proposed Briggs Village Master Plan and does not encompass construction approval for any aspect of the project. In accordance with *Washington Administrative Code* (WAC) 197-11-060(5) and *Olympia Municipal Code* Chapter 14.04, the City of Olympia will conduct additional environmental review under SEPA for each element of the project when each is proposed by the applicant or other party. Additional environmental review of such individual elements may also be conducted as part of federal, state, and other local permitting requirements.

DOCUMENTS INCORPORATED BY REFERENCE

A number of documents are incorporated into this EIS by reference because they contain information on existing environmental conditions, impacts, or mitigation measures related to the proposed Master Plan. Many of the documents listed below are technical reports requested from the applicant by the City to address project-related environmental issues. Several of these documents, as indicated below, are contained in appendices to this EIS because they were prepared by the applicant to directly supplement this EIS and support the applicant's land use applications. Other documents used to provide information for the analyses in this EIS are cited where applicable throughout this document and are listed in the References section. The following documents are herein incorporated by reference in accordance with WAC 197-11-635:

- City of Olympia. 1999. *Final Supplemental Environmental Impact Statement for the City of Olympia Comprehensive Plan.* This document discloses potential impacts associated with a variety of amendments proposed in 1999 to the *Olympia Comprehensive Plan.* Several of these amendments relate to the proposed Briggs Village Master Plan.

- KPFF Consulting Engineers. 2000. *Preliminary Storm Drainage and Erosion Control Plan.* This document addresses the following storm drainage issues: infiltration rates/soils report; wells and septic systems; subbasin description; analysis ofthe 100-year flood; aesthetic considerations for facilities; and facility sizing and downstream analysis.

- KPFF Consulting Engineers. 2000. *Briggs Urban Village Utility Design Report.* This document summarizes the basic issues and considerations taken into account in Master Plan utility design. Topics covered include grading, water service, sanitary sewer, storm drainage, and street lighting.

- KPFF Consulting Engineers. 2000. *South Kettle Description.* This report describes the existing and proposed drainage features and characteristics of the South Kettle relative to its proposed use for storm drainage treatment and infiltration.

- L.C. Lee & Associates, Inc. 1996. *An Analysis of the Jurisdictional Status of Waters of the United States, Including Wetlands, at the Briggs Nursery Property - South Kettle Depression.* This document describes the types and geographic extent of wetlands found in this kettle and the federal, state, county, and city jurisdictional requirements applicable to these wetlands.

- L.C. Lee & Associates, Inc. 1996. *An Analysis of the Jurisdictional Status of Waters of the United States, Including Wetlands, at the Briggs Nursery Property - Central, Northwest, and North Kettles.* This document describes the types and geographic extent of wetlands found in these kettles and the federal, state, county, and city jurisdictional requirements applicable to these wetlands.

- L.C. Lee & Associates, Inc. 1997. *An Analysis of the Jurisdictional Status of Waters of the United States, Including Wetlands, at the Briggs Nursery Property East of Henderson Boulevard SE, Report Addendum.* This document summarizes findings of fact and judgments concerning the geographic extent of waters of the U.S., including wetlands, east of Henderson Boulevard. This document is intended as a companion document to two earlier reports that describe wetlands/waters west ofHenderson Boulevard (May and July 1996).

- L.C. Lee & Associates, Inc. 1997. *Preliminary Mitigation and Monitoring Plan for Briggs Urban Village Stormwater Facility.* This document discusses mitigation measures related to the preferred stormwater detention alternative (direct the majority of stormwater to the South Kettle and restore the wetland in the Central Kettle) for the proposed Briggs Village project.

- L.C. Lee & Associates, Inc. 1998. *Addendum to the Preliminary Mitigation and Monitoring Plan for Briggs Urban Village.* This document serves to update and clarify Part IV of the *Preliminary Mitigation and Monitoring Plan for Briggs Village Stormwater Facility* (Restoration Plan).

- L.C. Lee & Associates, Inc. Letter of September 7, 1999, from Steven M. Winter, Associate, to Perry Lund, Wetlands/Shoreline Specialist, Southwest Regional Office, Washington Department of Ecology, regarding the Nationwide Permit 26 for use of wetlands for a

stormwater detention facility, the Central Kettle Restoration Project, and compliance with Sections 401 and 404 of the Clean Water Act. Seattle, Washington.

- L.C. Lee & Associates, Inc. 2000. *Wetland Functions Technical Memorandum.* This document discusses the wetland functions for the six kettle wetlands located on the proposed Briggs Village property. Four functional categories are evaluated: hydrology, biogeochemistry, plant community, and faunal support/habitat.

- L.C. Lee & Associates, Inc. Letter of June 1, 2000, from Steven M. Winter, Associate, to Gail Terzi and Cindy Barger, U.S. Army Corps of Engineers, Seattle District, Regulatory Branch, regarding Central Kettle Restoration Project and Sections 401 and 404 of the Clean Water Act. Seattle, Washington.

- L.C. Lee & Associates, Inc. 2001. *Data Summary from the Additional Contaminant Sampling at the Briggs Nursery Site in Olympia, Washington.* Submitted to Gary Briggs, Briggs Nursery. Seattle, Washington.

- NBBJ and Briggs Development Company. 1998. *Briggs Village Master Plan Development Application, Vols. 1 and 2.* This document describes the existing conditions on the proposed project site, the project components, project phasing, and regulatory compliance. It also includes a set of maps illustrating the project and proposed phasing.

- NBBJ. 2000. *Briggs Village Ownership Plan.* This map illustrates the four types of ownership proposed for the Briggs Village project. The ownership types are Village Corporation, City, Arboretum Foundation, and "private."

- Philip Services Corporation. 1998. *Limited Phase I Site Assessment for Briggs Nursery, Olympia Facility.* This site assessment summarizes assessment activities, including inspecting the site for evidence of environmental contamination; conducting research to evaluate current and past uses of the property; and providing recommendations based on findings.

- Robinson & Noble. 2000. *Water Well Report, Briggs Nursery, Thurston County, WA.* This document summarizes the results of water well tests, including drawdown and recovery data.

- The Shea Group. 2002. *Briggs Village Master Plan Development: Transportation Study.* This document addresses existing traffic conditions in the vicinity of the site, future traffic characteristics with and without the project, and potential mitigation measures.

- U.S. Army Corps of Engineers. Letter of December 17, 1997, from Robert H. Martin, Chief, Applications Review Section, to Briggs Development Company regarding use of wetlands for a stormwater detention facility at Briggs Nursery. Reference 1997-4-01903 Briggs Development Corporation. Seattle District, Seattle, Washington.

- U.S. Army Corps of Engineers. Letter of May 10, 1999, from Robert H. Martin, Chief, Applications Review Section, to Briggs Development Company regarding mitigation and

monitoring plan for a stormwater detention facility at Briggs Nursery. Reference 1997-4-01903 Briggs Development Corporation. Seattle District, Seattle, Washington.

- U.S. Army Corps of Engineers. Letter of March 13, 2000, from Muff)r Walker, Acting Chief, Applications Review Section, to Briggs Development Corporation regarding expiration of Nationwide Permit 26 for a stormwater detention facility at Briggs Nursery. Reference 1997-4-01903 Briggs Development Corporation. Seattle District, Seattle, Washington.

- U.S. Army Corps of Engineers. Letter of April18, 2000, from Gail M. Terzi, Acting Chief, Applications Review Section, to Briggs Development Corporation regarding a Mitigation Area deed restriction for a stormwater detention facility at Briggs Nursery. Reference 1997-4-01903 Briggs Development Corporation. Seattle District, Seattle, Washington.

LOCATION OF RELATED MATERIAL

Background material and supporting documents, including documents incorporated by reference, may be reviewed at Conununity Planning and Development, City of Olympia, 837 7th Avenue SE, Olympia WA 98507-1967, and at Adolfson Associates, Inc., 5309 Shilshole Avenue NW, Seattle, WA 98107.

PURCHASE OF COPIES

Copies ofthis document have been printed and are available to the public for $10.15 +tax. (One copy has been provided at no charge to each party who conunented on the draft EIS.) Copies in alternative formats can be made available; call (360) 753-8314 to make arrangements.

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CHAPTER 1 - INTRODUCTION

During the early 1990s, the City of Olympia and Thurston County responded to the State's Growth Management Act by jointly conducting a planning process to identify how and where growth should take place. In 1993 the Briggs family entered into this public process by requesting that the City and County change the land use designation of their property to Urban Village as part of the joint *Olympia Comprehensive Plan* update. In 1995 the City completed an implementation process that resulted in new standards and design guidelines that would apply to the development of an urban village. In 1997, at the owner's request, the City of Olympia annexed the Briggs Village site into the City. In 1999 the Briggs family requested several additional comprehensive plan and zoning amendments.

The Briggs Village Master Plan is for a mixed-use community proposed on a 137-acre site. As the designated lead agency for review under the State Environmental Policy Act (SEPA), the City of Olympia determined on May 21, 1999, that the proposal may result in significant adverse impacts, issued a Determination of Significance, and called for the preparation of this Environmental hnpact Statement (EIS). This EIS has been prepared to identify existing conditions, potential impacts, and possible mitigation measures associated with the proposed Master Plan. In accordance with *Washington Administrative Code* (WAC) 197-11-408 and the City's SEPA Ordinance (Chapter 14.04 ofthe *Olympia Municipal Code* [OMC]), from May 21, 1999, to June 18, 1999, the City conducted a scoping process with the public and affected agencies to determine issues to be addressed in this E S.

The Master Plan review process will enable the City of Olympia and interested citizens to review the proposal and comment on the proposed Master Plan and alternatives. The purpose of this EIS is to serve as an informative document for the public as well as local, state and federal agencies, tribes, and other interested parties. The EIS will be a portion of the information the City will use to evaluate the proposal and make appropriate decisions on whether to approve, condition, or deny the Master Plan as described in Chapter 18.57 of the OMC. This process includes this environmental review, evaluation by the Design Review Board, review by a hearing examiner for compliance with City policies and development regulations, and a City Council decision (see Figure 1-1).

As required by SEPA, the EIS evaluates alternatives to the proposal. This EIS includes a "No Action" alternative as required by SEPA, which evaluates the likely use of the project site if a village Master Plan is not approved. A series of "options" is also included to address specific issues of concern, such as transportation, public access to Ward Lake, and treatment of stormwater. Chapter 3 provides a full description of each of these alternatives and options.

Possible mitigation measures are described. However, the presence of a possible measure in the EIS does not assure that such steps will be required. Specific mitigation measures will only be imposed if required, if proposed by the applicant, or required as a condition of the master plan or development approval.

PROJECT DESCRIPTION: OVERVIEW

The proposed Briggs Village site is located in the southeast portion of the City of Olympia on the site of the existing Briggs Nursery at the intersection of Henderson Boulevard and Yelm Highway (see Figure 1-2). The project site comprises approximately 133 acres and is bounded by Yelm Highway and The Farm neighborhood to the south; Ward Lake to the east; Brigadoon and South Street neighborhoods to the north; and the Tumwater city limits and a portion of the Deschutes neighborhood to the west. An associated area of 3.7 acres along the northwest edge of the Central Kettle is in the City of Tumwater.

Briggs Village is proposed as a mixed-use development with a variety of housing and commercial types. The applicant proposes 810 housing units, including 9 existing homes; new single-family detached housing; townhomes; duplexes; apartments; senior housing; lofts; and studios in mixed-use buildings (see Table 1-1 and Figure 1-3). Approximately 224,000 square feet of commercial space would be constructed around a "town square" and would include offices, a grocery, and other retail uses. Lower-density residential uses would be located at the north and west edges of the project. Other project elements include a four-acre public neighborhood park; a "commons" area for each phase of development; an arboretum with trails and a public overlook of Ward Lake; and infrastructure, including new internal roads, improvements to existing roads, parking, and public service and utilities. Approximately 40 percent of the site would be designated for open space. Additional detail on the proposed Master Plan is provided in Chapter 3, Alternatives. Depending on economic conditions and homebuyer preferences, the project is likely to be constructed over a period of 18 to 25 years.

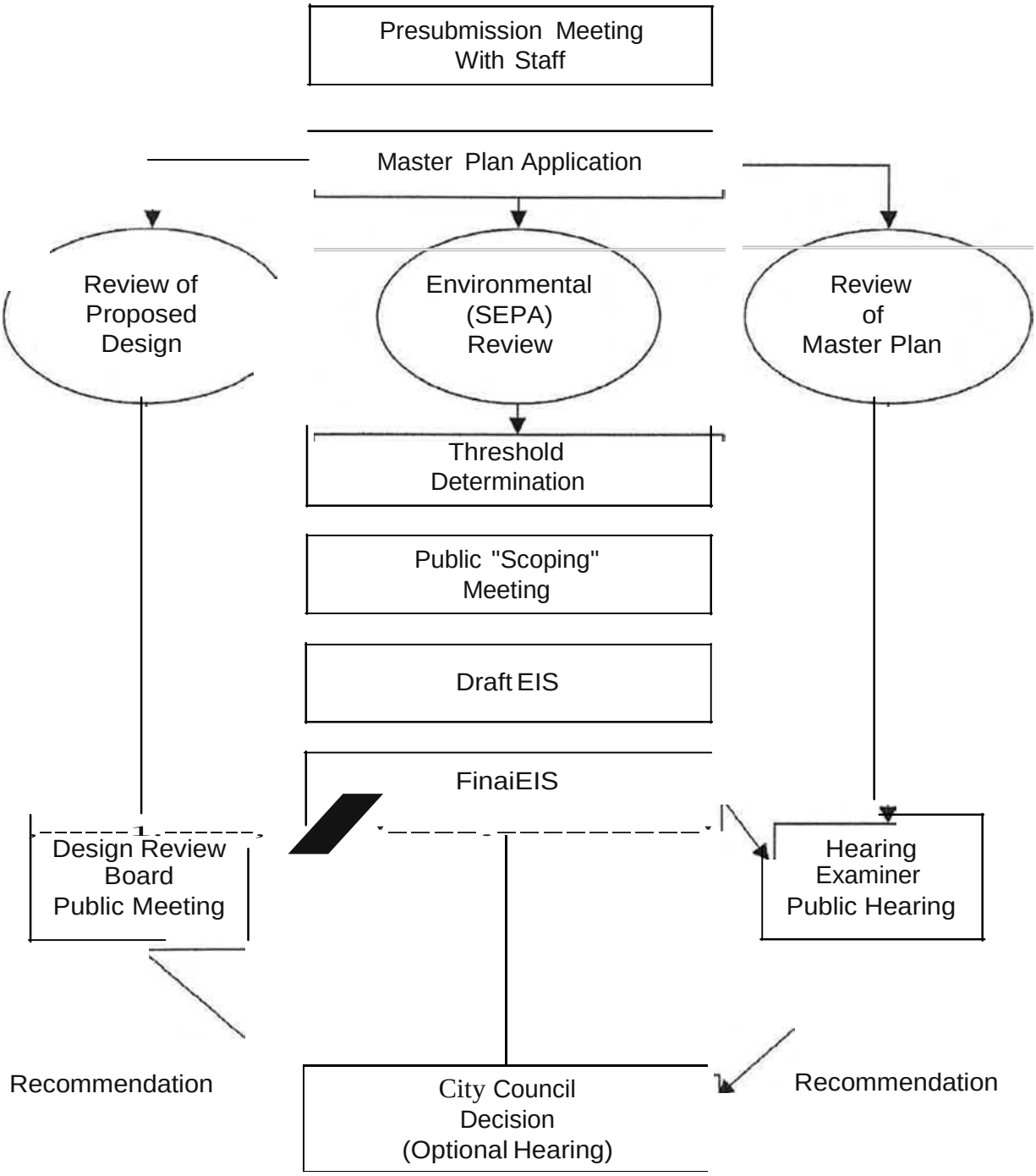
Table 1-1. Housing Units and Types by Phase

Phase	Area (acres)	Residential Units*
North Residential Phase	32	75 single-family detached houses 17 single-family attached townhouses
West Residential Phase	51	58 single-family detached houses 58 single-family attached townhouses 10 units in duplexes 72 multi-family apartments
Central Residential Phase	8	25 single-family attached townhouses 72 multi-family apartments
Village Center Phase	21	140 Town Square residential units
East Residential Phase	25	200 senior living units 14 units in duplexes 60 multi-family apartments

* An additional 9 existing housing units will remain on property for a total of 810 units.

The applicant proposes to relocate nursery facilities to a site in Grays Harbor County. Relocation of nursery facilities would occur in phases designed to correlate with Briggs Village development phasing. Preliminary relocation plans call for relocation to begin in 2003 and be completed by 2017. Field and shed growing operations in the northern part of the nursery would be relocated prior to development of Briggs Village North Residential Phase and West Residential Phase.

BRIGGS URBAN VILLAGE
MASTER PLAN REVIEW PROCESS



Note: Standard project and construction review may also occur concurrently with Master Plan review.

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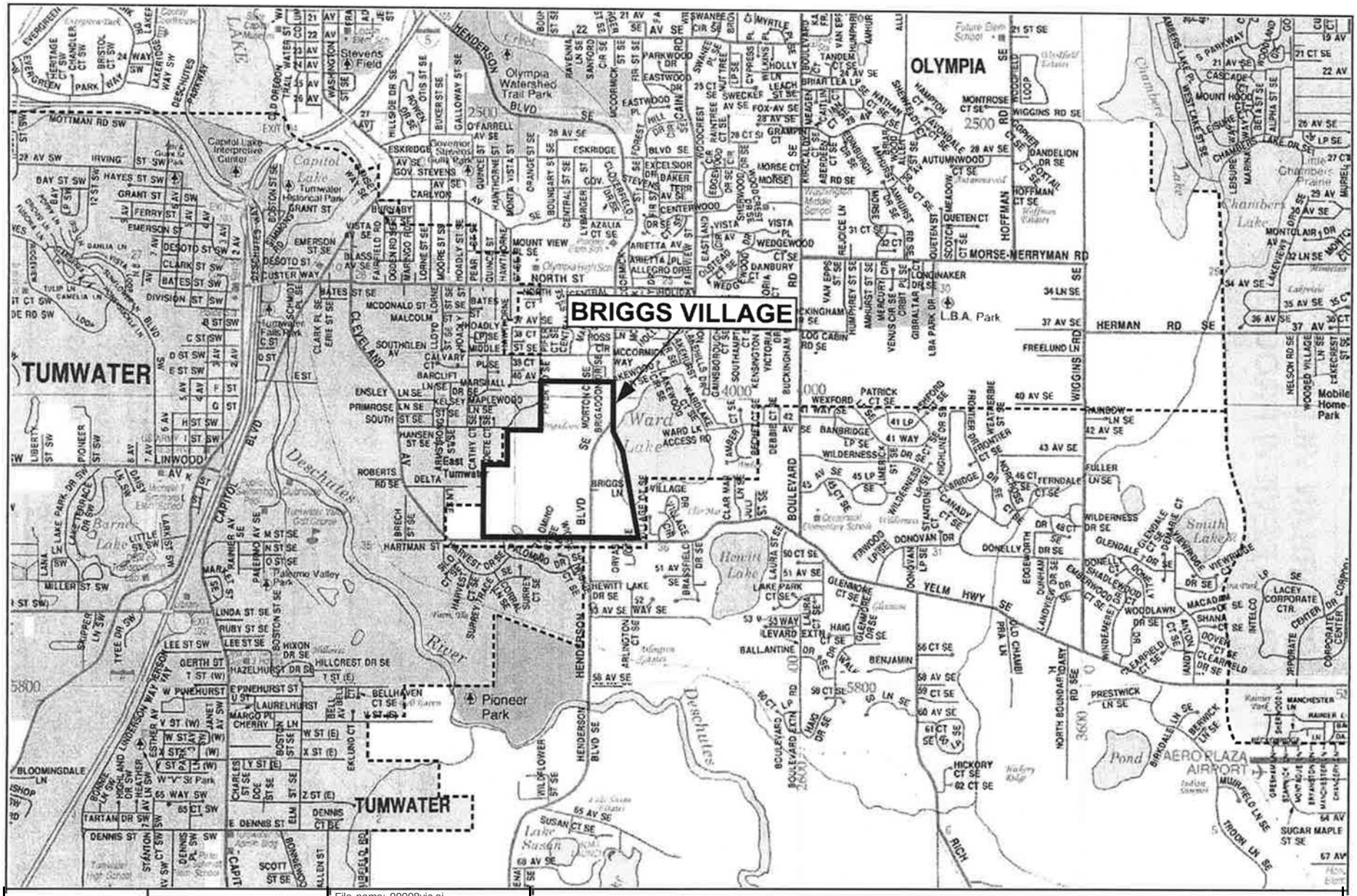
Source: City of Olympia.

FIGURE 1-1.
OLYMPIA MASTER PLAN REVIEW PROCESS
BRIGGS VILLAGE MASTER PLAN EIS
OLYMPIA, WASHINGTON



NORTH
No Scale

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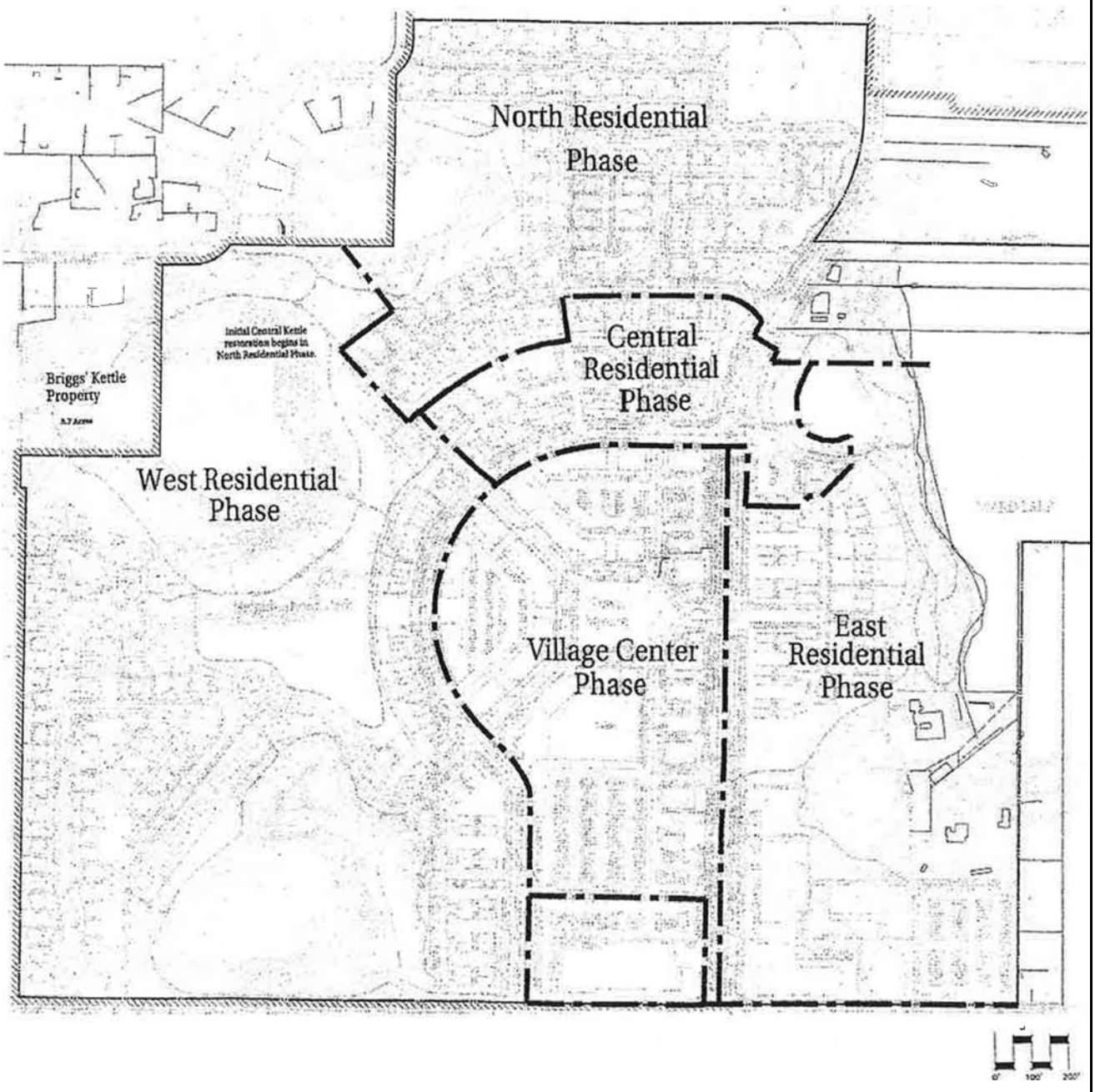
Edits by:
Date: 07/02/02

Source: Totem Publications: AUas of Thurston & Mason Counties; 1994.

ADOLFSON

FIGURE 1-2.
VICINITY MAP
BRIGGS VILLAGE MASTER PLAN EIS
OLYMPIA, WASHINGTON



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Source: NBBJ.

FIGURE 1-3.
BRIGGS VILLAGE PHASING PLAN
BRIGGS URBAN VILLAGE MASTER PLAN EIS
OLYMPIA, WASHINGTON

Corporate offices, liner warehouses, and sales facilities in the center of the nursery off Henderson Boulevard would be relocated prior to development of the Central Residential Phase and Village Center Phase. The laboratory site east of Henderson Boulevard would be the last facility to be relocated and remain until development of the East Residential Phase is initiated.

The site is zoned Urban Village by the City. According to Section 18.05.020 ofthe *Olympia Municipal Code,* the general purpose of this land use designation is:

- To enable development of integrated, mixed-use communities containing a variety of housing types arranged around a village center, which provide a pleasant living, shopping, and working environment; a sense of community; and a balance of compatible retail, office, residential, recreational, and public uses. **(Note:** Urban villages and neighborhood villages are very similar, except for the size and service area of their commercial component. Urban villages contain a larger and more diverse commercial component intended to serve multiple neighborhoods while the commercial uses in neighborhood villages are scaled to serve the immediate neighborhood.)

- To enable a land use pattern that will reduce dependence on auto use, especially drive-alone vehicle use during morning and evening commute hours.

- To enable the design of new development in a manner that will ensure the safe and efficient movement of goods and people.

- To require direct, convenient pedestrian, bicycle, and vehicular access between residences in the development and the village center in order to facilitate pedestrian and bicycle travel and reduce the number and length of automobile trips.

- To require sufficient housing density to enable cost-effective extension of utilities, services, and streets; frequent transit service; and to help sustain neighborhood businesses.

- To enable many of the community's residents to live within one-fourth (114) mile of a grocery store and transit stop.

- To ensure that the villages are arranged, scaled, and designed to be compatible with surrounding land uses and provide sensitive transitions between significantly different land uses (e.g., commercial and residential uses).

- To ensure buildings and other development components are arranged, designed, and oriented to facilitate pedestrian access.

- To allow innovative site and building designs while providing for harmony and continuity throughout the development (e.g., coordinated architectural styles, street trees, lighting, signage, and benches).

- To ensure adequate light, air, and privacy and readily accessible open space for each dwelling in order to maintain public health, safety, and welfare.

- To provide for appropriately located community open spaces for informal social activity, recreation, and aesthetic enhancement of the development.

SCOPE OF THIS EIS

The City of Olympia, as the lead agency under SEPA for this project, issued a Determination of Significance on May 21, 1999. Along with the Determination of Significance, the City issued a Request for Comments on the scope of the EIS, beginning a formal30-day public scoping period for the project.

By the end of the scoping period on June 18, 1999, the City had received a total of 15 written comments from local residents, members of the general public, and a variety of state and local agencies. City staff also hosted a public scoping meeting on June 16, 1999, to collect comments on the scope ofthis EIS. Approximately 15 members of the public attended this meeting, and City staff recorded detailed comments provided during this meeting. Issues and areas of concern raised by the public at this meeting and in written comments included:

- Future growth in the project area;

- The scope ofthe alternatives evaluated in the EIS;

- Inter-jurisdictional coordination between Olympia and Tumwater;

- Unrestricted automobile access and increased traffic along Pifer and South Streets (connections to neighborhoods to the north and west);

- Pedestrian safety, particularly for children;

- Impacts on school capacity;

- Kettle water quality, hydrology impacts, and kettle management;

- Impacts to wildlife;

- Public access to Ward Lake;

- Park management;

- Soil contamination from past nursery activities;

- Water and wastewater system capacity; and

- Increased light and glare in adjacent neighborhoods.

On September 30, 1999, the City of Olympia issued a "Notice of Scope of Environmental Impact Statement." The Notice lists those topics and issues that the City's SEPA official concluded should be evaluated in the EIS. These include potential impacts to:

- Transportation systems;
- Ward Lake, wetlands, and other surface waters;
- Groundwater;
- Soil and air quality;
- Parks and other recreation facilities;
- Light, noise, and view obstruction;
- Upland habitat and wildlife; and
- Public schools.

It was determined that in addition to impacts of the proposed action upon these elements of the environment and consideration of the "No Action" alternative, a number of options should be evaluated as part of this EIS. Transportation system options include: (a) a connection between Briggs Village and Delta Lane; (b) a connection between Briggs Village and Pifer Road; (c) roundabout intersections on Henderson Boulevard; and (d) transportation demand management (TDM) measures. Two drainage system options that do not involve placement of the storm drainage facility in the South Kettle are evaluated. And a public access trail to Ward Lake is examined as an option to the proposed public overlook.

ORGANIZATION OF THIS EIS

This Introduction is Chapter 1 of the EIS. Chapter 2 characterizes existing conditions of the natural and built environment on and in the vicinity of the project site. Chapter 3 describes the proposed action in greater detail, as well as each "option" and the No Action alternative. Chapter 4 addresses potentially affected elements of the natural and built environment by element and includes information on potential impacts and mitigation measures. Chapter 5 discusses "options" for transportation, drainage, and Ward Lake access, each of which may or may not be implemented. Appendices provide supporting information, such as technical reports and agency consultation letters. Tables 1-2 and 1-3 provide summaries of impacts and mitigation measures associated with all alternatives and optional elements.

Table 1-2. Summary of Impacts and Mitigation

ELEMENT	PROPOSED ACTION	NO ACTION	OPTIONAL ELEMENTS
SOIL IMPACTS	• 193,000 cubic yards of excavation, 167,500 yards of fill, 25,000 yards exported off-site. • Potential erosion of exposed soils sedimentation during construction. • Potential deposition of soils on roadways during truck transport. • Potential for landslides and slumping on steep slopes of kettles and Ward Lake • Potential for small-scale contaminant leaks and spills.	• No excavation or fill required. • No soil stockpiling required. No transport of soils off-site. • Continued use of fertilizers and pesticides. Potential for soil contamination.	Ward Lake Access Trail • Construction of access trail to Ward Lake could result in erosion of steep slopes along lake.
SOIL MITIGATION	**Regulatory Requirements** • Comply with applicable requirements in City of Olympia's Critical Areas Ordinance for construction near steep slopes, Ward Lake, and kettles. • Require Best Management Practices described in the *Drainage Design and Erosion Control Manual for Olympia* (City of Olympia, 1994b) for all construction. • Implement a Temporary Erosion and Sedimentation Control Plan for construction. • Cover exposed and stockpiled soils as soon as practical. • Immediately contain and clean up spills. **Other Mitigation Measures** • Limit initial clearing and grading for each phase to minimum areas necessary. • Retain native vegetation in all buffer areas and dedicated open spaces to control erosion and sedimentation. • Coordinate with staff of Department Ecology, Thurston County Environmental Health, and City of Olympia regarding grading and potential soil contamination issues. • Require retaining walls in certain locations to enhance stability of slopes, and minimize grading and filling.	• No mitigation necessary.	• Implement erosion control measures to minimize potential for erosion reaching Ward Lake.
AIR QUALITY IMPACTS	• Small amounts of dust during construction. • Emissions of gas and diesel fumes from construction vehicles and equipment. • Odors from asphalt paving. • Increase in vehicle emissions over long term. • Potential for wood smoke from residences.	• Continued emissions from nursery operations.	• Street Connections. Different distribution of vehicle emissions based on traffic patterns.
AIR QUALITY MITIGATION	**Regulatory Requirements** • Wood stoves and fireplaces must conform with State Wood Smoke Control Program. • Homeowners must comply with air quality advisories regarding wood burning from Olympic Region Clean Air Agency (ORCAA). **Other Mitigation Measures** • Control fugitive dust during construction by spraying exposed soils with water, cleaning streets, cleaning haul trucks prior to exiting the site. • Avoid prolonged vehicle idling during construction. Maintain and service vehicles.	• No mitigation necessary.	• No additional mitigation measures identified.

ELEMENT	PROPOSED ACTION	NO ACTION	OPTIONAL ELEMENTS
WARD LAKE, OTHER SURFACE WATER IMPACTS	• Potential for erosion runoff to Ward Lake and kettles.	• Continuing erosion associated with disturbed soils..	• Ward Lake Access. Increased erosion, sedimentation of Ward Lake, removal of vegetation along lakeshore.
MITIGATION WARD LAKE, OTHER SURFACE WATERS, WETLANDS	**Regulatory Requirements** • Meet requirements of the Olympia *Drainage Design and Erosion Control Manual.* **Other Mitigation Measures** • Operation and maintenance of storm drainage facilities would be the responsibility of the homeowner's association(s). • Private inspection program to evaluate performance of stormwater facilities. • Restore Central Kettle to mitigate impacts of stormwater facility in the South Kettle.	• Continued compliance with erosion control standards.	• Meet requirements of the *Drainage Design and Erosion Control Manual* for Olympia and Olympia Critical Areas Ordinance.
WETLANDS IMPACTS	• Elimination of irrigation return flows to kettles. • Increase of 31.6 acres for South Kettle contributing area. Slight change in contributing basin size for other kettles • Loss of 1.5 acres of wetland associated with South Kettle.	• Continued discharge of irrigation return flows to kettles.	• Slight changes in contributing basin sizes for each kettle.
WETLANDS MITIGATION	**Regulatory Requirements** • Design must conform with Olympia's Critical Areas Ordinance. **Other Mitigation Measures** • Mitigation/restoration to improve Central Kettle wetland functions.	• No mitigation necessary.	
GROUNDWATER IMPACTS	• Potential surface spills of fuels, lubricants, other chemicals during construction. • Potential temporary dewatering for building construction. • Long-term contamination potential from stormwater runoff; improper use of fertilizers, pesticides.	• Potential for groundwater contamination from continued use of fertilizers and pesticides in nursery. • Risk of contamination from use of on-site sewage treatment systems.	
GROUNDWATER MITIGATION	**Regulatory Requirements** • Stormwater system maintenance plan required. **Other Mitigation Measures** • Develop a Landscape Management Plan to ensure proper application rates, appropriate use of fertilizers, pesticides; including covenants to minimize use of chemicals.. • If dewatering is necessary, treat clean ground water with settling ponds and reinfiltrate on-site. Monitor ground water quality; treat contaminated ground water as appropriate • Discontinue use of on-site sewage treatment.	• No mitigation necessary.	• No additional mitigation measures identified.

ELEMENT	PROPOSED ACTION	NO ACTION	OPTIONAL ELEMENTS
UPLAND HABITAT AND WILDLIFE IMPACTS	• Conversion of 25 acres of upland scrub/shrub, 3 acres of upland forest, 1.5 acres of kettle wetland habitat to more urban habitat type; total alteration of land cover on approximately 60 percent of site. • Shift in species including birds and manunals to more urban-adapted species. • Potential disruption of red-tailed hawk nesting during construction. • Construction noise may cause relocation of some species.	• Continued risk of release of pesticides and herbicides with associated impacts to wildlife.	• Drainage Option A. Several acres of upland "urban-horticulture" habitat converted to stormwater detention facility. • Drainage Option B. Potential removal of trees and hawk nest. • Access trail to Ward Lake Would modify forested habitat along lake; potential disruption of wildlife from trail use.
UPLAND HABITAT AND WILDLIFE MITIGATION	**Regulatory Requirements** • Retain trees in accordance with City of Olympia Tree Protection and Replacement Ordinance. • Retain portions of site in vegetated condition. • Retain healthy, mature trees where possible. Incorporate preservation of unique specimens (OMC Section 18.06A.090, 1997). **Other Mitigation Measures** • Enhance Central Kettle native habitat for resident and migratory animals. • Retain arboretum area as forest. – Protect red-tailed hawks by avoiding work in vicinity of nest tree during February to July nesting season, permanent retain tree, plant buffer to increase the buffer, and include interpretive signage to educate public about protecting nest.	• No mitigation necessary.	Ward Lake Access Trail • Minimize vegetation clearing along trail corridor and at shoreline access point. Control trail and lake access point through use of boardwalk, marking of trail limits, signage. Drainage Options • Retain stand of conifers identified as potentially containing a red-tailed hawk nest in the vicinity of the proposed public park.
LIGHT & GLARE IMPACTS	• Increased residential and commercial lighting.	• Continued use of lighting associated with nursery.	• None identified.
LIGHT & GLARE MITIGATION	**Regulatory Requirements** • Comply with City lighting standards **Other Mitigation Measures** • On Briggs Boulevard use lighting 25-30 feet high. • Use lower fixture mounting (12 feet) for Town Square radial and collector streets. • Design open-space lighting to reduce impacts to neighboring residents by shielding and directing lighting toward open space and trails, away from residential areas. • Include shielding on security lighting for parking areas associated with buildings such as Daycare Center and Arboretum ; direct ti2J,ting away from neighboring properties.	• No mitigation necessary.	Ward Lake Access Trail • Limit use of Ward Lake access trail to daytime hours to avoid need for lighting.
NOISE IMPACTS	• Temporary construction-related noise increases from heavy equipment during clearing, grading, paving, building. Includes vehicle noise, nail guns, drills, etc. • Long-term noise increase from local traffic, residential activity, commercial activity.	• Continued vehicle noise.	• Connection to South Street/Pifer Road would slightly increase vehicle noise in neighborhoods.

ELEMENT	PROPOSED ACTION	l'/OACTION	OPTIONAL ELE:MENTS
NOISE MITIGATION	Regulatory Requirements • Conduct construction activities in compliance with City of Olympia Noise Protection Standards, including limited hours. Other Mitigation Measures • Reduce noise levels from construction equipment by shutting off vehicle engines when not in use, and driving trucks, equipment to avoid backup alarm. • Develop restrictive covenants to regulate types and period of noises allowed in Briggs Village residential areas. • Regulate commercial noise by covenants that designate delivery schedules and stipulate measures such as shutting off vehicles during deliveries.	• No mitigation necessary.	
VIEW IMPACTS	• Temporary creation of dust and graded areas and stockpiles during construction. • Change from nursery setting to residential, commercial development. • Obstruction of limited Mt. Rainier views from project site.		• Clearing for new trail could alter views of forested areas along Ward Lake shoreline.
VIEW MITIGATION	Regulatory Requirements • Provide one-acre town square common area in mixed-use district (OMC Section 18.05A.030 and 18.05.080). Other Mitigation Measures • Proposal includes Arboretum other open spaces in addition to general landscaping.	• No mitigation necessary.	Ward Lake Access Trail • Limit vegetation clearing along trail corridor and at shoreline access point..
RECREATION IMPACTS	• Increased demand for parks and recreation facilities in region. • Increased use of Pioneer Park.	• No increase in parks and recreation demand from continued nursery operation. • No increase in use of Pioneer Park. • No new park facilities (public neighborhood park, arboretum, commons, trails).	• Drainage Option B could displace proposed 4-acre neighborhood public park in proposed action. Proposed park overlook at Central Kettle also eliminated. • Access trail to Ward Lake would provide additional recreational shoreline access, which is in demand in the City.
RECREATION MITIGATION	Regulatory Requirements • Compensate City of Olympia in accordance with the City's Park Impact Fee schedule. Other Mitigation Measures • Proposal includes overlook of Ward Lake, Arboretum, Town Square, trail system, commons areas. City is purchasing 4-acre neighborhood public park. • Project includes 6-acre Arboretum, 6 acres of commons space, over 3 miles of trail. City proposes to purchase 4 acres on-site for public neighborhood park.	• No mitigation necessary.	

ELEMENT	PROPOSED ACTION	NO ACTION	OPTIONAL ELEMENTS
IMPACTS TRANSPORTATION	• Projected new vehicle trip generation of 1,082 trips per day at Full Buildout. • Delay-based levels-of-service degrade substantially at Henderson and I-5 off-ramp, Henderson, Henderson and North Street, and Henderson and Yelm Highway intersections. • At Full Buildout, five new access points on Henderson Boulevard (two signalized) and three on Yelm Highway.	• Continued limited commercial traffic.	• Pifer Connection Traffic flow would increase between site and neighborhoods. • Roundabouts Vehicle delays, queuing for eastbound traffic at Henderson/Yelm Highway.
MITIGATION TRANSPORTATION	Regulatory Requirements • Payment of Transportation Impact Fees prior to issuance of building permits. • Construct network of internal streets including sidewalks and street lighting. Other Mitigation Measures • Close YMCA Driveway to Henderson Boulevard when the Village Center Phase is completed. • Prior to each major project reexamine projected traffic impacts with respect to current roadway network, operating conditions. • Improve two off-site intersections, Henderson Boulevard / I-5 northbound off-ramp and Henderson Boulevard / North Street. • Widen Henderson Boulevard from north property line to Yelm Highway to three lanes from the north property boundary to near Briggs Boulevard, five lanes from near Briggs Boulevard south to Yelm Highway. • Signalize new intersections as appropriate. • Improve safety of walking routes to schools. • Provide bus shelters at appropriate locations.	• No mitigation necessary.	Transyortation Oytions • Repair and upgrade Delta Lane, Pifer Road and South Street. • Install traffic calming measures in association with new connections. • Include safety measures in roundabout designs.
PUBLIC UTILITY IMPACTS	• About 200,000 gallons per day of wastewater added. • About 220,000 gallons per day of water required for project. • Potential 100-year storm drainage capacity issues in North Kettle.	• Continued minimal utility use.	
PUBLIC UTILITY MITIGATION	Regulatory Requirements • Implement measures to mitigate potential impacts from storm drainage as incorporated into *Drainage Design and Erosion Control Manual.* • Extend 12-inch main along Henderson Boulevard Other Mitigation Measures • Transfer sewer service for YMCA from City of Tumwater to City of Olympia system. • Schedule YMCA pool draining during off-peak hours (i.e., 11 p.m. to 5 a.m.) to minimize potential capacity impacts on the Henderson Boulevard trunk line. • Provide sewer collection for nine existing residences on west, south side of Ward Lake. • Extend sanitary sewer service to existing residences along western side of Ward Lake; provide connections from STEP system to Henderson Boulevard trunk line. • Use private water supply to irrigate common areas. • Enhance Central Kettle to mitigate use of the South Kettle as a storm drainage facility.	• No mitigation necessary.	
SCHOOL IMPACTS	• Project could generate about 240 additional children entering local elementary, middle, and high schools, including at elementary and middle schools that are over capacity.	• No change.	• None identified.

ELEMENT	PROPOSED ACTION	NO ACTION	OPTIONAL ELEMENTS
SCHOOL MITIGATION	Regulatory Requirements • Pay Olympia School District impact fees when residential building pennits are issued. Other Mitigation Measures • None identified.	• No mitigation necessary	• No additional mitigation measures identified.

CHAPTER 2- EXISTING CONDITIONS

BACKGROUND

The proposed Briggs Village is in the southeast Olympia area on the site of the existing Briggs Nursery, locate4 at the intersection of two arterial streets: Henderson Boulevard and Yelm Highway (Figure 2-1). The site includes a YMCA facility and nine residences and has been actively used for plant nursery operations since 1912. No other uses are known to have occurred on the site.

Briggs Nursery began operations as a vegetable and berry farm. At that time, the developed farm consisted of about 40 acres at the current location of nursery offices, just west of Henderson Boulevard. A 1933 aerial photo shows that the farm had expanded to about 60 acres. The farm was primarily devoted to soft fruits and berries (Mackie, personal communication, 2000).

Following World War II the nursery shifted production to woody ornamentals grown in containers. Containers provided the capability of shipping to Midwest and East Coast markets. Inthe 1950s, the nursery expanded to the area east ofHenderson Boulevard. Inthe 1960s and 1970s, mechanisms for cloning woody ornamentals were refined and tissue culture liners developed. As the product line evolved, the nursery changed from a general-purpose facility to a special-purpose nursery. Over these years, additional properties adjacent to the facility were acquired (Briggs, personal communication, 2000).

The nursery expanded northward in the 1970s. The shift from field to container operations continued with plants grown in liners (small pots in which new shoots are rooted) and containers in plastic sheds. By 1986 the nursery had expanded into the southwestern portion of the current facility, though it had not yet moved to the area of the Central Kettle. Nursery operations had expanded to the areas near the Central Kettle and Northwest Kettle by 1990.

In 1997 the Briggs Community branch of the South Sound YMCA, a 40,300 square-foot facility on a five-acre site, was completed and opened on the south part of the proposed urban village. An addition to the facility was completed in 2000. The YMCA includes two pools, a gymnasium, weight rooms, locker rooms, branch administrative offices, and parking. Street access is provided from both Yelm Highway and Henderson Boulevard.

Briggs Nursery Corporation has a lease for the property associated with Briggs Village North Residential, West Residential, Central Residential, and Village Center Phases through the Year 2004. The East Residential Phase property, which includes the laboratory, is leased through the Year 2006.

CURRENT SITE CONDITIONS

The Briggs Village site includes the Briggs Nursery, consisting of field and container production, laboratory facilities, and a landscape sales yard (see Figure 2-1). The nursery operation also

contains ten structures of various sizes and functions, including an administrative and sales office, cafeteria, loading facility, employee facility, shops, a can shed, storage facility, nursery laboratory, liner shipping facility, and several nursery beds. There are nine residences located on the project site. These include one residence on the west-central boundary of the property, five residences between the Southeast Kettle and Ward Lake, and three residences north and northwest ofthe Northeast Kettle (see Figure 2-1).

Six "kettles," depressions created by melting chunks of ice left behind by retreating glaciers, ring the perimeter of the site. These kettles range in size from one to nine acres. Forested, scrub-shrub, emergent, aquatic, and open-water vegetation communities are present in one or more of these kettles, which collectively include approximately 9.5 acres of wetland. Portions of the Southeast, Northwest, North, and Northeast Kettles are comprised of upland forest. The site is also located adjacent to and west ofWard Lake, a large kettle containing a 65-acre lake. Steep slopes comprise about nine acres of the site and generally are found along the shore ofWard Lake and in the vicinity of the on-site kettles. See the Ward Lake, Surface Waters, and Wetlands section of this chapter for more detail.

RELATED ACTIVITIES

There are a number of ongoing and planned future activities that are related to, but independent of, the proposed Master Plan. The activities are:

- The applicant has obtained a grading permit from the City of Olympia to remove nursery debris, including plastic material, metal, and rubber material associated with a now inactive landfill area located just east ofthe Central Kettle on the site. This project has undergone separate environmental and permitting review. The applicant is completing this cleanup during-the winter of2002-2003.

- The City of Tumwater has widened Yelm Highway to four lanes from Henderson Boulevard west along the south boundary of the project site. This project was subject to a separate environmental review (City ofTumwater, 1999). Stormwater from the improved highway has been directed to the south of the roadway, opposite from the South Kettle. The project also included enhancement plantings to the buffer ofthe South Kettle to mitigate the project's encroachment in the kettle's buffer.

- Briggs Village will retain a portion of the existing Briggs Nursery water rights to irrigate the Village grounds. The remainder will be made available to others.

- The City ofTumwater is nearing completion of improvements to Henderson Boulevard between Yelm Highway and Pioneer Park. Improvements include widening, provision of a left-tum lane at Yelm Highway, sidewalks, and slope stabilization.

- Thurston County proposes to widen that portion ofYelm Highway east of the project site to four lanes with bicycle lanes and sidewalks on both sides. This project is in the early design stages. The environmental review for this project has not been completed.

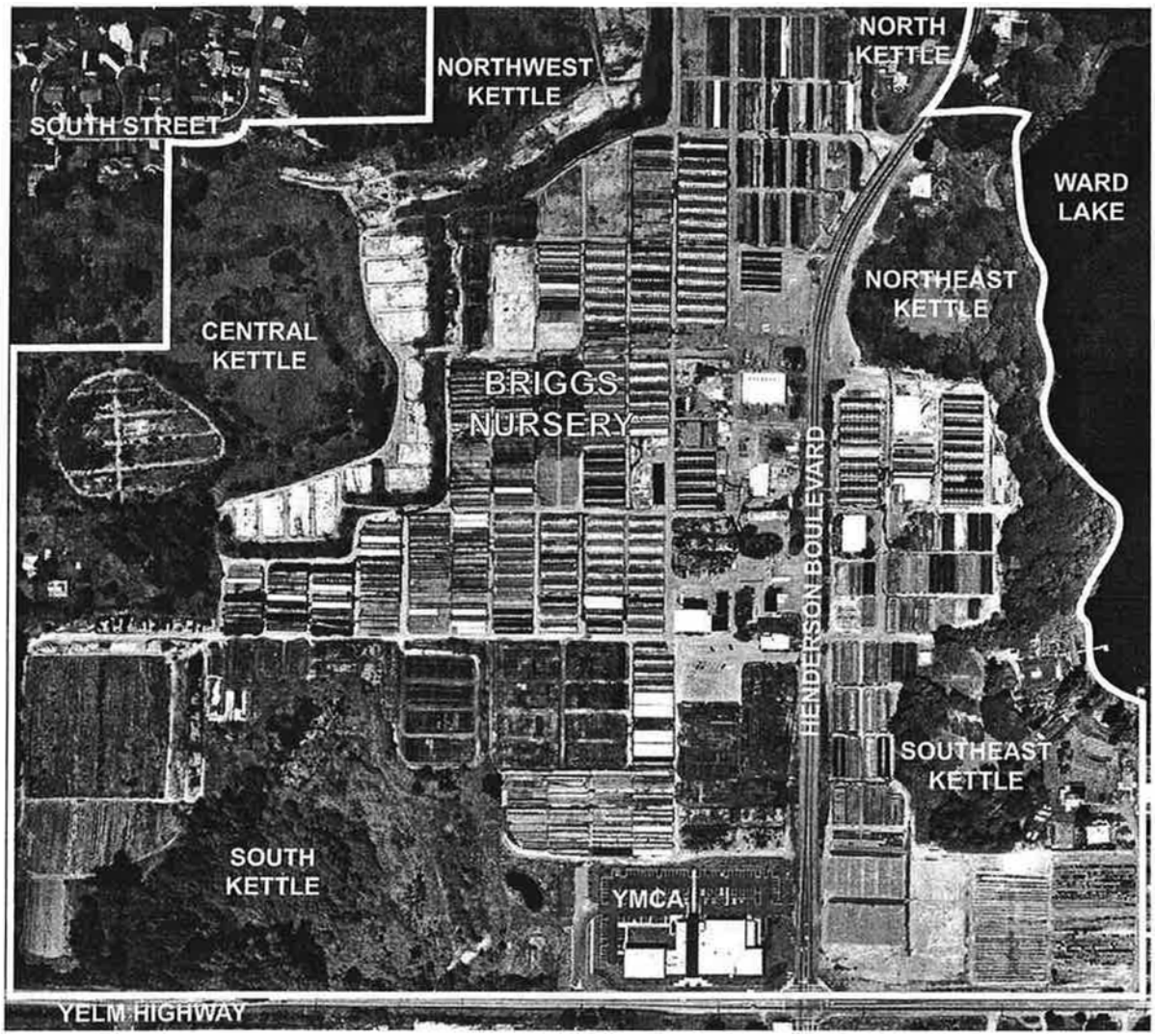

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FIGURE 2-1.
AERIAL PHOTO
BRIGGS URBAN VILLAGE MASTER PLAN EIS
OLYMPIA, WASHINGTON

GEOLOGY AND SOILS

The following description of soil conditions on and in the vicinity of the project site is based on a review of published information, technical studies prepared in support of the Briggs Village application, and correspondence from public agencies. These include:

- Technical studies prepared for the *LOTT Wastewater Resource Management Plan, Final Programmatic Environmental Impact Statement* (LOTI Partnership, 1996);
- *Soil Survey a/Thurston County, Washington* (U.S. Department of Agriculture [USDA] 1990);
- U.S. Geological Survey 7.5 minute quadrangle of Tumwater, Washington (1959);
- Maps provided by the Thurston County GeoData Center;
- Results of analysis of kettle sediments at Briggs Nursery site (Landau Associates, 1996);
- *Limited Phase I Site Assessments for Briggs Nursery, Olympia Facility* (Philip Environmental Services Corporation, 1998);
- Grading Permit application for excavation and removal of farm debris at Briggs Nursery site (Thurston County, 1998; City of Olympia, 2001);
- Letter to A. Mackie regarding Briggs Village Thallium and Water Quality Sampling (L.C. Lee & Associates, Inc., 2000);
- Letter to S. Stewart, L.C. Lee & Associates, Inc., from Washington Department of Ecology regarding proposed soil and water sampling plan at Briggs Nursery site (Blum, 2000);
- *Data Summary from the Additional Contaminant Sampling at the Briggs Nursery Site in Olympia, Washington* (L.C. Lee & Associates, Inc., 2001); and
- Letters to T. Stamm, City of Olympia, from Washington Department of Ecology regarding environmental investigations at Briggs Nursery (Blum, 2000 and 2001);

Additional information was gathered from site visits and personal communications with local officials (Blum, personal communications, 2001).

Landform and Topography

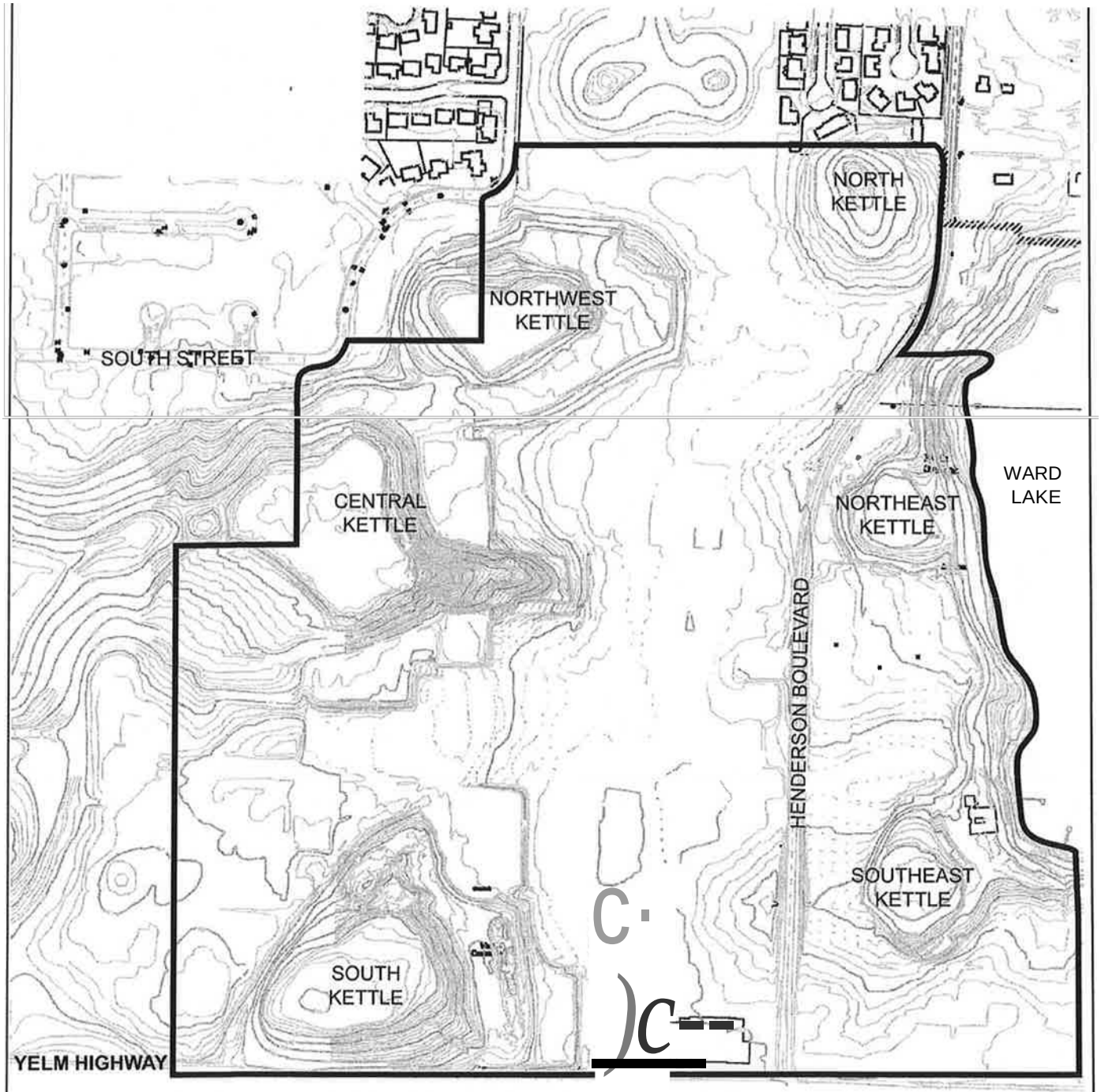
The City of Olympia lies within a basin called the Puget Sound Lowlands that was formed by glacial action. The geologic composition of this portion of Thurston County is mainly the result of glacial activity that occurred during the Pleistocene ice age's Vashon glaciation, about 10,000

years ago. Sediments deposited by glacial activities are divided into several different geologic units throughout northern Thurston County (Robinson & Noble, 1996). The dominant geologic unit in Thurston County is Vashon Recessional Outwash, which consists of sand and gravel deposited by streams from the receding ice of the most recent glacial period. Below the Vashon Recessional Outwash, Vashon Till is the next underlying unit in most areas. Till consists of an unsorted mixture of sand, gravel, and boulders in a compact matrix of silt and clay, which is deposited directly by glacial ice. The third major geologic unit is Vashon Advance Outwash, which consists of layers of stratified sand and gravel deposits. Underlying the Vashon Advance Outwash is the Kitsap Formation, an interglacial deposit containing layers of clay and silt with scattered thin layers of sand, gravel, and peat. Undifferentiated Deposits, also known as Salmon Springs Drift, is the deeper, fifth layer below northern Thurston County. Little is known about this fifth geologic unit. The oldest geologic unit found under Thurston County is tertiary bedrock, which consists of sandstone with interbedded siltstone layers and basalts of the Black Hills complex. Not all of the geologic units mentioned above are present in every portion of the study area. Furthermore, the layers are not uniform in thickness or in composition and may contain interbedded layers of different composition (Robinson & Noble, 1996).

Olympia is situated at the mouth of a watershed that is drained by the Deschutes River, which discharges into Puget Sound's Budd Inlet (City of Olympia, 1996). The proposed Briggs Village site is located upland from, and adjacent to, the Deschutes River valley on a north-south trending late Pleistocene glacial drift that has been transported and eroded by glacial activity. Most of the property is situated on gently sloped, sandy outwash terraces that formed as a result of glacially deposited parent material, which was sorted and graded by water action from melting glacial ice. These terraces are composed of volcanic ash, mantled outwash sands, and silty sand layers, including weakly cemented sandy subsoil layers (L.C. Lee & Associates, Inc., 1999).

Located on the site's gently sloping terraces are six deeply inset depressions called kettles. These kettles were formed as a result of "dead ice" that separated from glaciers as they retreated and remained to form depressions as the ice melted. Substrates at the bottom of the kettles are composed of deep muck deposits in the center with interstratified mucks, silts, and sands comprising the kettle edges. The recent alluvium is predominantly fine sandy and silty-sandy mixtures. The South Kettle also contains fill material from past construction ofYelm Highway and wedges of stratified alluvium that have eroded from this fill. The fill is characterized as unsorted glacial drift, including till. (L.C. Lee & Associates, 1999)

Gentle slopes, punctuated by steeper slopes of the six kettles and Ward Lake (see Figure 2-1a), characterize the overall topography of the site. Elevations on the site range from approximately 180 feet mean sea level throughout most of the site to 140 feet along the banks of the kettles (USGS, 1959). The kettles, which range in size and depth from one to nine acres and between 30 and 80 feet deep, respectively, have slopes that range from approximately 20 to over 40 percent, with the Northeast Kettle having the steepest slopes. Steep slopes were calculated using existing topographic information (KPFF Consulting Engineers, 1998). The northeastern border of the project area along Ward Lake and portions of the South Kettle have slopes of approximately 60 percent.



NORTH
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FIGURE 2-1a.
EXISTING TOPOGRAPHY
BRIGGS URBAN VILLAGE MASTER PLAN EIS
OLYMPIA, WASHINGTON

Soil Types

Surface soil conditions interpreted by the USDA Soil Conservation Service (SCS, now Natural Resources Conservation Service [NRCS]) generally characterize near-surface soil deposits (within the upper 3 to 6 feet) and provide information concerning: (1) areas susceptible to erosion; (2) relative percolation (high or low runoff potential); (3) areas suitable for on-site stormwater disposal; and (4) acceptability of the soil for road fill (USDA, 1990). According to the *Thurston County Soil Survey* (United States Department of Agriculture, 1990), the project site is comprised of five distinct major soil types (see Figure 2-2.). These five soil types include Yelm fine sandy loam on 0 to 3 percent slopes, Yelm fine sandy loam on 3 to 15 percent slopes, Yelm fine sandy loam on 15 to 30 percent slopes, Mukilteo muck on 0 to 3 percent slopes, and Norma silt loam on 0 to 3 percent slopes (USDA, 1990). See the Ward Lake, Wetlands, and Other Surface Waters section of this chapter for hydric soils information.

The three Yelm fine sandy loam soils found on-site are deep, moderately well-drained soils (USDA, 1990). These soils cover approximately 90 percent of the project site. Permeability for these soil types is moderately rapid with a high capacity to hold water. Runoff is slow, and the hazard of water erosion is low.

Mukilteo muck is characterized as a very deep, poorly drained soil with moderate permeability (USDA, 1990). Mukilteo muck comprises approximately 5 percent ofthe project site and is primarily located within the boundary of the South Kettle. Available water capacity is typically high, with a seasonal water table that is at or above the surface from October to April. Runoff is ponded and water erosion is not a hazard.

Norma silt loam, formed on 0 to 3 percent slopes, is a deep, poorly drained soil located in depressions on till plains (USDA, 1990). Norma silt loam accounts for approximately 5 percent of the site and is the primary soil composition of the Southeast Kettle. Permeability is moderately rapid with a high available water capacity. Runoff is slow, and the hazard of water erosion is low.

GEOLOGIC HAZARDS

Landslide

Soil conditions, hydrology, and topography largely dictate the degree oflandslide risk in a given area. Areas with slopes greater than 15 percent generally are considered to be at least moderately susceptible to landslides and erosion. This is especially true if the site is lacking vegetation and has a significant amount of water migrating above and below the ground surface (USDA, 1990).

The City of Olympia's Critical Areas Ordinance (OMC Chapter 14.10) defines landslide hazard areas as having a 40 percent or greater slope, or 15 percent or greater on slopes with seeps (see Soil-related Plans, Policies, and Regulations). Steep slopes in the project area cover approximately 8.7 acres of the site and surround each of the six kettles (L.C. Lee & Associates, 1999). The bank ofWard Lake between the Northeast and Southeast Kettles is also considered a

steep slope area, with slopes exceeding 50 percent. An additional two acres of the project site are composed of artificially created slopes, resulting from grading of the site to create usable nursery beds. These artificial steep slopes are located approximately 150 to 200 feet east of the Central and Northwest Kettles.

The eastern and southern slopes of the South Kettle are unstable. These slopes have been highly modified as the area was used as a fill disposal site, and small slump failures 5 to 15 feet wide and 15 to 40 feet long have occurred in several locations on the side slopes of the kettle. Some sediment deposition has been observed in the kettle, apparently as a result of the upslope failures (Winter, personal communication, 2000).

Seismic activity may result in ground shaking, ground failure, liquefaction, landslides, and slumping. The western Washington region is seismically active and slopes in the region are subject to failure caused by seismic action. The potential for liquefaction in some soils is also believed to greatly increase the potential for damage from earthquakes. Liquefaction occurs when the structural strength of saturated, unconsolidated soil is greatly reduced as a result of seismic shock. Liquefaction is most likely to occur in poorly drained organic and alluvial soils with a relatively low-density and high-organic content. No site-specific seismic risk-related studies have been conducted.

The *Olympia Comprehensive Plan* (City of Olympia, 1994) indicates that portions of the Briggs Village site have "severe soil limitations for roads and buildings." These areas include slopes in the vicinities of Ward Lake and the on-site kettles. Some of these areas are naturally unstable (e.g., slopes above Ward Lake); others have been modified by excavation and fill activities associated with past nursery operations.

Soil Contamination

Nursery operations include mixing of soil materials with liquid and solid fertilizers and use of liquid and solid pesticides and herbicides. Small amounts of cleaning solvents and petroleum wastes are generated in the shop area. Currently, these are shipped as hazardous waste to an approved facility. However, in the past, undetermined amounts and types of contaminants may have been introduced to soil and/or ground water on the site.

Under the Washington State Model Toxics Control Act (MTCA) cleanup regulations (WAC Chapter 173-340), methodologies are established to be used for site contamination studies as well as identifying response or cleanup thresholds for various organic and inorganic contaminants. "Cleanup levels" are defined as "...the concentration of a hazardous substance in soil, water, air, or sediment that is determined to be protective of human health and the environment under specified exposure conditions" (WAC 173-340-200). Included in these regulations are guidelines for addressing total petroleum hydrocarbons (TPH), pesticides, herbicides, dioxins, and metals. MTCA contains three different methods (Methods A, B, and C) for establishing cleanup levels for hazardous substances. Method A is for sites with few contaminants and easily defined problems. Where cleanup levels for hazardous substances have not been established, natural background levels may be used. Method B is the standard method for determining

cleanup levels. Cleanup levels are based on cancer risk and for non-carcinogenic substances concentrations which are anticipated to result in no acute or chronic toxic effects on human health and the environment. Method C is a conditional method used in situations where use of Methods A and B are impossible to achieve or where compliance with Methods A and B may result in greater environmental harm. In the soil and water investigations at the Briggs Nursery site, Methods A and B were used to determine applicable cleanup levels. These procedures were established with the cooperation of the Department of Ecology and Thurston County Health Department.

As summarized below, approximately 70 different locations on the Briggs Nursery site were sampled in five different sampling efforts: (1) Chamberlain & Associates (1996); (2) Landau (1996); (3) Phillips (1998); (4) L.C. Lee & Associates, Inc. (January 2000); and (5) L.C. Lee & Associates, Inc. (October 2000). Many of these locations have been tested for 118 to 190 different elements and compounds typically associated with nursery operations. There have been over 120 samples collected from different locations and depths.

Soils at YMCA Site

In November and December 1995, soil samples from the site of the proposed YMCA were collected to determine levels of residual pesticides and herbicides from past nursery uses (S. Chamberlain & Associates, Inc., 1996). Very low concentrations of chlorinated pesticides were detected in surface soil samples. No organophosphorus pesticides or chlorinated herbicides were detected. All concentrations were well below recommended cleanup levels. Subsurface sampling indicated that chlorinated pesticides did not increase with depth but rather decreased to non-detectable levels at a depth of 12 inches below the surface.

Sediments in Kettles

In August 1996, sediment samples were collected from the Southwest Kettle, Northwest Kettle, and Central Kettle (Landau Associates, Inc., 1996). In 2000, sediments samples were collected from the Northeast and Southeast Kettles (L.C. Lee and Associates, Inc., 2001). These kettles are known to collect stormwater from the existing Briggs Nursery site. Soils samples were also collected from a site south of the Central Kettle. The purpose of the sampling program was to provide data to be used in the development of a stormwater plan as well as other permit and development-related evaluations.

Solid Waste

The site owners identified a solid waste site near the Central Kettle. In 2001 and 2002 that site was extensively tested. Minor levels of nursery-related chemicals were identified and removed. The work is concluded and the Department of Ecology is in the process of issuing its final approvals for the waste site (Mackie, personal communication, 2002).

