

**CITY OF WHEELER
TRANSPORTATION SYSTEM PLAN
2000-2001**

Prepared For:

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Appendix A. Wheeler Comprehensive Plan Recommended Amendments

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I. INTRODUCTION

PROJECT DESCRIPTION

The City of Wheeler has received a State of Oregon grant to prepare a Transportation System Plan (TSP). The TSP will result in a plan to satisfy the community's transportation needs and desires for the next 20 years. The objective of this project is to develop a Transportation System Plan and implementing ordinances that serve Wheeler's transportation/growth management needs and meet the requirements of the state Transportation Planning Rule (TPR).

The City of Wheeler references transportation policies throughout its' comprehensive plan, zoning ordinance, and various other city ordinances. Current references to transportation planning fail to address Wheeler's obligation to meet state mandates such as developing a TSP and implementing ordinances to comply with the TPR.

The Wheeler TSP will address ways to improve the transportation system to support anticipated growth in Wheeler and associated traffic volumes in a way that will support the functioning of Highway 101 as a Statewide Highway. The TSP will plan for a transportation system that includes all modes of travel (i.e. rail, pedestrian, bicycle, auto, marine, and public transportation), serves the entire urban area, and is well coordinated with the state, regional, and county transportation network. Specific objective include:

- planning local street connections and extensions to provide for local circulation and access off of Highway 101;
- developing local street standards that comply with the TPR;
- identifying appropriate improvements along Highway 101 to support planned land uses and the long-term functionality of Highway 101;
- planning for pedestrian circulation improvements, particularly in and near downtown, to reduce the need for short car trips on Highway 101 and improve pedestrian safety; and
- evaluating designation of the downtown area as a "special transportation area" or STA to provide access to community activities, businesses and residences and to accommodate pedestrian movement along and across Highway 101.

PLANNING AREA

The planning area for the TSP includes land within the Wheeler city limits and urban growth boundary (UGB). Approximate boundaries of this area:

West: Nehalem Bay

North: Highway 101 near Milepost 47, where Zimmerman Creek crosses under Highway 101

South: Highway 101 at Mileport 48.66

East: Approximately 1,500 feet east of Highway 101 along the forested hillside

PLANNING PROCESS

A well-conceived plan is the result of a planning process that follows a series of sequential tasks. For the Wheeler TSP, the planning process consists of the following primary tasks:

1. Establish an Advisory Committee (AC) and Implement a Public Involvement Program
2. Review Existing Plans, Policies, Standards, and Laws
3. Inventory Existing Transportation System
4. Identify Existing Deficiencies and Estimate Future Transportation Needs
5. Develop and Evaluate Transportation Alternatives
6. Complete Draft Transportation System Plan and Initiate Adoption

PUBLIC INVOLVEMENT PROCESS

Public involvement is an important component of the planning process. It provides useful technical and community input which assists in determining community needs and desires while establishing a program for future planning. Public involvement provides opportunities for community leaders and citizenry to become knowledgeable and involved in the future development of the city, leading to broad-based community review that aids in the acceptance of the plan in later stages of the planning process. Building consensus and giving ownership of the plan to the public is critical to implementation. For the Wheeler TSP, public involvement mechanisms include:

- Workshops throughout the planning process with the Advisory Committee (AC) which includes representatives from the Wheeler City Council, Wheeler Planning Commission, Wheeler Planning Staff, Wheeler Public Works, Nehalem Bay Wastewater Agency, Port of Tillamook Bay Railroad, Wheeler citizenry, Oregon Department of Transportation, Oregon Department of Land Conservation & Development, CTS Engineering, and TriLand Design Group, Inc;
- Two Community Open Houses where the community is invited to 1) provide input on transportation-related issues in Wheeler and, 2) review and comment on the alternative and recommended transportation system plans and recommendations;
- Prepare summaries of progress on the TSP for inclusion in The Wheeler Stakeholder;
- A presentation at a joint public hearing with the City Council and Planning Commission.

PROJECT SCHEDULE

TASK	Month:	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.
1. Establish Adv. Comm./Public Inv. Program									
2. Review Plans, Policies, Standards									
3. Inventory Existing Transportation System									
4. Estimate Future Transportation Needs									
5. Develop and Evaluate Transp. Alternatives									
6. Transp. System Plan & Initiate Adoption									

Proposed Meeting Dates

AC Meeting #1:	Monday, November 20, 2000, 6:00 p.m.
AC Meeting #2:	Monday, January 22, 2001, 4:00 p.m.
Community Open House #1:	Monday, January 22, 2001, 6:00 p.m.
AC Meeting #3:	Monday, March 26, 2001, 6:00 p.m.
AC/Community Open House #2:	Monday, May 21, 2001, 6:00 p.m.
AC Meeting #4:	Monday, June 4, 2001, 6:00 p.m.
Joint City Council/Planning Commission Hearing:	Tuesday, June 19, 2001

AC = Advisory Committee

All meetings are scheduled to be at either Wheeler City Hall or the Wheeler Masonic Lodge

II. PLANS AND POLICIES REVIEW

This section identifies existing plans, policies, and regulations that impact Wheeler's transportation system; and identifies accomplishments needed to comply with the Transportation Planning Rule and 1999 Oregon Highway Plan.

WHEELER COMPREHENSIVE PLAN (Adopted October 1979 with Amendment through December 1997)
The following three sections of the Wheeler Comprehensive Plan directly address transportation policies and recommendations:

- Transportation
- Estuarine Resources – Subsection L. Land Transportation Facilities
- Estuarine Resources – Subsection R. Public Access to the Estuary and its Shorelands

These sections are stated below and followed by excerpts from other sections of the Comprehensive Plan that address transportation-related issues.

Transportation (pages 10-11)

Policies:

1. Street development shall be designed to create a minimal need for cutting and filling. All sidehill streets and driveways shall be built entirely in cut-no-fill; surplus excavated materials must be removed to a location where it will not constitute a hazard.
2. The city may permit less than standard right-of-way and surface ways for streets in steeply sloped areas, consistent with safety for traffic and fire protection.
3. Proliferation of new access points to Highway 101 shall be discouraged by the city, Tillamook County, and the State Department of Transportation. Wherever possible, new residential developments shall not have direct access to Highway 101. New commercial uses should be clustered with access being provided by a consolidated access point.
4. The city shall be notified prior to the installation of any underground utility in an city right-of-way. The city will require reasonable efforts to improve or restore the road after construction.
5. The city supports efforts to provide public transportation.
6. The State Department of Transportation, when undertaking major highway improvements, shall address the following considerations:
 - a. The enhancement of pedestrian and vehicular access across Highway 101;
 - b. The maintenance or improvement of parking facilities along Highway 101;
 - c. The minimization of short-term disruptions which would adversely affect the business and residential areas of downtown Wheeler;
 - d. Assist the City in enhancement of the long range viability of the downtown area;
 - e. The minimization of noise and air pollution impacts on adjacent residential areas;
 - f. The provision of appropriate landscaping;
 - g. The protection of views across Nehalem Bay;
 - h. The enhancement of access to the waterfront;
 - i. Where appropriate, the Wheeler Planning Commission shall be used by the Oregon Department of Transportation as its citizen involvement committee.
7. The Department of Transportation shall coordinate any highway improvements with the Port of Tillamook Bay Railroad to insure that their combined improvement plans are consistent with the criteria in policy 6. Future improvement plans should not preclude passenger rail service to Wheeler.
8. The City will participate in the Highway 101 Corridor Study and the Scenic Byway Study toward the end of providing better highway transportation through Wheeler.
9. The City of Wheeler recognizes the need to amend its Comprehensive Plan and Implementing Ordinances to provide more certainty for highway and street construction projects. The City will consider making the appropriate amendments after the Oregon Department of Transportation develops model plan policies and ordinances.

Recommendation:

1. The State Department of Transportation should continue to improve the coastal bike route along Highway 101 by widening the Highway's shoulders or, where feasible, constructing separate bike lanes.
2. The City of Wheeler should develop a street Master Plan and a Multi-Modal Transportation Plan including access to the community without using Highway 101.

Estuarine Resources – Subsection L. Land Transportation Facilities (pages 29-30)

1. Maintenance and repair of existing roads, railroads, airports, bridge crossing support structures and bridge approach ramps, and establishments of low water bridges shall be allowed in all estuary zones. Replacement of bridge crossing support structures and bridge approach ramps may be considered a form of maintenance if the resulting bridge support structure or ramp is the -minimum size necessary to accommodate the same number of traffic lanes as exist on that portion of the highway.
2. In selecting sites for development of new land transportation facilities, priorities are, from highest to lowest:
 - a. upland sites; b. shoreland sites; c. estuary Development (ED) zones.

The City, however, realizes that this priority list is subject to modification by economic considerations, or by the need for services in a particular area.
3. New land transportation facilities within estuarine waters, intertidal marshes or tidal wetlands shall be permitted only if.
 - a. no feasible alternative upland route exists;
 - b. a need (i.e. a substantial public benefit) is demonstrated and the use or alteration does not unreasonably interfere with public trust rights;
 - c. adverse impacts are avoided or minimized.
4. New land transportation facilities in Estuary Development (ED) zones shall be permitted only if consistent with the purposes of the management area and the maintenance of navigation and other needed public commercial and industrial water-dependent uses.

5. When bridge crossing support structures are needed, the amount of estuarine surface area occupied shall be the minimum amount possible. Bridges, piers, and trestle shall be designed so as not to impair tidal flow in respect to volume, velocity or direction.
6. Proposals for new land transportation facilities shall be reviewed locally to determine land and water use compatibility and resource capabilities.
7. Construction and maintenance of land transportation facilities should be timed and conducted so that mass soil wasting or excessive surface erosion does not occur. Wheeler recommends increased coordination between the State and County Highway Departments and state natural resource agencies in order to meet this objective.
8. In order to preserve significant fish and wildlife habitats and maintain biological productivity, new land transportation facilities in Estuary Natural (EN) zones shall be limited to low-water bridges, bridge crossings and bridge crossing support structures. Bridge crossing support structures are allowed only if consistent with the resource capabilities of the area and the purposes of the management unit.
9. Dredged material stockpile sites shall be used as a source for fill material for land transportation facilities whenever practicable.
10. Roadway construction shall be scheduled to avoid critical periods of breeding, feeding and migration of coastal species.

Estuarine Resources – Subsection R. Public Access to the Estuary and its Shorelands (pages 34-35)

1. The City recognizes the value of maintaining and improving public access to its publicly owned estuaries for all people.
2. Further acquisition, sale or development of shorelands owned by the County, Federal, State and local governments shall be carried out in a manner to retain existing public access and maximize future public access to these publicly owned shorelands, consistent with resource capabilities and site sensitivity to human use. To this end:

- a. Existing public ownership, rights-of-way, and similar public easements which provide access to or along coastal waters shall be retained or replaced if sold, exchanged or transferred. Rights-of-way may be vacated to permit redevelopment of shoreland areas provided public access across the affected site is retained.
 - b. Governments should avoid closing their lands to public use unless protection of fragile resources outweighs the benefits to be derived from public use.
 - c. All units of government providing or supporting public access to the public coastal areas should give particular attention to use capabilities in order to protect areas from over-use and to prevent potential damage to resources.
 - d. Public access to shorelands owned by Federal, State and local government should be improved where feasible and consistent with authorized use.
 - e. The City should consider the purchase of conservation of scenic easements whenever opportunities are available to increase public access.
 - f. The City supports the voluntary use of the open space special tax assessment law when it will result in property owners maintaining natural areas or providing visual or physical access to public areas.
 - g. Special consideration should be given to making some designated areas of the City's publicly owned shorelands available to the elderly, handicapped, and physically disabled.
3. The private use of privately owned intertidal areas, tidal wetlands and shorelands is legitimate and must be protected against encroachment. Public access through and the use of, private property shall require the consent of the owner, and is trespass unless appropriate easements and accesses have been acquired in accordance with the law.
4. Where major shoreline developments are allowed, they should not, in combination with other developments in the area, exclude the public from shoreline access to areas traditionally used for fishing, hunting or other shoreline activities.

5. Special consideration of the need to retain open space and improve public access to publicly owned shorelands is necessary in urban and urbanizing areas. Industrial and commercial facilities such as canneries, ports and marinas should, where feasible, provide physical or visual access to coastal waters and shorelands.
6. The City shall carry out a program of providing public access to Nehalem Bay by retaining existing public ownership, rights-of-way, and similar public easements which provide access to coastal waters or replacing such access if they are sold, exchanged or transferred (rights-of-way may be vacated so long as equal or improved access is provided as part of a development project).

Natural Features (pages 3-4)

Policy 1. Site-specific geologic investigations may be required when appropriate to assure safe development. Site-specific investigations shall be conducted:

- d. In cases of roads and streets, fill and excavation will require a site investigation.

Policy 5. Site design which utilizes the natural topography and vegetation is encouraged:

- b. Efforts shall be made to maintain streams in their natural state;
- c. Access roads and driveways should follow natural slopes and contours and need not be constructed in block patterns;
- d. In cases of undeveloped platted lands, legal action to vacate existing lot lines and/or public rights-of-way to permit replatting consistent with natural features may be desirable.

Economic Development (page 6)

Policy 5. The economic land resource of Wheeler – the town waterfront and business district – shall be developed in a manner which encourages beneficial long-term uses outlined below.

- b. Public access to the Nehalem River is encouraged, provided that private property rights, public safety and the shoreline are not adversely affected.
- d. City of Wheeler Goal: To diversify and improve the economy of the local area.
 1. The City will endeavor to establish a waterfront revitalization plan and pursue the goals set forth in the plan.

2. The City shall endeavor to promote local markets and develop visitor attractions to the Wheeler waterfront and business district under the City's revitalization plan.

Recreation and Open Space (page 8)

Policy 4. Riparian vegetation within identified riparian zones shall be protected and retained. A fifteen foot riparian zone (measured from the ordinary high water line) is established on each bank of Zimmerman, Gervais, and Vosberg Creeks. A twenty-five foot riparian zone (measured from the mean higher high water line or line of non-aquatic vegetation, whichever is most landward) is established adjacent to Nehalem Bay. (This policy is stated because it may need to be addressed if pathways are recommended parallel or near creeks or Nehalem Bay.)

Energy (page 12)

Policy 1. The city promotes domestic energy conservation efforts, including:

- c. Bicycle and pedestrian access within the city is encouraged.

Estuarine Resources – Policy C. Boats, Ramps, Docks, and Moorage (page 15)

2. Safe navigational access to boat ramps, docks and moorages should be provided and maintained.
3. New boat ramps, docks and moorages shall be allowed only where sufficient back-up land exists without the need to fill tidelands or marshlands.
4. To encourage the most efficient use of waterfront and water surface area, alternatives to individual, single purpose docks and moorages (such as cooperative use facilities mooring buoys or dry land storage) are encouraged....
6. To preserve significant fish and wildlife habitats and provide for continued biological productivity, docks and moorages shall not be permitted within Estuary Natural (EN) zones. Boat ramps for public use where no dredging or fill for navigational access is needed shall be allowed, where consistent with the resource capabilities of the area and the purposes of the management zone.

Estuarine Resources – Policy G. Fill in Estuarine Water, Intertidal Areas and Tidal Wetlands (page 22)

Policy 5. New fill in the Estuary Natural (EN) zone shall be allowed only for:

- c. installation of public boat ramps or bridge crossing support structures.

Estuarine Resources – Policy S. Recreation and Recreational Facilities (Page 36)

Policy 4. Recreational off-road vehicle use shall not be permitted in estuarine waters, intertidal areas or tidal wetlands.

Estuarine Resources – Policy V. Shallow Draft Port Facilities and Marinas (page 40)

Policy 4. Safe navigation access to existing and future port facilities shall be maintained.

Public Facilities (page 44-46)

Policy 2. Key public facilities and services (water, sewer, and approval of transportation and storm runoff designs) shall be provided in an orderly and efficient manner.

Policy 11. Because of the major impacts such activity has on the life of the community, major highway and railroad developments, such as realignment, relocation, purchase of additional right-of-way, construction of intersections or abandonment of rail lines, should be controlled through the City's Conditional Use procedure. Minor improvement such as repaving, and addition of bike lanes in existing rights-of-way shall be outright use.

Recommendation 3. The City should consider establishing a joint venture street paving and drainage program whereby the City and adjacent property owners would share in the costs of improvements.

Recommendation 5. The city needs to undertake a study of System Development Charges.

Shorelands (pages 47-48)

Policy 8. Public access to publicly owned shorelands shall be maintained and improved wherever possible, consistent with the authorized use.

Policy 12. (This policy addresses the intent of the City to develop a Waterfront Revitalization Plan This policy is addressed here because transportation facilities will be a primary element of any revitalization plan.)

WHEELER ZONING ORDINANCE

Transportation related provisions of the Wheeler Zoning Ordinance are identified in this section.

Definitions

1. Access. Means the way or means which pedestrians and vehicles enter and leave property.
3. Alley. A street which affords only a secondary means of access to property.
6. Bridge Crossing. The portion of a bridge spanning a waterway not including support structures or fill located in the waterway or adjacent wetlands.
7. Bridge Crossing, Support Structures. Piers, piling, and similar structures necessary to support a bridge span but not including fill for causeways or approaches.
25. Highway Development or Railroad Development. Major or significant realignment, change of grade, rerouting or expansion of an arterial highway or abandonment of a railroad line or reconstruction thereof, not including routine maintenance activities such as repaving, widening for bicycles, or installation of traffic signs.
40. Marina. A facility for the docking of boats in the water, involving eleven (11) or more boats or boatslips.
44. Moorage. A facility for the docking of boats in the water, involving ten (10) or fewer boats or boatslips.
45. Navigational Aid. A beacon, mooring buoy, or channel marker.
46. Navigational Improvements. Pile dikes, groins, fills, jetties, and breakwaters that are installed to help maintain navigation channels, control erosion or protect marinas and harbors by controlling water flow, wave action and sand movement.
51. Parking Space. Parking space means an area of 9 feet by 18 feet or full size spaces, and an area of 8 feet by 16 feet for compact spaces, located off the street right of way, and intended for the parking of vehicles.
54. Recreation Vehicle. A vacation trailer or other unit with or without motive power, which is designed for human occupancy and to be used temporarily for recreation or emergency purposes and has a floor space of less than 220 square feet, excluding built-in equipment such

as wardrobes, closets, cabinets, kitchen units or fixtures and bath or toilet rooms.

60. Street. The entire width between the right-of-way lines of every public way for vehicular and pedestrian traffic and includes the terms "road", "highway", "land" (believe this is supposed to be "lane"), "place", "avenue", "alley", and other similar designations.

Zoning Districts

All zoning districts (Articles 2-7) state, in the Development Standards, that parking shall be in accordance with Section 11.090 (described below).

Article 2. WRC Zone – Water-Related Commercial Permitted principal uses/activities include marine transportation-related uses and facilities. Conditional uses/activities include railroad development and bicycle paths.

Article 3. IND Zone – Water-Related Industrial Permitted uses/activities include marinas, piers, and wharves; navigational improvements; and boat ramps. Conditional uses/activities include park, wayside or bicycle paths; and railroad development.

Article 4. GC Zone – General Commercial Conditional uses permitted include RV Parks on 4.5 acres or more.

Article 6. R-2 Zone – Residential Type 2 Permitted principal uses include park, wayside, bicycle paths and public owned recreation areas.

Article 7. P Zone – Public Lands Zone Permitted principal uses (exclusively) include park and wayside area; bicycle paths; public dock; and new highway or railroad development.

Article 8. Estuary Zone Within the Estuary Natural Zone (EN), uses permitted with standards include navigational aids and bridge crossings and bridge crossing support structures. Conditional uses include boat ramps for public use where no dredging or fill for navigational access is needed.

In the Estuary Development Zone (ED), permitted uses include navigational structures and navigational aids; and bridge crossing and bridge crossing support structure.

Conditional uses include water access structures, boat ramps, commercial docks, moorages and marinas, and water-borne transportation.

Article 10. Planned Development

Development standards include: Streets and Roads. Necessary streets and roads within the Planned Development shall be dedicated to the public and constructed to standards determined by the Planning Commission.

Article 11. Supplementary Provisions

Section 11.050. Design Review – parking lots should be divided into groups of no more than 8 spaces with landscaping and walkways dividing the groups. Plantings and/or fences should be provided to separate the parking from public streets and adjacent property.

Section 11.070. Access

Each lot and parcel shall abut a street other than an alley for a width of at least 25 feet or have vehicular

access by means of a recorded easement for a width of 25 feet.

Section 11.075. Maintenance of Public Access

The City shall review, under ORS 368.326-368.366, proposals for the vacation of public easements or rights-of-way which provide access to estuarine waters. Existing rights-of-way which provide access to estuarine waters. Existing rights-of-way and similar public easements which provide access to coastal water shall be retained or replaced if they are sold, exchanged or transferred. Right-of-way may be vacated so long as equal or improved access is provided as part of a development project.

Section 11.080 Clear Vision Areas

A clear-vision area shall be maintained on the corners of all property at the intersection of two streets. See pages 58-59 of the Zoning Ordinance for a detailed description and standards.

Article 11.090. Off-Street Parking and Loading Requirements.

RESOURCE TEAM REPORT FOR WHEELER BY THE BAY, OREGON

Oregon Downtown Development Association, March, 2000

The ODDA report is a plan that provides several recommendations and plans for improving downtown Wheeler. The report focuses on three subjects: Strengthening the Sense of Community & Place, Design: Private Space, and Design: Public Place. The Strengthening the Sense of Community & Place discusses:

- the importance of strengthening downtown as the “heart” of the community and as a logical place for people to do business, interact, shop and do business;
- increasing Wheeler’s retail shopping and art gallery experiences which would help attract visitors and underscore the need for a more comprehensive business mix combined with pedestrian friendly pathways on, and between main street and waterfront activities.

The Design: Private Space section identifies Highway 101 building façade and signage improvements, and infill opportunities.

The Design: Public Space addresses several topics including many transportation-related elements

including pedestrian-bicycle trail opportunities, parking, street lighting, street trees and plantings, utilities, public art/amenities, identification of downtown Wheeler, and a proposed Special Transportation Area (STA).

The report includes a downtown master plan that addresses these elements for the area from Hospital Street at Highway 101 to north of Rector Street, from approximately First Street west to the waterfront. Descriptions of these elements are provided below. Please note the ODDA report recommends some street closures, realignment, and new streets in the downtown core. This includes closing Gregory Street between the highway and First Street, making Rorvik Street the connection from the highway, and extending First Street to indirectly connect to Hospital Street. This is a good plan with many good features however, there may be other street alignment opportunities that may be appropriate. The TSP recommends a detailed study and design through a public process, i.e. an STA plan, that will address these elements in more detail.

Pedestrian – Bike Trail Opportunities

An opportunity exists to create better pedestrian and bike linkages throughout the city. The new Gervais Plaza, located between existing Gregory Street retail stores and Rorvik Street should have curbs and sidewalks. Sidewalks and bicycle pathways should lead from the upper park along Gervais Creek through the town square and down to the docks on Nehalem Bay. A new bike trail along the new “Bay Front Drive” would allow for bicycle and pedestrian traffic to view wildlife and estuary habitat apart from Highway 101 traffic.

Parking

Moving the Post Office ½ block closer to the new city hall/community center site would allow for the town center space to be developed with additional angled parking. The Gervais Plaza parking area could be constructed to alternate as public parking and as a public square devoted to special outdoor events like a growers market or art fair. Properly developed and landscaped parking by the waterfront that includes a non-motorized boat launch will accommodate non-trailer vehicles. RV’s would be encouraged to park in five new spaces on Hall Street. Additional RV parking and boat trailer parking would be located north of town and off of Hwy. 101.

Street Lighting

Lighting for streets, sidewalks and park should be provided to encourage pedestrian movement, improve the visual environment, and enhance the safety and security within the town square area. Light standards are manufactured in a number of styles that are “historic” in appearance. Many of these would be appropriate for Wheeler and would certainly enhance downtown.

Street Trees and Plantings

Provision should be made for street trees and plantings along the Highway 101 that buffer the parking zones of the town center. Planting beds should be sited at appropriate locations within the new Gervais Plaza. Cutouts for trees should be street level and can be planted with maintenance free ground cover plants or contained with a new paver material that allows for moisture to reach the tree roots. Tree specimens should be colorful, non-fruiting ornamentals. The city could use several varieties, but it is important to simplify the tree

planting scheme and maintenance by keeping the number of tree species to a minimum.

Street trees should not be planted along Hwy. 101 between Hall Street and one block north of Rector. The significance and impact of the businesses along this side of the street should be emphasized, and views of the bay and mountains left open. Benches and planters can be used along this area to provide amenities and add color and foliage.

Utilities

Most downtown power lines should be moved underground. Visually, power lines, poles and transformers are the most troublesome due to their penchant for creating visual clutter. It is important to ensure adequately functioning underground systems such as storm water sewers. Streets must drain rainwater to roadside curbs and adequate storm drains.

Identification of Downtown Wheeler

Entryways into Wheeler can be identified by signage at the north and south entrances to the actual commercial district. Evidence of arrival into the downtown core could be pedestrian scaled lighting, benches, planting, trash receptacles, paving and clearly defined crosswalks. In addition, the traditional beach character could be enhanced by the presence of banners, flags, sails, kites, and windsocks. Visitors arriving into downtown and Gervais Plaza should be provided with adequate information about the town’s attractions and services. A system of directional signage should be designed and positioned to orient travelers to specific destinations within the community.

Proposed Special Transportation Area (STA)

An important opportunity for Wheeler to consider is partnering with ODOT to designate Highway 101 in the downtown area from Hospital Street to one block north of Rector Street as an STA. This designation would allow Wheeler to maintain its economically important Highway 101 on street parking, reduce highway speed, and articulate more clearly defined pedestrian crosswalks. Traditional downtown development has smaller contiguous storefronts that are not set back from the sidewalk. It will be important to keep downtown development, in-fill and building rehab within these traditional downtown design guidelines.

WATERFRONT DEVELOPMENT PLAN FOR THE CITY OF WHEELER

Malcolm Johnstone, December 1997

The goal of the Waterfront Development Plan project was to provide waterfront planning and development framework which protects the waterfront amenity values and helps revitalize the economy of the City of Wheeler. The plan's project limits were west of Highway 101 from Hall Street to the north city limits. The Wheeler Waterfront Access Plan identifies vehicular circulation, turn lanes, pedestrian access and crosswalks, and landscaping improvements for the Highway 101/Rector Street intersection and along Marine Drive.

Plan recommendations for improvements to the public realm include many transportation-related elements:

- Improve the entrance to the waterfront at Marine Drive and Rector Street where it intersects with Highway 101,
- Establish landscaping plan for area for Marine Drive that will promote pedestrian usage,
- Create a pathway development plan for Marine Drive that will promote pedestrian usage,
- Approve conceptual parking plan developed by the Port of Tillamook Bay to be established at the north end of Marine Drive,
- Develop signage guidelines that will encourage highway monument signs at the entrances to the marina,
- Enhance parking on the west side of Highway 101,
- Daylighting Gervais Creek.

1999 OREGON HIGHWAY PLAN

The state highway system is a critical component of the state's transportation system. The 1999 Oregon Highway Plan (OHP) is a mechanism to help the State efficiently and effectively guide the development, operations, and maintenance of the state highway system over the next several years. The OHP is relevant to Wheeler in that State Highway 9 (U.S. Highway 101) traverses through Wheeler and is the primary roadway and only continuous north-south access through the city. The highway will continue to be the primary physical element from which through traffic travels and area residents use to access businesses, residence, and other uses.

The OHP updates state highway directives identified in the 1992 Oregon Highway Plan. The 1999 OHP emphasizes:

- Efficient management of the system to increase safety, preserve the system and extend its capacity;
- Increased partnerships, particularly with regional and local governments;
- Links between land use and transportation;
- Access management;
- Links with other transportation modes; and
- Environmental and scenic resources.

The OHP has three main elements: the Vision, the Policy Element, and the System Element. The Policy Element identifies goals which address the OHP vision and elements. An overview of these elements and their relevance to State Highway 9 (U.S. 101) through Wheeler is provided below.

Wheeler's Relevance to the 1999 Oregon Highway Plan

OHP Policy Element Goals		Relevancy to Wheeler
<p>G O A L 1</p>	<p>System Definition: To maintain and improve the safe and efficient movement of people and goods, and contribute to the health of Oregon's local regional, and statewide economics and livability of its communities.</p>	<p>The System Definition recognizes that state highways are the main streets of many communities and strives to maintain a balance between serving these main streets and the through traveler. This is particularly relevant to Wheeler. U.S. Highway 101 is the primary roadway and access for both through travelers and area residents. The Wheeler TSP must incorporate the OHP policies and standards that recognize the need to achieve a balance and accommodate mobility needs of both through travelers and area residence.</p>
<p>G O A L 2</p>	<p>System Management: To work with local jurisdictions and federal agencies to create an increasingly seamless transportation system with respect to development, operation, and maintenance of the highway and road system that:</p> <ul style="list-style-type: none"> • Safeguards the state highway system by maintaining functionality and integrity; • Ensures that local mobility and accessibility needs are met; and • Enhanced system efficiency and safety. 	<p>The focus of the System Management policies is on making the highway system operate more efficiently and safely through public, and private partnerships, intelligent transportation systems, better traffic safety, and rail-highway compatibility (where applicable). There is the opportunity and need for the State and City of Wheeler to coordinate and work to together to ensure that improvements are made in a most effective and efficient manner. The State recognizes that this often occurs by assisting cities with off-system improvements. The TSP will identify how off-system improvements in Wheeler will improve mobility and safety along U.S. Highway 101.</p>
<p>G O A L 3</p>	<p>Access Management: To employ access management strategies to ensure safe and efficient highways consistent with their determined function, ensure the statewide movement of good and services, enhance community livability and support planned development patterns, while recognizing the needs of motor vehicles, transit, pedestrians, and bicyclists.</p>	<p>Access management balances access to developed land while ensuring movement of traffic in a safe and efficient manner. In Wheeler existing access management along U.S. Highway 101 and downtown has a fairly well-established framework. Through the core area of downtown (from Hospital Street to one block north of Rector Street) access points are generally limited to local side streets that intersect with Hwy. 101 from the east side of the highway. There are limited access points from private property. The west side of the highway (between the highway and the railroad) is used for parking. Access is limited to streets that access the marina and commercial uses located along the waterfront. The current access will be examined in the TSP and recommendations for improvements and/or maintenance of the existing system will be provided.</p>

<p>G O A A L 4</p>	<p>Travel Alternatives: To optimize the overall efficiency and utility of the state highway system through the use of alternative modes and travel demand management strategies.</p>	<p>The Travel Alternatives Policies focus on reducing barriers to efficient freight movement, using alternative modes. Although U.S. Highway 101 is not a designated freight highway through Wheeler, the highway is the sole source of access for through freight and vehicular traffic. There is an opportunity to improve the movement of through traffic by introducing an improved pedestrian friendly environment. The scale of Wheeler is conducive to a pedestrian friendly environment. The current inefficiencies are primarily related to vehicular, pedestrian, and parking conflicts. Improvements to parking and pedestrian facilities along the highway and adjacent local streets and property will increase multi-modal movement throughout Wheeler, improve safety, and enhance efficient movement of through traffic.</p>
<p>G O A L 5</p>	<p>Environmental and Scenic Resources: To protect and enhance the natural and built environment throughout the process of constructing, operating, and maintaining the state highway system.</p>	<p>The Environmental and Scenic Resources Policies recognize ODOT's responsibilities for maintaining and enhancing environmental and scenic resources in highway planning, construction, operation and maintenance. This is particularly relevant in Wheeler. The city and Highway 101 was built along the edge of Nehalem Bay. The bay offers a significant amount of environmental and scenic resources, provides spectacular views, and is a significant attraction to motorists, pedestrians, and bicyclists. The TSP will address the protection and enhancement of this significant natural resource while addressing the mobility needs of through travel and local travel.</p>

For Wheeler and the development of the TSP, a critical element of the OHP is the Special Transportation Area (STA) designation. The TSP includes evaluation of Wheeler for a designated STA and initial findings support the criteria for a Wheeler STA designation. OHP Policy 1B Land Use and Transportation describes Special Transportation Areas. The primary objective of

managing highway facilities in an existing or future STA is to provide access to community activities, businesses, and residences and to accommodate pedestrian movement along and across the highway in a downtown, business district and/or community center. Wheeler, along Highway 101, fits this description. The TSP addresses STA criteria identified in the OHP.

TRANSPORTATION PLANNING RULE

The Transportation Planning Rule (TPR) sets out specific guidelines for the development of a TSP. In development of this plan, individual modal plan elements will be produced for:

- Roadway network plan
- Public Transportation
- Bicycle and Pedestrian Plan
- Air/Water/Rail Pipeline Plan

In addition to these modal elements, the plan must include policies and regulations for implementing the plan and a determination of transportation needs.

In development of the modal elements, the plan must include inventories for road, bicycle, pedestrian, and public transportation facilities. These inventories will not only provide the location of facilities, but also information on their condition and service demand. The TPR also requires the TSP to include information on the location of planned major improvements.

**PACIFIC COAST SCENIC BYWAY MANAGEMENT PLAN FOR HIGHWAY 101 and
SCENIC BYWAY MANAGEMENT PLAN for the NEHALEM, TILLAMOOK, AND NESTUCCA
REGIONS of the U.S. 101 CORRIDOR IN OREGON**

Recognition of the Oregon Coast as a special and unique natural resource, coupled with U.S. Highway 101 providing access along the coast led to the designation of U.S. Highway 101 as one of 12 State Scenic Byways. The 1997 Pacific Coast Scenic Byway Management Plan for Highway 101 will help improve the tourist experience and will also benefit residents by improving a variety of traveler amenities. A primary purpose for the plan is to create a plan for developing and managing the U.S. 101 corridor as a scenic byway in accordance with its state designation. As a current Oregon Scenic Byway, the U.S. 101 corridor will benefit from the Corridor Management Plan through:

- The improved coordination between agencies and jurisdictions working to improve the visitor experience and quality of life that have been achieved during plan development,
- The plan's identification and prioritization of projects to improve these aspects of U.S. 101,
- The plan's utility as a resource for developing grant applications for identified projects,
- The plan's value as a general information resource for local governments, agencies, and private businesses.

The plan's secondary purpose is to serve as an application for designation of the U.S. 101 corridor as a National Scenic Byway through the Federal Highway Administration. National designation would recognize the value of this unique resource and good work being done to protect and enhance it. National Scenic Byway designation for the corridor will result in the state and its local partners realizing the following benefits:

- Access to National Scenic Byway grant program funding,
- National marketing and advertising exposure,
- The status of being formally recognized as offering one of the nation's premier travel experiences.

The Plan identifies eleven regions with Wheeler located in the Nehalem Region. The Nehalem Region summary states that "the town of Wheeler lies peacefully along the edge of Nehalem Bay". Identified "defining features" in Wheeler include:

- **The City of Wheeler** – The town of Wheeler was incorporated in 1914 and named after C.H. Wheeler, who established a sawmill in the area, after the railroad came through in 1911. Fishing, canning, and dairy production were once the economic mainstays of the community, but tourism gained a foothold in the 1920s. Wheeler hosts the Crab Festival in June and the Salmon Derby in September. The plan identifies the City of Wheeler's intrinsic qualities as scenic, historic, and cultural, with management goals as enhancement, awareness, and access. The access objective is to assess traffic flow to, from, and within the city and its businesses. Strategies are to realign traffic flow to the featured areas, and identify off-highway parking. The implementation step is for the City to work with ODOT to evaluate needs and possibility of project implementation.
- **Wheeler Waterfront Park and Views of Wheeler** – Wheeler has unique views from several vantage points. The city overlooks Nehalem Bay and River, including Lazarus Island, Dean's Point, and Fishery Point. In addition, it has a panoramic view of Neahkanie Mountain and Onion Peak, and a peek at the ocean across Nehalem State Park. These features are prominent also throughout the town – a town of hills. The plan identifies intrinsic qualities as scenic, recreational, and natural. Management goals identified in the statewide plan are awareness, interpretation, access, and a priority project, while the regional plan identifies stewardship, awareness, and interpretation as management goals.

The plan identifies the following two "contributing features" within Wheeler:

- **Birding/Wildlife Viewing on the Bay and Estuaries** – From Nehalem to within the town of Wheeler, the opportunity to view birds and wildlife is spectacular. A large variety of waterfowl, raptors, and passerine birds are drawn to the bay/estuaries. Elk are seen frequently on the sand spits, and beaver and seals can be seen playing the water. Intrinsic qualities are scenic

and natural with management goals as enhancement, stewardship, awareness, interpretation, access, and priority project. The access objective is to provide parking areas and turnouts along this stretch of the highway. Strategies are to establishing a safe exit/entry from U.S. 101, and to regulate the availability of parking spaces. Implementation steps are for ODOT to investigate opportunities for turnouts and parking areas; if project scope is within ODOT's maintenance forces ability to construct, the District Manager will determine if the project can be funded in the current budget or attempt to secure funding in a future budget; if project

scope is outside of ODOT's maintenance force's ability to construct, the project must be added to the State Transportation Improvement Program.

- **Passenger Train Views** – The passenger train that takes people from the Tillamook Industrial Park to Wheeler, May through October each year, passes through the heart of Tillamook County and offers a variety of viewing opportunities, ranging from the lush coastal mountains to agricultural valleys and views of the Pacific Ocean. The plan identifies contributing features as scenic, recreational, and natural with management goals as awareness.

PROPOSED OREGON COAST HIGHWAY CORRIDOR MASTER PLAN

The 1995 Oregon Coast Highway corridor master plan recognizes the Oregon Coast as a region of extraordinary beauty, natural wonders, and cultural diversity that will continue to mature as one of the nation's most admired scenic routes, attracting tourist and recreational travelers, while remaining the principal rout for commercial and industrial traffic along the coast. The corridor needs to provide for the safety and travel efficiency needs of users, while harmonizing with and, where appropriate, enhancing the inherent scenic beauty of the coastal region. The master plan has goals and objectives that focuses on development of a 20-year transportation plan. The subarea identified in the master plan that includes Wheeler is the "North of Manzanita Junction through Wheeler". Recommended "plan activities" relevant to Wheeler include:

- Develop a pedestrian/bicycle circulation strategy including investigation of alternative routes and possibly utility easements west of the highway;
- Improve transit/paratransit service, including transit stops at Wheeler;
- Develop a community design program that incorporates the following element:
 - Parking strategy for both on-street and off-street parking,
 - Pedestrian and landscape improvements that enhance the pedestrian environment and
 -

circulation features. In Wheeler, replace existing curb and sidewalk on the southeast side of the street. Develop a pedestrian connection from Paradise Cove to Wheeler.

- Informational and directional signage program, including consideration of consolidating or eliminating existing signs.
- Clearer definition of the highway's role in these communities,
- Identify possible locations, and preserve/enhance selected views of Nehalem River for northbound traffic,
- Analyze the need for providing left-turn opportunities from Highway 101,
- Preserve open views and natural resources adjacent to the highway,
- In Wheeler, investigate the opportunity to create an esplanade along the bay side of the railroad incorporating landscaping, street trees, benches, lighting, meandering pathway, and regulated parking,
- Preserve the integrity of the existing railroad,
- Investigate the feasibility of developing a left-turn lane for southbound traffic and a pedestrian crossing at Rector or Gregory Street in Wheeler. Consider closing one of these streets.
- Investigate the feasibility of constructing local street improvements so that traffic can collect onto Gregory Street in Wheeler.

STATEWIDE TRANSPORTATION IMPROVEMENT PROGRAM (STIP)

The STIP does not identify any project for U.S. Highway 101 through Wheeler.

III. EXISTING TRANSPORTATION SYSTEM

Summary

This section provides an assessment of existing traffic and roadway conditions along Hwy. 101 through downtown Wheeler; and includes an inventory of the local street system. The objective of this work is to establish baseline traffic conditions and operational issues that will be used to assess future traffic volumes and needs throughout the study area. Major findings of this assessment include:

1. Capacity analyses at the major intersection of Hwy. 101 and Gregory Street found that it operates at LOS B or better during weekday peak hours during the off-season months. During peak spring and summer time hours, such as mid-day on a Saturday, this intersection is estimated to operate at LOS C by standard capacity models (*which is still a relatively high LOS*), *but observations of summertime traffic found that vehicles slow along Hwy. 101 at this intersection and congestion does occur. Reasons for the congestion include a large number of pedestrians crossing Hwy. 101 and parking maneuvers along Hwy. 101.*
2. Within the downtown study area, most of Hwy. 101 contains sidewalks on the east side. No sidewalks are present along the west side. At the same time, the parking area, commercial activities, and marina on the west side tend to generate a significant number of pedestrian crossings. Observations of pedestrian activities and conflicts with through traffic indicate that safe pedestrian circulation needs to be a priority.
3. Most streets in the core study area have on-street parking with marked parallel or head-in spaces along Hwy. 101. During the summer time, almost all parking spaces along Hwy. 101 and along many minor streets appear to be occupied. During off-season periods, about half the spaces appear to be occupied along Hwy. 101. Parking for large vehicles and RVs needs to be addressed.
4. During the last three years, 8 accidents were reported along Hwy. 101 through Wheeler with two being injury accidents. This equates to an overall accident rate of approximately 0.8 accidents per million entering vehicles. This rate is typical of many stretches of Hwy. 101.
5. During the TAC and Open House meetings the above issues were discussed. Other major issues included long-term versus short term parking needs, impact of the potential boat ramp relocation to the north, development of Scoval property and its impact on Wheeler, and several operational problems at minor streets (e.g. Pennsylvania), bicyclists needs, and improvements for pedestrian facilities.

Based on the above, initial key traffic operational issues in Wheeler appear to be the RV parking, sight distances and traffic operations at the Gregory/Rorvik and Rector intersections on Hwy. 101, and pedestrian traffic crossing Hwy. 101.

The following paragraphs document the information reviewed, analyses, results, and major findings.

Study Area

This section focuses on Hwy. 101 within city limits, with the major concern being the downtown area from Spruce Street to Hall Street. Refer to the attached Figure 1 Study Area.

Area Land Uses

Most of the land in the downtown core is zoned commercial. Most of the buildings in the area are general retail buildings. The City Hall and Police Station are located in the south part of downtown along Hall Street.

The main traffic generator in the downtown area appears to be the Post Office, local retail stores/restaurants/motel, and the boat launch/waterfront area. To the west of Wheeler is the Nehalem River/Bay, which also provides access to the Pacific Ocean.

Roadway Characteristics along Hwy. 101

Hwy. 101 contains two lanes (one in each direction) with a painted centerline, which varies 32-46 feet wide. No intersections have any turn lanes. Parking is permitted along most of Hwy. 101 through the downtown core. The wider section is near Gregory Street contains 22 head-in parking spaces on the west side and parallel parking on the east side. Most of the minor streets are 34-40 feet wide and striped for only two lanes of traffic. At some intersections, traffic along the minor approach does form two lanes (one for left turners and one for right turners). Parking is permitted along most minor streets through the study area. Many of these characteristics are identified in the enclosed Highway 101 Street Inventory.

Pedestrian and Bicycling Facilities

Within the downtown core study area, Hwy. 101 has sidewalks along most of its east side. Marked pedestrian crosswalks are present at Gregory and Rector. Most of the street corners in the area have handicap ramp treatments. No bicycle lanes are marked in the study area. During our summer visits, heavy pedestrian movements were observed crossing the highway to/from the head in parking on the west side of Hwy. 101 and businesses on the east side. Figures 2 and 2A present the results of pedestrian counts taken during the summer and winter 2000. It should also be noted that pedestrian crossings at the Gregory intersection were significant even during the off-season periods.

Transit Facilities

Wheeler has several transit options. First, the Tillamook County Transportation District (TCTD) operates bus service along Hwy. 101. This route operates between Nehalem and Tillamook. At Tillamook, riders can transfer to other routes to travel further south or to travel to the Portland Metro area. This service operates Monday-Friday with 5 buses in each direction and with limited service on Saturdays. Data from the TCTD reveal that ridership is about 20-40 boardings/departings in Wheeler during a month. In addition, TCTD is starting a Dial-a Ride van service for Wheeler residents. This service will operate Monday through Friday from 8 a.m. to 5 p.m. Finally, during the summer peak season, the Port of Tillamook Bay operates a train between Nehalem and the Air Museum in Tillamook. This train ride also includes stops in Rockaway Beach and Garibaldi. Last season, over 1,800 passengers rode this train through Wheeler.

Other Features

A special feature of Wheeler's roadway system that would not be readily evident from these graphics is that the east section of Wheeler is along a ridge and significantly higher in elevation than Hwy. 101. This grade difference can be seen in several of the photos such as looking east along Gregory Street. This may make it difficult to connect local streets in this area.

Existing Traffic Volumes and Peak Hour Operations

Traffic Volumes

Three sets of traffic volume counts were performed for this study. The first was during the August of 2000 on a Saturday afternoon (1-3 PM). Due to the timing of this count relative to the contract, this count was limited to the intersection of Hwy. 101/Gregory. It also included counts for pedestrian movements. The second and third sets of counts were taken in December of 2000 on a Friday afternoon (4-6 PM) and on Saturday afternoon again. Figures 2 and 2A present the results of these counts. Comparing the through volumes along Hwy. 101, peak summer traffic was about 2.5 times the winter counts. Interestingly, the minor street traffic at Gregory was only slightly higher during the summer compared to the winter counts. This can be attributed to the fact that the Post Office and other major uses open throughout the year are located along Gregory. For comparison, attached is data from ODOT's automatic recorder 29-001, located south of Rockaway Beach. Most traffic crossing this location would likely also travel through Wheeler.

Counts

Consequently, these data will be used to track seasonal trends along Hwy. 101 through Wheeler and other volume characteristics. *These data reveal that overall traffic volumes during August (ADT= 9415) is over twice the volumes recorded during December (ADT= 4,348).* This confirms the differences noted in the peak hour counts.

Peak Hour Traffic Operations

The 1999 Oregon Highway Plan (OHP) uses volume to capacity ratios (V/C) to evaluate mobility deficiencies and needs. V/C is the ratio of peak hour traffic volume to maximum hourly volume of vehicles that a roadway section can accommodate. In other words, v/c measures the percentage of the capacity of the roadway section that is utilized during the peak hour. Through Wheeler, Highway 101 is classified as a Statewide Highway under the 1999 State Classification System (1999 SCS). The OHP states that the maximum acceptable v/c ratio for Statewide Highway outside the Portland Metro and not identified as a STA is 0.80.

Using ODOT's Mobility criteria, traffic conditions at key intersections along Hwy. 101 were analyzed during the periods shown in **Figures 2 and 2A**. Intersection operational analyses were conducted using the procedures in the 1997 Highway Capacity Manual (HCM) for evaluating signalized and unsignalized intersections, which describe the traffic operations of an intersection in terms of its Level of Service (LOS). The Level of Service (LOS) criteria range from "A", which indicates little, if any, delay, to "F", which indicates that vehicles experience long delays. We also evaluated these intersections using ODOT's UNSIG intersection capacity model. (Based on our experience, the HCM models would be more accurate and allow for certain adjustments such as pedestrian crossing that are not included in the UNSIG model.) **Tables III-1 and III-2** shows the results of the intersection capacity analyses and indicates that this intersection operates at LOS C or better during the Weekend or Weekday PM peak periods. Even so, observations during the summer revealed that congestion does occur through downtown Wheeler as drivers slow down to look at the area, search for parking spaces, and/or slow for pedestrians. The standard intersection capacity models do not capture these factors well. These factors were of less an impact during our off-peak traffic operations because of readily available parking and reduced pedestrian volumes.

Table III-1: December 2000 Current Levels of Service

Intersection	SATURDAY PEAK HOUR			WEEKDAY PM PEAK HOUR		
	MINOR STREET STOP CONTROL					
	Avg Vehicle Delay (Sec/Veh)	V/C Ratio	LOS	Avg Vehicle Delay (Sec/Veh)	V/C Ratio	LOS
Highway 101/1st Street Critical Leg: WB Approach	9.6	(0.04)	A (A)	9.4	(0.07)	A (A)
Highway 101/Hall Street Critical Leg: WB Approach	9.8	(0.01)	A (A)	7.5	((0.01)	A (A)
Highway 101/Gregory St/Rorvik St Critical Leg: WB Approach	10.0	(0.04)	B (A)	9.4	(0.01)	A (A)
Highway 101/Rector Street Critical Leg: WB Approach	10.3	(0.33)	B (A)	10.6	(0.03)	B (A)

UNSIG results in parenthesis ()

Table III-2: August 2000 Levels of Service

Intersection	SATURDAY PEAK HOUR		
	MINOR STREET STOP CONTROL		
	Avg Vehicle Delay (Sec/Veh)	V/C Ratio	LOS
Highway 101/Gregory St/Rorvik St Critical Leg: WB Approach	13.6	(0.09)	C (A)

*UNSIG results in parenthesis ()

Traffic Safety

Accident records for the most recent three years of available data (January 1997 to December 1999) were obtained from ODOT files for the Highway 18B portion of the study corridor. The majority of reported accidents occurred between Rector and 1st Street as shown in **Figure 3**. These data revealed that 8 accidents were reported near intersections with Hwy. 101 during this period. Four accidents involved parking maneuvers or collisions with fixed objects. Only 2 of these 8 accidents (or 25 percent) resulted in an injury, while 6 involved property damage only. The accident rate for this area is about 0.88 accidents per million entering vehicles. This rate is typical of other urban arterial roadways, but might be considered high relative to the minor street traffic in Wheeler.

Parking

Our field reconnaissance found that 64 parking spaces are available along Hwy. 101 (parallel spaces on east side and head-in spaces on west side) throughout the downtown core of Wheeler. A parking lot is also available on the west of Hwy. 101 in the boat launch area that also has an adjacent restaurant. The capacity of this lot is estimated to be 30-50 spaces. Parking is also available along most of the minor streets. Other nearby parking areas include lots at City Hall on the south side of downtown and the Masonic Lodge on the north side of downtown. Our observations during the summer time found most parking spaces throughout the entire downtown area were occupied during a typical Saturday afternoon. During our off-season observations, about half the parking spaces along Hwy. 101 were occupied during the weekend afternoon. Although no formal study was performed, our general impression is that most vehicles were typically parked for about 1 hour. A parking issue that must be addressed is available parking spaces for large trucks and RV vehicles. Finally, with parking full along Hwy. 101, a driver's line of sight from the minor streets is restricted.

Other Transportation Issues

During the TAC and Open House meetings several transportation issues were raised that either expand on the information reviewed above or are additional concerns. These issues are noted below by travel mode:

Traffic Flow

- 1) At the Post Office, people turn around and do not park safely
- 2) Northbound traffic travels too fast at south end of Wheeler
- 3) Drivers use City Hall Parking area as turn around

Roadway Network

- 1) Improve upper portion of Rorvik
- 2) Need alternative N/S route to Hwy. 101, possibly 3rd
- 3) Issues regarding ROW along Hwy. 101 and railroad. Hwy. 101 may be within RR ROW 50 feet wide each side of tracks?
- 4) Largest developable parcel north of Marina-privately owned by Scoval, who has submitted development proposals in past. County would like to obtain site for public uses.

Safety

- 1) Logging trucks too noisy and pass on right
- 2) E/W streets steep and can be slick with ice and frozen fog
- 3) Drivers along minor streets, particularly at Gregory, have problems seeing along Hwy. 101-possible solutions curb extensions.
- 4) Angle of Pennsylvania is too curved and dangerous, roadway does freeze (see additional picture)

Parking

- 1) Need parking areas for RVs and vehicles with trailers
- 2) Majority of parking on west side of Hwy. 101 creating pedestrian problems

- 3) Fisherman park all-day. This takes up space that could be used by people throughout the day. They also drive poorly with their trailers.

Pedestrian

- 1) Extend sidewalks through entire downtown core to Pennsylvania
- 2) Steep minor streets difficult to walk particularly when wet. Construct steps with railing
- 3) Improve shoulders along Hwy. 101
- 4) Crosswalks along Hwy. 101 need to be upgraded, perhaps with overhead sign like Rockaway Beach
- 5) Create walking path loop throughout Wheeler, could include boardwalk along River to Paradise Cove. Could include bike path.

Bicycling

- 1) Create bike path throughout Wheeler
- 2) Biking along Hwy. 101 is dangerous
- 3) Create biker rest area and provide bike racks

Transit/Bus

- 1) Stops poorly located (i.e. southbound) and conflict with parking along west side of Hwy. 101.
- 2) Need handicap access, safe waiting area, connection to sidewalks/safe walking areas.

Marine

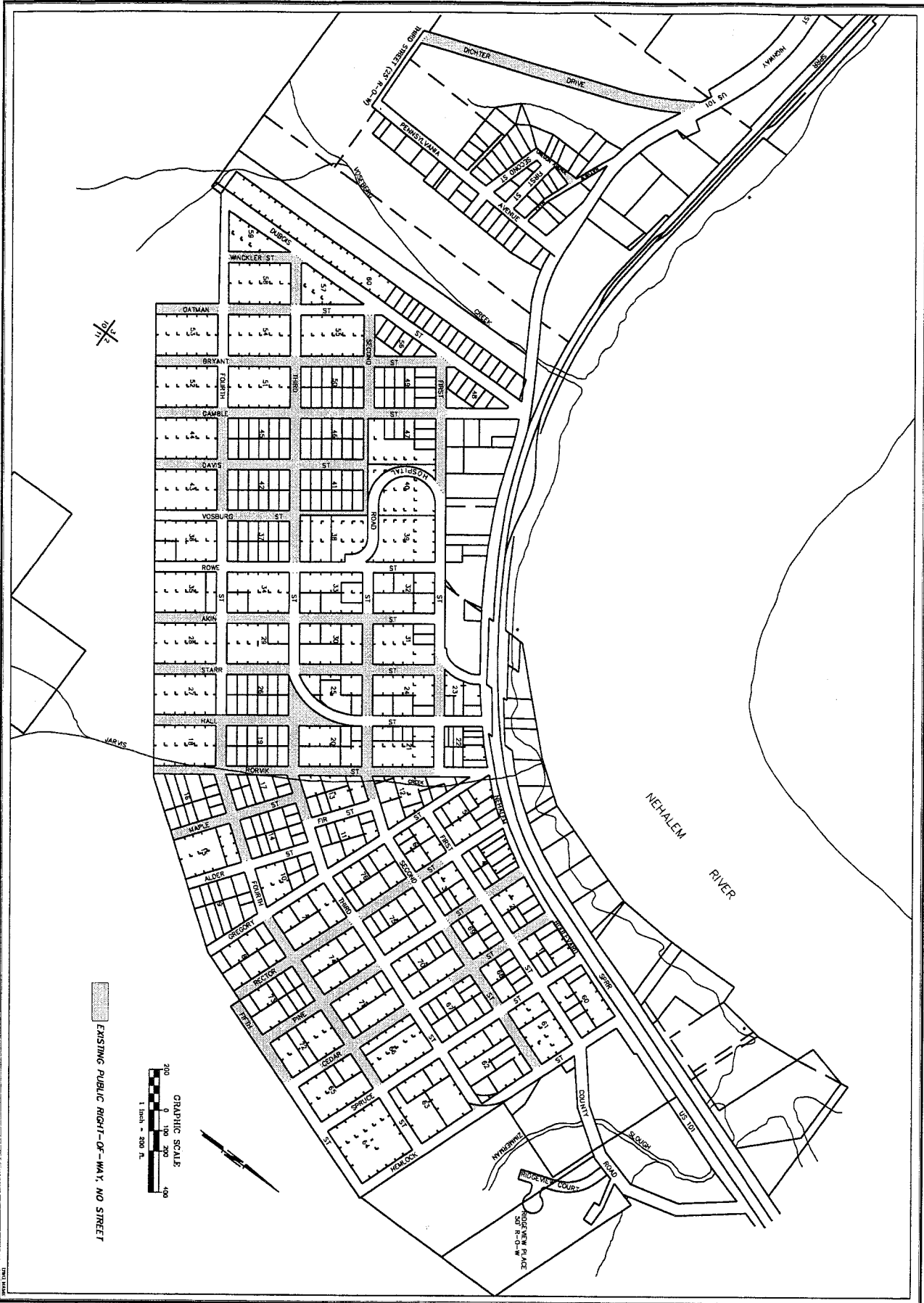
- 1) River needs to be dredged. It floods marine area and streets become drainage
- 2) Daylight Gervais, when culvert plugged city floods
- 3) Boat Ramp may move to north and will impact on downtown business and loss of business. City gets \$2500 to maintain marina park. Fee based on features available.