Soil samples were analyzed and compared to Washington's Model Toxics Control Act (MTCA) residential soil cleanup criteria WAC 173-340-740, a set of criteria that may also be applicable to

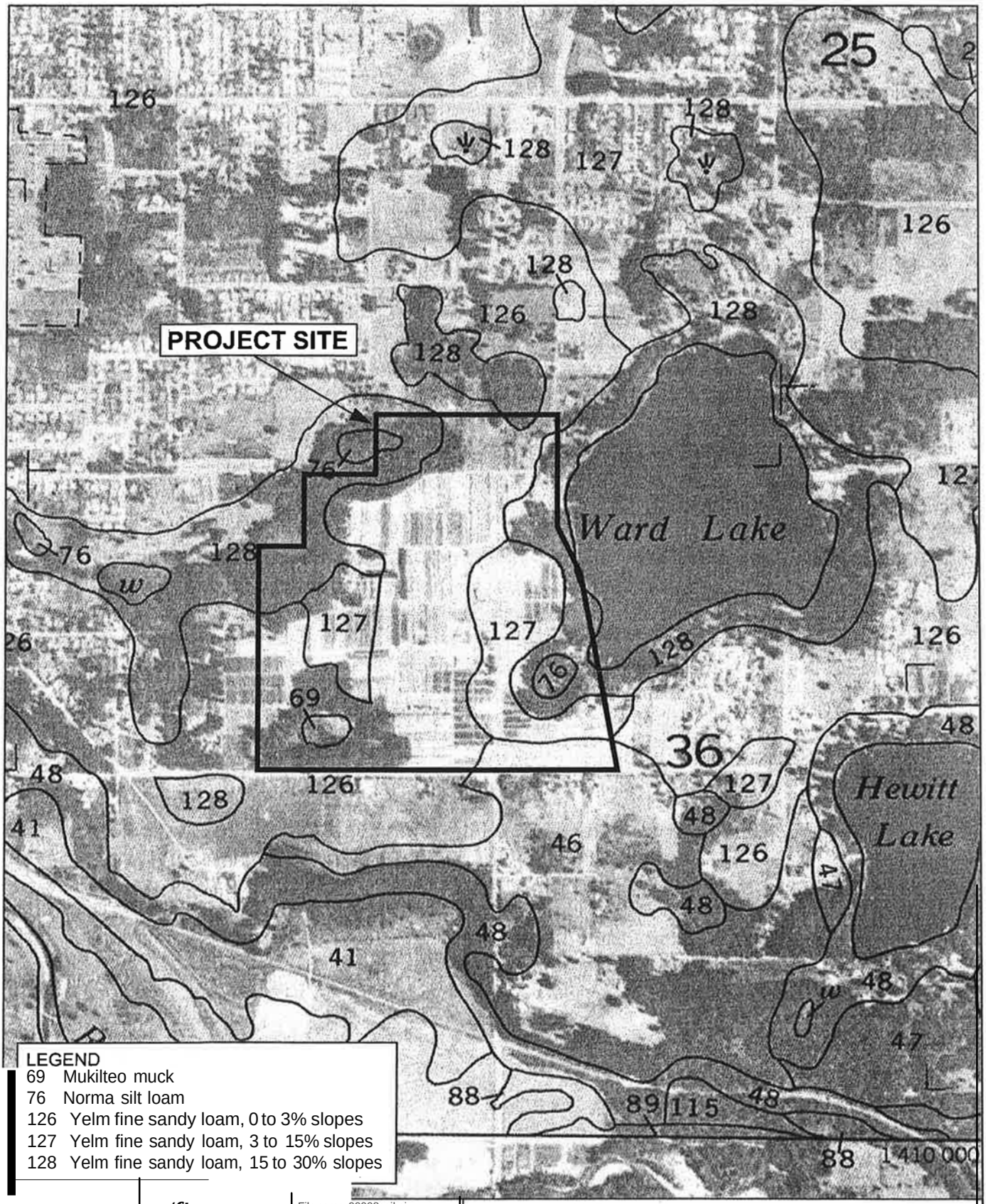


FIGURE 2-2.
THURSTON COUNTY SOIL SURVEY
BRIGGS VILLAGE MASTER PLAN EIS
OLYMPIA, WASHINGTON

the planned park site. All of the chemicals detected in soil samples were found to be below the MTCA residential soil cleanup criteria, with the exception of thallium. Thallium was commonly used as an active ingredient (thallous sulfate) in rodenticides before being replaced by less toxic compounds in 1975. Soil sampling in 1996 indicated that concentrations of thallium were present at levels below the MTCA cleanup level based on direct contact, but above the level established under MTCA for protection of ground water (Landau Associates, Inc., 1996). See additional discussion of thallium below.

Phase I Site Assessment

In early 1998, a Limited Phase I Site Assessment was conducted for the Briggs Village Nursery site (Philip Environmental Services Corporation, 1998). For locations see Figure 2-3. The purposes of the assessment were: (a) to investigate current and past uses of the site; (b) to inspect the site for evidence of environmental contamination; and (c) to make recommendations based on the results. A number of conclusions resulted from the site inspection.

- There are two underground storage tanks on the site located just north of the shop area. They are 500- and 1,000-gallon tanks used for storing diesel fuel and gasoline. These tanks were tested for structural integrity in 1998 and found to be structurally sound (Evergreen Environmental Services, Inc., 1998).

- There are several large propane tanks at various locations on the site. Propane is used for temperature control in both permanent and temporary structures. The assessment did not identify any problems with these tanks.

- Septic systems for sanitary sewage are located near the office building, shop area, and laboratory facilities.

- A natural depression located just east of the Central Kettle was historically used as an on-site landfill for farm debris. This landfill was reported to contain primarily organic materials, metal and rubber debris, as well as some chemicals. This area was in use from 1970 until the mid-1980s when the landfill was covered with soil.

- In 1992 there was a small spill of motor oil from a 55-gallon drum located north of the pesticide storage area (shown as #3 in Figure 2-3). Following cleanup and removal of contaminated soils, sampling of soils in the spill area showed that, "Material removed from the site has effectively eliminated the contamination" (Geotechnical Testing Laboratory, 1992).

- The assessment found some evidence of minor petroleum spills on the concrete pad outside the shop, including an oil sheen on standing water in the vicinity of the pad. Surface runoff from this area flows through a series of culverts to the Northeast Kettle. No significant spills of petroleum products were reported.

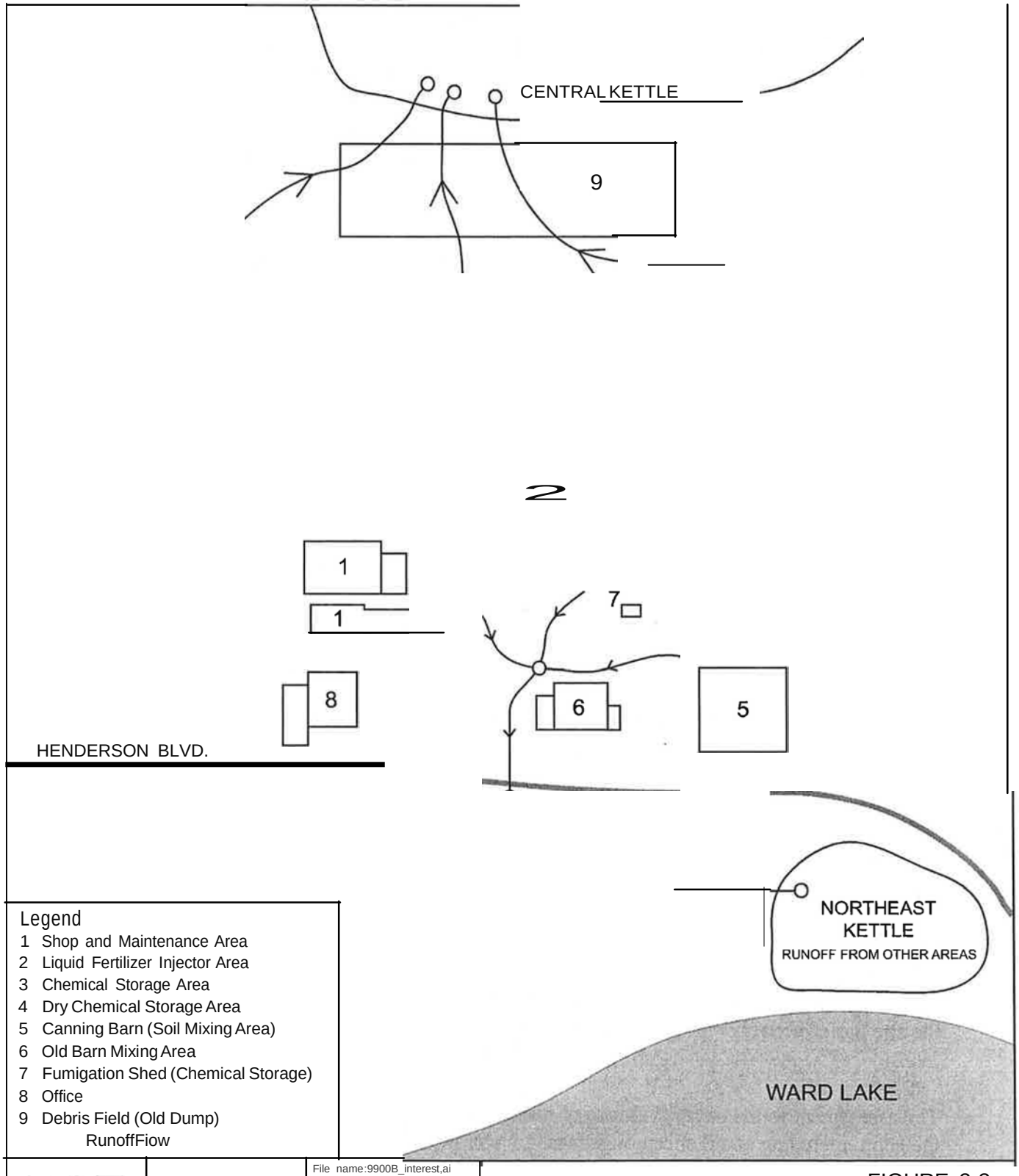


FIGURE 2-3.
BRIGGS NURSERY AREAS OF INTEREST MAP
BRIGGS VILLAGE MASTER PLAN EIS
OLYMPIA, WASHINGTON

- Various petroleum products (e.g., lubricating oil, hydraulic oil, gasoline, propane), paint, solvents, batteries, and tires were observed in and around the shop area. Partial containment of petroleum products was provided. Wastewater from the wash sink was directed to a sump area outside the shop.

- In the liquid fertilizer mixing area, fertilizers are mixed with waters used to irrigate plant materials. This area was being refurbished at the time of the inspection. Five 1,500-gallon poly-tanks were to be placed within a containment area. The operator stated that no "significant" spills of liquid fertilizer have occurred in this area (Philip Environmental Services Corporation, 1998).

- Two truck trailers and a concrete permanent structure used for mixing chemicals were observed. No evidence of spills was observed, although given the nature of these chemicals (e.g., wood preservatives, pesticides, herbicides), visual evidence of spills would be unlikely. Trailers did not have containment capability. A spill of approximately 55 gallons of copper chromium arsenicals (CCA) was reported to have occurred in 1992.

- Soil/chemical mixing areas are used to mix solid and liquid fertilizers with soils prior to potting or planting. These areas were found to be partially covered without containment barriers for any spillage. Evidence of spillage of chemicals was observed in all mixing areas. Wastewater and runoff from these areas was plumbed to the Northeast Kettle.

- The laboratory contained small amounts of chemicals stored in cabinets. No evidence of spills was observed and no significant spills were reported by the operator.

- The Northeast Kettle receives most of the runoff from the areas of potential contamination. The operator indicated that precautions had been taken to prevent any potential contamination of Ward Lake from kettle waters, although these were not described in the assessment. However, it was noted that if the capacity of the Northeast Kettle was exceeded, the overflow from the kettle would enter the lake approximately 60 to 80 yards away. At the time of the inspection, debris and white particles were observed on the embankment above the lake. The operator reported that these particles were inert in nature.

This Site Assessment included several recommendations, including those below. Actions taken in response to recommendations are indicated in parentheses.

- Soil samples should be taken to identify the nature and extent of any soil contamination. This information should be combined with data on kettles and Ward Lake waters to provide the basis for a "stormwater pollution prevention plan." (A sampling and analysis program for soils and waters on the site was conducted in fall 2000. See results of soil sampling below. A stormwater plan has been developed as part of the Briggs Village proposal. See Chapter 4 Utilities section.)

- The area thought to be the site of a spill of wood preservative should be sampled to ensure the effectiveness of remedial cleanup activities. (No known action.)

- Nursery debris from the landfill area east of the Central Kettle should be removed or monitoring wells installed to identify whether any contamination is present. (Removal of nursery debris is being completed. Monitoring of soils is being conducted coincident with removal operations.)

- The log system for underground petroleum storage tanks should be upgraded to ensure accurate accounting of fuels during filling and dispensing. (No known action.)

- Drums containing unknown materials should be sampled to identify contents and recycled or disposed of as appropriate. (No known action.)

Soil and Water Sampling and Analyses (Early 2000)

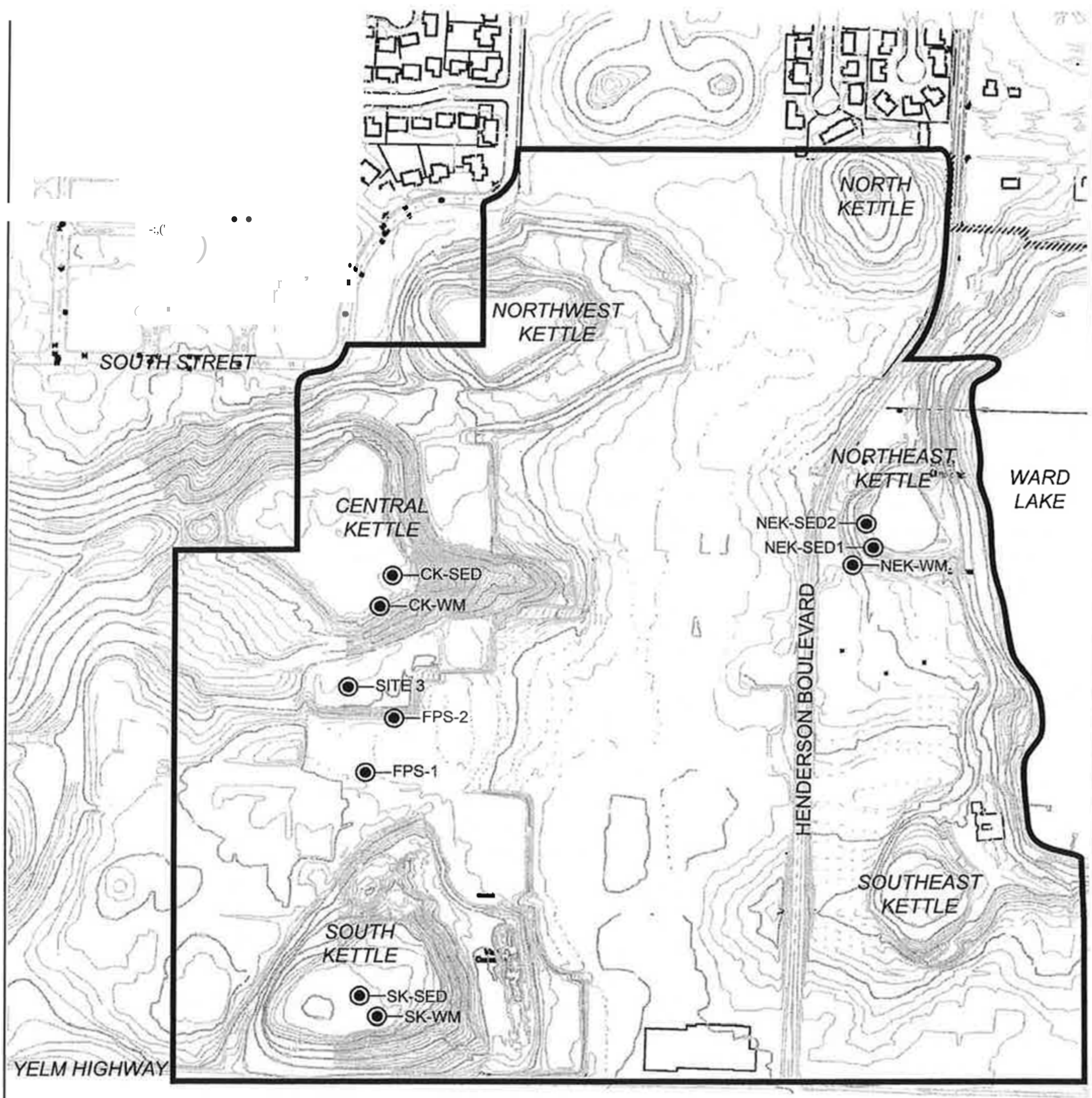
Additional sampling of soils for thallium was conducted in January 2000 to supplement data generated in 1996 (L.C. Lee & Associates, Inc., 2000). Samples were collected from the Central, South, and Northeast Kettles and from areas south of the Central Kettle. Data were compared with applicable MTCA cleanup levels for residential, commercial, and industrial uses as well as levels protective of surface and ground water.

Data showed that thallium at the Briggs Nursery is present in soils in concentrations ranging from undetected to 0.3 parts per million (ppm). These concentrations are 18 to 56 times below MTCA cleanup levels for soils with residential use (5.6 ppm). Similarly, thallium is present in concentrations approximately 220 times and 2,000 times below applicable MTCA levels for commercial (22.4 ppm) and industrial uses (245 ppm), respectively. However, 6 of 21 samples (see Figure 2-3a) showed concentrations just above MTCA cleanup levels protective of ground water (0.112 mglkg). No consistent trends in concentrations of thallium were observed with soil depth. More detailed sampling for thallium was conducted in fall2000 (see below).

In May 2000, the applicant met with representatives of the Department of Ecology and the Thurston County Health Department to discuss potential contamination issues at the Briggs Nursery site and to identify needs for further investigation and evaluation of soils and surface and ground water on the site. Additional sampling was requested by Ecology and the Thurston County Health Department on the basis of site characteristics, potential contaminants associated with past nursery operations, and previous analyses of soils and water on the site conducted through early 2000. This sampling was intended to fill in data gaps and to provide additional information on specific contaminants. Additional analysis was requested for: (a) dioxins/furans; (b) pesticides/herbicides, including DDT, DDE, and dieldrin; (c) total metals, including beryllium, thallium, and chromium; and (d) arsenic. A summary of this meeting and concerns expressed by Ecology and Thurston County Health Department can be found in a letter from Ecology to the City of Olympia (Blum, 2000 and 2001, Appendix J).

Soil and Water Sampling and Analyses (Late 2000)

The fall 2000 analyses compared all sample concentrations to current and proposed cleanup levels as provided in proposed amendments to WAC 173-340, 173-321, and 173-322.



THALLIUM SAMPLING SITES
(Sampling was conducted in January 2000.)

NORTH
No Scale

File name: 99008_sampling.ai
Original AAI Graphic by: ACT
Edits by:
Date: 01/29/03

SEDIMENT THALLIUM SAMPLING SITES
BRIGGS URBAN VILLAGE ... EIS
OLYMPIA, WASHINGTON

See Model Toxic Control Act (MTCA) Cleanup Levels and Risk Calculations (CLARC) Update Publication No. 94-145;August 2000; Proposed Rule Amendments- Ecology Web Page; Apparent Effects Thresholds (AETs), Probable Apparent Effects Thresholds (PAETs), and guidelines and standards proposed by different agencies in the U.S. and Canada listed in Ecology's *Creation and Analysis of Freshwater Sediment Quality Values in Washington State* (Ecology, 1997).

Most of the samples analyzed indicated contaminants at undetectable levels. No compounds or elements that have listed Method A cleanup levels have shown concentrations above these levels. Only eight of approximately 120 samples tested for elements/compounds are above listed Ecology Method B cleanup levels to be protective of ground water. Several of these compounds found to be above Method B levels are within established background concentrations for the Puget Sound area (Ecology, 1999).

Overall, six different compounds in five locations on the site have exceeded Method B cleanup levels for protection of ground water. The six compounds are thallium; arsenic; the pesticides DDT, DDE, and dieldrin; and the PCB Aroclor 1254. Compounds and locations are: (1) Central Kettle (south side)- thallium; (2) Central Kettle (east side near debris field)- arsenic; (3) Fertilizer shed/injection area- arsenic, DDE, DDT, Dieldrin; (4) Unspecified location on the "north side of site"- DDE, DDT, Dieldrin; and (5) Southeast Kettle (sediment)- Dieldrin, Aroclor 1254 (L.C. Lee & Associates, Inc., 2001). These compounds are discussed in detail below.

Thallium

Concentrations in soils on the south side of the Central Kettle were found to be above Method B levels in soil to be protective of ground water. However, the report indicates that it is unlikely that thallium (Tl) at these concentrations and depths could adversely affect ground or surface water. Several reasons are presented for this conclusion. First, no Tl was detected in any surface or ground water samples. Second, sampling at nearly identical sites taken during different efforts exhibited both the presence and absence of Tl, indicating variable levels of Tl, even at a single location. These data, coupled with the absence of detectable Tl in the majority of samples, indicate that Tl is rare on the site. Third, the Synthetic Precipitation Leaching Procedure (SPLP) was selected specifically to evaluate the potential for Tl to exchange with shallow subsurface water and ground water and no Tl was detected. Further, Cr and Be, similar metals to Tl, were observed in the soil profiles at much higher concentrations than Tl, but were not observed in the SPLP waters. It is unlikely that Tl would enter surface or ground waters if Cr and Be, present in much higher concentrations, do not. Fourth, ground water on the site is confined by an aquitard (an impermeable geologic feature [e.g., clay layer] that prevents ground water movement between aquifers.). See L.C. Lee & Associates, Inc., 2001.

Concentrations of DDE in soils near the fertilizer shed/injection area and at an unspecified location on the north side of the site were found to be just above Method B/carcinogen cleanup

levels. However, the study states that it is unlikely that DDE at these concentrations and depths could adversely affect ground or surface water. Several reasons are presented. First, no DDE was detected in any surface or ground water samples. Second, DDE was found within the upper 1 to 3 feet of the soil profile in only two locations. Subsequent resampling at one location failed to detect DDE at surface or depth. Third, DDE was observed in Southeast Kettle sediments, but in concentrations below Method B carcinogen levels for protection of ground water and below the most stringent values established by Ecology (1997). Fourth, ground water on the site is confined by an aquitard (L.C. Lee & Associates, Inc., 2001).

Levels of DDT were found to be significantly higher than the Method B/carcinogen and non-carcinogen cleanup levels, but are significantly below the proposed Method A Soil Cleanup Levels for Unrestricted Land Uses. The study indicates that it is unlikely that DDT, at these concentrations and depths, would adversely affect ground or surface waters. First, no DDT was detected in any of the surface or ground water samples. Second, DDT was observed within the upper 1 to 5 feet of the soil profile in only two locations near the fertilizer shed/injection area. Subsequent resampling of one of these locations found DDT at 5 feet, but at concentrations well below the Method B cleanup levels. No DDT was observed at 3 feet. Third, ground water on the site is confined by an aquitard (L.C. Lee & Associates, Inc., 2001).

Dieldrin

Levels of dieldrin were found to be significantly higher than the Method B/carcinogen cleanup levels for soil. Dieldrin was also found within Southeast Kettle sediments, though there are no established cleanup values for freshwater sediments. Concentrations are slightly above Environment Canada's most stringent freshwater sediment standards/guidelines, but well below Ecology's listed Probable Effects level (Ecology, 1997). The report states, however, that dieldrin at these concentrations and depths is not likely to adversely affect surface or ground water. Several reasons are presented. First, no dieldrin was detected in any of the surface or ground water samples. Second, dieldrin was observed within the upper 1 to 3 feet of the soils profile in only two locations near the fertilizer shed/injection area. Resampling of one of these locations did not detect any dieldrin in the soil profile. Third, ground water on the site is confined by an aquitard (L.C. Lee & Associates, Inc., 2001).

Aroc/or 1254 (PCB)

Concentrations of Aroclor 1254 within the soil profile slightly exceed Method B cleanup levels, but were over an order of magnitude below current and proposed Method A cleanup levels. Levels of Aroclor 1254 in the sediments of the Southeast Kettle are below Ecology's Effects Thresholds (Apparent and Probable Apparent). The study states that it is unlikely that Aroclor 1254 at these concentrations would adversely affect ground or surface water. First, no Aroclor 1254 was observed in any of the surface water samples, including water samples from the Southeast Kettle. Second, no Aroclor 1254 was observed in the ground water sample (L.C. Lee & Associates, Inc., 2001).

Removal of Nursery Debris

In 1997 the applicant submitted an Excavation and Removal Plan and grading permit application to "Thurston County Development Services for removing nursery debris from an area east ofthe Central Kettle. A SEPA Environmental Checklist for the project was completed and a Mitigated Determination of Non-Significance (MDNS) issued by the county. Grading Permit No. 69255 was issued in October 1998.

Because the initial grading permit with the county expired, a subsequent application for a land clearing and grading permit was submitted to the City of Olympia (following annexation ofthe property by the City). A second Environmental Checklist was prepared and the City issued a second MDNS in August 2001. The new grading permit (No. 012583) specifies a number of mitigation measures, including soil sampling and analyses, erosion and dust controls, hours of operation, truck haul routes, a health and safety plan, final grading specifications, and hydroseeding of disturbed areas. These measures were developed with the cooperation of Ecology and Thurston County Environmental Health.

In fal12001 the applicant initiated removal of farm debris from the area east of the Central Kettle. Approximately 75 percent of the debris material was removed, when the removal operation was terminated for the winter. The debris removal continued in summer 2002 and was completed late in 2002 under the terms of an "agreed order" (terms agreed to by owner and Department of Ecology).

Soil-Related Plans, Policies, and Regulations

Citv of 0/vmpia

There are two primary land use policies in the *Olympia Comprehensive Plan* that relate to development of steep slopes and other geologically hazardous areas and development in "environmentally inappropriate locations" in particular:

> *"Direct development to those areas best suited for it. Development will be extremely limited in areas with geological instability, frequent surface flooding, or extreme slopes (ENV 5.1);*
>
> *Enforce regulations which minimize damage due to landslide, seismic hazards, erosion, or occasional flooding (ENV 5.2)."*

The City of Olympia's Critical Areas Ordinance, Chapter 14.10 ofthe OMC, requires mitigation for development-related impacts in areas subject to landslide hazards. Landslide hazard areas are defined as those areas with:

- Slopes 15 percent or greater with impermeable subsurface material frequently interbedded with granular soils and springs or seeping ground water during the wet season;

- Steep slopes 40 percent or greater; or

- Areas located on a landslide feature that has shown movement over the last 10,000 years or is underlain by mass wasting debris.

Protection from landslide hazards is generally to be achieved by the use of appropriate buffers. This requirement is intended to maintain the stability of the hazard area and to protect structures located within the vicinity of the hazard. Activities in landslide hazard areas must be limited to low-intensity land uses that will not create additional hazards to life or property (OMC 14.10.900). The code also requires a minimum of25-foot buffers from such steep slopes. Exceptions are provided for slopes constructed in accordance with certain standards.

State of Washington

Under the Washington State Model Toxics Control Act (MTCA) cleanup regulations (Chapter 173-340 WAC), methodologies are established for site contamination studies as well as identifying response and cleanup thresholds for various organic and inorganic contaminants. "Cleanup levels" are defined as"...the concentration of a hazardous substance in soil, water, air, or sediment that is determined to be protective of human health and the environment under specified exposure conditions" (WAC 173-340-200).

AIR QUALITY

This section describes the existing air quality and applicable air quality standards for the proposed Briggs Village site. Information was gathered from the Olympic Region Clean Air Agency (ORCAA) (formerly *Olympic Air Pollution Control Authority) 1998 Annual Report* (OAPCA, 1998); *Code of Federal Regulations;* and the *1998 Air Quality Data Summary* (Ecology, 1998).

Climate

Olympia's climate is marine-influenced, characterized by warm, generally dry summers and wet, mild winters. Fall rains usually begin in mid-October and continue with only a few interruptions through February. During the winter months, daytime temperatures range from the 40s to low 50s, while nighttime temperatures are normally between 30° F and 40° F. Maximum temperatures average between 70° F and 80° F from June to September. Temperatures will exceed 90° F approximately five days each summer. The average rainfall during July and August is near 1 inch per month and about 2 inches per month during May, June, and September (Brown and Caldwell and Associated Firms, 1998).

Prevailing winds in the project area usually are from the south or southwest. During times of high pressure, the wind will normally blow from the north. Normal wind speed in the Olympia area ranges between 3 to 7 miles per hour (Moody, personal communication, 2000).

Occasional periods of weather stagnation, or inversions, occur in several areas of the region. Weather inversions are normally a winter phenomenon in the Puget Sound basin where cold air is trapped under warmer air. Higher wind speeds affect and eventually disperse the inversion. An inversion causes air pollutants emitted by local sources or emissions transported to the region to become trapped close to the ground and may adversely impact air quality (Moody, personal communication, 2000).

Existing Air Quality

The Olympic Region Clean Air Agency is the agency with jurisdiction over air quality in the project area. ORCAA is responsible for enforcing federal, state, and local air pollution standards and governing air pollutant emissions from new and existing sources within its jurisdiction. The agency has adopted "Regulation 1" as the regulatory code for the region. This regulation closely parallels Ecology's general air quality regulations (ORCAA, 2002).

ORCAA monitors air quality throughout the agency's jurisdiction utilizing State and Local Air Monitoring (SLAM) stations that detect the various criteria pollutants. The primary sources of air emissions in the project area are wood stoves, fireplaces, and vehicles. Both Henderson Boulevard and Yelm Highway experience large volumes oftraffic, and the intersection of these two roads experiences long delays (see Transportation section). According to ORCAA and the Thurston Regional Planning Council (TRPC), there are no available data on air quality conditions at these specific intersections (Moody, personal communication, 2000; TRPC, 2000).

Within the vicinity of the project area, the closest SLAM station that measures for particulates (PM_{10} and $PM_{2.5)}$ is located approximately 5 miles east of the site at Mountain View Elementary School on College Street. An ozone analyzer is operated at the Yelm Fire Station located approximately six miles southeast of the site. ORCAA is not currently monitoring for carbon monoxide (CO) (Moody, personal communication, 2002).

Air Quality Regulatory Requirements

The U.S. Environmental Protection Agency (EPA) has established National Ambient Air Quality Standards (NAAQS) under the 1970 Clean Air Act for six outdoor air pollutants called criteria pollutants (Table A-1, Appendix A). The standards are listed as either primary, which are intended to protect public health, or secondary, which are limits established to protect public welfare (i.e., protection against decreased visibility and damage to animals and crops).

Ecology and ORCAA have established state ambient air quality standards that are at least as stringent as the national standards for the six pollutants mentioned in Table A-1 in Appendix A. When an area fails to meet the designated National Ambient Air Quality Standards (NAAQS) for a pollutant, it is designated as a "non-attainment" area and as either "moderate" or "serious," depending upon the amount of the pollutant detected (OAPCA, 1998). Table A-2 in Appendix A summarizes ambient air quality standards applicable to the project area.

Since 1997 new wood stoves and masonry fireplaces must meet requirements established under Ecology's Wood Smoke Control Program. Consequently, new wood-burning stoves and fireplaces installed are more efficient than those that exist in older homes in the region. The Olympia area is also subject to periodic bans on indoor wood burning during periods of rising pollutant levels that occur when winter weather conditions are particularly cold and still.

The cities of Olympia, Lacey, and Tumwater, along with land under Thurston County's jurisdiction located within and between these municipalities, were formerly designated as reaching "moderate" non-attainment for particulate matter smaller than 10 microns in size (PM_{10}) (Moody, personal communication, 2000). PM_{10} collects in the lower portions of the lungs (i.e., alveoli) and can cause structural and chemical changes deep in the lungs, leading to a variety of chronic diseases (Ecology, 1998). This area is now designated a maintenance area for particulate matter (Moody, personal communication, 2002).

While the City of Olympia does not directly regulate air pollutants, the City's *Comprehensive Plan.* (City of Olympia, 1994a) contains the following policies relating to air quality:

> *Olympia and Thurston County will recognize and cooperate with local, state, and federal air pollution control agencies which set standards and regulate activities that emit air pollutants. These activities should be required to use the most effective and accepted pollution control technology (ENV 2.1);*
>
> *Encourage and financially support transportation demand management and the use of modes of travel other than the single occupancy vehicle, in order to reduce energy consumption and air and water pollution (ENV 2.2);*
>
> *Support efforts to monitor or enforce reduced wood stove emissions to prevent air pollution and other detriments to the environment (ENV 2.3).*

Olympia Municipal Code Chapter 18.40.080 specifies that air pollution shall be controlled in accordance with Regulation 1 of ORCAA.

WARQ LAKE, WETLANDS, AND OTHER SURFACE WATERS

The following section describes the wetlands and other surface waters present on and in the vicinity of the project site. This description is based on documents prepared by L.C. Lee & Associates Inc., KPFF, NBBJ, information from Ecology, input from local experts, and field observations.

Overview

There are seven surface water features on and adjacent to the project site. These include Ward Lake and six kettle depressions. The Deschutes River is located approximately one-half mile south of the project site, and Hewitt Lake is located approximately one-half mile southeast of the project site.

Ward Lake

Ward Lake is located in a deep glacial depression at the eastern edge of the project site. It covers approximately 65 acres. The lake is located at an elevation of 126 feet MSL; mean depth of the lake is 33 feet, and the maximum depth is 67 feet (Ecology, 1997). The lake's basin is approximately 0.95 square miles, and most of the basin is suburban with low- to moderate-density residential development in addition to the portion of the Briggs Nursery located east of Henderson Boulevard. The lake is fed by ground water springs and has no natural surface water inlets or outlets (Ecology, 1997). However, there are artificially created inflows to the Lake. Two outfall pipes from the Northeast Kettle on the project site have created a manmade tributary channel to Ward Lake along the northern portion of the shoreline (L.C. Lee & Associates, 1997a). The pipes regulate maximum water levels in the Northeast Kettle and discharge water into Ward Lake during periods of high water in the kettle. Stormwater also flows into the lake from residential areas in at least two locations.

Along the shoreline of Ward Lake, adjacent to the project site, dominant plant species include red alder, grand fir, big-leaf maple, Indian plum, and sword fern. Vegetation along the tributary predominantly consists of Indian plum and sword fern (see Appendix B, Plant List). The steep bank of the lake in the immediate vicinity of the discharge pipe is eroding and is lacking vegetation.

According to recent reports available from the Washington Department of Ecology, water quality in Ward Lake is relatively good considering its location in an urbanized area (Ecology, 1997). The lake has been reported to be in an oligotrophic (nutrient-poor) state with depleted dissolved oxygen concentrations in the hypolimnion (lower layer of water) (Ecology, 1997). During the most recent lake monitoring conducted by local volunteers in conjunction with Ecology, lake water quality was excellent. The most serious problems reported were decaying vegetation and high water levels (Ecology, 1997). The lake has low levels of nutrients and is unimpeded by aquatic weeds or algal growth. Algae blooms are not common, but occasional moderate densities of algae are observed. Data show that water quality varies from year to year, but there does not appear to be any obvious trend either toward improvement or degradation (Ecology, 1997). Phosphorus, chlorophyll *a*, and Secchi disk (water clarity) measurements show that the lake is near transition between an oligotrophic and mesotrophic (moderate nutrient) lake.

More recent evaluation of water quality data through 2001 by Thurston County and Ecology (2002) provides a number of conclusions regarding the quality of lake waters:

- Levels of nutrients in the lake are "low to moderate." The lake supports a "light growth" of aquatic plants. "Algae blooms are not common but occasionally moderate densities of algae are observed."

- During summer months, the lake stratifies into two layers. The lower cooler layer is usually anoxic due to decomposition of aquatic plants, algae, and other organic materials. Anoxic conditions solubilizes phosphorus from the sediments and can stimulate algal production in the water column after the lake mixes in late fall or early winter.

- Total phosphorus concentrations in the upper layer of the lake was low in 2000 and 2001. Similarly, chlorophyll *a*, the green pigment found in plants and a useful measure of algal growth, was also low in 2000 and 2001. These conditions are indicators of good water quality.

- Evaluation of phosphorus, chlorophyll *a*, and water transparency over the period 1995 through 2001 indicate that Ward Lake is considered oligotrophic (low productivity) tending toward mesotrophic.

- Sampling of algal species has shown the presence of blue-green algae, common in lakes with a tendency toward higher productivity. When there was a dominant species present, it tended to be a green algal species, more typical in oligotrophic (low productivity) lakes.

The report also identified several major issues. There is increasing residential development in the Ward Lake drainage basin, and the lake is subject to contaminants from stormwater flows and sewage spills. Increased development bas the potential for generating adverse impacts on the lake. The resident population of Canada geese using the lake and shoreline areas is of concern because of impacts on water quality and human health.

A local resident adds that algal blooms in Ward Lake have occurred annually since 1997 (Lazar, 2003). These included a blue-green algal bloom in March 2003.

Ward Lake is listed on the 1998 Washington Clean Water Act 303(d) list of impaired water bodies due to a water quality sample that exceeded the edible fish tissue criteria for polychlorinated biphenyls (PCBs). The 1998 document is the most recently published 303(d) list. This listing is based on a 1994 study of chemical contaminants in the lake by Ecology (1994). Surveys ofthe lake for that study also detected arsenic concentrations exceeding sediment quality guidelines. The report did not address the source of the contamination. (Ecology, 1994)

In 1990, the City of Olympia pumped sewage from the Holiday Hills lift station over Lakewood Drive and into the lake (Davis, personal communication, 2001). In the same year, there was an accidental spill of moss cleaner into a drain that discharged to the lake adjacent to the Holiday Hills community beach. A plume of turbidity has been observed during storm events at the point of discharge from the Northeast Kettle (Pearson, 2001).

Kettles

There are six kettle depressions located on the project site, each of which supports one wetland. The kettle bottoms are composed of deep muck deposits in the centers and inter-stratified mucks, silts, and sands near the edges. Two of the six kettles are located east of Henderson Boulevard and four are west of Henderson Boulevard (Figure 2-2). Stormwater from the majority of the site drains via sheet flow into the kettles (KPFF, 2000). In addition, a small amount of drainage from off-site areas northeast and northwest of the site drain into on-site kettles.

South Kettle

The South Kettle (Figure 3-3) is located just north of Yelm Highway and includes 1.5 acres of wetland occupying the kettle bottom. Vegetation present in the South Kettle wetland includes willow, hardhack, stinging nettle, reed canarygrass, and water parsley. The source of water for this winter- and spring-ponded wetland is primarily regional ground water. Like the other kettles located on the project site, the South Kettle wetland receives some irrigation return flow, but mainly during the summer months. The Kettle receives runoff from approximately 30 acres of the current nursery operation (KPFF, 2000b). Additional information on slope stability is provided in the Geology and Soils section, above. The South Kettle received a high rating for producing and storing plant materials when evaluated for its importance with regard to overall ecosystem function. According to the Cowardin classification system (Cowardin, 1979), the wetland associated with the South Kettle is a palustrine scrub-shrub/emergent/open water (PSS/PEM/POW) wetland. See Wetland Functional Assessment, Appendix C, for a more detailed description of the ecosystem functions provided by the South Kettle.

The City of Tumwater recently widened Yelm Highway in the vicinity of the Briggs Village site. To mitigate the impacts associated with the road widening, the City constructed a retaining wall and planted native vegetation along the south end of the South Kettle. This will result in more native shrubs in the South Kettle buffer and an increased physical barrier to protect the Kettle.

Waters in the South Kettle were sampled and analyzed for nutrient concentrations in January 2000 (L.C. Lee & Associates, Inc., 2000). Levels of nitrogen were "extremely low." Concentrations of total and soluble phosphorus were found to be high, indicating that potential for high phytoplankton production, decreased pH, decreased dissolved oxygen concentrations, and degraded water quality is high during spring and summer months when temperatures are warm and there is ample sunlight.

Southeast Kettle

The Southeast Kettle (Figure 3-8) is located east of Henderson Boulevard and west of Ward Lake. The kettle contains approximately 0.9 acre of wetland and is surrounded on the north, west, and south by nursery operations. The steep slopes located on all but the southeast side of the kettle are forested with western red cedar, Douglas fir, and red alder. Along the less steep eastern boundary of the kettle, the vegetation consists of a scrub-shrub community that includes Himalayan blackberry and willows. The pond surface supports Mexican water fern and duckweed. Reed canarygrass grows in the kettle bottom.

A culvert located on the west side of the kettle directs irrigation return flows and stormwater into the wetland. A second tributary channel enters the kettle on the southwest comer and also directs irrigation return flow to the same wetland.

The Southeast Kettle received mostly moderate ratings when evaluated in terms of its overall wetland ecosystem function. According to the Classification of Wetlands and Deepwater Habitats of the United States (U.S. Fish & Wildlife Service, 1979), the wetland associated with

the southeast kettle is a palustrine scrub-shrub/emergent/open water (PSS/PEM/POW) wetland. See Wetland Functional Assessment Appendix for a more detailed description of the ecosystem functions provided by the Southeast Kettle.

§urface water samples from the Southeast Kettle were collected in October 2000 and analyzed for total metals and PCBs (L.C. Lee & Associates, Inc., 2000). No metals were detected in surface waters with the exception of chromium (Cr). No Method A orB cleanup levels are specified for chromium. No pesticides or PCBs were detected in kettle waters. The only herbicide detected was 2,4-D. Concentrations were well below the Method B cleanup level for ground water; no surface water cleanup levels are provided by MTCA. Several dioxins/furans were detected but not at concentrations requiring cleanup measures. (See page 2-8 re MTCA clean-up levels.)

Central Kettle

The steep-sided Central Kettle (see Figure 3-3) is situated near the center of the project site. The kettle contains 4.27 acres of wetland, including an inundated area supporting a number of snags and an open-water area containing several vegetated "islands." At least one, and potentially more than one, of the vegetated islands consists of a floating mat that is not rooted in the pond bottom and moves about the pond with the wind. The steep slopes support invasive, non-native meadow and shrub communities that include such species as bull thistle, velvet grass, and large expanses of Himalayan blackberry. Willows and reed canarygrass grow along the waterline and on the vegetated islands. Water parsley, duckweed, marsh-pennywort, and Mexican water-fern grow in the standing water.

Five principal sources contribute water to the Central Kettle. These water sources are precipitation, regional ground water, surface and transient subsurface flow from precipitation, irrigation return flow, and stormwater from surrounding housing developments. According to the City of Tumwater staff, a portion of South Street drains on to the Briggs property. There are two catch basins that discharge to an energy dissipater and a 15-inch plastic pipe near the Pifer Street curve adjacent to the Briggs site in the vicinity ofthe kettle (Duncan, personal communication, 2000). Irrigation return flow input increases during the dry months, while stormwater input increases during periods of high precipitation. The kettle loses water via subsurface flow, evaporation, and evapotranspiration.

Although there are no natural streams flowing out of the kettle, the Central Kettle has a connection, particularly in times of high precipitation, to a wetland located approximately 1,000 feet to the west (West Kettle). The West Kettle is not located on the project site. In the early 1990s an earthen dam was created between the West and Central Kettles to rectify localized flooding problems (L.C. Lee & Associates, 1997b). A second dam located within the Central Kettle was created to increase the depth of ponded water in the kettle bottom in order to maintain sufficient water depths for the purpose of pumping water to the nursery during dry periods.

Surface waters ofthe Central Kettle were sampled in October 2000 and analyzed for total metals, pesticides/PCBs, herbicides, and dioxins/furans. No metals, pesticides, PCBs, or herbicides were

detected. Polychlorinated Dibenzodioxins and Dibenzofurans were below detection levels except for OCDD. No method A orB cleanup levels are listed for this compound.

Waters in the Central Kettle were sampled and analyzed for nutrient concentrations in January 2000 (L.C. Lee & Associates, Inc., 2000). Levels of nitrogen were "extremely low." Concentrations of total and soluble phosphorus were found to be high. This indicates that potential for degraded water quality is high during spring and summer months.

Overall, the Central Kettle received mostly moderate ratings when evaluated in terms of its overall wetland ecosystem function. According to the Classification of Wetlands and Deepwater Habitats of the United States (U.S. Fish & Wildlife Service, 1979), the wetland associated with the Central Kettle is a palustrine scrub-shrub/emergent/open water (PSS/PEM/POW) wetland. See Appendix C for a more detailed description of the ecosystem functions provided by the Central Kettle.

North Kettle

The North Kettle (Figure 3-2) contains 0.12 acre of forested, red alder-dominated wetland. The relatively steep side slopes support red alder, Douglas fir, Indian plum, and huckleberry. Unlike the Central and Northwest Kettles, the North Kettle supports only small amounts of Himalayan blackberry and is instead dominated by native plant species.

Hydrologic inputs to the North Kettle include precipitation, subsurface flow, surface and transient subsurface flow from precipitation, and irrigation return flow. The off-site area near the northeast comer drains into the North Kettle. Due primarily to the fact that it is situated at a higher elevation than the other two kettles, the North Kettle begins to lose water sooner than the Northwest and Central Kettles once the wet season ends. Unlike the Central and Northwest Kettles, no stormwater or irrigation return flow pipes discharge directly into the North Kettle. Stormwater and irrigation return flow do enter the kettle via subsurface flow and a channel that is located south of the wetland that flows across a parking lot and drains down the south slope of the kettle.

The North Kettle received only high ratings when evaluated in terms of its overall wetland ecosystem function. According to the Classification of Wetlands and Deepwater Habitats of the United States (U.S. Fish & Wildlife Service, 1979), the wetland associated with the North Kettle is considered a palustrine forested/scrub-shrub/emergent/open water (PFO/PSS/PEW POW) wetland. See Appendix C for a more detailed description of the ecosystem functions provided by the North Kettle.

Review of available documents did not uncover any data on water quality for the North Kettle.

Northwest Kettle

The Northwest Kettle (Figure 3-2) supports approximately 1.8 acres of emergent and shrub wetland. The relatively steep, forested slopes bordering the kettle support Douglas fir, big-leaf

maple, substantial amounts of Himalayan blackberry, vine maple, and salmonberry. Red alder, Sitka willow, water parsley, Mexican water-fern, and duckweed grow in the standing water.

Five principal sources contribute water to this kettle. These water sources are precipitation, regional ground water, surface and transient subsurface flow from precipitation, irrigation return flow, and stormwater from surrounding housing developments. The off-site area near the northwest comer of the site drains into the Northwest Kettle. The ditch that provides irrigation return flow to the Northwest Kettle is covered in tires, flowerpots, and discarded plastic. While these items in themselves are inert, their presence indicates that water quality in the kettle may be low due to other inputs associated with this debris, such as fertilizers and pesticides (L.C. Lee & Associates, 1996b).

Overall, the Northwest Kettle received mostly moderate ratings when evaluated in terms of its overall wetland ecosystem function. According to the Classification of Wetlands and Deepwater Habitats of the United States (U.S. Fish & Wildlife Service, 1979), the wetland associated with the Northwest Kettle is a palustrine scrub-shrub/emergent/open water (PSS/PEM/POW) wetland. See Appendix C for a more detailed description of the ecosystem functions provided by the Northwest Kettle.

Northeast Kettle

The Northeast Kettle (Figure 3-8) is located between Henderson Boulevard and Ward Lake. The kettle contains 0.88 acre of wetland. The steep slopes on the north, west, and south sides of the kettle are forested with red alder, big-leaf maple, Douglas fir, western red cedar, and Indian plum. The low bank located along the eastern edge of the kettle is dominated by Himalayan blackberry.

Tributary channels enter the kettle from the southeast, south, and west. All three tributaries contribute stormwater and/or irrigation return flow to the kettle. Due to the soil type underlying the Northeast Kettle, an impermeable layer has formed that prohibits infiltration (KPFF, 2000). The Northeast Kettle has two 8-inch plastic (PVC) outlet pipes situated above the ordinary high water mark that regulate the maximum water level in the kettle and drain to Ward Lake. Sediments and water quality in the kettle have been degraded by nutrient loading from past land uses (L.C. Lee & Associates, 2000).

The Northeast Kettle received mostly moderate ratings when evaluated in terms of its overall wetland ecosystem function. According to the Classification ofWetlands and Deepwater Habitats of the United States (U.S. Fish & Wildlife Service, 1979), the wetland associated with the Northeast Kettle is a palustrine scrub-shrub/open water (PSS/POW) wetland. See Appendix C for a more detailed description of the ecosystem functions provided by the Northeast Kettle.

Waters in the Northeast Kettle were sampled and analyzed for nutrient concentrations in January 2000 (L.C. Lee & Associates, Inc., 2000). Levels of nitrogen were "extremely low." Concentrations of total and soluble phosphorus were found to be high, indicating that the potential for degraded water quality is high during spring and summer months when temperatures

are warm and there is ample sunlight. In October 2000, surface water samples were collected from the Northeast Kettle and analyzed for PCBs (L.C. Lee & Associates, Inc., 2000). No PCBs were detected in kettle waters.

Other Surface Waters

The Deschutes River is located approximately one-half mile south of the project site. There is no surface water connection between the river and the project site. It is likely, however, that the project site influences ground water that flows to the river (see Ground Water section). The river is classified as Type 1 water according to the Washington Department of Natural Resources' water classification system. It has an annual average flow of 393 cubic feet per second (Ecology, 1995). The Deschutes drains a watershed of approximately 180 square miles, flowing into Capitol Lake and eventually emptying into Budd Inlet in downtown Olympia. Water quality in the Deschutes River in the vicinity of the project site typically meets state water quality standards for temperature, turbidity, dissolved oxygen, and nutrients. However, water quality data collected near the Miller Brewery at Ecology Monitoring Station 13A060 between 1990 and 1998 indicates that between two and three times per year the river does exceed water quality standards for fecal coliform. Occasional high-water temperatures have also been reported in the mainstem of the Deschutes River (Ecology, 1995). Record low flows were reported on the river in 1992, though it was not apparent whether or not these flows were due to natural climactic variability or another cause (Ecology, 1995).

The Deschutes River supports runs of chinook salmon, coho salmon, and steelhead trout, as well as several resident fishes, including Dolly Varden/bull trout, Olympic mudminnow, pygmy whitefish, and sea-run cutthroat trout (Washington Department of Fisheries, 1975). In its lower reaches, the river contains good pool-riffle habitat for fish, interspersed with occasional rapids. At river mile 2.0 near Tumwater, the river flows over a series of falls. In 1954, the Washington Department of Fish and Wildlife (WDFW) installed a fish ladder, opening the river to runs of anadromous fish. Limiting factors for fish in the Deschutes include occasional flooding, which can destroy spawning habitat; low summer flows; intermittent debris; beaver dams; and water quality problems.

Relevant Plans, Policies, and Regulations

At least three levels of government have jurisdiction over activities in and around the surface water bodies and wetlands located on the project site: the federal government, the state, and the cities of Olympia and Tumwater.

Federal

At the federal level, Sections 401 and 404 of the Clean Water Act regulate activities in wetlands and waters of the U.S. Section 401 of the Act mandates that federally permitted activities in wetlands comply with the Act and state water quality standards. Section 404 permitting is the most commonly applicable to the discharge of dredged or fill materials into freshwater wetlands.

However, the Clean Water Act does not apply to "isolated" wetlands. "Isolated" wetlands are those that are not adjacent or connected to a navigable water body, such as a river, lake, or marine waters. By this definition, several of the kettles on the Briggs Nursery site (e.g., South Kettle, Central Kettle) probably qualifY as isolated wetlands. Following this ruling, the U.S. Army Corps of Engineers apparently no longer has regulatory oversight of these two kettles (see November 2001letter from Ecology, Appendix H). However, the Corps has not yet confirmed this conclusion.

State

The principal Washington State regulations that would apply to activities in or near surface waters or wetlands on the project site are the Shoreline Management Act (SMA) of 1971 (Chapter 90.58 RCW), the 1949 State Hydraulic Code (RCW 75.20.100-140), State 401 (Water Quality) Certification, and Coastal Zone Management determinations.

Under provisions of the state Clean Water Act, Ecology will continue to regulate all wetlands including isolated wetlands. Ecology uses administrative orders to regulate projects involving isolated wetlands. Basic review standards are the same as with the 401 Water Quality Certification (see August 2001letter from Ecology, Appendix H).

Local

Development of the portion of the site within 200 feet of Ward Lake will require one or more shoreline substantial development permits from the City of Olympia. Such permits must be consistent with the Shoreline Management Act of 1971. Approximately nine acres of shoreline on the west side ofWard Lake are situated in the ref!lated shoreline environment. The shoreline of Ward Lake is designated as a "Rural" shoreline environment.

All proposed projects within the City of Olympia must also comply with the City's Critical Areas Ordinance (OMC, Chapter 14.10). The City has adopted various standards to protect unique, fragile, and vulnerable elements of the environment. This ordinance defines and classifies wetlands, defines activities subject to regulation, describes mitigation and buffer standards, and specifies the required content of reports for review by the City. The six kettles on the site are designated as Class II and III wetlands. All but the Central Kettle are Class III wetlands. The Central Kettle is a Class II wetland. The regulations require a buffer of 200 feet around Class II wetlands for high-intensity development and 100 feet around Class III wetlands. Buffers may be reduced on a case-by-case basis under certain circumstances.

GROUND WATER

This section characterizes existing ground water hydrology and quality in the project area. Principal sources of information used to complete this section include the *North Thurston County Ground Water Management Plan* (Thurston County, 1992); the *Initial Watershed Assessment, Water Resources Inventory Area 13; Deschutes River Watershed* (Ecology, 1995); and well logs

from existing nursery operations. There is little site-specific data for ground water immediately on and around the project site.

Existing Ground Water Hydrology

Four major aquifers are found throughout the northern portions of Thurston County. The geology of this area consists of several distinct geologic layers, some of which function as important aquifers in the North Thurston County area. Refer to the previous Soil and Air Quality section for additional information.

Principal aquifers, in order from shallowest to deepest, include the Recent alluviurnNashon recessional outwash (Qal/Qvr) aquifer, the Vashon advance outwash aquifer (Qva), the Sea Level aquifer (Qc), and older Undifferentiated aquifers (Tqu) (Ecology, 1995). The typical thickness of each of these aquifer layers ranges from 25 to 55 feet (Thurston County, 1992). These aquifers extend laterally throughout much of the northern portions of the County. The highest-yielding areas in terms of water withdrawals are generally found in the areas of McAllister Springs east of Lacey, Chambers Prairie, western Olympia, the west side of Budd Inlet (Cooper Point), and Tumwater. These are areas where substantial withdrawals of ground water have occurred and are likely to occur in the future. Estimated ground water recharge rates from precipitation in the northern part of Thurston County are generally 20 to 35 inches per year (Ecology, 1995).

Hydraulic "continuity" refers to the interconnection between geologic units, ground water, and surface water. Typically, an aquifer will be hydraulically connected with lakes, streams, rivers, or other surface water bodies. This inter-connectivity is important because changing hydraulic conditions in surface waters may affect ground water and vice versa. Because shallow aquifers generally are dominated by localized ground water systems, withdrawals from these shallow features are most likely to affect nearby surface waters. Deeper aquifers are more commonly part of regional ground water systems. In the project area, ground water withdrawals from the Recent alluviurnNashon recessional outwash (Qal/Qvr) and Vashon advance outwash aquifer (Qva) aquifers would likely have the greatest effect on nearby surface water features. In general, however, there is little information on hydraulic continuity in the project area.

Ground water in the project area moves both laterally and vertically. General ground water movement is toward the Deschutes River. Ground water discharges locally to springs, creeks, kettles, and streams, and through withdrawal from wells. Data collected as part of studies of ground water levels have not indicated any significant reductions in ground water levels due to well withdrawals (Ecology, 1995). However, without long-term records of ground water withdrawals, it is difficult to determine any relationship between ground water levels, precipitation, and well withdrawals.

Ground watet?underlying the project site is hydrologically eonnected to the kettles on the site and is a factor in local water level fluctuations within these kettles. Briggs Nursery operates an on-site well near Henderson Boulevard. Ground water enters the well through screens at depths between 230 and 319 feet (L.C. Lee & Associates, Inc., 2001). The Briggs Nursery operation currently pumps up to 400-acre feet of water per year. The well pumps from a depth of 328 feet

and recorded static water levels at the time of drilling in 1986 were 78.5 feet. Pump tests showed a yield of 950 gallons per minute (Robinson & Noble, 1986). During the irrigation season, approximately May to October, the nursery has historically pumped approximately 1,000 gallons per minute (gpm) (Robinson & Noble, 1986). The Robinson and Noble report contains the most recent pump tests for the well.

Existing Ground Water Quality

Ground water quality in northern Thurston County is generally good to excellent (Ecology, 1995; Thurston County, 1992). Areas of contamination have been reported in the lower Deschutes River valley, in the commercial area of Lacey, near the Olympia Airport, and along Yelm Highway south and west of the project site. These contamination areas are related to spills, leaks, septic discharge, or application of agricultural chemicals.

In fall 2000, water from the Briggs Nursery well was tested for metals of concern associated with nursery operations, including thallium, chromium, beryllium, and arsenic. The purpose for sampling was to provide data on the quality of the deep-water aquifer and to provide an indication of influence of any surface contamination of soils and surface waters on ground water quality. None of the metals of concern were detected in the deep ground water. Chromium is common throughout the site, but at concentrations below established background levels in the Puget Sound area (Ecology, 1994). The fact that Cr levels in the deep ground water beneath the nursery are at least four orders of magnitude less than levels in the overlying soil suggests that the integrity of the confining layers is intact. These data, the presence of a confining layer above the deep aquifer, and the depth to ground water, suggest that the nursery operations have not adversely affected deep ground water (L.C. Lee & Associates, Inc., 2001). See also previous Geology and Soils section in Chapter 2.

Maps produced by the Thurston Geodata Center show several wells within one mile of the site, predominantly to the south and east. According to maps available from the Thurston Geodata Center, areas of elevated ground water nitrate level occur two miles east and two miles southwest of the site. Nitrate is a natural constituent of ground water, but also can be contributed by fertilizers, animal manure, and septic system discharges. Nearly all ground water in northern Thurston County contains nitrate concentrations below the drinking water standard of 10 milligrams/liter.

Due to ground water depth on the project site, it is unlikely that any compounds associated with nursery operations would enter ground water over 200 feet beneath the project site. With the exception of total soluble phosphorus, contaminants in the kettles were found to be below concentrations requiring cleanup (see Chapter 2, Ward Lake, Wetlands, and Other Surface Waters). In October 2000, as part of a soil and water sampling program on the project site, well water was tested for metals of concern associated with nursery operations, including thallium, chromium, beryllium, and the metalloid arsenic. None of the metals of concern were detected in ground water (L.C. Lee & Associates, 2001).

Relevant Plans, Policies, and Regulations

The Washington Department of Ecology has adopted *Water Quality Standards for Ground Waters of the State a/Washington* (Chapter 173-200 WAC), which governs the use and protection of the state's ground water supplies. The standards include an antidegradation policy that mandates the protection of background water qualit)(: and prevents the degradation of wate quality that would harm an existing or future beneficial use. The goal of this regulation is "to maintain the highest quality of the state's ground waters and protect existing and future beneficial uses of the ground water through the reductioN or elimination of the discharge of contaminants to the state's ground waters." The regulations do not provide standards for specific ground waters, except for the special waters listed in WAC 173-200-090. Rather, the standards provide maximum primary and secondary contaminant concentrations that apply to protect beneficial uses of all ground waters. Maximum concentrations for nitrate are 10 milligrams/liter (mg/1).

The project site is within the Northern Thurston County Ground Water Management Area. The *North Thurston County Ground Water Management Plan (Ground Water Plan)* (Thurston County, 1992) describes goals, recommendations, and implementation strategies for ground water management in the northern third of the County, which includes the project site. The purpose of the *Ground Water Plan* is to protect the quality and quantity of ground water, meet future water needs, recognize existing water rights, and provide coordinated ground water resource management. The *Ground Water Plan* provides a number of recommendations for protecting ground water supplies in the management area. This plan also defines areas of aquifer susceptibility to pollutants throughout the management area; the project site is located in an area designated as having "high susceptibility," the second-most sensitive designation. "High susceptibility" areas are defined as having abundant ground water and somewhat permeable surface soils that slow the movement of liquids and allow some contaminant removal prior to ground water reaching the aquifer below (Thurston County, 1992).

The *City of Olympia Comprehensive Plan* (City of Olympia, 1991 as updated) contains several goals and policies intended to protect groundwater resources. Several of these are applicable to the Briggs Village proposal.

- Goal PF4. Protect, preserve, and enhance groundwater resources through proactive, aggressive measures such as watershed and wellhead protection programs as appropriate and comprehensive monitoring that is coordinated with other regional efforts.

- Policy PF 4.1. Protect groundwater from land uses and activities that would reduce water quality and quantity.

- Policy PF 4.2. Land use permit processes should ensure that negative effects on groundwater quality are avoided or mitigated.

- Policy PF 4.3. Create management and monitoring strategies that acknowledge the physical linkage between surface water and groundwater and that emphasize prevention and control of pollutants at the source.

HABITAT AND WILDLIFE

The following section describes the vegetation types on the site and corresponding wildlife habitat. This description is based on site visits conducted during the fall of 1999 and springs of 2000 and 2001, input from local experts, and a review of existing maps and documents including:

- *Wildlife Habitat Study* (City of Olympia, 1994b);
- United States Geological Survey Tumwater topographic map (1981);
- United States Fish and Wildlife Service National Wetlands Inventory, Tumwater map (1987);
- *Soil Survey of Thurston County Area, Washington* (USDA Soil Conservation Service, 1990);
- WDFW Habitats and Species database (WDFW, 1999);
- *Technical Memorandum: Cleveland Avenue/Yelm Highway Wildlife Evaluation* (City of Tumwater, 1999); and
- 1:12,000 color infrared aerial photographs (Washington State Department of Transportation, 1997).

See Appendix D for list of vertebrate species observed and expected at the Briggs Village site.

Vegetation and Wildlife Habitat Types

There are four main habitat types on the project site: urban horticulture (developed areas), kettle wetlands, upland forest, and upland scrub-shrub. Approximately 60 acres of the center of the site is developed with greenhouses and other nursery facilities. Due to the disturbance and constructed features on the site, there is little native vegetation present in this area. The six kettle wetlands located near the boundaries of the project site are the most highly vegetated areas on the property. Upland forest is located along a portion of the Ward Lake shoreline, as well as in isolated patches within the site.

Upland shrub habitat is scattered across the site and typically occupies the transition areas between the kettles or forest habitat and degraded areas. Upland shrub habitat is also located along portions of the periphery of the site. Each of the four main upland vegetation types and their value as wildlife habitat is described in greater detail below and shown on Figure 2-4.

From a regional perspective, overall habitat quality on and immediately adjacent to the project site varies widely based on the level of disturbance. Most of the areas surrounding the site have been developed or are being developed for residential use. These relatively poor wildlife habitat conditions in the vicinity of the project site limit the Briggs Village site's overall value as

wildlife habitat by isolating the site from nearby open spaces. The largest area of relatively undisturbed wildlife habitat in the vicinity is found along the Deschutes River, including portions ofPioneer Park, which is located nearly one-half mile south ofthe project site. Some wildlife species may travel between the project site and the Deschutes River corridor. However, the area to the north of the project site consists of relatively dense residential housing; the area to the east of the site is occupied by Ward Lake and associated residential development; and the area to the west consists primarily of residential neighborhoods interspersed with upland forest remnants. Thus, the project site provides a small "satellite" link ofhabitat from Ward Lake westerly to the River.

The City of Olympia *Wildlife Habitat Study* (City of Olympia, 1994b) classifies wildlife habitat. Evaluation units are classified by the City of Olympia in categories from I to IV, reflecting their relative value within Olympia's Urban Growth Area. Category I habitats are those areas providing the highest-quality wildlife habitat (called *significant* areas), while Category IV habitats provide the lowest-quality wildlife habitat. Category III habitats are those areas containing forested and/or wetland complexes of 5 to 20 acres with an average width greater or equal to 200 feet. Due to their small size, none ofthe areas on or immediately adjacent to the project site are considered *"significant wildlife habitat units."* The forested area along the west shore ofWard Lake and the kettles are Category III wildlife habitat areas.

Urban Horticulture

Most ofthe site is developed with greenhouses and other nursery facilities (Figure 2-1). Due to the disturbance and constructed features on this portion of the site, there is little native vegetation present. Access roads and roadside areas include primarily non-native sparse vegetation, such as Scot's broom, Himalayan blackberry, grasses, and herbs. The urban horticulture area covers approximately 60 acres in the central portion of the site and around the perimeter of the site. This includes portions of the site developed as lawns and landscaping.

The intrinsic habitat quality of urban horticulture areas is low due to the lack of vegetation. Little structural diversity exists in this area and minimal wildlife use is expected. These areas provide habitat for a limited number of species adapted to urbanized landscapes, such as American crow, European starling, house sparrow, feral cat, Virginia opossum, European rabbit, raccoon, and house mouse. Other species such as coyote and black-tailed deer may cross urban horticulture habitats to travel within the site.

Kettle Wetlands

The six kettle wetlands located near the periphery of the project site are the most highly vegetated areas on the property (see also the previous section Ward Lake, Wetlands and Other Surface Waters) (Figure 2-4). Kettle wetlands cover approximately ten acres of the project site. Their regulated buffers provide approximately 27 acres of additional habitat. All of the kettles had open water present during 1999, 2000, and 2001 site visits. The water levels in the kettles vary seasonally, and all of the wetlands receive irrigation return flow from the nursery operations. Forested, scrub-shrub, emergent, aquatic, and open water wetland communities are represented

within these six kettles. Only the North Kettle has a substantial forested wetland component. Portions of the upland surrounding the Southeast, Northwest, North, and Northeast Kettles are forested. Some perimeters have been cleared and logged and others have been graded. Based on observations during field visits in 1999 and 2000, the Central Kettle has the greatest diversity of habitat types, including scrub-shrub, emergent, and open water habitats. This kettle also contains snags, which are important habitat components for cavity-nesting birds.

The kettles provide habitat for birds, deer, small mammals, reptiles, and amphibians. However, the project site is isolated within a developing setting and is not connected to wildlife corridors. A local resident on Delta Lane has observed coyote, black-tailed deer, rabbits, skunks, Virginia opossum, Chinese pheasant, pileated woodpecker, great blue heron, California quail, red-tailed hawk, great-homed owl, grouse, mice, bats, and an array of frogs and other amphibians and reptiles in the vicinity (Kautsky, personal communication, 2000). This resident also noted that the kettles are stopovers for migrating waterfowl. Canada goose, bufflehead, and mallard, among others, are expected to use the kettles.

Upland Forest

Upland forest covers approximately ten acres of the site. Upland forest is located along portions of the project site boundaries, including a portion of the Ward Lake shoreline (Figure 2-4). This habitat type includes both deciduous and coniferous tree species, such as big-leaf maple, red alder, Douglas fir, and western red cedar. Additional species present in the understory include vine maple, Indian plum, salal, sword fern, and Oregon grape.

As described above, the forested habitat along the west shore of Ward Lake is a Category Ill wildlife habitat within the City, but it is not a "significant wildlife habitat unit" due to its small size. The forested "edge habitat" around Ward Lake provides habitat for wintering waterfowl, small mammals, reptiles and amphibians, and urban-adapted songbirds; this class of habitat does not provide interior forest habitat and thus excludes interior species. Columbian black-tailed deer, Townsend's chipmunk, Douglas squirrel, pileated woodpecker, and red-tailed hawk have been observed in the Ward Lake area, with a possible occurrence of band-tailed pigeon (City of Olympia, 1994b). Additional species expected to use the upland forest habitat type include black-capped chickadee, golden-crowned kinglet, hairy and downy woodpecker, Steller's jay, northern flicker, raccoon, little brown bat, Pacific chorus frog, western red-backed salamander, and common and northwestern garter snake.

Upland Shrub

Upland shrub habitat typically separates the kettles or forest habitat from degraded areas and is also located along the periphery of the site (Figure 2-4). The upland shrub habitat type covers approximately 30 acres. This habitat varies in its degree of disturbance, and the vegetation includes a mixture of native and non-native species. Those areas with greater disturbance include species such as Himalayan blackberry and Scot's broom, while those with comparatively less disturbance are dominated by red alder saplings. American robin, song sparrow, dark-eyed junco, house finch, spotted towhee, winter wren, black-tailed deer, coyote, Townsend's vole, and

common and northwestern garter snake are expected to utilize this habitat type. Deer and coyote may use this habitat type for foraging.