Tourist Train

- 1) Train line connects to Port of Tillamook near Air Museum. In future it could connect to Portland via Hillsboro and Max Light Rail

WHEELER HIGHWAY 101 STREET INVENTORY

Street	ROW Width	Trav. Lanes: Wid./No.	Turn Lanes: Wid./Len.	Pymnt Wid./Type	Speed Limit	P/Angle HC	Bike Ln Wid./Type	Sdwik Wid./Type	Crosswalks: Type/Pedsig	ADA Ramps	Bus Stops	Roadside Features	Sight Distance
Highway 101 North to South													
Hemlock to Spruce		12/2	None	32/AC	25/45	None	None	None	None	None	None	None	Adequate
Spruce to Rector		12/2	None	35/AC	25	None	None	None	None	None	None	None	Adequate
Rector to Gregory		12/2	None	50/AC	25	Angle/Parallel	None	4'	paint	yes	None	None	Adequate
Gregory to Hall		12/2	None	41/AC	25	Parallel	None	8'	paint	yes	None	None	Adequate
Hall to 1st		12/2	None	40/AC	35/25	Parallel	None	4'	None	None	None	None	Adequate
1st to Gamble		12/2	None	30/AC	35	None	None	4'	None	None	None	None	Adequate
Gamble to DuBois		12/2	None	32/AC	45/35	None	None	None	None	None	None	None	Adequate
DuBois to Pennsylvania		12/2	None	32/AC	45	None	None	None	None	None	None	None	Adequate



1	of	1
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EXISTING STREET SYSTEM

WHEELER TRANSPORTATION SYSTEM PLAN

PREPARED FOR:
CITY OF WHEELER
 PO BOX 177
 WHEELER, OR. 97147

30200 S.W. Nishize Ave.
 Suite 104
 Tigard, Oregon 97223
 (503) 968-6399
 FAX (503) 968-1439



TRILAND DESIGN GROUP INC.
 PLANNING - CIVIL ENGINEERING - LAND SURVEYING

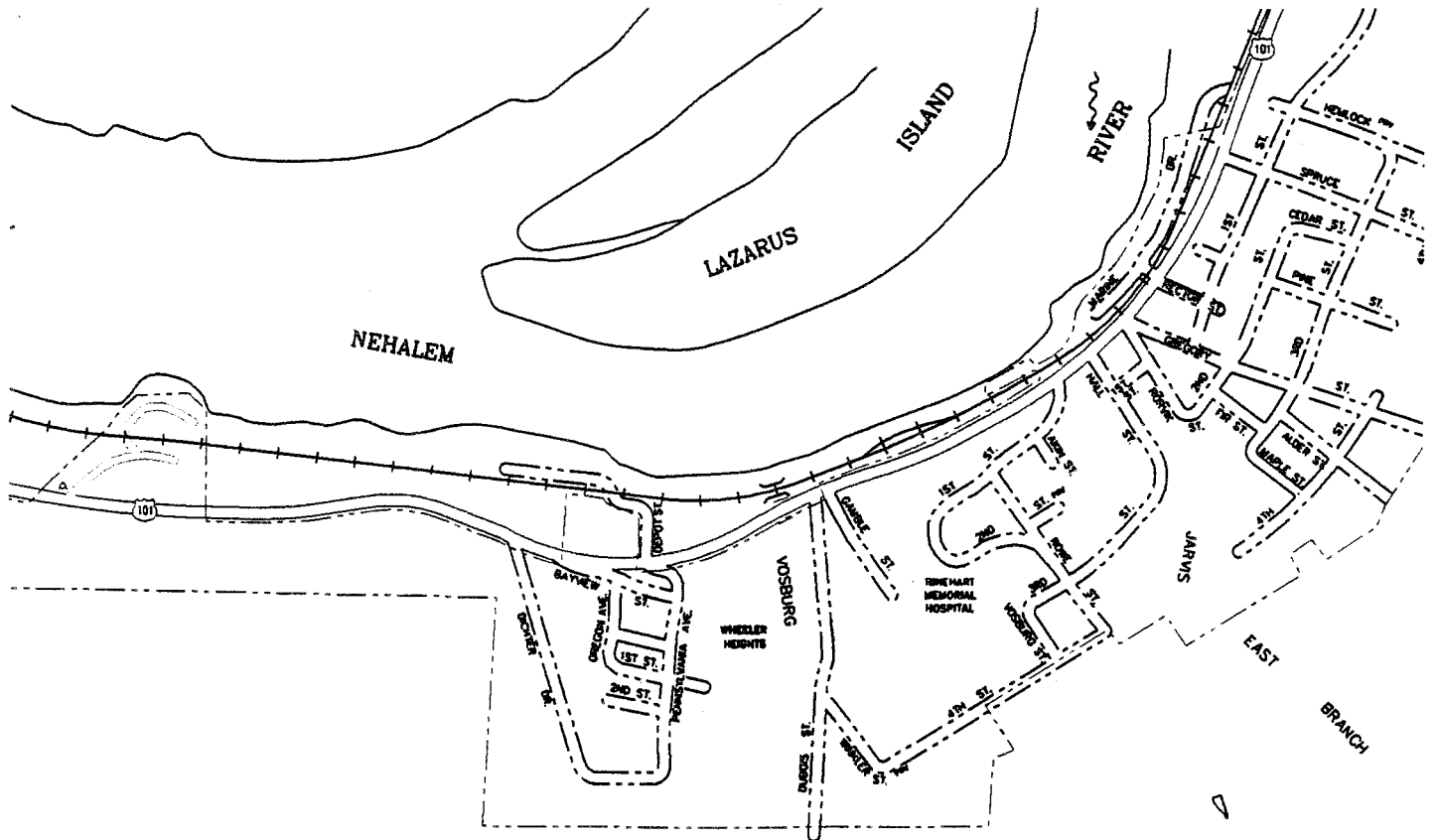
CTS ENGINEERING
 3300 NW 21TH AVENUE
 HILLSBORO, OR 97124
 (503) 690-8880

WHEELER LOCAL STREET INVENTORY

#	Street	Segment (From)	Segment (To)	ROW Width	Pavement Type	Pavement Width	Surface Condition	# of Travel Lanes	Travel Lane Width	Shoulder Width (L/R)	Shoulder Type	Curb	Comments
Ditcher Drive to Dubois Street													
1	Ditcher Drive	Hwy. 101	Third Street	60'	-	-	-	-	-	-	-	-	
2	Bayview Alley	Hwy. 101	Pennsylvania Avenue	16'	Gravel	10'	Poor	1	10'	0-3'	Grass	-	
3	Oregon Avenue	Bayview Alley	Second Street	16-50'	AC	10'	Poor	1	10'	3'	Gravel	-	
4	First Street	Oregon Avenue	Pennsylvania Avenue	50'	AC	10'	Poor	1	10'	3'	Grass	-	
5	Second Street	Oregon Avenue	Pennsylvania Avenue	50'	AC	10'	Poor	1	10'	3'	Gravel	-	
6	Pennsylvania Avenue	Hwy. 101	River View Street	50'	AC	20'	Good	2	10'	8'	Grass	-	
7	Pennsylvania Avenue	River View Street	Third Street	50'	Gravel	12'	Fair	1	12'	3'	Gravel	-	
8	Third Street	Pennsylvania Avenue	End	25'	Gravel	10'	Poor	1	10'	3'	Grass	-	
Dubois Street to Gamble Street													
9	Dubois Street	Hwy. 101	Oatman Street	50'	Gravel	16'	Poor	2	8'	3'	Grass	-	
10	Dubois Street	Oatman Street	Fourth Street	50'	AC	16'	Good	2	10'	3'	Grass	-	
11	First Street	Dubois Street	Gamble Street	50'	-	-	-	-	-	-	-	-	
12	Second Street	Dubois Street	Gamble Street	50'	-	-	-	-	-	-	-	-	
13	Second Street	Gamble Street	Rorvik Street	25'	-	-	-	-	-	-	-	-	
14	Third Street	Oatman Street	Bryant Street	50'	AC	10'	Good	1	10'	3'	Grass	-	
15	Fourth Street	Dubois Street	Bryant Street	50'	AC	20'*	Good	2	10'	0'	-	Yes	3-25' wide median; rolled curbs
16	Winckler Street	Third Street	Fourth Street	50'	-	-	-	-	-	-	-	-	
17	Oatman Street	Second Street	SW of Fourth Street	50'	AC	20'*	Good	2	10'	3'	Grass	-	6' wide median
18	Bryant Street	First Street	SW of Fourth Street	50'	-	-	-	-	-	-	-	-	
Gamble Street to Hall Street													
19	Gamble Street	Hwy. 101	First Street	50'	Gravel	12'	Good	1	12'	6'	Gravel	-	
20	First Street	Gamble Street	Hall Street	50'	-	-	-	-	-	-	-	-	
21	Second Street	Gamble Street	Vosburg Street	25'	-	-	-	-	-	-	-	-	
22	Second Street	Rowe Street	Akin Street	50'	Gravel	12'	Poor	1	12'	3-6'	Gravel	-	
23	Third Street	Gamble Street	Hall Street	50'	-	-	-	-	-	-	-	-	
24	Fourth Street	Gamble Street	Vosburg Street	50'	-	-	-	-	-	-	-	-	Unimproved pathway
25	Fourth Street	Vosburg Street	Hall Street	50'	AC	10'	Poor	1	10'	3-6'	Grass	-	
26	Davis Street	Second Street	SW of Fourth Street	50'	-	-	-	-	-	-	-	-	
27	Hospital Road	First Street	Fourth Street	50'	AC	20'	Fair	2	10'	3'	Gravel	-	
28	Vosburg Street	Second Street	Fourth Street	50'	-	-	-	-	-	-	-	-	
29	Vosburg Street	Fourth Street	E of Fourth Street	50'	Gravel	12'	Fair	1	12'	3'	Gravel	-	
30	Rowe Street	First Street	SW of Fourth Street	50'	AC	12'	Poor	1	12'	3'	Grass	-	
31	Akin Street	First Street	West of Second Street	50'	Gravel	8'	Fair	1	8'	6'	Grass	-	
32	Starr Street	Hwy. 101	First Street	50'	-	-	-	-	-	-	-	-	
33	Starr Street	First Street	SW of Fourth Street	50'	-	-	-	-	-	-	-	-	

#	Street	Segment (From)	Segment (To)	ROW Width	Pavement Type	Pavement Width	Surface Condition	# of Travel Lanes	Travel Lane Width	Shoulder Width (L/R)	Shoulder Type	Curb	Comments
Hall Street to Gregory Street													
34	Hall Street	Hwy 101	SW of Fourth Street	50'	AC	16'	Poor	2	8'	3-8'	Gravel	-	
35	Rorvik Street	Hwy. 101	First Street	50'	AC	40'	Good	2	12'	8'	AC	Yes	5' sidewalks front post office and Treasures Cafe
36	Gregory Street	Rorvik Street	Fourth Street	50'	AC	20'	Good	2	10'	3'	Grass	-	
37	Second Street	Fir Street	Gregory Street	50'	AC	20'	Fair	2	10'	3'	Grass	-	
38	Third Street	Fir Street	Gregory Street	50'	AC	20'	Fair	2	10'	3-8'	Grass	-	Parking on east side
39	Fourth Street	Rorvik Street	Gregory Street	50'	Gravel	10'	Poor	1	10'	3'	Grass	-	
40	Fir Street	Second Street	Third Street	50'	AC	12'	Poor	1	12'	3'	Gravel	-	
41	Maple Street	Third Street	West of Fourth Street	50'	-	-	-	-	-	-	-	-	
42	Alder Street	Third Street	Fourth Street	50'	AC	20'	Poor	2	10'	3'	Grass	-	
43	Alder Street	Fourth Street	West of Fourth Street	50'	AC	20'	Good	2	10'	3'	Grass	-	
Gregory Street to Hemlock Street													
44	First Street	Gregory Street	Rector Street	50'	AC	16'	Fair	2	8'	3'	Grass	-	Drainage problem - standing water mid-block
45	First Street	Rector Street	Cedar Street	50'	AC	16'	Poor	2	8'	3-8'	Grass	-	
46	First Street	Cedar Street	Hemlock Street	50'	AC	10'	Poor	1	10'	3'	Grass	-	
47	Second Street	Gregory Street	Pine Street	50'	Gravel	16'	Fair	2	8'	3'	Grass	-	
48	Third Street	Gregory Street	Spruce Street	50'	AC	20'	Good	2	10'	3'	Gravel	-	
49	Fourth Street	Spruce Street	Hemlock Street	50'	AC	20'	Good	2	10'	8-15'	Gravel	Yes	
50	Fifth Street	Rector Street	Hemlock Street	50'	AC	20'	Good	2	10'	0	-	-	
51	Rector Street	Hwy. 101	East of First Street	50'	AC	20'	Poor	2	10'	0-10'	Grass	-	
52	Pine Street	Second Street	Third Street	50'	Gravel	16'	Good	2	8'	3'	Gravel	-	
53	Cedar Street	Hwy. 101	West of Second Street	50'	-	-	-	-	-	-	-	-	
54	Cedar Street	West of Second Street	Fifth Street	50'	Gravel	20'	Fair	2	10'	0	-	-	
55	Spruce Street	Hwy. 101	Fifth Street	50'	AC	20'	Good	2	10'	5-8'	Gravel	-	Partial on-street parking
56	Hemlock Street	Hwy. 101	Fifth Street	50'	AC	20'	Good	2	10'	3'	Grass	-	Bad pavement area n. of Fourth Street
North of Hemlock													
57	First Street	Hemlock Street	Hwy. 101	60'	Gravel	12'	Fair	1	12'	3'	Gravel	-	
58	Ridgeview Court	County Road	End	50'	AC	20'	Good	2	10'	6'	Gravel	-	
59	Ridgeview Place	Ridgeview Court	End - Cul-de-Sac, 50' Rad	50'	AC	24'	Good	2	12'	8'	Gravel	-	

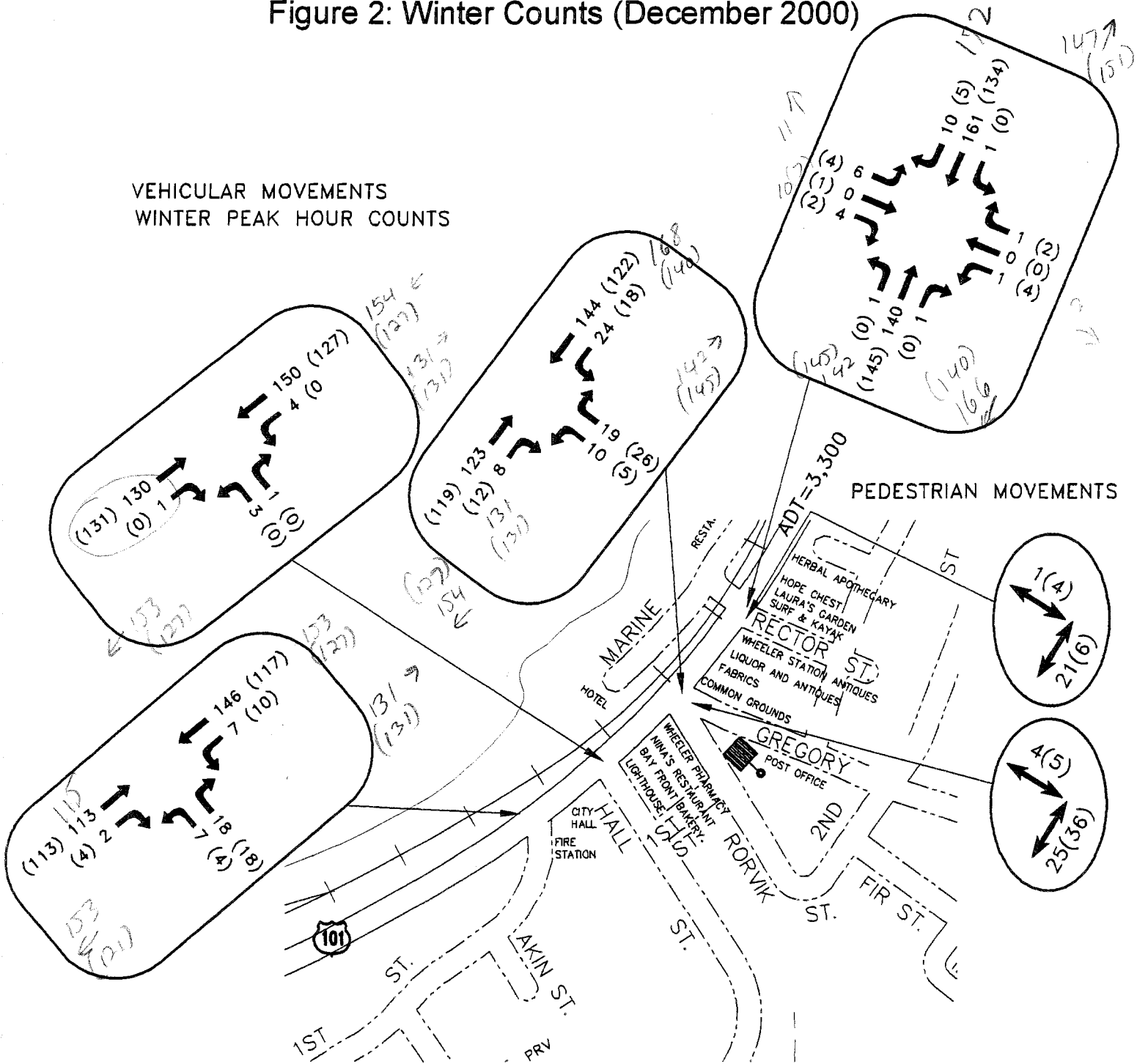
City of Wheeler
Transportation System Plan
Figure 1: Study Area



City of Wheeler Transportation System Plan

Figure 2: Winter Counts (December 2000)

VEHICULAR MOVEMENTS
WINTER PEAK HOUR COUNTS



TVT ADT 5,000 @ V to 4,300 @ W

Project: Wheeler TSP OR00.041.T01

@ ATR Dec ADT = 4348

K = 15.7

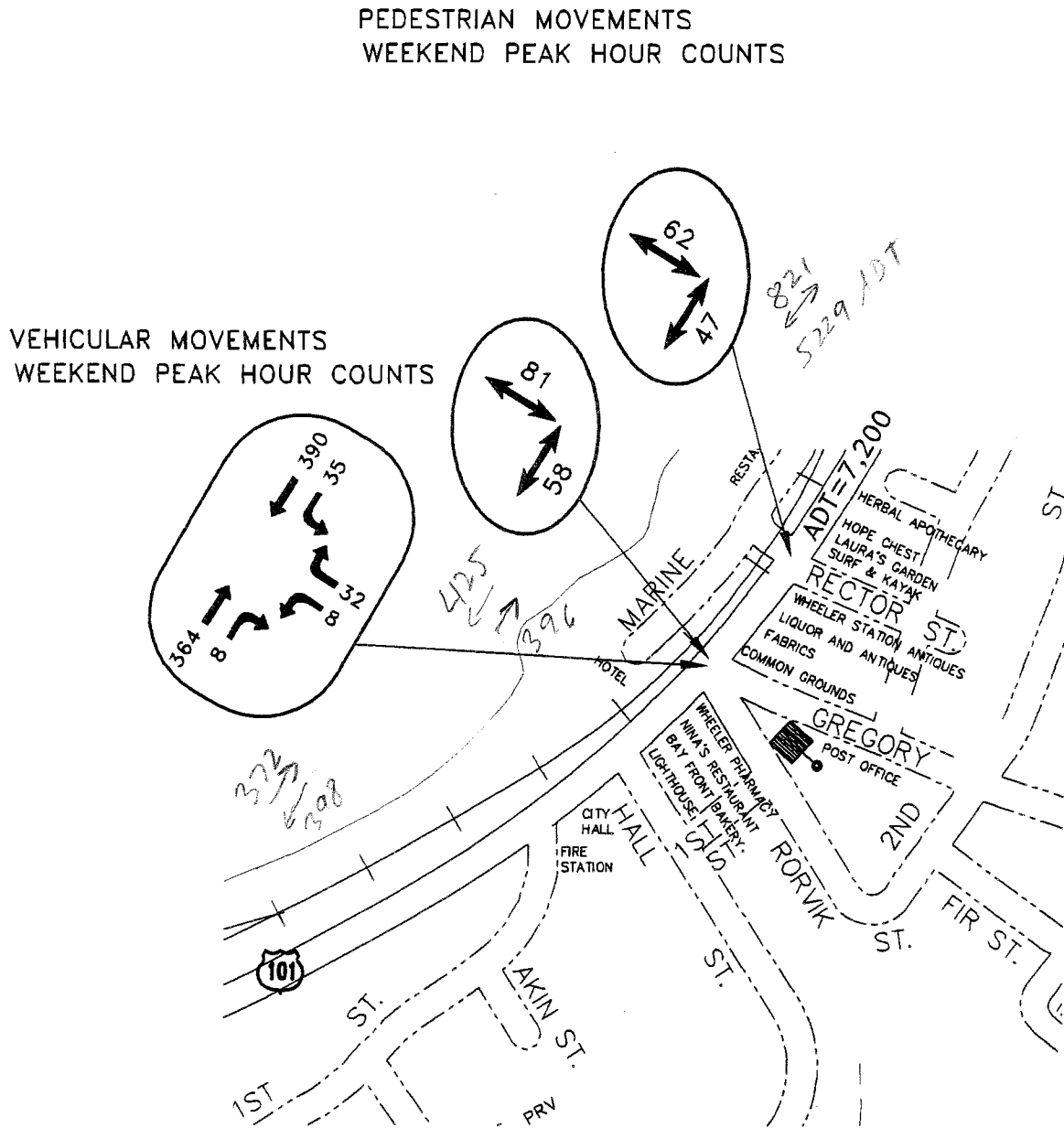
Drawing not to scale.

Saturday 10:30-12 (Friday 4 - 6)



City of Wheeler Transportation System Plan

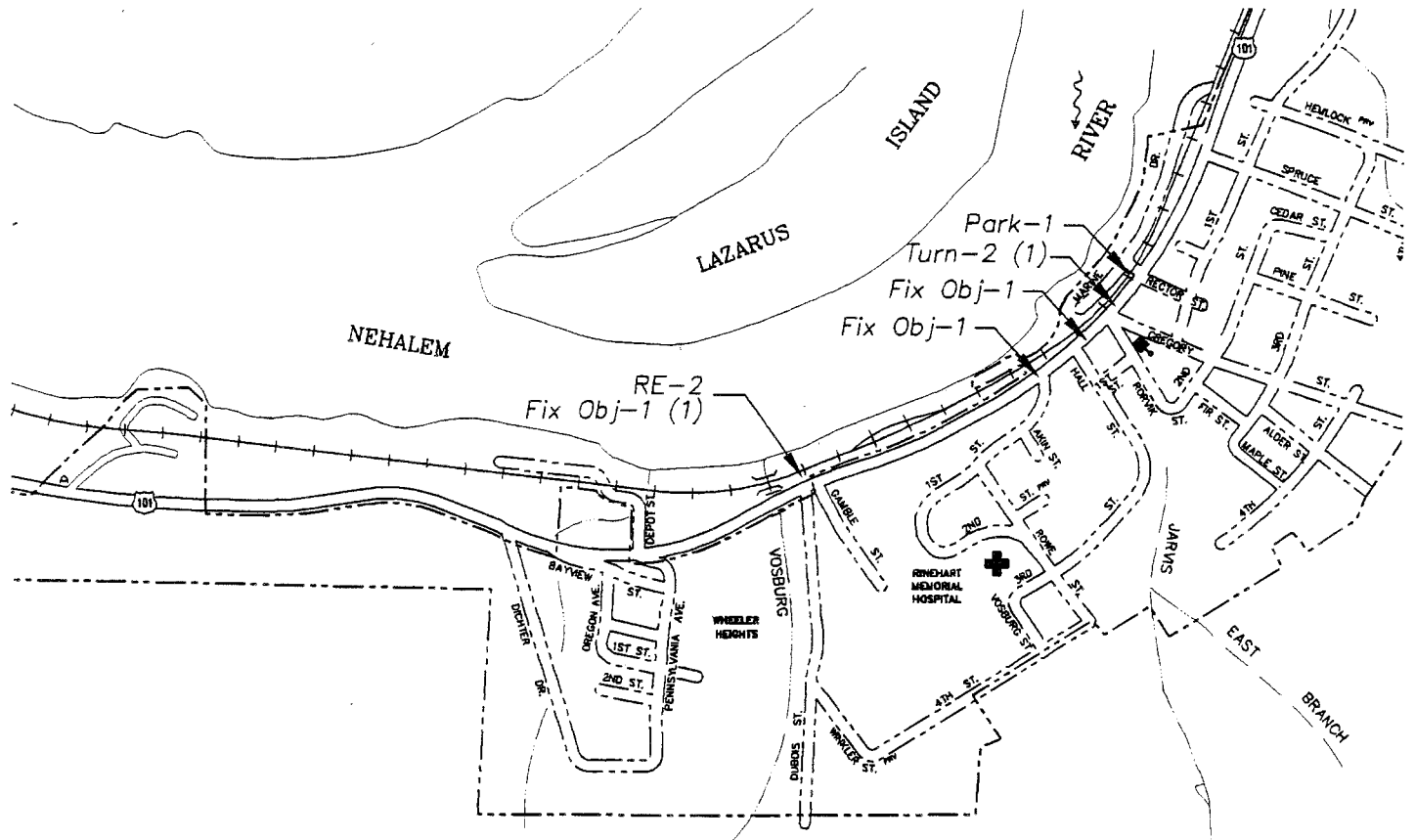
Figure 2A: Summer Weekend Counts (August 2000)



Drawing not to scale.
Weekend Peak Hour Volumes.