Sensitive Species

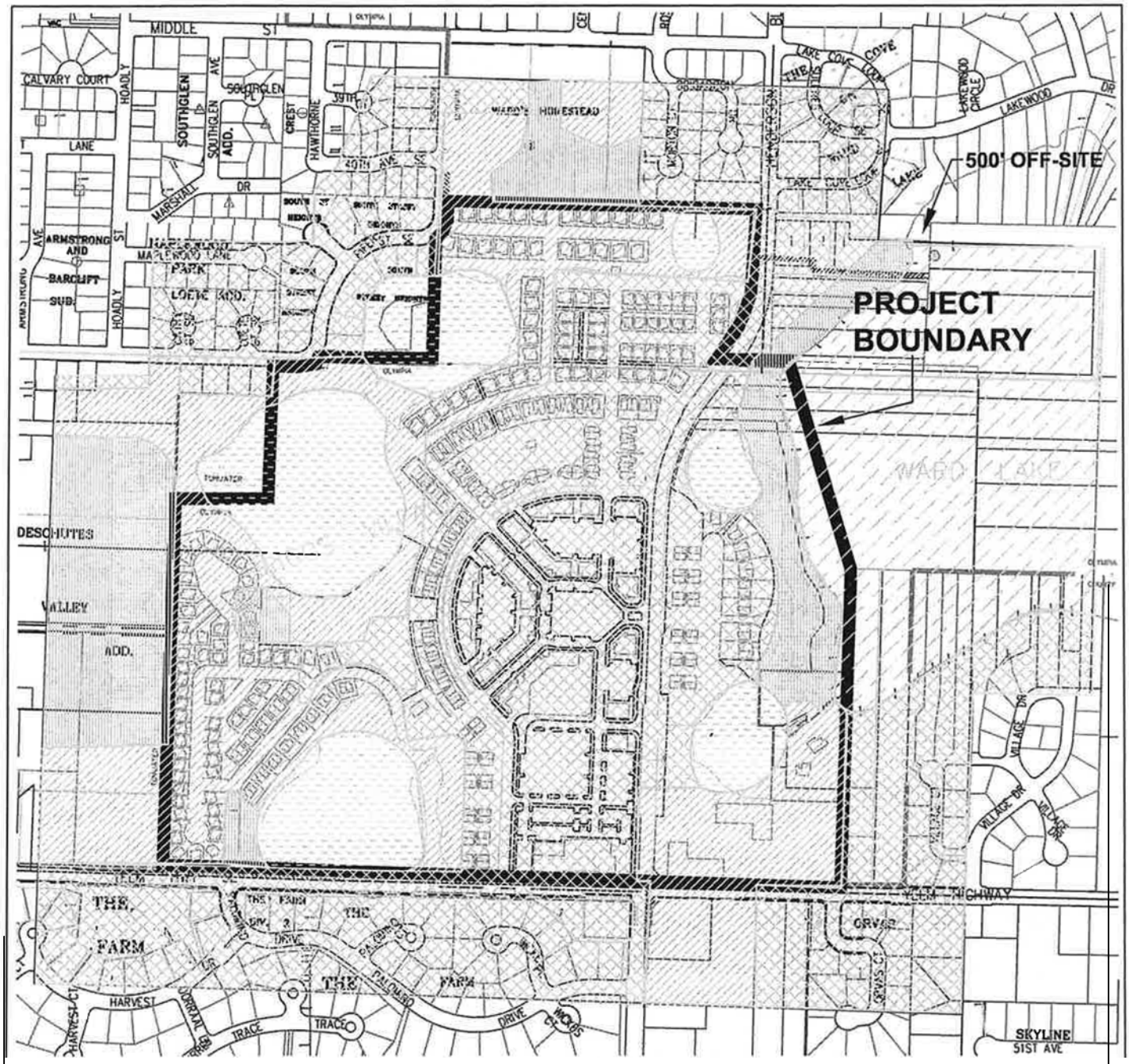
A review of existing information from the WDFW Habitats and Species database revealed no records for sensitive animal species present within the project vicinity (WDFW, 1999). In November 1999, a species list requested from the U.S. Fish and Wildlife Service (USFWS) and the list provided by the National Marine Fisheries Service (NMFS) were reviewed. The USFWS replied that no federally designated endangered, threatened, or candidate species under its jurisdiction are known to occur within the project area. Western pond turtle, a federal species of concern, could occur within the project area, although it is unlikely because known populations of this species are confined to Klickitat and Skamania Counties. No species under the jurisdiction ofNMFS were identified within the project area.

The WDNR's Natural Heritage Program maintains a database of sensitive plant species and habitats in the state. The DNR database does not identify any known rare plants, high-quality native wetlands, or high-quality native plant communities present within the project boundaries (DNR, 1999) (Appendix E).

Due to the high degree of urbanization, past disturbance, and lack oflocalized indicators, a site-specific priority species survey has not been conducted.

Other Species of Interest

A red-tailed hawk nest on the site has been reported by neighbors. It is probably located in a small patch of coniferous trees adjacent to and south ofthe Central Kettle. Possibly due to the densely branched conifers on-site, the presence of this nest has not been confirmed. However, activity of red-tailed hawks in the site vicinity indicates that a nest is likely present. The nest was reportedly active in 1998, 1999, and 2000 and fledged two young in 1999 (Kautsky, personal communication, 2000 and 2001). The hawks used a nest tree at the west end of the grove in 1998 and an alternative tree at the east end in 1999 (Kautsky, personal communication, 2000 and 2001). A red-tailed hawk was observed perched in the Central Kettle during a site visit in early 2000, and three red-tailed hawks were observed on-site in late June 2000. During a site visit in May 2001, red-tailed hawks were seen perching in trees in the Central Kettle, and one red-tailed hawk was observed landing in the tree with a dead opossum. Although the presence of a nest on-site in 2000 (and again in 2001) was not confirmed, it is likely that the three birds observed in June 2000 include two adults and their newly fledged young. The hawks were observed in the vicinity of the conifers and preyed on snakes and rabbits in 2000 (Kautsky, personal communication, 2000). Red-tailed hawks nested and fledged two young in 2002. They have been observed in the area again in 2003. (Kautsky, draft EIS comment.) It is likely that these hawks forage in the Central Kettle area and the surrounding meadow and shrub habitat areas.



KEY

- KETTLE WETLAND
- UPLAND SCRUB-SHRUB
- UPLAND FOREST
- URBAN HORTICULTURE
- WARD LAKE

NORTH

0' 300' 600'

File name: 99008hab.dwg
Date: 11/1/00 nls
Revised: 10/24/2002 nls

SOURCE: NBBJ, SE Olympia Sub-Area, 2000.

FIGURE 2-4.
HABITAT MAP
BRIGGS VILLAGE MASTER PLAN EIS
OLYMPIA, WASHINGTON

Relevant Wildlife Plans, Policies, and Regulations

Federal, state, and local regulations were reviewed for application to the proposed project. At the state level, they may be covered under a Forest Practices Application, depending on the area of impact. Locally, clearing and grading permits are issued for upland habitat impacts.

City of Olympia

The Environment chapter of the *Olympia Comprehensive Plan* (City of Olympia, 1994a) addresses upland habitat. The plan indicates that preserving and protecting "a diversity of wildlife habitat throughout the City and within Olympia's Urban Growth Area" is an important goal (Goal ENV4). Included in the policies is a reference to the City of Olympia *Wildlife Habitat Study* (City of Olympia, 1994b) to be used as a guide in managing wildlife habitat areas. The City's critical areas ordinance (OMC Title 14.10) includes the City's Critical Areas regulations with respect to "important species." However, no such species are known to occur on the site. (Although known to be of community interest, red-tailed hawks are not a listed species.)

Trees and associated vegetation are to be retained in accordance with the City of Olympia Tree Protection and Replacement Ordinance, OMC 16.60. Healthy, mature trees are to be retained where possible and site design must incorporate the preservation of unique specimens (OMC 18.06A.090). All portions of a site not designated for building, other improvements, or landscaping must remain in a vegetated condition (OMC 18.36.060(1)). See also Ward Lake, Wetlands and Other Surface Waters section for related plans, policies and regulations.

LIGHT, NOISE, AND VIEWS

This section characterizes existing major sources oflight in and around the project site, existing noise levels, and prominent views to and from the site. Information was collected through site visits, discussions with City staff, a review of state and local standards and regulations, and light and view information provided by NBBJ (2000a and 2000b).

Light and Glare

Residential developments that may be affected by light and glare from the project site include The Farm neighborhood, directly south of the project site across Yelm Highway; the Brigadoon and South Street Heights neighborhoods, approximately 3/8 mile to the north; a portion of Tumwater's Deschutes neighborhood, approximately 3/8 mile to the west; and residences surrounding Ward Lake, approximately 1/4 mile to the east. These residential areas consist of single-family homes. Existing local access roads are illuminated by standard light fixtures. Homes in the Brigadoon and South Street Heights neighborhoods overlooking the Briggs Village project site are partially to fully screened by mature deciduous and some evergreen trees. The Deschutes neighborhood is screened from the Briggs Village project site by mature evergreen trees. The Farm neighborhood is separated from the site by Yelm Highway.

On-Site

Sources of light and glare from the existing nursery consist of security lighting for the nursery grounds and buildings. Lighting at the existing nursery site is located near the office and laboratory buildings on the main nursery grounds and is mounted on 25-foot-high power poles. Parking lot lighting remains illuminated generally from dusk to dawn. Nursery yards are not lit at night. No lighting exists adjacent to nearby residential areas. Some office lights remain on through the night for security purposes. The southern portion of the project site contains the YMCA building and parking lot. The YMCA parking lot is currently lit by lamps mounted on standards located approximately 60 feet apart.

Off-Site

The main off-site sources of light and glare are street lighting and yard and home security lighting at nearby residences. The intersection of Henderson Boulevard and Yelm Highway is illuminated with "cobra-" style street lighting, as is the portion of Yelm Highway along the south edge of the project site. These lights are mounted on standards approximately 35 feet high and are approximately 250-watt sodium-vapor fixtures (Shoopman, personal communication, 2001). These lights are typically designed to cast light downward and away from residential areas; since their installation, there have been no complaints from nearby residents about excessive glare (Shoopman, personal communication, 2001).

The shoreline of Ward Lake is developed with single-family residences. Lighting includes security lighting and illumination to allow for use of the residences and dock areas during evening hours.

Henderson Boulevard

On the east side of the main nursery grounds along Henderson Boulevard are 100-watt sodium-vapor lights mounted on power poles at the entrances to the existing nursery grounds. These lights are approximately 30 feet high. One light is located at the east entrance to the main nursery area while the other is at the west entrance to the nursery greenhouses, east of the main nursery grounds along Ward Lake. These lights are for illumination of the nursery property and are not intended for street lighting (Baginski, personal communication, 2000).

Relevant City Standards

The OMC Section 18.40.060, Property Development and Protection Standards, states that "All display and flood lighting shall be constructed and used so as not to unduly illuminate the surrounding properties and not to create a traffic hazard." Section 18.05A.050 (2)(g) of the OMC lists five lighting guidelines that guide design choices to reduce impacts due to light and glare, enhance architectural or other landscape features, and provide safe and well-lit sidewalks and roadways. Section 4E of the Olympia Public Works Standards sets forth standards for illumination of public streets.

Noise

Existing Sources of Noise and Noise Levels

On-Site

The project site currently functions as a plant nursery, generating noise primarily during business hours. The nursery's hours of operation are typically 7:30a.m. to 4:00p.m., Monday through Friday, from November through February; and 7:30 a.m. to 5:00p.m., Monday through Saturday, from March through October. Noises associated with nursery operations include vehicle noise from trucks and cars entering and exiting the site and noise from all-terrain vehicles used to move people and supplies about the site. Other noises are associated with the transport of products and supplies around the site (e.g., scraping of containers, etc.) and voices.

Off-Site

Existing off-site sources of noise in the project area mainly consist of traffic and ambient residential noise. The proposed project site is bordered to the south by Yelm Highway and divided by Henderson Boulevard, both of which support high-traffic volumes. Other sources of off-site noise include those typically associated with residential areas, such as local traffic, lawn mowers, children playing, dogs barking, and other intermittent noises such as power tools and children's toys. Olympia Regional Airport is located approximately two miles south of the project site and the Briggs Village site is beneath the Airport's flight pattern, resulting in intermittent engine noise as aircraft pass over the site. The southern end of the site currently houses the YMCA building and parking lot. Noises generated from this facility are primarily automobile-related and contribute to the ambient noise in the area.

Relevant Local, State, and Federal Noise Standards and Guidelines

The City of Olympia has adopted noise control provisions consistent with the State of Washington's Noise Control Act, Chapter 70.107 RCW. The City of Olympia's standards are defined in Chapter 18.40.080-Protection Standards, B (Noise) ofthe OMC. The City's standards are the same as the standards set forth in the *Washington Administrative Code,* Chapter 173-60, titled "Maximum Environmental Noise Levels." Chapter 18.40.080, Section E, Noise Attenuation in the OMC calls out guidelines for meeting state noise standards.

Title 18.40.040 OMC specifies maximum permissible noise levels for residential areas based on zoning of the sending property (sound source). Maximum allowable noise levels in residential areas created by adjacent "sending" residential areas range from 55 to 60 dBA during the day to 45 to 50 dBA at night. Maximum allowable noise levels in residential areas created by commercial areas range from 57 to 62 dBA during the day and from 47 to 52 dBA at night. With the exception of vibration produced as a result of construction activity between 7:00a.m. and 6:00p.m., the OMC specifies that no use shall cause earth vibrations or concussions detectable without the aid of instruments beyond its lot lines.

Views

Prominent Views Over and From the Project Site

The project site is situated in a suburban setting and currently supports the Briggs Nursery. With the exception of the kettles and shoreline of Ward Lake, the site has little topographic relief, and there are no buildings exceeding two stories currently located on the site. The kettles are scenic in nature; they provide habitat for both plants and animals and visual relief from surrounding developed areas. Some residents in the vicinity of the project site have views of the kettles as well as Ward Lake and/or partial views of Mount Rainier in the distance. These same views are available from the project site as well. Views from the surrounding residential areas are screened in places from the current nursery operations by residential fences; distance; by kettle areas and their associated vegetation; and by many mature trees along the west property boundary and along Ward Lake. Views are also dependent on visibility conditions and season (e.g., views are obscured while deciduous trees are in leaf). The discussion below focuses on Mount Rainier due to its inclusion in the OMC as an important view/scenic vista (see Relevant City Standards below).

Views from Henderson Boulevard. Views of Mount Rainier from Henderson Boulevard are limited to those areas where clearing along the Ward Lake shoreline has occurred near the Briggs property (Figure 2-5). Mount Rainier is not observable from the southern portions of Henderson Boulevard due to the existing vegetation and nursery buildings, as well as the elevation of the roadway.

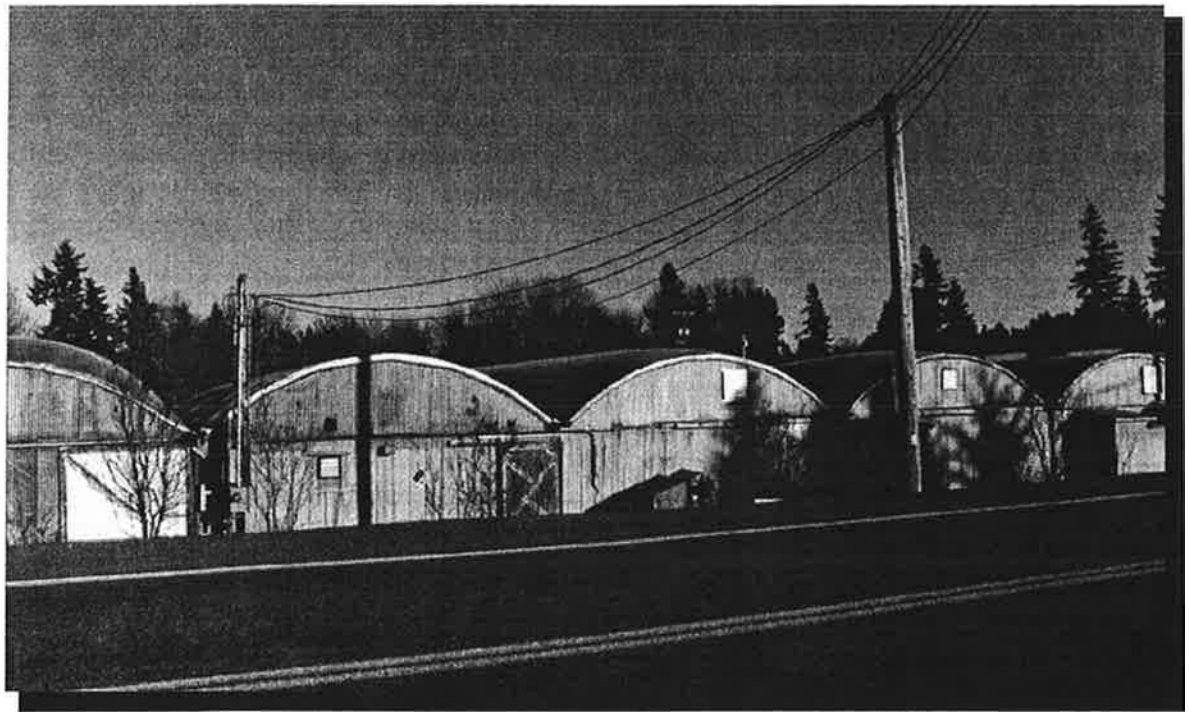
The primary view of Mount Rainier along South Street is from the northwest comer of the Briggs Property, at the bend in the roadway as it turns north. The view of the mountain from this spot is partial, with the very top of Mount Rainier visible on clear days over both nearby and distant vegetation (Figure 2-6).

Views from the Project Site. Partial views of Mount Rainier are found throughout the project site, although tall Douglas fir trees found on the south side ofWard Lake block full views of Mount Rainier from most of the site (Figure 2-7).

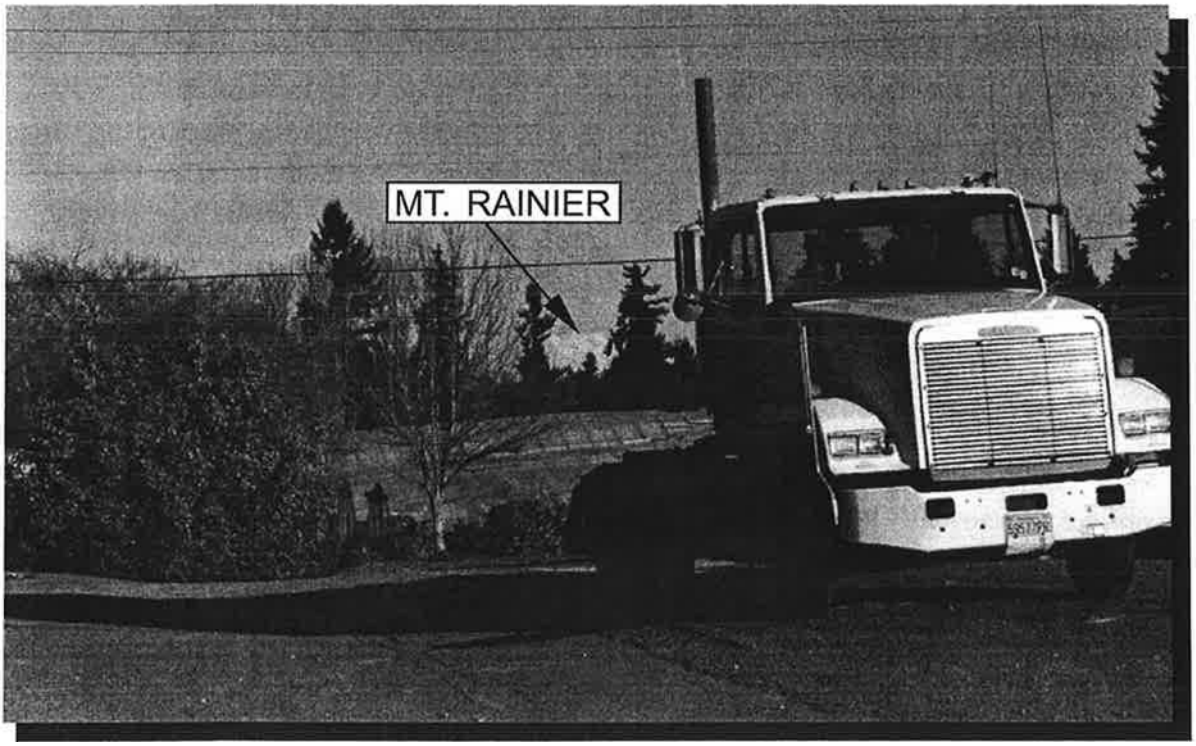
Views from Residences to North and West. Residences to the north and west of the Briggs Village project site currently have views of the Central Kettle and nursery grounds. The low-profile, single-story greenhouses are screened by a large grove of pine trees and Central Kettle vegetation. This contributes to a rural feel for residences west and north of the site. Some residences may have views of the top of Mount Rainier; large trees to the south and east obstruct full views. Views of Mount Rainier from across the Central Kettle are best during the winter months. Deciduous trees partially or fully screen these homes during the growing season.

Relevant City Standards

Proposed urban villages must be consistent with OMC Sections 18.05 and 18.05A, Villages and Centers. This section of the OMC provides development standards for project elements such as



Looking east across Henderson Boulevard.



Looking east from mid-site toward Ward Lake.

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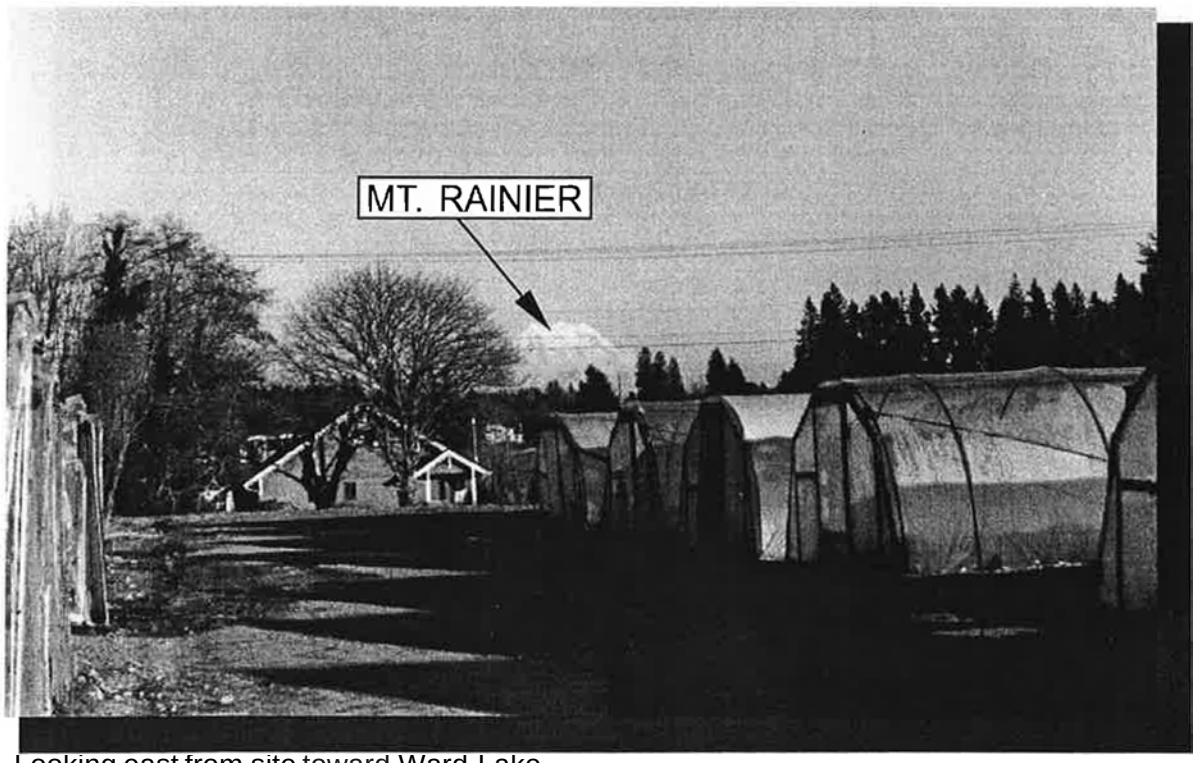
FIGURE 2-5.
BRIGGS VILLAGE MASTER PLAN EIS
VIEWS FROM HENDERSON BOULEVARD VICINITY
OLYMPIA,WASHINGTON



Looking east from site toward Ward Lake.

Looking east across site from north side of the South Kettle.

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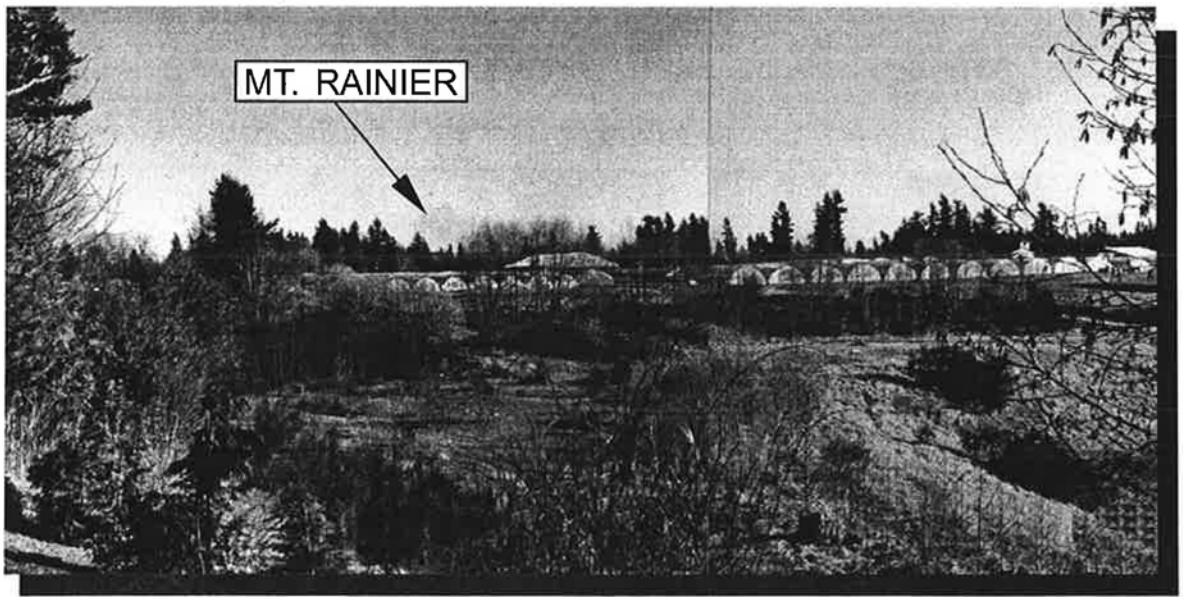
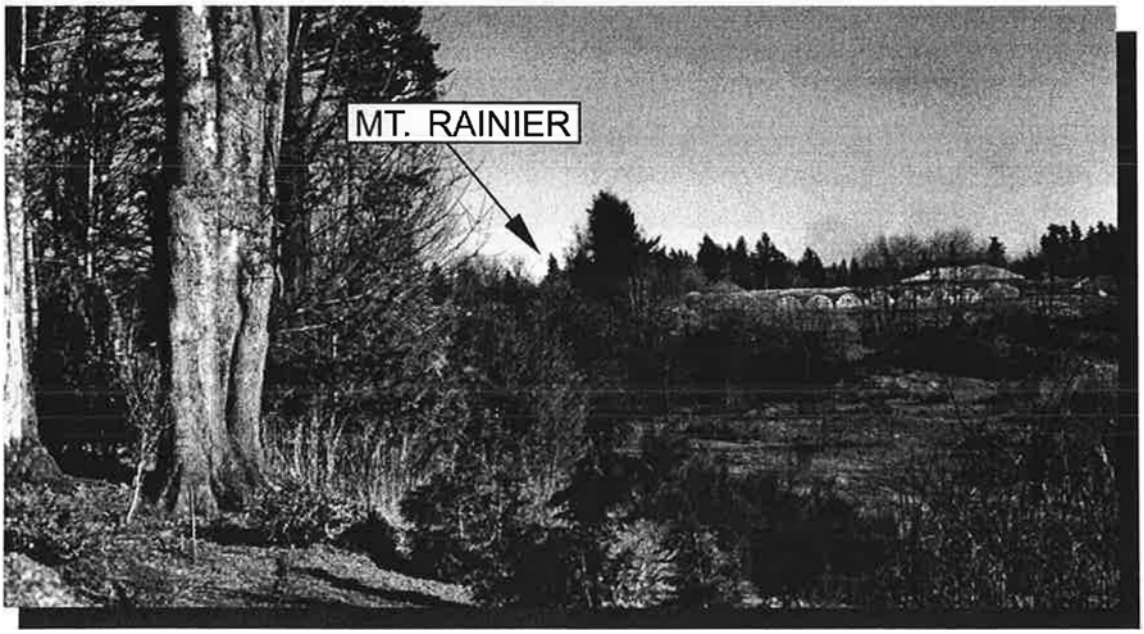
FIGURE 2-6.
BRIGGS VILLAGE MASTER PLAN EIS
VIEWS FROM SOUTH STREET
OLYMPIA, WASHINGTON



Looking southeast across site from South Street.



Looking southeast across site from South Street.

Al Ott ADOLPSON	No Scale	File name: 99008view5&6.p65 Original graphic by:ACT Edits by: Date:4/24/02	FIGURE 2-7. BRIGGS VILLAGE MASTER PLAN EIS VIEWS FROM PROJECT SITE OLYMPIA, WASHINGTON
	Source: NBBJ.		

building design and heights, commercial and residential densities, parks and open spaces, and lighting and landscaping. These elements determine the quality of views to, from, and across a piece of property. In addition, views and scenic vistas are regulated by OMC 18.20.070, Site Design-View Preservation and 18.50.100, Scenic Vistas. These regulations require developers to consider the effects of their proposal on specified views and scenic vistas, including Mt. Rainier. Public view corridors must be maintained to protect views and outstanding scenic vistas that are available to "significant" numbers of people from public rights-of-way.

The *Shoreline Master Program for the Thurston Region* (1990) sets forth regulations that ensure the preservation of views through and from residential developments in shoreline areas such as Ward Lake. General Regulation 4 of Section XVI Residential Development states that "Residential development shall be arranged and designed to protect views, vistas, aesthetic values to protect the character of the shoreline environment and the views of neighboring property owners." In addition, the *Shoreline Master Program* establishes standards as part of Section XIV Recreation to ensure that recreational developments are designed to "preserve, enhance or create scenic views and vistas."

RECREATION

The project site is located in the vicinity of a variety of parks in both the City of Olympia and the City of Tumwater. This section describes recreation resources in the vicinity of the proposed project provided by public parks and, to the extent applicable, public schools. For purposes of this analysis, the discussion of facilities generally is limited to those parks located within 1.5 miles of the project site. This radius covers the one-half mile service area radius established by the *Olympia Comprehensive Plan* for Olympia, the Olympia Growth Area (Olympia Comprehensive Plan), and neighborhood parks (City of Olympia, 1994a, as amended). This radius also covers the project's potential impacts on regional facilities located farther from the project site. Sources of information used to complete this section include site visits, telephone interviews with City of Tumwater and City of Olympia Parks and Recreation Departments, and applicable plans. These plans include the *City of Tumwater Parks and Recreation Plan* (City of Tumwater, 1997); the City of Olympia's *2002-2007 Capital Facilities Plan* (City of Olympia, 2001); and the parks and recreation element of the *Olympia Comprehensive Plan* (City of Olympia, 1994a).

Existing Parks and Recreation Facilities: Olympia

The City of Olympia maintains a variety of public parks and recreation areas, as well as 16 sports fields owned by the Olympia School District. As of 2002, the City operated 10 neighborhood parks, 4 community parks, 6 special-use parks, 12 ball fields, and an open space network of over 760 acres. The proposed project site is located in the South Planning Area of the City as defined by the *Olympia Comprehensive Plan* (City of Olympia, 1994a). There are approximately 207 acres of park land in the South Planning Area of the City, including just over 8 acres of neighborhood park, 177 acres of open space, and 22 acres of recreation facilities (Figure 2-8). Some schools in the City are also available for joint public recreation use under an agreement between the City and the Olympia School District. In exchange for maintenance and ball field

improvement support from the City, the district gives the City first priority in allocating field use among competing user groups (City of Olympia, 1998).

There are a number of recreation and park facilities within 1.5 miles of the project site, as well as several schools that provide recreational opportunities during non-school hours. These facilities are:

YMCA

The private Briggs Community YMCA was completed and opened on the northwest comer of the intersection of Yelm Highway and Henderson Boulevard. The 40,000 square-foot facility includes two pools, a full-size gymnasium, weight rooms, locker rooms, and branch administrative offices. Improvements were completed in 2000 that expanded the facility.

Trillium Park

Trillium Park is an open-space area and is located approximately three-quarters of a mile north of the project site. This public park comprises about four acres. (Trillium is separate Watershed Park which is about a block to the north.) .)

Olympia Watershed Trail Park

Olympia Watershed Trail Park is a 153-acre open-space area located approximately one mile north of the project site. The park provides hiking and walking trails. According to citizen survey results, this park is among the most popular in the City.

LBA Park

Olympia's LBA Park is a neighborhood and community park located approximately 1.5 miles northeast of the project site. The neighborhood park portion includes four acres. The remaining 16.6-acre portion of the park containing six ball fields serves as a community park facility. According to the *Draft Comprehensive Parks, Recreation, and Open Space Plan* (City of Olympia, 2001) and a citizen survey, this park is one of the most popular in the City.

Olympia High School

This high school is located about one-half mile north of the project site. The school provides a number of facilities, including two adult-sized baseball fields and two separate fields for football and soccer. These fields are generally available to the public for use through advance scheduling during non-school hours.

Washington Middle School

Washington Middle School is located three-quarters of a mile northeast of the project site. The school provides one backstop for baseball/softball and one field with goalposts for football/ soccer that are available to the public during non-school hours through advance scheduling.

Pioneer Elementary School

Pioneer Elementary School is located about one halfmile north of the project site. The school provides one backstop for youth-oriented ballgames. This field is available to the public through advance scheduling during non-school hours.

Centennial Elementary School

Centennial Elementary School is located three-quarters of a mile east of the project site. The school provides three backstops and multi-purpose fields for youth-oriented ballgames that are available to the public.

McKenny Elementary School

McKenny Elementary School is located 1.75 miles northeast of the project site. The school provides one ballfield/multipurpose field that is available to the public through advance scheduling.

WDFW Access, Ward Lake

The Washington Department ofFish and Wildlife manages a public boat launch on the shore of Ward Lake. The launch facility consists of a concrete plank ramp, ten gravel parking spaces, and a restroom. The facility is gated and closed from 10:00 p.m. to 4:00 a.m.

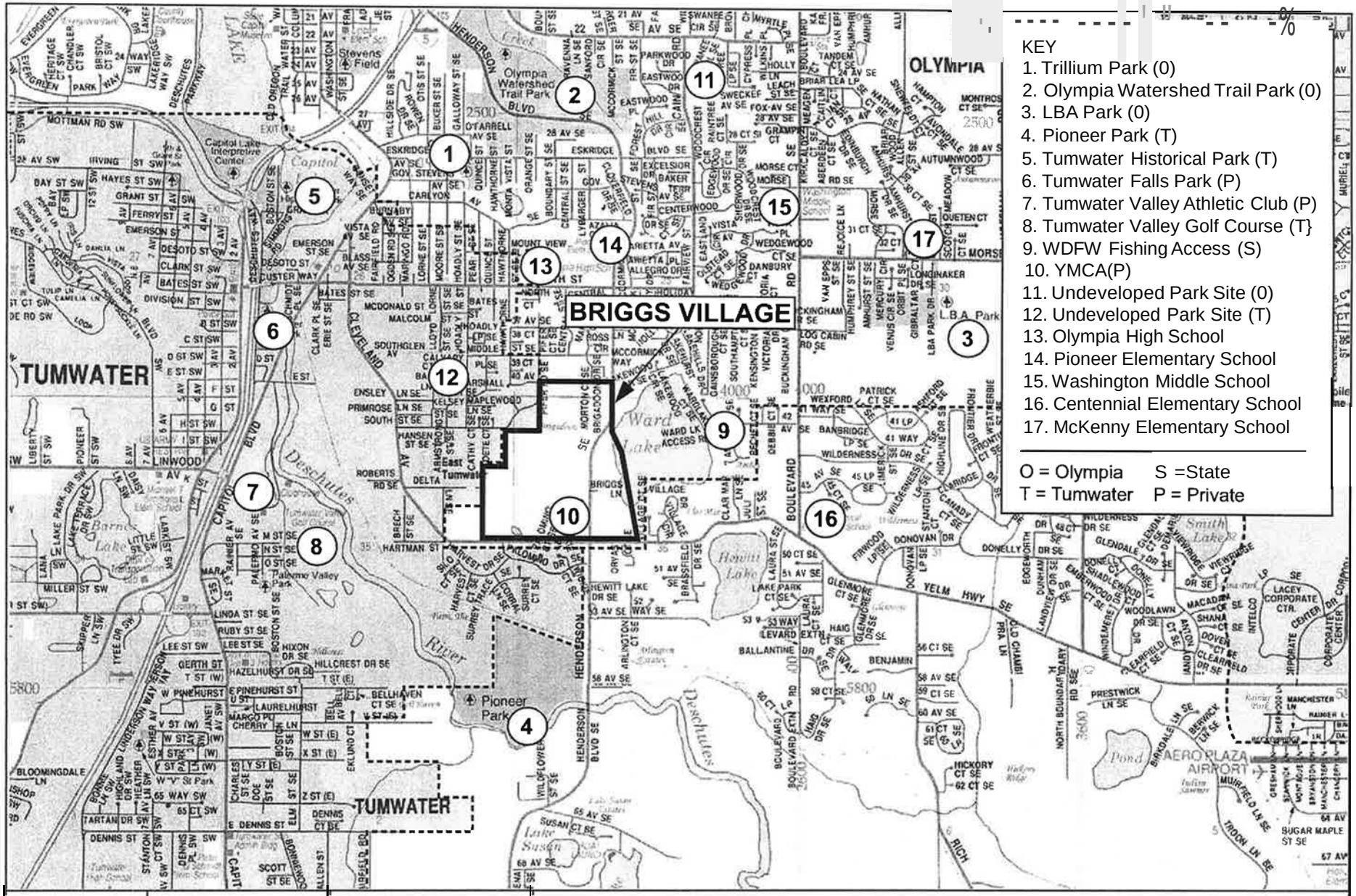


FIGURE 2-8.
PARKS, RECREATION FACILITIES, AND SCHOOLS
BRIGGS VILLAGE MASTER PLAN EIS
OLYMPIA, WASHINGTON

Existing Recreation Facilities: Tumwater

The City of Tumwater owns and maintains nine parks throughout the city, totaling about 131 acres, as well as one 18-hole golf course. Five of these parks are pocket parks, generally less than one acre in size; two are neighborhood parks; and two are community parks (City of Tumwater, 1997). In addition, the city owns about 40 acres of open space in the form of forested ravines, pedestrian access landings, historic property, powerline rights-of-way, and boulevards. Other facilities include school recreational facilities that are available for public use on a limited basis, a private park, a county-owned park, and a private athletic club.

Pioneer Park

Pioneer Park is comprised of 83 acres of active-use areas, passive trails, and natural area west of Henderson Boulevard, one-half mile south of the project site on the north bank of the Deschutes River. The park is classified as a "community" park in Tumwater's *Parks and Recreation Plan (Tumwater Parks Plan)* (City of Tumwater, 1997). Five phases of improvement are planned for the park, with Phases 1 and 2 completed and a portion of Phase 3 implemented. The park currently contains three soccer fields, two softball fields, a small baseball field, two sand volleyball courts, a large play structure for children, and parking and restroom facilities. The park also includes approximately 3,500 feet of river shoreline. Approximately 45 acres are dedicated to passive recreation and include a system of trails and a launch for small boats. Use levels in the park have not been surveyed, but the park experiences heavy use on warm summer weekends. During summer weekends, parking is at capacity and sports fields are reserved well in advance (Denney, personal communication, 2000).

Tumwater Historical Park

Tumwater Historical Park, the one other "community" park in Tumwater, is located near the mouth of the Deschutes River, approximately two miles west of the project site. This park is primarily designed for passive recreational use with a children's play structure, picnic and restroom facilities, river access, and views. The park also includes an interpretive trail. Use levels in this park are generally heaviest during summer weekends; parking lots generally are at capacity, and picnic areas are reserved well in advance (Denney, personal communication, 2000).

Tumwater Valley Golf Course

The Tumwater Valley Golf Course is located approximately three-quarters of a mile west of the site. This 18-hole municipal golf course offers a pro shop, driving range, lessons, and league play opportunities.

Other Parks

The City of Tumwater is planning for a new three-acre neighborhood park on Barclift Lane, approximately one-half mile west of the project site. Neighborhood parks in Tumwater often

include sports fields, picnic areas, and play equipment, but specific uses are unknown at this time. The park is to be completed in 2005 (Denney, personal communication, 2000).

Tumwater Valley Athletic Club

This private club is located about three-quarters of a mile west of the project site and provides a wide range of athletic facilities, including indoor and outdoor pools, a gymnasium, exercise equipment, racquetball courts, running tracks, and tennis courts.

Tumwater Falls Park

This private park, about one mile northwest of the project site, includes five acres of passive recreation that includes playground equipment, restroom and picnic facilities, and trails along both sides of the Deschutes River. The park is owned and operated by the Olympia-Tumwater Foundation and is open to the public free of charge.

Recreation Plans, Policies and Regulations

Olympia

The *Olympia Comprehensive Plan* (City of Olympia, 1994a) addresses the need for parks, open space, and recreation facilities in the City over the next 20 years. The Plan's Parks and Open Space chapter contains a number of goals and policies that address parks and recreation. Goal POS8 calls for the City to "Provide recreation and leisure opportunities in cooperation with other cities, non-profit groups, and school districts." Goal POS 10 calls for the City to "Provide parks and recreation facilities to meet level-of-service standards."

Goal POS 11 calls for the City to "Explore regulatory and non-regulatory ways to achieve level-of-service standards for each park type" in the City. This includes encouraging developers to dedicate land for future parks, open space, and recreational facilities. Policies supporting this goal also call for the City to continue to collect a proportionate share of impact fees from developers to pay for a development's fair share for increased demand on the park and open space system.

In its 2002 to 2007 *Capital Facilities Plan,* the City also established a number of specific level-of-service standards for parks based on a unit of acreage per 1,000 in population. These standards are based on standards included in the *Olympia Comprehensive Plan,* as amended in 1997 (City of Olympia, 1994a). Park level-of-service standards typically are used by jurisdictions to monitor park inventories against population growth rates in an effort to determine when new park facilities will be needed. The City also has established standards for trails, tennis courts, ball fields, soccer fields, pools, volleyball courts, and municipal golf courses. Olympia's adopted park level-of-service standards for major park facilities are described in detail in Appendix B. Overall, the *Olympia Comprehensive Plan,* Parks and Open Space chapter, identifies the greatest need for neighborhood parks in the southern portions of the City (City of Olympia, 1994a, as amended). The *Olympia Comprehensive Plan* identifies neighborhood parks,

open space acquisition, and urban trail acquisition and development as the top three priorities for funding. For shoreline access, the *Olympia Comprehensive Plan* also identified the need for acquiring lake access sites (City of Olympia, 1994a).

Since 1992 the City has collected impact fees from developers to cover some of the costs of parks. hnpact fees are described in the Olympia hnpact Fee Schedule (City of Olympia, 1999). The current rate per dwelling unit varies from $1,242 per single-family residence to $822 per multi-family residence, to $483 for a single-occupant dwelling. According to the *2002 to 2007 Capital Facilities Plan,* other funding options may include councilmanic debt, utility tax, and CIP funds (City of Olympia, 2001).

Tumwater

The *Tumwater Parks Plan* (City of Tumwater, 1997) was prepared as part of the City of Tumwater's *Comprehensive Plan* (1990 updated through 1999) and the *Thurston County Joint Plan for the Tumwater Urban Growth Area* (Thurston County, 1995). The *Parks Plan* includes Tumwater's 20-year vision from 1998 to 2018 for parks, recreation programs, open space, and trails.

The *Tumwater Parks Plan* (City of Tumwater, 1997) contains several goals and objectives relating to parks and recreation planning associated with new development. One objective requires "developer participation" in providing parks and open space, while another objective calls for the dedication of park land, improvements of facilities, or monetary compensation for development projects. Other objectives include shared/joint use of appropriate land or facilities and coordination with agencies and individuals to plan for parks, trails, and open space sufficient to serve long-term growth needs.

In conducting its needs analysis, the city established a standard of five acres of community park per 1,000 population. Each community park is intended to serve the entire community and should be sited to provide easy accessibility for all city residents. The *Tumwater Parks Plan* (City of Tumwater, 1997) showed that in 1997, the city had a surplus of approximately 41 acres of community park. However, the plan did note that with growth in the city, approximately 178 additional acres of community park would be needed by 2015 to meet applicable city standards.

The city has not adopted any standards for neighborhood parks. However, the *Tumwater Parks Plan* notes that at least one neighborhood park should be provided in each of Tumwater's neighborhoods. There are no existing neighborhood parks in the city's northeast planning area, the neighborhood in closest proximity to the project site. The needs analysis states that new developments should provide open spaces and/or recreation areas to serve the immediate needs of residents and employees, particularly children (City of Tumwater, 1997).

TRANSPORTATION

This section describes existing transportation systems that may be affected by the proposed Briggs Village development. It characterizes existing roadways, types and levels of use, transit

service, and proposed improvements. The discussion is based on the *Briggs Village Master Plan Development: Transportation Study* (The Shea Group, 2002); the *Briggs Village Master Plan Development: Traffic Scoping Analysis* (SCA Engineering, Inc., 2000); input provided by the City of Tumwater; Thurston County; Washington State Department of Transportation (WSDOT); and field observations.

Area Roadways

Yelm Highway

This is an east-west arterial that extends from Cleveland Avenue in Tumwater to the City of Yelm. It becomes State Route 510 (SR 510) where it intersects with St. Claire Cutoff Road at Fort Lewis. In the Briggs Village area, it is a three-lane roadway. It widens to four lanes at Boulevard Road, east of the project site, and to five lanes at Rich Road. The City of Tumwater has widened the road to five lanes west of the intersection with Henderson Boulevard. This intersection is signalized, as well as intersections at Boulevard Road, Rich Road, College Street, and Ruddell Road. Bicycle/pedestrian lanes are provided on both sides of Yelm Highway. Posted speed limit in the vicinity of the project site is 35 miles per hour (mph).

Henderson Boulevard

This is a north-south roadway classified as an arterial north of North Street, a major collector between North Street and Yelm Highway, and a minor arterial south of Yelm Highway. It extends from Plum Street in Olympia to Old Highway9 1rnhe City of Tumwater. In the vicinity of the project site, the roadway has a two- to three-lane cross section with 8-foot bicycle lanes on both east and west sides. The speed limit in this area is 25 mph. Sidewalks and bicycle lanes are provided on both sides of the street from The Cove subdivision north to North Street. Improvements to Henderson Boulevard from Yelm Highway south to 58th Avenue were underway as of October 2001.

In 2001 and 2002, the City of Tumwater widened Henderson Boulevard between Yelm Highway and the entrance to Pioneer Park. Henderson Boulevard now consists of five lanes between Yelm Highway and Palomino Drive, the entrance to The Farm subdivision, with curbs and sidewalks. Henderson Boulevard has been widened to three lanes from Palomino Drive south to Pioneer Park. Improvements included widening, bike lanes, landscaped median, and wetland mitigation to the west of Henderson Boulevard and south of the railroad tracks.

North Street

This is a major collector linking Cleveland Avenue to Cain Road. The intersection of North Street and Cain Road is a three-way stop at a tee-intersection. The intersections of North Street with Henderson Boulevard and with Cleveland Avenue are both signalized. Between Cain Road and Henderson Boulevard, North Street is a two-lane roadway with sidewalks on the north side and bicycle lanes on both sides of the street.

Pifer Road

Pifer Road is a collector roadway that extends from North Street in the City of Olympia to South Street in the City of Tumwater. A sidewalk is provided on the west side of the street, south of North Street. The speed limit is 25 mph.

Delta Lane

Delta Lane is a narrow two-lane local street in the City of Tumwater that dead-ends adjacent to the western edge of the site. It includes no sidewalks and is partially bordered by wetlands.

Middle Street

This is an east-west collector that connects Henderson Boulevard and Hoadly Street. A 4-foot sidewalk is provided on the south side of the street at the intersection with Pifer Road and on both sides of the street where it intersects with Hoadly Street. The posted speed limit is 25-mph.

Hoadly Street

This is a north-south roadway classified as a major collector. A 4-foot sidewalk is provided on the east and west sides of the street between North Street and South Street. The speed limit is 25-mph.

South Street

South Street is a two-lane east-west roadway classified as a major collector. It links Pifer Road and Cleveland Avenue and has a 4-foot sidewalk on the north side of the street east of Hoadly Street and a 6-foot sidewalk segment on the north side of the street where it intersects with Cleveland Avenue. It has a speed limit of 25-mph.

Cleveland Avenue

This is a north-south minor arterial with a five-lane cross section that extends from Capitol Boulevard to Yelm Highway. There are intermittent sidewalks provided between North Street and Yelm Highway. The intersection of North Street and Cleveland Avenue is under traffic signal control. The posted speed limit is 25-mph.

Roadway Condition

Each of the inventoried roadways was visually examined for pavement condition. South Street, Pifer Road, Middle Street, and Hoadly Street are local neighborhood streets that were constructed for low-volume residential traffic. Some segments of these streets do not meet the current minimum municipal standards required for public roadways. Pavement widths are sometimes narrow, about 20 feet, and shoulders and/or sidewalks are not provided for pedestrian use. Pavement is deteriorating in places.

Existing Traffic Volumes

Data on existing traffic volumes were obtained from the City of Olympia, Thurston County, and Trafficount, a private data collection firm, as part of the *Briggs Village Master Plan Development: Transportation Study* (The Shea Group, 2002). The turning movement counts at Capitol Boulevard/Custer Way and North Street/Cleveland Avenue were provided by the City of Tumwater. Data were obtained for the following intersections:

- Henderson Boulevard/I-S Northbound Off-Ramp
- Henderson Boulevard/Eskridge Boulevard
- Henderson Boulevard/Carlyon Avenue
- Custer Way/Capitol Boulevard
- North Street/Cleveland Avenue
- Henderson Boulevard/North Street
- Henderson Boulevard/Yelm Highway

Most counts were conducted in 1999 and 2000. Any counts obtained prior to the Year 2000 were increased by a factor of 4 percent per year to approximate base year 2000 conditions.

All of the counts were adjusted to represent the average of 4 p.m. to 6 p.m. peak period. The two-hour average traffic volume for each intersection varied from 88 percent to over 95 percent of the peak-hour volume. For purposes of the traffic study, traffic volumes were adjusted by 95 percent to calculate the two-hour average peak volume. The base year 2000 traffic volumes are shown in Figure 2-9.

Accident History

The accident history of the primary intersections in the project vicinity, Yelm Highway/ Henderson Boulevard and Henderson Boulevard/North Street was reviewed for the three-year period 1994 through 1996. This is the last complete three-year period of accident data that has been compiled by the Washington State Patrol (2001). The accident rate, shown in Table 2-1, is the number of recorded accidents divided by the number of vehicles entering an intersection.

Table 2-1. Reported Traffic Accident Rate Summary

Intersection	Three-Year Traffic Total	Three-Year Accident Total	Accident Rate
Yelm Highway/Henderson Blvd.	24,976,950	17	0.68
Henderson Blvd./North Street	18,768,300	13	0.69

Source: Washington State Patrol, 2001

Typically, intersections with accident rates below 1.0 are not considered significant accident locations. Generally, safety improvements are needed at intersections with accident rates abovel.O. Neither of the two intersections evaluated are considered high-accident locations. It is possible that the accident rate may decline further with City of Tumwater improvements to Henderson Boulevard immediately south ofYelm Highway.

Existing Traffic Operations

Existing traffic conditions at selected intersections have been evaluated in terms of level-of-service (LOS) (Appendix G). Level-of-service is a qualitative measure of the operating conditions a vehicle will experience on a particular roadway or intersection. Levels-of service vary from LOS A, where little or no delay is encountered, to LOS F, where long delays and congestion is experienced. The City of Olympia has adopted LOS D as the minimum standard for most roadways and intersections within the Urban Growth Area (UGA), LOS E for specific high-density traffic corridors, and LOS F for specified intersections. The study intersections in the City of Tumwater have a minimum LOS D standard. Table 2-2 shows LOSs for selected intersections in the project area for the PM peak-hour period for the base year 2000 conditions.

Table 2-2. Level of" Service and Delay Summary Existing {2000)

	Signalized Intersection	Unsignalized Intersection	
	Intersection Average	Minor Street Left Turn	Intersection Average
Intersection	LOS (Delay)	LOS (Delay)	LOS (Delay)
Henderson Boulevard/I-S NB Off-Ramp		E(40)	A(9)
Henderson Boulevard/Eskridge Boulevard		F(60)	B(ll)
Henderson Boulevard/Carlyon Drive		C(20)	A(2)
Capitol Boulevard/Custer Way	E(58)		
Cleveland Avenue/North Street-Custer Way	B(14)		
Henderson Boulevard/North Street	B(13)		
Yelm Highway/Henderson Boulevard	C(34)		

Source: The Shea Group (2003) usmg: *H1gh Capac1ty manual (HCM) 2000*

Planned Roadway Improvements

There are several roadway improvements in the project area that are either under construction or scheduled to be constructed prior to development of the North Residential Phase of Briggs Village.

- Cleveland Avenue/Yelm Highway: South Street to Henderson Boulevard. The City of Tumwater has widened this highway to four lanes with bicycle lanes and sidewalks on both sides of the street. The project was completed in 2001.

- Yelm Highway: Henderson Boulevard to Rich Road. Thurston County is planning to widen this segment of Yelm Highway to four or five lanes with bicycle lanes and sidewalks. The project is in the design stage for widening. Design is to be completed in 2004; right-of-way acquisitions will occur through 2005. Construction is to begin in 2006 (Davis, draft EIS comment letter). The existing level of service is for this roadway segment is "D." Unless improvements are constructed, this section of Yelm Highway is expected to exceed its capacity within the next six years. Full funding has not yet been secured for this project. (Thurston County 2003-2008 CFP.)

- Henderson Boulevard and 1-5 Northbound Ramp. There is a proposal to develop a commercial property west of Henderson Boulevard near the northbound off-ramp. The proposal involves construction of a new approach at the intersection in order to provide access to the site. The developer of the commercial site has been granted an approval that requires construction of a roundabout.

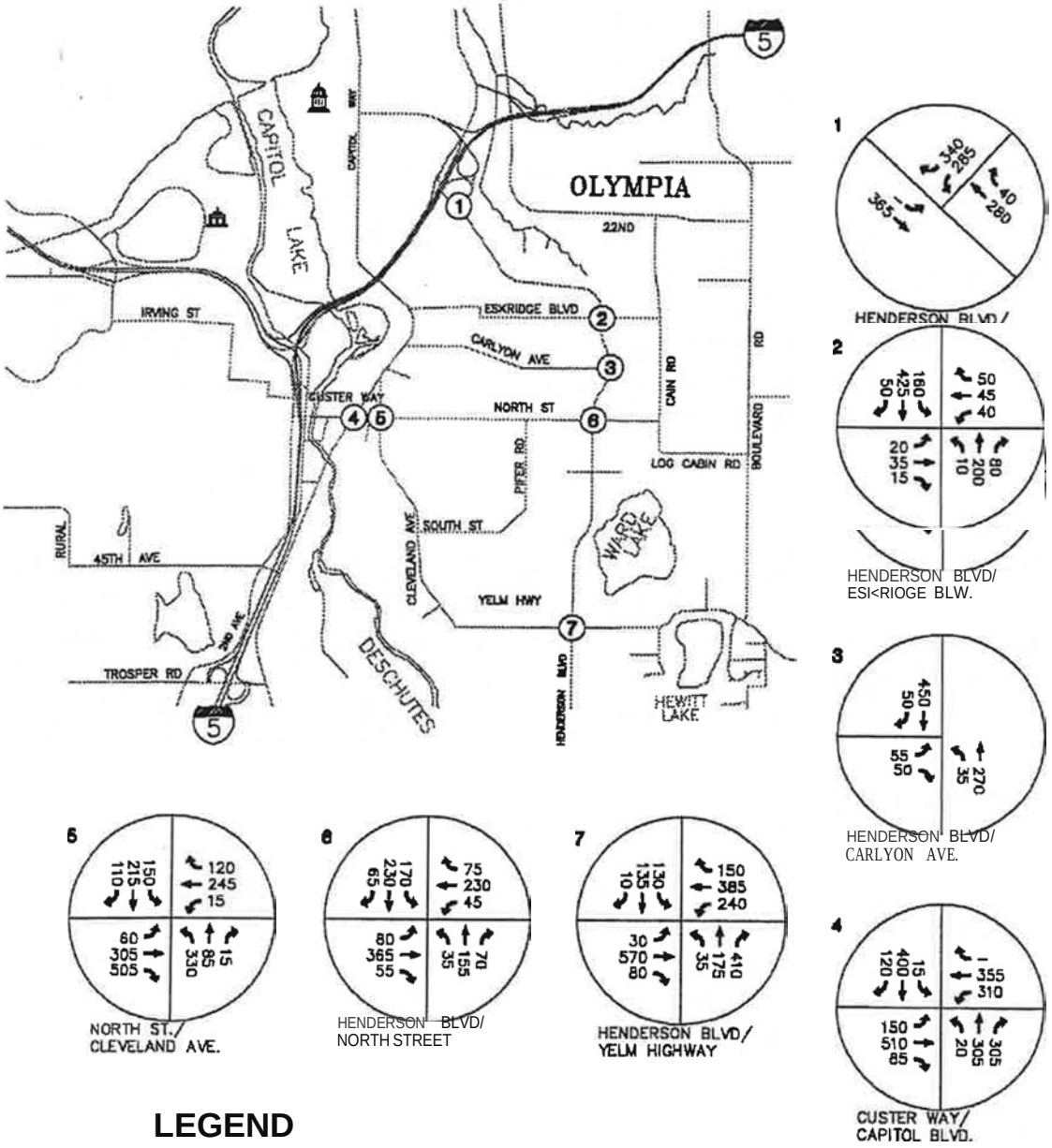
The City of Olympia does not have any transportation projects planned in the vicinity of the project at this time.

Transit Service

The project site is served by Intercity Transit (IT) Route No. 15 in both directions between the Yelm Highway and North Street. This route links the Olympia Transit Center in downtown Olympia with the Little Prairie Center in south Lacey with intermediate stops at Capitol Way and 15th, Tumwater Square, and Henderson and Yelm Highway. The route provides buses every 60 minutes during 12 hours of the day with no service in evenings or on Sundays. There are four existing stops in the vicinity of the Village site, including a sheltered stop on the east side of Henderson across from the YMCA. There is also east-west service on Yelm Highway east of Henderson Boulevard.

Bicycle Lanes

Both Yelm Highway and Henderson Boulevard are designated as Class II bikeways in the *Olympia Comprehensive Plan* (City of Olympia, 1994a), and both currently have separately striped bicycle lanes.



LEGEND

XX- PM PEAK PERIOD TRAFFIC VOLUMES

® INIERSECTION REFERENCE NU BER

LESS 1HAN FIVE VEHICLE TRIPS

I Will ADOLPSON	t NORTH No Scale	File name: 99008exisl.p65 Graphic by: ACT Edits by: Dale: 4/24102	**FIGURE 2-9.** **EXISTING 2000 TRAFFIC VOLUMES** **BRIGGS VILLAGE MASTER PLAN EIS** **OLYMPIA, WASHINGTON**
	Source: SCA Engineering.		

In Tumwater, the *Parks Plan* (City of Tumwater, 1997) identifies Henderson Boulevard as an on-street, "backbone" trail, with Yelm Highway as a "distribution link." Backbone trails are primarily major components ofthe city's trail network, while distribution links provide connections to other trail systems.

PUBLIC UTILITIES

The following section describes the existing water, sewer, stormwater, gas, electric, and cable television infrastructure on the project site and in the project area and identifies plans and polices applicable to these utility services. Sources used to complete this section include the *City of Olympia Water System Plan Update* (City of Olympia, 1996), the *City of Olympia Capital Facilities Plan* (City of Olympia, 2000, with 2000 updates), *City of Olympia Sewage Disposal Master Plan* (City of Olympia, 1997), *Comprehensive Plan for Olympia and the Olympia Growth Area* (City of Olympia, 1994a), conversations with local service providers, and applicable plans and policy documents for the City of Tumwater.

Water

The City of Olympia provides water service to approximately 16,000 connections within its city limits and adjacent areas ofThurston County within the City's urban growth area. Water supply planning and capacity issues in the City of Olympia are addressed by the *Water System Plan Update (Water Update)* (City of Olympia, 1996). According to the *Water Update,* the City obtains all of its drinking water from underground aquifers and is supplied by a number of ground water sources. Total production capacity of these sources is approximately 15.70 million gallons per day (City of Olympia, 1996). The largest of these sources is McAllister Springs; the City also operates three other full-time supply wells (City of Olympia, 1996).

Water distribution in the City's service area is divided among seven pressure zones, with areas to the immediate north and east of the project site located in Zone lA. Because of the area's predominantly residential use, the *Water Update* (City of Olympia, 1996) jointly identifies Zones 1 and 1A as the largest water-consuming zones of the entire system. The 1989 per capita demand in Zones 1 and 1A was 135 gallons per day (gpd). Average daily demands in 1993 for Zone 1A were 2.12 mgd. The *Water Update* also notes that the growth rate of Zone 1A is expected to significantly increase water service requirements, which will require water supply and distribution improvements to keep pace with future growth. The analysis of Olympia's water system contained in the *Water Update* indicated that by 2015, average daily demand for Zones 1 and 1A combined would be approximately 4.2 million gallons per day (mpd), assuming implementation of conservation measures (City of Olympia, 1996). Alternatives for new sources included new wells, a new booster pump station, or an adjustment of pressure zones.

With the exception ofthe YMCA located on the south side of the site, the project site is not currently served by City of Tumwater or City of Olympia municipal water systems. Although the project site is within the City of Olympia's current water service area, municipal water mains have not yet been extended to the project site. Instead, the southernmost termini of these mains are located in residential neighborhoods to the north and northeast of the project site. The nearest

existing city water main to the project site is a 12-inch main located along Henderson Boulevard. It terminates approximately 400 feet north of the nursery office, on Henderson Boulevard (City of Olympia, 1996). At present, the YMCA is connected to the City of Tumwater's municipal water system, which supplies water via a 12-inch main extending from Henderson Boulevard to the YMCA facility.

Water is supplied to the nursery operation by a private well on the Briggs property that irrigates nursery plants and supplies office and maintenance operations. This well is located in the central part of the and Briggs Nursery has water rights to 400 acre-feet of water per year, or the approximate equivalent of 357,000 gallons per day (Figure 2-1). Irrigation was an important part of nursery operations from the beginning. By 1952, several water permits were consolidated into the current permit, which operates from a well just north of the administration building. At present, overall use is about 320 acre-feet per year. Kettles on the site continue to be used for irrigation return flow. Refer to the Ground Water section for more information.

Sanitary Sewer

Olympia manages its own wastewater collection system, serving over 12,000 residences and businesses. The City of Olympia *Sewage Disposal Master Plan (Sewage Plan)* (City of Olympia, 1997b) directs the development, maintenance, and operation of this system. The system includes nearly 180 miles of gravity sewer pipe, 14 miles of pressure lines, several lift stations, and 500 septic tank effluent pump (STEP) systems. Wastewater flows in Olympia are conveyed by a series of collection lines from the project area north to a treatment plant on Budd Inlet managed by the Lacey-Olympia-Tumwater-Thurston County (LOTT) Wastewater Alliance. The LOTI Wastewater Alliance is responsible for joint management and maintenance of the treatment plant as well as flow management and long-range planning. The maintenance and operation of local wastewater collection systems is the responsibility of individual jurisdictions.

On average, Olympia sewers convey over 7.25 million gallons of effluent per day to the LOTI treatment plant. This varies seasonally depending on the amount of stormwater entering the system through combined stormwater and wastewater lines that serve older portions of the City to the north and west of the project site. Following treatment at the LOTI plant, effluent is discharged to Budd Inlet. The LOTT Wastewater Alliance has recently updated its long-range plan for providing sewer service to the region.

Presently, the nearest City of Olympia sewer main to the project site is a 10-inch sanitary sewer line in Henderson Boulevard, several hundred feet north of the site. There have been no capacity deficiencies reported in this line. The extension of this 10-inch gravity sewer system along Henderson Boulevard south to Yelm Highway is identified in the *Sewage Plan* as a planned developer-funded project (City of Olympia, 1997b).

The City's STEP systems integrate the technology of on-site treatment systems, such as a septic tank, with public sanitary sewer service. STEP systems are used in locations where gravity collection systems and/or pump stations are impractical or too costly. Typically, STEP systems include septic tanks for individual residences. Individual tanks are used to settle solids from the

sewage. Rather than being directed to an on-site drain:fi:eld, effluent from each tank is conveyed by small pumps to the community collection system. The City has identified the southeast part ofthe city, including the project area, as a suitable location for such systems (City of Olympia, 1997b).

The City of Tumwater provides interim sewer service to the YMCA located on the south side of the project site, as well as to residential areas to the west and south of the site. Tumwater is also a member of the LOTI Wastewater Alliance, and similar to Olympia, its wastewater flows are conveyed through a series of pipes north to the LOTT treatment plant.

Storm Drainage

At present, no storm sewer lines exist along Henderson Boulevard. All surface runoff is collected in roadside ditches and is infiltrated into either the ground water or nearby kettles (Steepy, personal communication, 2000).
As mentioned in the Ward Lake, Wetlands, and Other Surface Waters section, a portion of South Street drains to the Briggs Nursery site. This street runoff is conveyed to the Central Kettle. (Shoopman, personal communication, 2000).

Other stormwater facilities in the project area include 12-inch perforated pipes on the north and south sides ofYelm Highway adjacent to the project site to the south. Yelm Highway has recently been widened. As part of this project, a new stormwater detention facility has been constructed south ofYelm Highway across from the Briggs Village site.

Stormwater runoff on the present nursery operation generally drains via sheet flow to the six kettles (KPFF, 2000). Stormwater from the recently constructed YMCA and its parking is collected in catch basins, conveyed into a temporary detention facility on the west side of the YMCA, and discharged into the South Kettle (Steepy, personal communication, 2000).

Gas and Electric Power

Puget Sound Energy (PSE) provides natural gas and electric power in the vicinity of the project site. Currently, the nearest electrical line is a 12 kilovolt (kV), 3-phase overhead power line on the south side ofYelm Highway. There is also a 12 kV, 3-phase overhead line on the east and west sides of Henderson Boulevard. Conduit crossings were installed across Yelm Highway for future power requirement at the two entrances of Briggs Nursery on Yelm Highway. The conduits were installed when Yelm Highway was widened in 2001.

Gas is provided by PSE to the project area by 2- and 4-inch gas lines located on the south side of Yelm Highway. Puget Sound Energy is in the process of connecting these two segments to provide a continuous utility line. There are also 2-inch gas lines located on the west and east sides of Henderson Boulevard.

Phone and Television Cable Services

Comcast, Inc. provides cable and Qwest provides local phone service to the project area. The nearest existing cable utility is located on a pole line on the west side of Henderson Boulevard, extending south from North Street to a location just north of the project site. An additional cable line is located on Delta Lane.

Plans and Regulatory Requirements

City of Olympia

Both the City of Tumwater and the City of Olympia have developed comprehensive plans for their municipal water and sewer systems. These plans generally document existing conditions and identify future needs of expected growth in the area.

Water

The *Water Plan* (City of Olympia, 1996), an update to the 1989 *Water Comprehensive Plan,* evaluates the existing capacities ofthe city's water system, project demand, and provides recommendations needed to improve existing deficiencies, meet future growth requirements, and ensure compliance with water quality regulations. The updated *Water Plan* was also adopted by Thurston County as part of the 1996 *Coordinated Water System Plan* for the county, which provides policies and standards for all of the areas within the County's urban growth area.