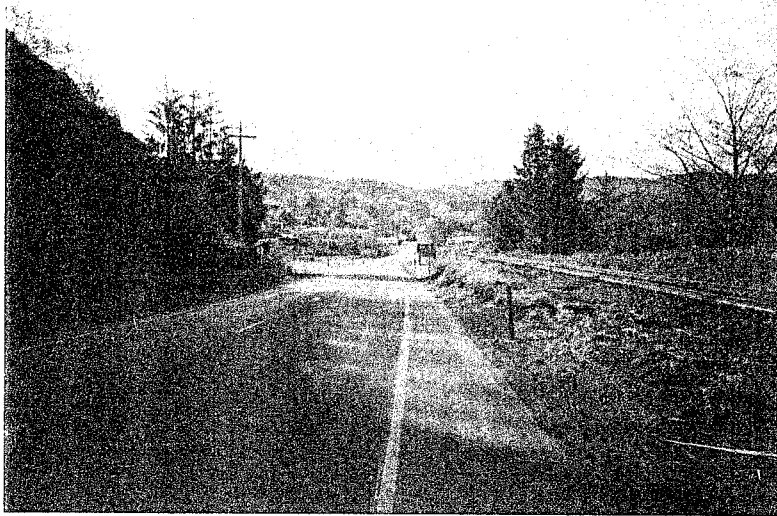
City of Wheeler Transportation System Plan

Figure 3: Recent Accidents 1/97 Through 12/99

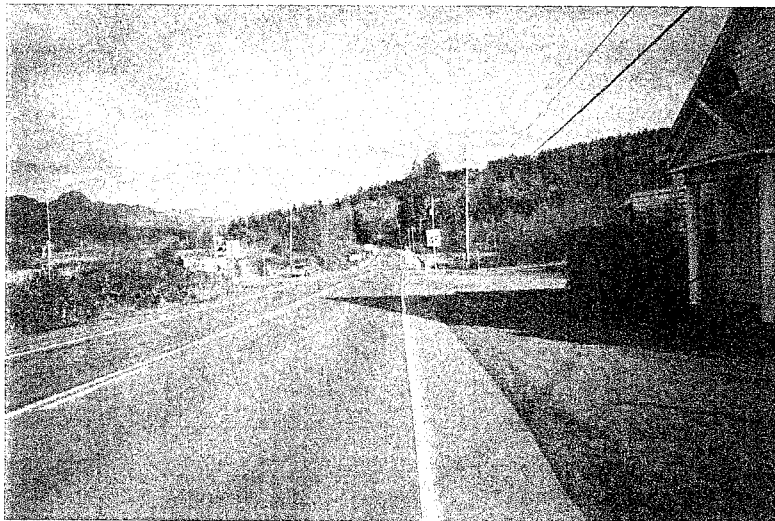


KEY: RE- Rear End
 Turn- Turning Maneuver
 Park- Park Maneuver
 Fix Obj- Fixed Object
 Total Number (Injury)





Looking South Along Hwy 101 from South City Limits



Looking Northbound Along Hwy 101 From Spruce



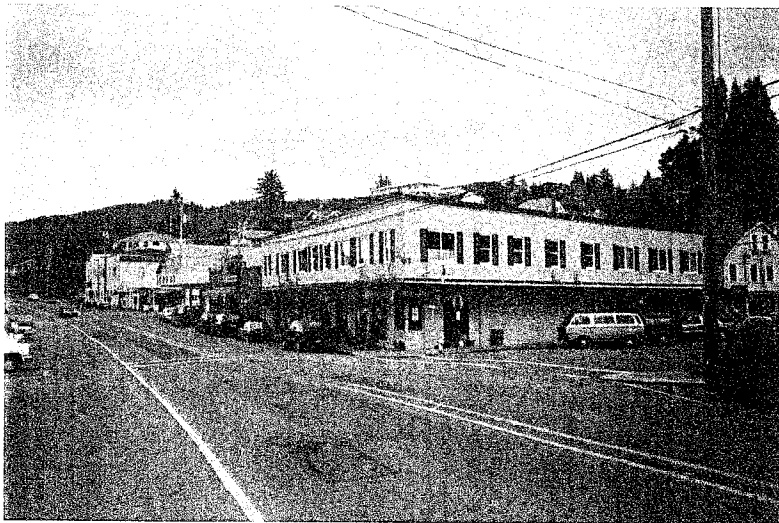
Looking South Along Hwy 101 From Rector



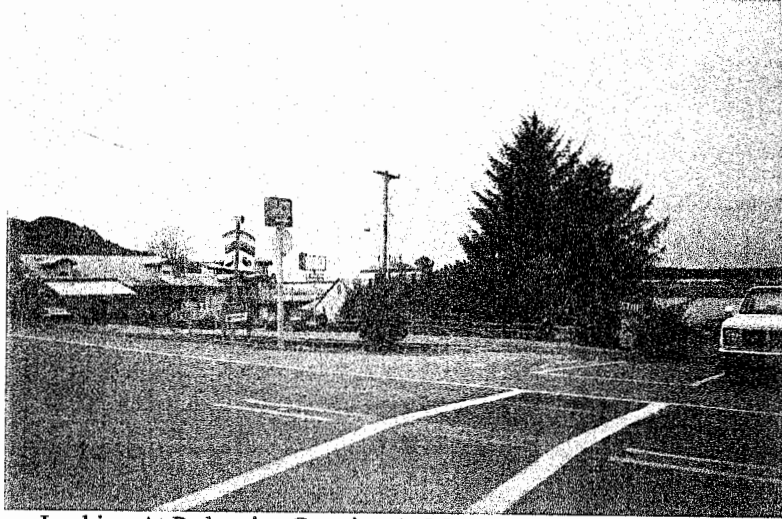
Looking East At Gregory and Rorvik



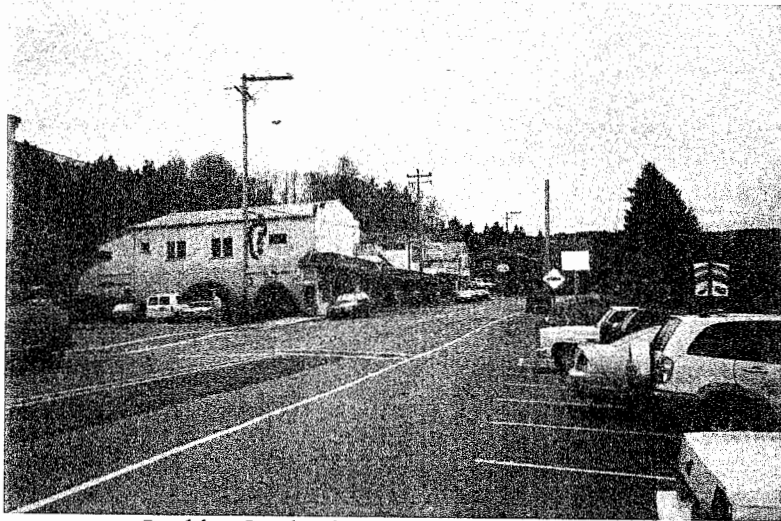
Looking West Along Gregory



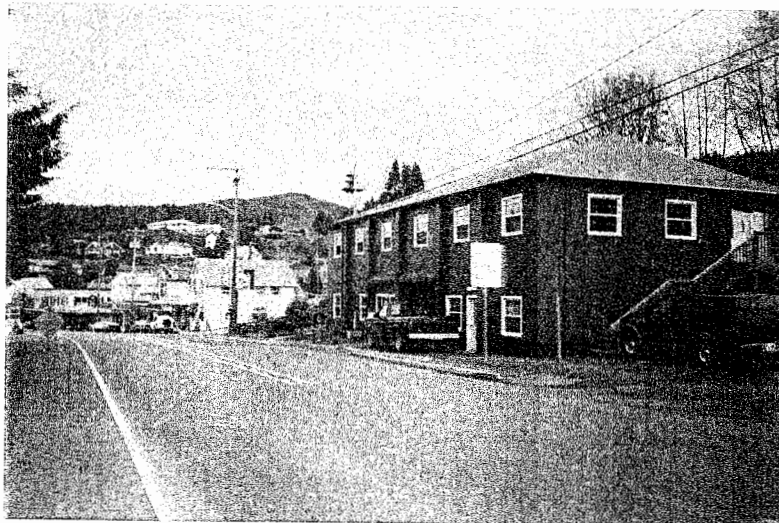
Looking North Along Hwy 101 From Gregory



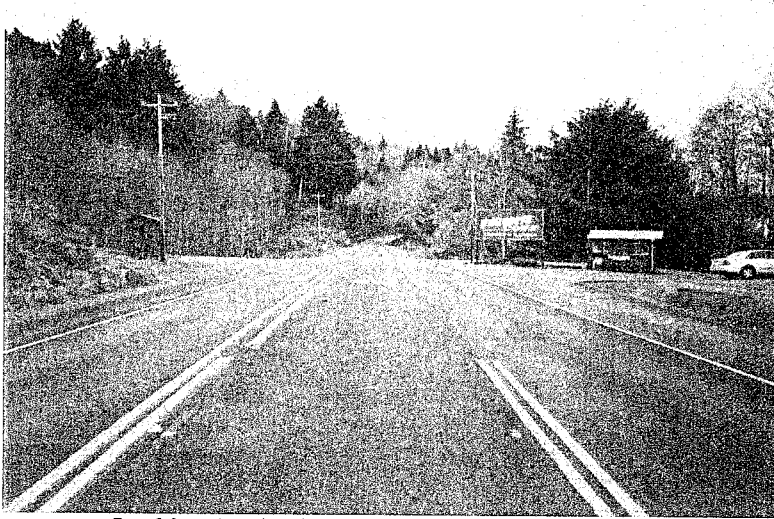
Looking At Pedestrian Crossing At Motel Access Across Gregory



Looking South Along Hwy 101 From Gregory



Looking North Along Hwy 101 From South of Hall St



Looking South Along Hwy 101 Near Paradise Cove

Recorder: ROCKAWAY, 29-001

Location: US101, OREGON COAST HIGHWAY, NO. 9
 2.2 miles south of Rockaway Beach
 Installed: September, 1954

HISTORICAL TRAFFIC DATA

Year	Average Daily Traffic	Percent_of_ADT				
		Max Day	Max Hour	10TH Hour	20TH Hour	30TH Hour
1990	5743	216	20.0	19.0	18.4	18.1
1991	5845	211	20.1	17.7	17.1	16.7
1992	6068	210	17.6	17.0	16.7	16.4
1993	6068	206	17.3	16.5	16.2	15.6
1994	6215	186	19.6	16.7	16.3	16.1
1995	6092	197	19.1	17.8	17.4	17.0
1996	6036	211	20.5	18.8	17.9	17.3
1997	6624	217	18.9	17.2	16.7	16.3
1998	6569	200	18.3	17.3	16.5	16.2
1999	6592	189	19.5	16.8	16.2	15.7

1999 TRAFFIC DATA

Month	Average Weekday Traffic	Percent of ADT	Average Daily Traffic	Percent of ADT
January	4599	70	4736	72
February	4914	75	5483	83
March	5548	84	5952	90
April	5815	88	6244	95
May	6032	92	6830	104
June	6513	99	6938	105
July	8321	126	9196	140
August	8768	133	9415	143
September	7357	112	8236	125
October	6181	94	6649	101
November	4920	75	5081	77
December	4604	70	4348	66

Vehicle Classification Breakdown	Percent of ADT
Passenger Cars.....	57.73
Other 2 axle 4 tire vehicles.....	31.36
Single Unit 2 axle 6 tire.....	3.50
Single Unit 3 axle.....	2.39
Single Unit 4 axle or more.....	0.09
Single Trailer Truck 4 axle or less..	0.54
Single Trailer Truck 5 axle.....	1.76
Single Trailer Truck 6 axle or more..	0.71
Dbl-Trailer Truck 5 axle or less.....	0.43
Dbl-Trailer Truck 6 axle.....	0.24
Dbl-Trailer Truck 7 axle or more.....	0.28
Triple Trailer Trucks.....	0.00
Buses.....	0.95
Motorcycles & Scooters.....	0.02

IV. EXISTING DEFICIENCIES AND ESTIMATE FUTURE TRANSPORTION NEEDS

The purpose of this section is to establish a growth rate to be used to estimate future traffic volumes through the City of Wheeler. Based on this growth rate, future traffic volumes along Hwy. 101 and the local roadway system will be estimated. The adequacy of the roadway system will then be assessed to accommodate these future volumes. To this date, an initial analysis of future traffic volumes along Hwy. 101 has been performed that includes growth in traffic from vehicles traveling along the coast as well as the buildout of several proposed and planned developments in Wheeler. The next step is to have ODOT review these estimates for their concurrence and for the AC to confirm local growth assumptions. The sections below present our methodology used in our analyses.

Estimated Yearly 30th Highest Hour Volume

The first step in this process is to estimate the yearly 30th highest hour volume, which is used by ODOT for evaluating the capacity of roadway system. Experience has found that this level of traffic is a reasonable criteria for evaluating traffic conditions. The main source of seasonal data in the area is a permanent 24-hour traffic recording station that ODOT maintains along Hwy. 101 just south of Rockaway Beach (ATR Rockaway, 29-0001). Data from this station as published in ODOT's 1999 *Transportation Volume Tables* is attached. The average daily traffic along this section during 1999 was 6,592 vehicles per day (VPD). This varied from 9,415 VPD in August to 4,348 VPD in December. The yearly 30th highest volume was estimated to be approximately 1,035 VPD (6592×15.7 percent). **Figure 1** present the results of the summer time traffic counts taken in Wheeler during August 2000 at Gregory Street and Hwy. 101 that were presented in our existing conditions/inventory analysis. These counts were taken during mid-day on a Saturday and would equate to about 775 vehicles per hour. While these may be a bit low compared to ODOT's counts, some of the differences can be attributed to people stopping at Rockaway Beach and day-to-day variation. The weekend that the counts were taken had good weather. It is recommended that these volumes simply be used as the estimate of the 30th highest hour. Based on this, the count has been expanded to other intersections throughout the city. Turn volumes at other minor streets were based on December 2000 counts and our knowledge of the city and its land uses. These estimated traffic volumes are also presented on **Figure 1**. The only exception was at the intersection of Paradise Cove and Hwy. 101. Paradise Cove is a private roadway that serves an RV park and recreation area, both east and west of Hwy. 101. Traffic volumes at this intersection were estimated based on using standard ITE trip generation rates for RV parks for each section. D.201

Intersection capacity analysis was performed for these intersections based on their estimated 30th highest hourly volume and the results are presented in **Table IV-1**. The 1999 Oregon Highway Plan (OHP) uses volume to capacity ratios (V/C) to evaluate mobility deficiencies and needs. V/C is the ratio of peak hour traffic volume to maximum hourly volume of vehicles that a roadway section can accommodate. In other words, v/c measures the percentage of the capacity of the roadway section that is utilized during the peak hour. Through Wheeler, Highway 101 is classified as a Statewide Highway under the 1999 State Classification System (1999 SCS). The OHP states that the maximum acceptable v/c ratio for Statewide Highway outside the Portland Metro and not identified as a STA is 0.80.

Using ODOT's Mobility criteria, traffic conditions at key intersections along of Hwy. 101 and Main Street were analyzed during the critical PM peak hours based on the volumes shown in **Figure 1**. Intersection operational analyses were conducted using the procedures in the 1997 Highway Capacity Manual (HCM) for evaluating unsignalized intersections, which also describe the traffic operations of an intersection in terms of its Level of Service (LOS). The LOS criteria range from "A", which indicates little, if any, delay, to "F", which indicates that vehicles experience long delays. **Table IV-1** presents the results of the intersection capacity analyses and indicates that these intersections operate at LOS C or better during the Saturday/30th highest peak periods, with 0.22 V/C ratios or lower. Even so, observations during the summer revealed that congestion does occur through downtown Wheeler as drivers slow down to look at the area, search for parking spaces, and/or slow for

↓ capacity = ↑ v/c ratio

pedestrians. The standard intersection capacity models do not capture these factors well. These factors were of less an impact during our off-peak traffic operations because of readily available parking and reduced pedestrian volumes.

Table IV-1: Levels of Service for Current Yearly 30th Highest Hour Volumes

Intersection	Saturday Peak Hour			
	Total Hourly Volume	Avg Vehicle Delay (Sec/Veh)	V/C Ratio	LOS
Highway 101/Paradise Cove Critical Leg: EB Approach	1,007	10.0	0.05	C
Highway 101/1 st Street Critical Leg: WB Approach	886	13.2	0.06	B
Highway 101/Gregory St/Rorvik St Critical Leg: WB Approach	892	13.5	0.09	B
Highway 101/Rector Street Critical Leg: EB Approach	1,010	22.3	0.22	C
Highway 101/Spruce Street Critical Leg: WB Approach	952	14.4	0.03	B
Highway 101/Hemlock Street Critical Leg: WB Approach	973	16.0	0.04	C
Highway 101/Old Wheeler Road Critical Leg: WB Approach	959	14.3	0.01	B

Growth in Traffic Along Highway 101

The primary route through Wheeler is Oregon Highway 101. **Table IV-2** presents trend data from the historical volumes collected at the Rockaway automatic 24-hour traffic recorders that provide seasonal, as well as historic traffic data. From the ODOT data in **Table IV-2**, traffic volumes along Hwy. 101 appear to increase only slightly over the last decade. The 30th highest traffic volumes have been calculated by multiplying the ADT by the percentage provided in the ODOT data and are summarized in **Table IV-2** below. Overall, this analysis found the 30th highest volumes along Hwy. 101 has not increased substantially over the last decade. The average annual growth in traffic volumes was overall only 1-2 percent per year. Based on this and the local developments discussed later, it is recommended that a growth rate of 1.5 to 2 percent per year. This equates to a growth of 30 percent to 40 percent over the next 20 years.

Table IV-2: Historic Data ADT and 30th Highest Hour Volumes along Hwy. 101 from ODOT Rockaway Automatic Recording Stations (2.2 miles south of Rockaway)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Average Yearly Growth
Average Daily Volume	5473	5845	6068	6068	6215	6092	6036	6624	6569	6592	2.2%+
Yearly Growth		1.7%	3.7%		2.4%	-2.0%	-0.9%	8.9%	-0.8%	0.3%	1.5%
30th Highest Volume	1039	976	995	947	1001	1036	1044	1080	1064	1035	1%+
Yearly Growth		-6.5%	1.9%	-5.1%	5.4%	3.4%	0.8%	3.3%	-1.5%	-2.8%	-0.31%

+ Percent growth based on 1999 volumes compared to 1990/1991 volumes

Growth in Local Traffic Due to Residential Development

The state's economic forecasts for Wheeler report that its existing population is about 375 persons and will increase to 459 persons by 2020. This is an increase of only 84 people, which equates to about 34 residential units (based on 2.5 persons per household). However, the AC and city staff has indicated that these estimates do not account for the summer tourist residents and interest from developers to construct new projects in the city. Based on this, meetings were held with city staff to review past development activity and sites that would likely be built out over the next 20 years. The biggest factor would be the redevelopment of the downtown retail area.

The second largest factor would be the redevelopment of the Scoval site on the west side of Highway 101 on the north side of Wheeler. This site has limited development potential because of the site's zoning and location along the Nehalem River. City staff indicated that this site could support a small hotel (50 rooms) and a park/recreation area with about 100 parking spaces. Traffic associated with the hotel was estimated using the standard ITE trip generation rates. For the recreation area, it was assumed that about half the parking spaces would turn over during a one-hour period. Thus, it would have 50 trips in and 50 trips out during a peak hour. Access to both these developments would be along the west side of Hwy. 101 via Hemlock. In addition, city staff identified 4 areas that would likely develop with subdivisions. Figure 2 shows their location and **Table IV-3** presents the trip generation from standard ITE trip generation rates. Figure 2 also shows the directional distribution for assigning these trips onto the roadway network.

Table IV-3: Estimate of Saturday Trip Generation for Planned Developments

Name/Access	Units/ Homes	Daily Trips	Peak Hour Generator		
			Total	In	Out
Scoval Site					
Hotel ITE Code 310	50 Rooms	410	36	20	16
Recreational Area	100 Spaces	Unknown	100	50	50
Residential Developments					
20 Lots along Old Wheeler Road	20 Homes	202	20	11	9
12 Lots along 4th Street	12 Homes	121	12	6	6
48 Lots along 3rd Street	48 Homes	484	48	26	22
16 Lots along Pennsylvania Street	16 Homes	161	16	9	7
Total All Residential	246	1,378	232	122	110

+ 250 →
+ 250 ↙

Estimate of Future 2020 Volumes and Initial Capacity Evaluation

To estimate future 2020 traffic volumes we developed a *Traffix* roadway network model of Wheeler. This model is shown on Figure 3. Each of these developments is a specific zone on this network. With this model a wide range of assumptions for future traffic patterns or land developments can be evaluated. Assign the traffic and using a 40 percent growth factors would results in an increase of about 250 vehicles in each direction along Hwy. 101 at Gregory Street, from about 375 vehicles per hour to about 625 vehicles per hour (See **Figure 3** for projected future volumes). All intersections appear to still have acceptable LOS and V/C ratios as shown in **Table IV-4**. However, a major shortcoming of this analysis is that it does not fully account for additional vehicles stopping and parking in Wheeler. *The major constraint will be providing parking for additional*

vehicles that would come to Wheeler. Several plans have been developed for Wheeler that examined redevelopment of the downtown core, in particular to provide more parking.

Table IV-4: Levels of Service for Future (2020) Yearly 30th Highest Hour Volumes

Intersection	Saturday Peak Hour			
	Total Hourly Volume	Avg Vehicle Delay (Sec/Veh)	V/C Ratio	LOS
Highway 101/Paradise Cove Critical Leg: SB Approach	1,360	19.8	0.13	C
Highway 101/1st Street Critical Leg: WB Approach	1,315	21.6	0.21	C
Highway 101/Gregory St/Rorvik St Critical Leg: WB Approach	1,278	20.6	0.21	C
Highway 101/Rector Street Critical Leg: EB Approach	1,405	91.2	0.77	F
Highway 101/Spruce Street Critical Leg: WB Approach	1,313	20.9	0.08	C
Highway 101/Hemlock Street Critical Leg: EB Approach	1,349	41.8	0.38	E
Highway 101/Old Wheeler Road Critical Leg: WB Approach	1,358	23	0.06	C

Recorder: ROCKAWAY, 29-001

Location: US101, OREGON COAST HIGHWAY, NO. 9
 2.2 miles south of Rockaway Beach
 Installed: September, 1954

HISTORICAL TRAFFIC DATA

Year	Average Daily Traffic	Max Day	Percent_of_ADT			
			Max Hour	10TH Hour	20TH Hour	30TH Hour
1990	5743	216	20.0	19.0	18.4	18.1
1991	5845	211	20.1	17.7	17.1	16.7
1992	6068	210	17.6	17.0	16.7	16.4
1993	6068	206	17.3	16.5	16.2	15.6
1994	6215	186	19.6	16.7	16.3	16.1
1995	6092	197	19.1	17.8	17.4	17.0
1996	6036	211	20.5	18.8	17.9	17.3
1997	6624	217	18.9	17.2	16.7	16.3
1998	6569	200	18.3	17.3	16.5	16.2
1999	6592	189	19.5	16.8	16.2	15.7

1999 TRAFFIC DATA

	Average Weekday Traffic	Percent of ADT	Average Daily Traffic	Percent of ADT
January	4599	70	4736	72
February	4914	75	5483	83
March	5548	84	5952	90
April	5815	88	6244	95
May	6032	92	6830	104
June	6513	99	6938	105
July	8321	126	9196	140
August	8768	133	9415	143
September	7357	112	8236	125
October	6181	94	6649	101
November	4920	75	5081	77
December	4604	70	4348	66

Vehicle Classification Breakdown	Percent of ADT
Passenger Cars.....	57.73
Other 2 axle 4 tire vehicles.....	31.36
Single Unit 2 axle 6 tire.....	3.50
Single Unit 3 axle.....	2.39
Single Unit 4 axle or more.....	0.09
Single Trailer Truck 4 axle or less..	0.54
Single Trailer Truck 5 axle.....	1.76
Single Trailer Truck 6 axle or more..	0.71
Dbl-Trailer Truck 5 axle or less.....	0.43
Dbl-Trailer Truck 6 axle.....	0.24
Dbl-Trailer Truck 7 axle or more.....	0.28
Triple Trailer Trucks.....	0.00
Buses.....	0.95
Motorcycles & Scooters.....	0.02