The *Water Plan* (City of Olympia, 1996) identifies two proposed projects within the immediate vicinity of the project site. The first project would involve installing an intertie from a 10-inch waterline on Yelm Highway to a 10-inch waterline on Henderson Boulevard at an unspecified time in the future. The second project would result in the installation of a pressure-reducing valve (PRV) between Ward Lake and Yelm Highway at the pressure zone boundary.

Sewer

The latest City of Olympia *Sewage Disposal Master Plan (Sewage Plan)* (City of Olympia, 1997b) includes a number of plans, policies, and specific projects to help maintain and guide the development of the city's sewage treatment system. Projects identified in the *Sewage Plan* are also included in the City's 2002 to 2008 *Capital Facilities Plan (CFP),* which identifies all proposed facility projects in the City (City of Olympia, 1998).

Generally, the *Sewage Plan* calls for new sewer line and pump station construction to be financed by the users of the facilities. If the City contributes to financing, future users will repay the City through facilities charges or latecomers fees. New development pays its fair-share costs of sewer service through the general facilities or other charges (City of Olympia, 1997b).

Planned or recent major sewer projects in the vicinity ofthe project site include the Holiday Hills Lift Station Upgrade. According to the *CFP,* the purpose of this project is to analyze, design,

and construct the necessary corrective measures to increase capacity and remove the potential environmental risks to Ward Lake associated with the station (City of Olympia, 1998). This project is located at the north end of Ward Lake, north and east of the project site.

Stormwater

New commercial and residential developments in the City of Olympia must comply with the detention, conveyance, treatment, and habitat requirements of the *Drainage Design and Erosion Control Manual for Olympia* (City of Olympia, 1994b). The City's stormwater requirements are consistent with requirements established by Ecology (City of Olympia, 1998).

PUBLIC SCHOOLS

The proposed Briggs Village project falls within the boundaries of the Olympia School District. This section characterizes existing schools in the Olympia School District that would be responsible for serving the proposed project. Information for the following section was obtained from the Olympia School District's *Capital Facilities Plan*, personal communications with district staff, and the district's Web site (http://kids.osd.wednet.edu).

The district encompasses 80 square miles, including the majority of the City of Olympia, a portion of the City of Tumwater, and portions of unincorporated Thurston County (Olympia School District, 2000). The Olympia School District currently operates 2 high schools, 1 alternative high school, 4 middle schools, and 11 elementary schools.

The Olympia School District has developed guidelines for class size. The recommended class size for kindergarten is 21; the recommended class size for grades 1 and 2 is 21; the recommended class size for grade 3 is 23; and the recommended class size for grades 4 and 5 is 25 (Olympia School District, 2002a). However, classroom capacity levels vary from school to school.

The district's enrollment model described in the *2000-2006 Capital Facilities Plan* (Olympia School District, 2000) projects a 2.28 percent increase in students from kindergarten to grade 1; little or no increase in students from grades 1 to 8; a 19.32 percent increase in student enrollment as students move from grades 8 to 9, which includes students incoming from the Griffin School District; and smaller decreases in student enrollment as students progress through high school (-1.95 percent grades 9 to 10; -8.36 percent grades 10 to 11; and -6.89 percent grades 11 to 12). Table 2-3 shows the district's projected student enrollment totals through school year 2004/2005.

Table 2-3. Olympia School District Enrollment Forecast

Year	Elementary	Middle	High	Total
2001/2002	3,504	2,207	3,338	9,049
2002/2003	3,464	2,330	3,452	9,246
2003/2004	3,492	2,369	3,543	9,404
2004/2005	3,517	2,390	3,703	9,610
2005/2006	3,565	2,312	3,918	9,795
2006/2007	3,601	2,328	3,992	9,921

Source: *Olympia School District GMA enrollment model- most recent official data available*

Elementary Schools

The two elementary schools located in the vicinity of the proposed Briggs Village project and most likely to receive students from the proposed Briggs Village project are Pioneer Elementary and Centennial Elementary (see Figure 2-8). Olympia School District's elementary schools serve grades kindergarten through 5.

Pioneer Elementary School

Pioneer Elementary School is located at 1655 Carlyon Avenue SE, approximately 0.75 mile north of the project site (Figure 2-8). Pioneer Elementary is north of North Street and adjacent to Olympia High School. In October of 2002, Pioneer Elementary served approximately 290 students with an average class size between 22 and 23 in grades 1 through 5 Originally constructed in 1969, Pioneer has a capacity of 295 students and thus is nearly at capacity (Olympia School District, 2000; Wolpert, personal communication, 2003).

Recent improvements to Pioneer Elementary school were completed in 2002, including a new multi-purpose room, a music room, and kitchen. Additional classrooms will be constructed under a second phase capital improvement program, which was part of a bond authorization election approved by voters in February 2003.

Centennial Elementary School

Centennial Elementary School is located at 2637 45th Avenue SE, approximately one mile east of the project site (Figure 2-8). The project site is within the service area for this school. Centennial Elementary has a capacity of 387 students (Wolpert, personal communication, 2003), and serves approximately 423 students according to the 2002 enrollment figures . In response to school enrollment exceeding building capacity the District has recently installed three "portable" classrooms.

Middle School

Washington Middle School is located at 3100 Cain Road SE, approximately one mile northeast of the project site (Figure 2-8). The school was originally constructed in 1969 and currently has a student capacity of 588 (Olympia School District, 2000). Washington Middle School currently serves approximately 746 students in grades 6 through 8, with an average class size of28 (Wolpert, personal communication, 2003). A total of nine portable classrooms have been installed to accommodate additional students.

High School

Olympia High School (also known as William Winlock Miller Senior High School) is located at 1302 North Street, approximately 0.75 mile north of the project site. The present structure was constructed in 1961 (Figure 2-8). Olympia High School was recently modernized and expanded its facilities and was rededicated on October 28, 2000. This remodel included expanding from 60 teaching stations to 72 and increased total capacity to approximately 1,680 students and based on 2002 enrollment currently services 1,696 students in grades 9 through 12 (Olympia School District, 2000; 2001e, 2003). The district installed three single-wides the end of October 2002 and two double-wide portable classroom since completion ofthe school expansion/remodel project.

Transportation Policy

Students in all grades generally travel between school and home by school bus, by being driven by parents, by driving themselves (high-school students), or by walking. In general, the Olympia School District policy, following guidelines provided by RCW 28A.160.160, is that students located within one mile of their school can walk; students living greater than one mile from their school are bused. However, students who live in areas where walking routes encounter hazardous conditions are bused, even if they are within one mile of their school. According to the State Superintendent of Public Instruction, the following items contribute to hazardous conditions: types of traffic conditions (heavy industrial traffic, concentration of commuter traffic, concentration of high school drivers); excessive intersection crossings; presence of drainage ditches; and social issues (presence of "drug" houses and residences where known sex offenders reside). Although busing may be available or walking distances short, many parents elect to transport their children directly to schools.

Relevant Plans, Policies, and Regulations

The *Olympia School District's Capital Facilities Plan (School CFP) 2003-2008* provides guidance to the District for the expansion of school facilities, including schools serving the project area. The City of Olympia uses *Comprehensive Plan for Olympia and the Olympia Growth Area (Olympia Comprehensive Plan)* (City of Olympia, 1994a) goals and policies to work with the district to assess whether or not adequate school capacity exists to serve new development. Goal PF24 of the *Olympia Comprehensive Plan*, "To enhance the strength and vitality of our neighborhood schools," provides direction for land use decisions affecting schools,

including their location, the safety of surrounding neighborhoods and arterials, and the shared use of school facilities. In particular, a project should assess the impacts to the area's schools in terms of pedestrian safety and school capacity. In addition, projects should take into account the goals and vision of the Olympia School District's Strategic Plan II that establishes guidelines for decisions affecting the quality of the district's education programs through 2002. The Strategic Plan II Mission Statement states, "We will create, in partnership with our staff, families, and community, challenging opportunities for all students to be successful as they become responsible and contributing citizens, and master the knowledge and skills essential for life-long learning in our changing and diverse world." The Vision Statement states, "The vision for the Olympia School District is to create an environment in which each day, each student achieves success" (Olympia School District, 1999d).

CHAPTER 3 -ALTERNATIVES

The following section describes the proposed Briggs Village Master Plan and No Action alternatives in detail and summarizes for comparative purposes impacts associated with each alternative. Chapter 4, Environmental Impacts and Possible Mitigation, presents a more in-depth discussion of potential impacts.

"NO ACTION" ALTERNATIVE

Under the No Action alternative, the proposed Master Plan would not be approved and the project would not be constructed. For the purposes of this EIS, it is assumed that the use of the site for nursery operations would continue in substantially the same manner as the property was used for the Briggs Nursery.

Nursery use would consist of field and container production, laboratory facilities, and a landscape sales yard (Figure 2-1, Chapter 2). The No Action alternative also includes continued maintenance and operation of ten structures of various sizes and functions, including an administrative and sales office, cafeteria, loading facility, employee facility, shops, a can shed, storage facility, nursery labor tory, liner shipping facility, and several nursery beds. Briggs Nursery employed approximately 200 people. The No Action alternative also includes continued operation of the Briggs Community branch of the South Sound YMCA, a 40,300 square-foot facility on the site. This facility includes two pools, a full-size gymnasium, weight rooms, locker rooms, branch administrative offices, and parking.

Summary of Impacts

Compared to the proposed Master Plan, the No Action alternative would not result in any significant adverse environmental impacts. Continued operation of the nursery on the site could, however, result in impacts associated with ongoing returns of irrigation water to the site's kettles and use of fertilizers, pesticides, and other potentially hazardous materials.

PROPOSED BRIGGS VILLAGE MASTER PLAN

The proposed action consists of a Master Plan for a mixed-use development with a variety of housing and business types (Table 3-1; Figure 3-1). The project is likely to be phased over a period of 18 to 25 years, depending on economic conditions, homebuyer preferences, and other related factors. Five independent development phases have been proposed:

- North Residential Phase
- West Residential Phase
- Central Residential Phase
- Village Center Phase
- East Residential Phase

Table 3-1. Briggs Village Major Features

Laud Use	Approximate Size
Office	Approximately 114,000 Square Feet of Floor Area
Retail	Approximately 60,000 Square Feet Floor Area
Grocer	Approximately 50,000 Square Feet Floor Area
Residential	
◦ Single-family (attached & detached)	242 Units / 27 Acres (including existing lots)
◦ Multi-family (duplexes & apartments)	228 Units / 11 Acres
◦ Senior Housing	200 Units / 6 Acres
◦ Town Square units	140 Units
Total	810 Units / 44 acres
Recreational Open Space	
◦ Public Neighborhood Park	4.0 Acres
◦ Private Neighborhood "Commons"	5.0 Acres
◦ Private Arboretum	6.6 Acres
◦ Private Town Square	1.0 Acre
Total	16.6 acres
Other	
◦ YMCA	3.0 Acres
◦ Daycare	0.5 Acre
◦ Arboretum Facility and parking	1.0 Acres
◦ Wetland kettles and associated open space	38.0 Acres
Rights of Way-Roads	±3 miles/25 Acres
Trails	3.3 Miles

At full buildout, Briggs Village would include approximately 810 residential units in a variety of housing types, including single-family detached, townhomes, duplexes, apartments, senior housing, lofts, and studios in mixed-use buildings. Commercial facilities and multi-family units would be located within the Town Square area of the village (Village Center Phase) near major arterials. Table 3-2 summarizes housing units and types by phase.

Table 3-2. Housing Units and Types by Phase

Phase	Area (acres)	Housing Units
North Residential Phase	32	75 single-family detached 17 single-family attached
West Residential Phase	51	58 single-family detached 58 single family attached 10 duplexes 72 multi-family apartments
Central Residential Phase	8	25 single-family attached 72 multi-family apartments
Village Center Phase	21	140 Town Square residences
East Residential Phase	25	200 senior living units 14 duplexes 60 multi-family

*An additional 9 existing units will remain on property for a total of 810 units.

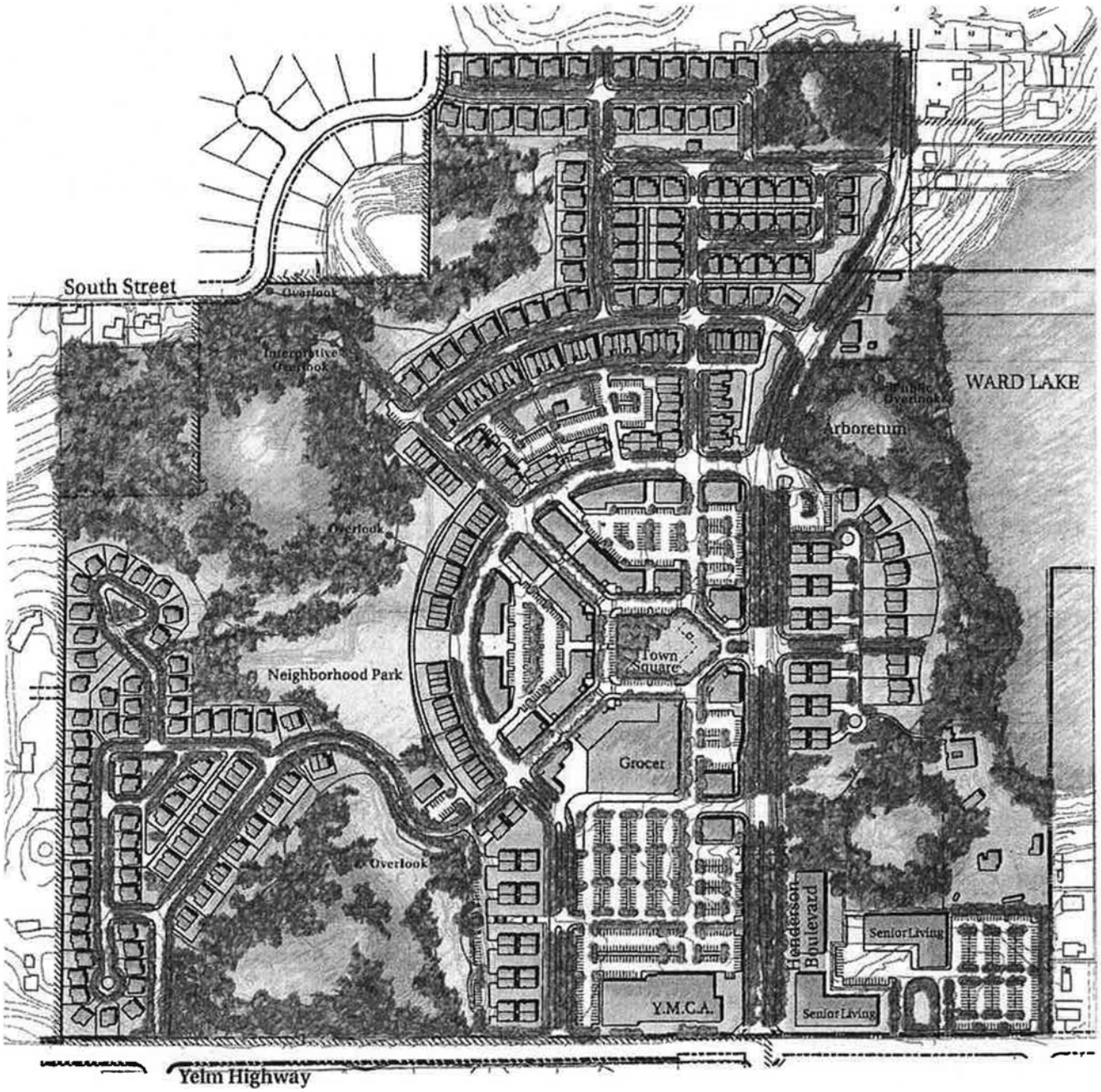


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FIGURE 3-1.
MASTER PLAN
BRIGGS VILLAGE MASTER PLAN EIS
OLYMPIA, WASHINGTON

As proposed, the Village Center Phase would be the primary activity center of the urban village. This district would include a blend of retail, office, and housing in three-story buildings surrounding the town square (Figure 3-1). Overall, this district would include an approximately 50,000 square-foot grocery store; 60,000 square feet of retail space; and 114,000 square feet of offices and services. Other elements would include wide sidewalks, street trees, and awnings. Parking would be provided on-street, in off-street parking areas, and in two-story, below-grade structures located in the north and west blocks of the mixed-use district.

Three housing neighborhoods would surround the Village Center Phase to the north, west, and east (Figure 3-1). Each neighborhood would provide a mix ofhousing types, including single-family detached homes, townhomes, duplexes, and apartments. Single-family homes generally would be located at the perimeter of the village.

The proposed action also includes adopting design criteria governing building style characteristics such as symmetrical placement of windows and doors, facades dominated by porches, use of columns, and vertically proportioned windows.

Other Master Plan Components

Other elements of the Master Plan include a public overlook ofWard Lake and a private Arboretum. The Arboretum would be planned, owned, and maintained by a Foundation. The overall planting plan and timing of its development would be decided by an Arboretum Board as part of the East Residential Phase development approvals. Once fully developed, the Board would be responsible for development, maintenance, and oversight. The proposed four-acre public neighborhood park would be developed during the West Residential Phase.

Phasing

The project would be constructed in five distinct and independent phases, with buildout of each phase occurring over approximately five years. Phases may be constructed in any sequence as long as code requirements and the prerequisite infrastructure is in place. The overall park and stormwater plans for the project would be implemented as independently functioning plans. Additional information on each phase is summarized below, including detailed tables on the amounts and types of construction. Each phase is analyzed as an independent development in this EIS, with prerequisites to be identified by the City for each phase to move forward. However, for purposes of assessing impacts of the Master Plan on school enrollment and capacity, two development scenarios for the project have been identified, one involving overlapping phasing and one sequential phasing.

The first scenario consists of overlapping phase development (i.e., the second phase [West Residential Phase] would begin in the fourth year of the first phase [North Residential Phase], the third phase [Central Residential Phase] would begin in the fourth year of the second phase [West Residential Phase], etc.). This would result in full buildout of the proposal in 18 years.

The second scenario consists of sequential phasing in which the second phase (West Residential Phase) would begin at the end of the fifth year of the first phase (North Residential Phase), the

third phase (Central Residential Phase) would begin at the end of the fifth year of the second phase (West Residential Phase), etc. This would result in full buildout in 25 years.

North Residential Phase

The North Residential Phase would occur on 32 acres on the north portion of the project site (Figure 3-2) and include construction of75 single-family detached units and 17 single-family attached units with an associated local road network and access. This phase would also include designation of open space around the North Kettle, a public overlook of Ward Lake, and a North Residential Phase Commons. Access to the site would be off Henderson Boulevard. During this phase restorative work on the Central Kettle would be initiated as part of a proposed mitigation plan for wetland impacts.

West Residential Phase

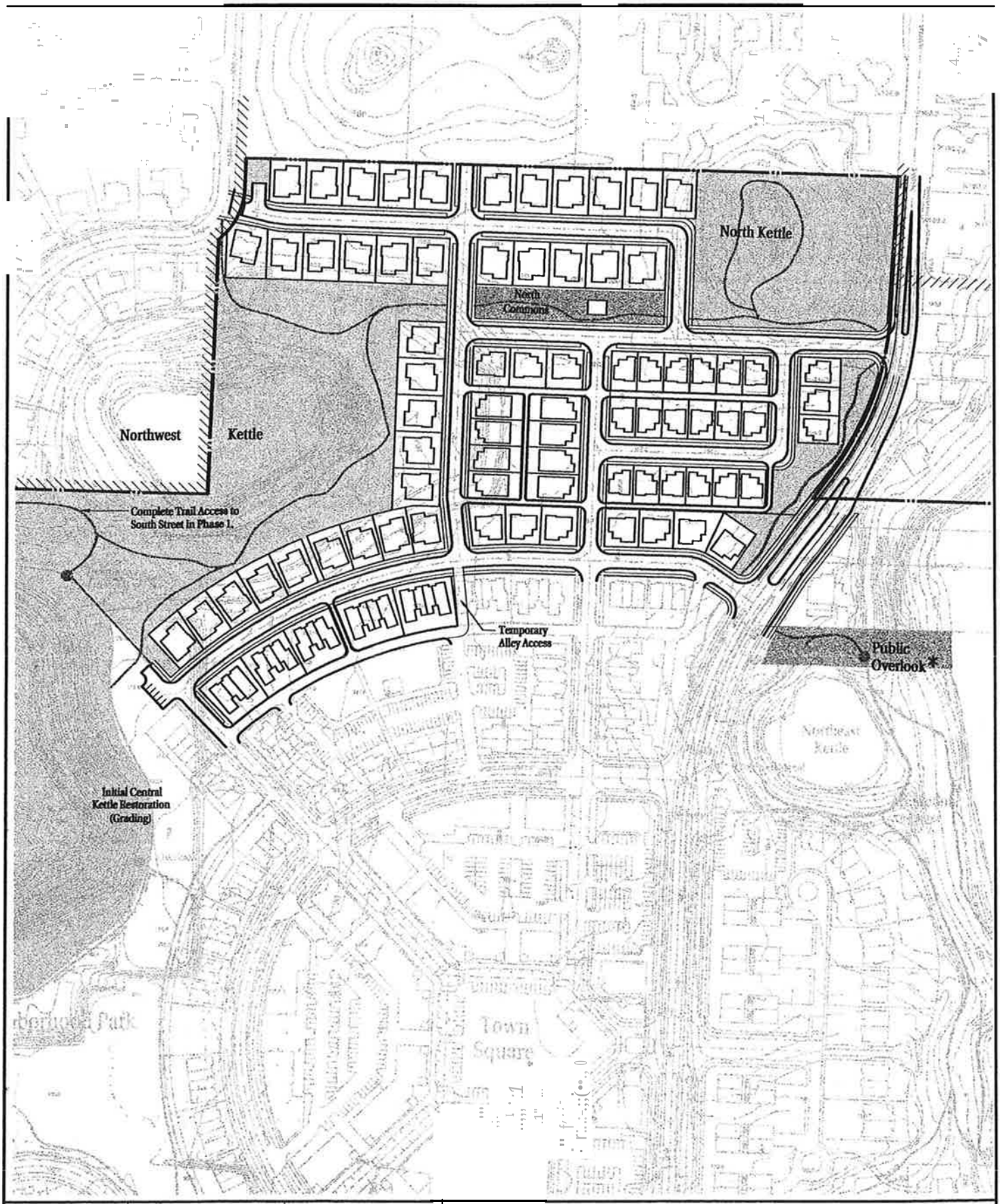
The West Residential Phase includes construction of 58 single-family detached units, 58 single-family attached units, 10 duplexes, and 72 multi-family units along with a local road network and 41 off-street parking spaces adjacent to the multi-family area (Figure 3-3). Additional structured parking for multi-family buildings will be provided below the living units. Single-family units will include off-street parking for residents. The West Residential Phase would occupy approximately 51 acres. Enhancements to the Central Kettle would continue, as an independent concurrent project, and several series of Central Kettle overlooks would be developed, one with interpretive facilities. The City will purchase four acres for future design and construction of a public neighborhood park. The South Kettle would be converted to a stormwater treatment facility and a West Residential Phase Commons would be developed. A Daycare Center with off-street parking would also be constructed. Primary access to this portion of the project would be from Yelm Highway.

Central Residential Phase

The Central Residential Phase would occupy approximately eight acres and would include the Arboretum facility and associated parking, as well as the preliminary trail network for the Arboretum (Figure 3-4). This phase would include construction of25 single-family attached units, 72 multi-family units, approximately 115 off-street parking spaces, and associated access just north of the proposed Town Square.

Village Center Phase

The Village Center Phase would be comprised of the mixed-use district of the project and includes the town square, parking, 50,000 square feet of grocery store, and commercial, retail, and apartment buildings around the square in the center of the site (Figures 3-5 through 3-7). This phase would occupy approximately 21 acres. Other possible uses would include an office for security personnel, a post office, approximately 60,000 square feet of retail, and 140 Town Square residential units. This phase would also include 923 parking spaces, including 792 off-street and 131 on-street parking spaces. The Villlage Center Phase would include construction of a one-acre Town Square, an urban park-like setting. If proposed, any additional underground parking would be evaluated during review of the commercial site plan.



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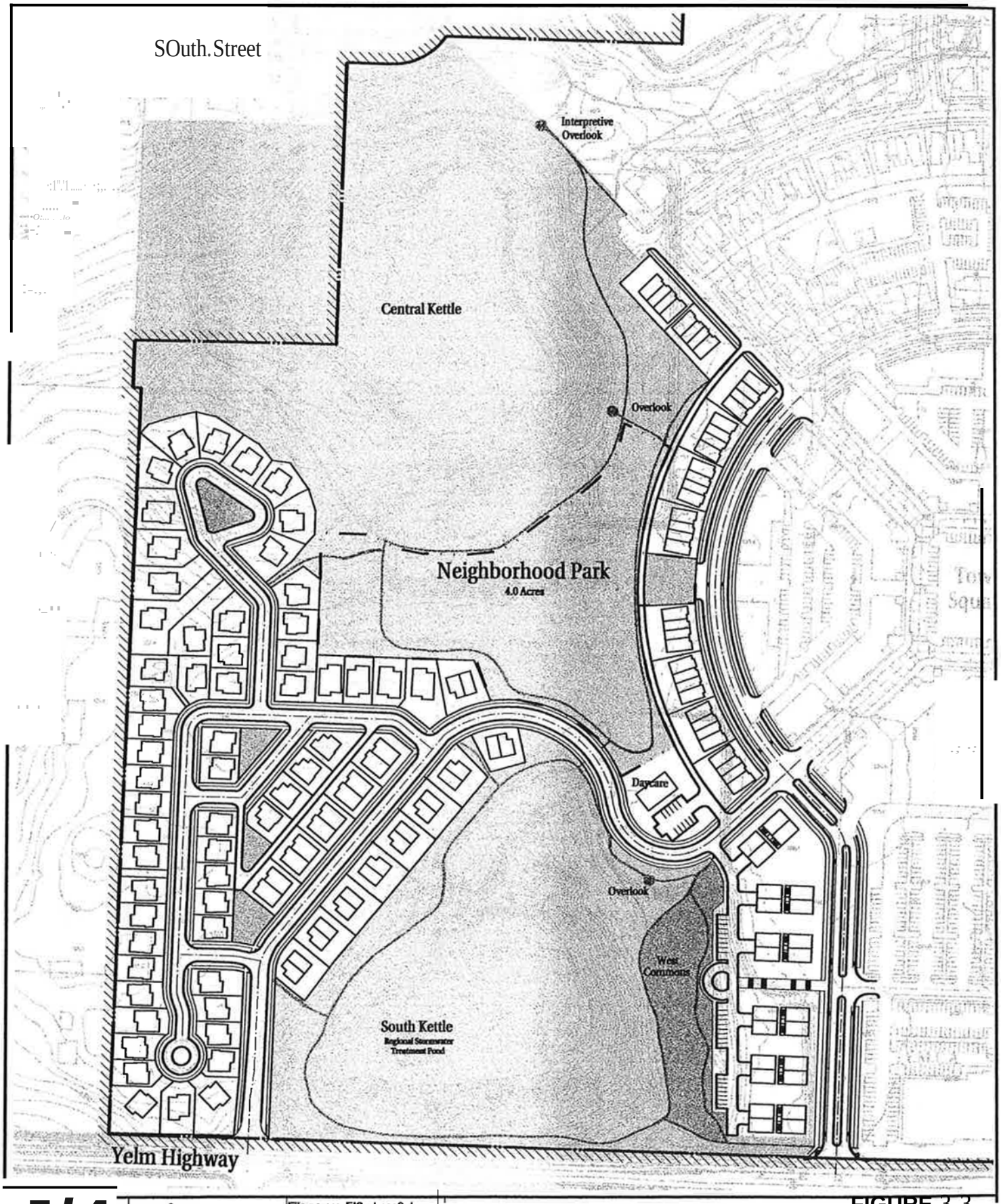
Date: 6/8/00 nls
Revised: 11/12/01

SOURCE: NBBJ, 2002.

FIGURE 3-2.
NORTH RESIDENTIAL PHASE
BRIGGS VILLAGE EIS
OLYMPIA, WASHINGTON



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Date: 6/8/00 nls
Revised: 11/12/01

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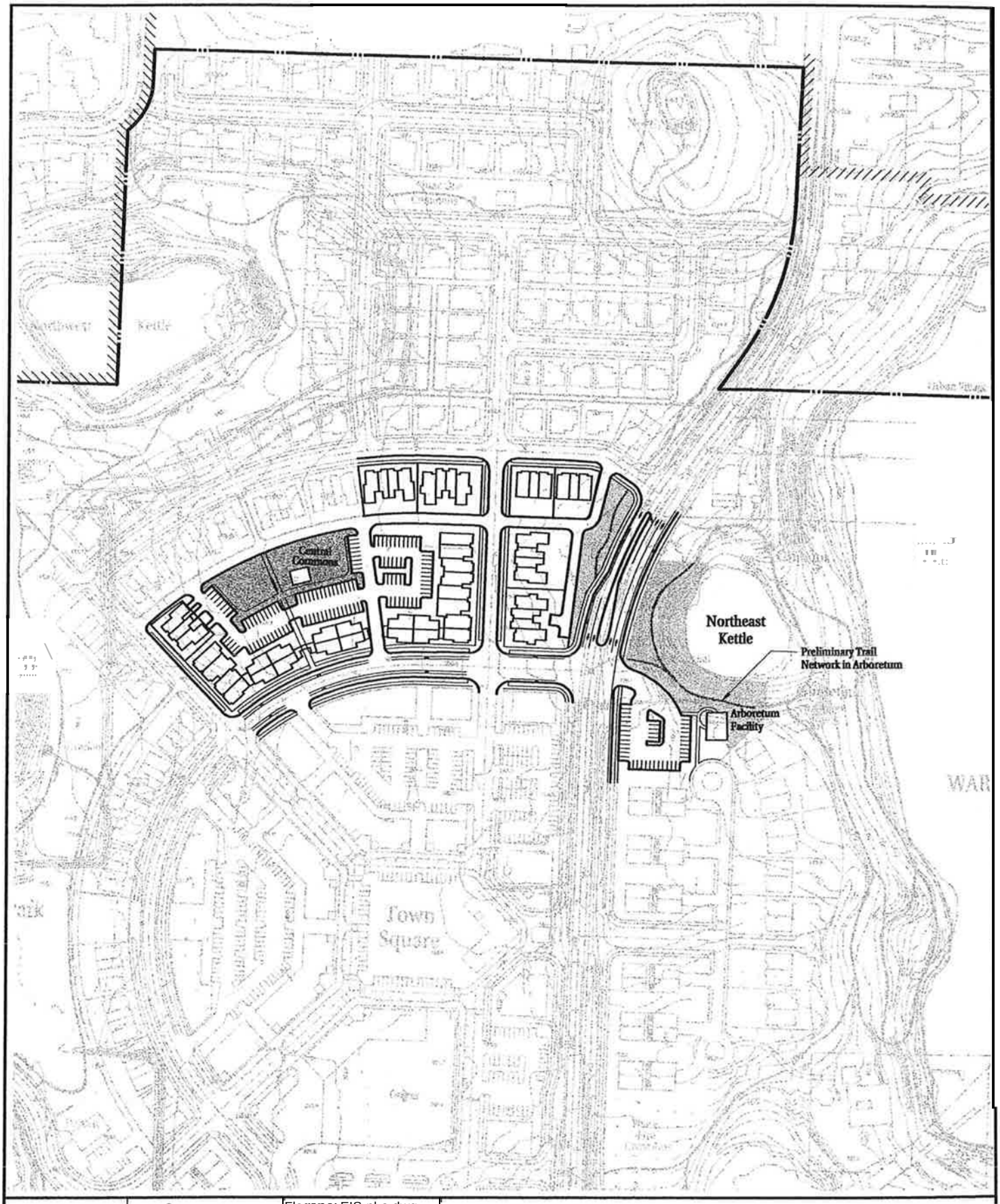
FIGURE 3-3.
WEST RESIDENTIAL PHASE
BRIGGS VILLAGE EIS
OLYMPIA, WASHINGTON



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FIGUR E 3-4.
CENTRAL RESIDENTIAL P HASE
BRIGGS VILLAG E EIS
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3SVHd 31N30 38V111A
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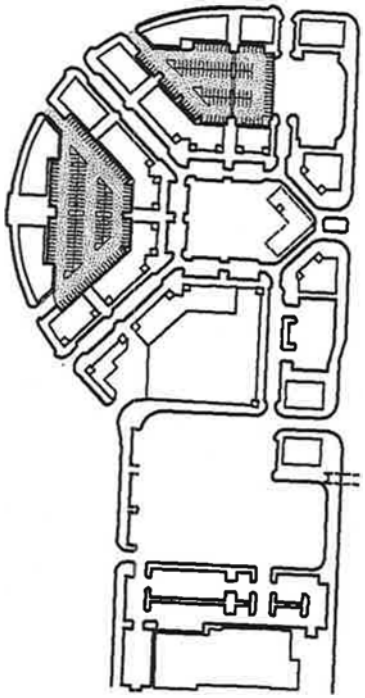
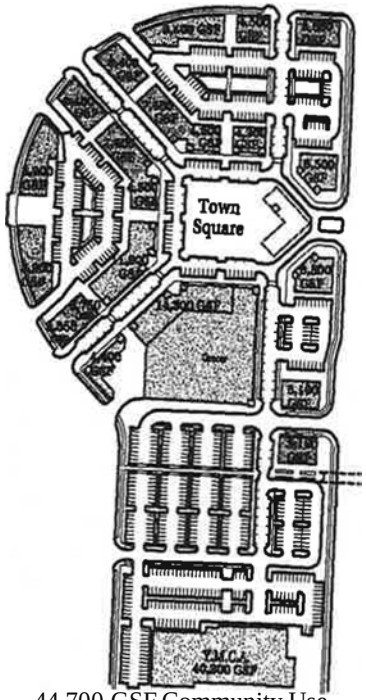
Preferred Plan: Three story buildings around Town Square, including community use (e.g., Conference/ meeting area) near grocer.

Below Grade



272 Off-Street Parking Stalls

First Floor

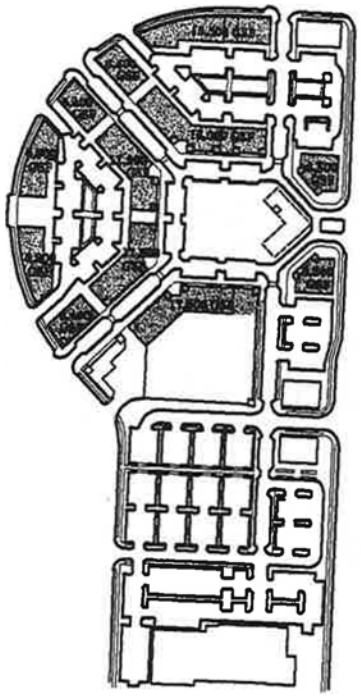


44,700 GSF Community Use
YMC.I.I -.tlf,UbloiJ, ...Dllloi

50,000 GSF Grocery
42,050 GSF Office
60,250 GSF Retail
31,700 GSF Residential
21Uallploa.-. Anu

520 Off-Street Parking Stalls
DoooDOIIDdudai55-•YMCA
131 On-Street Parking Stalls

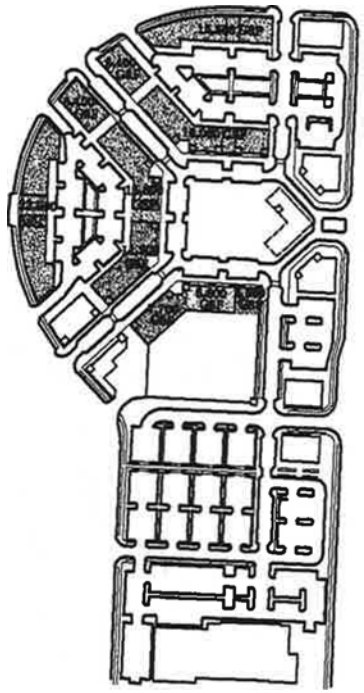
Second Floor



48,900 GSF Office

76,000 GSF Residential
Ill VIIli

Third Floor



6,600 GSF Community Use

22,900 GSF Office

82,100 GSF Residential

Area Totals

	GSF
Community	51,300
·D&CA·.....,,u..,,....cmo.	
Grocery	50,000
Office	113,850
Retall	60,250
Residential	189,800
	(140Units)

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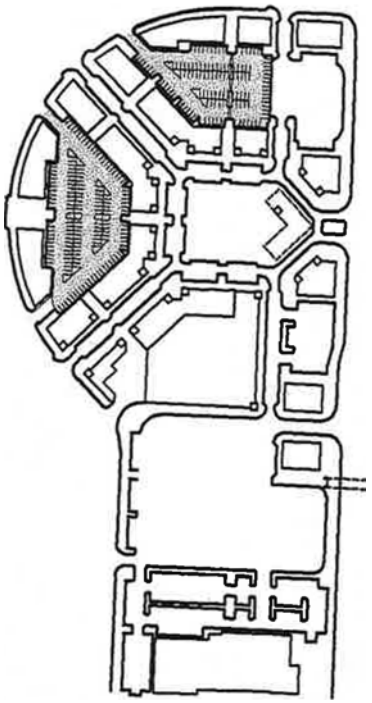
FIGURE 3-6.
MIXED USE DISTRICT PLAN
BRIGGS VILLAGE MASTER PLAN EIS
OLYMPIA, WASHINGTON

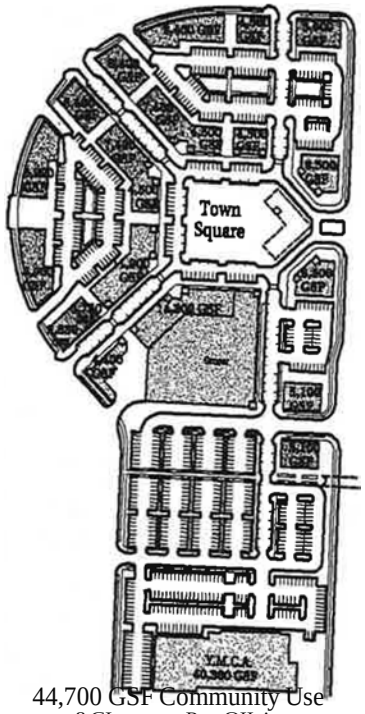
Option: Buildings at west end of Town Square have 2nd story offices, resulting in 2-story building on south end ofTown Square. Comer retail on Briggs Boulevard (Planning Commission).

Below Grade



272 Off-Street Parking Stalls

First Floor



44,700 GSF Community Use
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50,000 GSF Grocery
42,050 GSF Office
60,250 GSF Retail
31,700 GSF Residential
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520 Off-Street Parking Stalls
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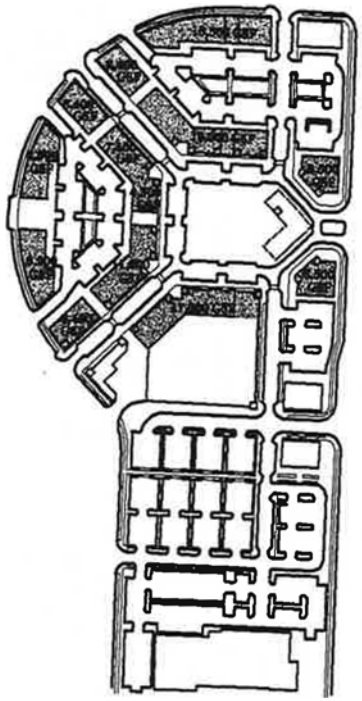
131 On - Street Parking Stalls

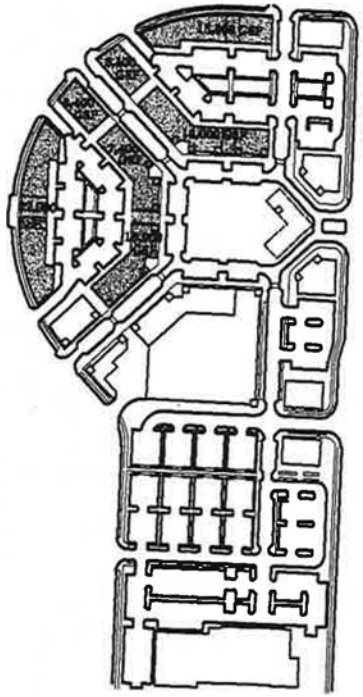
Second Floor



53,400 GSF Oftlce

71,500 GSF Residential
I!Uaflo

Third Floor



18,000 GSF Office

75,700 GSF Residential
57Ubtm

Area Totals

I'i1Sl	GSF
Community	44,700
"YMCA··ÜbNrp,.,.c-.	
Grocery	SO,000
Romce	113,450
lmJJ Retail	60,250
aJ Residential	178,900
	(140Unlta)

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792 Off-Street Parking Stalls
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FIGURE 3·7.

MIXED USE DISTRICT PLAN (OPTION)
BRIGGS VILLAGE MASTER PLAN EIS
OLYMPIA, WASHINGTON

East Residential Phase

The East Residential Phase includes 200 senior living facility units, 14 duplex units, 60 multi-family units, and 204 off-street parking stalls (Figure 3-8). This phase would occupy approximately 25 acres. The East Residential Phase Commons would be developed and the 6.6-acre Arboretum would be completed, as would 900 square feet of office/services and retail to support senior living facilities. A trail network associated with the Arboretum would also be constructed.

Ownership

Roads and alleys would be dedicated to the City of Olympia. Each phase of the project would contain a "commons" that would be built by the applicant. Each commons would be owned and maintained by the Village Corporation, with the exception of the multi-family commons, which would be owned by the multi-family property owner. Conveyance of the four-acre public neighborhood park to the City will be completed as part of the West Residential Phase.

The Arboretum would be owned and managed by an Arboretum Foundation, while the Village Corporation would own the Town Square and parking between the YMCA and grocer. Trails would be maintained in private ownership of the Village Corporation and the Arboretum Foundation. The proposed overlook of Ward Lake would be operated and maintained by the Village Corporation but would be open to the public. The Central and South Kettles would remain in Village Corporation ownership. The corporation would be responsible for monitoring of wetland restoration activities at the Central Kettle.

Village Management

The members of the corporation will be all property owners in the village and all tenants on long-term leases (i.e., greater than one year).

Individual members will belong to districts, each of which will have a seat on the Board of Directors (Board). Directors will be elected by the members of each district. In addition, two seats on the Board will be reserved for one at-large representative and one representative from Briggs Development Co., Inc. The Board Chair will be appointed by the Directors.

The Corporation will be responsible for common area maintenance and the administration and implementation of all permit requirements. It will have a design review subcommittee to administer design review responsibilities under applicable village covenants.

OPTIONAL ELEMENTS OF PROPOSED MASTER PLAN

In addition to the proposed Master Plan and the No Action alternative, Chapter 5 of the EIS analyzes impacts and possible mitigation associated with several optional elements to features of the Master Plan. These optional elements are organized into three broad categories: transportation, drainage, and Ward Lake access. These are intended to address potential impacts associated with specific features of the Master Plan.

Transportation System Options

In addition to the transportation features included in the Master Plan, a number of additional transportation options have been evaluated. These include the possibility of a connection between Briggs Village and Pifer Road; the possibility of a connection to Delta Lane; roundabouts on Henderson Boulevard and/or Yelm Highway; and transportation demand management (TDM) options. See Chapter 5 for a discussion of impacts associated with each option.

Connection to Delta Lane

Delta Lane is an existing local-access street with a terminus at the west edge of the proposed Briggs Village. The potential for a connection of Briggs Village with Delta Lane was evaluated as part of this assessment. Connection ofDelta Lane with the internal circulation system within Briggs Village would facilitate access for residents to the west to office and retail facilities developed in the Village Residential Phase, as well as to the four-acre public neighborhood park.

Connection to Pifer Road

The City of Olympia's development guidelines include policies that encourage multiple roadway connections within neighborhoods. For the Briggs Village, several potential connection locations with adjacent neighborhoods have been identified. These are discussed below.

The northwest portion of the Briggs Village site is bounded by Pifer Road near N South Street. The current design includes a connection between the Village and the adjacent neighborhood at this location. Several connection options are being considered:

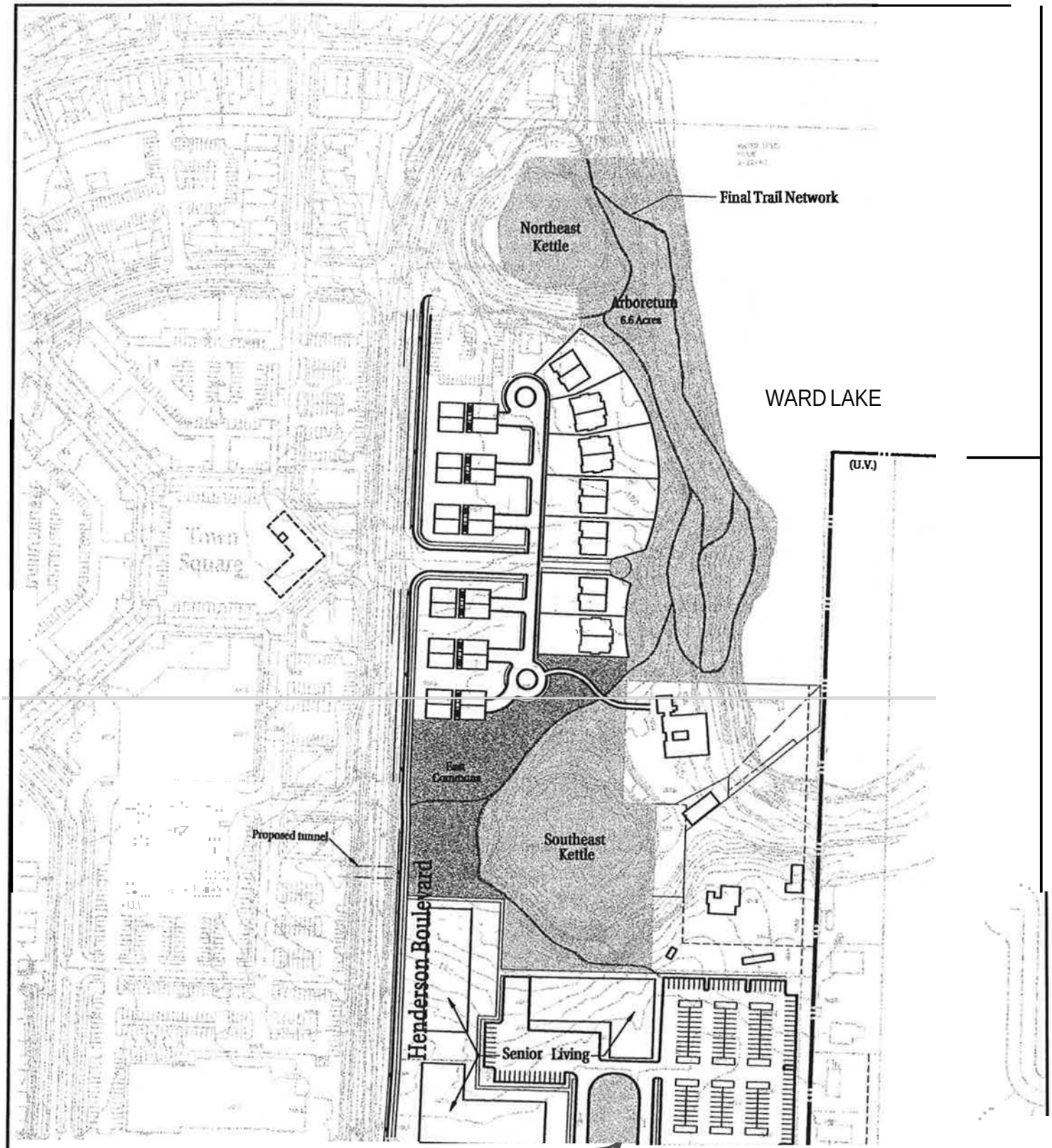
- Full vehicular access at a "tee" intersection;
- A narrowed two-lane roadway section for emergency vehicle and bicycle/pedestrian access only; and
- An all-weather bicycle/pedestrian pathway with no motor vehicle connection.

Roundabout Intersections

The use of roundabouts instead of signalized intersections at primary site access driveways to the Briggs Village site has been evaluated. Potential locations for roundabouts include the Briggs Boulevard intersection with Henderson Boulevard, the southernmost site entrance on Henderson Boulevard (Driveway N<?· 5), and the intersection of Yelm Highway and Henderson Boulevard.

Transportation Demand Management

The Thurston Regional Planning Council (TRPC), in cooperation with Intercity Transit (IT) and local agencies, has adopted Transportation Demand Management (TDM) goals for the region.



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NBBJ, 2002.

FIGURE 3-8.
EAST RESIDENTIAL PHASE
BRIGGS VILLAGE EIS
OLYMPIA, WASHINGTON

Briggs Village has been designed to be consistent with those TDM goals in that it will function as a mixed-use development with integrated residential, commercial, and office uses. This integration of land uses will provide opportunities for pedestrian and vehicle trips to occur within Briggs Village, reducing demands on off-site roadways. (See discussion of trip interaction in Transportation section of Chapter 4.)

Overall, it is likely that the most substantial TDM strategies will be developed in conjunction with the Village Center Phase when commercial and town center elements of the project come on line. Possible TDM measures include a shuttle van for residents to the state capitol campus, downtown Olympia, and other major employment centers (e.g., Evergreen College). In addition, a vanpool system is being evaluated that would include a stop at the North Residential Phase Commons building.

All potential TDM strategies will be evaluated and developed with the cooperation of TRPC, Intercity Transit, and the City of Olympia. Implementation of specific TDM measures will be dependent on a number of factors, including consistency with long-range TDM goals; the timing of project phases; usage of vanpools or shuttles; and cost considerations. At this time because of uncertainties regarding transit funding and provision of transit service, it is premature to develop detailed TDM measures for Briggs Village.

Drainage System Options

Two drainage options were analyzed that do not involve placing the stormwater treatment facility within the South Kettle wetland boundary. Option A involves relocating the three-cell wet pond system to the upper bench on the east side of the kettle outside the wetland buffer. Treated stormwater would be released to the South Kettle. (See Chapter 5 for more detail.)

Option B would involve relocating the three-cell wet pond system to the north, outside the wetland buffer of the Central Kettle but within the Central Kettle drainage basin. In large part, this option maintains the existing drainage system, with substantial runoff discharged to the Central Kettle. Option B would still require a wet pond system for the South Kettle in the same location as Option A, but of smaller capacity. (See Chapter 5 for more detail.)

Ward Lake Public Access Option

The Briggs Village Master Plan includes construction of an overlook above Ward Lake in the vicinity of the Northeast Kettle. This overlook would be operated and maintained by the Village Corporation but would be open to the public.

As part of this EIS, the possibility of an access trail to Ward Lake was also examined. Such a trail could extend from near the Northeast Kettle via switchbacks to the water's edge. It is assumed that the trail would terminate at a viewing platform above the lake's high water mark.

Comparison of Impacts to No Action

Compared to the No Action alternative, the proposed Master Plan would result in higher impacts to both the natural and built environment. Construction of each phase of the proposal would result in increased noise, dust, and construction traffic; impacts would vary in location and duration based on the particular phase being developed, with the Village Center Phase generally having the highest impacts and the Central Residential Phase the least. Risks of spills of fuel or other potentially hazardous materials would also temporarily increase during construction.

Buildout of the proposed Master Plan would result in the loss of some upland wildlife habitat and is likely to cause a shift in species to thos adapted to more urban environments. Approximately 1.5 acres of wetland in the South Kettle would be lost. This loss would be mitigated by enhancements to the Central Kettle. Water quality in the remaining kettles would improve through cessation of irrigation water discharges. The proposal would also increase light levels in the area, increase traffic, and increase demand for public services, schools, and utility service. For details see Chapter 4, Environmental Impacts and Possible Mitigation.

CHAPTER 4- ENVIRONMENTAL IMPACTS AND POSSIBLE MITIGATION

This chapter addresses potentially affected elements of the natural and built environment by element and includes information on potential impacts and mitigation measures. Mitigation measures are grouped into those that are included in the proposal ("project design"), those that are required by regulations of the City and other agencies ("regulatory requirements"), and those that may be imposed by decision-makers ("other possible mitigation measures"). Where appropriate, separate analyses are provided for each phase of the master plan.

GEOLOGY AND SOILS

Impacts from Full Buildout

Impacts to soils during construction phases of the project would result from clearing, grading, excavation, and backfilling to accommodate roadways and utilities and to prepare pads for residences and commercial structures. Erosion could occur as a result of exposed soils and placement of fill materials. The permeability of surficial soils may be reduced by mechanical compaction by heavy equipment. For full buildout, approximately 193,000 cubic yards of soil excavation and 167,500 cubic yards of fill would be required. Much ofthe excavated material is suitable for use as common fill on the site. This material may be placed in temporary large stockpiles prior to reuse. The remaining amount, approximately 25,500 cubic yards, would be exported off the site to an undetermined location. This activity may be ongoing for up to 25 years.

Stockpiled material could erode during heavy rains or winds, leading to possible sediment transport to stormwater facilities or airborne dust during windstorms. Off-site transport of excavated material could lead to deposition of soil on to roadways from truck tires or truck exterior. For the most part, facilities will be set back from steep slopes. However, there is some potential for small-scale landslides and slumping to occur during construction in the vicinities of steep slopes near Ward Lake and on-site kettles.

There are also potential impacts to soil quality resulting from construction and from completed development. (See Ward Lake, Wetlands, and Other Surface Water section.) For example, petroleum products may enter soils through leakage and/or inadvertent spills. Paints, solvents, sealants, fertilizers, pesticides and other contaminants may be introduced to soils and subsequently transported to local drainages and kettles via stormwater runoff.

Overall, construction-related impacts are not expected to be significant, assuming that contractors adhere to generally accepted construction methods and applicable requirements, particularly those related to erosion control, steep slopes, and seismic hazard. Construction of roads, utilities, residences, and commercial structures is not expected to have any impact on geologic hazards. However, geologic hazards (e.g., earthquakes, steep slopes near Ward Lake) were a consideration in the design and siting of project components.

Impacts by Phase

Impacts associated with each phase of development would be similar to impacts from full buildout, described above. The amount of excavation required for each phase is as follows:

Grading Types (in cubic yards)	North Residential Phase*	West Residential Phase*	Central Residential Phase*	Village Center Phase*	East Residential Phase*
Cut	70,300	36,700	6,900	49,900	28,900
Fill	49,300	47,600	2,200	23,200	45,200
Stockpile	21,000	9,100	4,700	26,700	(14,300)

As described in the Soil Section in Chapter 2, soils, surface water, and groundwater at the Briggs Village site have been sampled and tested extensively in the mid-1990s through 2000. The most recent sampling and testing effort in fall 2000 has been conducted with the cooperation of the Department of Ecology and Thurston County Public Health. The results of these investigations have not identified public health concerns of significance associated with soils, surface waters in the kettles, and groundwater (L.C. Lee & Associates, Inc., 2000a and 2000b). Where contaminants have been detected, they are present in locations and concentrations that are unlikely to present consequential risks to future residents and visitors to the Briggs Village area (Blum, 2001).

The principal long-term impact on soils and groundwater is likely to be possible spillage of small volumes of fuels and lubricants and application of herbicides, pesticides, and other household chemicals typically used around the home and by commercial establishments. The degree of impact would be directly dependent on the care taken by residents and commercial establishments in the use and disposal of potential contaminants. Overall, the potential impacts of chronic small-volume spills and applications should be no greater than for other residential and commercial areas in the Olympia/Tumwater area.

Cumulative Impacts

In conjunction with other ongoing and foreseeable future projects in the Briggs Village site (e.g., improvements to Yelm Highway east of Henderson Boulevard), the project would increase the potential for erosion and runoff into local water bodies, such as Ward Lake and the on-site kettles. However, construction impacts would be mitigated by erosion control measures required by the City of Olympia.

Mitigation Measures

Mitigation measures to reduce or eliminate potential adverse impacts include those required by applicable state and local regulations and ordinances and those proposed by the applicant. These are described below.

Project Design

Cleanup of the nursery debris area east of the Central Kettle was completed in summer 2002 in accordance with Ecology and Thurston County requirements.

Regulatory Requirements

- Construction of roads and structures in the vicinities of steep slopes and unstable areas (e.g., near Ward Lake) will be subject to Uniform Building Code requirements and applicable provisions of the City's code relating to seismic and landslide hazard areas (OMC 14.10).

- All project elements (i.e., roadways, trails, utilities, residences, commercial structures) in the vicinities of steep slopes near Ward lake and on-site kettles must comply with applicable protection and setback requirements identified in the City of Olympia's Critical Areas Ordinance (CAO) Chapter 14.10 OMC.

- During installation of streets and utilities and construction of residences and commercial structures, contractors will be required to follow Best Management Practices (BMPs) described in the *Drainage Design and Erosion Control Manual for Olympia* (City of Olympia, 1994b) and the *Stormwater Manual for the Puget Sound Basin (The Technical Manual)* (Ecology, 1992).

- A Temporary Erosion and Sedimentation Control Plan (TESC Plan) must be developed by the applicant prior to construction of each phase of the project.

- Exposed soils must be covered (e.g., pavement, hydroseed) as soon as practical after exposure to reduce erosion potential.

- Any spills of contaminants during construction must be contained and cleaned immediately after the spill occurs.

- Any stockpiled soils must be covered to prevent erosion by wind and/or precipitation.

Other Possible Mitigation Measures

- Limit initial clearing and grading for each phase to the minimum areas necessary to construct roads, install utilities, and prepare sites for residences and commercial structures.

- Retain native vegetation in all buffer areas and dedicated open spaces to control erosion and sedimentation in local drainages, especially during wet weather periods.

- Require the applicant to continue to coordinate with Ecology, Thurston County Environmental Health, and City of Olympia staffs regarding grading and excavation activities and potential soil contamination issues.

- Require use of retaining walls in certain locations as a means of enhancing stability of slopes and reducing the amount of grading and filling.

Significant Unavoidable Adverse Impacts

None identified.

AIR QUALITY

Impacts from Full Buildout

Construction

Impacts on air resources resulting from construction of streets, installation of new utilities, and construction of residences and commercial buildings on the Briggs Village site are not expected to be significant. However, such activities may be ongoing for up to 25 years. Depending on the season, small amounts of particulate matter in the form of fugitive dust may be generated during excavation work. These impacts would be local in nature. Construction vehicles and heavy equipment are expected to generate gasoline and diesel exhaust fumes, but these are not expected to be of a magnitude to affect air quality in any significant fashion. Asphalt paving operations would generate localized odors, but these should not persist for more than a few days after pavement is installed.

Long Term

Over the long term, impacts on air resources are not expected to be significant with any of the individual phases or with the completed project. No industrial uses are included in the project; consequently, no industrial sources of air contamination are expected. Motor vehicles traveling to and from residences, commercial establishments, and park areas are expected to generate small amounts of carbon monoxide, ozone, nitrogen, and particulate matter. This activity would generate a small incremental increase to overall regional air pollution at levels similar to other residential and commercial areas in Olympia, Tumwater, Lacey, and the Thurston County region.

Wood-burning masonry fireplaces and wood stoves would primarily be features of single-family homes and few, if any, fireplaces and wood stoves would be included in multi-family residences. The decision to include wood-burning or gas fireplaces in either single- or multi-family residences would be dependent upon several factors, including market demand and code requirements. To the extent that individual homeowners construct wood-burning fireplaces and wood stoves, the project can be expected to generate wood smoke, adding incrementally to regional air pollution.

Impacts by Phase

The nature of short- and long-term impacts would be similar for each phase. However, the duration and magnitude of impacts may vary slightly by phase. For example, the duration of

construction and associated impacts would vary among phases. Generation of wood smoke should be slightly higher for those phases with more single-family homes.

Mitigation Measures

Project Design

None identified.

Regulatory Requirements

- New wood stoves and wood-burning masonry fireplaces must meet requirements of Ecology's Wood Smoke Control Program.

- Individual homeowners shall comply with air quality advisories regarding wood burning promulgated by the Olympic Region Clean Air Agency.

Other Possible Mitigation Measures

- During construction, require that fugitive dust be controlled by spraying exposed soils with water, street cleaning as needed, and cleaning of all haul trucks prior to exiting the site.

- To minimize exhaust emission, prohibit prolonged vehicle idling and require that vehicles be well maintained and serviced.

Significant Unavoidable Adverse Impacts

None identified.

WARD LAKE, WETLANDS, AND OTHER SURFACE WATERS

Impacts from Full Buildout

Kettles

The elimination of nursery irrigation return flows to kettles and changes to the sizes of contributing basins for individual kettles would result in several impacts to kettle wetlands on the Briggs Village site. Depending on kettle topography, the size of the wetland could decrease slightly because a reduced area of the kettle bottom being inundated during the growing season. Alternatively, the size of the kettle wetland could remain unchanged, though the wetland margins could become drier in the summer. The margins of the wetland could be inundated for a shorter period of time and/or the depth of inundation reduced.

The seasonal reduction in water input to a kettle wetland can be expected to cause a shift in the composition of wetland plants occupying the outer margins where drier conditions are likely to

occur. The species in these marginal wetland areas are likely to shift from facultative wetland species (FACW) adapted to wet conditions to a mixture of FACW, facultative upland (FACU), and facultative (FAC) species more adapted to seasonally wet conditions. Based on plant species observed in kettle wetlands and wetland buffers, species likely to colonize a drier wetland margin include reed canarygrass (FACW), red alder (FAC), Himalayan blackberry (FACU), and willow (FACW).

Slight changes in contributing basin size for the North, Northwest, Northeast, and Southeast Kettles are projected (see Table 4-11). Decreases in basin size for the Northwest, Northeast, and Southeast Kettles should result in the types of changes discussed above, specifically, potential decrease in wetland size and shift of species composition to facultative species. A slight increase in basin size for the North Kettle would tend to result in a slight increase in wetland size and shift to obligate wetland species. The largest changes in basin sizes will be experienced by the South Kettle and Central Kettle. Potential impacts are discussed below by specific kettle.

Water quality in each of the kettles receiving return flows is likely to gradually improve as nutrient-rich, sediment-laden irrigation return flows decrease. Overall nutrient and sediment loading to the kettles would decrease, though not eliminated entirely. New residential development is likely to result in chronic impacts through use of fertilizers, pesticides and herbicides; small spills of household chemicals; and small spills/leakage of petroleum products.

South Kettle

Most potential impacts to the South Kettle would result from stormwater systems and flows. See Storm Drainage section under Public Utilities for more detailed discussion of stormwater impacts to the South Kettle. At full buildout, the South Kettle would receive storm runoff from 62.0 acres, compared to an existing basin size of 30.4 acres (see Table 4-10). This storm runoff would be treated with a three-cell pond system and infiltration area (Figure 4-1). Conversion of the South Kettle to the primary stormwater treatment facility for Briggs Village would result in the loss of 1.5 acres of wetland area. Most of the functions and values that are currently provided by the South Kettle wetland would be lost. The South Kettle would likely retain limited value as upland habitat and seasonal, open water habitat for waterfowl.

Southeast Kettle

The principal changes to the Southeast Kettle would be the elimination of irrigation return flows; installation of a compost filter and rock-lined swale at the kettle inlet; the addition of a second inlet; and a slight decrease in the contributing basin size from 17.5 acres to 14.7 acres (see Table 4-11). The slight decrease in basin size for the Southeast Kettle would result in the types of changes discussed previously, including potential decrease in wetland size and shift of species composition to facultative species, such as Himalayan blackberry, reed canarygrass, red alder, and willow.

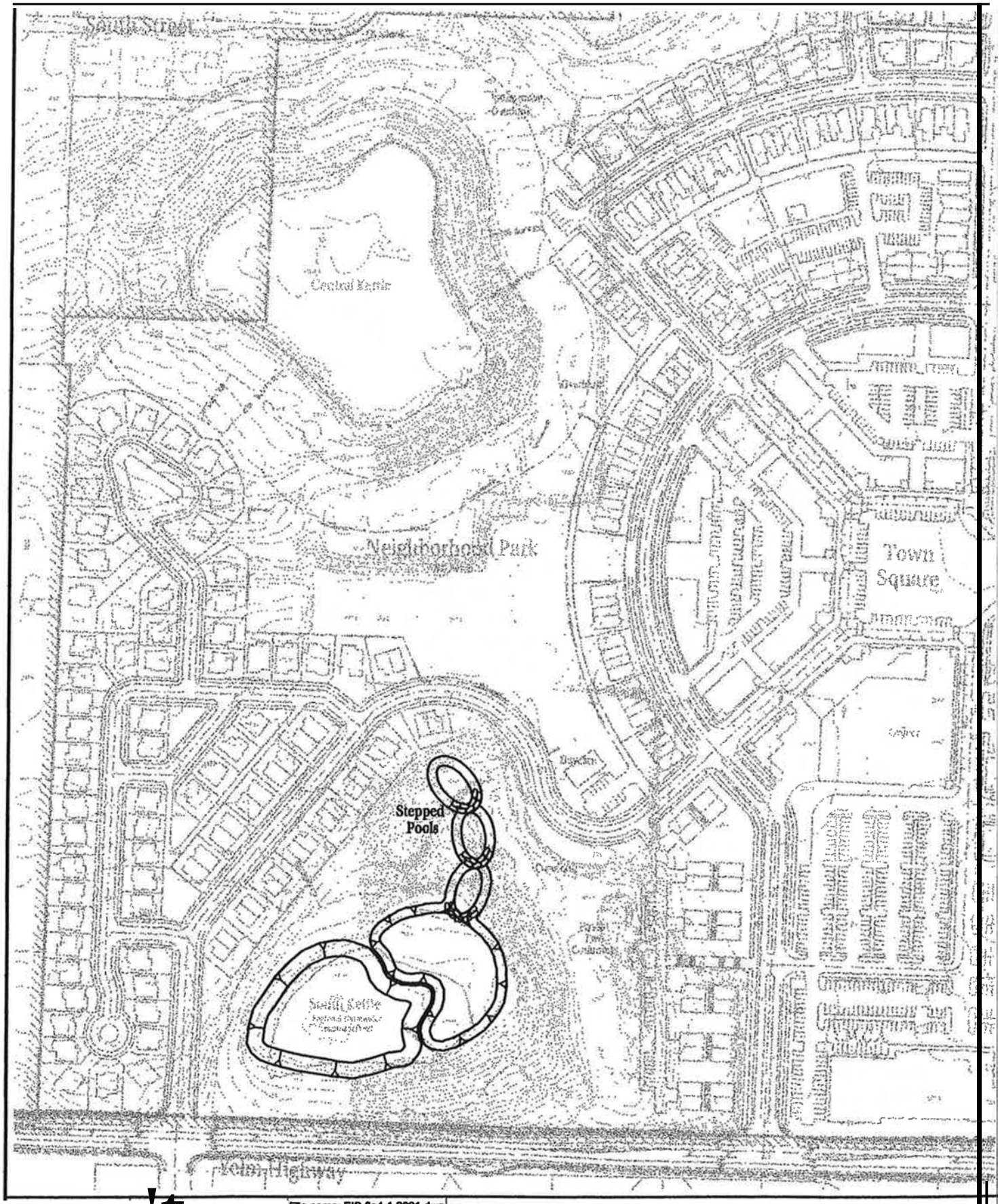

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FIGURE 4-1
PROPOSED OPTION

BRIGGS VILLAGE MASTER PLAN EIS
OLYMPIA. WASHINGTON

Water quality is likely to gradually improve as nutrient-rich, sediment-laden irrigation return flows decrease. Overall nutrient and sediment loading to the kettles would decrease, though not eliminated entirely. New residential development is likely to result in chronic impacts through use of fertilizers, pesticides and herbicides; small spills ofhousehold chemicals; and small spills/leakage of petroleum products.

Central Kettle

The major changes to the Central Kettle resulting from the proposal would be the elimination of irrigation return flows; installation of a spreader structure and compost filter at the kettle inlet; elimination of the culvert that directs water from South Street to the kettle; and a substantial decrease in the contributing basin size from 47.5 acres to 21.1 acres (see Table 4-11). The elimination of irrigation return flows and decrease in the contributing basin by 26.4 acres would result in a substantial reduction of water input to the Central Kettle, particularly in summer months. Overall, this would result in drier conditions than now exist. The extent of open water in the kettle would be substantially reduced. Water levels will tend to fluctuate with the water table, resulting in a mosaic of seasonally and permanent ponded areas (L.C. Lee & Associates, Inc., 1997).