Figure 1: Summer 2000 Count and Estimated Volumes

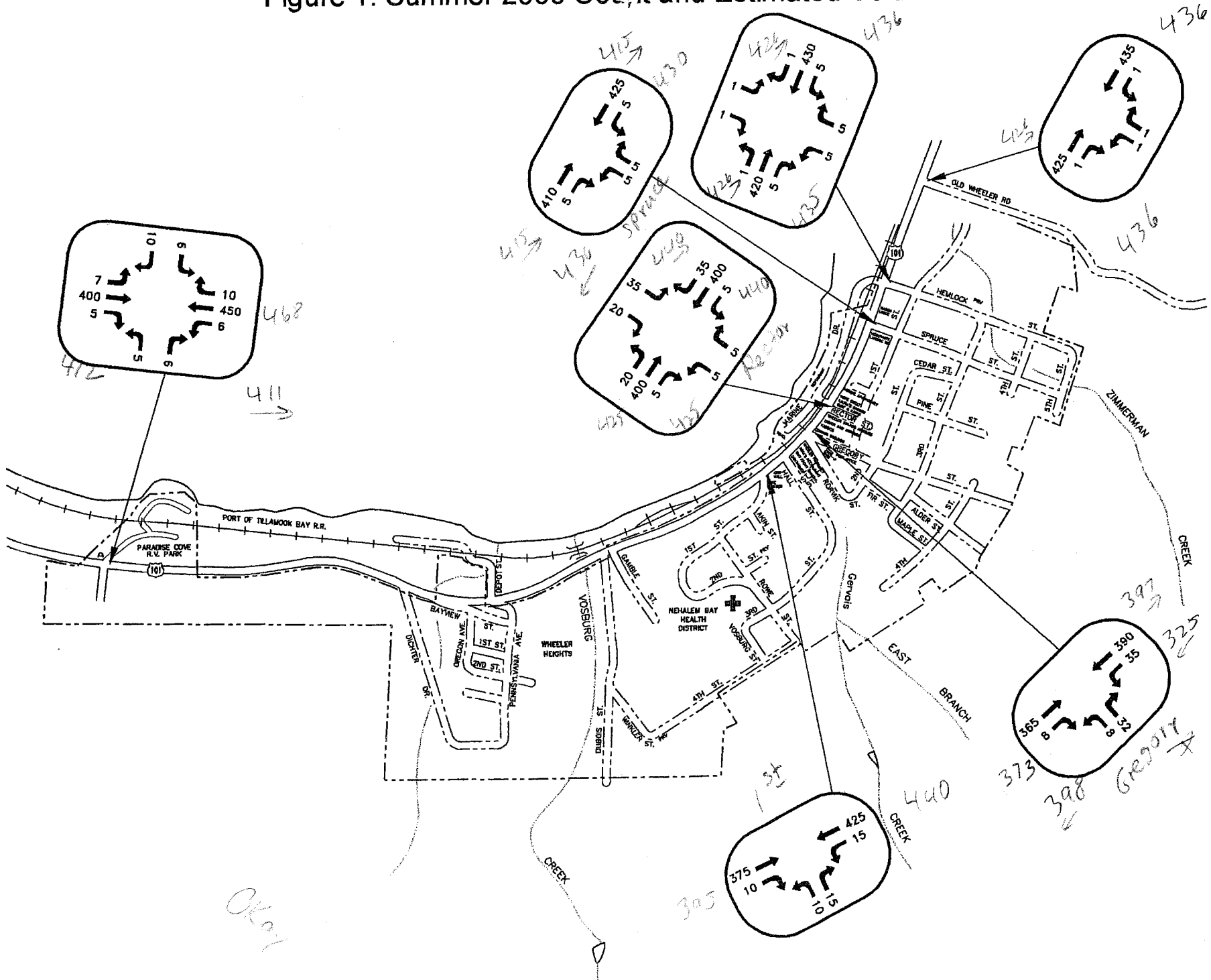


Figure 2: Location and Travel Patterns To/From Future Developments

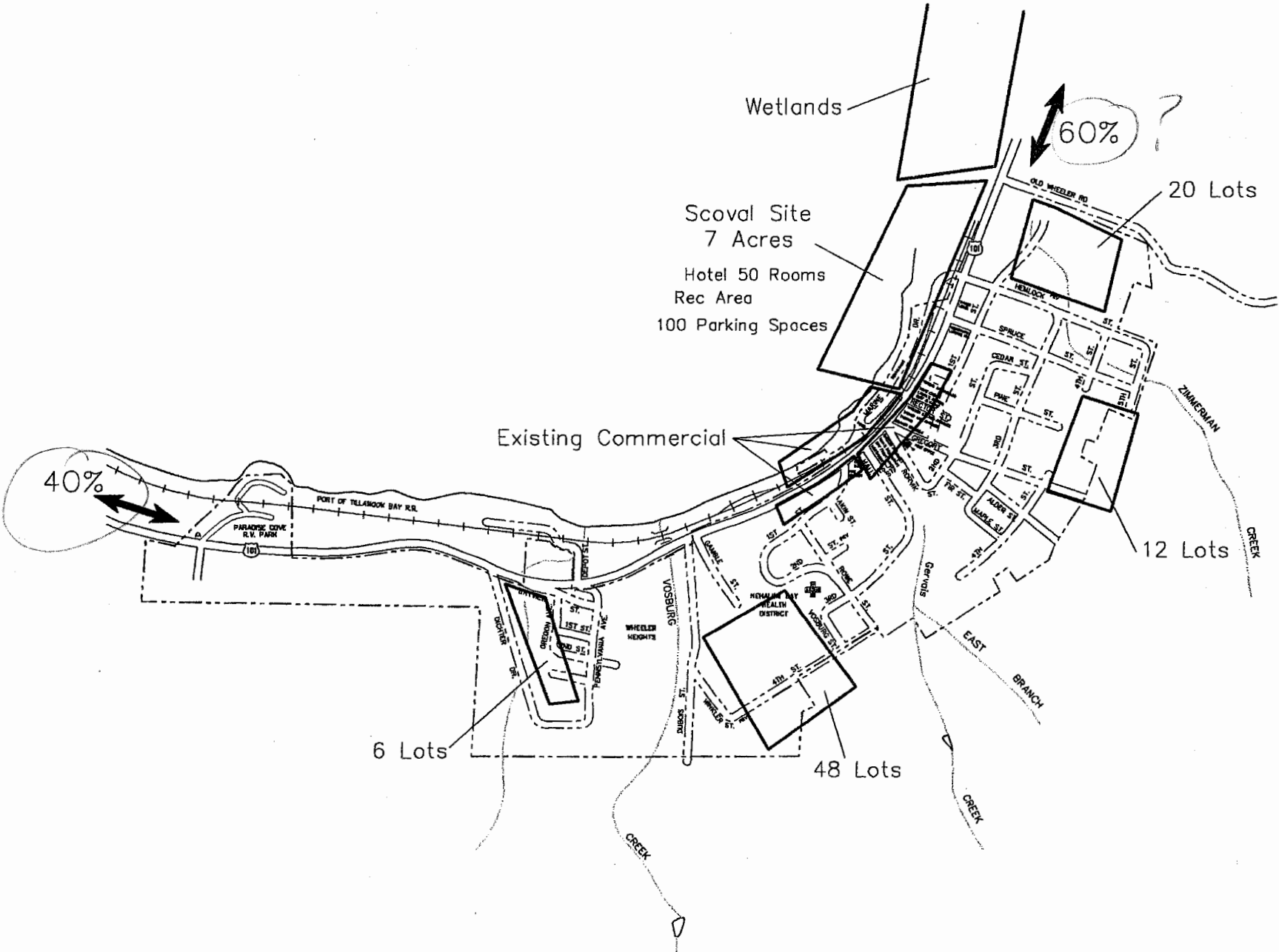
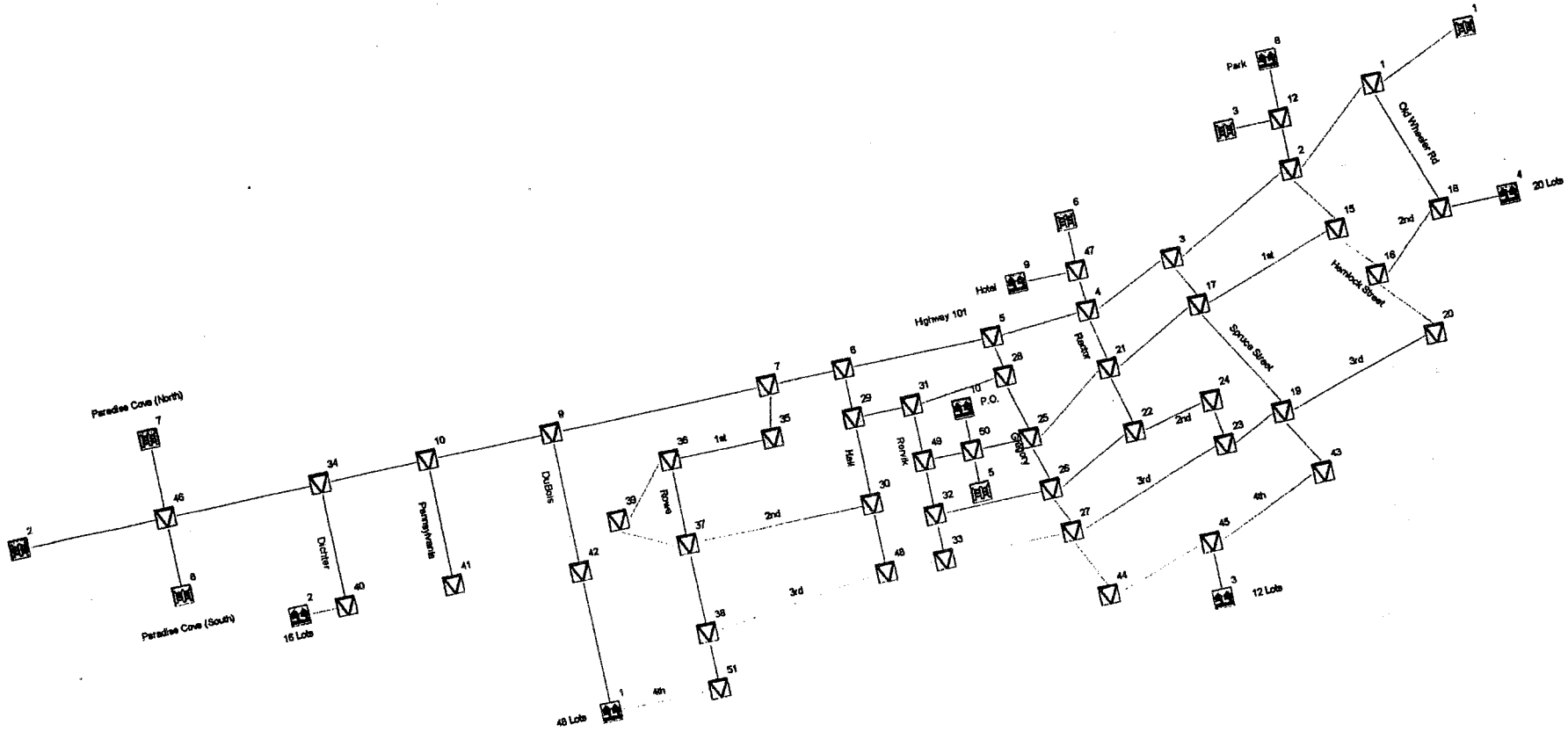


Figure 3: City Of Wheeler Traffic Model



Drawing not to scale.

TRIP GENERATION WORKSHEET RATES

Development: Wheeler TSP
Size: 16 Homes

ITE Land Use Code: Single Family Homes, Code 210

Variable: Number of Homes (H)

Total Saturday Trips

$$T = 10.09x(H)$$

	Enter	Exit	Total
Vehicle Trips	81	80	161
Site Distribution	50%	50%	100%

Saturday AM Peak Hour Trips

No Data Available

	Enter	Exit	Total
Vehicle Trips	N/A	N/A	N/A
Site Distribution			

Saturday PM Peak Hour Trips (Generator)

$$T = 0.94x(H)$$

	Enter	Exit	Total
Vehicle Trips	9	7	16
Site Distribution	54%	46%	100%


 Engineers, Inc.

TRIP GENERATION WORKSHEET RATES

Development: Wheeler TSP
Size: 48 Homes
ITE Land Use Code: Single Family Homes, Code 210
Variable: Number of Homes (H)

Total Saturday Trips

$$T = 10.09x(H)$$

	Enter	Exit	Total
Vehicle Trips	242	242	484
Site Distribution	50%	50%	100%

Saturday AM Peak Hour Trips

No Data Available

	Enter	Exit	Total
Vehicle Trips	N/A	N/A	N/A
Site Distribution			

Saturday PM Peak Hour Trips (Generator)

$$T = 0.94x(H)$$

	Enter	Exit	Total
Vehicle Trips	26	22	48
Site Distribution	54%	46%	100%

TRIP GENERATION WORKSHEET RATES

Development: Wheeler TSP
Size: 12 Homes
ITE Land Use Code: Single Family Homes, Code 210
Variable: Number of Homes (H)

Total Saturday Trips

$$T = 10.09x(H)$$

	Enter	Exit	Total
Vehicle Trips	61	60	121
Site Distribution	50%	50%	100%

Saturday AM Peak Hour Trips

No Data Available

	Enter	Exit	Total
Vehicle Trips	N/A	N/A	N/A
Site Distribution			

Saturday PM Peak Hour Trips (Generator)

$$T = 0.94x(H)$$

	Enter	Exit	Total
Vehicle Trips	6	6	12
Site Distribution	54%	46%	100%


 CTS
 Engineers, Inc.

TRIP GENERATION WORKSHEET RATES

Development: Wheeler TSP
Size: 20 Homes
ITE Land Use Code: Single Family Homes, Code 210
Variable: Number of Homes (H)

Total Saturday Trips

$$T = 10.09x(H)$$

	Enter	Exit	Total
Vehicle Trips	101	101	202
Site Distribution	50%	50%	100%

Saturday AM Peak Hour Trips

No Data Available

	Enter	Exit	Total
Vehicle Trips	N/A	N/A	N/A
Site Distribution			

Saturday PM Peak Hour Trips (Generator)

$$T = 0.94x(H)$$

	Enter	Exit	Total
Vehicle Trips	11	9	20
Site Distribution	54%	46%	100%


 Engineers, Inc.

TRIP GENERATION WORKSHEET RATES

Development: Wheeler TSP
Size: 50 Rooms
ITE Land Use Code: Hotel, Code 310
Variable: Number of Rooms (R)

Total Saturday Trips

$$T = 8.19x(R)$$

	Enter	Exit	Total
Vehicle Trips	205	205	410
Site Distribution	50%	50%	100%

Saturday AM Peak Hour Trips

No Data Available

	Enter	Exit	Total
Vehicle Trips	N/A	N/A	N/A
Site Distribution			

Saturday PM Peak Hour Trips (Generator)

$$T = 0.72x(R)$$

	Enter	Exit	Total
Vehicle Trips	20	16	36
Site Distribution	56%	44%	100%


 Engineers, Inc.

TRIP GENERATION WORKSHEET RATES

Development: Wheeler TSP
Size: 68 Spaces/Sites

ITE Land Use Code: Campground/RV Park, Code 416

Variable: Number of Spaces/Sites (S)

Total Saturday Trips

$$T = 50.67x(S)$$

	Enter	Exit	Total
Vehicle Trips	1723	1723	3446
Site Distribution	50%	50%	100%

* There is only one observation and no related plots for these data points

Saturday AM Peak Hour Trips

No Data Available

	Enter	Exit	Total
Vehicle Trips	N/A	N/A	N/A
Site Distribution			

SATURDAY

-Weekday PM Peak Hour Trips (Generator)

$$T = 0.48x(S)$$

	Enter	Exit	Total
Vehicle Trips	17	16	33
Site Distribution	50%	50%	100%


 Engineers, Inc.

TRIP GENERATION WORKSHEET RATES

Development: Wheeler TSP
Size: 45 Spaces/Sites

ITE Land Use Code: Campground/RV Park, Code 416

Variable: Number of Spaces/Sites (S)

Total Saturday Trips

$$T = 50.67x(S)^*$$

	Enter	Exit	Total
Vehicle Trips	1140	1140	2280
Site Distribution	50%	50%	100%

* There is only one observation and no related plots for these data points

Saturday AM Peak Hour Trips

No Data Available

	Enter	Exit	Total
Vehicle Trips	N/A	N/A	N/A
Site Distribution			

SATURDAY

Weekday PM Peak Hour Trips (Generator)

$$T = 0.48x(S)$$

	Enter	Exit	Total
Vehicle Trips	11	11	22
Site Distribution	50%	50%	100%


 Engineers, Inc.



Existing Weekend Summer PM Peak Hour Hour Volumes (August 2000)

Level Of Service Computation Report

1994 HCM Unsignalized Method (Base Volume Alternative)

Intersection #46 Paradise Cove Rd/Hwy 101

Average Delay (sec/veh): 0.4 Worst Case Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R

Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		

Lanes:	0	0	1	0	0	0	0	1	0	0	1	0	0	1	0	1	0	0	1	0
--------	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Volume Module: PM Peak												
Base Vol:	5	0	6	10	0	6	7	400	5	6	450	10
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	5	0	6	10	0	6	7	400	5	6	450	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	6	0	7	11	0	7	8	444	6	7	500	11
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	6	0	7	11	0	7	8	444	6	7	500	11

Adjusted Volume Module:												
Grade:	0%			0%			0%			0%		
% Cycle/Cars:	xxxx	xxxx		xxxx	xxxx		xxxx	xxxx		xxxx	xxxx	
% Truck/Comb:	xxxx	xxxx		xxxx	xxxx		xxxx	xxxx		xxxx	xxxx	
PCE Adj:	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.00	1.00	1.10	1.00	1.00
Cycl/Car PCE:	xxxx	xxxx		xxxx	xxxx		xxxx	xxxx		xxxx	xxxx	
Trck/Cmb PCE:	xxxx	xxxx		xxxx	xxxx		xxxx	xxxx		xxxx	xxxx	
Adj Vol.:	6	0	7	12	0	7	9	444	6	7	500	11

Critical Gap Module:												
MoveUp Time:	3.4	xxxx	2.6	3.4	xxxx	2.6	2.1	xxxx	xxxxx	2.1	xxxx	xxxxx
Critical Gp:	6.5	xxxx	5.5	6.5	xxxx	5.5	5.0	xxxx	xxxxx	5.0	xxxx	xxxxx

Capacity Module:												
Cnflct Vol:	971	xxxx	447	971	xxxx	506	511	xxxx	xxxxx	450	xxxx	xxxxx
Potent Cap.:	290	xxxx	822	290	xxxx	768	978	xxxx	xxxxx	1046	xxxx	xxxxx
Adj Cap:	0.98	xxxx	1.00	0.98	xxxx	1.00	1.00	xxxx	xxxxx	1.00	xxxx	xxxxx
Move Cap.:	284	xxxx	822	284	xxxx	768	978	xxxx	xxxxx	1046	xxxx	xxxxx

Level Of Service Module:												
Stopped Del:	12.9	xxxx	4.4	13.2	xxxx	4.7	3.7	xxxx	xxxxx	3.5	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	A	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	442	xxxxx	xxxx	372	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	8.3	xxxxx	xxxxx	10.0	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	B	*	*	C	*	*	*	*	*	*	*
ApproachDel:	8.3			10.0			0.1			0.0		

V/c = (11+7)/372 = 0.05

Existing Weekend Summer PM Peak Hour Hour Volumes (August 2000)

Level Of Service Computation Report

1997 HCM Unsignalized Method (Base Volume Alternative)

```

*****
Intersection #7 1st Street/Hwy 101
*****
Average Delay (sec/veh):      13.2          Worst Case Level Of Service:      B
*****
Approach:      North Bound      South Bound      East Bound      West Bound
Movement:      L - T - R      L - T - R      L - T - R      L - T - R
-----|-----|-----|-----|-----|
Control:      Stop Sign      Stop Sign      Uncontrolled      Uncontrolled
Rights:      Include      Include      Include      Include
Lanes:      0 0 1! 0 0      0 0 0 0 0      0 0 0 1 0      0 1 0 0 0
-----|-----|-----|-----|-----|
Volume Module: PM Peak
Base Vol:      10 0 15 0 0 0 0 0 375 10 15 425 0
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 10 0 15 0 0 0 0 0 375 10 15 425 0
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.96 0.96 0.96 0.96 0.96 0.96 0.96 0.96 0.96 0.96 0.96 0.96
PHF Volume: 10 0 16 0 0 0 0 0 391 10 16 443 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Final Vol.: 10 0 16 0 0 0 0 0 391 10 16 443 0
-----|-----|-----|-----|-----|
Critical Gap Module:
Critical Gp: 6.4 xxxx 6.2 xxxxxx xxxx xxxxxx xxxxxx xxxx xxxxxx 4.1 xxxx xxxxxx
FollowUpTim: 3.5 xxxx 3.3 xxxxxx xxxx xxxxxx xxxxxx xxxx xxxxxx 2.2 xxxx xxxxxx
-----|-----|-----|-----|-----|
Capacity Module:
Cnflct Vol: 870 xxxx 396 xxxx xxxx xxxxxx xxxx xxxx xxxxxx 401 xxxx xxxxxx
Potent Cap.: 325 xxxx 658 xxxx xxxx xxxxxx xxxx xxxx xxxxxx 1169 xxxx xxxxxx
Move Cap.: 321 xxxx 658 xxxx xxxx xxxxxx xxxx xxxx xxxxxx 1169 xxxx xxxxxx
-----|-----|-----|-----|-----|
Level Of Service Module:
Stopped Del:xxxxx xxxx xxxxxx xxxxxx xxxx xxxxxx xxxxxx xxxx xxxxxx 8.1 xxxx xxxxxx
LOS by Move: * * * * * * * * * * * * * * * * * * * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx (464) xxxxxx xxxx xxxx xxxxxx xxxx xxxx xxxxxx xxxx xxxx xxxxxx
Shrd StpDel:xxxxx 13.2 xxxxxx xxxxxx xxxx xxxxxx xxxxxx xxxx xxxxxx 8.1 xxxx xxxxxx
Shared LOS: * B * * * * * * * * * * * * * * * * * * * * *
ApproachDel: 13.2 xxxxxxxx xxxxxxxx xxxxxxxx
ApproachLOS: B * * *

```

$$V/L = (10+16)/464 = 0.06$$

Existing Weekend Summer PM Peak Hour Hour Volumes (August 2000)

Level Of Service Computation Report

1997 HCM Unsignalized Method (Base Volume Alternative)

Intersection #5 Gregory Street/Hwy 101

Average Delay (sec/veh): 13.5 Worst Case Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound										
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R

Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled										
Rights:	Include			Include			Include			Include										
Lanes:	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0

Volume Module: PM Peak	North Bound			South Bound			East Bound			West Bound		
Base Vol:	8	0	32	0	0	0	0	365	8	35	390	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	8	0	32	0	0	0	0	365	8	35	390	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	9	0	34	0	0	0	0	388	9	37	415	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	9	0	34	0	0	0	0	388	9	37	415	0

Critical Gap Module:	North Bound			South Bound			East Bound			West Bound		
Critical Gp:	6.4	xxxx	6.2	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	4.1	xxxx	xxxxxx
FollowUpTim:	3.5	xxxx	3.3	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	2.2	xxxx	xxxxxx

Capacity Module:	North Bound			South Bound			East Bound			West Bound		
Cnflct Vol:	951	xxxx	462	xxxx	xxxx	xxxxxx	xxxx	xxxx	xxxxxx	438	xxxx	xxxxxx
Potent Cap.:	291	xxxx	604	xxxx	xxxx	xxxxxx	xxxx	xxxx	xxxxxx	1133	xxxx	xxxxxx
Move Cap.:	267	xxxx	570	xxxx	xxxx	xxxxxx	xxxx	xxxx	xxxxxx	1095	xxxx	xxxxxx

Level Of Service Module:	North Bound			South Bound			East Bound			West Bound					
Stopped Del:	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	8.3	xxxx	xxxxxx			
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*			
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	465	xxxxxx	xxxx	xxxx	xxxxxx	xxxx	xxxx	xxxxxx	xxxx	xxxx	xxxxxx			
Shrd StpDel:	xxxxxx	13.5	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	8.4	xxxx	xxxxxx			
Shared LOS:	*	B	*	*	*	*	*	*	*	A	*	*			
ApproachDel:	13.5			xxxxxxx			xxxxxxx			xxxxxxx					
ApproachLOS:	B			*			*			*					

$$v/c = (9+34)/465 = 0.09$$

Existing Weekend Summer PM Peak Hour Hour Volumes (August 2000)

Level Of Service Computation Report

1997 HCM Unsignalized Method (Base Volume Alternative)

Intersection #4 Rector Street/Hwy 101

Average Delay (sec/veh): 22.3 Worst Case Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R

Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0	0	1! 0 0	0	0	1! 0 0	0	0	1! 0 0	0	0	1! 0 0

Volume Module: PM Peak	North Bound			South Bound			East Bound			West Bound		
Base Vol:	5	0	5	35	0	20	20	400	5	5	400	35
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	5	0	5	35	0	20	20	400	5	5	400	35
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	5	0	5	38	0	22	22	435	5	5	435	38
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	5	0	5	38	0	22	22	435	5	5	435	38

Critical Gap Module:	North Bound			South Bound			East Bound			West Bound		
Critical Gp:	7.1	xxxx	6.2	7.1	xxxx	6.2	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	xxxx	3.3	3.5	xxxx	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx

Capacity Module:	North Bound			South Bound			East Bound			West Bound		
Cnflct Vol:	1012	xxxx	491	1002	xxxx	509	504	xxxx	xxxxx	471	xxxx	xxxxx
Potent Cap.:	220	xxxx	581	223	xxxx	568	1071	xxxx	xxxxx	1101	xxxx	xxxxx
Move Cap.:	197	xxxx	555	207	xxxx	543	1043	xxxx	xxxxx	1073	xxxx	xxxxx

Level Of Service Module:	North Bound			South Bound			East Bound			West Bound		
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.5	xxxx	xxxxx	8.4	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	A	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	291	xxxxx	xxxx	267	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	17.8	xxxxx	xxxxx	22.3	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	C	*	*	C	*	*	*	*	*	*	*
ApproachDel:	17.8			22.3			xxxxxx			xxxxxx		
ApproachLOS:	C			C			*			*		

$$v/c = (38 + 22) / 267 = 0.22$$

Existing Weekend Summer PM Peak Hour Hour Volumes (August 2000)

Level Of Service Computation Report

1997 HCM Unsignalized Method (Base Volume Alternative)

Intersection #3 Spruce Street/Hwy 101

Average Delay (sec/veh): 14.4 Worst Case Level Of Service: B

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Stop Sign	Stop Sign	Uncontrolled	Uncontrolled
Rights:	Include	Include	Include	Include
Lanes:	0 0 1! 0 0	0 0 0 0 0	0 0 0 1 0	0 1 0 0 0

Volume Module: PM Peak				
Base Vol:	5 0 5	0 0 0	0 410 5	5 425 0
Growth Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Initial Bse:	5 0 5	0 0 0	0 410 5	5 425 0
User Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
PHF Adj:	0.90 0.90 0.90	0.90 0.90 0.90	0.90 0.90 0.90	0.90 0.90 0.90
PHF Volume:	6 0 6	0 0 0	0 456 6	6 472 0
Reduct Vol:	0 0 0	0 0 0	0 0 0	0 0 0
Final Vol.:	6 0 6	0 0 0	0 456 6	6 472 0

Critical Gap Module:				
Critical Gp:	6.4 xxxx	6.2 xxxxx xxxx xxxxx	xxxxx xxxx xxxxx	4.1 xxxx xxxxx
FollowUpTim:	3.5 xxxx	3.3 xxxxx xxxx xxxxx	xxxxxx xxxx xxxxx	2.2 xxxx xxxxx

Capacity Module:				
Cnflct Vol:	942 xxxx	458 xxxx xxxxx	xxxx xxxxx xxxxx	461 xxxx xxxxx
Potent Cap.:	294 xxxx	607 xxxx xxxxx	xxxx xxxxx xxxxx	1111 xxxx xxxxx
Move Cap.:	293 xxxx	607 xxxx xxxxx	xxxx xxxxx xxxxx	1111 xxxx xxxxx

Level Of Service Module:				
Stopped Del:	xxxxxx xxxx xxxxx	xxxxxx xxxx xxxxx	xxxxxx xxxx xxxxx	8.2 xxxx xxxxx
LOS by Move:	* * *	* * *	* * *	A * *
Movement:	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT
Shared Cap.:	xxxx 395 xxxxx	xxxx xxxxx xxxxx	xxxx xxxxx xxxxx	xxxx xxxxx xxxxx
Shrd StpDel:	xxxxxx 14.4	xxxxxx xxxxx xxxxx	xxxxxx xxxx xxxxx	8.3 xxxx xxxxx
Shared LOS:	* B *	* * *	* * *	A * *
ApproachDel:	14.4	xxxxxxx	xxxxxxx	xxxxxxx
ApproachLOS:	B	*	*	*

$$V/C = (6+6)/395 = 0.03$$

Existing Weekend Summer PM Peak Hour Hour Volumes (August 2000)

Level Of Service Computation Report

1997 HCM Unsignalized Method (Base Volume Alternative)

Intersection #2 Hemlock Street/Hwy 101

Average Delay (sec/veh): 16.0 Worst Case Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R

Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		

Lanes:	0	0	1!	0	0	0	1!	0	0	0	1!	0	0	0	0	0	1!	0	0	0
--------	---	---	----	---	---	---	----	---	---	---	----	---	---	---	---	---	----	---	---	---

Volume Module: PM Peak	North Bound			South Bound			East Bound			West Bound		
Base Vol:	5	0	5	1	0	1	1	420	5	5	430	1
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	5	0	5	1	0	1	1	420	5	5	430	1
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	6	0	6	1	0	1	1	467	6	6	478	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	6	0	6	1	0	1	1	467	6	6	478	1

Critical Gap Module:	North Bound			South Bound			East Bound			West Bound		
Critical Gp:	7.1	xxxx	6.2	7.1	xxxx	6.2	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	xxxx	3.3	3.5	xxxx	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx

Capacity Module:	North Bound			South Bound			East Bound			West Bound		
Cnflct Vol:	962	xxxx	469	964	xxxx	478	479	xxxx	xxxxx	472	xxxx	xxxxx
Potent Cap.:	238	xxxx	598	237	xxxx	591	1094	xxxx	xxxxx	1100	xxxx	xxxxx
Move Cap.:	236	xxxx	598	233	xxxx	591	1094	xxxx	xxxxx	1100	xxxx	xxxxx

Level Of Service Module:	North Bound			South Bound			East Bound			West Bound		
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxxx	xxxx	xxxxxx	8.3	xxxx	xxxxxx	8.3	xxxx	xxxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	A	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	339	xxxxx	xxxx	335	xxxxxx	xxxx	xxxx	xxxxxx	xxxx	xxxx	xxxxxx
Shrd StpDel:	xxxxx	16.0	xxxxx	xxxxxx	15.8	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx
Shared LOS:	*	C	*	*	C	*	*	*	*	*	*	*
ApproachDel:	16.0			15.8			xxxxxxx			xxxxxxx		
ApproachLOS:	C			C			*			*		

$$v/c = (6+6)/339 = 0.04$$

Existing Weekend Summer PM Peak Hour Hour Volumes (August 2000)

Level Of Service Computation Report

1997 HCM Unsignalized Method (Base Volume Alternative)

Intersection #1 Old Wheeler Road/Hwy 101

Average Delay (sec/veh): 14.3 Worst Case Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0	0	1	0	0	0	0	0	0	1	0	0

Volume Module: PM Peak

Base Vol:	1	0	1	0	0	0	0	425	1	1	435	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	0	1	0	0	0	0	425	1	1	435	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	1	0	1	0	0	0	0	472	1	1	483	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	1	0	1	0	0	0	0	472	1	1	483	0

Critical Gap Module:

Critical Gp:	6.4	xxxx	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx

Capacity Module:

Cnflct Vol:	958	xxxx	473	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	473	xxxx	xxxxx
Potent Cap.:	288	xxxx	596	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1099	xxxx	xxxxx
Move Cap.:	288	xxxx	596	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1099	xxxx	xxxxx

Level Of Service Module:

Stopped Del:	xxxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxxx	xxxx	xxxxxx	8.3	xxxx	xxxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	388	xxxxxx	xxxx	xxxx	xxxxxx	xxxx	xxxx	xxxxxx	xxxx	xxxx	xxxxxx
Shrd StpDel:	xxxxxx	14.3	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	8.3	xxxx	xxxxxx
Shared LOS:	*	B	*	*	*	*	*	*	*	A	*	*
ApproachDel:	14.3			xxxxxxx			xxxxxxx			xxxxxxx		
ApproachLOS:	B			*			*			*		

$$V/C = (1+1)/388 = 0.01$$

V. TRANSPORTATION SYSTEM ALTERNATIVES

The primary objective of this section is to identify potential transportation alternatives that will provide for a safe, adequate, connected transportation system in Wheeler for the next 20 years. These transportation alternatives include Highway 101 alternative improvements, downtown area improvements, local street improvements that address safety concerns, pedestrian/bicycle facilities, and other multi-modal approaches to meeting community needs.

The draft recommended transportation improvements are the result of research and analysis of the existing transportation system, estimating future traffic and impacts on the transportation system, and from public involvement. The planning process incorporates the philosophy that in order to create a successful plan, Wheeler citizens must provide input. The citizens of Wheeler are the people who live, work, play, and use the city's transportation facilities. They are the people who consistently ride, drive, bike, walk and run in Wheeler. Therefore, Wheeler citizens know the existing transportation system, know what issues and conflicts currently exist, and have ideas on how to improve the transportation system.

The following tasks and public involvement mechanisms were utilized to identify transportation issues and alternative improvement projects:

- Three TSP Advisory Committee (AC) Meetings
- Two Community Open Houses
- Review of Existing Transportation-Related Plans and Policies
- Inventory of Existing Transportation Facilities and Conditions
- Forecast of Future Travel Demand

This section provides the following:

- Identification of transportation issues identified in the Advisory Committee meetings and initial Community Open House
 - Identification and Descriptions of Alternative Transportation Improvement Projects
 - Summary of Community Open House #2
-

AC MEETING #1 – IDENTIFICATION OF TRANSPORTATION ISSUES

Projects/Plans

- A community visioning process was recently completed that included a questionnaire. Lou has this information.
- Hwy. 101 water system improvements are planned for late summer of 2001. Is it possible to tie in street improvements with this project? Once this water system is completed, the city will no longer get water from Gervais Creek or Vosburg Creek, except for fire water needs.
- The City is working on possible land swaps to acquire waterfront property. The City may acquire the 5-7 acres (of the total 40 acre site) that is within the Urban Growth Boundary (UGB). Lou may have more information on this in about a month.
- The proposed grocery store on Hwy. 101 will generate traffic. (for location, see photo taken summer 2000 that shows "Wheeler Market")
- It would be beneficial to all surrounding communities if greater intercity-cooperation were established, i.e. sharing heavy equipment that is seldom uses. This would result in cost savings and only require scheduling between the communities for using the heavy equipment.

Highway 101

- Auto/pedestrian conflicts due to businesses being located on the east side with the majority of parking located on the west side of the highway.
- The peak season (for business and traffic) is from July 4th to Labor Day.
- There is a lack of RV parking along the highway and for boat ramp usage.
- There have been previous discussions about relocating the highway. Mo Dichari, ODOT, may have information on this. Steve Jacobson is the ODOT area planner.
- The Hwy. 101/Gregory St./Rorvik St. intersection has visual problems. Autos currently have to pull out into the Hwy. 101 travel lanes to see past parked cars. This is also a confusing intersection with the three streets coming together.

Center of Town

- The Hwy. 101/Gregory St./Rorvik St. intersection area is the center of town and busiest area. This area includes the post office and pharmacy. Past plans show a potential reconfiguration of the street system, development potential, and additional parking.

Local Street System

- Need to have alternative north-south street access to Hwy. 101.

Storm Water Drainage

- Wheeler has a significant drainage problem.
- The City does not have a storm drainage plan.
- Hwy. 101 is currently a barrier for drainage. The drainage under the highway is inadequate.
- The TSP needs to tie in storm drainage recommendations with transportation recommendations.

Open Space/Pedestrian System

- Gervais Creek needs to be daylighted. The existing 2-3 block culvert should be removed, daylighting the creek and providing an opportunity for a trail system along the creek. The culvert needs to be located. It may be on both public and private property.
- The City owns property between Akin Street and Hall Street, which could become part of the open space system.
- There are opportunities in other places, i.e. the ends of dead-end streets, to have hiking/pedestrian trails.
- There is a need for additional/easy pedestrian access from the hillside residential areas to the waterfront.
- Opportunity for pedestrian/bicycle pathway parallel to the railroad tracks.

Hazards

- There has been a landslide at Hemlock Street and 4th Street. Hemlock Street is settling.

Railroad

- The TSP needs to address the potential passenger train that could make Wheeler a destination.
- Currently, a (long) lumber train passes through Wheeler about three times weekly.
- The Port of Tillamook Railroad owns a considerable amount of land. There have been ideas of building a train station. Any proposed development needs to be sensitive of views.

Boat Ramps

- Boat ramps are located in the center of town on the bay and at the bridge. A private boat ramp is located at Paradise Cove at the south end of town.

Public Transportation

- The Wave (van/small bus) is the public transportation system that travels between cities throughout Tillamook County.

Special Events

There are three annual events held at the park located at the boat launch area. These are sponsored by the Wheeler Business Association.

- Crab Feed in July
- Salmon Festival in late August
- Oyster Feed in September

Business Identification/Signage

- One-third of the businesses are located off of Hwy. 101. Identification of the businesses is needed, i.e. through signage at the entrances into the city.

AC MEETING #2 – IDENTIFICATION AND DISCUSSION OF TRANSPORTATION ISSUES

- Improve business signage at the city entrances and along Highway 101
- There is a lack of RV parking along Highway 101 and at the boat ramps
- Potential passenger train with Wheeler as a destination
- Potential for a Special Transportation Area (STA) designation along the highway through downtown
- Highway 101 auto/pedestrian conflicts
- Highway 101/Gregory Street/Rorvik Street intersection – visual problems and opportunities for improvements
- Waterfront property at north end will be developed – could have impact on traffic
- Highway 101 water system improvements are scheduled to begin construction Labor Day 2001. It would be good to make some highway/pedestrian improvements at this time.
- Storm drainage is a problem throughout the city including Highway 101 as a barrier to stormwater flow towards the bay.
- Additional local street connections are needed where possible. There are topographic constraints.
- An second north-south vehicular connection is needed. Currently, local residents have to access Highway 101 to travel from one end of town to the other.
- Improve pedestrian access from the hillside to the waterfront, beyond dead-end streets, and parallel to the railroad tracks
- Maintain and improve bay views.
- Daylight Gervais Creek and construct a pedestrian path along the creek.
- Open space opportunity at Hall and Akin streets.
- Landslide hazard on Hemlock Street, north of Fourth Street

Additional discussion items included:

- Ensure that local streets are addressed, i.e. extensions/connections to the existing local street system and improvements to existing streets.
- There is some discussion/interest in relocating the boat ramp from downtown to the north end. There are concerns about how it would effect the marina and businesses located along the waterfront.

OPEN HOUSE #1 TRANSPORTATION ISSUES AND CONCERNS

- Public bus transportation – a designated stop is needed at the north end of town and across from the hospice.
- Sidewalks are needed connecting Pennsylvania to Hall Street and Rorvik Street.
- Make Rorvik a through-street (extend).
- There is a need for a secondary north-south access (secondary to Highway 101).
- There is a speeding problem on Highway 101 through Wheeler.
- Lack of RV/trailer parking
- Need for business and chamber of commerce signs prior to downtown.
- Congestion at Gregory Street – steep, post office parking, diagonal parking.

- There are two major bottlenecks – Hwy. 101/Gregory/Rorvik and Hwy. 101/Boat Ramp access. Traffic control is needed.
- A left turn lane is needed on Hwy. 101 at Hospital Street.
- Capitalize on the water line construction project by improving the streets at the same time.
- Hall Street needs resurfacing and solutions for drainage.
- Safety committee has an identified evacuation route (Third Street).
- Consider bridges to connect some local streets.
- The Hwy. 101/Pennsylvania Avenue intersection is dangerous.
- There is a slightly irregular right-of-way along the east side of Hwy. 101
- Pedestrian Issues
 - Provide ADA pedestrian improvements where possible but consider constructing stairs in steep places.
 - Consider a hiking path along Gervais Creek – connected into other pedestrian opportunities and extended to Wheeler Falls.
 - Daylight Gervais Creek.
 - Need to address storm drainage.
 - There will be increased water from Gervais Creek once the water distribution line is constructed.
 - Consider a grade-separated pedestrian crossing across Hwy. 101
 - Improve pedestrian access to the river/bay.
 - A pedestrian/bicycle path/boardwalk is needed along the entire waterfront.
 - The Scovell property would be good for parking and public access to the bay.
 - Utilize the railroad right-of-way for a parallel pedestrian/bicycle path.
 - Opportunity for RV/trailer parking on the west side of Marine Drive, consider view protection.
 - Considerable discussion on relocating the boat launch to the north end of town – may pros and cons.
 - River dredging is needed for flood protection.
 - Lack of safe sidewalks/pedestrian paths from Wheeler Heights to downtown
 - The train is an attractive summer activity. Wheeler could be a hub for passenger train travel. Consider pedestrian safety for passengers getting off the train and crossing Hwy. 101. A sidewalk/pedestrian path is needed along the west side of Hwy. 101.
 - Any consideration to relocating the highway out of town?

IDENTIFICATION AND DESCRIPTIONS OF ALTERNATIVE TRANSPORTATION IMPROVEMENT PROJECTS

There are four primary recommended transportation improvements that address the transportation system for the entire city or a large area. In addition, there are several individual or site specific transportation improvement recommendations.

Alternative Highway 101 Transportation Improvements

This recommended transportation project addresses alternative concepts for improving the auto/truck, pedestrian, bicycle, and parking conflicts that currently exist along Highway 101 through downtown Wheeler. To demonstrate alternative transportation improvements on Highway 101, alternative diagrams were produced for a one-block section that includes the Highway 101/Rector Street intersection. (*See enclosed diagrams*) The intent of the alternative diagrams is to demonstrate potential Highway 101 throughout the Wheeler downtown area – generally from Hospital Road north to Pine Street.

Alternative 1: Three Lanes with Parallel Parking

- Three lanes with one 12' travel lane in each direction and 14' center turn lanes at the Gregory St./Rorvik St. and Rector intersections.
- The center turn lane becomes a median where center turn lanes are not needed.
- 8' wide sidewalk on the east side.

- 8' wide parallel parking on each side.
- Reduces Highway 101 parking by replacing west side diagonal parking with parallel parking.

Alternative 2: Three Lanes with East Side Diagonal Parking

- Three lanes with one 12' travel lane in each direction and 14' center turn lanes at the Gregory St./Rorvik St. and Rector intersections.
- The center turn lane becomes a median where center turn lanes are not needed.
- 8' wide sidewalk on the east side with wider sidewalk areas associated with diagonal parking.
- Diagonal parking on the east side.
- No parking on the west.
- Sidewalk on the west side (adjacent to travel lane).
- Although east side parallel parking is replaced with diagonal parking, the overall Highway 101 parking is reduced by eliminating west side parking.

Alternative 3: Two Lanes with Separated West Side Parking

- Two lanes with one 14' travel lane in each direction
- 7' wide sidewalk on the east side.
- West side diagonal parking with access lane that is separated from the travel lanes by a 2' barrier. The parking access lane is between the highway travel lanes and the parking.
- Reduces Highway 101 parking by eliminating east side parallel parking.

Alternative 4: Two Lanes with Separated West Side Parking

- Two lanes with one 14' travel lane in each direction
- 7' wide sidewalk on the east side.
- West side diagonal parking with access lane that is separated from the travel lanes by a 2' barrier. The difference from Alternative 3 is the diagonal parking is between the highway travel lanes and the parking access lane.
- Reduces Highway 101 parking by eliminating east side parallel parking.

Downtown Refinement Plan and Special Transportation Area (STA)

This project includes the recommendation for a downtown refinement plan to that will evaluate the alternative concepts and result in a preferred downtown plan with Highway 101 improvements. Consideration should be given to Highway 101 through downtown Wheeler being designated as a Special Transportation Area (STA). The STA would be an agreement between the City and ODOT to improve downtown and Highway 101 so that the needs and safety of autos/trucks, pedestrians, and bicyclists are balanced. This will include recommended traffic calming and pedestrian friendly elements, i.e. reducing the speed limit, curb extensions, parking configurations, medians, crosswalks, etc.

Local Street Network

There is an opportunity to connect some local streets by constructing street extensions within existing right-of-way. Topographic constraints limit the opportunities for connections. One objective for improving the local street network is to provide a north-south local street connection where local residents will be able to drive from one end of town to the other without having to access Highway 101. Alternative north-south, continuous local street connections include:

- **First Street Extension** from Hospital Road north to Third Street and from Rorvik Street to Gregory Street. An alternative connection from the First St./Rorvik St. intersection is to improve Rorvik St. between First St. and Second St. then connect Second St. between Rorvik St. and Fir Street (although this is fairly steep).
- **Fourth Street Extension** from south of Gamble St. north to Vosburg St., Hall St. north to Alder St., and Gregory St. north to Spruce St.

Pedestrian and Bicycle System

There is an opportunity to create a connected pedestrian and bicycle system. The connected ped/bike system will enable residents to access destinations, i.e. shops, post office, homes, without having to use an automobile. The ped/bike system will also provide a recreational amenity for people to walk, run, or ride. The ped/bike system will utilize the existing right-of-way where feasible. The ped/bike system (*see diagram in next section*) should also be integrated with a park and open space system, i.e. pathways parallel to daylighted creeks and leading to and through parks. Designated routes include:

- Highway 101 – east and west sides
- Fourth Street from Dubois St. to Hemlock St.
- Hemlock St. from Fourth St. to Highway 101 and across the highway
- Country Road from Highway 101 to Hemlock St.
- Gregory Street from Fourth St. to Highway 101 and across the highway
- Parallel to a daylighted Gervais Creek from Fourth Street to Highway 101, across the highway to the bay
- Akin Street from Fourth Street to Hospital Road and surrounding the City-owned land (future park) between Akin, Hall, Third, and Hospital streets.
- Third Street from Gervais Creek south to the City-owned land (future park)
- Rowe Street/Hospital Road from Fourth Street to Highway 101
- First Street from Gregory St. to Hospital Rd.
- Second Street from Akin St. (future park) to Dubois St.
- Parallel to Vosburg Creek from Fourth Street to Highway 101 and across the highway
- Third Street and Dichter Drive from Vosburg Creek to Highway 101 and across the highway

Street Design Standards

In addition to street design standards for Highway 101, street standards are recommended for local streets and off-street pathways. Street standards identify how future streets should be designed and constructed. This will provide the City and developers with standard street designs. Each street design standard identifies travel lane widths, parking, bicycle lanes, sidewalks/pathways, and drainage recommendations. In addition to Highway 101, three street design standards are recommended:

- Local Street Option 'A': 50' right-of-way with two 11' travel lanes and 5' drainage swales.
- Local Street Option 'B': 50' right-of-way with two 11' travel lanes, 6' pedestrian/bicycle path, and 5' drainage swales.
- Pathway: 10-50' right-of-way with 10' pathway width (paved or hard-packed unimpervious material)

Site Specific Transportation Improvement Projects

The following site specific transportation improvements were identified:

- Waterfront Pedestrian and Circulation improvements. This may include a recommendation for designating Marine Drive as a street. Currently Marine Drive is not a public (or private) street but is used to access the waterfront and commercial/industrial uses along the waterfront.
- Highway 101/Pennsylvania Avenue intersection realignment
- Hall Street/Third Street Curve - Identification of existing right-of-way or easement that depicts the true turning movement (curve)
- Hemlock Street/Third Street – need to secure right-of-way or easement where Third Street curves to intersect with Hemlock Street (or realign Third Street to intersect with Hemlock at a 90 degree angle if topography allows – doubtful)
- Railroad improvements including auto/pedestrian conflicts, and the potential for Wheeler to become a passenger rail destination with a train station
- Accommodating RV parking
- Gateway improvements – traffic, landscaping, signage improvements at each end of Wheeler that notify motorists that they are entering a community and provides an initial attractive appearance as one enters the community

- Need for the citywide stormwater master plan (Stormwater drainage is typically integrated with the street system therefore it will be addressed in the TSP.)

COMMUNITY OPEN HOUSE #2 COMMENTS TO ALTERNATIVE TRANSPORTATION IMPROVEMENTS

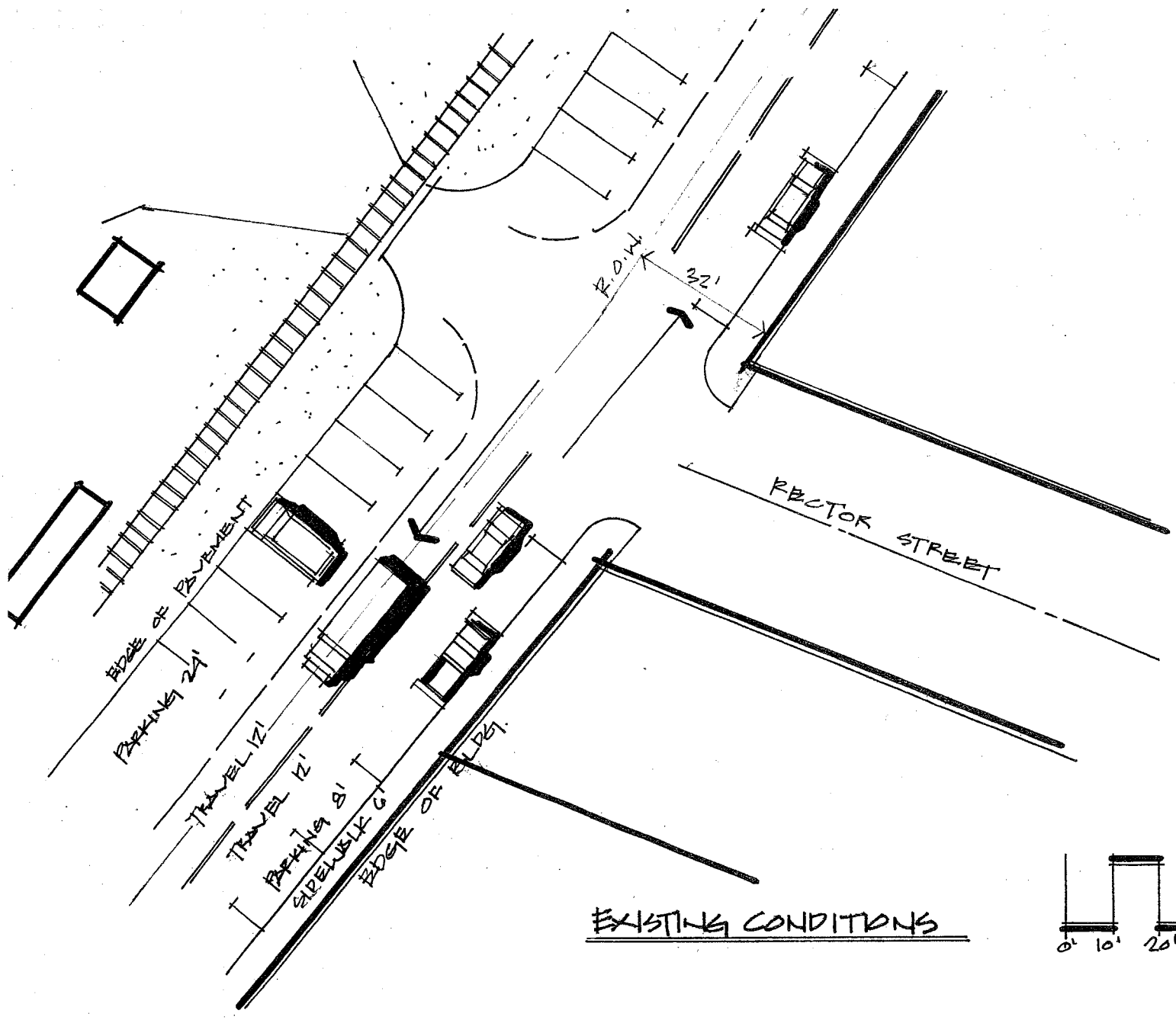
Downtown/Highway 101

The majority of the comments focused on Highway 101/Downtown alternative improvements.

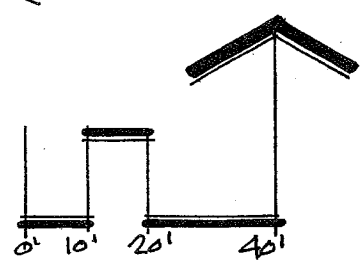
- Parking is the most important element. Additional parking is needed. A preferred alternative must show additional parking in the downtown area. The more on-street parking, the better.
- Wheeler is not a destination. There is a need to “capture” people, get them to stop.
- Bicycle lanes are needed.
- The Rorvik Street/Gregory Street/Highway 101 area is the center of town. This area includes the post office and commercial uses. This area is congested and needs improved circulation and additional parking.
- Parking needs to be located on level ground and within 100 feet of the stores.
- The City needs to continue to look for off-street parking opportunities near Highway 101 either through acquisition or lease.
- The pharmacy may allow general public parking if there parking lot were improved.
- The Nina’s Restaurant parking lot may be ideal for RV parking if it were improved.
- There is potential additional parking and a plaza on the Rorvik Street right-of-way.
- An modified Alternative 4 was discussed that would provide two travel lanes on Highway 101 with diagonal parking and access lanes on the west side of the highway separated from the travel lanes and include a bicycle lane.

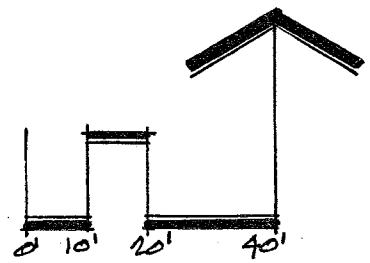
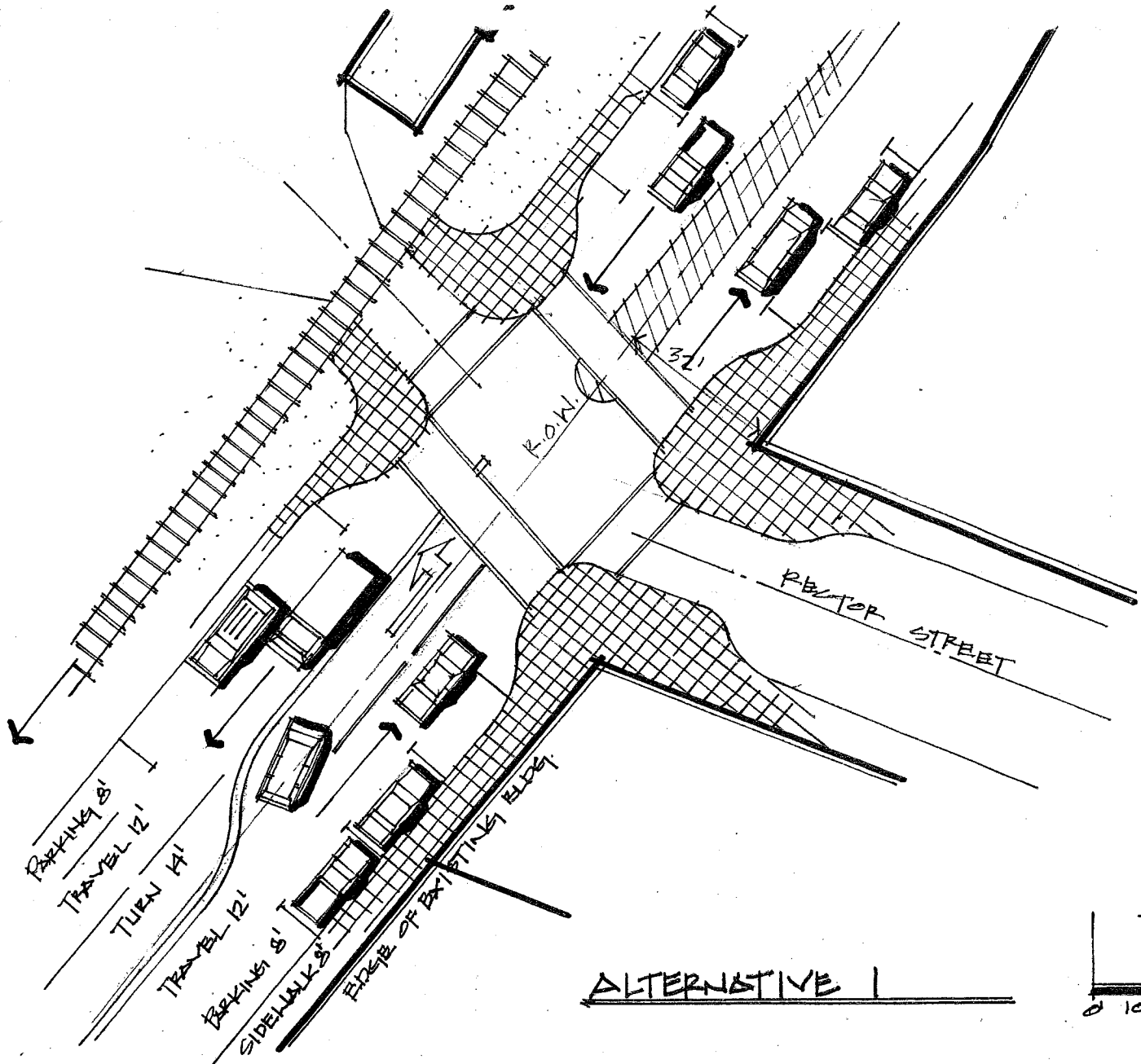
Local Street Connections

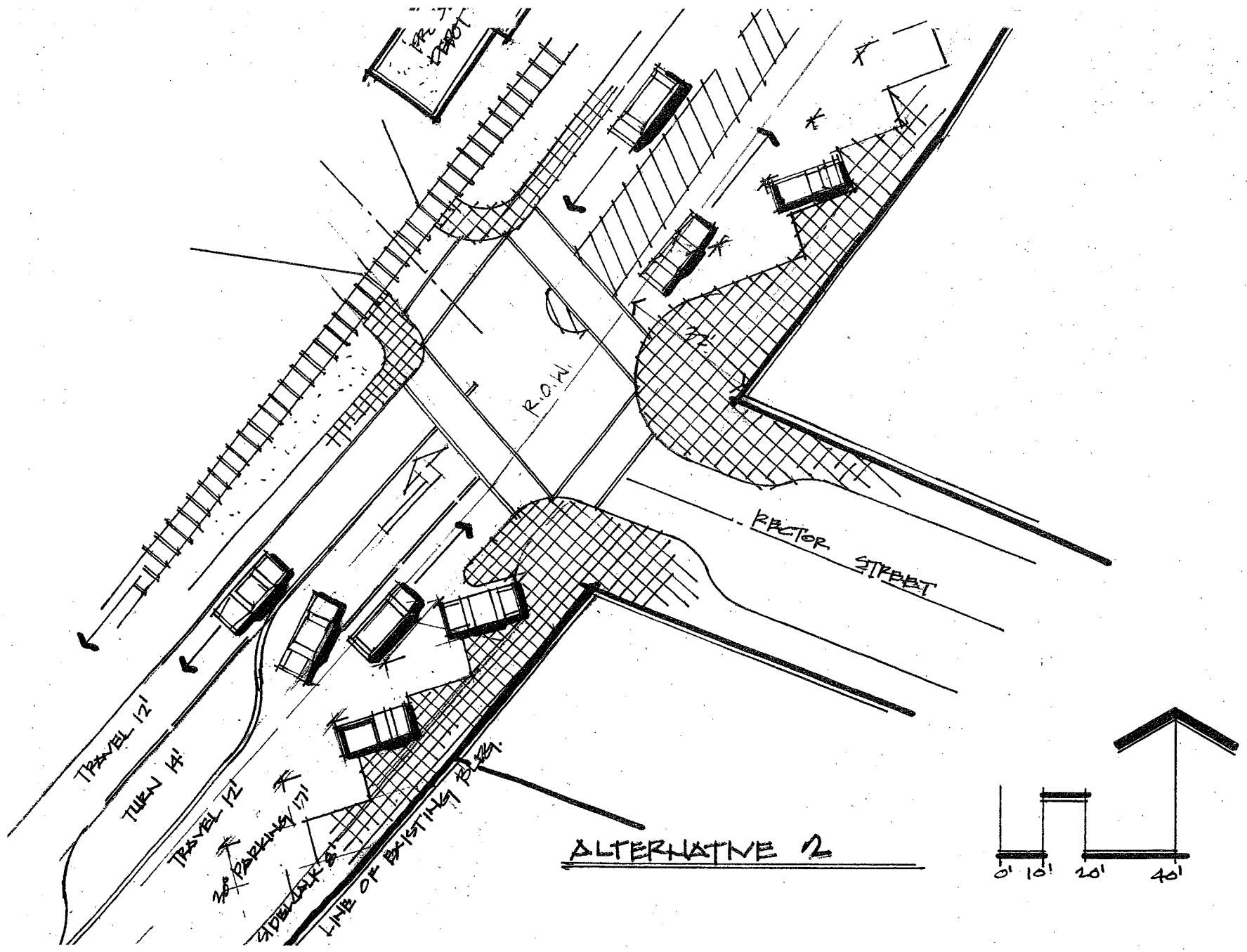
- The First Street connection has topographical constraints between Hospital Road and Hall Street, and private property owner constraints between Rorvik Street and Gregory Street.