A gradual shift in the composition of wetland plants occupying the Central Kettle would occur. Plant species are likely to shift from obligate and facultative wetland species adapted to wet conditions to a mixture of facultative, facultative upland, and facultative species more adapted to seasonally wet conditions. Species likely to colonize drier areas in the Central Kettle include reed canarygrass, red alder, Himalayan blackberry, and willow in seasonally moist areas and Scot's broom, snowberry, salal, Oregon grape, and Douglas fir in upland areas.

Water quality in the Central Kettle is likely to gradually improve as nutrient-rich, sediment-laden irrigation return flows decrease. Overall nutrient and sediment loading to the kettles will decrease, though would not be eliminated entirely. New residential development is likely to result in chronic impacts through use of fertilizers, pesticides and herbicides; small spills of household chemicals; and small spills/leakage of petroleum products.

The Central Kettle would be the focal point of mitigation proposed to compensate for the loss of wetlands in the South Kettle. See Mitigation Measures section below for more detail.

Northwest Kettle

Changes to the Northwest Kettle resulting from the proposal include elimination of irrigation return flows, installation of a compost filter and rock-lined swale, and a reduction ofthe contributing basin from 14.8 acres to 13.0 acres (see Table 4-11). This slight decrease in basin size for the Northwest Kettle would result in the types of changes discussed previously, such as potential decrease in wetland size and shift of species composition from obligate to facultative species, such as Himalayan blackberry, reed canarygrass, red alder, and willow.

Water quality is likely to gradually improve as nutrient-rich, sediment-laden irrigation return flows decrease. Overall nutrient and sediment loading to the kettle would decrease, though

would not be eliminated entirely. New residential development is likely to result in chronic impacts to water quality typically associated with single-family residential use.

North Kettle

The principal changes to the North Kettle would be the elimination of irrigation return flows; the addition of a second inlet to the kettle; installation of a compost filter and rock-lined swale at kettle inlets; and a slight increase in the contributing basin size from 7.0 acres to 8.2 acres (see Table 4-11). A one-acre increase in basin size for the North Kettle would tend to result in a modest increase in wetland size and gradual shift from facultative to obligate wetland species. Water quality is likely to gradually improve as nutrient-rich, sediment-laden irrigation return flows decrease. New residential development is likely to result in chronic impacts to water quality typically associated with single-family residential use.

Northeast Kettle

The major changes to the Northeast Kettle resulting from the proposal would be the elimination of irrigation return flows; installation of a compost filter and rock-lined swale at the kettle inlet; and a slight decrease in the contributing basin size from 13.9 acres to 12.3 acres (see Table 4-11). In addition, existing outlet pipes would be replaced with a control structure and overflow spillway and the existing berm reinforced to meet applicable code requirements.

The 1.6..:acre decrease in basin size for the Northeast Kettle should result in the types of changes discussed previously, specifically, potential decrease in wetland size and shift of species composition from obligate to facultative species, such as Himalayan blackberry, reed canarygrass, red alder, and willow. Water quality is likely to gradually improve as nutrient-rich, sediment-laden irrigation return flows decrease. Overall nutrient and sediment loading to the kettle would decrease, though would not be eliminated entirely. New residential development would result in chronic impacts to water quality typically associated with single-family residential use.

Ward Lake

Over the long term, full buildout of the project is not expected to have any significant adverse impacts on Ward Lake. Most stormwater from the Briggs Village site would be directed to the South Kettle. Stormwater generated on that part of the site east of Henderson Boulevard would be treated in compost filters and discharged to rock-lined swales at the inlets to the Northeast and Southeast Kettles. Improvements described above for the Northeast Kettle should reduce the potential for adverse impacts on the lake resulting from discharge from that kettle. Access to the lake would be limited to passive viewing facilities, thereby avoiding potential impacts from active shoreline use (e.g., erosion, sedimentation, nutrient input, fecal coliform).

Deschutes River / Hewitt Lake

No significant adverse impacts to Hewitt Lake or the Deschutes River are anticipated. These water bodies are located approximately % and 1 mile from the project site, respectively, and would not be affected by construction activities.

Impacts by Phase

The impacts described above for each kettle can be attributed to specific phases. Note that the sequence of phases would be dependent on market conditions experienced over the expected 20-year buildout period. For detailed information by phase, see also Public Utilities section of this chapter.

Cumulative Impacts

In conjunction with other residential and commercial developments in the Olyropia, Tumwater, and Thurston County area, the loss of wetlands (1.5 acres) resulting from the project would contribute to a regional loss of wetlands and their associated functions and values. The increase in population generated by the project would also contribute to chronic water quality impacts of wetlands, lakes, rivers, and marine waters in the region.

Mitigation Measures

Project Design

- The Central Kettle is the focal point of mitigation proposed by the applicant to compensate for the loss of wetlands in the South Kettle. Mitigation would include removing stormwater and irrigation return flows from the Central Kettle; removing an earthen dam from within the kettle to increase wetland area; and replanting a mosaic of open water, aquatic bed, emergent, scrub-shrub, and forested plant communities. See Appendix I for a summary of the plan.

- Upland connections would be established and maintained between some of the kettles. The Central Kettle, Northwest Kettle, and West Kettle (off-site) would be connected via upland buffers. The Northeast Kettle and the Southeast Kettle would be connected via the proposed Arboretum located along the west shore of Ward Lake.

- Structures constructed as part of the East Residential Phase would be set back from Ward Lake and separated from the lake by vegetation in the proposed Arboretum.

- Opportunities would be provided for wetland and wildlife observation by overlooks and trails near the South Kettle and Central Kettle and above Ward Lake.

- During construction of the North Residential Phase, compost filters and rock-lined swales would be installed at inlets to the North Kettle and Northwest Kettle.

- A two-celled temporary stormwater system would be constructed at the South Kettle, and much of the Central Kettle mitigation effort would be initiated.

- The buffers surrounding the North Kettle, Northwest Kettle, Northeast Kettle, and Southeast Kettle would be designated as open space.

- The stormwater treatment facility would be completed at the South Kettle during construction of the West Residential Phase.

- The mitigation work at the Central Kettle would be completed and post-construction monitoring initiated during construction of the West Residential Phase.

- During construction of the East Residential Phase, to reduce, but not eliminate, the potential for adverse impacts. Compost filters and rock-lined swales would be installed at the inlets to the Northeast Kettle and Southeast Kettle and the Northeast Kettle would be improved.

Regulatory Requirements

- Long-term protection must be provided for the kettle wetlands and their associated buffers.

- Up to a 100-foot buffer must be established around the perimeter of each kettle, except the Central Kettle, which may require a 200-foot buffer of native upland vegetation.

- The buffers surrounding the kettles must receive permanent Open Space designation and be measured out from the edge of the existing wetland.

Other Possible Mitigation Measures

- Establish an ongoing program to remove non-native invasive plant species from kettle wetlands. Periodic removal of Himalayan blackberry, reed canarygrass, and other invasive species can allow other native species to establish and provide quality habitat for wetland dependent wildlife.

- Distribute information to occupants and property owners regarding appropriate use of fertilizers and pesticides, disposal of waste materials, and alternatives thereto.

- Reconstruct the westerly dam of the Central Kettle to maximize the size of the resulting wetland.

Significant Unavoidable Adverse Impacts

The loss of 1.5 acres of South kettle wetland would contribute to a regional loss of wetlands and their associated functions and values.

GROUND WATER

Impacts from Full Buildout

Short Term

Potential impacts to ground water during construction include surface spills of fuels, lubricants, and other chemicals. Some temporary dewatering could be required for building construction, particularly construction of underground parking. The applicant proposes that ground water removed during dewatering would be re-infiltrated.

Long Term

Long-term sources of potential ground water contamination could include stormwater runoff from developed areas of the site and improper use of fertilizers and pesticides. Several elements of the Master Plan, however, minimize the potential for impacts to ground water. The existing on-site sewage treatment systems would be discontinued. The project would be served by City of Olympia sewer. The discontinuation of on-site treatment would eliminate the risk of ground water contamination from failure of these systems. Fertilizers and pesticides for residential use and use in landscaping could potentially contaminate ground water if improperly handled and applied. Overall, however, pesticide and fertilizer use on the site should decrease with the phasing out of nursery operations and implementation of the Master Plan. With proper handling and application guidelines and homeowner education, these impacts could be minimized. Water quality in the on-site kettles, which are hydrologically connected to ground water on the site, is also expected to improve under the proposal, as discussed under Ward Lake, Wetlands, and Other Surface Waters, above.

The existing nursery operation has water rights for approximately 400 acre-feet per year. Recent use for nursery irrigation purposes is estimated at 320 acre-feet per year, produced from an on-site well. Under the Briggs Village proposal, the project would be served by City of Olympia municipal water supply. Approximately 40 acre-feet per year would be used for irrigation of landscaped common areas in Briggs Village. This projected use represents a reduction in the withdrawal from the aquifer of approximately 280 acre-feet per year (88 percent). Similarly, projected use of 40 acre-feet per year represents approximately 10 percent of existing water rights.

This change in the purpose of use would require submittal of an "Application for Change/Transfer of Water Right" to Ecology and/or the Thurston County Conservancy Board in accordance with "Changing an Existing Water Right or Water Right Claim,"(Ecology, 1998). This application applies to proposed changes to elements of an existing water right permit, certificate, or claim including: a) place of use; b) point of diversion or withdrawal; c) additional point(s) of diversion or withdrawal; or d) purpose of use.

The proposal does not include any transfer of water rights from the site. Any transfer of this type would be subject to the process described in the paragraph above. This would include internal review, public notice, public comment and an opportunity to appeal the decision. Potential

impacts resulting from transfer of water rights from the Briggs Village site would be evaluated as part of this process.

Elimination of irrigation return flows to individual kettles will tend to return kettles to more natural, pre-irrigation hydrologic conditions. In some kettles, particularly the South Kettle and Central Kettle, this effect will be modified by proposed changes in drainage basin size and the addition of impervious surfaces. These surface water issues are discussed in the Ward Lake, Wetlands, and Other Surface Waters and Storm Drainage Sections of this Chapter.

Impacts by Phase

There are no impacts specific to each phase of development.

Cumulative Impacts

In conjunction with other residential and commercial developments in the project area, the proposal would slightly increase the long-term potential for ground water contamination through increased population and increased use of fertilizers and pesticides and spills or leaks of fuels and other potentially hazardous materials. In addition, because the City of Olympia uses ground water as its primary drinking water source, the project would slightly increase demand for ground water withdrawals in the region.

Mitigation Measures

The following mitigation measures may be required to reduce or eliminate potential ground water-related impacts:

Project Design

A Landscape Management Plan would be developed to ensure the proper application rates and appropriate use for landscape fertilizers and pesticides.

Regulatory Requirements

A long-term maintenance plan for stormwater facilities must be developed to ensure their proper function.

Other Possible Mitigation Measures

- If dewatering is necessary, require treatment of ground water through the use of settling ponds andre-infiltrated on site.
- Monitor ground water quality, and treat any contaminated ground water as appropriate.
- Require covenants for common areas and/or individual lots to minimize the use of chemicals for vegetation control.

Significant Unavoidable Adverse Impacts

None identified.

UPLAND HABITAT AND WILDLIFE

Impacts from Full Buildout

Briggs Village would result in direct alteration of wildlife habitat. Land uses and land cover on the site would be converted from nursery facilities to a mix of planned landscaping (lawns, shrubs, etc.), buildings, streets, natural open space, and sidewalks/trails. Construction would result in a loss of some vegetation and its associated wildlife habitat, some additional isolation or fragmentation of the remaining vegetation patches, replacement of some native vegetation with ornamental species and lawns, and an increase in noise and human disturbance.

Site preparation, clearing, grading, paving, and construction would result in alterations ofland cover for approximately 61 percent of the site. Most of these impacts would occur to degraded and shrub habitat types that now exist on the site. Overall, full buildout would result in the redevelopment of approximately 60 acres (100 percent) of degraded habitat and the conversion of25 acres (83 percent) ofupland shrub habitat, 3 acres (33 percent) ofupland forest habitat, and 1.5 acres ofkettle wetland habitat (Table 4-1). The strip of forest along Ward Lake would be designated as an Arboretum under the proposed Master Plan (see Chapter 5 for a discussion of theWard Lake access option). The urban horticulture habitat type would effectively be converted to another developed use. Similarly, the shrub habitat would be converted to a more urban habitat type. Overall, 43 acres, or 31 percent of the site, would remain undeveloped in habitat as kettle wetland, buffer, upland forest, or park/open space habitat (Neighborhood Park and greenbelt areas; NBBJ, 2001). The shoreline Arboretum would be a landscaped setting but retain a large number of existing trees within this six acres of forest habitat.

Alterations to the distribution, composition, and amounts of vegetation cover types would affect the distribution ofwildlife currently found on the site. Numbers ofindividuals of some species that currently utilize the site may decrease as a result ofloss and conversion of habitat. While individuals would likely relocate or perish, it is unlikely that any particular species would be eliminated. This is largely because the loss of degraded and shrub habitat types would entail conversion to similar developed and landscaped habitat types, and the same species are likely able to use the converted habitat types.

As sections of the existing nursery are relocated, reductions in irrigation return flows to all kettle wetlands would likely improve wetland wildlife habitat by improving water quality in the wetlands. The South Kettle would be used for stormwater treatment, and this use would effectively eliminate approximately 1.5 acres of this kettle wetland's natural functions, vegetation, and related wildlife use (see Ward Lake, Wetlands, and Other Surface Waters, above).

Table 4-1. Habitat Types and Area Existing Conditions and Completed Project

Habitat Type	Existing Conditions (approximate areas)	Change (approximate acreag)	Completed Project (approximate areas)
Urban Horticulture	60 acres	+30 acres	90 acres
Upland Shrub	30 acres	-25 acres	5 acres
Upland Forest	10 acres	-3 acres	7 acres
Kettle Wetland & Buffer	37 acres	-2 acres	35 acres
Total	*137 acres*	*30 acres*	*137 acres*

Species Composition

Implementation of the Master Plan and alteration of habitat types on the site would result in a slight shift in species composition, particularly birds and mammals. Several studies of urbanizing areas have shown a decrease in bird species diversity accompanied by an increase in bird density (Woolfenden and Rohwer, 1969; Batten, 1972; Vale and Vale, 1976). Birds in the urban environment forage primarily on the ground while birds in the nearby forest forage primarily in the tree canopy. Urbanization often results in increased densities of omnivores and seed-eaters and a corresponding decrease in insectivores (Beissinger and Osborne, 1982). The Briggs Village site is similar to an urbanized site in its degraded habitat; only a small amount of forested habitat is currently available on the site for tree canopy feeders and the amount of forest would decrease as a result of construction.

Buildings usually provide some crevices and ledges used by cavity-nesting and ledge-nesting bird species. A limited number of native species utilize these building characteristics, including the barn swallow and house finch. Several non-native species, including the rock dove, European starling, and house sparrow, have increased in numbers due to urbanization. These species would also likely increase on the site.

Some native species are adaptable to a wide range of habitats, while others would likely use the site less frequently. For example, American robin, American crow, song sparrow, house finch, and raccoon may increase in abundance on the project site. Species typically found in forested habitats but that can persist in partly urbanized environments include kinglets, chickadees, squirrels, shrews, and garter snakes. Numbers of species such as ring-necked pheasant, great-homed owl, coyote, and deer would likely persist on the site, but in smaller numbers.

Threatened, Endangered, and Other Species of Local Importance

The project is not likely to adversely affect any federal- or state-listed wildlife species. Red-tailed hawks have been identified on the site and a nest is believed to be present, as discussed in Chapter 2. Although red-tailed hawks are not federal- or state-listed, they remain oflocal interest and importance.

Red-tailed hawks vary in their ability to tolerate human activity, depending on the timing and frequency of activity and the degree of habituation. Clearing, grading, and other construction activities carried out during the nesting season, which occurs from February 1 through July 31, could potentially cause the adults to avoid laying eggs or to abandon a nest. Once the young have left the nest site (i.e., typically after July 31), construction activities and the associated disturbance are not as detrimental to these hawks. During the non-nesting season (August 1 through January 31), the hawks may remain in the area or leave, but their activities are not as closely associated with the nest site.

Noise Impacts

Noise and equipment associated with construction may temporarily affect wildlife in the project vicinity (EPA, 1971). Wildlife species differ in their ability to tolerate disturbance; tolerance depends on a variety of factors including season, types of noise (sporadic or continuous), distance from the source, and frequency of disturbance (Adolfson Associates, Inc., 1993). It is likely that some species, such as common yellowthroat and red-breasted sapsucker, would move away from the site, at least temporarily, during construction. These species would likely relocate during times of construction noise to similar habitats nearby, if available. (Note that construction may be extend up to a 25-year period.) Some of these species might return to the site, while others would remain in their new location if suitable habitat is available. If suitable habitat is not available, some individuals may perish. It is difficult to quantify the number of individuals that would perish; however, the net result of urbanization is loss of wildlife sensitive to noise and human disturbance. The areas surrounding the project site are also becoming more developed, and this makes the remaining habitat areas on the site more isolated and stressful.

Long-Term Impacts

Over the long term, the increase in human activity, pets, noise, and traffic would all contribute to a decrease and/or shift in wildlife use of the site. All of these activities would disturb wildlife species and likely result in a shift in species use of the site to those more adapted to human disturbance, as described above. The remnant upland forest vegetation along Ward Lake and the kettle wetlands and buffers would become more isolated and potentially less valuable as wildlife habitat areas due to this isolation.

Impacts by Phase

North Residential Phase

The primary impacts of the North Residential Phase would include the replacement of approximately 20 acres of shrub and degraded habitats with developed habitat, and an additional conversion of four acres of these habitats to landscaping. The North Kettle and its buffer would be preserved, and grading would commence on the Central Kettle improvements. This change in land cover would primarily affect species accustomed to using the degraded and shrub habitat types such as white-crowned sparrow, deer, coyote, and house mouse.

West Residential Phase

hnplementation of the West Residential Phase would result in development of an additional16 acres of shrub and urban-horticulture habitat, with the loss of a small area of upland forest near the South Kettle. Landscaping and street plantings would cover four acres. The South Kettle would be developed for stormwater treatment, resulting in the loss of approximately 1.5 acres of wetland vegetation and a change in hydrology and water quality. This would likely change the use of this kettle by waterfowl and other aquatic wildlife. hnprovements to the Central Kettle would continue during the West Residential Phase, which would over time enhance wildlife habitat by removing non-native species in the buffer and planting and diversifying the area.

Central Residential Phase

The Central Residential Phase would convert four acres of degraded habitat to developed buildings and streets, with two additional acres of landscaping. This small area would not result in substantial impacts to wildlife species or habitat.

Village Center Phase

Development of the Village Center Phase would result in the conversion of 17 acres of degraded habitat to more intensely developed land cover, with the additional conversion of2 acres to street plantings, landscaping, and lawns. The conversion of degraded habitat would not result in substantial impact to wildlife species or habitat.

East Residential Phase

The East Residential Phase includes the loss of 15 acres of degraded and shrub habitats due to housing and the Senior Living facility. The approximately six-acre Arboretum would preserve the majority of forested habitat along Ward Lake, although trails through the site would cause some disturbance to wildlife such as red-breasted nuthatch, raccoons, and owls, among others.

Cumulative Impacts

Most of the proposed development would occur within currently degraded and shrub habitats. The loss of the degraded Urban Horticultural habitat type (approximately 30 acres) is not a significant loss of native wildlife habitat. Similarly, the shrub habitat type on this site is also degraded, including nursery operation areas (25 acres of Upland Shrub habitat will be lost). However, the increase in human activity and associated disturbance would decrease the value of the remaining native habitat types (i.e., kettles, upland forest). The remaining native habitat areas on the site (47 acres) would become increasingly isolated and fragmented both from each other and from the available surrounding habitats.

Development in the project area is contributing to a trend toward diminished habitat, and mitigation can minimize but cannot completely compensate for this cumulative loss of native vegetation and habitat. Other development proposals in the Briggs Village vicinity would contribute to an overall decrease in native vegetation and habitat and an increase in human

disturbance. These contribute to a loss of wildlife habitat and use and a general shift toward species accustomed to human activity.

Mitigation Measures

Project Design

Certain mitigation measures have been incorporated into the project design and include the following:

- The slopes surrounding the Central Kettle would be graded and planted with native species to mitigate for impacts to the South Kettle and would provide enhanced habitat areas for wildlife over time. An increase in habitat diversity and an increase in the number of native plant species present on site is expected to occur as a result of the restoration/mitigation activities at the Central Kettle. See Ward Lake, Wetlands, and Other Surface Waters section of this chapter.

- Planned overlooks and trails would provide opportunities for wetland and wildlife observation. At least two overlooks would be established along the edge of the Central Kettle and at least one overlook would be established adjacent to the South Kettle.

- Trails are planned for the arboretum area, as well as within and connecting the kettle buffers. The planned trail network would provide opportunities for nature appreciation but would also disturb some wildlife species more sensitive to activity, such as deer and coyote.

- Areas designated as Commons areas and Parks would be vegetated with grassy vegetation.

- The Arboretum area would be retained as forest.

Regulatory Requirements

- Trees and associated vegetation must be retained in accordance with the City of Olympia Tree Protection and Replacement Ordinance, OMC16.60.

- All portions of a site not designated for building, other improvements, or landscaping must remain in a vegetated condition (OMC Section 18.36.060[1]).

- Healthy, mature trees must be retained where possible, and the site design must incorporate the preservation of extraordinary specimens (OMC Section 18.06A.090 and 16.60.070).

Other Possible Mitigation Measures

Incorporate mitigation measures to protect red-tailed hawks into the project design. These measures could include:

- Reconnaissance visits during the period oflate February through mid-April to ascertain if breeding hawks have returned to the territory on site, as red-tailed hawks return to one of several nests within their nesting territories in late winter. If red-tailed hawks are observed at the site and they perform territorial behavior (e.g., calling and circling at the approach of humans), it should be assumed that the territory is active. Further visits should be performed to identify the nest tree.

- If red-tailed hawk nests are observed, no site work or construction would take place in the vicinity of any red-tailed hawk nest during the February through July nesting season. (There are no local, state, or federal requirements for distance to be maintained from a nest tree. See accompanying Wildlife Study for additional information.)

- Mitigation may include permanent tree retention as well as additional plantings to provide additional protection to the nest site.

- Interpretive signs may educate the public about protecting the red-tailed hawk nest.

Significant Unavoidable Adverse Impacts

There would be an overall unavoidable loss of upland shrub, kettle wetland, and degraded habitats on the site. The majority of the impacts would occur to the degraded habitat type, and this provides the least valuable wildlife habitat on the site. There would be an unavoidable loss of shrub habitat also; however, on this site, the habitat type is also degraded.

LIGHT, NOISE, AND VIEWS

Impacts from Full Buildout

Light and Glare

Each phase of Briggs Village would slightly increase light and glare over existing operations. Full buildout would create a community contributing predominantly residential and suburban commercial lighting to the area. Because the Briggs Village development is proposed to be developed over an 18- to 25-year period within an existing suburban area, the impacts due to lighting would be incremental, and adverse impacts are not anticipated to be substantial. Specific lighting design proposals and impacts are discussed under each phase below. Impacts would vary from phase to phase and would be mitigated depending on specific location and design opportunities.

Noise

Construction

Construction related noise impacts would occur during all phases of the proposal. Noise would be produced by heavy equipment during initial clearing and grading activities and during paving

and building construction. Vehicle and other heavy equipment noise would also be expected along with noise from smaller machinery such as nailing guns and drills. Construction noise would be temporary and would vary in potential impact based on the proximity of surrounding neighborhoods to the particular phase of construction. Estimated construction duration for each phase is discussed below. Typical construction noise levels for these activities and equipment are displayed in Table 4-2.

Long Term

Long-term impacts would result from the incremental increase in noises associated with residential neighborhoods (e.g., local traffic, lawn mowers, children playing, dogs barking) and neighborhood commercial areas (e.g., vehicle engines, delivery vehicles, delivery activity such as loading and unloading of products in common areas).

The existing sources of noise in the area are predominantly traffic-related and residential in nature. Some heavy truck and equipment noise occurs on the existing Briggs Nursery site. Briggs Village would also produce truck and equipment noise (e.g., commercial delivery, maintenance of homes, and common areas) and would incrementally add to these noise sources. It is not expected that this increase in commercial and residential noise would have any significant adverse impact on surrounding properties.

Table 4-2. Typical Construction Equipment Noise (dBA)

Activity	Average Noise Levels		
	At 50ft	At 100ft	At 800ft
Clearing	83	77	59
Grading	75-88	69-82	51-64
Construction	72-84	66-78	48-60
Pile Driving (Impact)	92	86	68
Pile Driving (Vibratory) Medium frequency	66	60	42
Equipment	**Range of Sound Level**		
	At 50ft	At100 ft	At 800 ft
Bulldozer	77-96	71-90	23-72
Dump Truck	82-94	76-88	58-70
Scraper	80-93	74-87	56-69
Crane	75-85	69-79	51-61
Generators	71-82	65-76	47-58
Compressors	74-81	68-75	50-57

Source: U.S. EnVIronmental ProtectiOn Agency, 1971

Views

This view evaluation incorporates the site design elements and view regulations described in Chapter 2, Affected Environment. Of particular concern are views of Mount Rainier. At present, views of the mountain from the project area are limited, with views of the top of the

mountain being more prevalent than views of the entire mountain (Figures 2-4 through 2-6, Chapter 2).

Short Term

Visual impacts during construction would include construction-related equipment, dust; open, cleared and graded areas; stockpiled equipment, and construction materials. These impacts would be temporary and would occur periodically over the anticipated 18 to 25 years ofbuildout as each independent phase is constructed.

Long Term

Overall, implementation ofthe proposed Master Plan would alter views to and from the project site, both during construction and over the long term. The character of the site would change from a generally low-intensity commercial nursery operation to a more active, moderate-density residential and commercial area. Over the long term, the site would be developed in a manner consistent with City of Olympia urban village design guidelines and standards set forth in the OMC Chapter 18.05, Villages and Centers. These guidelines and standards include development-related issues such as building size, shape, height, placement, density, and variety; building materials and compatibility with surrounding areas; landscaping; lighting; streets, trails and open space; and signage. In addition to residential and commercial areas, the site would also include a series of commons and open spaces to provide public and private green spaces that are visually pleasing and provide visual relief from buildings and parking areas.

Impacts to existing partial views of Mount Rainier following full buildout of Briggs Village are not expected to be significant. Some partial views :from South Street, residences to the north and west, and Henderson Boulevard would be partially or wholly blocked. Residences to the north and west that overlook the Briggs Village site would have views of the landscaped four-acre Public Neighborhood Park that would be developed around the environmentally enhanced Central Kettle. Internal viewscapes would include landscaped residential areas, a public neighborhood park and greenbelt, an arboretum along Ward Lake, Town Square, "commons," and a mixed commercial/multi-family residential-use area around the Town Square. What constitutes a pleasing view varies between individuals; however, it is expected that Briggs Village would provide a more diverse and aesthetically pleasing landscape than the existing rows of greenhouses by combining architectural elements, landscaping, and open space into the viewscape.

Impacts by Phase

Light and Glare

North Residential Phase

The northern end of the North Residential Phase directly abuts an existing residential area containing single-family detached housing units. Ingeneral, lighting of homes is expected to be similar to that which exists in adjacent residential areas. All housing units would likely have

security lighting in the front and back. The level of impact would depend on the type and nature oflighting used (e.g., motion-sensitive versus constantly lit fixtures). The area lit by security lighting would be confined within property boundaries and would be focused on areas such as walkways and doorways in a manner typical of private residences. At present, the area proposed for the North Residential Phase is undeveloped. The presence of the proposed single-family residences would alter the nighttime character of this property in the form of interior and exterior lighting that would likely be noticeable to the existing adjacent residents. No adverse impacts due to interior and exterior lighting ofhomes are expected. The Arboretum building and temporary parking would also be constructed in this phase. Residential street lighting is not anticipated to have substantial adverse impacts on existing residents adjacent to this phase, as specially shielded fixtures would direct light onto the roadway.

West Residential Phase

The West Residential Phase directly abuts an existing residential area on its west border along a row of single-family detached residences. Impacts resulting from residential and roadway lighting for the West Residential Phase would be as described for the North Residential Phase. The off-street parking area would contain fixtures similar to existing fixtures in the YMCA parking area (mounted on 16- to 18-foot standards spaced approximately 60 feet apart). Due to the approximate 1,200 foot separation between this phase and existing neighborhoods to the west, off-street parking lighting is not anticipated to negatively impact the residences to the west of the West Residential Phase. Interior and exterior lighting ofhomes and yards in the West Residential Phase would be generally the same as described for the North Residential Phase. Interior and exterior residential lighting is not expected to adversely impact the existing residential areas.

The West Residential Phase would also include a four-acre Public Neighborhood Park and a Daycare Center. The public neighborhood park would include trails, natural features, and art. Final lighting design, if any, for the four-acre Public Neighborhood Park would be decided by the City of Olympia Parks and Recreation Department. Briggs Village would also include a pedestrian and bicycle trail system throughout the development. The main trail loop may be lit at night, but secondary spurs would not. Lighting, if used, would be designed to concentrate light to the trails, natural features, or art by directing or shielding light fixtures appropriately.

The Daycare Center would have minimal exterior security lighting between the hours of 7 a.m. and 8 p.m. and may also utilize interior security lighting during nighttime hours. Parking for the Daycare Center would be located between the daycare building and the public neighborhood park. If evening activities are proposed for the public neighborhood park and the Daycare Center parking is used for these after-hours activities, security lighting would be provided. Daycare Center parking area lighting would be as described previously for the YMCA parking area. Because of its location, lighting within the Daycare Center parking area would be visible to Briggs Village residents of the single-family attached homes to the east and west but would not illuminate neighboring properties. Daycare Center parking area lighting could potentially be visible to residents of existing homes that abut the Briggs Village site but would not be expected to create excessive and disturbing amounts oflight and glare for these properties.

Central Residential Phase

Lighting for the housing and parking areas in the Central Residential Phase would be the same as described for the North Residential Phase and the West Residential Phase. The nearest existing residences to this phase would be located approximately 250 feet to the east, across Henderson Boulevard. Adverse impacts to these residences are not expected to be consequential due to distance and the presence of light standards on Henderson Boulevard. Lighting for the Arboretum parking area would contain fixtures similar to existing fixtures in the YMCA parking area (mounted on 16- to 18-foot standards spaced approximately 60 feet apart). The Arboretum building would likely have security lighting (fixed or motion-sensor) at entrance points to the building.

Village Center Phase

Lighting for residential units, associated roadways, and parking in Village Center Phase would be the same as described previously and would meet the City's approved standards. Spacing would be the maximum allowed to meet the City's foot-candle requirements. Security lighting for the commercial buildings would include low-level interior lighting and exterior security lighting. Parking and walkway areas for the commercial area would be lit into the evening and early nighttime hours, and the duration and level of illumination would be dependent upon hours of operation and other security considerations. This phase would be located approximately 600 feet from the nearest existing residences located to the east of the project site, across Henderson Boulevard, and along the shore ofWard Lake. Adverse impacts to these residences due to lighting are not expected to be consequential. In addition, residents on the opposite shoreline of Ward Lake from the Village Center Phase may be able to see some interior and exterior lighting, but due to the distance and the screening by Arboretum vegetation, the impacts are not expected to be consequential.

East Residential Phase

The East Residential Phase would include the East Residential Phase Commons and other offices/services and retail to support the senior living facilities, as well as the Arboretum trail system and landscape maintenance facility. Lighting would be the same as previously described for residential areas, roadways, commercial areas, trails, and open spaces such as the neighborhood public park and commons. The nearest existing residence to the northerly portion of this phase is approximately 150 feet from a proposed multi-family duplex unit. Senior housing along the south border of this phase would be approximately 350 feet from existing residences located to the east; the senior housing parking area would be located approximately 75 to 100 feet from these residences. No adverse impacts to existing residences due to lighting are expected.

Noise

Construction noise impacts would be slightly different for each phase due to phase location and duration. Proximity of each phase to existing residential areas would also be a factor. The North Residential Phase and West Residential Phase would likely have a higher impact due to their

Other Possible Mitigation Measures

None identified.

Noise

Project Design

None identified.

Regulatory Requirements

Construction activities shall be conducted in compliance with the City of Olympia Noise Protection Standards, OMC 18.40.080 (2.a.), and WAC 173-60 Maximum Environmental Noise Levels. Construction activities generating substantial noise may only occur during the allowable hours--between 7 a.m. and 10 p.m.

Other Possible Mitigation Measures

- Reduce noise levels from construction equipment by shutting off vehicle engines when not in use, driving trucks and equipment forward rather than in reverse to avoid backup alarms, and shutting down equipment engines when not in use.

- Mitigation measures related to residential noise could include restrictive covenants that would regulate what types of noises are allowable within Briggs Village residential areas. These covenants could also regulate quiet hours and the allowable loudness and duration of various noise sources. Commercial noise could also be regulated by covenants that designate when deliveries can be made and also stipulate measures such as shutting off vehicles while deliveries are being made instead of allowing vehicle engines to idle.

Views

Project Design

- The proposal would include a four-acre Public Neighborhood Park, Arboretum, Town Square, Ward Lake overlook, overlooks into kettles, and other viewing opportunities and open spaces in addition to general landscaping that would provide visual relief from residential and commercial buildings.

Regulatory Requirements

- The OMC Section 18.05.050 specifies development requirements for Urban Village developments. Specifically, the code establishes a minimum distance of at least one-half mile between neighborhood village centers, neighborhood centers, urban villages, and community-oriented shopping centers. This separation requirement provides relief and visual separation of non-residential areas.

- A one-acre Town Square would be provided in the mixed-use district in accordance with OMC Section 18.05A.030 and 18.05.080. This Town Square would provide visual relief from the concentrated development of the mixed-use district.

- Any existing outstanding scenic views of Mount Rainier, which significant numbers of the general public have from public places, must be preserved. See OMC 18.50.100.

Other Possible Mitigation Measures

None identified.

Significant Unavoidable Adverse Impacts

None identified.

PARKS AND OTHER RECREATION FACILITIES

Impacts from Full Buildout

Full buildout of the proposed Master Plan would increase demand for parks and recreation facilities in both Tumwater and Olympia. At buildout over the next 18 to 25 years, the project would house approximately 1,450 additional residents. This increased population would place increased demand on parks and recreation facilities such as Tumwater's Pioneer Park to the south, on playfields and athletic facilities, and on other regional parks.

Specific parks that could be affected in Olympia include Governor Stevens Park, a neighborhood park; Watershed Park, with hiking and walking opportunities; and LBA Park, which includes ball fields and a community park. LBA Park is one of the most popular in the City, and while the City does not maintain records of park use, increased demand for parks in the project area could particularly affect this park.

In its *Capital Facilities Plan* (City of Olympia, 2001), the City of Olympia has established a level of service standard for various parks and recreation facilities based on the *Olympia Comprehensive Plan* (City of Olympia, 1994a). Applicable level of service standards and impacts of the proposed project at buildout are provided in Table 4-3.

The *Olympia Comprehensive Plan* (City of Olympia, 1994a) identified acquisition of neighborhood parks as a high priority Additional waterfront access points and urban trails were also identified as important to meet existing and future demands (City of Olympia, 1994a). Ball fields were also identified as a need. While the City has not developed level-of-service standards for specifically how many waterfront access points are required per 1,000 population to meet demand, the project would likely contribute to increased demand.

Pioneer Park, classified by Tumwater as a "community park" and located to the south of Briggs Village, would likely experience an increase in use as the Briggs Village development is built out. Increases would be incremental over the 18- to 25-year buildout of the project. Pioneer

Park experiences heavy use, particularly of its sports fields, from March through September (Denney, personal communication, 2001). Parking areas are regularly over capacity during peak use periods, causing spillover onto Henderson Boulevard near the park.

Table 4-3. City of Olympia Parks and Recreation Facilities
Level of Service Standards and Project Impacts

Park/Facility Type	Level of Service Standard 2002-2007 Capital Facilities Plan	2007 Projected Level of Service with Planned Facilities	Increased Demand Created by Project
Neighborhood Park	0.93 acres/1,000 population	0.88 acres/1,000 population	1.35 acres, but project will create 4 acres of additional neighborhood public park
Ball Fields	0.26 fields/1,000 population	0.20 fields/1,000 population	0.38 additional ball fields
Soccer Fields	0.1 field/3,500 population	0	0.15 additional soccer field
Swimming Pools	1 pool/50,000 population	0	1.45 swimming pools; demand largely offset by 2000 expansion of YMCA on site
Urban Trails	0.166 miles/1,000 population	1 mile	0.24 additional miles of trail, but project will provide 3.3 miles of trail on site
Community Parks	2.22 acres/1,000 population	0	3.2 additional acres of community park
Shoreline Access	25 percent of marine and lake shoreline	0	Unspecified; project would provide overlook of Ward Lake
Outdoor Volleyball Courts	0.2 courts/1,000 population	0	0.29 courts
Tennis Courts	0.20 cours/1,000 population	1 court	0.29 courts
Municipal Golf Course	0.05 course/1,000 population	0	0.073/course
Open Space Areas	13.4 acres per 1,000 population	60 acres	19.43 acres of additional open space, but project will provide 38 acres of open space, including kettles

The City of Tumwater has established a standard requiring five acres of community park per 1,000 Tumwater residents. Because the Briggs Village site is not located in Tumwater, the City does not include the site in its population projections and demand forecasting for future park

needs. However, for the purposes of illustration, if the population projections associated with Briggs Village were applied to the City of Tumwater using the City's formula for community parks, the project would create a need for 7.25 additional acres of community park in Tumwater by buildout. The City of Tumwater reports a surplus of community park land now but projects a deficit of 178 acres by 2015 as the City's population grows. Adverse impacts to Pioneer Park as a result of increased use would be moderated by the development of commons and park areas (as described above) within Briggs Village itself. The project may also increase use at other Tumwater parks including Tumwater Historical Park, a park heavily used during summer months located along the Deschutes River. However, because of the proximity of Pioneer Park and riverfront access to the Briggs Village site, it is likely that Pioneer Park would absorb the greatest demand for riverfront access generated by the project.

Private facilities, such as Tumwater Falls Park, will probably also experience in an increase in use. However, because of the YMCA located at the site, the Briggs Village project should not result in large demand increases for the Tumwater Valley Athletic Club.

The Village Master Plan includes several park and recreation amenities that would help offset demand for local parks and open space, particularly for a neighborhood park in the South Planning Area as identified in the *Olympia Comprehensive Plan.* The Master Plan includes a four-acre Public Neighborhood Park near the center of the site; this park site is proposed to be purchased by the City of Olympia. The park would serve a one-mile radius and be classified as a neighborhood park.

The Master Plan also includes approximately six acres of common areas distributed in each phase of development; a six-acre Arboretum; an overlook of Ward Lake; and approximately 3.3 miles of trail. While the proposal does not include formal access to the shoreline of Ward Lake, the proposed overlook and trails in the proposed Arboretum have the potential to increase non-sanctioned access to the Lake's shoreline. The steep nature of the Lake's shorelines in the project vicinity could create safety hazards for individuals attempting to access the shoreline, particularly at night. Increased access to the arboretum, overlook area, and shoreline created by the proposed overlook and Arboretum trail system could also increase the potential for vandalism and would require maintenance and security measures to minimize safety hazards.

Impacts by Phase

Impacts ofthe project by phase on parks and recreation would be similar to those described above, but incrementally less in conjunction with the population projections for each phase. Table 4-4 identifies population projections by phase, along with corresponding park and recreation amenities provided by the project. The four-acre Public Neighborhood Park proposed as part of Briggs Village would be constructed in the West Residential phase; as a result, the project's increased demand on neighborhood parks in Olympia would be offset once the park is constructed. Portions of trails would also be constructed within each phase, which would help to offset increased demand for trails and walking paths in the City.

Construction of additional trails could increase safety hazards in the vicinity of the steep side slopes of the kettles on the site. Without proper signage, barriers and other safety measures, trail

users may be exposed to safety hazards from wandering off-trail in an attempt to access the water's edge in the kettles.

Cumulative Impacts

In conjunction with other ongoing and future projects in the area, the Briggs Village development would contribute to regional increases in demand for parks and recreation facilities due to population growth. As discussed above, some of this regional demand would be offset by establishment of common areas and trails on the site and by the four-acre City Neighborhood Park proposed on the site. Other increased demands for park and recreation facilities caused by the project would be further offset through payment of fees as outlined in the City's Park Impact Fee Schedule (see Chapter 2, Parks and Other Recreation Facilities).

Mitigation Measures

Project Design

- The Briggs Village development would include an overlook of Ward Lake, an Arboretum, a Town Square, a trail system, and commons areas. Table 4-4 identifies proposed recreational amenities by phase.

- The City is purchasing 4 acres for a public neighborhood park on the site.

Table 4-4. Proposed Recreation Amenities by Phase

Phase	Residents	Commons Area	Linear Feet of Trail	Other
North Residential Phase	228 residents	0.5 acre	4,350	0.6-acre public overlook of Ward Lake
West Residential Phase	403 residents	1.4 acres	5,040 linear feet of perimeter trails	4.0-acre public neighborhood park transferred to City
Central Residential Phase	109 residents	0.6 acre	2,000 linear feet of kettle, Arboretum, and other trails	
Village Center Phase	232 residents			1-acre town square
East Residential Phase	482 residents	2.5 acres	3,500 linear feet of Arboretum, Southeast Kettle, and Senior trail	6.6-acre Arboretum along Ward Lake

Regulatory Requirements

- To offset increased demand for some parks and recreation facilities in the City of Olympia, the applicant would compensate the City of Olympia in accordance with the City's Park Impact Fee schedule. For impacts related to increased demand for neighborhood parks, athletic fields, open space, urban trails, and tennis courts, impact fees would be levied on

residential building permits by the City of Olympia based on the City's park impact fee schedule for development (OMC 15.08.010 and OMC 15.16.010). Collected fees are used to carry out projects as guided by the Parks and Recreation element of the *Olympia Comprehensive Plan* (City of Olympia, 1994a).

Other Possible Mitigation Measures

- Develop signage and appropriate trail designs to encourage uses to stay on-trail and to minimize straying off the trail in the vicinity of steep kettle side slopes and the Ward Lake.
- Compensate the City of Tumwater for impacts on Pioneer Park.
- Indemnify the City for any environmental costs related to prior contamination of the site and associated with the proposed public park.

Significant Unavoidable Adverse Impacts

None identified.

TRANSPORTATION

This section of the EIS examines transportation impacts of the applicant's Proposed Alternative and compares them to what is projected under the No Action Alternative. A comparison between the proposed Briggs Village development and residential scenarios is also presented. Generally, the alternatives are compared in terms of trip generation and distribution, traffic volumes, and traffic operations. Impacts are evaiuated by development phase and at full buildout. Cumulative impacts are assessed and mitigation measures to reduce or eliminate adverse impacts presented.

Traffic volume forecasts were prepared by The Shea Group (2002) in cooperation with the City of Olympia and Thurston Regional Planning Council (TRPC). TRPC's model of the roadway network of Thurston County was calibrated by TRPC to reflect the traffic conditions currently experienced by Thurston County drivers. Land use, population, and employment projections used in the model were provided by TRPC and the cities of Olympia and Tumwater land use projections. The TRPC model includes the development of an urban village at the Briggs Nursery site and incorporates Transportation Demand Management (TDM) strategies and increased transit ridership forecasts.

Transportation impacts associated with the Proposed Action are compared with other land use scenarios at the end of this Transportation Section. Specifically, these land use scenarios include single-family homes at a density of five units per acre and a mix of 50 percent single-family homes and 50 percent multi-family residences at an overall density of seven units per acre.

Construction of Briggs Village is expected to occur over a period of 18 to 25 years. The timing and sequence of phases will be dependent on market conditions. In determining the scope of this

EIS, the responsible official decided that traffic impact analysis for all possible sequences of the proposed development phases would be too complex to yield meaningful information.

Instead, this traffic impact analysis includes two assumptions: one, that development would begin with the North Residential Phase, followed by the West Residential Phase, and then by other phases; and two, that the North Residential Phase and the West Residential Phase will be completed by 2007 and that all phases will be completed by 2020. This phasing sequence is not specifically proposed or required. However the applicant has indicated that it is the most likely. Should the applicant elect a different sequence, additional analysis may be required.

Impacts from Full Buildout and by Phase

When complete, the Briggs Village will add over 1,000 vehicle trips to area roadways during the afternoon peak traffic hour. A summary of this trip generation analysis is provided in Table 4-5. Traffic volumes and distribution for the North Residential Phase, combined North Residential Phase and West Residential Phase, and full buildout are shown in Figures 4-2 through 4-7. Transportation impacts of the first two phases and full buildout are discussed together below.

Trip Generation

Vehicle trip generation for the project uses trip generation rates found in the 1999 *City of Olympia Addendum to Transportation Impact Fee Rate Study* (The Shea Group (2001). These rates are based on information provided in the *Trip Generation Handbook* (Institute of Traffic Engineers, 1998). Trip generation is estimated for the North Residential Phase, the North Residential Phase combined with the West Residential Phase, and for full buildout.

A project of this type would experience mixed-use interaction and pass-by traffic. Mixed-use interaction relates to traffic interactions between different land uses within a development. After commercial uses are developed during the Village Center Phase and East Residential Phase, approximately 15 percent of total traffic generated by the project would occur on roadways internal to Briggs Village. The 15 percent figure was derived from the *Trip Generation Handbook* (ITE, 1998) (The Shea Group, 2002). Some of these internal trips could be by walking or bicycling. The 15 percent reduction is applied to all of the land uses within the project, but only after completion of the Village Center Phase.

A new commercial center tends to attract a large amount of traffic already driving on existing roadways in the vicinity. These are not new trips generated by the project but are considered "pass-by" trips. Pass-by trips are trips made as an intermediate stop from an origin to a primary destination (i.e., stopping to shop on the way home from work) by vehicles passing directly by the project driveway. Based on information provided in the 1995 City of Olympia *Transportation Impact Fee Rate Study*, 10 percent, 30 percent, and 25 percent pass-by reductions were applied for office, strip retail, and supermarket land uses. No reduction was applied to any of the residential land uses. Project traffic volumes after reduction are termed "new-to-network" trips.

A summary of the resulting trip generation estimates is provided in Table 4-5.

Table 4-5. Trip Generation Summary

	Total Project Trips			New-To-Network Trips		
	Total	Inbound	Outbound	Total	Inbound	Outbound
North Residential Phase (92 units)	85	55	30	85	55	30
North and West Residential Phases (290 units)	222	145	77	222	145	77
Full-Build	1286	643	643	1082	548	534

Source: The Shea Group (2002)

Trip Distribution and Traffic Volumes - Briggs Village

Vehicle trip distribution to and from the Briggs Village site is based on street system characteristics in the area; current travel patterns on area roadways; proposed access system for the project; and locations of employment bases and shopping/commercial centers. Directional distribution of traffic to and from Briggs Village is determined using the regional transportation model. For the North Residential, West Residential, and Central Residential Phases, the City of Olympia Year 2005 model was used. This model includes roadway improvements anticipated through the Year 2005. For the Village Center Phase and the East Residential Phase, the Year 2020 model was used, reflecting roadway improvements anticipated through the Year 2020. Similar methodology was used to project 2007 afternoon peak-hour traffic volumes, which include the North Residential Phase and West Residential Phase. Projected trip distribution and traffic volumes are shown in Figures 4-2 through 4-7 for the North Residential Phase and the West Residential Phase, and full buildout.

Future Traffic Volumes - Overall

Traffic forecasts are based on the 2007 and 2020 planning horizons. Traffic growth rates for the various roadways in the project area are derived from the TRPC model. Projected growth rates are added to existing turning movement volumes to provide a baseline 2007 volume that does not include Briggs Village (see Figure 4-8).

Projected site-generated traffic volumes are added to the baseline volumes to determine 2007 overall volumes, including the North Residential Phase, and the overall volumes for the North Residential Phase combined with the West Residential Phase (see Figures 4-9 through 4-12). Projected traffic volumes for 2020 are shown in Figure 4-13.

Traffic Operations

Future traffic operations have been projected for eight off-site intersections for the 2007 scenario and for the 2020 horizon. (See Chapter 2 for discussion of current conditions.) For each, there are projections of:

- Year 2007 volumes without Briggs Village traffic;

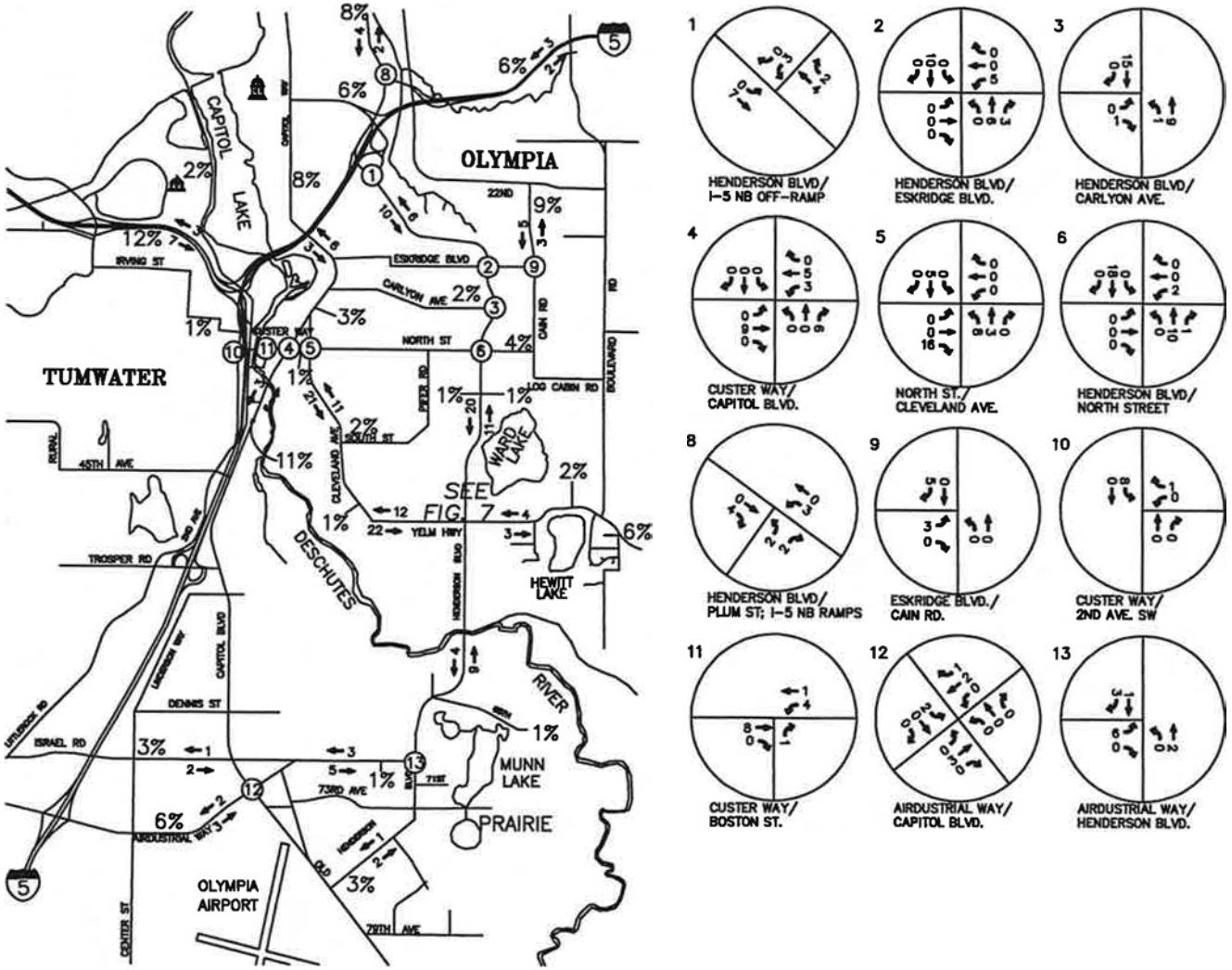
- Year 2007 volumes with North Residential Phase traffic;
- Year 2007 volumes with North Residential Phase and West Residential Phase traffic; and
- Year 2020 volumes with full buildout.

Results of these analyses using Highway Capacity Manual 2000 methods are shown in Table 4-6. Note that the Year 2007 analysis assumes that proposed improvements described below have been installed at Capitol Boulevard and Custer Way. (Without such improvements the intersection fails to meet adopted levels of services of the City of Tumwater.) For comparison, the table also includes levels of service resulting from signalization of the Henderson Boulevard/1-5 Northbound ramp, and at the Henderson/Eskridge intersection. Because specific traffic movement estimates for intersections are inherently unreliable for long-term traffic modeling, a more simplistic volume to capacity ratio was used to estimate levels of service in 2020.

Table 4-6. PM Peak 2-Hour Average Level of Service Summary

Intersection	Existing (2000) Level of Service	Projected 2007 Conditions			Projected 2020 Volume-Based Condition
		Without Project	With North Residential Phase	With North & West Residential Phases	
Unsignalized Intersections [1]	LOS (Seconds of Delay)	LOS (Seconds of Delay)	LOS (Seconds of Delay)	LOS (Seconds of Delay)	LOS (VIC)
Henderson Blvd/I-5 NB Off-Ramp	E(43) -- A(9)	F(161) -- E(38)	F(170) -- E(40)	F(192) -- E(45)	See signalized scenario below
Henderson Blvd/Eskridge Blvd	F(60)- B(11)	F(99+) -- F(84)	F(99+) -- F(99+)	F(99+) -- F(99+)	See signalized scenario below
Henderson Blvd/Carlyon Ave	C(20) -- A(2)	E(38) -- A(3)	E(40) -- A(3)	E(45) -- A(4)	B (0.64)
Signalized Intersections [2]	LOS (Delay)	LOS (Delay)	LOS (Delay)	LOS (Delay)	LOS (Delay)
Henderson Blvd/I-5 NB Off-Ramp	not signalized for this scenario	not signalized for this scenario	not signalized for this scenario	B(15)[3]	D (0.85)
Henderson Blvd/Eskridge Road	not signalized for this scenario	not signalized for this scenario	not signalized for this scenario	C(27)[3]	F (1.15)
Capitol Blvd/Custer Way	E(58)	C(20t	C(21)[4]	C(21)[4]	E (0.92)
Cleveland Ave/North Street	B(14)	C(16)	C(17)	C(17)	F (1.01)
Henderson Blvd/ North Street	B(13)	B(15)	B(16)	B(17)	E (0.95) or C(25)[4]
Henderson Blvd. Airdustrial [5]	D(25)	F(55)	Not provided.	Not provided.	F (1.03)
Yelm Highway/Henderson Blvd	C(34)	D(43)	D(43)	D(43)	F (1.41)

1 LOS and delay m seconds provrded for the rmnor street left-tum -- and for mtersect10n average at unsrgnahzed intersections
2 LOS and delay in seconds provided for intersection average at signalized intersections.
3 LOS reflects the installation of a traffic signal system
4 If proposed intersection improvements constructed
5 Henderson/ Airdustrial Analysis provided by City of Tumwater



TRIP GENERATION

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XX	NEW-IO-NE'IWORK IRIPS
@	IN'IERSECIiON REFERENCE NUMBER
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SIT£-G£N£RAT£0 TRAFFIC VOLUMES

NORTH RESIDENTIAL PHASE

BRIGGS VILLAGE TRAFFIC IMPACT ANAL YS/S

FIGURE

•The Shea Group

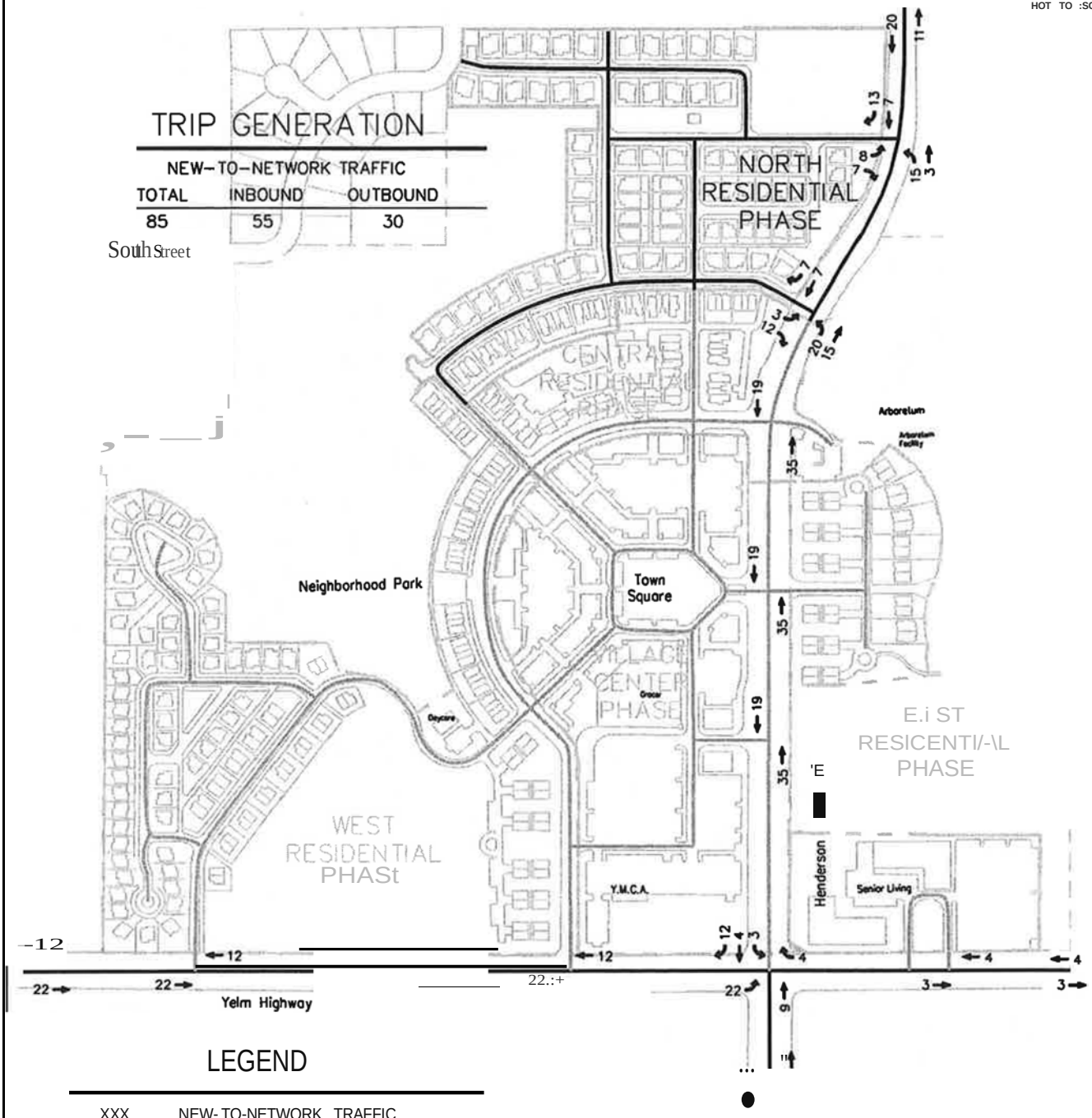
6

NORTH
No Scale

File name: 99008Shea6.dwg
Date: 11/29/2001 nls
Revised: 10/22/2002 nls

SOURCE: Briggs Village Traffic Impact Analysis, The Shea Group, 2001.

FIGURE 4-2.
SITE-GENERATED TRAFFIC VOLUMES
NORTH RESIDENTIAL PHASES
BRIGGS URBAN VILLAGE MASTER PLAN EIS
OLYMPIA , WASHINGTON



SITE-GENERATED TRAFFIC VOLUMES

NORTH RESIDENTIAL PHASE

The Shea Group

A Porometrix company

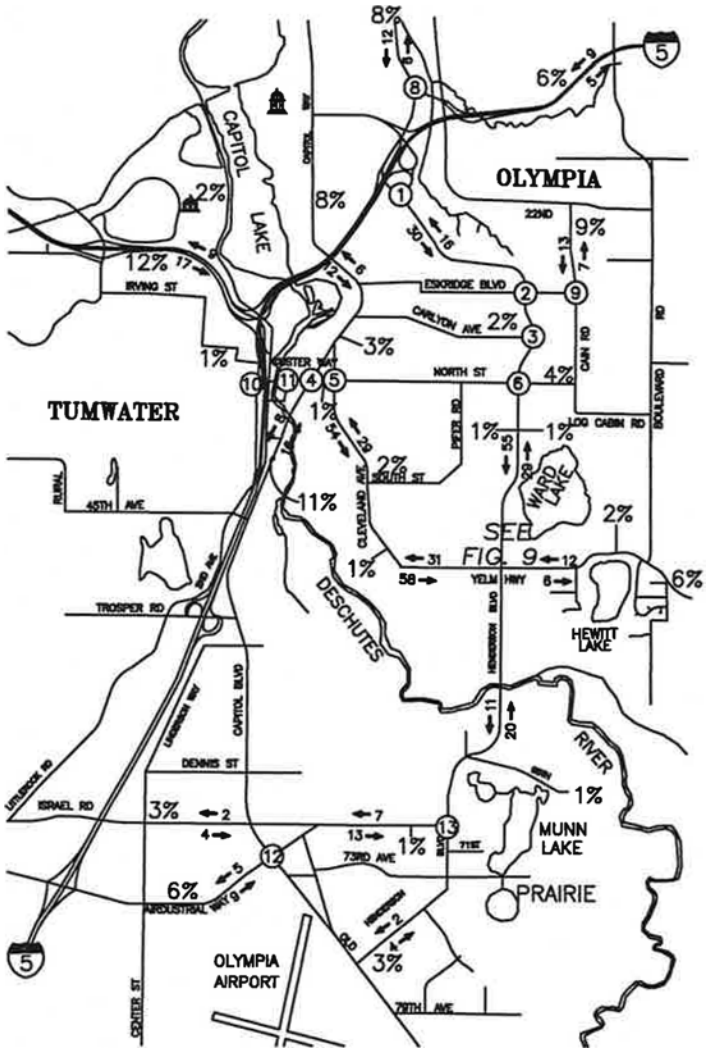
NORTH
No Scale

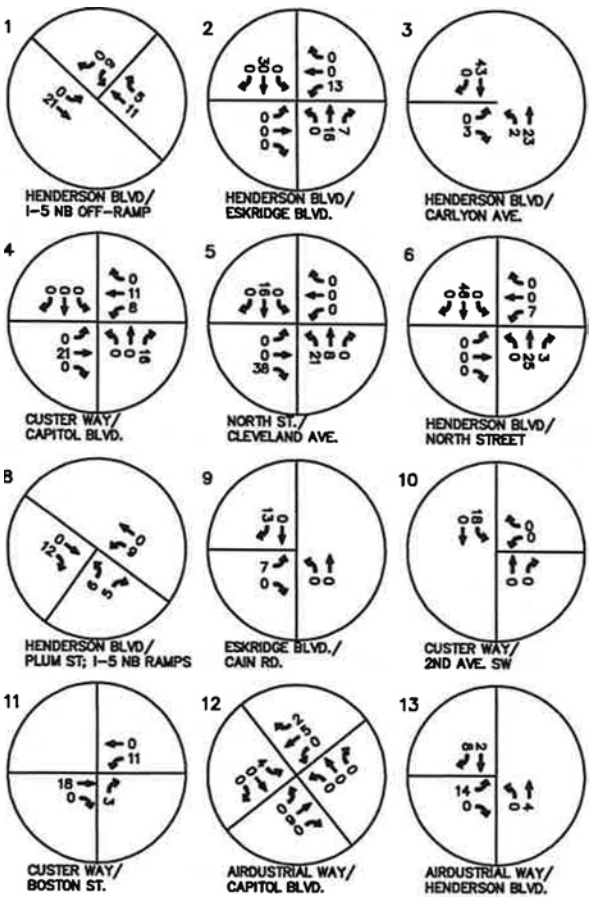
File name: 99008Shea7.dwg
Date: 11/29/2001 nls
Revised:

SOURCE: Briggs Village Traffic Impact Analysis, The Shea Group, 2001.