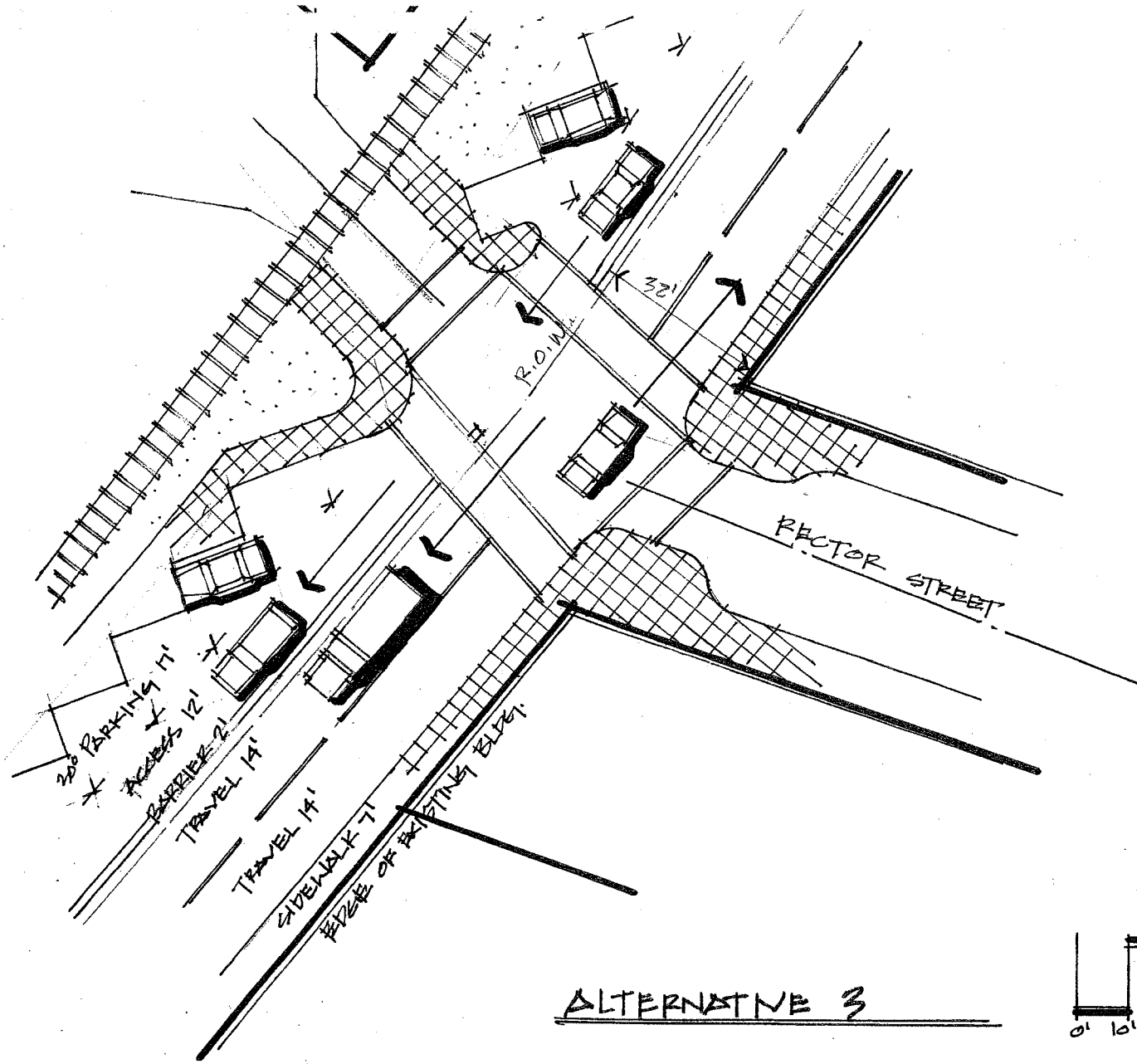
EXISTING CONDITIONS



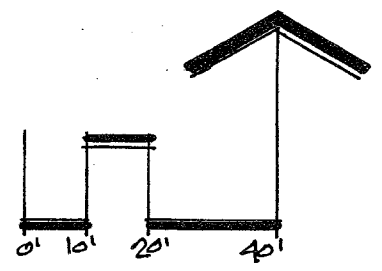


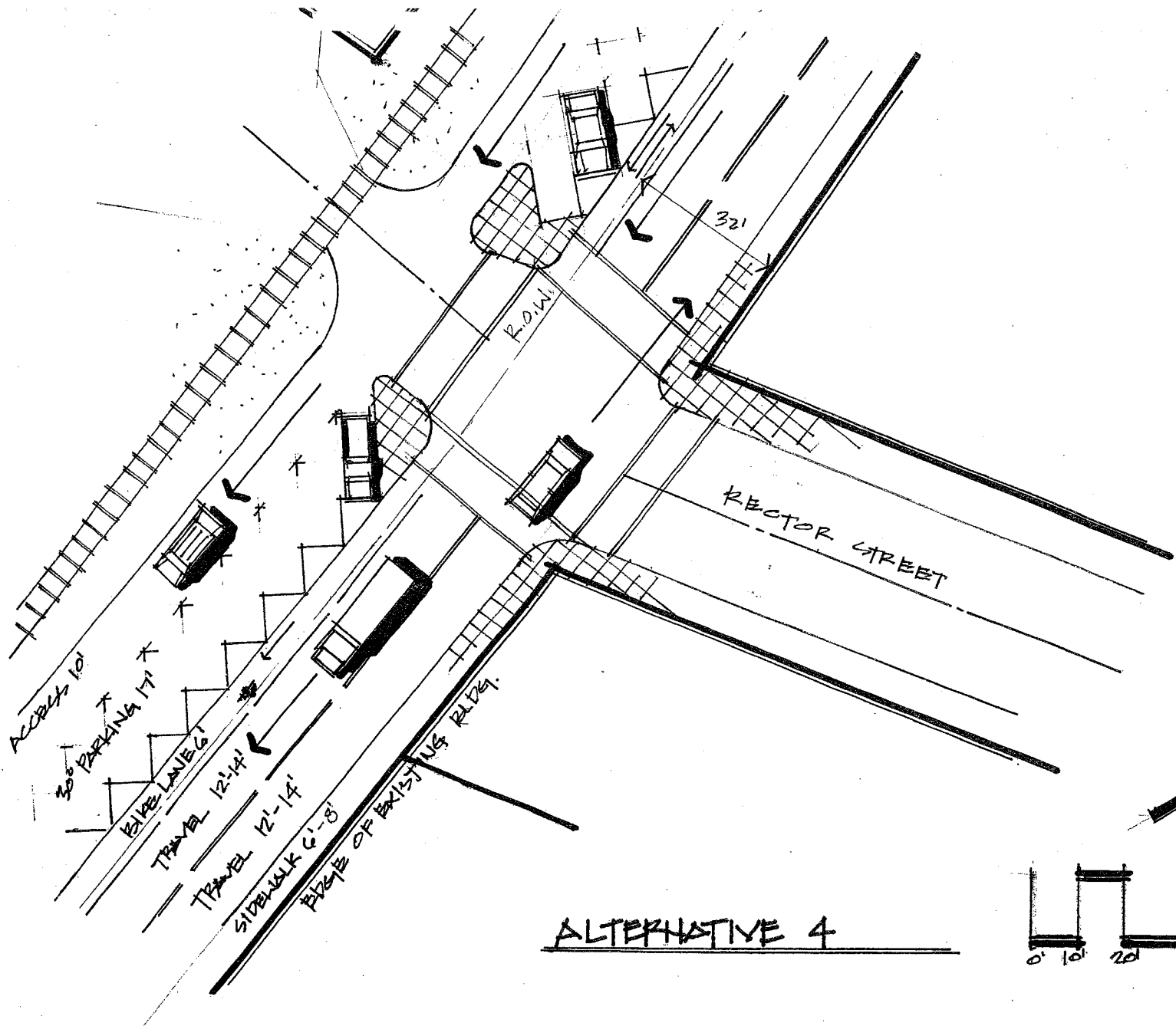


ALTERNATIVE 2

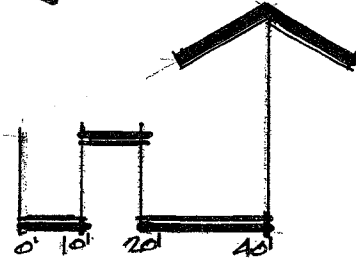


ALTERNATIVE 3





ALTERNATIVE 4



VI. TRANSPORTATION SYSTEM PLAN

The purpose of the **Transportation System Plan** is to guide the development of a safe, convenient and efficient transportation system that promotes economic prosperity and livability for all City residents.

As required by the Transportation Planning Rule (TPR), the City of Wheeler proposes to adopt standards and policies in this Transportation System Plan (TSP) that comply with the requirements to provide a multi-modal approach to solving transportation issues. The TPR identifies the specifications required of jurisdictions based on their population. For most urban areas, the TPR requires an alternative analysis to compare various new project options versus an alternative that proposes to build only existing funded and committed projects. These goals are measurable in many urban areas, but not in small communities or rural areas. There are three logical alternative directions for small communities and rural areas:

- **No-Build Alternative:** Pursue an alternative that programs only the identified projects in current City capital improvement plans and gradually shifts funding from new capital projects to more preservation and maintenance. Over time, capital improvements to address traffic and safety problem areas will proceed on a prioritized basis. The long-term effect is that preservation and maintenance of the existing system becomes a higher priority than relieving congestion and solving safety issues. This is often referred to as the "no build" alternative.
- **Build Alternative:** Adopt a "build" alternative, which tries to keep pace with anticipated growth by focusing funding on building capacity-enhancing and safety oriented projects, while also attempting to maintain the existing road network.
- **Combination Alternative:** Adopt a combination alternative, **as recommended in this TSP**, which includes a mixture of new projects to enhance roadway capacity, improve safety while also maximizing preservation and maintenance. This alternative also shifts emphasis to non-auto modes as much as is practical to meet the intent of the TPR.

This TSP balances the need to reduce the reliance on single occupant vehicles given the community's needs, geography and demographics, with the need to solve safety and operational problems. At the same time, the system needs a significant effort in maintenance over the next twenty years to preserve the investment already made by the community.

This Plan contains descriptions of recommended transportation improvement projects and implementation strategies that cover the following areas:

- Streets Plan Element;
- Public Transportation Plan;
- Bicycle / Pedestrian Plan;
- Air / Rail / Water / Pipeline Plan;
- Transportation System and Demand Management Plan (TSM & TDM); and
- The Plan also provides identification of potential implementation mechanisms and a spreadsheet that prioritizes projects according to "high," "medium," or "low;" identifies cost implications, and potential implementation mechanisms.

STREETS PLAN ELEMENT

This Street Plan Element is divided into the following subsections:

- **Functional Street Classification**
 - **Street Design Standards**
 - **Access Management**
 - **Highway 101-Downtown Improvements**
 - **Street Maintenance**
 - **Local Street Network Connections**
 - **Site Specific Street-Related Improvement Projects**
-

FUNCTIONAL STREET CLASSIFICATION

Functional street classification describes how the public street system should operate. Streets are grouped by their similar characteristics in providing mobility and/or land access. Within the City, there are two general street classifications: arterials and local streets.

Arterial

The primary function of a primary arterial is to provide for trips passing through a community and connecting regional centers. The principal arterial in Wheeler is U.S. Highway 101.

Local Streets

Local streets provide direct access to individual properties. Streets in Wheeler, other than Highway 101, are considered local streets.

Project A: Functional Street Classification System

Establish a functional street classification system by designating Highway 101 as an arterial street and remaining streets as local streets.

STREET DESIGN STANDARDS

Street design standards are provisions for the construction of roads. Street design standards are developed for each type of functional classification, i.e. arterial streets and local streets. Wheeler street design standards are identified in the following table.

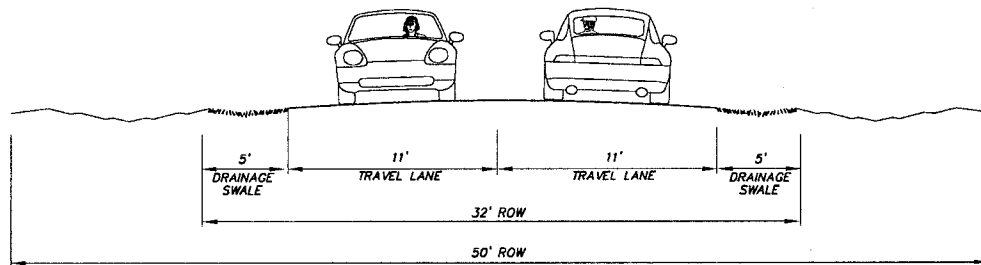
MINIMUM STREET DESIGN STANDARDS

Functional Class	Right-of-Way Width	Surface Width	Turn Lane Width	Surface Type	Base Depth	Maximum Grade	Design Speed	Minimum Tangent	Minimum Curve	Curb Type
Principal Arterial (Highway 101) *	80'	60-80'(1)	14'	(see note #1)		6%		(see note #1)		16"
Local Street Option A	50'	22'	--	3" AC	8"	15% (3)		(see note #2)		16" (4)
Local Street Option B	50'	33'	--	3" AC	6"	15% (3)		(see note #2)		12" (4)
Pathway	10-50'	10'	--	Varies	--	15% (3)		--		--

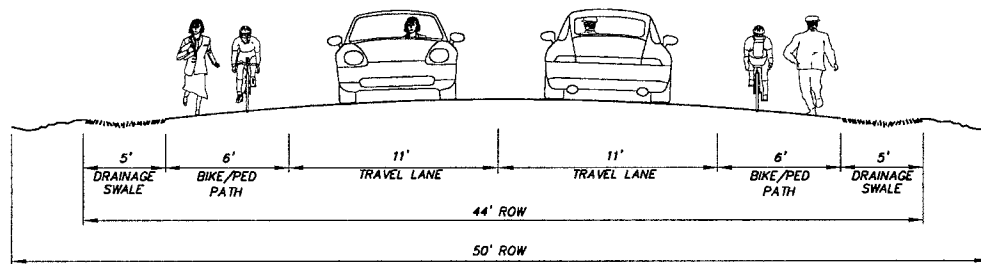
* Minimum street design standards identified for Highway 101 are typical standards for state highways. As plans for Highway 101 are developed as part of the recommended Downtown Refinement Plan, these standards will likely change.

- (1) Design shall be in accordance with Oregon Department of Transportation Design Standards.
- (2) Design shall be in accordance with AASHTO standards.
- (3) Maximum 15% is preferred however this may increase up to 20% due to topographical constraints.
- (4) Curb not required. If constructed, alternative storm drainage system required.

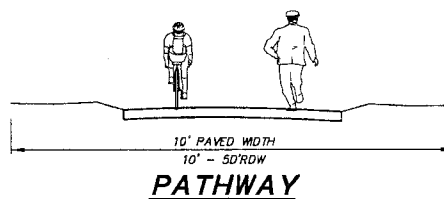
Project B: Adopt the recommended minimum street design standards.



OPTION "A"
WHEELER, OR



OPTION "B"
WHEELER, OR



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PREPARED FOR:
CITY OF WHEELER
PO BOX 177
WHEELER, OR 97147

RECOMMENDED STREET DESIGN STANDARDS

WHEELER TRANSPORTATION SYSTEM PLAN

Project: SDCB
Designed: -
Drawn: EAB
Checked: LMS
Date: 10/05

ACCESS MANAGEMENT

Streets accommodate two types of traffic: local travel and through traffic. Arterial streets are intended for through movement of traffic while local streets are designed to give direct access to the abutting properties.

Without access management, arterial streets can become overused for short distance trips and local access to property. Land use changes along arterials also contribute to increased trip generation and traffic conflicts, as businesses normally choose to locate on high traffic arterials. The lack of adequate access management and insufficient coordination of land use development, property division, and access review can contribute to the deterioration of both the arterial and collector road network. Partial access control, which is often found on major arterials and highways, is provided by limiting or prohibiting driveway access, left turn movements, and cross traffic at intersections. These limitations increase the capacity of an arterial to carry through traffic at the desired speeds without requiring the additions of more travel lanes. Coordination, planning, and proper policies can help avoid these problems and costly solutions.

Highway 101

An inventory of existing accesses to Highway 101 was conducted and summarized in the existing conditions analysis. Generally, access management is currently adequate along Highway 101 through Wheeler, particularly through the downtown core area. There are two primary reasons for the adequate access management through downtown: 1) the highway is adjacent to the railroad which limits private property access on the west side of the highway through downtown; 2) generally, east side commercial establishments fronting the east side of Highway 101 Street do not have vehicular access to their properties from Highway 101. Vehicular access is provided via side street connections and behind (east) the buildings.

As development and redevelopment of property fronting Highway 101 occur throughout the city limits, property access to Highway 101 should be limited to the minimum number of access required to serve properties. Coordination with ODOT is required for any development/redevelopment that impacts traffic on Highway 101.

Project C: Establish an ordinance that restricts access on Highway 101.

HIGHWAY 101-DOWNTOWN IMPROVEMENTS

Improve downtown/Highway 101 automobile, bicycle, and pedestrian circulation and safety, and provide additional parking. Improvements will occur by proceeding with the following basic steps:

- Highway 101/Downtown Refinement Plan
- Consider a Special Transportation Area Designation
- Secure Funding for Improvements
- Final Design and Construction

The Highway 101/Downtown Refinement Plan should include the following transportation-related improvements:

- **Accommodate Through Traffic**
In addition to making it convenient and safe for motorists to stop and shop in Wheeler, recognize that Highway 101 is the primary access and arterial through Wheeler. Therefore, autos, trucks, RVs, and other vehicles must be able to (continue to) move through Wheeler.
- **Improve Pedestrian Safety and Circulation**

AD A?

Improve pedestrian safety and circulation along Highway 101 and from local streets and parking areas that connect to Highway 101. This will occur through traffic calming improvements such as wider sidewalks, bulbouts (curb extensions), intersection treatment/crosswalks, medians, signage, pedestrian signals, and lighting.

• **Provide Additional Parking**

Provide additional parking spaces in the downtown area. Additional parking spaces are needed. The additional parking needs to be:

- grouped, i.e. large shared parking area(s);
- close to Highway 101 commercial uses;
- easily identified with good circulation from Highway 101; and
- adequate, safe, and provide attractive pedestrian connections to commercial uses and the bay.

• **Bicycle Traffic**

Highway 101 has considerable through-bicycle traffic in the summer. Consider the safety of bicyclists when addressing Highway 101 improvements. *Bike Paths*

• **Urban Design Concepts**

Urban design elements improve the appearance of a downtown – which leads to increased tourism and commerce. Urban design elements also make a downtown more pedestrian-friendly. The Highway 101 / Downtown Refinement Plan should incorporate urban design elements, i.e. architectural features that complement the existing character of Wheeler; plazas that accentuate commercial store entrances and provide a place for pedestrians; gateways features at each end of downtown such as landscaping, signage, and art that “tells” motorists they are entering a community, slow down, stop, be aware of pedestrians, bicyclists, and parking movements.

• **Consider a Special Transportation Area (STA)**

Consider creating a Downtown Wheeler STA. The STA will recognize that local auto, pedestrian, bicycle, and transit movements through downtown are generally as important as the movement of through traffic. The STA is a method for developing a detailed physical plan and management plan that addresses the needs of through traffic, local traffic, pedestrians, bicyclists, and public transportation; identifies parking; develops standards for highway access, lowers highway speed limits, improves commerce, and makes the downtown area along the highway an attractive place for local residents and tourists to visit. The STA will be a mechanism for the City of Wheeler and ODOT to collaborate on downtown transportation improvement projects.

Concept Plan

A detailed design study is recommended for Highway 101 and downtown improvements in Wheeler – called a Downtown Refinement Plan. The Downtown Refinement Plan should include evaluation of a concept that incorporates the following transportation elements:

- Two lanes with one 14’ travel lane in each direction
- A wider sidewalk on the east side
- West side diagonal parking with access lane that is separated from the travel lanes by a 2’ barrier. The diagonal parking should be located between the highway travel lanes and the parking access lane to allow more turning.
- Reduces Highway 101 parking by eliminating east side parallel parking.

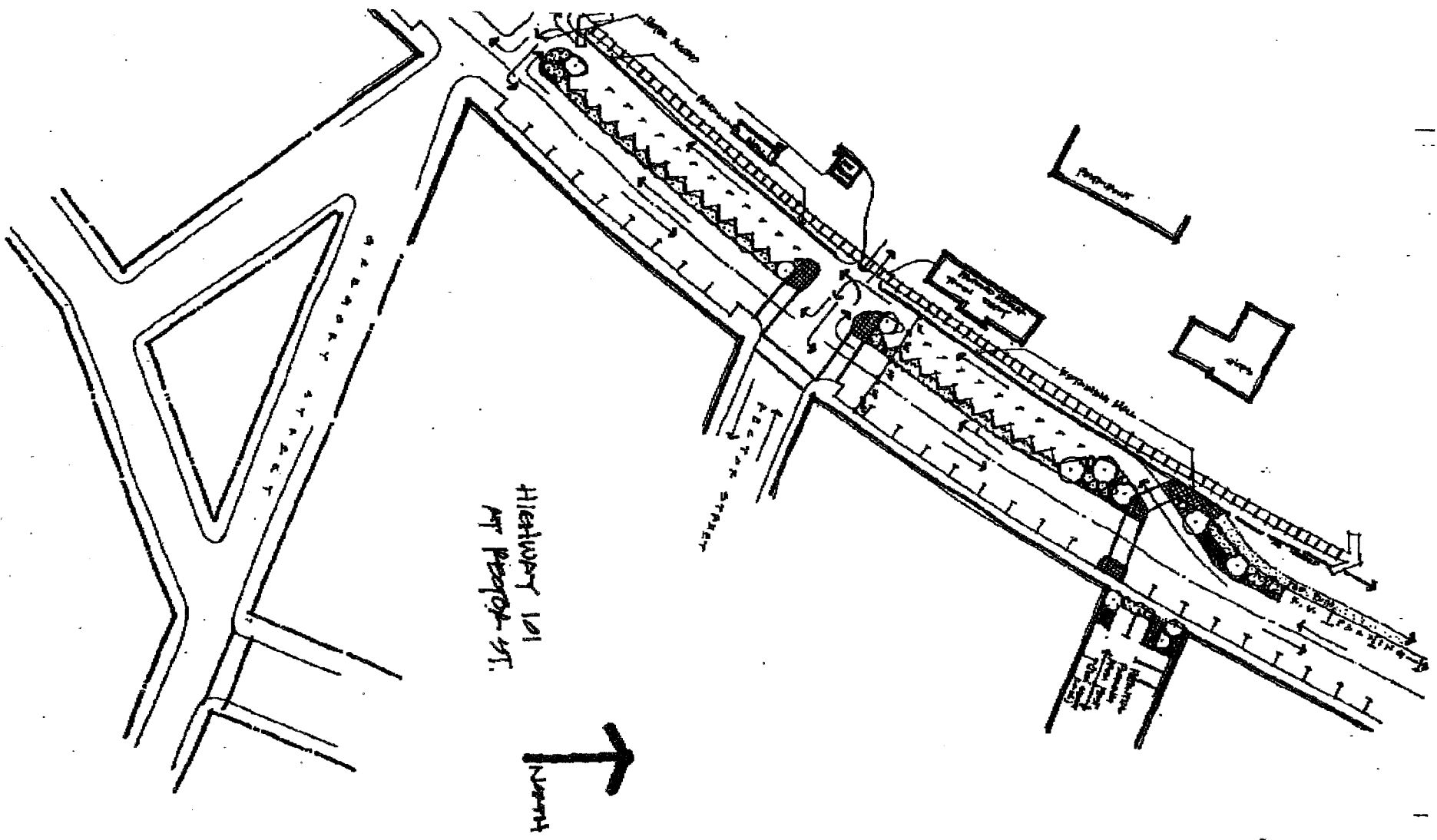
Project D: Prepare a Downtown Refinement Plan

The downtown refinement plan will provide the city with a more detailed plan for downtown transportation and urban design improvements. The refinement plan should evaluate the conceptual plan identified in this TSP and include a public process where the community is able to evaluate, provided input, and participate in the selection of a preferred downtown plan.