ADOLFSON

FIGURE 4-3.
SITE-GENERATED TRAFFIC VOLUMES
NORTH RESIDENTIAL PHASE
BRIGGS URBAN VILLAGE MASTER PLAN EIS
OLYMPIA, WASHINGTON





TRIP GENERAIION

NEW-TIHI£TMIRK 1WAFFIC		
TOTAL	INBOUND	OUliiOUND
222	145	*n*

LEGEND

XX NEW-10-NETWORI< TRIPS

® INTERSEcnON REFERENCE NUMBER

XXX SIIE 1WAFFIC DIS1RIIIU11ION X

SITE-GENERA *TED TRAFFIC* VOLUMES

NORTH AND WEST RESIDENTIAL PHASES

BRIGGS IALLAGE TRAme IMPACT ANALYSIS

FIGUR£

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•The Shea Group

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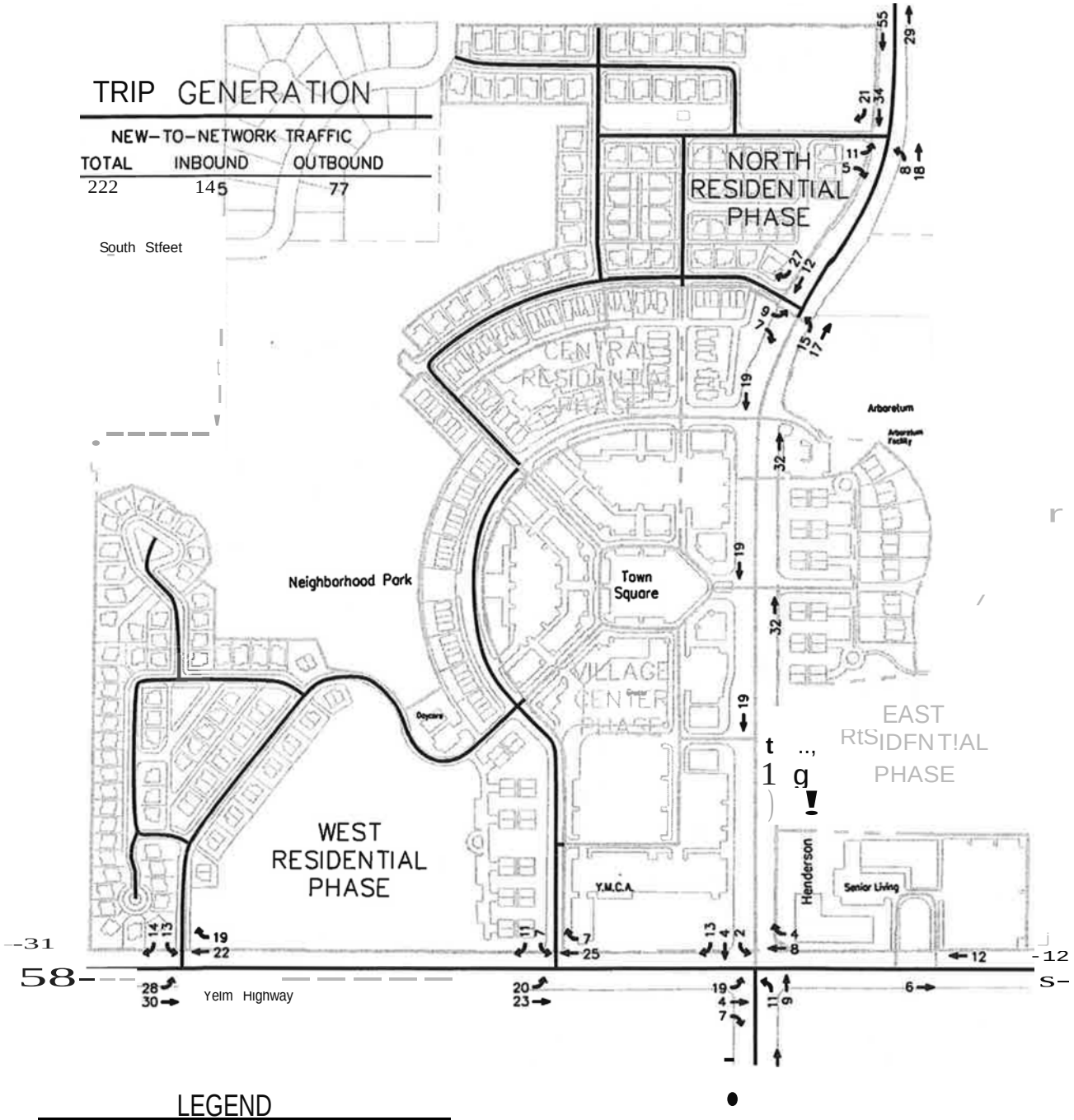
FIGURE 4-4.
SITE-GENERATED TRAFFIC VOLUMES
NORTH & WEST RESIDENTIAL PHASES
BRIGGS URBAN VILLAGE MASTER PLAN EIS
OLYMPIA, WASHINGTON



SITE-GENERATED TRAFFIC VOLUMES

The Shea Group
a Poromeirl• company

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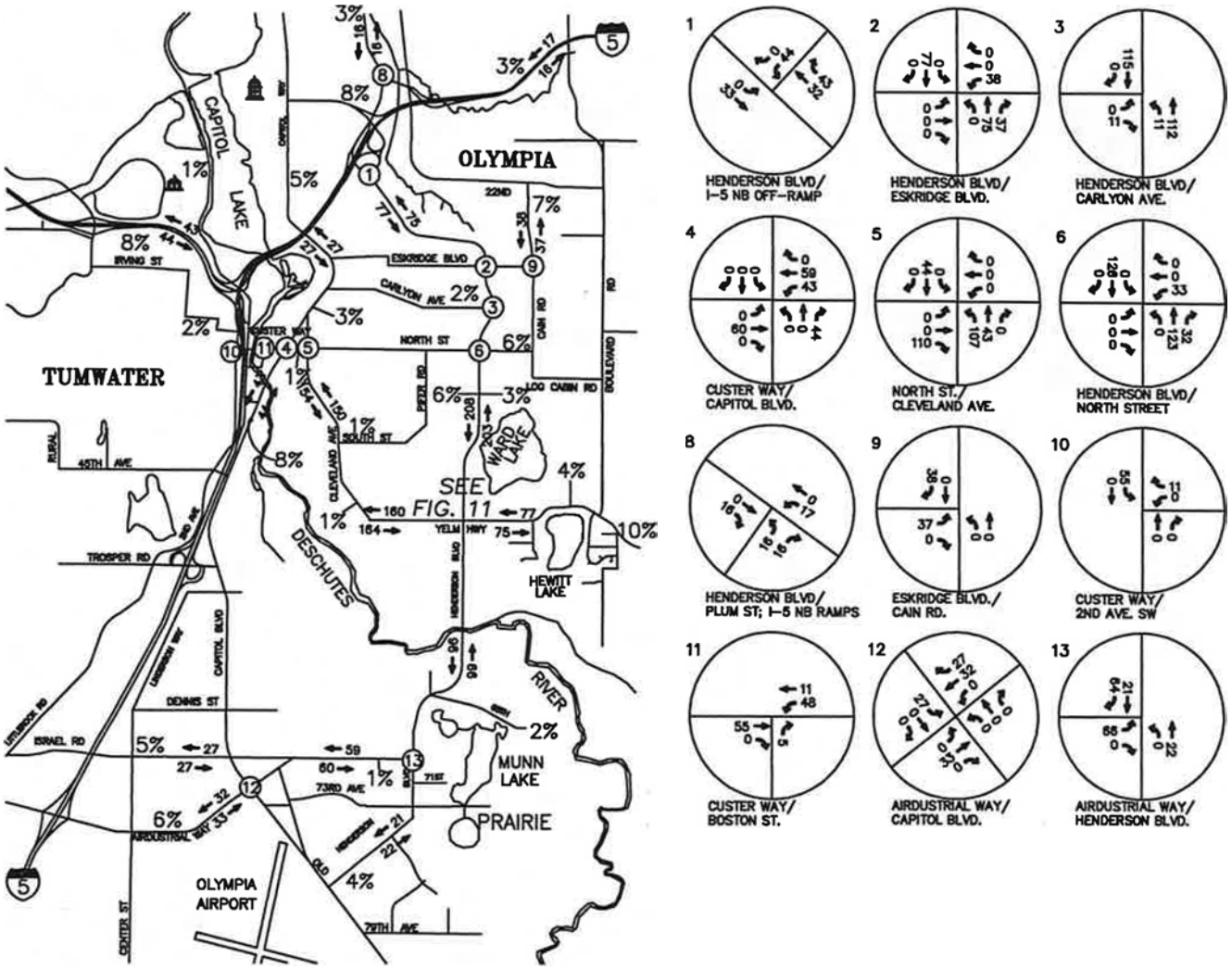
File name: 99008Shea9.dwg
Date: 11/29/2001 nls
Revised:

SOURCE: Briggs Village Traffic Impact Analysis, The Shea Group, 2001.

ADOLFSON

FIGURE 4-5.
SITE-GENERATED TRAFFIC VOLUMES
NORTH & WEST RESIDENTIAL PHASES--SITE DETAIL
BRIGGS URBAN VILLAGE MASTER PLAN EIS
OLYMPIA, WASHINGTON



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TRIP GENERATION

NEW-'10-NEI'MIRK IRAfFIC

IOTAL	INBOUND	OUTBOUND
1082	548	534

LEGEND

XX	NEW-10-NE1WIIRK 1RIPS
®	INIERSECIION RE1'ERENCE NUIIBER
XXX	SitE IRAfFIC D4S'IRIBU1ION S

5/T£-GENERA T£0 TRAFFIC VOLUMES

FULL-BUILD ALL PHASES

BRIGGS VTLLAGE TRAffiC IMPACT ANALYSIS

FIGURE

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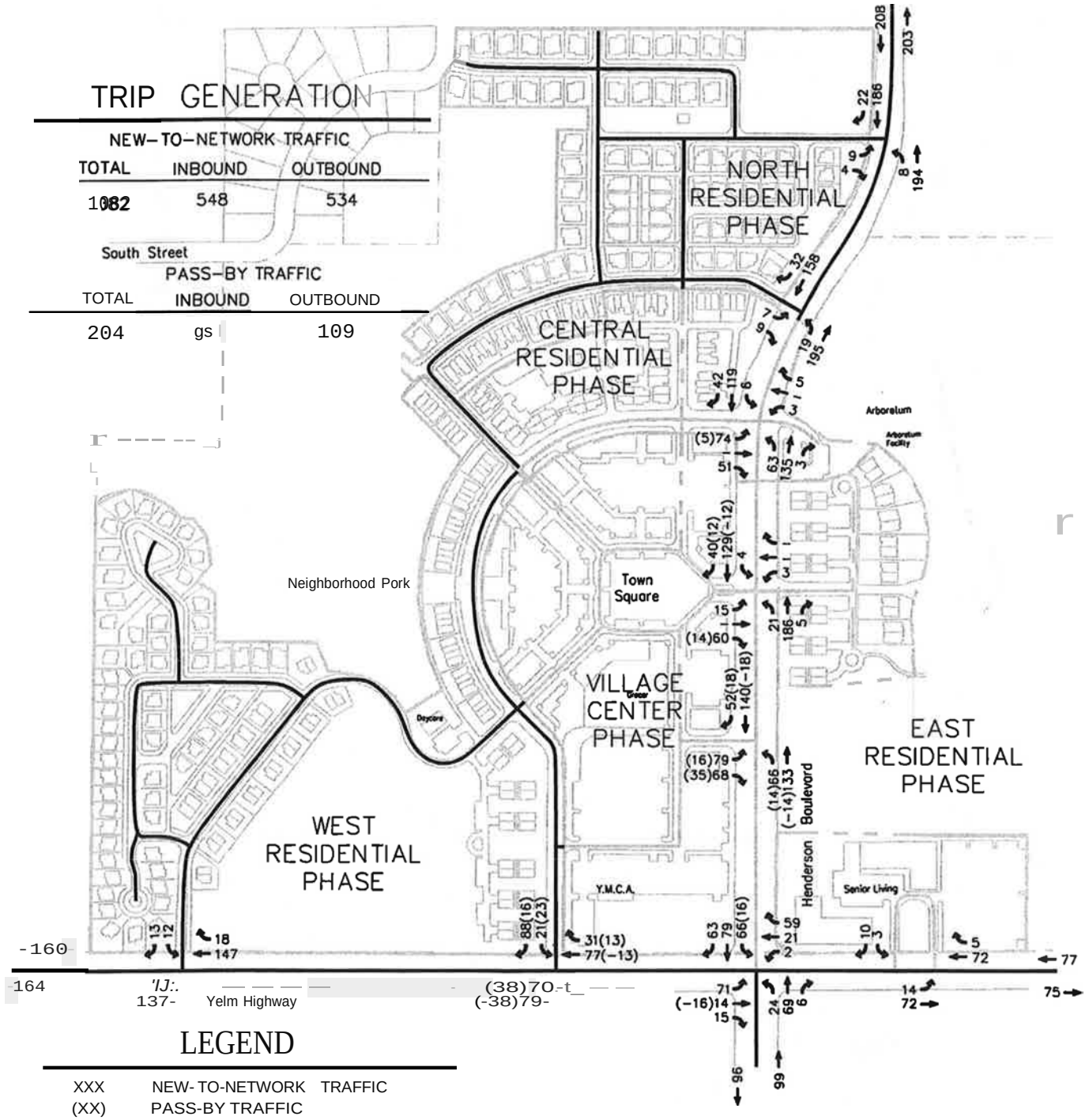
1---S-O-U-RC_E_: -Bgg_sV_illa-ge..T-.,.,-fti--lm-pact-A-na-ly-sis-. ---

The Shea Group, 2001.

ADOLF SON

FIGURE 4-6.
SITE-GENERATED TRAFFIC VOLUMES
FULL-BUILD ALL PHASES
BRIGGS URBAN VILLAGE MASTER PLAN EIS
OLYMPIA, WASHINGTON



•The Shea Group

o Poromelrix *company*

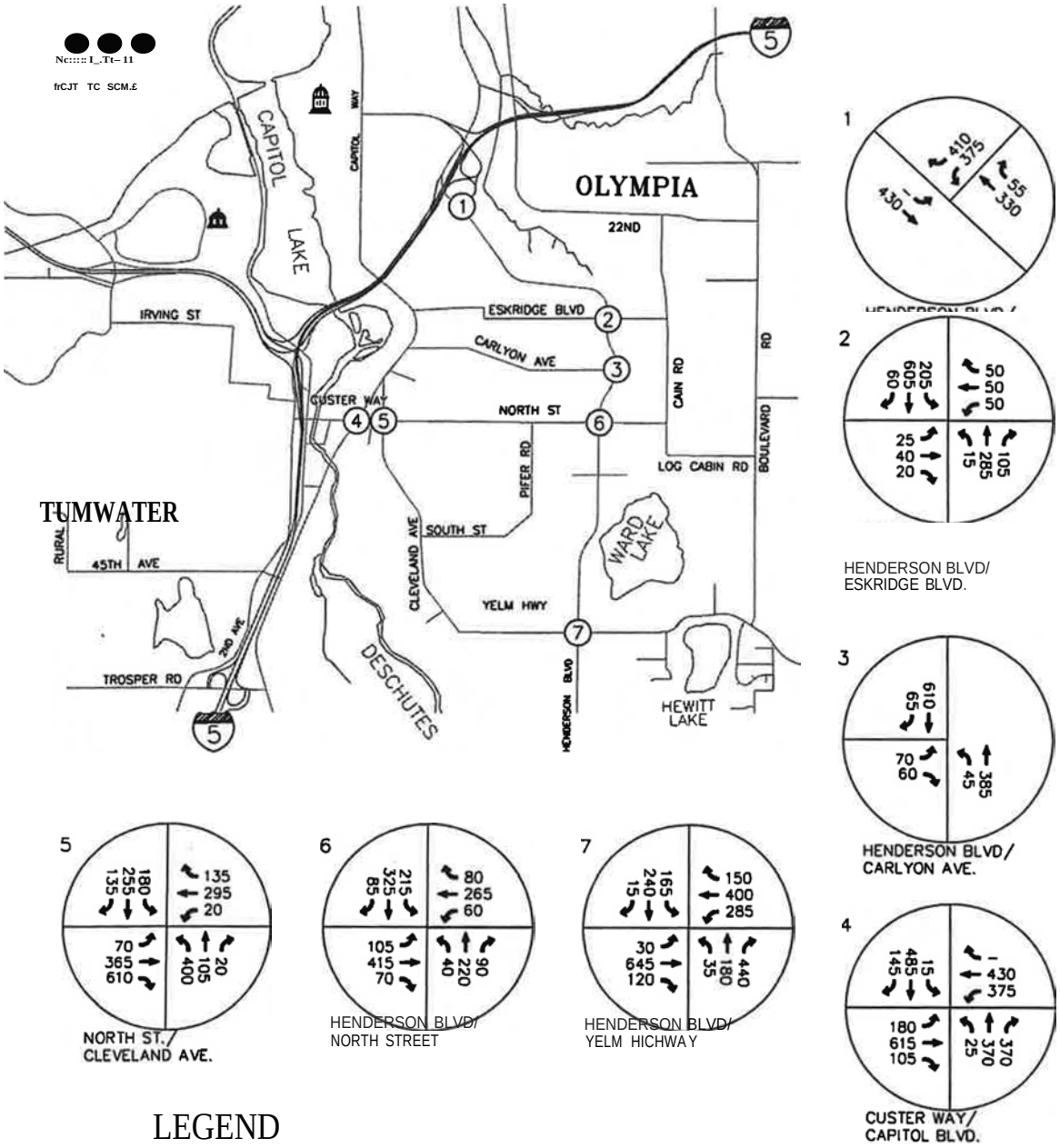
SITE-GENERATED TRAFFIC VOLUMES

NORTH
No Scale

File name: 99008Shea11.dwg
Date: 11/29/2001 nls
Revised:

SOURCE: Brtggs Village Traffic Impact Analysis. The Shea Group, 2001.

FIGURE 4-7.
SITE-GENERATED TRAFFIC VOLUMES
FULL-BUILD ALL PHASES
BRIGGS URBAN VILLAGE MASTER PLAN EIS
OLYMPIA, WASHINGTON



LEGEND

XX- PM PEAK PERIOD TRAFFIC VOLUMES

@ INTERSECTION REFERENCE NUMBER

LESS THAN FIVE VEHICLE TRIPS

PROJECTED 2007 TRAFFIC VOLUMES

W/0 BRIGGS VILLAG£

2-HOUR PM P£AK A V£RAG£

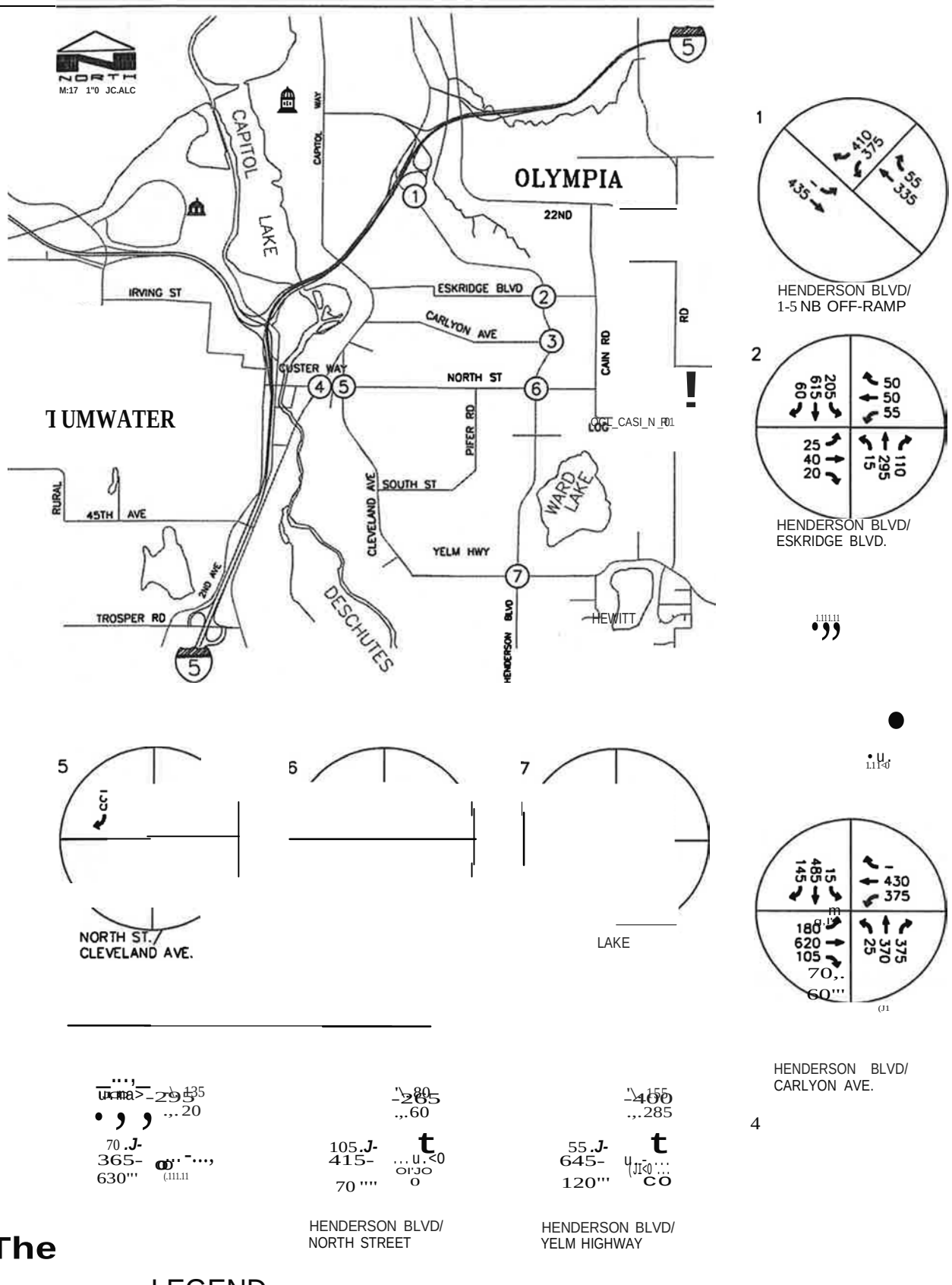
The Shea Group

c POI'am•Irl'ff company

File name: 9900BShea12 dwg
Date: 11/29/2001 nls
Revised:

SOURCE: Briggs Village Traffic Impact Analysis, The Shea Group, 2001.

FIGURE 4-8.
PROJECTED 2007 TRAFFIC VOLUMES W/0 BRIGGS VILLAGE
2-HOUR PM PEAK AVERAGE
BRIGGS URBAN VILLAGE MASTER PLAN EIS
OLYMPIA, WASHINGTON



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LEGEND

NORTH
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File name: 9900BShea13.dwg
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Revised:

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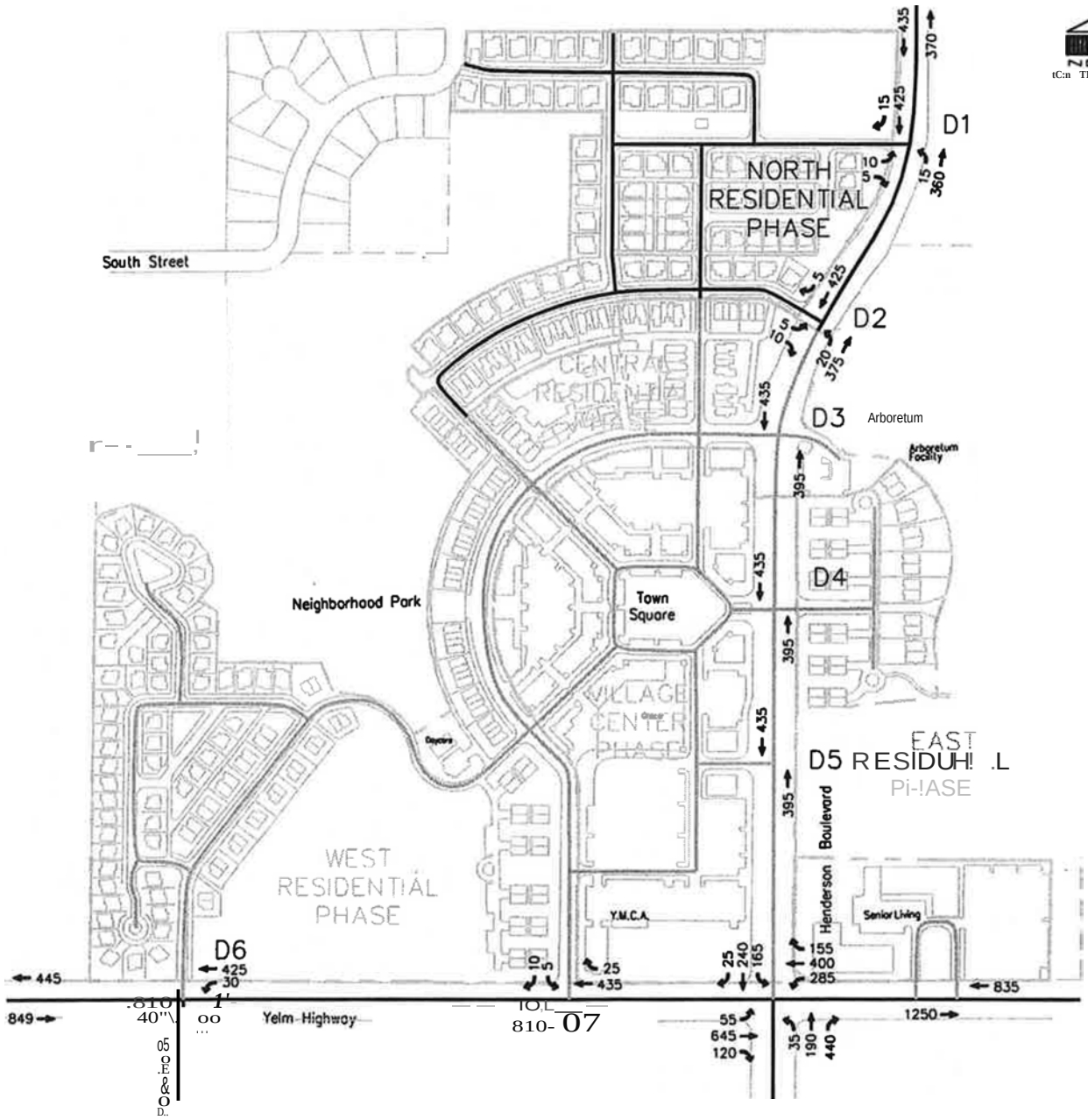
ea Group, 2001.

ADOLFSON

FIGURE 4-9.
PROJECTED 2007 TRAFFIC VOLUMES W/NORTH RESIDENTIAL
2-HOUR PM PEAK AVERAGE
BRIGGS URBAN VILLAGE MASTER PLAN EIS
OLYMPIA, WASHINGTON



LEGEND

XXX- PM PEAK PERIOD TRAFFIC VOLUME
01 DRIVEWAY REFERENCE NUMBER

PROJECTED 2007 TRAPPIC VOLUMES

W/NORTH RESIDENTIAL PHASE

SITE DETAIL

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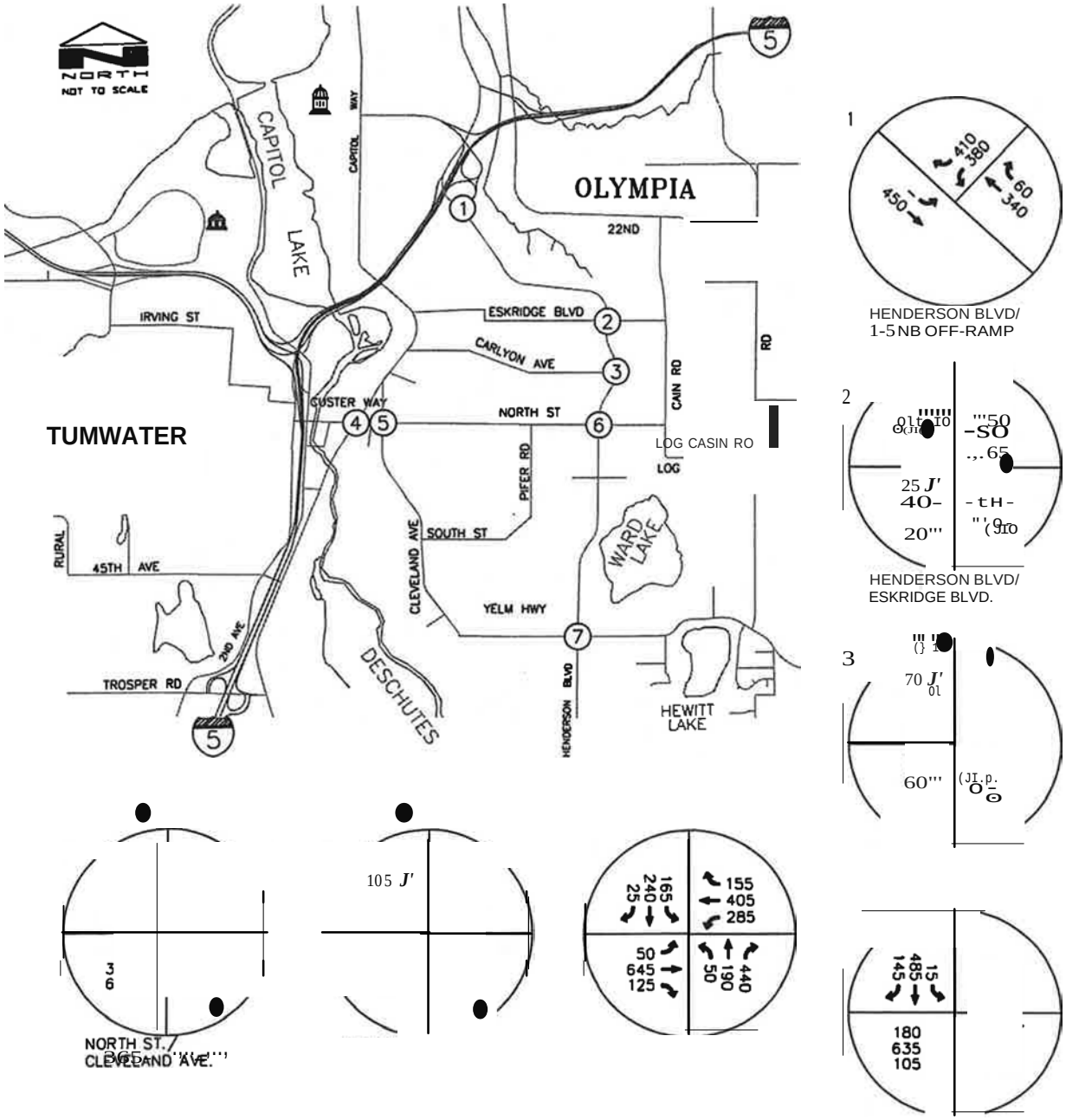
o *Poram•IriM compony*

NORTH
No scale

Filename: 9900BShea14.dwg
Date:11/29/2001 nls
Revised:

SOURCE: BriggsVillageTraflicImpactAnalysis, The Shea Group, 2001.

FIGURE 4·10.
PROJECTED 2007 TRAFFIC VOLUMES W/NORTH RESIDENTIAL SITE DETAIL
BRIGGS URBAN VILLAGE MASTER PLAN EIS
OlYMPJA, WASHINGTON



NORTH
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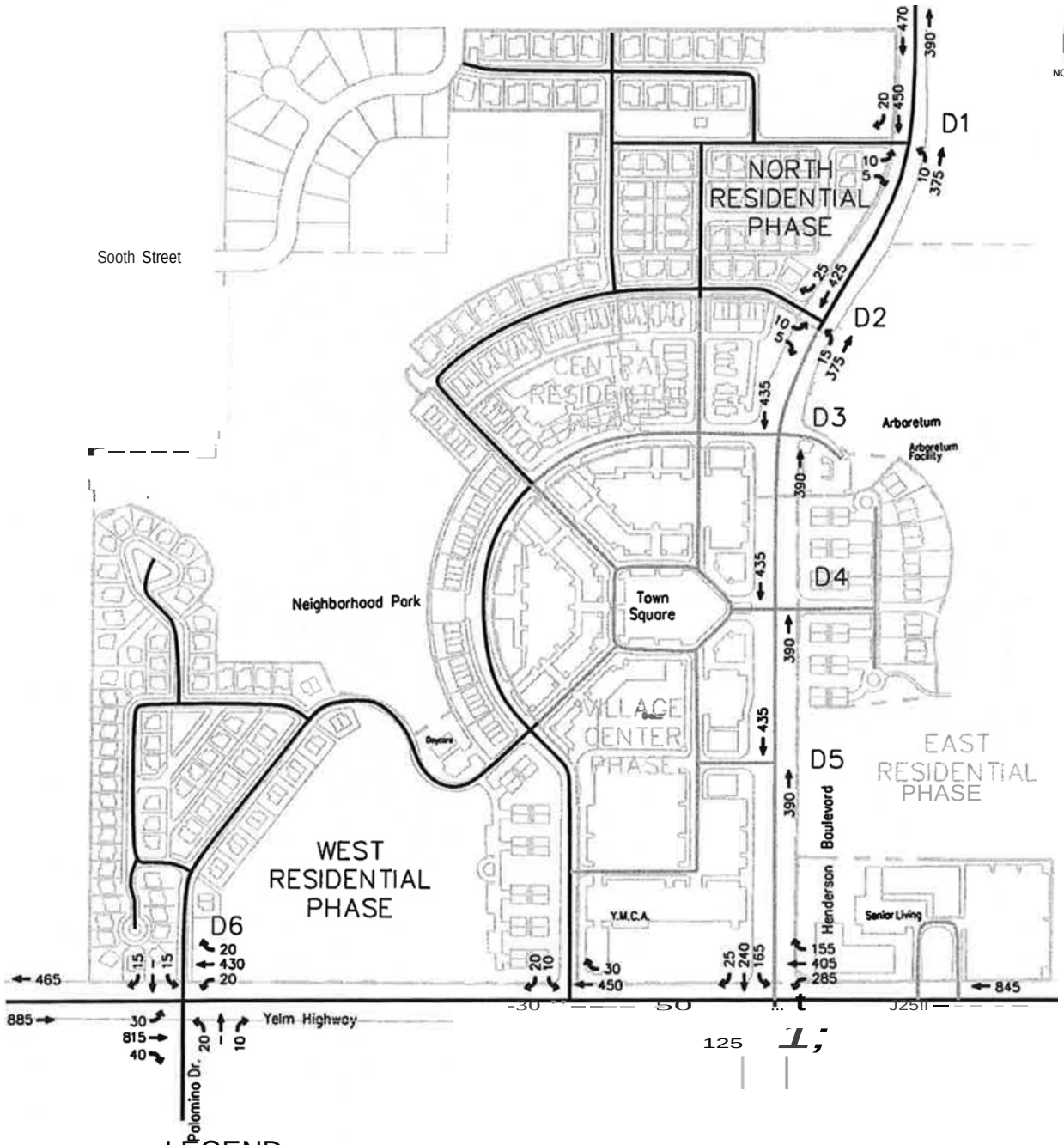
File name: 9900BShea15.dwg
Date: 1112912001 nls
Revised:

lage Traffic Impact Analysis,
:a Group, 2001.

FIGURE 4-11.
PROJECTED 2007 TRAFFIC VOLUMES W/NORTH & WEST RESIDENTIAL PHASES:2-HOUR PM PEAK AVERAGE
BRIGGS URBAN VILLAGE MASTER PLAN EIS
OLYMPIA, WASHINGTON



LEGEND

XXX — PM PEAK PERIOD TRAFFIC VOLUME

01 DRIVEWAY REFERENCE NUMBER LESS THAN FIVE VEHICLE TRIPS

•The Shea Group

PROJECTED 2007 TRAFFIC VOLUMES W/NORTH AND WEST RESIDENTIAL PHASES

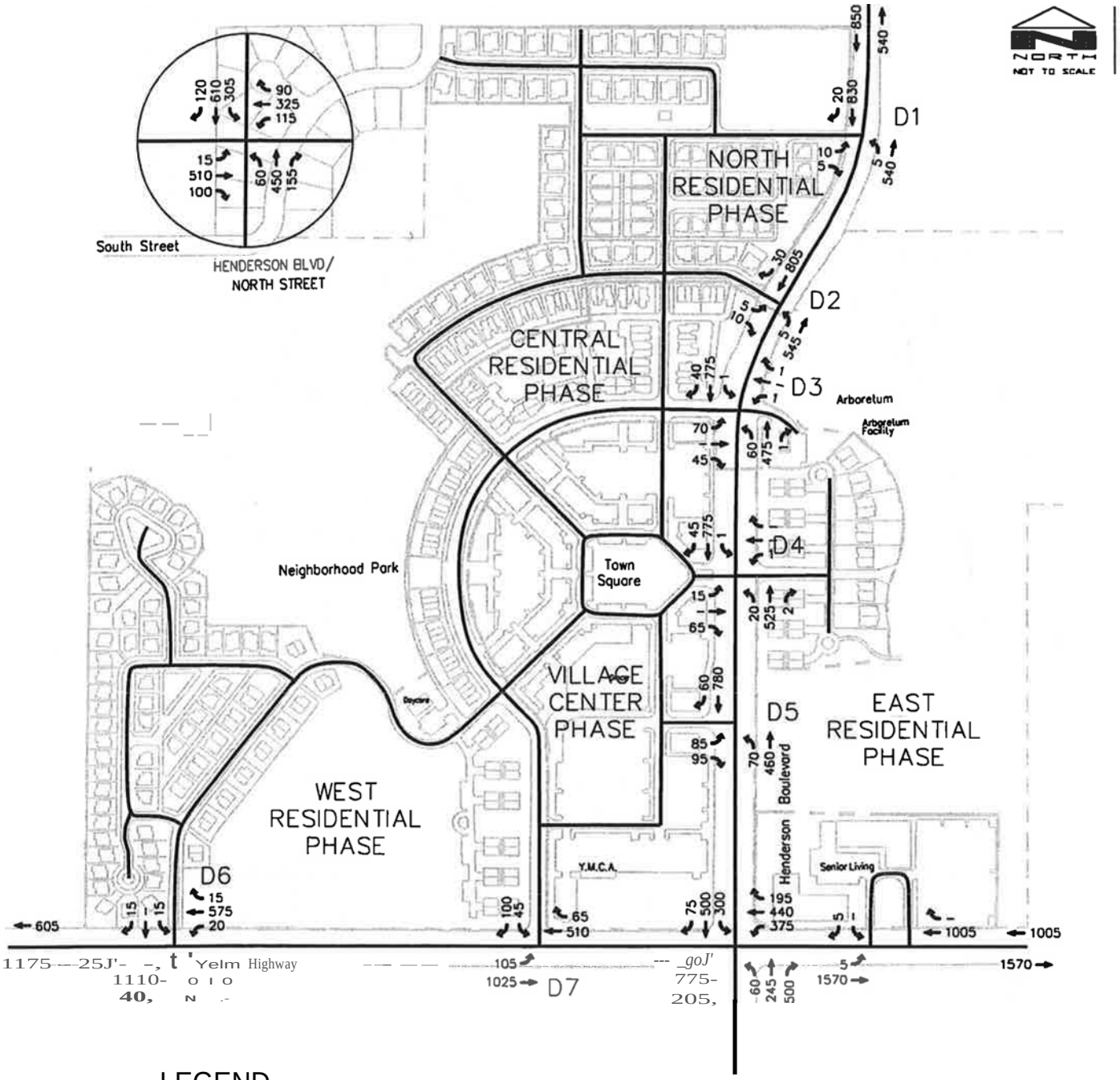
NORTH
No Scale

File name: 99008Shea16.dwg
Date: 11/29/2001 nls
Revised:

SOURCE: Briggs Village Traffic Impact Analysis, The Shea Group, 2001.

ADOLFSON

FIGURE 4-12.
PROJECTED 2007 TRAFFIC VOLUMES W/NORTH & WEST RESIDENTIAL PHASES:SITE DETAIL
BRIGGS URBAN VILLAGE MASTER PLAN EIS
OLYMPIA, WASHINGTON



LEGEND

XXX- PM PEAK PERIOD TRAFFIC VOLUME
01 DRIVEWAY REFERENCE NUMBER
LESS THAN FIVE VEHICLE TRIPS

PROJECTED 2020 TRAFFIC VOLUMES

•The Shea Group
a Porametrix company

NORTH
No Scale

File name: 99008Shea17.dwg
Date: 11/29/2001 nls
Revised:

SOURCE: Briggs Village Traffic Impact Analysis, The Shea Group, 2001.

ADOLFSON

FIGURE 4-13.
PROJECTED 2020 TRAFFIC VOLUMES
SITE DETAIL
BRIGGS URBAN VILLAGE MASTER PLAN EIS
OLYMPIA, WASHINGTON

Henderson Boulevard/I-5 Northbound Off Ramp

For minor street left-turn movement during p.m. peak-hour periods, this intersection operates at Level of Service (LOS) E, just above LOS F. In the absence of any improvements, operations will decline to LOS F in the near future. With the addition of traffic from Briggs Village, flow of traffic would further degrade. The operating condition can be improved through installation of a signal or roundabout to replace the existing stop sign.

There is a proposal to develop commercial property west of Henderson Boulevard near the northbound off ramp. This proposal involves constructing a fourth approach at the intersection in order to provide access to the site. The City of Olympia has granted land use approval to the developer of the site. That approval requires construction of a roundabout at the intersection satisfactory to Washington Department of Transportation.

If the fourth approach and roundabout were not constructed, signalization would allow the intersection to operate at a LOS B during the 2007 horizon, including traffic from Briggs Village North Residential Phase and West Residential Phase.

Henderson Boulevard/Eskridge Boulevard

This intersection with stop signs on Eskridge Boulevard has an average peak hour LOS of B. However, this intersection operates at LOS F for minor street left-turn movements during afternoon peak-hour periods. The North Residential Phase would further degrade the operating condition of the intersection. Even if traffic from the North Residential Phase and the West Residential Phase is included, installation of a traffic signal would improve the condition to LOS C in 2007. In the long-term, the level of service may decline to F without further improvements.

Henderson Boulevard/Carlyon Drive

This intersection is controlled by a stop sign on Carlyon Drive. The left-turn from Carlyon functions at LOS C. Non-project growth in traffic would degrade the condition to LOS E by 2007. This intersection would remain at LOSE with the addition of the North and West Residential Phases in 2007 for minor street left-turn functions. However, the overall intersection would operate at LOS A. (The Shea Group, 2003).

Henderson Boulevard and Airdustrial Way

Analysis prepared for and by Thurston County has indicated that the intersection of Henderson Boulevard/Airdustrial Way is operating near capacity and will fail by the 2007 horizon year of the first phase of Briggs Village. It has been determined that the intersection will require the construction of a traffic system to maintain acceptable operation. Thurston County is currently collecting mitigation fees from new development toward the signalization project. The Briggs Village project will be required to contribute a mitigation fee toward that improvement.

Capitol Boulevard/Custer Way

This intersection was identified as currently operating as LOS E during the afternoon peak period. Without improvements, the intersection is expected to fall to LOS F by 2007. The City of Tumwater has examined the intersection in order to assess the impacts of new development. Several improvements have been proposed to mitigate impacts resulting from new developments. Based on analysis by the city of Tumwater, mitigation may be in the form of restriping of Custer Way, elimination of the protected left-tum lane phase for the north-south left turns from Capital Boulevard, and coordination of this traffic signal with the Custer Way/ Cleveland Avenue signal. With these improvements, the intersection would operate at LOS C with the completion of the North Residential Phase and West Residential Phase. Tumwater is continuing to evaluate transportation alternatives and remedies to the Custer/Cleveland/Capitol Boulevard area.

Cleveland Avenue/North Street- Custer Way

This intersection operates under traffic signal control at an LOS B condition. Expected traffic increases unrelated to Briggs Village will degrade the operating condition to LOS C. The operating condition of this intersection would remain at LOS C with the completion of the North Residential Phase and West Residential Phase.

Henderson Boulevard/North Street

During afternoon peak-hour periods, this traffic signal-controlled intersection operates at LOS B. The intersection would remain at LOS Bin 2007 with the addition of traffic from the North Residential Phase and West Residential Phase.

By the year 2020, Henderson Boulevard is projected to experience a substantial increase in traffic. The Henderson Boulevard southbound approach has a separate left tum lane; the other approaches do not. The Henderson Boulevard northbound and North Street eastbound approaches have exclusive right tum lanes. With the existing lane configuration, the Henderson Boulevard/North Street intersection would operate at LOSE condition during the afternoon peak-hour in Year 2020. In order to maintain acceptable flows, the intersection would require separate tum lanes for each traffic movement at all four approaches. This improvement, coupled with signal phasing changes, would allow the intersection to operate at LOS C in Year 2020. Although this intersection LOS would be acceptable, southbound and eastbound movements through the intersection would still be operating near capacity. The City's Capital Facilities Plan does not include any provisions for improvements to this intersection.

Henderson Boulevard/Yelm Highway

The City of Tumwater has recently improved Yelm Highway and Cleveland Avenue from South Street to Henderson Boulevard. This project included a traffic signal upgrade at the Henderson Boulevard/Yelm Highway intersection. Based on intersection geometry and signal phasing, the intersection is expected to operate at LOS D in 2007 with and without Briggs Village traffic.

Improvements to Yelm Highway between Henderson Boulevard and Boulevard Road are being designed by Thurston County. These would probably include widening Yelm Highway to four or five lanes with other improvements at the intersection of Henderson Boulevard and Boulevard

Road. The traffic volume projections used by Thurston County include full buildout of Briggs Village. Because a final design is lacking, analysis conducted for this EIS does not include this improvement project and a projected LOS ofF was found for 2020. However, preliminary studies indicate that a LOS D can be maintained by making a variety of improvements. (Shea, 2002.)

Schoo/Access/ssues

The Briggs Village site is within the service areas of Centennial Elementary School, Washington Middle School, and Olympia High School. Because Centennial and Washington are over one mile from the site, pursuant to state law, the District would provide bus transportation from the Village area to these schools. Including bus shelters in the project design would encourage the use of this form of mass transportation.

Olympia High School is less than one mile north of the site. It is likely that students would choose to travel to the high school along either Henderson Boulevard or Pifer Street. There is a marked cross-walk for students walking across North Street at Pifer. The intersection of Henderson Boulevard and North Street is signalized. Due to the off-peak afternoon hour of school traffic, no specific analysis was done regarding vehicle trips to the high school. There is a possibility that the service area boundaries will be adjusted by the District to place the Briggs Village in the Pioneer Elementary School service area. Pioneer is located on the south side of Carlyon Avenue, near Henderson Boulevard. Sidewalks to Pioneer Elementary School are provided along local roadways including Carlyon Avenue and Henderson Boulevard, except that portion bordering the site and one adjacent lot.

An evaluation of the intersection ofNorth Street and Henderson Boulevard intersection determined that the accident rate at this intersection is 0.69. The threshold rate at which safety improvements are generally considered is 1.0; rates lower than 1.0 are not considered to be significant accident locations (The Shea Group, 2002) (see Transportation sections of Chapters 2 and 4).

In addition, new Briggs Village traffic may affect the safety of the existing student pedestrian routes. There is a crosswalk on Henderson Boulevard at Carlyon Avenue for students living on the east side of Henderson Boulevard. This crosswalk is under crossing guard control during the morning and afternoon student arrival/departure times. The Briggs Village North and West Residential Phases alone would add approximately 70 afternoon peak-hour vehicle trips at this crossing.

Henderson Boulevard Functional Classification

The City of Olympia has designated Henderson Boulevard as a two- to three-lane major collector roadway. The analysis prepared for the Briggs Village development does not indicate the need to redesignate the roadway or to increase the width to accommodate two through lanes in each direction beyond the Briggs development. The road widening proposed for Henderson Boulevard is within the Briggs Village project frontage and is specific to improving the function and safety of the intersections that will serve the project. All of the proposed street

improvements to Henderson Boulevard can be accomplished within the right of way along the Briggs Village without encroaching or impacting adjacent properties.

Site Access and New Intersection Analyses

Five access points are proposed onto Henderson Boulevard and three onto Yelm Highway. Traffic operations are analyzed for site driveways for the North Residential Phase and the West Residential Phase in Year 2007 and for all site driveways in Year 2020. The results are shown in Table 4-7. Driveway locations are shown by number on Figure 4-10.

Table 4-7. PM Peak 2-Hour Average
Level of Service Summary – Site Driveways

Access Point Number (Phase Constructed)	Major Street	Projected 2007 Conditions W/Nortb Res. Phase LOS (Delay)[1]	Projected 2007 Conditions W/North and West Res Phase LOS (Delay)[1]	Projected 2020 Conditions Full-Build LOS (Delay)[1]
1 (North Res. Phase)_	Henderson Blvd	C(18) -- A(l)	C(l8) -- A(l)	E(36) -- A(l)
2 (North Res. Phase)	Henderson Blvd	C(15) -- A(l)	C(16) -- A(l)	D(26) -- A(l)
3 (Central Res. Phase)	Henderson Blvd			F(83) -- A(5) *C(20i*
4 (Village Center Phase)	Henderson Blvd			E(35) -- A(l)
5 (Village Center Phase)	Henderson Blvd			F(68) -- A(5) B(17)[2]
6 (West Res. Phase)	Yelm Highway		D(35)/A(2)	F(80) -- A(2)
7 (West Res. Phase)	Yelm Highway		C(22)/A(l)	F(58) -- A(3)

1 LOS and delay, in seconds, provided for each of the minor street left-turn-- intersection average.
2 LOS reflects traffic operations with signalization of the driveway.

Access 1 -Northerly Street of North Residential Phase at Henderson Boulevard

When completed as part of the North Residential Phase, this access would be a stop sign-controlled "tee" intersection. The north approach on Henderson Boulevard would provide a shared through right lane; the south approach would have separate left-tum and through lanes. The minor street west approach would have separate right-tum and left-tum lanes. On completion of the North Residential Phase in 2007, the intersection would operate at LOS C condition during the afternoon peak period. The intersection would degrade to LOS E condition by Year 2020.

Access 2 – Southerly Street of North Residential Phase at Henderson Boulevard

This intersection would operate as a stop sign-controlled "tee" intersection. The north approach on Henderson Boulevard would provide a single shared through right lane; the south approach would have an exclusive left-tum lane and two exclusive through lanes. Between Driveways 1

and 2, northbound Henderson Boulevard would narrow from two through lanes to one through lane. During the p.m. peak period, the intersection would operate at LOS C condition upon completion of the North Residential Phase in 2007, declining to LOS D condition at full buildout in 2020.

Access *3 - Briggs Boulevard of Central Residential Phase at Henderson Boulevard*

Briggs Boulevard would operate as a four-leg intersection providing access to residential and commercial areas west of Henderson Boulevard and to the Arboretum east of Henderson Boulevard. The east and west approaches would have exclusive left-tum lanes and shared through right lanes. The north and south approaches would have exclusive left-tum lanes, exclusive through lanes, and shared through right lanes.

Under stop sign control, the intersection would operate at LOS F condition for the west approach left-tum and LOSE for the east approach left-tum movement for projected p.m. peak period in Year 2020. The overall intersection would operate at LOS A. It is anticipated that signal control would be necessary when the Village Center Phase is implemented (The Shea Group, 2001). With signalization, it is projected that traffic would operate at LOS C for 2020 conditions.

Access *4 - North Driveways of Village Center and East Residential* Phases *at Henderson Boulevard*

These private driveways would create a four-leg intersection providing access to the Town Square commercial area on the west side of Henderson Boulevard and to the housing on the east side. The north and south approaches on Henderson Boulevard would have exclusive left-tum lanes, exclusive through lanes, and shared through right lanes. The east and west approaches would have exclusive left-tum lanes and shared through right lanes. The intersection would have stop sign control for the east-west minor street approaches. During the projected 2020 afternoon peak period, the intersection would operate at LOS A condition. However, the primary left-tum movement would be at LOS E.

Access *5 - South Driveway of Village Center Phase at Henderson Boulevard*

This access point would operate as a "tee" intersection and the primary entrance to the grocery proposed as part of the Village Center Phase. When this phase is completed, the existing YMCA driveway to Henderson would be closed and all vehicles would use this new driveway and Briggs Boulevard access the YMCA. The north approach would have an exclusive right-tum lane and two through lanes. The south approach would have an exclusive left-tum lane and two through lanes. The west approach would have separate right-tum and left-tum lanes. This intersection is proposed to operate under traffic signal control. With stop sign control it would have a major left-tum LOS ofF, and an overall LOS of A. Under signalization control, the intersection would operate at LOS B condition during p.m. peak period conditions in 2020.

Access 6 - *Westerly Street of West Residential Phase at Yelm Highway*

This location currently is a "tee" intersection providing access to The Farm, a residential area south of Yelm Highway. The proposed new street would be constructed as a north approach at the Palomino Drive intersection. Upon completion of the West Residential Phase, the intersection would operate under minor street stop sign control. The north approach would have an exclusive left-tum lane and a shared through right lane. The east and west approaches would have exclusive left-tum lanes, exclusive through lanes, and shared through right lanes. The intersection's left-tum would operate at LOS D condition if the West Residential Phase was completed in 2007. By 2020, the intersection is expected to operate at LOS F for the north and south approach left-tum movements. However, the overall intersection would operate at LOS A condition with no disruption to traffic on Yelm Highway.

Access 7 - *Briggs Boulevard of West Residential Phase at Yelm Highway*

This new intersection would be at the current entrance to the YMCA from Yelm Highway. Following completion of the West Residential Phase, this would operate as a "tee" intersection with stop sign control for the north approach. The north approach would have separate right-tum and left-tum lanes. The west approach on Yelm Highway would have an exclusive left-tum lane, and two through lanes. The east approach on Yelm Highway would have an exclusive through lane and a shared through right lane. If the West Residential Phase is completed by 2007, the intersection would operate at LOS A, with a left-tum LOS of D. By 2020, the intersection would operate at LOS F for the Briggs Boulevard left-tum and LOS A for the intersection average.

Driveway (8) to East Residential Phase at Yelm Highway

In addition to the driveways analyzed above, a minor driveway providing access to the senior housing in the East Residential Phase from Yelm Highway is also proposed. It is projected to be a full-access driveway, but access may be limited depending on the ultimate design of the Yelm Highway corridor east of Henderson Boulevard. Lacking that design, this driveway has not received detailed analysis.

Trip Generation Comparison

For comparison, trip-generation estimates have been prepared for single-family homes at a density of five units per acre and a mix of 50 percent single-family residential use and 50 percent multi-family residential use at seven units per acre. For each scenario, the building densities were applied to the 104.5 developable acres on the 137-acre Briggs Village site. No reductions were used for pass-by trips or mixed-use trips.

Both residential scenarios would probably generate less trips than the Briggs Village proposal. This is to be expected because of the commercial component of the Briggs Village proposal. Table 4-8 shows a comparison of estimated trip generation (PM Peak Hour) of these two residential scenarios with the Briggs Village proposal. A comparison of trip distribution for the two residential-only scenarios and the Briggs Village proposal is shown in Figure 4-14.

Table 4-8. Trip Generation Comparison PM Peak Hour

Land-use Alternative	Size	Total Trips	Inbound	Outbound
Single-Family Residences	522 Homes	527	337	190
Single- and Multi-Family Residences	366 Homes 366 Apartments	582	379	203
'Briggs Village' proposal	Mixed (see Appendix A)	1,082	548	534

Figure 4-15 shows projected Year 2020 traffic volumes for the two residential-only scenarios and the Briggs Village proposal. The figure and table assume full buildout conditions for the Briggs Village proposal. As shown, the comparative increase in trip generation and distribution associated with the Briggs Village proposal at full buildout in Year 2020 is not of a magnitude to require substantial transportation improvements beyond those projected under residential-only development scenarios (The Shea Group, 2002).

In addition, the residential scenarios would result in different traffic characteristics. Differences that could be expected include:

- Typically, residential areas exhibit a morning peak when commuters exit a development and an evening peak when commuters return to their homes. Thus the residential scenarios would have more traffic in one direction during peak hours than the mixed-use proposal.

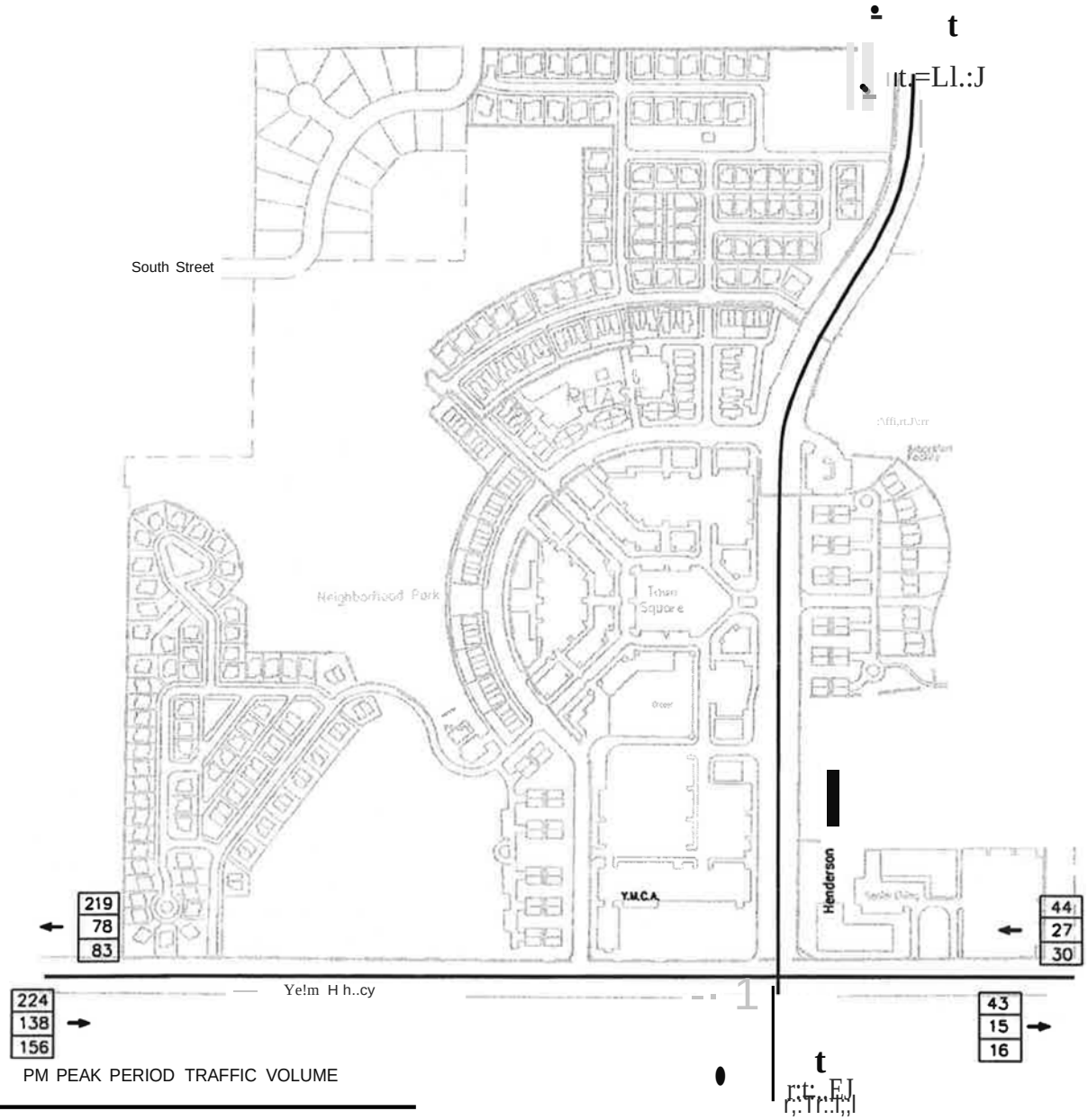
- Trip lengths from residential developments tend to be greater than from retail developments. With residential-only scenarios, the site would tend to generate trips of greater length and duration over a larger area of the region's road system.

Cumulative Impacts

There are several roadway improvements in the area that have recently been completed or in the planning phases that will accommodate overall traffic growth, including traffic generated by Briggs Village. These include widening of Cleveland Avenue and Yelm Highway from South Street to Henderson Boulevard (completed 2001); widening of Henderson Boulevard from Yelm Highway to Pioneer Park (completed 2002); and widening of Yelm Highway from Henderson Boulevard to Boulevard Road (only design and right-of-way acquisition funded).

The contribution of Briggs Village full buildout traffic to traffic volumes and operations in this area has been emphasized in traffic studies conducted for the project. TRPC's regional traffic model was used to develop forecasts of traffic volumes and conditions in the area, incorporating existing traffic conditions, existing and future land uses, population trends, projected transit ridership, and TDM strategies. Using the TRPC model, levels-of-service (LOSs) were projected for principal intersections in the vicinity of the project for Years 2007 and 2020, both cumulatively with and without Briggs Village. The results are shown in Tables 4-6 and 4-7.

As indicated, traffic congestion at area intersections would degrade differently at each location. In particular, absent improvements or mitigation, by 2020 certain traffic movements at the Henderson/I-S interchange and Henderson/Eskridge, Henderson/Carlyon, Capital/Custer,



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SITE-GENERA TEO TRA IC VOLUME COMPARISON
FULL PROJECT DEVELOPMENT

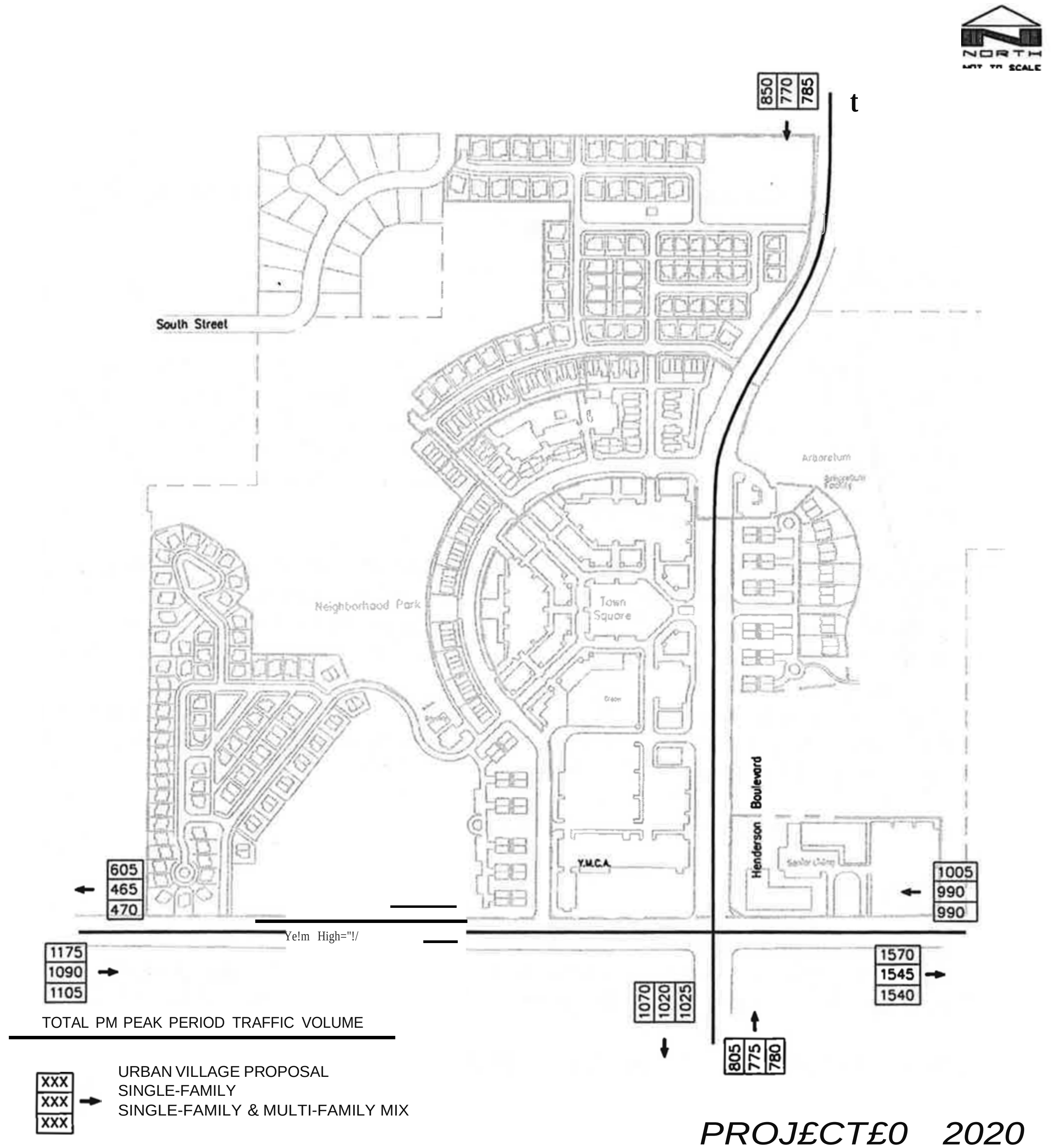
1/.1
ADOLF SON

NORTH
No Scale

File name: 99008Shea18.dwg
Date: 11/29/2001 nls
Revised: 7/15/2002 nls

SOURCE: Briggs Village Traffic Impact Analysis, The Shea Group, 2001.

FIGURE 4-14.
SITE-GENERATED TRAFFIC VOLUME COMPARISON
FULL PROJECT DEVELOPMENT
BRIGGS URBAN VILLAGE MASTER PLAN EIS
OLYMPIA, WASHINGTON



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PROJ£CT£0 2020
TRAFFIC VOLUM£ COMPARISON
TOTAL TRAFFIC ASSIGNMENT

NORTH
No Scale

File name: 99008Shea19.dwg
Date: 11/29/2001 nls
Revised: 7/1512002 nls

SOURCE: Briggs Village Traffic Impact Analysis,
The Shea Group, 2001.

ADOLFSON

FIGURE 4-15.
PROJECTED 2020 TRAFFIC VOLUME COMPARISON
TOTAL TRAFFIC ASSIGNMENT
BRIGGS URBAN VILLAGE MASTER PLAN EIS
OLYMPIA, WASHINGTON

Henderson/North, and Yelm/Henderson intersections will fall below minimum level-of-service standards. In addition, certain movements at some of the new intersections will be below Level of Service D unless traffic signals are installed.

Mitigation Measures

As identified below, mitigation measures related to traffic may apply to the entire project, to every phase, or only to a specific phase.

Project Design

- Henderson Boulevard. Henderson Boulevard would be widened from the north property line to Yelm Highway. The roadway would be widened to three lanes from the north property boundary to near Briggs Boulevard and expand to five lanes from near Briggs Boulevard south to Yelm Highway. A center tum lane would be provided that would allow left-tum channelization at proposed driveway locations. Bicycle lanes, sidewalks, and street lighting would be provided on both sides of the street. All roadway improvements would be constructed to City of Olympia standards.

- Internal Roadways. A network of internal streets would be constructed by the applicant to provide access to single- and multi-family residences, offices, retail establishments, and parks and common areas. Sidewalks and street lighting would be provided. Internal roadways and associated improvements would be constructed to City of Olympia standards.

- YMCA Driveway (Henderson Boulevard). In order to maintain traffic flows on Henderson Boulevard and to provide safer ingress/egress, the YMCA driveway on Henderson Boulevard would be closed when the West Residential Phase is completed.

- At least two bus stops would be added on Henderson Boulevard.

Regulatory Requirements

- Transportation Impact Fees. The City of Olympia will require payment of Transportation Impact Fees prior to issuance of each building permit in the Briggs Village. Fees will be based upon the Olympia Transportation Impact Fee Rate Schedule. See OMC 15.16.040.

- Frontage Improvements. As each phase of the project is constructed, improvements to adjacent Olympia streets is required. *See Olympia Development Guidelines and Public Works Standards,* Chapter 2.

Other Possible Mitigation Measures

- Henderson Boulevard- 1-5. Require installation of a roundabout (or traffic signal) at the intersection of Henderson Boulevard/!-5 northbound off-ramp junction by the Year 2007. (This improvement may be constructed in the interim in association with a different development.)

- Henderson Boulevard / Eskridge Street. Require installation of a traffic signal at the intersection of Henderson Boulevard and Eskridge Street by the Year 2007.

- Henderson Boulevard/North Street. Require geometric improvements, including separate left-tum lanes for each traffic movement at all four approaches, coupled with signal phasing changes as necessary and timely to maintain a Level of Service D.

- Yelm Highway / Henderson Boulevard. Require design and construction of intersection improvements as necessary and timely to maintain a Level of Service D.

- Capital Boulevard/Custer Way/Cleveland Avenue. Require restriping of Custer Way, elimination of the protected left-tum lane phase for the north-south left turns from Capital Boulevard, and coordination of this traffic signal with the Custer Way/Cleveland Avenue signal.

- Henderson Boulevard/ Airdustrial Way. Require construction of improvements as designated by Thurston County or payment of a proportional share mitigation fee.

- YelmHighway widening from Henderson Boulevard to Rich Road (county project). Require construction of improvements as designated by Thurston County or payment of a proportional share mitigation fee.

- Henderson crossing at Carlyon. Require installation of a traffic signal and/or improvements to Henderson Boulevard pedestrian crossing warning devices.

- North Street crossing at Henderson Boulevard. Upon any future change by the school district of boundaries that result in the Briggs Village being included in the Pioneer Elementary School service are1:1, require that thereafter any preliminary approval of any subdivision plats shall be subject to improvement of this crossing as necessary to achieve a safe, non-hazardous walking route for elementary school students walking to and from Pioneer. (See RCW 58.17.110.)

- North Street crossing at Pifer Street. Require installation of a marked crossing as necessary to achieve a safe, non-hazardous walking route for high school students walking to and from Olympia High School.

- Bus Service. Install bus shelters at locations designated by the Olympia School District and Intercity Transit.

- Central Residential Phase. Require signalization of the proposed new Central Residential Phase street (Briggs Boulevard) intersection at Henderson Boulevard.

- Village Center Phase. Require signalization of the proposed new north driveway of the Village Center Phase at Henderson Boulevard.

- Village Center Phase. Require signalization of the proposed new south driveway of the Village Center Phase at Henderson Boulevard.

- Village Center Phase. Require signalization of the proposed new Central Residential Phase street intersection at Henderson Boulevard.

- West Residential Phase. Require signalization of the proposed new easterly West Residential Phase street (Briggs Boulevard) intersection at Yelm Highway.

- West Residential Phase. Require signalization of the proposed new westerly West Residential Phase street intersection at Yelm Highway.

- Future Traffic Impact Analyses. Analyses of traffic impacts in this EIS have focused on the North Residential Phase, the West Residential Phase, and full buildout conditions. Prior to initial construction, projected traffic impacts of a specific phase would be re-examined with respect to the current roadway network and operating conditions. This analysis would include cumulative impacts of Briggs Village phases completed to that point in time.

- Transit. Require provision of accessibility for paratransit at the senior living center and at bus stops throughout the Village, in compliance with ADA regulations.

PUBLIC UTILITIES

Impacts from Full Buildout

Wastewater

Sanitary Sewer Flows. Projected wastewater flows for Briggs Village are shown in Table 4-9 for full buildout by phase, type of unit, and type of commercial facility. Flows are based on generally accepted rates for residential units and commercial establishments.

As part of regional wastewater planning, the LOTI Wastewater Management Partnership conducted detailed population studies to provide the basis for design of new and expanded wastewater facilities. Population in the City of Olympia, including the Urban Growth Area (UGA), is projected to increase from 51,670 in 2000 to 75,155 in 2020, an increase of 46 percent (LOTT Wastewater Management Partnership, 1998). Briggs Village would consist of 810 housing units with a projected population at full buildout of approximately 1,450. The 1,450 people expected to reside in Briggs Village represents approximately 6 percent of the population growth expected over the period.

Average annual wastewater flow for the City of Olympia, including the UGA, is projected to increase from 1.46 million gallons per day in 1998 to 4.32 million gallons per day in 2020, an increase of 296 percent (LOTT Wastewater Management Partnership, 1998). This projection assumes a medium growth scenario with all new residences connected to sewers, gradual elimination of current on-site users, implementation of water conservation measures, and rehabilitation of deteriorated sewer lines. At full buildout, the sanitary sewer flows from Briggs

Village are projected to be 191,661 gallons per day. This represents approximately 7 percent of the increase in sanitary sewer flows anticipated for the City of Olympia (includes UGA) over the period 1998 through 2020.

LOTT's "Highly Managed Alternative" addresses wastewater treatment and disposal needs for four Resource Management Basins (RMBs): Budd Inlet, Hawks Prairie, Chambers Prairie, and Airport/West. The Briggs Village site is located in the Airport!West RMB. Current plans call for construction of satellite reclamation plants in each of these RMBs. The Capital Improvement Program (CIP) presented in the *LOTT Wastewater Resource Management Plan* (LOTT Wastewater Management Partnership, 1998) indicates construction of satellite reclamation plants in the Hawks Prairie RMB in 2004 and in the Airport/West RMB in 2008.

Table 4-9. Projected Sanitary Sewer Flows[1], Briggs Village

Phase	Unit Type	No. Units	Household Size	Gallons per Day	Subtotal
North Residential Phase	Single Family Detached	75	2.60	14,859	
	Townhouses	17	1.95	2,526	
	Community Center? Commons building}	1		450	17,835
West Residential Phase	Single Family Detached	58	2.60	11,491	
	Townhouses	58	1.95	8,618	
	Duplexes	10	1.93	1,471	
	Apartments	72	1.66	9,107	
	Day Care Center-3	1		1,200	31,887
Central Residential Phase	Townhouses	25	1.95	3,715	
	Apartments	72	1.66	9,107	12,822
Village Center Phase	Commercial (224,100 sf)[4]			56,025	
	Restaurant (3 @ 40 seats each)[5]			6,000	
	Laundromat: (20 machines)[6]			10,000	
	Existing YMCA			7,850	
	Time Square Units	140	1.66	17,709	97,584
East Residential Phase	Single Family Detached	9	2.60	1,783	
	Duplexes	14	1.93	2,060	
	Apartments	60	1.66	7,590	
	Assisted Living Units[7] (Senior Housing)	200		20,000	
	Arboretum			100	31,533
	TOTAL				191,661

Note: [1] Source: KPFF Consulting Engineers (2000).
[2] Assumes: 50 visitors/day@ 9 gallons/person/day.
[3] Assumes 50 children plus 10 staff @ 20 gallons/person/day.
[4] Assumes 250 gpd/1,000 sq. ft.
[5] Assumes 50 gpd/seat.
[6] Assumes 500 gpd/machine.
[7] Assumes 100 gpd/unit.

Ultimately, all Briggs Village wastewater flows would be treated at the new Airport/West satellite reclamation plant. In the interim, Briggs Village wastewater flows would be incrementally added to the existing collection system and treated at the Budd Inlet Treatment

Plant. The *LOTT Wastewater Resource Management Plan* (LOTT Wastewater Management Partnership, 1998) has been designed to incrementally add treatment capacity to the regional system to serve expected growth in the long term while implementing measures (e.g. conservation, collection system improvements, flow management programs) that accommodate short-term population growth. Adequate wastewater collection and treatment capacity exists to serve Briggs Village (Hill, personal communication, 2000). As long as implementation of new regional treatment capacity progresses as planned, no adverse impacts on the existing wastewater collection and treatment facilities are anticipated.

Goals and Policies. City of Olympia goals and policies for wastewater are set forth in the *City of Olympia Sewage Disposal Master Plan and Final Environmental Impact Statement* (City of Olympia, 1997) and the *Comprehensive Plan for Olympia and the Olympia Growth Area* (City of Olympia, 1994 as updated). These include:

PF 1.1 Infill development shall be encouraged to ensure that urban land densities are achieved.

PF 2.2 Utility services should be paid for by users.

PF 9.3 All future urban growth shall be developed on sewers.

PF 11.1 Encourage infill development and the phased expansion within the UGA, where practical of the area served, since compact systems are less expensive to build and maintain.

PF 11.5 Generally, new sewer line and pump station construction is to be privately financed by the users of the facilities. When the City contributes to the financing of new sewer collection facilities, future users of the new facilities will repay the City through general facilities charges or latecomer fees.

PF 13.1 New development should pay its fair share costs of providing sewer service to new development through the general facilities or other charges.

The proposed Briggs Village development site lies within the City of Olympia's Wastewater Service Area Boundary. In accordance with City ordinances, the Briggs Village development will be required to pay its share of costs involved in extending wastewater service to the site.

Design Considerations. The sewer system would be designed to utilize gravity sewers to the maximum extent possible and to minimize the use of lift stations and forcemains. Flows would be conveyed to a new 10-inch-diameter trunk line in Henderson Boulevard that would connect to an existing 10-inch sewer main north of the North Residential Phase boundary. This trunk line was identified for future construction in the *City of Olympia Sewage Disposal Master Plan* (City of Olympia, 1997). Consistent with this plan, the capacity of the trunk line is designed to be 2.1 cubic feet per second (cfs). Based on a peaking factor of 3.0, maximum flows are expected to be 1.93 cfs.

Water

Water Use. Projected water use for Briggs Village is shown in Table 4-10 for full buildout by phase, type of unit, and type of commercial facility. Usage figures are based on generally accepted usage rates for residential units and commercial establishments.

According to the *City of Olympia Water Comprehensive Plan* (City of Olympia, 1996), the City can expect an overall population increase within its service area boundary (same as GMA Boundary) from 49,900 in 1995 to an estimated 74,900 in 2015, a 48 percent increase. Much of this growth is expected to occur in Zones 1 and 5, the eastern and western portions of the city, respectively. The Briggs Village site lies adjacent to Zones 1 and 1A. The combined population of Zones 1 and 1A is expected to increase from 20,500 in 1995 to 32,400 in 2015, a 58 percent increase.

Table 4-10. Projected Water Use[1], Briggs Village, Olympia, Washington

Phase	Unit Type	No. Units	Household Size	Use	Subtotal
North Residential Phase	Single Family Detached	75	2.60	17,745	
	Townhouses	17	1.95	3,017	
	Community Center (Commons)	1		2,000	22,762
West Residential Phase	Single Family Detached	58	2.60	13,723	
	Townhouses	58	1.95	10,292	
	Duplexes	10	1.93	1,756	
	Apartments	72	1.66	10,876	
	Day Care Center	1		1,500	38,147
Central Residential Phase	Townhouses	25	1.95	4,436	
	Apartments	72	1.66	10,876	15,312
Village Center Phase	Commercial (224,100 sf)[4]			66,670	
	Restaurant (3 @ 40 seats each)[5]			7,140	
	Laundromat: (20 machines)[6]			11,900	
	Existing YMCA[7]			--	
	Town Square	140	1.66	21,148	106,858
East Residential Phase	Single Family Detached	9	2.60	2,129	
	Duplexes	14	1.93	2,459	
	Apartments	60		9,032	
	Assisted Living Units[8] sr. housing	200		23,800	
	Arboretum			400	3 820
	TOTAL				220 899

Note: [1] Source: KPFF Consulting Engineers (2000).
[2] Assumes: 200 visitors/day @ 10 gallons/person/day.
[3] Assumes 50 children plus 10 staff @ 25 gallons/person/day.
[4] Assumes 250 gpd/1,000 sf.
[5] Assumes 50 gpd/seat.
[6] Assumes 500 gpd/machine.
[7] YMCA does not represent new water demand.
[8] Assumes 100 gpd/unit.

Overall water system demand (average day) is projected to increase from 9.26 million gallons per day (mgd) in 1995 to 11.95 mgd in 2015, a 29 percent increase (City of Olympia, 1996).

Combined water system demand (average day) for Zones 1 and 1A is projected to increase from 3.04 mgd in 1995 to 4.64 mgd in 2015, an increase of 53 percent.

As proposed, Briggs Village would consist of 810 housing units with a project population at full buildout of approximately 1,450. The 1,450 people expected to reside in Briggs Village represents approximately 6 percent of the overall population growth expected over the 20-year period ending in 2015. The Briggs Village population represents approximately 12 percent of the growth expected in Zones 1 and 1A over the same 20-year period ending in 2015.

Projected water use at full buildout is estimated to be 221,000 gallons per day (gpd) (see Table 4-10). Projected water use at Briggs Village is approximately 8.2 percent of the increase in water use projected for the City as a whole over the 20-year period ending in 2015. Projected water use at Briggs Village at full buildout represents approximately 14 percent of the increase in water use expected in Zones 1 and 1A over the same 20-year period.

Water Supply. Provision for anticipated population growth is an integral part of the City of Olympia's planning efforts for water supply and distribution. Detailed information on planning efforts are contained in the *City of Olympia Water Comprehensive Plan* (City of Olympia, 1996). With regard to Zones 1 and 1A, the *City of Olympia Water Comprehensive Plan* (City of Olympia, 1996) states that "The large percentage of developable land and the expected growth rate of this area will increase its water service requirements significantly. Consequently, Zones 1 and 1A will require water supply and distribution improvements to keep pace with future growth."

In order to accommodate population growth, the City has developed a plan for new sources that includes: (a) implementation of a conservation program; (b) development of new wells within the distribution system; (c) development of new wells upgradient from McAllister Springs; and (d) development of regional sources in cooperation with other municipalities (City of Olympia, 1996). The City is actively implementing conservation measures, making improvements to existing sources and distribution systems, and developing new and enhanced sources.

Future development and provision of utilities, including water, to the Briggs Village site has been considered by the City over the course of establishing the Urban Growth Boundary and approval of the urban village concept for the site. To the degree that the City continues to implement conservation measures and improvements to the water system and develops new sources of supply, Briggs Village is not likely to result in unanticipated or significant adverse impacts related to water.

Goals and Policies. City of Olympia goals and policies for water are articulated in the *City of Olympia Water Comprehensive Plan* (City of Olympia, 1996) and the *Comprehensive Plan for Olympia and the Olympia Growth Area* (City of Olympia, 1994 as updated; including:

PF 2.2 Utility services should be paid for by users.

PF 8.1 In general, the costs of new water mains and related facilities should be charged to the new developments requiring them.

The proposed Briggs Village lies within the City of Olympia's Water Service Area Boundary. In accordance with City ordinances, the Briggs Village development will be required to pay its share of costs involved in extending water service to the site.

Design Considerations. The design for water service is to extend the existing City of Olympia system in phases using loops to meet fire flow and pressure requirements. Residential and commercial fire-flow criteria were obtained from the City of Olympia Fire Department (KPFF, 2000). Proposed water system improvements were incorporated into the City's water system model to compare available fire flow with required fire flow. Based on the model results, extension of the City's 12-inch main located in Yelm Highway between Henderson Boulevard and Delta Lane is **not** proposed (KPFF, 2000).

Fire hydrants for all phases would be installed in accordance with fire code requirements. Commercial buildings would include fire suppression systems in accordance with applicable City requirements.

Overall, it is estimated that 24.5 acres of the project site would need irrigation. This would include the Arboretum, the public neighborhood park, planter strips, common areas, residential properties, and the Town Square landscaping. It is estimated that irrigation requirements would be 1 inch per week over the June 1 to October 1 irrigation season. Assuming a 10 percent contingency, this would require a water right of 40 acre-feet per year. (The Briggs Nursery currently has water rights of 400 acre-feet per year). Operation and maintenance of the well and irrigation system would be the responsibility of the Village Corporation.

Storm Drainage

The site includes six natural depressions also known as "kettles." These are referred to as North Kettle, Northeast Kettle, Southeast Kettle, South Kettle, Central Kettle, and Northwest Kettle (see Figure 2-1) and define six individual drainage basins on the site.

The overall approach would be to direct most runoff from the developed site to the South Kettle. As shown in Table 4-11, watersheds on the site would be modified. The South Kettle watershed would double in area while the Central Kettle watershed would be reduced by half. Other kettle watersheds would decrease slightly or remain the same in area.

The South Kettle is the largest and deepest kettle on the site. The storm drainage treatment facility proposed for this kettle would consist of a three-cell wet pond and an infiltration area (see Figure 4-1). The South Kettle would collect runoff from a large proportion of the site, treat the runoff in the wet pond system, and then infiltrate the runoff into ground water.

Use of the South Kettle as a storm water detention facility was approved by the U.S. Army Corps of Engineers, Seattle District (Corps), in a letter of December 17, 1997. Impacts to 1.5 acres of wetlands was authorized under Nationwide Permit (NWP) 26 contingent on approval of the proposed mitigation and monitoring plan (see Appendix I). The Corps subsequently approved the mitigation and monitoring plan involving modifications to the Central Kettle in a letter of May 10, 1999. The NWP 26 was extended by the Corps to February 11,2002. A Corps letter of

March 13, 2000 states: "...if the project is under construction, or under contract to construct before the expiration date, then the NWP 26 authorization will remain in effect for 12 additional months" (see Appendix H). Use of the South Kettle for a storm water detention facility and mitigation proposed for the Central Kettle would also require City of Olympia approval and Ecology approvals under the Clean Water Act, Section 401 and Coastal Zone Management Consistency certification. Applications and supporting documentation were sent to Ecology in September 1999.

Table 4-11. Storm Drainage Existing and Proposed

Basin	Existing Watershed Area	Developed Watershed area	Difference	Roolare.a ToDell
	Acres	Acres	Acres	Acres
South Kettle*	30.4	62.0	31.6	9.2
Southeast Kettle	17.5	14.7	-2.8	2.3
Northeast Kettle	13.9	12.3	-1.6	0.9
North Kettle	7.2	8.2	1.0	1.2
Northwest Kettle	14.8	13.0	-1.8	2.3
Central Kettle	47.5	21.1	-26.4	1.0
Ward Lake	5.7	5.7	0.0	0.0
TOTAL	137.0	137.0	0.0	16.9

*Includes YMCA

Projected increased water levels during storm events were calculated for 2-year, 10-year, and 100-year storms for the South Kettle and Central Kettles was evaluated (KPFF, 2000). See Table 4-12. These projections assume full buildout, both in conditions where infiltration occurs through the kettle bottom and where no infiltration occurs.

Table 4-12. Kettle Characteristics During Storm Events [1]
South and Central Kettle, Briggs Village Site

Kettle	Elevations		Projected Water Elevations w/Storm Events						Projected elevation[2] of closest residence	Kettle Capacity[4]	CQmment
			W/Infiltration[3]			W/0 Infiltration[3]					
	Stimding Wate	Top of Ketde[1]	2 yr	10 yr	lOOyr	2yr	10 yr	lOOyr			
South	124	160	128.0	130.3	132.8	128.2	130.7	133.4	180	145.1	Six 100-_)'!_storms
Central	126	134	127.5	128.4	129.5	127.7	128.7	129.9	150	35.15	3 days 100-yr storms

Notes:
[1] Table derived from KPFF (2000)
[2] Datum: mean sea level (msl); measured in December 1999.
[3] Assumes infiltration of 1.5 inches/hour; no evaporation.
[4] Acre feet.

Assuming no infiltration occurs through the South Kettle bottom, KPFF projects that water levels would increase from 124 feet to elevations of 128.2, 130.7, and 133.4 feet for 2-year, 10-year,

and 100-year storms, respectively. Infiltration through the kettle bottom changes the results only slightly. Water levels would increase from 124 feet to elevations of 128.0, 130.3, and 132.8 feet for 2-year, 10-year, and 100-year storms, respectively. The kettle has a volume of approximately 145 acre-feet between 124 feet and 160 feet, the elevation of the top of the kettle. This volume represents a capacity to store runoff from six separate 100-year storm without overflowing (KPFF, 2000).

For the Central Kettle, assuming no infiltration occurs, water levels would increase from 126 feet to elevations of 127.7, 128.7, and 129.9 feet for 2-year, 10-year, and 100-year storms, respectively. Infiltration through the kettle bottom changes the results only slightly. Water levels would increase from 126 feet to elevations of 127.5, 128.4, and 129.5 feet for 2-year, 10-year, and 100-year storms, respectively. The kettle has a volume of approximately 35 acre-feet between 126 feet and 134 feet, the elevation of the top of the kettle. This volume represents a capacity to store runoff from three separate 100-year storms without overflowing (KPFF, 2000). If water were to rise above the 134-foot elevation, it would overtop the dike and combine with waters of the larger kettle to the west off of the site.

Reduction in the size of the Central Kettle watershed and the cessation of irrigation return flows from nursery operations would eliminate much of the direct discharge of storm runoff to the kettle. A portion of runoff from an area immediately southwest of the Central Kettle would be released into ground water and would be treated in a compost filter prior to discharge to a level spreader located just outside the kettle wetland buffer. The spreader would encourage infiltration of runoff rather than discharge to the kettle wetland.

The stormwater treatment and infiltration facility in the South Kettle has been designed with the understanding that the loss of wetland area in the South Kettle would be mitigated through enhancement measures in the Central Kettle. Stormwater would be treated through a three-cell system in the South Kettle and compost filters in other kettles to maintain water quality.

Runoff discharged to all but the South Kettle and Central Kettle would be conveyed in underground lines to compost filters located at the upper margin of each kettle wetland buffer. Flows from the compost filters would discharge into rock-lined swales that convey flows through the buffers to the kettle wetland.

Because infiltration rates in the Northeast Kettle are quite low, runoff accumulates within the kettle during periods of heavy runoff and discharges from the kettle into Ward Lake. This hydraulic connection would be maintained as part of the project because this flow is considered an important source ofwater to Ward Lake (KPFF, 2000).

Roof runoff from commercial/retail areas would be directed to the South Kettle through a separate bypass conveyance line and discharged directly to the infiltration area. Treatment for roof runoff would not be necessary since this runoff does not include contaminants from vehicular traffic. Roof runoff from residential areas would be discharged to individual dry wells.

Goals and Policies. The City's goals and policies relating to stormwater management are provided in the *City of Olympia Drainage Design & Erosion Control Manual* (City of Olympia,

1994b) and the *Comprehensive Plan for Olympia and the Olympia Growth Area* (City of Olympia, 1994 as updated), including:

Goal PF 14	To minimize flooding, surface and ground water degradation, and aquatic habitat loss associated with stormwater runoff.
Policy PF 16.2	Olympia shall maintain and implement a Drainage Design and Erosion Control Manual and ordinance that addresses the following elements: a. Erosion control. b. The design, operation, and maintenance of storm drainage facilities. c. Best Management Practices (BMPs) for stormwater management. [and] d. Regulations for wetland management.

Gas and Electric Power

Puget Sound Energy's (PSE's) long-range plans call for additional capacity to serve customers along the Yelm Highway corridor from Henderson Boulevard to Ruddell Road. The proposals for Briggs Village, Summerwalk Village, and Horizon Point Village are all drivers for a new substation.

Impacts by Phase

Wastewater

See Table 4-9 for number of units, household size, and expected wastewater flows by phase.

North Residential Phase

During the North Residential Phase, the Henderson Boulevard trunk line would be extended approximately 1,100 feet to an existing 10-inch sewer main north of the phase boundary. Sanitary sewer service for the North Residential Phase would be provided by two separate systems.

The northerly system would consist of approximately 2,400 feet of 8-inch gravity mains down the center of each street, conveying flows to the Henderson Boulevard trunk line. The southerly system would consist of a combination of force main and gravity main. Flows from 14 single-family and 6 townhouse units south and east of the Northeast Kettle would be conveyed by 1,200 feet of gravity main to a small lift station. The lift station would pump flows approximately 200 feet to a force main discharge where it connects to an 8-inch gravity line. This line would convey flows approximately 1,000 feet to a connection with the Henderson Boulevard trunk line.

West Residential Phase

Sanitary service for the West Residential Phase would consist of a combination of gravity main and STEP system (see Chapter 2, Public Utilities, for greater discussion of STEP systems). Approximately 5,300 feet of 8-inch gravity main would serve most of the residences in West Residential Phase. The STEP system would serve ten single-family homes southwest of the

Central Kettle. A STEP system main would convey flows approximately 550 feet to a connection with the 8-inch gravity main. Total wastewater flows from the West Residential Phase residences would be conveyed to the North Residential Phase lift station and subsequently to the Henderson Boulevard trunk line. The North Residential Phase lift station would be upgraded to handle West Residential Phase flows.

Central Residential Phase

For the Central Residential Phase, the Henderson Boulevard trunk line would be extended approximately 450 feet to the south. Most of the residences in the Central Residential Phase would be served by approximately 1,100 feet of 8-inch gravity mains conveying flows to the Henderson Boulevard trunk line. Sanitary flows from the four townhouses nearest the West Residential Phase would be conveyed to a previously constructed 8-inch gravity main and the North Residential Phase lift station.

Village Center Phase

An additionall,400 feet of 10-inch trunk line would be constructed on Henderson Boulevard in the Village Center Phase. Sanitary service to businesses and residences would be provided by approximately 1,100 feet of 8-inch gravity main that conveys flows to the Henderson Boulevard trunk line.

East Residential Phase

A combination of gravity mains and a STEP system would be used in the East Residential Phase. Flows from the Senior Center and some of the apartment housing would be conveyed to the Henderson Boulevard trunk line by gravity mains. Approximately 950 feet of 8-inch STEP main would collect flow from townhouses, apartments, and one existing house near the lake to the Henderson Boulevard trunk line.

Water

North Residential Phase

The water system for the North Residential Phase would consist of a combination of 8-inch, 10-inch, and 12-inch water mains. The 12-inch main would extend from the northwest comer of the North Residential Phase, south around the North Kettle, connecting to a new 12-inch main in Henderson Boulevard. As part of this phase, approximately 600 feet of 12-inch main would be extended south on Henderson Boulevard from the existing 10-inch City of Olympia main. Projected North Residential Phase use of potable water is shown in Table 4-10.

West Residential Phase

West Residential Phase residences would be served by a combination of8-inch and 10-inch water mains. The northern end of the 10-inch line adjacent to the Village Center Phase would connect with the southern end of the North Residential Phase system. This 10-inch line would

extend south along Briggs Boulevard, connecting to the existing 10-inch main that serves the YMCA.

Central Residential Phase

Water service for Central Residential Phase residences would be provided by 8-inch mains. During this phase, the 12-inch water main in Henderson Boulevard would be extended approximately 400 feet to the south. The 8-inch main serving the Central Residential Phase residences would be looped, connecting to the West Residential Phase to the west, the North Residential Phase to the north, and Henderson Boulevard to the east.

Village Center Phase

The water system for the Village Center Phase would consist of 8-inch mains serving multi-family residences and commercial establishments. During this phase, the 12-inch main on Henderson Boulevard would be extended approximately 1,600 feet south where it would connect to the existing 10-inch main that serves the YMCA. Expected potable water use for the Village Center Phase is shown in Table 4-10.

East Residential Phase

Water service for the East Residential Phase would consist of 8-inch mains connecting to the new 12-inch main on Henderson Boulevard at each end of the phase. Water service for the Senior Center would consist of an 8-inch main connecting with 12-inch mains in Henderson Boulevard on the west and Yelm Highway on the south.

Storm Drainage

North Residential Phase

All stormwater runoff within the North Residential Phase would be collected in a closed system, treated in a compost filter, and discharged to appropriate kettles. See Table 4-11 for the North Residential Phase drainage by kettle and drainage area. Compost filters would be located at the margin ofkettle wetland buffers. Runoffleaving the compost filters would discharge into rock-lined swales that would convey flow through the buffer to the wetland. Rock-lined stormwater conveyance channels would be constructed in the Northwest Kettle (1), the North Kettle (2), and the Northeast Kettle (2). All roof runoff from North Residential Phase residences would be discharged to individual dry wells.

Because of the soils under the Northeast Kettle, an impermeable layer exists that limits or possibly prohibits infiltration of stormwater runoff that enters this kettle. Analysis of the capacity and infiltration potential of the Northeast Kettle indicates that the berms on the east side of the kettle are not of sufficient height to detain the 100-year storm at full buildout.

Until the three-cell treatment facility is constructed for the South Kettle (West Residential Phase) (Figures 4-1, 5-2, and 5-3), a temporary treatment and infiltration facility would be used for the

southwest portion of the North Residential Phase. This temporary facility would be designed in accordance with the *Drainage Design and Erosion Control Manual* (City of Olympia, 1994b). The temporary facility would be a two-cell pond providing primary settling. The infiltration pond would be sized for a 25-year event, with an overflow to the Central Kettle. This overflow would use an existing irrigation return flow channel.

West Residential Phase

All stormwater runoff within the West Residential Phase would be collected in closed systems and conveyed to the South Kettle or the Central Kettle. See Table 4-11 for the West Residential Phase drainage by kettle and drainage area. A three-cell treatment facility and infiltration area would be constructed for storm drainage directed to the South Kettle. The cells would be designed as three-stepped pools discharging to an infiltration area immediately northeast of the South Kettle wetland buffer (Figure 4-1). As in the North Residential Phase, roof drainage would be discharged to individual dry wells.

Central Residential Phase

The Central Residential Phase stormwater runoff would be collected and conveyed to the South Kettle and the Northeast Kettle (see Table 4-11). Treatment facilities at the South Kettle and discharge facilities at the Northeast Kettle are as described above for the North Residential Phase and West Residential Phase.

Village Center Phase

Stormwater runoff within Village Center Phase would be collected in closed systems and conveyed to the South Kettle or the Northeast Kettle. See Table 4-11 for the Village Center Phase drainage by kettle and drainage area. Treatment facilities at the South Kettle and discharge facilities at the Northeast Kettle are as described above for the North Residential Phase and West Residential Phase.

Roof runoff from the commercial/retail area would be directed to the South Kettle via a separate bypass conveyance system and discharged directly to the infiltration area without treatment. Treatment of this roof runoff is not required as this runoff is ofhigher quality than that subject to contaminants associated with vehicular traffic.

East Residential Phase

The East Residential Phase stormwater runoff would be collected and conveyed to the Southeast Kettle, the Northeast Kettle, and Ward Lake (see Table 4-11). Treatment facilities at the South Kettle and discharge facilities at the Northeast Kettle are as described above for the North Residential Phase and West Residential Phase. Two rock-lined stormwater conveyance channels would be constructed in the Southeast Kettle wetland buffer.

Cumulative Impacts

Wastewater

Buildout of the project, in conjunction with other ongoing and future residential and commercial development projects in the region, would contribute to increased demand for wastewater service in the project area. This increased demand is accounted for in the comprehensive wastewater planning processes conducted by the LOTI partnership and by each individual jurisdiction in the regton.

Water

Buildout of the project, in conjunction with other ongoing and future residential and commercial development projects in the region, would contribute to increased demand for water service in the project area. This increased demand has been taken into account in the comprehensive water planning process conducted by the City of Olympia.

Storm Drainage

Buildout of the project, in conjunction with other ongoing and future residential and commercial development projects in the region, would contribute to stormwater flows to Ward Lake, the South Kettle, and the Northeast Kettle, all of which receive water from other properties within and outside of Olympia.

Mitigation Measures

Wastewater

Project Design

The collection system would be sized to accommodate sanitary flows from the project and the nine existing residences on the west and south side of Ward Lake.

Regulatory Requirements

All wastewater facilities would be designed in accordance with City of Olympia requirements. (See Olympia Public Works Standards.)

Other Possible Mitigation Measures

- Transfer sewer service for the YMCA from the City of Tumwater collection system to the Henderson Boulevard trunk line and the City of Olympia system. The YMCA lies within the City of Olympia's existing sewer utility service area. The transfer would eliminate the need for a sewer service agreement with the City of Tumwater.

- Schedule YMCA pool draining during off-peak hours (i.e., 11 p.m. to 5 a.m.) in order to minimize potential capacity impacts on the Henderson Boulevard trunk line;

- Extend sanitary sewer service to existing residences along the western side of Ward Lake by providing connections from a STEP system to the Henderson Boulevard trunk line.

Water

Project Design

Briggs Village would retain the right to approximately one-fourth of the total acre-feet per year of existing water rights at the Briggs property to irrigate common areas. The remainder of the existing water rights would be made available to others. The City of Olympia has expressed an interest in the transfer of these water rights.

Regulatory Requirements

- The applicant would be responsible for the extension of the 12-inch main along Henderson Boulevard.

- All water systems must conform with City of Olympia Public Works standards.

Other Possible Mitigation Measures

None identified.

Storm Drainage

Project Design

The Central Kettle would be enhanced to mitigate use of the South Kettle as a storm drainage facility. Enhancement of the Central Kettle is described in the Ward Lake, Wetlands, and Other Surface Waters section of this chapter and in Appendix I, Central Kettle Mitigation Summary.

Regulatory Requirements

- The conceptual storm drainage system must conform to the *Olympia Drainage Design and Erosion Control Manual* (City of Olympia, 1994b).

- Final design of all stormwater systems on the site must be in accordance with the *City of Olympia Drainage Design & Erosion Control Manual* (City of Olympia, 1994b) and any subsequent amendment thereto. Such designs are subject to approval by the City.

Other Possible Mitigation Measures

- As part of development of the North Residential Phase, raise the associated berm(s) to a height sufficient to contain the 100-year storm.

- Install a flow regulator to control discharge to Ward Lake. At present, discharge to Ward Lake occurs through two 8-inch pipes. The flow regulator would be designed to allow any sediments to settle before discharge to Ward Lake.

- Design and install a "contingency stormwater system" sufficient to ensure that Yelm Highway improvements will not be put at risk by South Kettle water levels, that downstream properties will not be damaged by overflow from the Central Kettle, and that the Central Kettle wetland will remain comparable in size and be enhanced as proposed and not be reduced in function and value.

- Add a stormwater treatment system to the South Street stormwater system.

Significant Unavoidable Adverse Impacts

The loss of 1.5 acres of South kettle wetland would contribute to a regional loss of wetlands and their associated functions and values.

PUBLIC SCHOOLS

Olympia School District's student projection methodology results in a projected total of 265 children being added to the public elementary, middle, and high schools as a result of the Briggs Village development (Table 4-13).

Table 4-13. Student Projections for the Briggs Village Development

Phase	Elementary School	Middle School	High School	Total	Students Added Each Year*
North Residential Phase	22	6	14	42	7-11
West Residential Phase	48	15	25	88	15-19
Central Residential Phase	24	8	10	42	8-19
Village Center Phase	35	11	12	58	10-12
East Residential Phase	20	7	8	35	6-10
All phases	149	47	69	265	9-14

*The "students added each year" count assumes that each phase is built in 3 to 5 years and the full project in 18 to 25 years.

In projecting the number of students anticipated as a result of the Briggs Village development, it was assumed that the grade level divisions would remain the same within the Olympia School

District, with elementary schools containing kindergarten through grade 5, middle schools containing grades 6 through 8, and high schools containing grades 9 through 12.

The Briggs Village development includes a number of different housing types that each typically have different number of adults and children. Based on multipliers provided by the Olympia School District, student projections were calculated at 0.237, 0.071, and 0.158 students per single-family home for elementary, middle, and high school ages, respectively. For multi-family homes, student numbers were calculated at 0.248, 0.081, and 0.085 students per unit for elementary, middle, and high school ages, respectively.

Census data for the Olympia area (2000) were used to determine the approximate breakdown of student groups for the Olympia area. These data show that approximately 47 percent of school-age children are elementary age, approximately 22 percent are middle school age, and approximately 31 percent are high school age. The projected numbers of students entering the Olympia School District as a result of the Briggs Village development are distributed in roughly similar percentages.

Because the phased development of this project will cover up to 25 years, a number of factors will influence the actual number of students entering the Olympia School District during and following each phase of construction. These factors include the phasing of unit construction (number and type of unit), the demographic profile of village residents, and housing stock and prices in the Olympia area.

Impacts from Full Buildout

Table 4-13 provides a phase-by-phase breakdown of the anticipated number of students entering the Olympia School District as a result of the Briggs Village development as well as the total number of students anticipated over the 18 to 25 year development period.

The overall impacts to the Olympia School District from the Briggs Village development are not anticipated to be significant given the extended buildout period (up to 25 years) and the phased implementation of the project.

Elementary Schools

The largest influx of students is anticipated to occur with the buildout of the West Residential Phase, with a total of 88 students (refer to Table 4-13). The 48 elementary students anticipated for this phase would likely be introduced over a three- to five-year period.

Centennial currently serves this area of Olympia. According to the Olympia School District's *Capital Facilities Plan 2003-2008,* Centennial Elementary School has capacity for 387 students. (Olympia School District, 2000). This school is currently over capacity.

Olympia School District ml;ly redistrict school boundaries to accommodate Briggs Village students at Pioneer Elementary School (Wolpert, personal communication, 2000), however, proposed redistricting would be dependent upon School Board approval. According to the

Olympia School District's *Capital Facilities Plan 2003-2008,* construction of new classrooms at Pioneer Elementary is dependent upon future enrollment growth within the district's service area, which includes potential development of high-density residential neighborhood centers, neighborhood villages, and urban villages (Olympia School District, 2000). New classroom construction has been funded under 2003 bond authorization.

Middle School

Because Washington Middle School is currently over capacity, portable classrooms have been provided to accommodate extra students. Over the course of the Briggs Village development, a total of 44 middle school students are anticipated to enter the Olympia School District, with the largest number of students, 16, entering the district in the West Residential Phase (see Table 4-13). Students from the Briggs Village development would be added over an 18 to 25 year period. The 2003 bond authorization will increase school capacity to 800 students by adding ten classrooms.

High School

Olympia High School is currently over capacity. The Briggs Village development would add approximately 64 high school students to the Olympia School District over the 18 to 25 year development period. The largest number of students, 24, is anticipated following implementation of the West Residential Phase.

Impacts by Phase

See Table 4-13.

Cumulative Impacts

The population of the City and its Urban Growth Area is projected to increase at an average rate of 1.78 percent per year through 2025 (Thurston Regional Planning Council, 2000). Briggs Village is the largest development currently proposed within the City of Olympia and thus would account for a portion of this increase and would contribute students to the Olympia School District. It is likely that other new developments will be proposed in the Olympia area over the next several years. As noted in the District's Capital Facilities Program, continued expansion of the schools in the vicinity of the Briggs Village will be necessary to accommodate this growth.

Mitigation Measures

Project Design

None identified.

Regulatory Requirements

Payment of impact fees to the Olympia School District for capacity improvements would be . required in accordance with the City's School Impact Fee Schedule (see OMC 15.16.030). These fees are based on the cost of additional student capacity and students anticipated in each type of housing unit. These fees are paid to the City of Olympia and transferred to the Olympia School District on a monthly basis (Wolpert, personal communication, 2000b). These impact fees are used by the District to assist in funding capital improvement projects that may be required to serve new development (Olympia School District, 2000).

Other Possible Mitigation Measures

None identified.

Significant Unavoidable Adverse Impacts

None identified.

CHAPTER 5- VILLAGE MASTER PLAN OPTIONS IMPACTS AND POSSIBLE MITIGATION

INTRODUCTION

A number of options were identified in the EIS scoping process that were of sufficient importance to merit environmental review. Impacts of these options are evaluated in this chapter. Potential mitigation measures are provided where appropriate. Transportation options include: (a) a street connection to Pifer Road -South Street; (b) street connection to Delta Lane; and (c) the use of roundabouts at intersections on Yelm Highway and Henderson Boulevard. Several options for handling storm drainage were also evaluated, and an option for provision of public access to Ward Lake was examined.

TRANSPORTATION OPTIONS

Connection to Pifer Road

The City of Olympia development guidelines contain street grid spacing standards that require multiple roadway connections within neighborhoods. One option is connection of a new street at the curve where South Street transitions to Pifer Road. (For simplicity, henceforth this location is referred to as Pifer Road.) Pifer Road is located at the northwest corner ofthe Briggs Village site (see Figure 5-l). This assessment includes an evaluation ofthree scenarios at this location:

- A full vehicular access creating a "T" intersection;
- A paved two-lane roadway for only emergency vehicle and bicycle/pedestrian access; and
- An all weather bicycle/pedestrian pathway with no motor vehicle access.

Full Vehicle Access

This option would provide vehicular and non-motorized access to the existing streets. A full connection would provide a route for drivers traveling between Briggs Village and the Olympia High School area and from existing neighborhoods to the Briggs Village commercial center.

Impacts

With a full connection there would be about a 7 percent interaction of traffic between Briggs Village and adjacent neighborhood areas. This equates to approximately 76 afternoon peak-hour trips. The net effect of this scenario would not significantly change design and traffic operations at other Briggs Village site accesses.

Both South Street and Pifer Road are substandard and may require pavement restoration and widening to accommodate the traffic increases that would result from a full connection with Briggs Village. The connection to Pifer Road may require approval from the City of Tumwater. Tumwater staff have indicated that mitigation measures would probably be required if such a connection were made.

Possible Mitigation Measures

- Install a stop sign to control traffic exiting Briggs Village onto Pifer Road.
- Revise the curve to create an intersection with "T" form.
- Install traffic calming devices, such as islands, narrowing of roadways, and speed humps, to control traffic.
- Add signs to enhance the safety of pedestrians and bicyclists.
- Require roadway resurfacing and installation of safety measures, such as curbs and sidewalks, along road sections receiving substantial traffic increases.

Emergency Vehicle and Non-Motorized Vehicle Connection

This option would provide access for emergency service, such as medical, fire, and police vehicles, between Briggs Village and neighborhoods to the northwest. Non-emergency police patrol use of the access would also be possible. The system would be designed to allow passage of pedestrians and bicycles. The street connection could have bollards or a gate system to restrict motor vehicle access. This connection would allow relatively direct non-motorized access to the neighborhood park and the Briggs Village commercial center by users residing northwest of Briggs Village.

Impacts

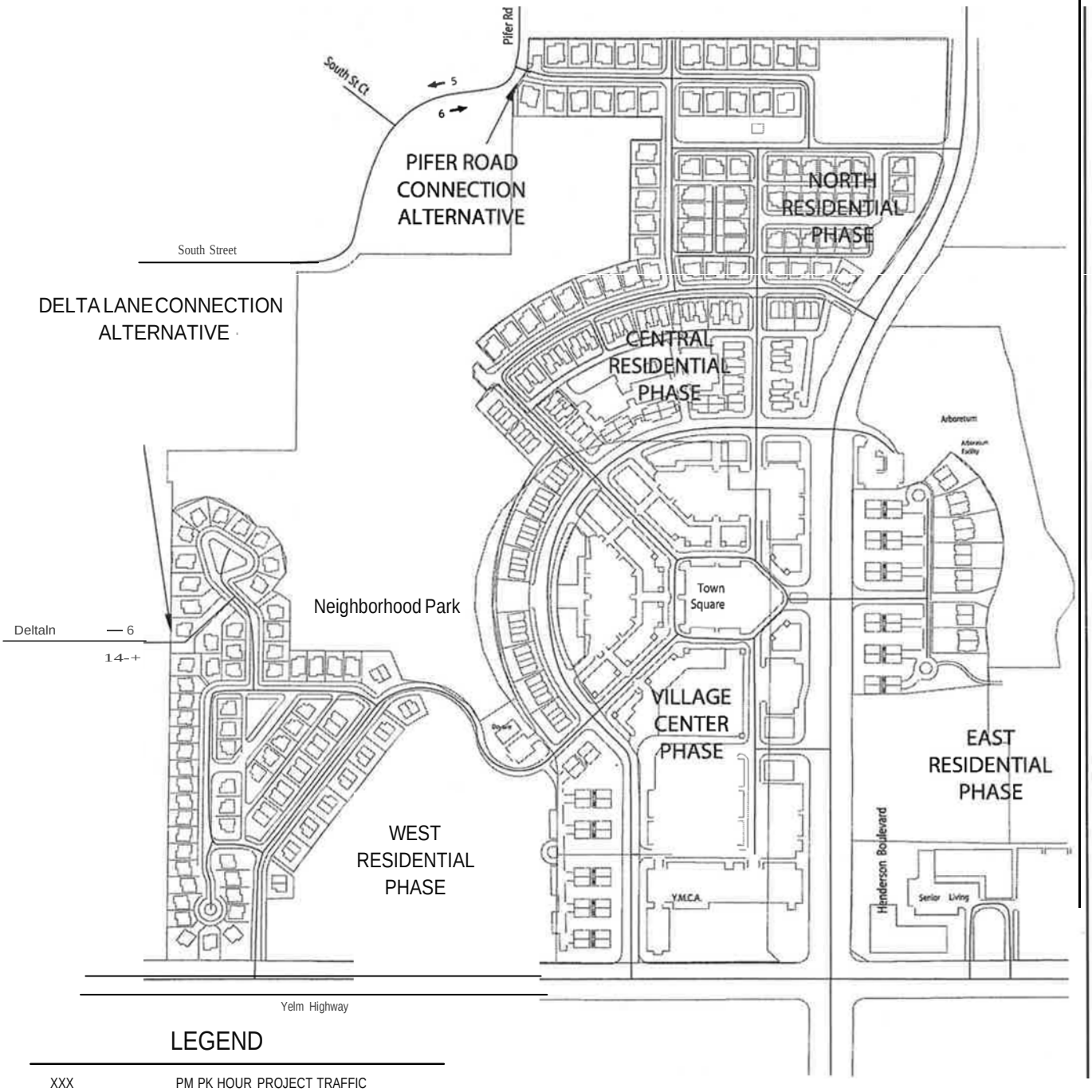
If obstructions are sufficient to prevent unauthorized vehicle use, no substantial adverse impacts are anticipated. However, this option would enable use of Pifer Road as a walking route to and from the schools to the north. Safety risks could increase due to a lack of sidewalks on Pifer and lack of controlled crossing at the Pifer Road and North Street intersection.

Other Possible Mitigation Measures

- Signs and/or sidewalks would be provided to enhance safety of pedestrians and bicyclists.
- All structural systems and signage should be in accordance with either City of Olympia or City of Tumwater requirements, as applicable.

Non-Motorized Connection Only

This option would only allow access for non-motorized users, such as pedestrians and bicyclists. A paved path would connect the North Residential Phase of Briggs Village to neighborhoods to the west. Bollards or equivalent structures would be used at the access point to restrict motor vehicles from using the path.



ADOLFSON

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Edits by:
Date: 7/12102

Source: The Shea Group.

FIGURE 5-1.
POTENTIAL TRAFFIC INTERACTION WITH NEIGHBORHOOD CONNECTIONS
BRIGGS URBAN VILLAGE MASTER PLAN EIS
OLYMPIA, WASHINGTON

Impacts

Same as emergency access above.

Other Possible Mitigation Measures

Same as emergency access above.

Connection to Delta Lane

Delta Lane is an existing local access street with a terminus near the west edge of the Briggs Village site. The potential for a connection between the proposed Briggs Village development and Delta Lane has been evaluated for this assessment. Connection of Delta Lane with the internal circulation system within Briggs Village would facilitate access for residents to the west to office and retail facilities developed in the Village as well as to the neighborhood park. Residents of Briggs Village could use Delta Lane to access Cleveland Avenue to the west. The roadway is located within Tumwater city limits (see Figure 5-1).

Impacts

If the connection with Delta Lane were implemented, it would probably not be a preferred route for travel between Briggs Village and Cleveland Avenue. However, residents in the West Residential Phase would likely use Delta Lane for travel to and from the west. If one-half of the PM peak-hour trips from the West Residential Phase traveling to and from the west used Delta Lane, it would result in approximately 20 afternoon peak-hour trips in Year 2020. The existing roadway is of substandard construction to accommodate increases in traffic. Further, the connection might require the displacement of an existing residence.

Other Possible Mitigation Measures

- Require an upgrade of Delta Lane, including widening and pavement improvements in accordance with Tumwater requirements.

- Provide compensation and/or relocation for displacement of the residence.

Roundabout Intersections

Roundabouts are a traffic control method that is an alternative to traditional signalized or stop sign-controlled intersections. Use of roundabouts at the primary site driveways on Henderson Boulevard are examined as part of this assessment. Potential roundabout locations include the Briggs Boulevard intersection, the southernmost site entrance (Driveway No. 5), and the Yelm Highway/Henderson Boulevard intersection, the latter because of its proximity to Briggs Village entrances.

Impacts

In most cases, roundabouts should be located at least 800 to 1,000 feet distant from signalized intersections to ensure that traffic flow is not impeded through the roundabout from vehicle delays and queuing caused by the signal system (The Shea Group, 2002). The southernmost entrance to Briggs Village (Driveway No. 5) is located only 600 feet from the Yelm Highway/ Henderson Boulevard intersection. Thus the option of maintaining the existing signalized intersection at Yelm Highway/Henderson Boulevard combined with a roundabout at the southernmost site entrance would not be viable.

Level-of-service (LOS) analyses were conducted by The Shea Group (2002) for each potential roundabout location using the SIDRA roundabout modeling program. The analyses assumed full buildout with all five phases completed. The results show that the Briggs Boulevard entrance and the southernmost site entrance (Driveway No. 5) can function as single-lane roundabouts and operate at an acceptable LOS A condition. The LOS results are more favorable than the proposed signalization option, for which the service levels are projected to be LOS C for Year 2020.

The LOS analyses indicate that at full buildout in Year 2020, the Yelm Highway/Henderson Boulevard intersection would operate at a LOS C condition with a two-lane roundabout configuration. This is a similar LOS condition to that projected with the existing signalization design plus projected improvements to Yelm Highway by Thurston County as described in Chapter 2 Transportation section.

A consideration with respect to roundabouts is the length of queuing anticipated and potential effects on eastbound traffic on Yelm Highway. The Yelm Highway/Henderson Boulevard intersection and the Briggs Boulevard intersection are approximately 550 feet apart. With the roundabout scenario, traffic is expected to queue from the Yelm Highway/Henderson Boulevard intersection west beyond the Briggs Boulevard intersection, impeding vehicles from exiting onto Yelm Highway. This condition is projected to occur after completion of the first three phases of Briggs Village. With the combination of background traffic increases and new traffic generated by Briggs Village commercial areas, queuing would increase to LOS D near Year 2020 (The Shea Group, 2002).

Another impact related to a roundabout at the Yelm Highway/Henderson Boulevard intersection is the new right-of-way required. The roundabout would require a larger amount of right-of-way than for the existing signalized intersection. Portions of properties at the existing intersection, including the Grange Hall site, YMCA site, Briggs Nursery site, and southeast comer of intersection, would have to be acquired to implement a roundabout. Acquisition of portions of these parcels could constrain existing and future uses.

Other Possible Mitigation Measures

- Designs would incorporate measures, such as crosswalks, overpasses, and/or signs, to ensure the safe movement of pedestrians and bicycles through the roundabout.

- Owners would be compensated for the acquisition of properties at the intersection of Yelm Highway/Henderson Boulevard.

DRAINAGE OPTIONS

The applicant has proposed a storm drainage system that incorporates a combination of compost filters, rock-lined swales, and stormwater treatment facility in the South Kettle that will treat the majority of stormwater generated on the site. The proposed system is described in the Ward Lake, Wetlands, and Other Surface Waters and Public Utilities sections of Chapter 4. See Figure 4-1. As part of the storm drainage analysis, two drainage options were considered that do not involve placing the stormwater treatment facility within the South Kettle wetland.

Option A involves relocating the three-cell wet pond system to the upper bench on the east side of the kettle, outside the wetland buffer (Figure 5-2). Treated stormwater would be released to the South Kettle.

Option B would involve relocating the three-cell wet pond system to the north just outside the wetland buffer of the Central Kettle (Figure 5-3). In large part, this option maintains the existing drainage system, with substantial runoff discharged to the Central Kettle. Option B would still require a wet pond system for the South Kettle in the same location as Option A, but of smaller capacity.

Impacts

Option A would have no significant direct adverse impacts and it would eliminate direct impacts to the South Kettle, including loss of 1.5 acres of wetland. However, this change in design would probably have indirect impacts. The mitigation plan proposed for the Central Kettle by the applicant would probably no longer be required. The relocated wet pond system would consume several acres of uplands intended for the Phase II Commons area, including the proposed overlook. The Phase II Commons area would be either substantially reduced in size or effectively eliminated.

Option B would also eliminate direct impacts to the South Kettle and the mitigation plan developed for the Central Kettle would probably no longer be required. However, the relocated wet pond system would consume up to two acres of uplands intended for the Neighborhood Park. The Neighborhood Park might be relocated or reduced in size from the currently planned four acres.

Avoidance of wetland loss may be important in a cumulative perspective, in that the project would not contribute to ongoing regional losses of wetland areas. However the enhancement and restoration of the Central Kettle would probably be deferred indefinitely.

Other Possible Mitigation Measures

None proposed.

WARD LAKE ACCESS OPTION

The Master Plan includes construction of an overlook above Ward Lake in the vicinity of the Northeast Kettle. (See Figure 3-2.) This overlook would be open to the public and operated and maintained by the Village Corporation.

As part of this EIS, an access trail to Ward Lake was also examined. This trail would extend from near the Northeast Kettle via switchbacks to the water's edge, possibly terminating at a viewing platform or other structure. The total elevation change would be approximately 45 feet at a site with a slope of33 percent. The applicant would probably convey an easement to the City of Olympia for the trail.

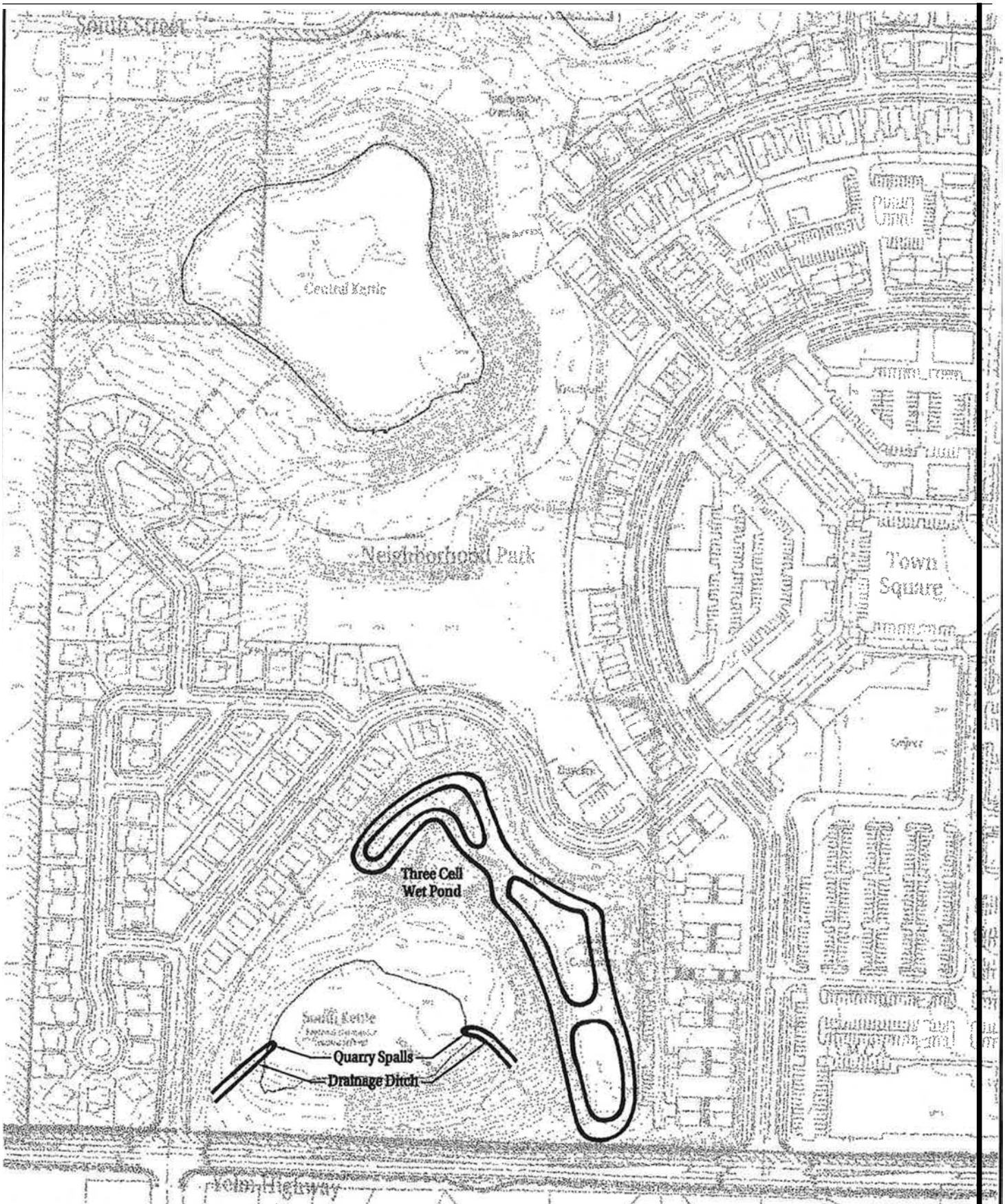
At the bottom of the trail, a platform could be constructed above the high-water mark to provide a public viewpoint. It would probably be necessary to support this structure on piles. This platform could include benches, picnic tables, signs, and waste receptacles. Due to the limitations of access, limited nearby opportunities for parking, and anticipated public demand exceeding site capacity, no swimming facility or such was evaluated.

If the trail is to meet the Americans with Disabilities Act (ADA) guidelines, it may need to be paved to provide a slip-resistant surface with gradual slopes and widths in accordance with ADA criteria. A trail would need to be designed with an average slope of 8.3 percent and a maximum grade of 14 percent over 50 feet. In addition, landings at the top and bottom of the slope and where maximum grade segments change direction are required.

Impacts

Construction of an access trail to Ward Lake has the potential for creating short-term impacts to soils on the slope above the lake. Excavation would be necessary across the steep slopes. There would be potential for slumping, erosion, and sedimentation during the construction period. The steep slopes extend to the lake edge and little area exists for construction mitigation features such as settling ponds, hay bales, and silt fences.

Off-trail excursions by trail users and their pets could occur, resulting in erosion of the hillside that would likely introduce sediment into Ward Lake via surface water runoff. Any dog-waste deposits would contribute fecal contamination to Ward Lake. Litter could enter the lake affecting water quality and aesthetic appeal. If it is not possible to limit access to the water's edge, there is also high potential for creating turbidity if soft soils are disturbed by recreational users and pets.



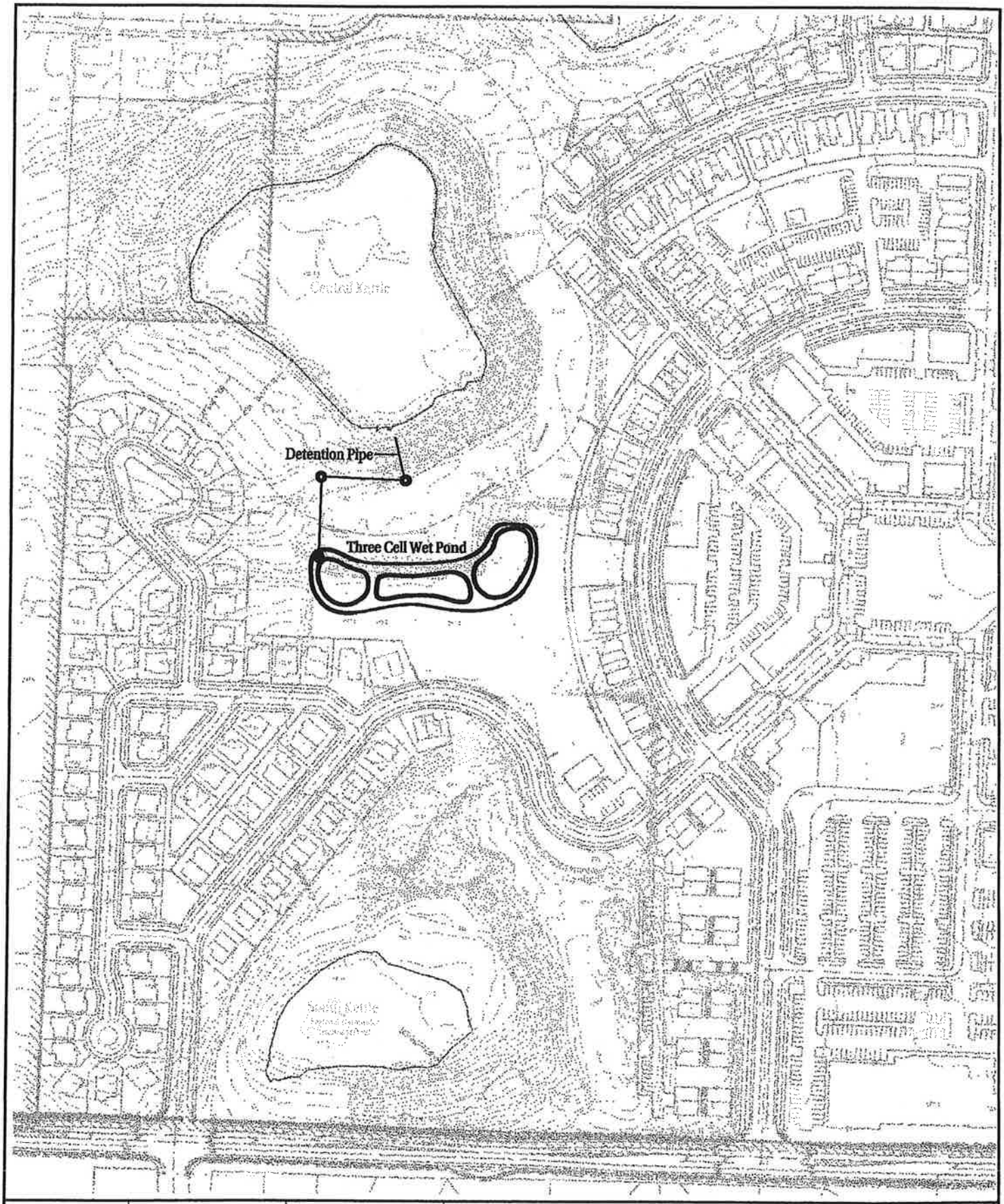
NORTH

SOURCE: NBBJ, 2002.

ADOLFSON

FIGURE 5-2
OPTION A

BRIGGS VILLAGE MASTER PLAN EIS
OLYMPIA, WASHINGTON



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NORTH
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SOURCE: NBBJ, 2002.

FIGURE 5-3
OPTION B
BRIGGS VILLAGE MASTER PLAN EIS
OLYMPIA, WASHINGTON

Increased public access to this forest and the lake itself may cause some species to temporarily relocate during times of public activity, or in some cases, to permanently relocate.

The addition of any lighting in this area would change the nighttime views of this portion of the west shoreline for residents living around the lake, particularly those living directly across the lake along the east shoreline. The addition oflighting in this area would give this shoreline a more urbanized and developed appearance.

Other Possible Mitigation Measures

- Require guardrails, handrails, or other safety barriers.
- Fence the viewing platform to prevent access to the unstable shoreline margin.
- Prohibit swimming and fishing and post signs accordingly.
- Construct and impose extraordinary maintenance requirements.
- Establish a conservation easement to limit vegetation clearing.
- Limit access to the trail to the hours between dawn and dusk.
- Require specified extraordinary erosion control measures during construction.
- Restrict construction and public access during nesting seasons.
- To reduce impacts to forest habitats, minimize the area of disturbance of the trail and associated facilities.
- Prohibit, minimize, or limit hours of trail lighting.

REFERENCE SOURCES

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Briggs Urban Village Environmental Impact Statement

COMMENTS RECEIVED

	Name	Agency	Date Received	Received by...•
1	Michael Lamprecht	Army Corp of Engineers	2-26-03	Mail
2	Ingrid Jodziewicz	Private Party	3-12-03	E-mail
3	Bob Jacobs	Private Party_	3-27-03	Mail
4	Dale Severson	WA Dept. ofTransportation	3-31-03	E-mail
5	Lisa Pearson	Ecology	3-31-03	E-mail
6	Niel Lawrence	Private Party	3-31-03	E-mail
7	Scott Davis	Thurston County	3-31-03	E-mail
8	Joe Kane	Private Party	3-31-03	E-mail
9	Denis Bloom	Intercity Transit	3-31-03	E-mail
10	Chris Kautsky	Private Party_	3-31-03	E-mail
11	Jeri Berube	Ecology	3-31-03	Fax
12	Chris Carlson	City of Tumwater	3-31-03	Fax
13	Jim Lazar	Private Party	3-31-03	2 Faxes
14	Barry Lumbard	Puget Sound Energy	3-31-03	Fax
15	Donald Fagerstrom	Private Party	4-4-03	Mail

DEPARTMENT OF THE ARMY
SEATILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 3755
SEATILE, WASHINGTON 98124-3755

REPLY TO
ATTENTION OF
Regulatory Branch

FEB 24 2003

Mr. Todd Stamm
Olympia Community Planning & Development
837 – 7th Avenue Southeast
Post Office Box 1967
Olympia, Washington 98507-1967

Reference: 2003-4-00209
Briggs Development Company
Briggs Village Master Plan

Dear Mr. Stamm:

We are in receipt of the Draft Environmental Impact Statement (DEIS) for the above-referenced project. The DEIS discusses the proposed construction of a 133-acre mixed-use residential and commercial development off Henderson Boulevard and Yelm Highway in Olympia, Washington.

The U.S. Army Corps of Engineers (Corps) is aware of wetlands in this area. The DEIS states, "the Clean Water Act does not apply to "isolated" wetlands. "Isolated" wetlands are those that are not adjacent or connected to a navigable water body, such as a river, lake, or marine waters. By this definition, several of the kettles on the Briggs Nursery site (e.g., South Kettle Central Kettle) probably qualify as isolated wetlands. Following this ruling, the U.S. Army Corps of Engineers apparently no longer has regulatory oversight of these two kettles".

The definition stated in the DEIS is not totally correct and these wetlands may be in Corps jurisdiction. If these kettle wetlands will be impacted by the proposed project, it is our recommendation that the applicant request the Corps to perform a jurisdictional determination prior to work being performed at the site. 1

Thank you for this opportunity to provide comments. If you have any questions regarding Corps jurisdiction or our Regulatory program, please telephone our office at (206) 764-3495.

Sincerely,

F. Michael Lamprecht
Chief, Enforcement Section

Karen Anderson

From: Todd Stamm
Sent: Wednesday, March 12, 200312:15 PM
To: Karen Anderson
Subject: FW: draft EIS comments

Karen, please print for file; and add Ms. Jodziewicz to contact lists. Thanks, Todd

-Original Message---
From: Ingrid [SMTP:jodzing@attbi.com)
Sent: Wednesday, March 12, 2003 11:29 AM
To: tstamm@ci.olympia.wa.us
Subject: draft EIS comments

Todd Stamm
Senior Planner
Community Planning and Development
837 7th Ave. SE, P.O. Box 1967
Olympia, WA 98501
(360) 753-8314

1106 South St. SE
Tumwater, WA 98501
March 12, 2003

Dear Mr. Stamm,

The purpose of this letter is to comment regarding the draft EIS pertaining to Briggs Urban Village.

I would like clarification on how the "Transit & Emergency Access Only" entry (located where Pifer turns into South St.) will be configured. I'm having difficulty imagining an entry that will allow in only Transit and Emergency vehicles yet keep out regular traffic, (i.e., residents, people looking for a "short cut" between South St. and Henderson Blvd., and those who like the thrill of driving fast through a "curvy" road in a residential neighborhood late at night). **2a**

I would like to maintain the safe, quiet atmosphere our neighborhood (South Street Heights) has enjoyed *for* the last 14 years to continue and insist that it not be turned into a "main thoroughfare" due to the addition of a "through" street into Briggs Urban Village. **2b**

Please comment on *my* letter and keep me up to date on proceedings.

Sincerely,

Ingrid Jodziewicz jodzing@attbi.com <mailto:jodzing@attbi.com>.

720 Governor Stevens Ave. SE
Olympia, WA 9850I

March 27, 2003

Todd Stamm
CP&D
P.O. Box 1967
Olympia, WA 98507-1967

Dear Todd:

This letter contains my official comments on the Briggs Village Draft EIS.

1. Page 2-45. The report refers to "Governor Stevens Park." The correct name is Trillium Park. The report also says that the park is nine acres in size. I believe it is closer to five. And the report specifies that this park is separate from Stevens Field. It is not even close to Stevens Field. If any such clarification is needed, it would be that Trillium is not part of Watershed Park, which is less than a block away. It might be advisable to have the OPARD staff review all information related to parks and recreation facilities in this EIS. 3a

2. Page 3-13. This portion of the EJS deals with street connections between the urban village and adjacent areas. It is not clear to me whether all possible street connections are included, but I strongly suggest that the maximum connectivity be accomplished in accordance with city policies. I realize that this may be difficult where connections involve Tumwater, but every effort should be made to achieve connectivity in the interest of convenience, environmental health, resource conservation, and social connections. 3b

3. Pages 3-15,5-7, and 5-10. These pages deal with public access to Ward Lake. Physical access to the lake is important. Not just visual access from an overlook. Furthermore, OMC 18.05A.020 requires a swimming access "if possible." I believe such an access is clearly possible. In adopting this language, the City Council was well aware that a full community swimming access would not be possible in this location due to the steep slope of the lake bottom in this area. However, a modest access for serious swimmers should be possible. This would accommodate the many triathletes and others who work out in the lake every summer and fall. 3c

Sincerely

Bob Jacobs *lf*
352-1346
jacobsoly@aol.com

Washington State Department of Transport
Douglas B. MacDonald
Secretary of Transportation

Olympic Region Headquarters
5720 Capitol Boulevard, Tumwater
P.O. Box 47440
Olympia, WA 98504-7440

360-357-2600
Fax 360-357-2601
TTY: 1-800-833-6388
www.wsdot.wa.gov

March 31, 2003

Mr. Todd Stamm
Senior Planner
Olympia Community Planning and Development
P. O. Box 1967
Olympia, WA 98507-1967

RE: Briggs Village DEIS
I-5, MP 105.06 Right Vicinity
EC File No. 2003-027 T

Dear Mr. Stamm:

We have reviewed the DEIS for the above project and have the following comments:

- This project, as mentioned in the DEIS, will have a significant adverse traffic impact to the I-5 northbound off-ramp to Henderson Boulevard intersection. As a result, we request the City of Olympia make a SEPA condition that this development be required to 100% fund the design and construction of a roundabout at this intersection prior to any City of Olympia approval of the development. 4

Please be aware, as noted in the DEIS, that another development is City of Olympia SEPA required to 100% fund the design and construction of a roundabout at the I-5 northbound off-ramp to Henderson Boulevard intersection. The Henderson Boulevard LLC development, which will be located next to this intersection, has prepared a Developer Agreement with WSDOT that includes all the design engineering plans to build a roundabout here. As of this date, this Developer Agreement is complete and waiting for the developer to sign the agreement and return it to WSDOT with appropriate construction bonding. Once we receive the signed agreement with bonding, we will then execute that Developer Agreement so construction by the developer may begin. However, be advised there are also two Quit Claim Deeds that need to be processed before WSDOT will execute the agreement.

So while it appears the Henderson Boulevard LLC development will build the roundabout prior to any construction starting on Briggs Village, we still request the

City of Olympia require Briggs Village be 100% responsible to build the roundabout. This is only in case the Henderson Boulevard LLC development is delayed and construction of the roundabout does not occur prior to Briggs Village approval. Another possibility, again depending on the timing for both projects, is for both of these developments to split the cost of the roundabout, using a ratio to be determined by the developers or the city.

Thank you for the opportunity to review the Briggs Village Master Plan DEIS. If you have any questions, please contact Lany Anderson ofmy staff at (360) 357-2709.

Sincerely,

Dale C. Severson, P.E.
Development Services Engineer
WSDOT, Olympic Region

DCS:ypl
LLA

Todd Stamm

From: Pearson, Lisa [LPEA461@ECY.WA.GOV]
Sent: Monday, March 31, 2003 2:12PM
To: 'tstamm@ci.olympia.wa.us'
Cc: Alexanian, Dan; Carroll, Kerry
Subject: FW: Comments for Briggs Urban Village Draft EIS

Hello, Mr. Stamm

Please find below my comments regarding the draft EIS for Briggs Nursery Urban Village.

Referring to page 2-9 Sediments in Kettles: The document states that, "In August 1996, sediment samples were collected from the Southwest Kettle, Northwest Kettle; and Central Kettle (Landau Associates 1996)...", samples were also collected from the Northeast Kettle and Southeast Kettle. The analytical results from the Southeast Kettle indicate sediments contain the pesticide Dieldrin and the PCB Arochlor 1254 in concentrations excess of regulatory limits.

Southeast Kettle: Ecology has concerns about routing urban stormwater to the Southeast Kettle, which has been determined to be contaminated. Contamination issues will have to be addressed prior to Kettle collection of stormwater.

Northeast Kettle: As mentioned in the EIS, this kettle currently collects stormwater from a significant portion of Briggs' property on both sides of Henderson Blvd, and also collects stormwater runoff from approximately 0.5 miles of !-Jenderson Blvd. As mentioned in the EIS, the Kettle soils do not allow much infiltration so the kettle water elevation rises during the fall and discharges directly into Ward Lake during rain events in the winter. This discharge contains higher levels of nutrients than typically found in the lake and significant turbidity. I have been on the lake during a rain event and witnessed the discharge running approximately 2-3 cfs, and emitting a dark rolling plume of turbidity from the location where the pipe flow discharges at the lake.

Although a slightly less amount of stormwater is proposed to be routed to the Northeast Kettle, this will not be enough to prevent discharge to the lake. Ecology also has concerns because Ward Lake does not have any out flow to cleanse itself and urban stormwater runoff may contain dissolved constituents that could accumulate and degrade the quality of the Lake further.

Ecology would like to recommend that Henderson Blvd be regraded so that road runoff will no longer be collected in the Northeast Kettle, and therefore discharged into Ward Lake. This will contribute to the prevention of continuing degradation to Ward Lake.

Thank you for the opportunity to comment on the draft Briggs Urban Village Draft EIS.

Lisa Pearson
Environmental Engineer
Taxies Cleanup Program
Southwest Regional Office
(360) 407-6261
lpea461@ecy.wa.gov

Niel Lawrence
3723 Holiday Drive SE
Olympia, Washington 98501
(360) 570-9309 (v)
570-9310 (fax)

VIA E-MAIL AND SURFACE MAIL

March 31, 2003

Todd Stamm
SEPA Official
City of Olympia
P.O. Box 1967
Olympia, WA 98507

Re: Draft EIS for Briggs Urban Village

Dear Mr. Stamm:

Below are my comments on the Draft Environmental Impact Statement (DEIS) for the proposed Briggs Urban Village project on Henderson Boulevard and Yelm Highway. I appreciate the opportunity to comment on this project. Please add me to the mailing list for the Urban Village, for notification of availability of subsequent documentation and public hearings or comment opportunities. If you find that I am on an existing notification list, please check the entry carefully. I previously requested of your office by phone that I be notified of the availability of the DEIS, notice I did not receive, with the consequence that my review has been somewhat rushed. Thank you for your attention to this.

In summary, urban village projects represent an attractive alternative to low density housing, especially in a metropolitan area like Olympia's, where community infrastructure is already under strain. The combination of multiple housing types with communal open space and commercial capacity holds the potential to create desirable neighborhoods, reduce overall traffic loads, and mitigate sprawl. Unfortunately, the serious deficiencies in the DEIS make it impossible to gauge accurately the actual impacts of the proposed project on its physical and social surrounding, on the city's financial status, and on taxpayers. The more glaring deficiencies include: optimistic or missing traffic assessments; failure to examine actual impacts on an over-

6a

capacity school system; omission of information about consequences for Ward Lake and its surrounding neighborhoods; extraordinarily cursory discussion of possible mitigation measures; and absence of information about the costs of off-site measures necessitated by the project. These shortcomings so significantly affect the public's ability to comprehend and respond to the proposal that a revised DEIS should be prepared and circulated for public review before the project goes any further. 6a

TRAFFIC

Failure to present Level of Service (LOS) data for affected intersections under full build out is among the DEIS' most serious shortcomings. Traffic in the area is already badly strained at peak commute times. The DEIS presents enough information to raise alarm about the project's impacts but not enough to quantify them. For instance, we know from the DEIS that side street flow at the Henderson Blvd. to Eskridge St. intersection- a dangerous spot with limited site distance - will degrade to LOS F by 2007 without any contribution from the project (p. 4-48)[1]. The possibility looms that by 2020 with full build out, this intersection will be a true nightmare, but readers are denied an opportunity to assess the impacts of this likely scenario. A revised DEIS must candidly reveal the range of LOS outcomes in 2020, and associated wait times and possible mitigation strategies. In addition to simple numbers, readers need a qualitative assessment of what dealing with this traffic situation would be like in subjective terms, so they can understand its possible real impact on their lives. 6b

Several other traffic-related omissions make the DEIS' traffic analysis unserviceable. There is no discussion of the capacity of existing left turn and right turn lanes at affected intersections, a critical factor in how increased flow will affect those already using the roadways in question. Among the problematic left turns completely ignored in the DEIS is the northbound Henderson to southbound I-5 intersection, where a short turn lane, a dangerous double-stop-and-go situation, and a high speed merge onto the onramp are already quite problematic. Also missing is an examination of the potential for project traffic, either alone or in combination with other reasonably foreseeable added loads, to result in opening of nearby neighborhoods to through traffic. Some such new thoroughfares are already on the city's books, and would greatly affect quality of life in neighborhoods thus opened 6C

[1] All page references are the DEIS.

up. A case in point would split the Cove neighborhood and cut off Holiday Hills from Ward Lake. Because urban village traffic would increase pressure to build them, these neighborhood-based arterial expansions need careful discussion in a revised DEIS. 6c

Another quite striking omission is any discussion of private vehicle transportation to area schools. Despite currently low ridership on district school buses, the DEIS reads as though parents simply will not drive their children to elementary or middle school from the project. In southeast Olympia, we know that the opposite is very likely to be true, based, e.g., on the high percentage of Lincoln Elementary School area children driven to Pioneer Elementary daily, and by the long lines leading into Washington Middle School on a typical morning. The DEIS is no more revealing about transportation to Olympia High School, mystifyingly stating that " [d]ue to the age of these students and likely motor vehicle modes of transportation, no specific analysis was done regarding trips to the high school" (p. 4-50). It adds, glibly and falsely that " students will have numerous choices for traveling to the high school along either Henderson Boulevard or Pifer Street" (ibid). In fact, for most of the distance they will have precisely two choices, one circuitous and the other marked by a bad left turn. 6d

It appears inevitable that private vehicle transit to and from all three of these schools will cause serious LOS deterioration at several intersections. It also seems likely that due to overlap with rush hours, the age of many school drivers, and the already congested nature of these intersections, not merely time, air pollution, and inconvenience are at stake, but safety as well. A separate and clear examination of the school commute traffic situation, based on local survey data about actual school transportation habits for the relevant service areas, and including LOS, wait time, and qualitative information, along with mitigation strategies, is imperative. The assessment needs to consider, among other things, overload of turn lanes and the needed length of school-site cuing lanes for drop-off and pick-up. This is particularly true at Pioneer, where existing cuing space appears to be at capacity already. The potential exists for extremely unworkable traffic to develop - e.g. at the Henderson-Carlyon intersection - if these problems are not squarely identified and addressed. 6e

SCHOOLS

Annexation of the Briggs site into the city of Olympia aggravates an already saturated school situation. Passage of the recent bond measure may adequately address the elementary school overload, but a revised DEIS needs to examine this question carefully. No such prospects exist for Washington Middle School and Olympia High. The desirability of these schools to prospective purchasers of residences in the area is we11 known to realtors and doubtless not lost on developers of the urban village. Unfortunately both are already at or over capacity and no satisfactory means of dealing with new enrollment is under consideration. The situation is particularly egregious at Washington, where no addition of portables can ameliorate the core facility crowding associated with several hundred more pupils than originally planned. Students at Washington have difficulty passing one another in the hallway, faculty ratios have long since risen above desired levels, and parents and prospective attendees are asked not to visit the school because of extreme overcrowding. And even at Pioneer, the transportation issues discussed above threaten to make the urban village's pup_il load a serious headache. To a school system already so stressed, addition of hundreds of new pupils cannot be reconciled with the DEIS' bland assurance that overall impact on schools is " not anticipated to be significant" (p.4-74), and complete failure to identify any mitigation measures (p. 4-75). A revised DEIS must be far more forthcoming about actual impacts, and conscientiously research the potential means and costs of addressing them. 6f

WARD LAKE

Like the school system, Ward Lake is major drawing card for the proposed project whose potential degradation the DEIS glosses over. The document discusses a possible viewing area for the lake, but pretends that hundreds of kids from the urban village will consistently follow directions not to use the area for lake access and will abide by access rules at other points of ingress. In reality, trespass at private neighborhood facilities around the lake is already a serious problem on warm days, creating strife and expense for neighborhood-associations, and occasioning hard feelings and vandalism when rules are enforced. 6g

With or without the viewing area, children and youths from the project will use Ward Lake for recreation. They will, in many cases, access it from either project property or surrounding private property (the city public access point is on the far side of the lake). As described, the viewing area would somewhat lessen pressure on private access

points, but at the cost of unregulated, unsanitary, and probably unsafe impromptu use of the western lakefront. It is imperative that a revised DEIS examine this situation in a real world fashion - using surveys of surrounding neighborhood associations - and present an accurate picture of the range of potential impacts to the lake, its surroundings, and neighbors. It must also propose an adequate means of dealing with the situationh, up to and including a developed access site with sanitary facilities on property the project owns or dedicates to the city.

6g

MITIGATION

Throughout the DEIS, impact mitigation is dealt with in a cursory and uninformative fashion. In many cases, as for schools and sport facilities, no mitigation at all is proposed. This leaves current residents with no understanding of what the likely and unavoidable impacts are and no information about what to request of the project, and of regulating and permitting authorities. In virtually all instances, no financial data are presented for mitigation needs and options. Thus parents have no idea what the likely increased costs of additional school capacity or traffic measures would be for their community and them, over and above those covered by standard impact fees.[2] Since these costs are, indisputably, actual or potential impacts of the project, without them, impacts are not adequately disclosed.

6h

In some cases, mitigation is proposed, but its likelihood of success, contingency plans for its failure, and more robust options, are left unaddressed. The reconstruction of the Middle Kettle as a wetland offset is a case in point. Remediation of the arsenic-based preservative spill on-site is another, along with removal of the landfill along the Middle Kettle edge. So too are the measures proposed for the Northeast Kettle, critical given its periodic overflow into ward Lake and the DEIS' failure to discuss chemical contamination of that kettle by past pollution attributable to Briggs family operations. TDM mitigation that could come online prior to completion of the Village Center phase is an obvious example of stronger mitigation that the DEIS simply overlooks. And several recommendations in Philip

6i

[2] In this connection, Briggs Urban Village developers are reported to have assured residents some years ago in writing that no additive infrastructure costs would fall on the city. If this assurance was not given, a revised DEIS needs to clarify that. If it was, then how it will be honored, or why *it* will not be, also needs disclosure.

6j

Environmental Services' site assessment, described in chapter 2, are completely ignored.

Finally, there are many instances where the DEIS suggests or mentions mitigation without clarifying whether the public and officials can count on it. The TDM mitigation mentioned above, is an example. The DEIS projects that it will be taken care of in the future, but how real that assurance is, and how it will actually play out on the ground, is never examined (p. 3-15). Gk

CONCLUSION

In concept, the Briggs Urban Village project seems to have much to recommend it. In practice, the DEIS makes it impossible to assess just how good and how workable an idea it is, and who will bear which impacts and costs associated with its development. I look forward to reviewing another DEIS that addresses the issues raised above, and gives a real picture of the project to the public and to officials, prior to any further progress on it.

Thank you for ensuring that I am on the notice list for this project.

Very truly yours,

/s/

Niel Lawrence

March 31, 2003

Todd Stamm, Senior Planner
City of Olympia Community Planning & Development Dept
PO Box 1967
Olympia, WA 98507-1967

Subject: Briggs Village DEIS, dated February 2003

Dear Mr. Stamm:

Thank you for the opportunity to review and comment in regards to the above referenced development proposal. Upon review of the above referenced DEIS I offer the following comments and suggested conditions:

COMMENTS

1. It appeared many figures within Chapter 3 were not included in tre CD of environmental documents delivered to my office. **7a**

2. It does not appear intersections or roadways within the county's jurisdictional boundaries were analyzed in the DEIS. **7b**

3. At this time the intersection of Henderson Blvd & Airdustrial Road is operating below acceptable thresholds for concurrency without this project. This is based upon a recent analysis for a nearby development proposal (Plat Of0244) within Thurston County. See comment number 6 on attached 2119/03 memorandum from Jeff Schramm of Transportation Engineering Northwest, LLC. 7c

4. Table 2-2 and 4-6 appear to be inconsistent. The existing Level of Service for Henderson & Yelm HWy in Table 2-2 reads "D" while in Table 4-6 it reads "B." Based upon direct observations of the intersection it would appear Table 2-2 is more reflective of existing conditions. Discussion on page 4-50 is also reflects this discrepancy. **7d**

5. Discussion of planned improvements to Yelm Highway from Henderson to Rich Road found on page 2-54, 2-55 and page 4-54 appear to be out of date. Thurston County recently secured design and right of way funding and timing of design, right of way acquisition and construction could be more appropriately regarded as the following: 7e

    a. Design: 2003-2004
    b. RightofWay:2004-2005
    c. Construction: 2006-2007

6. On page 2-62 under Transportation Policy it appears the RCW reference is incorrect or has been amended by the state since the original publication of the DEIS. **7f**

7. Chapter 5 discusses roadway connections. It would seem connections to Pifer Road and Delta Lane would enhance the overall transportation network and conform to the goals of our Joint Transportation Plan. However impacts of these connections would need to be mitigated and I believe the DEIS discusses several options in that regard. 7g

8. Outside of vague discussion in Table 1-2, there does not appear to be a discussion of off-site walking or pedestrian routes. For example if the development of this site occurs prior to improvements to Yelm Highway would the Olympia School District consider Yelm Hwy a safe walking route to Centennial Elementary? If not should Briggs Village provide a safe walking route albeit a temporary one to Centennial Elementary as an interim mitigation measure? Has the school district weighed in on this question? 7h

9. The Mitigation Measures contained on pages 4-57, 58 and 59 for transportation improvements does not appear to consider potential safety or capacity impacts to transportation facilities within Thurston County. 7i

10. The DEIS suggested full build out may not occur for 18 to 25 years. It would appear difficult to forecast many transportation impacts due this long time frame and many unforeseen changes that could occur in the next 25 years. Additional transportation analyses prior to constructi.on approval as suggested in the DEIS would seem appropriate so long as affected jurisdictions retained the ability to enforce concurrency requirements or collect contributions toward impacts to transportation facilities. 7j

SUGGESTED COND ITIONS

11. Future Traffic Impact Analyses: In coordination with phase specific environmental review and prior to construction approval of any phase or division of this development the projected traffic impacts shall be re-evaluated based upon the current roadway network and operational conditions. This analysis would also include cumulative impacts of the Briggs Nursery. The scope of any such analysis would be prepared in coordination with affected jurisdictions including Thurston County. 7k

12. Impacts of Briggs Nursery to County transportation facilities may require contribution to mitigate identified impacts prior to final approval of each phase or division as identified on each phase specific environmental determination and traffic study. At this time contributions would be sought for the following planned transportation improvements [1]: 71

    a. CRP 61192 – Yelm Highway from City Limits to Rich Road
    b. CRP 61314 - Henderson/Airdustrial Intersection Improvements [2]

[1] This list is subject to change as this development is built out and may not be comprehensive since the DEIS did not evaluate affected County transportation facilities. Such changes occur during the annual Capital Facilities Plan update retlecting completion of projects and identification of new safety and capacity needs.

[2] Currently this intersection is operation below adopted minimums levels of service and funding is not yet secured as such concurrency options discussed in this letter would need to be considered prior to approval an individual phase or division.

13. Transportation concurrency issues outside Olympia'sjurisdictional boundaries shall be evaluated and mitigated in accordance with the respective jurisdiction's concurrency regulations or future inter-local agreements. Thurston County's Transportation Concurrency Policy is found under Title 17.I0 of the Thurston County Code. OR the following options could be provided if transportation concurrency is not satisfied:

    a. LOS standards are met by the developer and mitigating measures needed to meet such standards are identified in an approved traffic impact study or other approved document, and the project deve Ioper shall have guaranteed the funding of the approved mitigating measures, and the anticipated completion date ofthe · construction is within six years from the date of preliminary approval
    b. The developer pays a pro-rata share towards necessary improvements identified in the six-year County Capital Facilities Plan that have secured funding sources, including grant obligation
    c. The applicant reduces the traffic impacts to achieve an acceptable LOS by scaling the project down to reduce the number of motor vehicle peak hour trips generated by the project; or
    d. The applicant may choose to wait until such time as there may be sufficient transportation facility capacity due to improvements identified with secured funding in the six-year Capital Facilities Plan, and tren reapply for a concurrency determination. This approach shall not relieve the applicant of restrictions regarding expiration of permits and may result in a requirement of full application procedures.

7m

Ifyou have any questions you can reach me at 360-357-2492 or by email at davissa(ci:)co .thurston.wa.us.

Sincerely

Scott A. Davis, P.E.
Development Review Manager

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cc. Dale Rancour, County Engineer
Fred Knostman, Planning Manager

Todd Stamm

From: Shiripuno@aol.com
Sent: Monday, March 31, 2003 4:47PM
To: tstamm@ci.olympia.wa.us
Subject: Comment on Briggs Village draft EIS

Todd Stamm
Senior Planner
Olympia Community Planning and Development
Via email

March 31, 2003

Dear Mr. Stamm:

The draft EIS for the proposed Briggs Village fails to consider the impact of the vehicle traffic that will be necessary to deliver the Village's estimated 149 elementary students to school.

The EIS names Centennial Elementary and Pioneer Elementary as the potential elementary-school service areas for the Village. However, Centennial is now filled beyond capacity, and according to projections by the committee that drafted the recently passed capital bond for the Olympia School District, it will remain so for the next ten to twenty years even without the addition of the Village students. In light of this, the OSD intends to redraw the school service areas to place the Village within the Pioneer Elementary service area.

As a member of the committee that designed both the addition to Pioneer that will be built with the new bond monies and the addition and expanded traffic facilities that were build in 2001-2002, I studied traffic loads and patterns for the school. As part of the 2001-2002 remodel, a separate driveway for buses was added and the existing driveway was lengthened to accommodate pick up and drop off of students by parents and care providers. **8**

According to our studies, an elementary school needs a minimum of 1:5 feet of private-vehicle queuing space per student. The new driveway was built to the maximum length the site would allow. However, given the site's inherent size restrictions, the driveway can carry only the traffic generated by the school's current maximum capacity rating of 321 students, a number the existing service area will continue to generate for the next one to two decades. The driveway cannot be expanded to service the additional 149 students the Village will generate.

Given the distance of the Briggs site from Pioneer (approximately one mile) and its location (south ofNorth Street), all of the Briggs students will arrive at school by vehicle, as the EIS acknowledges. The school district has said it will provide bus transportation. However, the studies done for the Pioneer remodel--of Lincoln Elementary students attending Pioneer--also showed that less than 20 percent of students who can ride to school by bus do so; the rest are delivered by private vehicle.

Of the 149 elementary students the Village will generate, 100 to 120 will anive and depart by private vehicle; even if there is some car-pooling, it is likely that at least 100 private vehicles a day, as well as one or two buses, will be added to the traffic pattem at both pick-up and drop-off times.

There is no room to expand the driveway to service an additional 100 vehicles. The EIS makes no mention of this scenario, nor of the impact these additional vehicles will have on traffic on Henderson Boulevard and Carlyon Avenue, where traffic congestion at school times is already highly problematic and at times dangerous.

March 31, 2003

Mr. Todd Stamm
837 Seventh Avenue SE
Olympia. WA 98507

Dear Mr. Stamm:

Subject: Briggs Village Master Plan Draft Environmental Impact Statement Comments

I am pleased to submit the following comments on the draft environmental impact statement (DEIS) for the Briggs Village Master Plan. Thank you for providing an opportunity for the interested public to have input into this process.

Let me begin by complementing the City on the overall quality of the draft. It is well organized, clearly written, and the information presented well documented. However I do have some comments. They are organized according to the order the topics appear in the draft and page numbers are noted, as appropriate. I conclude with comments that are more general in nature or that apply to more than one section.

Page 2-10: Figure 2-2. Thurston County Soil Survey Briggs Village Master Plan EIS. Soil Type 126 is not included in the figure legend. This soil constitutes the majority of the site. From the write-up it appears that it should be Yelm fine sandy loam on slopes of less than 3 percent. I would like to see another map that shows areas of fill and other disturbed soil since it is clear from the history of the site that the natural topography has been disturbed by nursery operations. **10a**

Page 2-23: Kettles. The figure numbers throughout this section are incorrect. Figure 2-2 is the soils map and does not show the kettles. Figure 2-la is probably the correct figure. Also on this figure and others the Northwest Kettle is mistakenly identified as the West Kettle. **10b**

Page 2-30: Groundwater. I think that the discussion of the relationship between groundwater levels in the shallow aquifer and .the water level in the kettles should be expanded. The connection between the two should be highlighted and clarified. Also any information about seasonal variation in groundwater supply and water table should be included. **10c**

Page 2-34: Kettle Wetlands. Please add Chinese pheasant, pileated wood peeker, and Great Blue Heron to my list of observed wildlife on the site. **10d**

Page 2-37: Other Species of Interest. Just for interest, the red-tail hawks returned and nested at the west end of the grove last summer (2002) the nest was more visible and two young were fledged. Already this year we have seen hawks in the area and the territorial nature of their behavior indicate that they are preparing to nest on the site again this year. **10e**

Page 2-41: Views from Residences to the North and West. It should be noted that the views of the nursery grounds from the west are largely of open space. The nursery buildings are screened by the large grove of pine trees and the vegetation in the central kettle. This contributes to the rural feel to the residences in the neighborhoods to the north and west. **10f**

Page 2-51: Area Roadways. Since Delta Lane is included in the discussion of alternative transportation options (page 3-13) it should be included in this discussion. Also a map showing the location of these roadways and the jurisdictional boundary between Tumwater and Olympia should be added to clarify this discussion. **10g**

Page 2-59: Phone and Television Cable Services. AT&T no longer provides cable service in Washington. This should be changed to Comcast, Inc. It should be noted that a cable line runs along Delta Lane and may be closer than the one on the north side of the project site. **10h**

Page 3-4: Proposed Briggs Village Master Plan. Design criteria are said to be adopted as part of this project. I think that a definition of what a design criteria is and a bit about that process, as well as any opportunity for public involvement should be included in this section. **10i**

Page 3-12: OwnershipNillage Management. I find the discussion of future ownership confusing. Clarification is necessary especially since the "corporation" will have responsibilities for maintenance of common spaces and stewardship of the kettle wetlands. A discussion of where funds would come from to carry out these responsibilities would also be enlightening. **10j**

Page 4-8: Ward Lake, Wetlands, and Other Surface Waters- Central Kettle. This discussion indicates that the Central Kettle could become much smaller and drier as a result of this project. It will lose not only return irrigation flow, but storm water management will reduce its drainage area. At this time it is the largest kettle on the site and requires the largest wetland buffer. Is it appropriate to direct mitigation to compensate for the loss of South Kettle wetlands to this area? It appears that the overall affect of the changes to the water local water table from this project could greatly reduce or eliminate this wetland area. This needs to be further explored and re-evaluated. **10k**

Page 4-10: Ward Lake, Wetlands, and Other Surface Waters- Mitigation Measures West Kettle (off-site). This kettle should be described and included in the discussion of potential impacts. It is my understanding that this kettle is linked hydrologically to the others and I would like to know what affects the project would have on this area. It is likely to serve as a haven for wildlife. Also as part owner of this kettle I would like to know if the seasonal pond will remain. The West kettle's health is central to our enjoyment of our property and its value since our home was constructed to showcase its view.

101

Page 4-11: Ward Lake, Wetlands, and Other Surface Waters- Mitigation Measures. I would like to be assured that the buffers that are required for the protection of wetlands on the site should be based on the current conditions since the areas are likely to be smaller in the future.

10m

Pages 4-10 and 4-11: Ward Lake, Wetlands, and Other Surface Waters- Cumulative Impacts and Significant Unavoidable Adverse Impacts. Clearly there will be a greater than 1.5 acre area of wetlands lost to this project. All the kettles will have less water in them and all are cited to have their areas of standing water and wetland habitat reduced. While this may be difficult to quantify it should be estimated and included as an adverse unavoidable impact.

10n

Page 4-12: Groundwater. A discussion should be added to this section as to the possible affects of this project on the local water table. There are some significant impacts to the hydrology of the area with the loss of irrigation return flow to the kettles, the redirection of storm water flow (a major source of recharge in this area). Increased impervious surface area should be mentioned here as well. There should also be some discussion of the changes on site that would result from the transfer of water rights from the site. While it is noted that no formal agreement has been made between the City of Olympia and the applicant, it is highly likely that those water rights will be transferred. What will be the impact if the full 400 acre/feet per year is removed as opposed to 320 acre-feet per year (page 2-57) currently being removed? Will the kettles still be wetlands when full buildout is achieved? I think that a more thorough exploration of this issue is called for.

100

Page 4-13: Groundwater. I strongly support the development of a Landscape Management Plan and ask that it focus on "organic" methods in order to minimize the dependency on lawn care chemicals which are a major threat to water quality from residential developments

10p

Pages 4-15 and 4-18: I strongly support the protection of the red-tail hawk nesting area. I would like to see the mature trees that make up the grove

10q

maintained and a buffer area planted. The addition of interpretive signs would be nice. I would like to add that the development of a resident education program similar to the Back Yard Wildlife Refuge program would help integrate residents with any wildlife that remain on the site. **10Q**

Pages 4-17 and 4-18: Upland Habitat and Wildlife. Cumulative Impacts and Significant Unavoidable Adverse Impacts. Please include the number of acres of each type of habitat that will be lost. Expand Table 4-1 to fully disclose the loss of acreage. Also include a discussion of the likely areas for displaced wildlife to move into such as the West Kettle, Ward Lake. **10r**

Page 4-18: Upland Habitat and Wildlife- Mitigation/Project Design. This implies that the Arboretum would be suitable replacement for forested areas lost to the project. Arboretums are rather manicured forests at best and not full of the undergrowth and snags necessary for quality animal habitat. **10s**

Page 4-24: Light, Noise, and Views. From the perspective of a neighbor to the site I would have to disagree with the description of the site as a working nursery. From the western side of the project this area appears to be open space. While we can see some of the nursery buildings our views are mostly large trees, areas of shrub-scrub vegetation and wetlands. This view will be severely altered by the project replaced with the backs of several houses. Mitigation could be included for those areas that directly abut existing properties that include fences, screens of vegetation or additional set back from the property line. I would like to see more discussion of these impacts in this section and some mitigation to minimize them as appropriate. **10t**

Page 4-27: Light, Noise, and Views-Mitigation Measures. A large percentage of the wildlife that may remain on the site is nocturnal in nature. A mitigation measure that I would like to see included in this section is to restrict access to the open space and Arboretum to daylight hours. Security lights could be designed to target specific areas and lights could be turned off from midnight to dawn. Lights at the commercial areas could also be dimmed at night, especially if the grocery store were not open 24 hours a day. **10u**

Page 4-33: Transportation. The traffic analysis includes the assumptions that the development will proceed in a specific order. This could have been made consistent throughout the DEIS. It would have made for a more logical discussion of impacts and their timing. **10v**

Page 4-33: Transportation: The reader should be referred back to the discussion of LOS in the Existing conditions section (page 2-54 Existing Traffic Operations) since the concept is key to understanding the potential impacts. **10w**

Pages 4-51 through 4-53: Transportation- Site Access and Ne Intersection! Analyses. The terminology needs to be made consistent between the text, Table 4-7 and the figures. It is confusing to coordinate access numbers with driveway numbers. **10x**

Page 4-57: Transportation- Mitigation Measures. A discussion of TDM should be included here. As the project moves into the commercial development phase likely strategies should be included. **10y**

Page 4-72: Public Utilities – Storm Drainage/Other Possible Mitigation Measures: The storm water from the Village Center Phase would likely contain much higher levels of contamination from motor vehicles. The flow from this are could be run through an oil/ water separator prior to discharge into the South Kettle treatment facilities. Installation and maintenance of the oil/water separator should be included iri this section. **10z**

Page 5-4: Connection to Delta Lane. The connection of this development to Delta Lane is impractical. The roadway is substandard only 12 feet wide. The eastern end serves only 4 residences and passes through wetlands and is bordered by steep slopes on the north. Any construction along this roadway would necessitate the removal of one residence that may have historical significance to the area as anecdotal evidence suggests that it was the original farm house for this area. Also Delta Lane is with the City of Tumwater and any alteration to its current structure would require considerable interjurisdictional coordination. In addition, as a resident living on Delta Lane I would personally not support the increase in traffic through my neighborhood. This option should be abandoned. **10aa**

General Comments:

I must say that due to the long-term nature of this project I can not support the typical professional assumption that the construction impacts are "temporary in nature" (Geology and Soils p. 4-1, Wildlife p.4-13 and others). I think it is necessary to take a more realistic view. This is a very large project with construction proposed to last from 18 to 25 years. This means that a child born on the day that the ground is broken for the Village would be graduating from college before construction activities at this site are completed. This means that <u>every</u> summer would be characterized by the presence of construction vehicles, noise, view alterations and that Henderson Blvd. would always be used to transport supplies and machinery. I think that this is underplayed throughout the DEIS. For neighbors this is a significant impact. Our pastoral summers are now to be compromised for the foreseeable future. And while the argument can be made that the activity **10bb**

will vary across the site depending on phase, I still think that traffic delays, noise and dust will prove wearing and irritating. The presence of machinery the last two summers concentrating on debris removal from the shores of the Central Kettle are a perfect preview for what is in store. I would like to see these impacts explored and their affects included in the EIS, especially in the Transportation Section.

10bb

As a planning professional I am aware that the quality of any project hinges on the integrity of the applicant. There is no inherent enforcement mechanism in SEPA which allows unscrupulous developers to ignore suggested mitigation strategies. I think that every EIS should include a discussion of the difference between the strategies listed under "Regulatory Requirements" and those under "Other Possible Mitigation Measures" so that the public can help by supporting optional mitigation that they feel strongly about. I would also like to see an assignment of long-term responsibility for mitigation measures as appropriate since some are the implementation of plans and others require maintenance of facilities that will last for the foreseeable future.

10cc

Once again I appreciate the effort that went into evaluating the potential environmental impacts of the proposed project. I hope that the applicant whole heartedly commits to the long-term implementation of the recommended mitigation measures and remains in control of the project to assure that the Briggs Village becomes an enviable asset to the community and treads as lightly as possible on the natural environment of the site.

Sincerely yours,

Christie t.C. Kautsky, AICIV

Post·ir' Fax Note 7671 01110 # of pages ▶
To Todd Stam From Ecology
Co./Dopl. Co.
Phone • Phone r
Fax # 753-8087 Fax # 407-

WASHINGTON

UH•At< IML:NT OF ECOLOGY

P.O. Box 47775 • Olympia, WuhingrM 98.04·7715 • (360)407-6300

March 28, 2003

Mr. Todd Stamm
City of Olympia
Community Planning and Development Department

P.O. Box 1967
Olympia, WA 98507-1967

Your address in the Deschutes watershed

Dear Mr. Stamm:

Thank you for the opportunity to comment on the draft environmental impact statement for the proposed Briggs Village Master Plan, a mixed use development in 5 phases with 810 single and multi fami1y units, office, retail, 4 acre park and ssociatcd uses on 137 acres, located on both sides of Henderson Boulevard, norrh ofYc:lm Highway, as proposed by Gary Briggs, Briggs Development Company. We reviewed the environmental checklist and have the following comm :nts:

Corp of Eugineers:

The applicant should contact th¢ U.S. Anny Corps ofEnginc :rs in Seattle at (206) 764-3495 regarding additional pennit intormation. **11a**

A water quality certification may be required from the Department of Ecology in conjunction with the U.S. Army Corps of Engineers' permit for this project.

Water OuaUty:

Erosion control measures must be in place: prior to any clearing, grading, or construction. These control measures must be effective to prevent soil from being carried into surface water by stom1water runoff. Sand, silt, and so11 will damage aquatic habitat and are considered pollutants.

Any discharge of sediment-laden runoff or other pollutants to waters of the state is in violation of Chapter 90.48, Water Pollution Control, and WAC 173-201A, Water Quality Standards for Surface Waters of the State of Washington, and is subject to entorcement action. **11b**

Given the long duration ofthis project (five phases over 18-25 years) and the currently unknown order of developmem we recommend perfonning all actions related to soil cleanup (as described in WA MTCA Rules) ptior TO start of construction on Phase L with the goal of reducing the potential for surface water quality contamination through runoff of contaminated sedimcJlts.

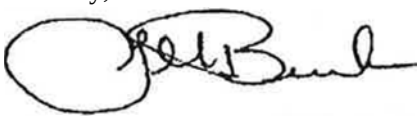
Toxic Clenpup:

The proposed action is adjacent to a *known or suspected* contaminated sire. Contaminants may be present t the site of the propose action: If contamin tion is di.sco'lcred, it must be cportcd_ to the D.epartmt.'Ilt of Ecology, Southwest Re tonal Office. Contammated so1ls or water may rcquu e spec1al handlmg and/or **11c**

disposal to protect site workers. visitors, public health, or the environment. Tf contamination is currently known or observed duling construction, sampling of the potentially contaminated media must be conducted. If contamination of soil or groundwater is readily visible, or is revealed by sampling, the Department of Ecology must be noritied. Contact the EnvironmcmtaJ Report ·rracking System Coordinator at the Southwest Regional Office at (360) 407-6300. For assistance and information about subsequent cleanup and to identify the type of testing that will be required contact Bob Warren. 11c

lfyou hnve any questions or would like to respond to these comments, please call Ms. Helen Pressley with the Water Quality Program at (360) 407-6926, Ms. Kerry Carroll with the Water Quality Program at (360) 407-6294, and/or Mr. Bob Warren with he Toxics CJ"anup Prob'Tam at (360) 407-6361.

Sincerely,



Jeri Berube
Administrative Coordinator
Southwest Regional Office

JB:lmc(03-0895)

cc: Gary Briggs, Briggs Developm nt Company
Helen Pressley, SWRO/SEA
Kerry Carroll, SWRO/WQ
Bob Warren, SWROffCP

See Fax (Received 3-31-03)

RECEIVED
APR 02 2003
COMMUNITY PLANNING & DEVELOPMENT DEPT.

CITY OF TUMWATER
Washington's First Community.

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March 31, 2003

City of Olympia Community Planning and Development
Attn: Todd Stamm
P.O. Box 1967
Olympia, WA 98507-1967

SUBJECT: Draft Environmental Impact Statement
Briggs Village Master Plan

Dear Mr. Stamm:

The City of Tumwater appreciates the opportunity to review and comment on the above referenced DEIS for the Briggs Village Master Plan.

After reviewing the DEIS, our jurisdiction has the following comments regarding transportation and recreation impacts to the City of Tumwater.

TRANSPORTATION

1. The DEIS discusses several options for the internal streets associated with the Briggs Village Master Plan to connect to Pifer Street and Delta Lane. The City of Tumwater will not allow any motorized vehicular access onto either Pifer Street or Delta Lane. 12a

   We will be supportive of an all-weather bicycle/pedestrian pathway either at Pifer Street, Delta Lane, or both.

2. Please provide clarification of the level of service and average delay at the intersections of Capitol Boulevard/Custer Way and Yelm Highway/Henderson Boulevard. Table 2-2 on page 2-54 of the DEIS indicates a level of service C with a 22 second delay for the intersection of Capitol Boulevard/Custer Way and a level of service D with a 27 second delay for the intersection of Yelm Highway/Henderson Boulevard, while Table 4-6 on page 4-48 of the DEIS indicates a level of service E with a 58 second delay for 12b

Capitol Boulevard/Custer Way and a level of service B with a 14 second delay for Yelm Highway/Henderson Boulevard. **12b**

3. With the exception of the intersection of Capitol Boulevard/Trosper Road and the Trosper Road/I-5 Interchange, the City of Tumwater has adopted a Level of Service standard of D for all intersections within the City.

   Table 4-6 on Page 4-48 of the DEIS shows that the intersection of Capitol Boulevard and Custer Way in currently operating at Level of Service E. The table also reflects a level of service C is anticipated at this intersection with the assumption that "intersection improvements will be constructed by others" by the project's 2007 horizon. It is the City's position that if a level of service deficiency exists at Capitol Boulevard and Custer Way, mitigation measures need to be implemented to eliminate the level of service deficiency as a condition of phased approval of the Briggs project. **12c**

   The DEIS document suggests several possible measures that could be completed to mitigate adverse impacts associated with the Briggs project on the intersection of Capitol Boulevard and Custer Way. The DEIS is unclear whether the suggested improvements at this intersection will eliminate the level of service deficiency. It is also unknown whether the suggested mitigation measure will be a part of the long-term solution to the level of service deficiencies along the Custer Way corridor. A Custer vVay strategy plan is currently being developed for the City of Tumwater by The Shea Group and may be completed by the end of 2003. The strategy plan will outline improvements that will help relieve the level of service deficiencies along the corridor.

RECREATION

1. The City of Tumwater is in agreement with the assessment of parks and recreation impacts that the Briggs Village Niaster Plan has defined. The build-out of the Briggs Village will create an additional need of 7.25 acres of community park land in the City of Tumwater. As part of the mitigation for the proposed project, compensation for impacts to Pioneer Park should be paid to the City of Tumwater.

   Phase one and two of the Briggs Village development will have little noticeable or immediate effect on the operations and recreational experiences at Pioneer Park. However, additional development of the Briggs Village will begin to show visible effects on Pioneer Park facilities and impacts to our park patrons. The City of Tumwater should be compensated as part of the mitigation measures required by this development. It is expected that mitigation will be agreed to and set during the third phase of development. **12d**

Thank you for the opportunity to comment.

Sincerely,

Chris Carlson, AICP
Senior Planner

c: File: Briggs Village
Jay Eaton, Public Works Director
Chuck Denney, Parks and Recreation Director

March 31, 2003

Mr. Todd Stamm
City of Olympia
Box 1967
Olympia, WA 98507

RE: Comment on Briggs Urban Village EIS

I offer the following comments on the Draft EIS. Because I note many deficiencies in the Draft, I anticipate preparation of a Supplemental Draft EIS prior to a final EIS.

1) Page 2-22: Algae blooms in Ward Lake have occurred annually since 1997. Many ofthese have been reported to the City of Olympia and Thurston County. A blue-green algae bloom was noted as recently as March 12, 2003. The Final EIS must review all reports of algae blooms, interview residents along the lake who have observed these blooms, and examine the probability of further adverse impacts from the Development.

This is a very serious shortcoming of the EIS. Ward Lake is in extremely fragile condition, due to the munber of street drains entering the lake from already-d1 veloped properties. One form of mitigation for the additional adverse impact of the proposed Urban Village might be to required off-site mitigation in the form of treatment of street effiuent from Holiday Hills and/or 42"d Avenue. Holiday Hills has previously indicated to the City an interest in cooperating with the City to develop a street effluent treatment project.

13a

2) Page 2-23: Canada Geese: Holiday Hills has participated in a goose reduction program operated by the Department of Agriculture for several years. The cost of this is being borne by the Association, not by the City. The Urban Village should be required to contribute to this effort as a condition of approval.

13b

3) Page 2-52: Transportation. The proposed Urban Village will create a destination for area traffic for shopping that does not now exist. This should be expected to significantly increase left turning traffic from westbound North Street to southbound Henderson Boulevard. Funding the construction of a tum lane and associated intersection improvements should be assigned to the Urban Village, and the environmental impact of these potential improvements should be examined in the EIS. The trip generation for this intersection at Figure 4-2 through 4-6 grossly understates the shopping traffic from the adjacent residential areas to the retail facilities at the proposed Urban ViUage. Figure 4-8 shows 60 vehicles making the left turn from westbound North to southbound Henderson during the 2-hour peak without the Urban Village, but there is no calculation of the increase after full retail buildout At page 4-49, the EIS does reflect an LOS "F" condition for this leg. The construction of the required turn lane must be examined for environmental impact in the EIS, as it is a direct consequence of the retail traffic generated by the proposed project.

13c

The EIS does not examine traffic impacts on the intersection of Cain and North at all. This intersection is already subject to congestion during morning peak hours (high-school traffic). This will be further affected by the Project. The EIS needs to examine the traffic impacts on this intersection in the same manner as other affected intersections. **13d**

An additional transportation issue are the walking and bicycling paths from the Urban Village to Pioneer Elementary, Washington Middle, and Olympia High School. Many of these walking routes have sidewalk deficiencies. Provision of adequate off-site sidewalk improvementsto provide for safe walking routes to school should be an obligation of the Project, and the traffic and environmental impact ofNOT providing such walking routes (i.e., more students being driven to school) needs to be examined in the EIS. **13e**

4) Page 2-57: Water: The current Briggs property uses lake water from Ward Lake in addition to groundwater pumping. There does not appear to be discussion of the existing surface water pumping from the lake. The EIS needs to examine the impact of changes to the amount of water pumped from Ward Lake. **13f**

5) Page 3-13, Pifer Road: This is a substandard road that adequately accommodates existing traffic volumes. It must be upgraded as a part of the Urban Village development, and the environmental impact of this upgrade should be a part of the EIS. **13g**

6) Page 3-13, Roundabout: A roundabout at the Briggs Urban Village entrance will facilitate traffic flow, reduce injury accidents, reduce air pollution by reducing traffic delay, and provide an opportunity for beautification. It should be examined in greater detail in the EIS. **13h**

7) Page 4-19, Light and Glare: The current City of Olympia Public Works Standards provide for the installation of "pedestrian-scale" lighting. Some units installed in the city have upright globes, which have severe adverse light pollution impacts. The EIS should examine the alternative of using "downward facing" luminaires, such as those at the Olympia Farmer's Market instead of the typical units installed in the City. **13i**

8) Page 4-64, Water: The document assumes continued use of existing agricultural water rights for irrigation of landscaping in the development. The transfer of water rights from agricultural to residential / commercial / municipal cannot and should not be asswned. This water is needed in the Ward Lake groundwater basin, and one benefit of the Project should be reduced withdrawals from Ward Lake and associated groundwater. The EIS needs to examine alternative sources of water for this irrigation. **13j**

9) Page 4-66, Northeast Kettle: Because runoff from the Northeast Kettle will be directed to Ward Lake, it is essential that the EIS examine alternatives to assure that such runoff will not be contaminated. Tills would include increased retention and treatment of stormwater on-site by properties dependent on this kettle, restrictions on the use of chemicals on properties served by this kettle, supplemental traps and filters on stonnwater lines that lead to the Northeast Kettle and other available measures. **13k**

10) Page 4-57: YMCA Driveway: The EIS proposes to close the YMCA driveway from Henderson. This will lead to increased traffic congestion, increased accident frequency, and increased air pollution due to vehic1e delay at the intersection of Henderson and Yelm Highway from vehicles now entering the YMCA from Henderson. This access should be retained. Installation of a roundabout should be examined as a tool to facilitate this access without adversely impacting traffic flow on Henderson.

13\

11) Page 4-58, Traffic Mitigation: Intersection improvements for Cain and North are also required. The City's stated position is that when intersection improvements occur at Henderson and North and Cain and North, a sidewalk will be constructed along the south side of North Street between Cain and Henderson (statement of Randy Wesselman to Holiday Hills Board).

13m

12) Page 4-58, Traffic Mitigation: Traffic signals on Henderson are identified for three locations; use of roundabouts should be examined as an alternative to reduce traffic delay, air pollution, and injury accidents.

13n

Summary

The Draft EIS omits consideration of an evaluation of a number of elements that are required as a part of this proposed Urban Village. Some of these have been identified above, and others will be addressed by other commentors.

130

I look forward to the issuance of a Supplemental EIS addressing the omissions from the Draft, and an opportunity for public comment on the SEIS prior to preparation of a Final EIS.

Sincerely,

Jim Lazar
1907 Hurst Dr. SE
Olymp1a, WA 98501

March 31, 2003

Mr. Todd Stamm
City of Olympia
Box 1967
Olympia, WA 98507

RE: Additional Comment on Briggs Urban Village EIS

These comments are in addition to the comments submitted earlier by me.

1) Page 2-41: Relevant City Standards: OMC 18.05A.020 requires that Urban Villages provide swimming access, if possible. I have personally swum from locations within the boundaries of the proposed Urban Village, and know for a fact that it is possible. The Code does not make any other provision for exclusion of a swimming access. Therefore, the EIS needs to examine the envirorunental impacts of the swimming access that is a required element of the proposed Urban Village. The discussion of an access trail at page 3-15 does not appear to recognize this requirement.

2) Page 4-30, Shoreline Access: the EIS does not recognize the obligation to provide swimming access as set forth in OMC 18.05A.020. The discussion at page 5-10 is totally inadequate, as it does not start from the requirement oflaw, that swimming access be provided "if possible." Since the discussion clearly demonstrates that it is possible (i.e., the discussion identifies the construction and mitigation options for such an access), one can only conclude that swimming access is a requirement for the project.

13p

3) Page 5-7: Shoreline Access: the EIS does not recognize the obligation to provide swimming access as set forth in OMC 18.05A.020. The discussion at page 5-10 is totally inadequate, as it does not start from the requirement of law, that swimming access be provided "if possible." Since the discussion clearly demonstrates that it is possible (i.e., the discussion identifies the construction and mitigation options for such an access), one can only conclude that swinuning access is a requirement for the project.

Summary

The EIS must fully evaluate the environmental impact of the required swimming area, and identify mitigation measures that can be included. Absent provision of a swimming area, the proposed Urban Village cannot be built, and therefore there will be some impact. Those impacts that can be mitigated need to be examined for mitigation opporttmities, and those that cannot be mitigated need to be recognized as unmitigated environmental impacts of the Urban Village.

I believe that the net environmental impact of swimming access will, ultimately, be positive, as this will give the general population of Olympia a vested interest in the water quality of Ward Lake. With this heightened public impact, it will be more possible to move forward with street

effiuent treatment, expansion of sewer service to Ward Lake Heights and Sten Village; and other measures that will protect the water quality of Ward Lake.

Sincerely,

Jim Lazar
1907 Lakehurst Dr. SE
Olympia, WA 98501

PUGET SOUND ENERGY

3130 S. 38th St. TAC-ANX Tacoma, WA 98409

March 31, 2003

Mr. Todd Stamm
Senior Planner
Olympia Community Planning and
Development Department
837 7lh Avenue S.E.
P.O. Box 1967
Olympia, WA 98507-1967

RE: Briggs Village Master Plan
Draft Environmental Impact Statement

Puget Sound Energy (PSE) has reviewed the above referenced Draft Environmental Impact Statement and we offer the following comments for your consideration.

In Chapter 2 *Existing Conditions* under the section on Public Utilities, Gas and Electric Power, revise the text to read as follows:

"Gas and Electric Power

Puget Sound Energy (PSE) provides natural gas and electric power in the vicinity of the project site. Currently, the nearest electrical line is a 12 kilovolt (kV), 3-phase overhead power line on the south side of Yelm Highway. There is also a 12 kV, 3-phase overhead power line on the east and west sides of Henderson Boulevard. Conduit crossings were installed across Yelm Highway for future power requirement at the two entrances of Briggs Village west of Yelm Highway. The conduits were installed when Yelm Highway was widened in 2001.

Gas is provided by PSE to the project area by 2- and 4-inch gas lines located on the south side of Yelm Highway. Puget Sound Energy is in the process of coniiecting these two segments to provide a continuous utility line. There are also 2-inch gas lines located on the west and east sides of Henderson Boulevard."

14a

In Chapter 4 *Environmental Impacts and Possible Mitigation* under the Section on Public Utilities, Impacts from Full Buildout, Gas and Electric Power, revise the text as follows:

"Gas and Electric Power

Puget Sound Energy's (PSE's) long range plans call for additional capacity to serve customers along the Yelm Highway corridor from Henderson Boulevard to Ruddell Road.

14b

The proposals of Briggs Village, Summerwalk Village and Horizon Point Village are all drivers for a future new substation."

Thanks for the opportunity to comment on the Draft Environmental Impact Statement. Please call me if you have any questions or need additional information.

Sincerely,

Barbara Bard
Municipal Liaison Manager

27 March 2003

City of Olympia
Community Planning & Development
P. 0. Box. 1967
Olympia, WA 98507-1967

RE: Briggs Village Master Plan – EIS Comments

I have tried to get answers to the foUowing three question for some time. Maybe you can answer them.

What has happen to the pair of eagles that were nesting in the area northwest of the south kettle?

When the City of Tumwater was widening the Yelm Highway, they obtained two tenths of an acre <;>n the south side of the south kettle. They turned around and bought two acres in south Tumwater near Percival Creek for replacement as wild life habitat. If this land was so important for wild life habitat then why is this south kettle being use as a surface water run off retention pond for the whole area? 15

Is there a program for taking care of mosquito nesting in any of the kettles?

Sincerely,

Donald Fagerstrom

Donald Fagerstrom
1114 South Street SE
Tumwater, WA 98501

RESPONSES TO COMMENT LETTERS RECEIVED REGARDING DRAFT ENVIRONMENTAL IMPACT STATEMENT

1. Lamprecht on behalf of Army Corps of Engineers

   A. The possibility of Corps jurisdiction has been noted in final EIS. The recommendation to that applicant request jurisdictional determination by the Corps regarding possibly isolated wetlands will be forwarded to the applicant and the Olympia Hearing Examiner for consideration.

2. Jodziewicz, Ingrid

   A. A gate, bollards, or other barriers may be used to prevent motor vehicles from accessing Pifer Road. The specific design and location of such barrier will probably not be determined until developme!lt of this portion of the Briggs Village is proposed.

   B. The comment regarding South Street traffic will be forwarded to the Olympia Hearing Examiner for consideration.

3. Jacobs, Bob

   A. References and information regarding Olympia parks have been corrected based on information provided by City Parks staff.

   B. The comment regarding maximizing connectivity will be forwarded to the Olympia Hearing Examiner for consideration.

   C. This comment will be forwarded to the Design Review Board for their consideration. Swimming access is listed in the Code as an example of shoreline access. In the City staffs opinion, public access cannot be limited only to athletic swimmers, and general swimming access to Ward Lake is not a viable option within the Briggs Village site. Thus, the swimming access option was not studied in the EIS.

4. Severson on behalf of Washington Department of Transportation

   A. This comment letter requesting a condition of approval regarding the Henderson Boulevard/Interstate 5 interchange will be forwarded to the Olympia Hearing Examiner for consideration.

5. Pearson on behalf of Washington Department of Ecology

   A. The referenced studies have been corrected to include the Northeast and Southeast Kettles. The Department of Ecology's recommended specific response to contamination issues will be requested by City staff prior to the master plan public hearing.

   B. The comment regarding stormwater input to the Southeast Kettle and statement that contamination issues in the kettle need to be addressed prior to introduction of stormwater from Briggs Village will be forwarded to the Olympia Hearing Examiner for consideration.

   C. The comment regarding stormwater input to the Northeast Kettle and recommendation that Henderson Boulevard be modified to redirect stormwater will be forwarded to the Olympia Hearing Examiner for consideration. An additional sentence has been added to the text regarding Ward Lake, "A plume of turbidity has been observed during storm events at the point of discharge from the Northeast Kettle (Pearson, 2001)." For clarification, the mitigation statement has been changed to "...reduce, but not eliminate, the potential for adverse impacts ".

6. Lawrence, Neil

   A. The comments regarding general deficiencies in the EIS will be forwarded to the Hearing Examiner for consideration.

   B. Analysis of intersection congestion at full buildout has been added to the EIS. However, the methodology used differs slightly from the "level of service" analysis used for short-term analysis.

   C. Tum-lane analysis is included in the EIS to the extent related to short-term (6-year) impacts of the development. Tum-specific analysis was deemed too speculative for 20-year analysis. Analysis of the 1-5/Henderson interchange was based on consultation with Washington Department of Transportation staff. Additional linkage analysis was not done due to a lack of direct relationship to the proposal under review.

   D. Because Olympia's environmental policies focus on afternoon peak traffic hours, congestion analysis was not done for school (morning) traffic. The text of Chapter 4 has been refined to address the issues raised by this comment.

   E. See response above regarding school traffic in general. Because the Briggs Village site is currently in the Centennial service area, issues of Pioneer expansion were not addressed. Should Pioneer Elementary School be expanded, issues of access safety and congestion will be examined at that time in cooperation with the Olympia School District.

F. With the assistance of school district staff, information regarding the various school enrollments and expansion plans has been updated in the final EIS.

G. The comments regarding potential impacts to Ward Lake will be forwarded for the Hearing Examiner's consideration. The risk that the project may increase non-sanctioned access to the Ward Lake shoreline, particularly by children, is addressed in Chapter 4 of the EIS. These impacts include safety hazards and the potential for vandalism, particularly at night. Maintenance and security measures would be required to minimize safety hazards. As noted in Chapter 3 of the EIS, the Village Corporation would retain ownership of the project's trails and Ward Lake overlook, while an Arboretum Foundation would be responsible for the trail system. While no mitigation is likely to completely eliminate non-sanctioned use of the project's frontage along Ward Lake, the applicant has proposed some measures that would likely reduce the frequency of non-sanctioned use. For the Arboretum, which would be constructed during the last phase of the project, the applicant proposes to fence the waterward side to inhibit access to steep slopes along the Ward Lake shoreline. The applicant also proposes to post signs of prohibition of swimming and/or trespass.

H. As noted in the EIS, current regulations require the payment of impact fees to mitigate residential development impacts upon school capacities and Olympia's recreational facilities. Other possible mitigation measures are listed in the EIS. Following the public hearing, the Olympia Hearing Examiner may recommend imposition of extraordinary mitigation measures.

I. The comments regarding mitigation measures in general will be forwarded to the Hearing Examiner for consideration.

J. The City staff is not aware of any assurance that the City's residents will bear no costs of this development. In general, fiscal and socioeconomic analyses are not required to be included in SEPA Environmental Impact Statements and thus would not require an addendum to the EIS. However, any such written assurance would be of interest.

K. The lack of assurance of mitigation results from the general purpose of the EIS, which is to identify probable adverse environmental impacts and possible mitigation-not to determine what mitigation is to be required. As set forth in the introduction of the EIS, the decision regarding specific required mitigation, i.e., conditions of any approval, will be made by the City Council on the recommendation of the Olympia Hearing Examiner and will be one of the subjects ofthe public hearing to be held by the Examiner.

7. Davis on behalf of Thurston County Roads and Transportation Services

A. A few of the figures were inadvertently left off of the compact disc version of the draft EIS. Paper copies have been distributed on request.

B. The draft EIS analyzed those intersections identified during the scoping process. None of these intersections were outside the cities of Tumwater and Olympia.

C. As requested, analysis of the Henderson/Airdustrial intesection has been added.

D. Analysis of the Yelm Highway/Henderson intersection has been updated. Current level of service was found to be "C."

E. Status of Yelm Highway widening project has been revised to reflect the information provided.

F. School busing statute was recodified in 1990; the erroneous reference has been corrected.

G. The comment regarding the Pifer connection will be forwarded to the Hearing Examiner for consideration.

H. The City of Olympia's practice, consistent with school district policy, is to only require safe-walking routes to a public school if busing is not provided. Because this site is over one mile from Centennial Elementary School, a safe-walking route to a bus stop would be required instead of sidewalks on Yelm Highway. The District has not commented directly on this issue.

I. The possibility of mitigation for the Airdustrial/Henderson intersection and Yelm Highway have been added.

J. The comment regarding long-term issues will be forwarded to the Hearing Examiner for consideration.

K. The suggestion regarding later transportation system analysis will be forwarded to the Hearing Examiner for consideration.

L. The suggestion regarding contribution to the county projects will be forwarded to the Hearing Examiner for consideration.

M. The comment regarding concurrency will be forwarded to the Hearing Examiner for consideration. Note that in the City staffs opinion, inter-jurisdictional concurrency requirements are an unresolved issue of the Growth Management Act.

8. Kane, Joe

A. School District information has been updated to reflect the recently approved bond issue. Because the Briggs Village site is currently within the Centennial service area, the secondary impacts of expansion of Pioneer Elementary were not addressed. Instead, the issue of adequate access and alternative access would be

evaluated if and when the Olympia School District proposes specific expansion of Pioneer.

9. Bloom on behalf of Intercity Transit

A. The Briggs Village Master Plan includes the addition of bus stops on Henderson Boulevard. A reference to Intercity Transit's long-range plans has been added to the EIS.

B. The multi-use design of the Briggs Village itself is a form of transportation demand management strategy. City staff would welcome any proposals for other TDM measures that would effectively reduce traffic impacts of the development or enhance IT service.

C. A possible mitigation measure assuring para-transit has been added.

D. The sentence regarding IT's funding uncertainty has been deleted.

E. The paragraph regarding IT's current service to the site has been updated as suggested.

10. Kautsky, Chris

A. Soil Type 126 has been added to the Figure 2-2legend. There is a figure titled "Briggs Village Critical Areas" in the Master Plan Development Application that provides topography on the site. This figure shows steep slopes, cuts, and proposed slope buffers. This document is available for review at the City Planning office.

B. Figure numbers of Chapter 2 have been corrected; as has kettle naming.

C. The lack of data regarding aquifers and groundwater use at the Briggs Nursery makes analysis ofkettle water levels very difficult. Return flows of irrigation to each kettle were not measured. It is estimated that 320 acre-feet of water was annually withdrawn from the on-site well for irrigation and that the development will reduce withdrawals by 80 to 90 percent, but specific data is not available. Thus, the EIS is limited to qualitative conclusions regarding the elimination of irrigation return flows to kettles and resulting conditions.

D. Chinese pheasant, pileated woodpecker, and great blue heron have been added to the text under Kettle Wetlands.

E. The continuing presence of red-tailed hawks is noted in the final EIS.

F. The text under "Views from Residences to North and West" has been modified to reflect the comments on views.

G. Delta Lane has been added to the Chapter 2 summary of surrounding roadways. Figure 1-2 shows relative the location of this street and Pifer Road.

H. Comcast has been substituted for AT&T as suggested.

I. The design review step is discussed in the introduction ofthe EIS. That process is now ongoing.

J. The Village Corporation would be responsible for ownership and maintenance of all "commons" areas including the Town Square; parking areas between the grocery store and the YMCA; Central Kettle and South Kettle areas; the overlook above Ward Lake; and other common areas within the Village, e.g. trails, storm drainage facilities. The Village Corporation would probably be supported by maintenance fees collected from residents and commercial establishments within the Village.

K. In the applicant's opinion, the design that involved directing the majority of stormwater to the South Kettle and restoring and enhancing wetlands in the Central Kettle was determined to be less environmentally damaging than alternatives (L.C. Lee September 1997). By removing the eastern most of the two berms located near the western edge of the Central Kettle, the applicant expects the overall area of wetland in the Central Kettle to increase. The elimination of irrigation return flows may also serve to return the wetland to a more natural hydrologic regime, as compared to the artificiai hydrologic regime maintained by irrigation water inputs. The comment regarding the need for additional information and possible mitigation will be forwarded to the Hearing Examiner for consideration.

L. The City staff is continuing to evaluate the wetland relationships and will provide additional information as it becomes available. According to the applicant's consultant, L.C. Lee & Associates (Technical Memorandum, Lee & Associates, 2000), the South Kettle, Southeast Kettle, North Kettle, and Northwest Kettle are all closed depressions and are not connected to one another. Also according to Lee & Associates (L.C. Lee & Associates February 2000), the Central Kettle and West Kettle (off-site) are physically separated by two constructed berms. The West Kettle has a bottom elevation of 116, the Central Kettle has bottom elevation of 124.9. Removal of eastern-most berm will allow water to flow into the elevation 124.6 pond/depression currently located west of the existing berm. It appears that the eastern-most berm has been preventing water from flowing from the Central Kettle west towards the West Kettle. In L.C. Lee's opinion, it is unlikely that removal of the berm alone would affect the West Kettle. As long as the remaining (western-most) berm is retained and its integrity maintained, lower water levels in the Central Kettle should not affect water levels in the West Kettle. According to the Preliminary Storm Drainage and Erosion Control Report (KPFF 2000), it is predicted that during a 100-year storm event, water in the Central Kettle would rise to elevation 129.5. According to that report, it is only at

elevation 134 that the Central Kettle becomes part of the West Kettle. Therefore, it is unlikely that a lowered water level in the Central Kettle would affect water levels in the West Kettle.

M. Buffers are ordinarily measured from wetland edges as they exist pnor to a development or project. Given the extraordinary conditions of this site, it may be necessary to clearly establish the meaning of pre-development. The text ofthe Regulatory Requirements Section has been amended to address this topic.

N. To this point, it has proved impossible to quantify the extent to which wetland conditions will change as a result of the proposed development. The EIS reflects that limitation of information.

0. Although such possibility has been discussed, there is no proposal to transfer water rights to the City, and there is no reason to believe it is likely. Thus the EIS assumes abandonment of that portion of the water right not put to use by the Village Corporation and other water regimes as proposed by the applicant. Any other analysis would be highly speculative.

P. The recommendation for a Landscape Management Plan will be forwarded to the Hearing Examiner for consideration.

Q. The recommendations regarding the red-tailed hawk nesting area will be forwarded to the Hearing Examiner for consideration.

R. Acreages have been added to the habitat discussion under Cumulative Impacts. A column was added to Table 4-1 to list the amount of change within each habitat type between the existing condition and the proposed project. In general, when habitat is lost, relocation of wildlife does not occur since existing habitat is already occupied by other wildlife.

S. The comment regarding lost forest habitat will be forwarded to the Hearing Examiner for consideration.

T. This comment regarding visual mitigation on the west side of the Village (i.e., fencing, vegetative screening, setbacks) will be forwarded to the Hearing Examiner for consideration.

U. The recommendation to restrict access to open space and the Arboretum will be forwarded to the Hearing Examiner for consideration. Current plans call for the Arboretum to be fenced and gated with daytime access only. Lighting in open spaces, residential areas, and commercial areas will be considered by the Design Review Board.

V. The applicant has not proposed a specific development phasing order. The traffic impact analysis was limited to the most likely scenario because analysis of all alternatives was not practical. Such discussion was limited to this section to avoid misleading the public regarding the specific proposal.

W. A traffic Level of Service cross-reference has been added.

X. The driveway analysis section has been modified in an attempt to improve clarity of reference.

Y. City staffhad intended to include an extensive analysis of potential Transportation Demand Management (TDM) options. However, until recently, declining funding of Intercity Transit limited such options. With the recent passage of new revenue sources, the City staff will be working closely with IT staff to identify feasible measures. The EIS has been amended to address this possibility.

Z. All stormwater systems of the Village will be required to conform with the City's drainage manual. Current storm drainage plans call for a compost filter discharging to a rock-lined swale prior to introduction of storm drainage to the South Kettle. Oil/water separators are a less preferred technique than compost filters and generally would not be allowed.

AA. The comment regarding connection to Delta Lane will be forwarded to the Hearing Examiner for consideration.

BB. The long-term nature of construction impacts has been noted in the final EIS. These comments will also be forwarded to the Hearing Examiner for consideration of possible mitigation.

CC. The distinction between required and possible mitigation is now noted in the introduction and will be emphasized at the Hearing Examiner's public hearing on the Master Plan.

11. Berube on behalf of Washington Department of Ecology

A. The possibility of a water quality certification being required is listed in the "Fact Sheet" of the EIS.

B. The water quality comments, including the importance of erosion control measures that any discharge of sediment-laden waters or other pollutants to waters ofthe state is a violation of state Water Quality Standards and recommendation to conduct all soil cleanup prior to the start of Phase I, will be forwarded to the Hearing Examiner for consideration.

C. Staff from Ecology's Southwest Regional Office are aware of the cleanup of contamination of soils and water resulting from historic nursery activities. These cleanup activities have been evaluated through a separate environmental process. The history of this cleanup is documented in the EIS. Ecology staff will be contacted regarding any continuing cleanup issues.

12. Carlson on behalf of City of Tumwater

A. The comment regarding connection to Tumwater streets will be forwarded to the Hearing Examiner for consideration.

B. The referenced conflicts in information regarding intersection levels of service have been resolved and updated in the final EIS.

C. The "by others" phrase has been deleted regarding Tumwater intersections. The comment will be forwarded to the Hearing Examiner for consideration. City of Olympia staffwill be in contact with Tumwater staff to discuss specific mitigation measures.

D. The comment regarding parks impacts will be forwarded to the Hearing Examiner for consideration. Probable impacts of the project to Pioneer Park are acknowledged. There currently are no specific provisions for measuring this impact. City of Olympia staff will be in contact with Tumwater staff to discuss specific mitigation measures.

13. Lazar, Jim

A. The Chapter 2 text has been revised to include updated information on water quality ofWard Lake and specifically information collected by Thurston County and information regarding algal blooms. Note that the project design includes measures to limit impacts to Ward Lake, such as elimination of irrigation return flows, use of compost filters, new outfall structures, and restricted shoreline use. The recommendation that treatment of street effluent from H9liday Hills and/or 42nd Avenue should be required as mitigation will be forwarded to the Hearing Examiner for consideration.

B. The recommendation that Briggs Village should participate in the funding of the Canada goose reduction program will be forwarded to the Examiner.

C. The analysis of the North Street/Henderson intersection has been expanded to include the full buildout scenario. However, absent a specific design, it would be premature to examine the secondary impacts of modification of this intersection. In the staff's opinion, the traffic generation estimates are the best available information.

D. Because Olympia's environmental policies focus on afternoon peak-hour congestion, it was deemed inappropriate to include a morning congestion analysis.

E. The EIS includes an analysis of walking routes to schools. The recommendation to require improvements will be forwarded to the Hearing Examiner for consideration.

F. The applicant states that Briggs Nursery has not withdrawn water from Ward Lake for many years and that the water right was transferred to an on-site well with lake water available as backup should the well fail (Mackie, personal communication, 2003). The Briggs Village Master Plan does not propose use of Ward Lake water for irrigation use.

G. The recommendation to require upgrading of Pifer Road will be forwarded to the Hearing Examiner. The indirect impacts of such improvements was deemed too remote for analysis at this time.

H. The staff believes the roundabout analysis is adequate. The comment regarding requiring a roundabout will be forwarded to the Hearing Examiner.

I. The form of street lights employed by the City and associated impacts is not a direct result of the proposal. The comment will be forwarded to the Hearing Examiner for consideration.

J. The water rights comment will be forwarded to the Hearing Examiner for consideration. As indicated on page 4-12, use of ground water is expected to decrease from a current estimated use of 320 acre-feet per year by the Briggs Nursery to an estimated 100 acre-feet per year for landscape irrigation at Briggs Village. Subsequent to issuance of the DEIS, the applicant has indicated that water use could be as low as 40 acre-feet per year. Depending on the figure used, the reduction of groundwater use would then be 280 acre-feet (87.5%) or 220 acre-feet (68.5%). As with current agricultural use, all landscape irrigation will occur on the existing site. The state recognizes both agricultural use and irrigation for domestic purposes as beneficial uses of water. The state does not give priority to one type of use over another. Converting the existing water right at the Briggs Nursery site from agricultural to domestic use would require a change in purpose of use. This would require submittal of an "Application for Change/Transfer of Water Right" to Ecology and/or the Thurston County Conservancy Board in accordance with "Changing an Existing Water Right or Water Right Claim," (Ecology, 1998). The change application would proceed through Ecology's process that includes internal review, public notice, public comment, and an opportunity to appeal the decision. If the change is approved, Ecology will issue a Superseding Certificate.

K. Roof runoff from residences tributary to the Northeast Kettle would be discharged to individual dry wells. Other stormwater will be collected and directed to compost filters that would discharge through rock-lined channels to the Northeast Kettle. All such measures must conform with standards of the Olympia drainage manual.

L. The comment encouraging retaining the YMCA driveway will be forwarded to the Hearing Examiner for consideration.

M. The comment regarding Cain and North Street improvements will be forwarded to the Hearing Examiner for consideration.

N. The referenced intersections were not considered for roundabouts when the scope of the EIS was determined. The suggestion to add such consideration will be forwarded to the Hearing Examiner and the Public Works staff.

0. The draft EIS has been revised in response to comments received. If it proves necessary to add information, an addendum may be issued.

P. See response to Comment 3C above.

14. Lombard on behalf ofPuget Sound Energy

A. Chapter 2 of the final EIS has been revised to reflect the comment regarding gas and electric power.

B. Chapter 4 of the final EIS has been revised to reflect the comment regarding gas and electric power.

15. Fagerstrom, Donald

A. The staff has no knowledge of eagles nesting on or near the site. The EIS does address the known nesting behavior of red-tailed hawks at the site.

B. The City of Tumwater's Yelm Highway decision regarding mitigation was made in the context of Tumwater's environmental policies and circumstances surrounding the Yelm Highway project. The comment regarding the importance of the South Kettle will be forwarded to the Hearing Examiner for consideration.