*Wheeler Transportation System Plan
2000-2001*

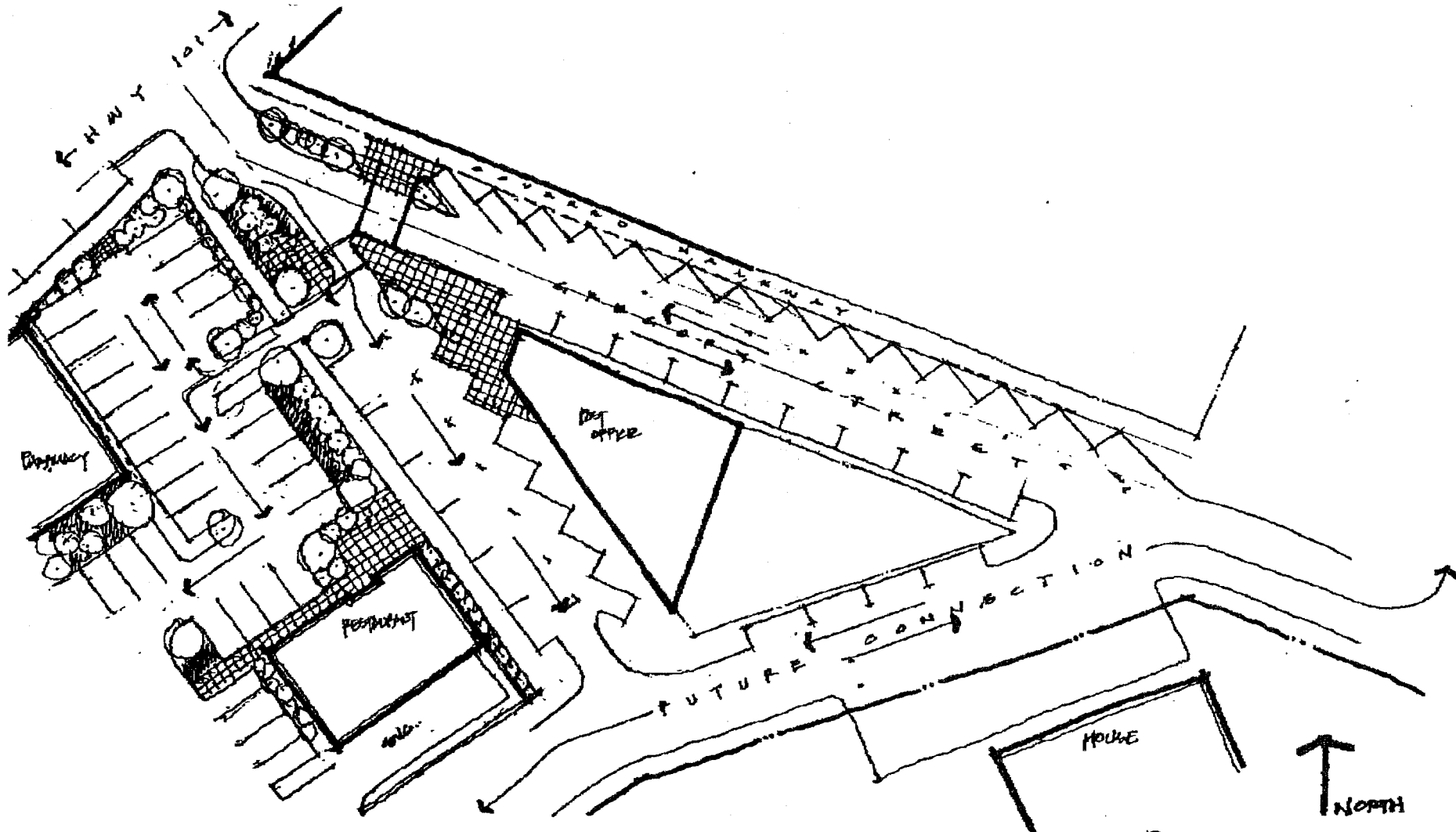
The downtown refinement plan should:

- accommodate the needs of through Highway 101 traffic,
 - improve pedestrian safety and circulation,
 - improve the needs and safety of bicyclists,
 - provided additional parking,
 - incorporate urban design concepts, and
 - evaluate the designation of downtown Wheeler as an STA.
-



Highway 101
at P.O. ST.

NORTH



Bicycle

Personnel

DET. OFFICE

FUTURE CONNECTION

HOUSE

NORTH

PARMISE AT GREGORY & PARK

STREET MAINTENANCE

Safety, maintenance, and repair should be actively pursued to maintain the integrity of the system and not jeopardize current conditions. Pedestrian, bicycle, and transit modes of transportation typically require wider, smoother roadways. These improvements also benefit automobile and truck traffic by making the roads safer and more efficient. Providing pedestrian and bicycle facilities, as well as transit modes of transportation, within the street system promote the Oregon Transportation Plan policy of encouraging alternatives to the auto.

Project E. Street Maintenance

Improve and maintain existing streets, i.e. potholes, paving, and striping.

LOCAL STREET NETWORK CONNECTIONS

There is an opportunity to connect some local streets by constructing street extensions within existing right-of-way. Topographic constraints limit the opportunities for connections. One objective for improving the local street network is to provide a north-south local street connection(s) where local residents will be able to drive from one end of town to the other without having to access Highway 101. Recommended north-south, continuous local street connection projects include:

Project F: First Street Extension

Extend First Street to provide a connection from Hospital Road north to Third Street and from Rorvik Street to Gregory Street. An alternative connection from the First St./Rorvik St. intersection is to improve Rorvik St. between First St. and Second St. then connect Second St. between Rorvik St. and Fir Street (although this is fairly steep).

Project G: Fourth Street Extension

Extend Fourth Street to provide a connection from south of Gamble St. north to Vosburg St., from Hall St. north to Alder St., and from Gregory St. north to Spruce St.

SITE SPECIFIC STREET-RELATED IMPROVEMENT PROJECTS

The following site specific transportation improvements are recommended:

Project H: Waterfront Circulation and Parking Improvements

As part of the recommended Downtown Refinement Plan, develop and implement a detailed plan for vehicular and pedestrian circulation and parking improvements between the railroad and the waterfront. This may include a recommendation for designating Marine Drive as a street. Currently Marine Drive is not a public (or private) street but is used to access the waterfront and commercial/industrial uses along the waterfront.

Project I: Highway 101/Pennsylvania Avenue Intersection Realignment

Project J: Hall Street/Third Street Curve

Identification of existing right-of-way or easement that depicts the true turning movement (curve)

Project K: Hemlock Street/Third Street

Secure right-of-way or easement where Third Street curves to intersect with Hemlock Street.

Project L: Provide Additional and Convenient RV Parking

Project M: Gateway Improvements

Provide attractive community gateway features at the north and south ends of Wheeler along Highway 101 to identify the entrance to Wheeler and to identify activities and businesses. The gateway features should include landscaping and signage. Also include a downtown gateway feature as part of the recommended Downtown Refinement Plan.

Project N. Maintain Access to Amenities and to Undeveloped Land

Maintain public access to amenities and to improve connectivity. This includes prohibiting street vacations where they provide access to amenities and potential access and circulation.

Project O. Circulation Connectivity with New Development

Require new development to provide connections to adjacent streets and pedestrian/bicycle facilities. This should occur through the land use application process and include provisions that transportation improvements be constructed concurrent with development, that right-of-way be dedicated, and that connections to adjacent properties occur to ensure future development connectivity.

Project P. Ensure Transportation Facilities and Services Accommodate Special Needs

Ensure transportation facilities are in accordance with Americans with Disability Act (ADA) standards wherever possible, and that public transportation services accommodate special needs, i.e. disabled and elderly.

Project Q: Citywide Stormwater Master Plan

Develop a citywide stormwater master plan that incorporates stormwater drainage solutions along side and within the street right-of-way system.

PUBLIC TRANSPORTATION ELEMENT

Public transportation services are needed to accommodate the elderly and transit disadvantaged. Tillamook County Transit District (TCTD) currently provides transit service between Nehalem and Tillamook that includes stops in Wheeler. This service should be continued and improved to accommodate future transit needs. Increased awareness of the existing service is encouraged to notify Wheeler residents of this transit opportunity.

The Tillamook County Transit District service, known locally as the *WAVE*, currently provides weekday service (no holiday service). Five daily trips are available from Nehalem to Tillamook, with limited service on Saturdays.

Project R. Improve Public Transportation Services

Improve public transit services as needed between Wheeler and other cities in Tillamook. Improved public transit service and increases in ridership can occur through alternative mechanisms, such as:

- Increasing public awareness of the existing service that currently is provided;
- Increasing public transportation trips to include weekend services and/or expanded weekday schedules;
- Encouraging employers to participate in transit programs for employees and visitors; and
- Physical public transportation-related improvements within Wheeler, i.e. ensuring an adequate number and easily identifiable drop-off/pick-up locations, transit shelters, scheduling and service information, and bicycle racks on buses, etc.

PEDESTRIAN AND BIKEWAY SYSTEM ELEMENT

There is an opportunity to create a connected pedestrian and bicycle system. The connected ped/bike system will enable residents to access destinations, i.e. shops, post office, homes, without having to use an automobile. The ped/bike system will also provide a recreational amenity for people to walk, run, or ride. The ped/bike system will utilize the existing right-of-way where feasible. The ped/bike system (*see diagram*) should be integrated with a park and open space system, i.e. pathways parallel to daylighted creeks and leading to and through parks.

There are two types of pedestrian/bicycle facilities - those associated with the street system and off-street multi-modal pathways. Pedestrian/bicycle facilities associated with the street system are preferred because of funding, maintenance, and safety issues. However, in Wheeler there are opportunities to create a pedestrian/bikeway system that incorporates both on-street and off-street facilities. This opportunity provides connections between destinations, i.e. residents, commercial uses, and natural amenities.

On-Street Pedestrian/Bicycle Facilities

Based on need and street characteristics, all streets open for public use should be considered for the potential to improve bicycling and walking. Pedestrian/bicycle facilities are considered in the development of street design standards according to functional classifications. The following pedestrian/bicycle facilities are appropriate on the street system in Wheeler.

Bicycle Lanes and Sidewalks

Principal arterial design standards (Highway 101) should include the provision for designated bicycle and sidewalks. This is appropriate on Highway 101. However, it is not appropriate to have designated bicycle lanes adjacent to diagonal parking as a result of limited vision of motorists backing into bicycle lanes.

Shared Roadways

Shared roadways are appropriate on local streets that do not experience high traffic volumes, i.e. less than 250 average daily traffic (ADT). Shared roadways are simply the streets pavement width as constructed and provide for shared motor vehicle, bicycle, and pedestrian usage. Local residential streets in Wheeler are used as shared facilities. Sidewalks are appropriate on local commercial streets in Wheeler, however sidewalks are not necessary on local residential streets because of low traffic volumes.

Off-Street Multi-Modal Pathways

Off-street pathways can be paved or unpaved. If unpaved, an appropriate surface material should be selected for its durability and compactness for multiple user groups, such as wheelchairs, bicycles, and pedestrians.

Though originally conceived to provide a facility for bicyclists separated from motor-vehicle traffic, paths often see greater use by pedestrians, joggers, skateboards, and in-line skaters. The planning and design of multi-use paths must therefore take into account the various skills, experience, and characteristics of these different users. In addition, a primary consideration to designing and constructing a multi-modal pathway in Wheeler will be the topography and trying to maintain grades that pedestrians, cyclists, and disabled individuals can use.

Well-planned and designed multi-use paths can provide good pedestrian and bicycle mobility. They can have their own alignment along drainage channels and "greenways," such as riparian and wetland corridors, and may be components of a comprehensive community pathway system.

Key components to successful paths include:

- Connection to and between land uses, such as residential areas, downtown/commercial areas, parks, and other community destinations;

***Wheeler Transportation System Plan
2000-2001***

- Well-designed street crossings, with measures such as bike and pedestrian activated signals, median refuges, and warning signs (on Highway 101) for both motor vehicles and path users;
- Shorter trip lengths than the road network, with connections between streets and through open spaces;
- Visibility: proximity to housing and businesses increases safety;
- Good design, by providing adequate width and sight distance, and avoiding problems such as poor drainage, blind corners, and steep slopes;
- Proper maintenance, with regular sweeping and repairs;
- An easy to read and understandable “wayfinding” system that includes signage to locate destinations, approximate distances, and facilitate better connections to the local street system;
- Continuous separation from traffic; and
- Scenic qualities, offering an aesthetic experience that attracts pedestrians and cyclists;

The substantial changes in topography in Wheeler create a challenge in providing a safe, well-connected pedestrian/bikeway system. Because of these limitations it is appropriate to consider off-street multi-modal pathways that will assist in providing a connected pedestrian/bikeway system.

Designated routes include and recommended projects include:

Project S: Highway 101 – East and West Sides.

Project T: Fourth Street from Dubois St. to Hemlock St.

Project U: Hemlock St. from Fourth St. to Highway 101 and across the highway.

Project V: Country Road from Highway 101 to Hemlock St.

Project W: Gregory Street from Fourth St. to Highway 101 and across the highway.

Project X: Gervais Creek Pathway

Construct a pathway parallel to a daylighted Gervais Creek from Fourth Street to Highway 101, across the highway to the bay.

Project Y: Akin Street from Fourth Street to Hospital Road and surrounding the City-owned land (future park) between Akin, Hall, Third, and Hospital streets.

Project Z: Third Street from Gervais Creek south to the City-owned land (future park).

Project AA: Rowe Street/Hospital Road from Fourth Street to Highway 101.

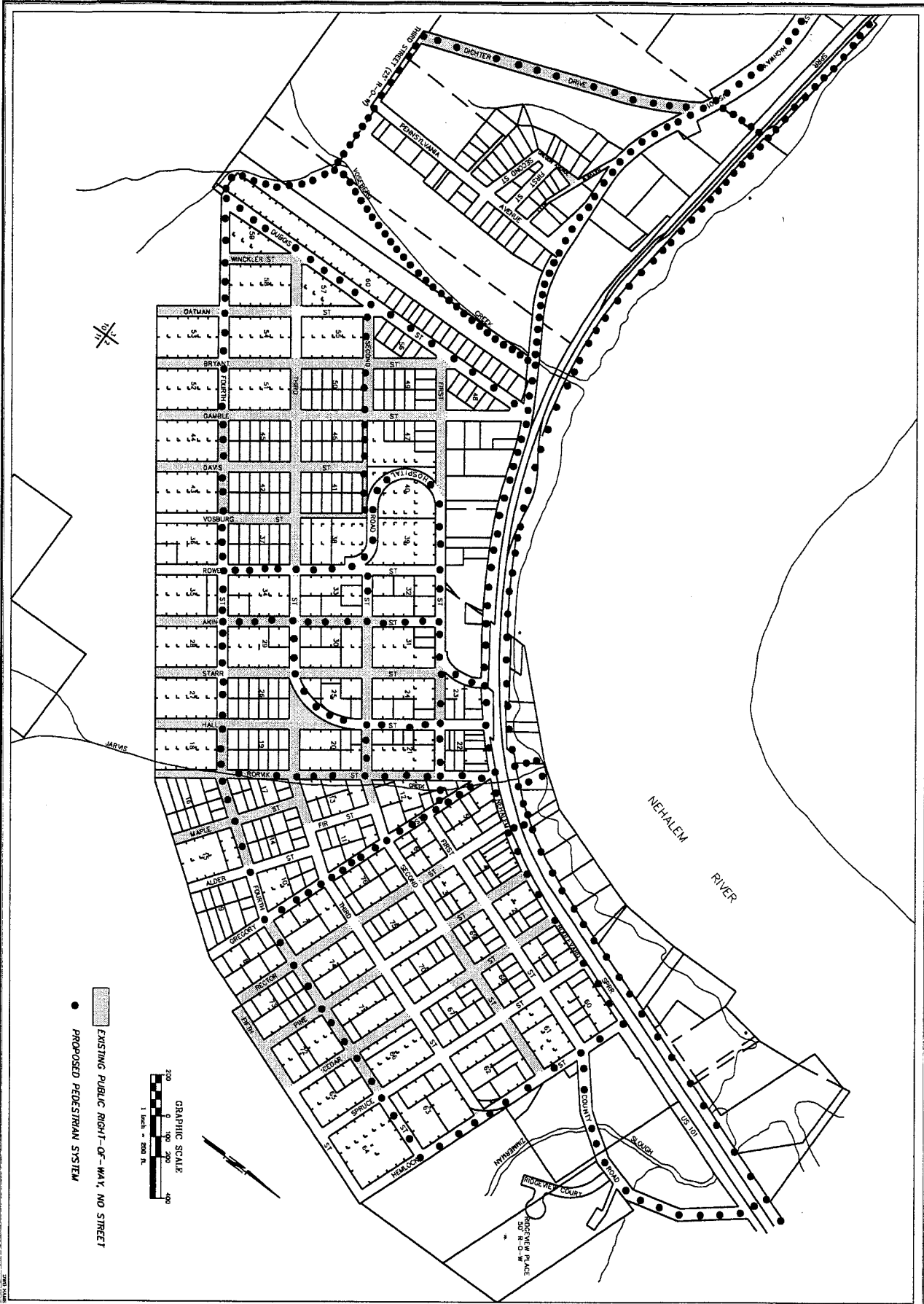
Project BB: First Street from Gregory St. to Hospital Rd.

Project CC: Second Street from Akin St. (future park) to Dubois St.

Project DD: Vosburg Creek Pathway

Construct a pathway parallel to Vosburg Creek from Fourth Street to Highway 101 and across the highway.

Project EE: Third Street and Dichter Drive from Vosburg Creek to Highway 101 and across the highway.



PROPOSED PEDESTRIAN SYSTEM

WHEELER TRANSPORTATION SYSTEM PLAN

PREPARED FOR:
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RAIL, WATER, PIPELINE, AND AIR TRANSPORTATION SYSTEM ELEMENT

Rail

The Port of Tillamook Bay operates a passenger rail car for tourists and other visitors to Tillamook County during the summer peak travel season. The route begins at the Port of Tillamook Bay just north of the City of Tillamook and stops in Garibaldi and Rockaway Beach. In 2000, over 1,800 passengers boarded this train, which travels through Wheeler.

There is also consideration to establish a regional passenger train service between the Portland Metropolitan Area and the Oregon coast. This would likely result in Wheeler becoming a passenger rail destination because it is the first city the existing rail connects to from the Portland area.

The Port of Tillamook Railroad is a major property owner in Wheeler including much of the land that currently occupies Highway 101. The City of Wheeler needs continuous coordination with the Port of Tillamook Railroad to ensure the needs of both the City and the Port are satisfied.

Project FF: Intercity Passenger and Freight Rail Service

Improve Intercity Rail Passenger Services and Freight Service as needed between Wheeler and other cities in Tillamook County.

Project GG: Regional Passenger Rail Service

Coordinate with state, regional, and local agencies as needed to establish a regional passenger rail service.

Project HH: Coordination with the Port of Tillamook Railroad

Establish continuous coordination with the Port of Tillamook Railroad to ensure the needs of both the City and the Port are satisfied.

Water

Water-borne transportation planning is applicable in Wheeler with the adjacent Nehalem Bay and access to the Pacific Ocean.

Project II: Maintain and Improve Access to and within Nehalem Bay

Pipeline Transportation

Project JJ: Maintain Use of Pipelines

Pipelines are used for power transmission lines, cable television, telephone, natural gas, water and sewage. The City encourages the continued use of pipelines to carry goods across City boundaries and for distribution within the City.

Air Transportation

Air transportation planning is not applicable in Wheeler.

TRANSPORTATION SYSTEM AND DEMAND MANAGEMENT ELEMENT

TRANSPORTATION SYSTEM MANAGEMENT

Transportation System Management (TSM) improvements focus on optimizing the carrying capacity of streets by alleviating congestion and reducing accidents. Examples of TSM strategies include:

- Minimizing the number of access points;
- Channelization of turning movements;
- Creation of continuous turning and merging lanes;
- Raised medians; and
- Signalization.

An important aspect of TSM is that public agencies work closely with affected businesses to fully evaluate impacts from changes to access. In addition, TSM must account equally for the needs of all modes of travel, particularly bike, pedestrian, and transit movements and safety are not compromised in exchange for improving roadway capacity.

Several TSM strategies are incorporated in this Plan and identified in the Transportation Projects. Examples include access management, intersection improvements, and turn lane improvements.

TRANSPORTATION DEMAND MANAGEMENT

Unlike TSM strategies, which focus on physical changes, Transportation Demand Management (TDM) measures target driver behavior, mode choice, and employers to lower the traffic demands on the roads, especially during the peak travel times of the day. Examples of TDM strategies include:

- Alternative or flexible work schedules;
- Ridesharing/carpooling;
- Transit use;
- Bicycling/walking;
- Parking management; and
- Working at home/telecommuting (teleworking).

Transportation Demand Management (TDM) strategies identify opportunities to reduce the impact of trips generated by various land uses, particularly during peak travel hours. TDM techniques typically seek to reduce reliance on single-occupancy vehicle trips and promote the use of alternative travel modes by persons accessing a given area or facility. The Oregon Transportation Planning Rule encourages the evaluation of TDM measures as part of the TSP development process.

TDM strategies often focus on major employers or other sources of traffic that can be influenced through measures such as scheduling changes, or alternative transit opportunities such as carpools and buses. Frequently, financial disincentives are included in programs to generate revenue that can be used to support other elements of an overall TDM program. The success of fee parking and other commonly used disincentives is dependent on the environment in which a given employer is located.

Given the small population of Wheeler, the TDM measures available to the city are limited in scope as compared to larger metropolitan areas. Typical TDM measures such as fee parking are not practical in a community where employee-paid parking does not exist. Provision of sidewalks and bicycle lanes will at least provide the community's residents with viable alternative travel modes for some local travel. Development patterns that encourage non-auto-oriented travel should be promoted.

POTENTIAL IMPLEMENTATION MECHANISMS

There are several potential mechanisms available for implementing transportation improvements in Wheeler. This section identifies potential mechanisms according to the following categories:

- Revenue Resources;
- Grants and Loans;
- ODOT Funding Sources; and
- Volunteer Labor and Material Donation.

REVENUE RESOURCES

In order to finance the recommended transportation system improvements it will require the expenditure of substantial capital resources. More importantly, the City of Wheeler needs to consider a range of funding sources implement the identified improvements. Although property taxes have traditionally served as the primary revenue source for local governments, property tax revenue accrues to general fund operations, and is typically not available for dedicated street improvements or maintenance. Despite this limitation, the use of alternative revenue funding has been a trend throughout Oregon as the full implementation of Measure 5 and 47 has significantly reduced property tax revenues (see below). *The alternative revenue sources described in this section may not all be appropriate in Wheeler; however, this overview is being provided to illustrate the range of options currently available to finance transportation improvements during the next 20 years.*

Property Taxes

Property taxes have historically been the primary revenue source for local governments. However, property tax revenue accrues to the general operating fund for the City. This revenue source is not typically available for street improvements or maintenance. The dependence of local governments on this revenue source is due, in large part, to the fact that property taxes are easy to implement and enforce. Property taxes are based on real property (i.e. land and buildings), which has a predictable value and appreciation to base taxes upon. This is as opposed to income or sales taxes, which can fluctuate with economic trends or unforeseen events.

Property taxes can be levied through: 1) tax base levies, 2) serial levies, and 3) bond levies. The most common method uses tax base levies, which do not expire and are allowed to increase by six percent per annum. Serial levies are limited by amount and time they can be imposed. Bond levies are for specific projects and are limited by time based on the debt load of the local government on the project.

The historic dependence on property taxes in Oregon is changing with the passage of Ballot Measure 5 in the early 1990s. Ballot Measure 5 limits the property tax rate for purposes other than payment of certain voter-approved general obligation indebtedness. Under full implementation, the tax rate for all local taxing authorities is limited to \$15 per \$1,000 of assessed valuation. As a group, all non-school taxing authorities are limited to \$10 per \$1,000 of assessed valuation. All tax base, serial, and special levies are subject to the tax rate limitation. Ballot Measure 5 requires that all non-school taxing districts' property tax rate be reduced if together they exceed \$10 per \$1,000 of assessed valuation; then all of the taxing districts' tax rates are reduced on a proportional basis. The proportional reduction in the tax rate is commonly referred to as compression of the tax rate.

Measure 47, another ballot initiative passed by Oregon voters in November 1996, is a constitutional amendment that reduces and limits property taxes, which in turn limits local revenues and replacement fees. The measure limits 1997-98 property taxes to the lesser of the 1995-96 tax, minus 10 percent, or the 1994-95 tax. It limits future annual property tax increases to three percent, with exceptions. Local governments' lost revenue may be replaced only with state income tax, unless voters approve replacement fees or charges. Tax levy approvals in certain elections require a "double majority" of 50 percent voter participation and approval.

***Wheeler Transportation System Plan
2000-2001***

Subsequent to Measure 47, the state legislature created Measure 50, which retains the tax relief of Measure 47, but clarifies some legal issues. Oregon voters approved this revised tax measure in May 1997.

The League of Oregon Cities (LOC) estimated that direct revenue losses to local governments, including school districts, may total \$467 million in fiscal year 1998, \$553 million in 1999, and increase thereafter. The actual revenue losses to local governments will depend on actions of the Oregon legislature. LOC also estimates that the state will have revenue gains of \$23 million in 1998, \$27 million in 1999, and increase thereafter because of increased personal and corporate tax receipts due to lower property tax deduction.

Measure 50 adds another layer of restrictions to those which govern the adoption of tax bases and levies outside the tax base, as well as Measure 5's tax rate limits for schools and non-schools, and tax rate exceptions for voter approved debt. Each new levy, and the imposition of a property tax, must be tested against a longer series of criteria before the collectible tax amount on a parcel of property can be determined.

System Development Charges

System Development Charges (SDCs), or impact fees, are becoming increasingly popular in funding public works infrastructure needed for new local development. Generally, the objective of systems development charges is to allocate portions of the costs associated with capital improvements on land development projects, which increase demand on transportation, water, sewer, other infrastructure systems, and public services.

Local governments have the legal authority to charge property owners and/or developers fees for improving the local public works infrastructure based on projected demand resulting from their development. The charges are most often targeted towards improving community water, sewer, or transportation systems. Cities and counties must have specific infrastructure plans in place that comply with state guidelines in order to collect SDCs.

Typically, the fee is collected when new building permits are issued. Transportation SDCs are based on trip generation of the proposed development. Residential calculations would be based on the assumption that a typical household will generate a given number of vehicle trips per day.

Nonresidential use calculations are based on employee ratios for the type of business or industrial uses. The SDC revenues help fund the construction of transportation facilities necessitated by new development.

State Highway Fund

The State of Oregon disburses gas tax revenue to all counties and cities to fund street improvements, road construction, and maintenance. In Oregon, the State collects gas taxes, vehicle registration fees, overweight/overheight fines and weight/mile taxes, and returns a portion of the total revenue to cities and counties through an allocation formula. The revenue share allocated to cities is divided among all incorporated cities based on population. A majority of Oregon cities use state gas tax allocations to fund street construction and maintenance.

Local Gas Taxes

The Oregon Constitution permits counties and incorporated cities to levy additional local gas taxes with the stipulation that the revenue generated from the taxes will be dedicated to street-related improvements and maintenance within the jurisdiction. At present, only a few local governments (including the cities of Woodburn and The Dalles, and Multnomah and Washington Counties) levy a local gas tax. The City of Wheeler may consider raising its local gas tax as a way to generate additional street improvement funds. However, with relatively few jurisdictions exercising this tax, an increase in the cost differential between gas purchased in Wheeler and gas purchased in neighboring communities may encourage drivers to seek less expensive fuel elsewhere. Any action will need to be supported by careful analysis to minimize the unintended consequences of such an action.

Vehicle Registration Fees

The Oregon Vehicle Registration Fee is allocated to state, counties and cities for road funding. Oregon counties are granted authority to impose a vehicle registration fee covering the entire county. The Oregon Revised Statutes would allow Tillamook County to impose a biannual registration fee for all passenger cars licensed within the County. Although both counties and special districts have this legal authority, vehicle registration fees have not been imposed by local jurisdictions. A disincentive to employing such a fee may be the cost of collection and administration. In order for a local vehicle registration fee program to be viable in Tillamook County, all incorporated cities and the county would need to formulate an agreement which would detail how the fees would be spent on future street construction and maintenance.

Local Improvement Districts

The Oregon Revised Statutes allow local governments to form Local Improvement Districts (LIDs) to construct public improvements. LIDs are most often used by cities to construct local projects such as streets, sidewalks, bikeways, or public facilities. The statutes allow formation of a district by either the city government or property owners. Cities that use LIDs are required to have a local LID ordinance that provides a process for district formation and payback property owners within a specified area. The cost can be allocated based on property frontage or other methods such as traffic trip generation. The types of allocation methods are only limited by the scope of the Local Improvement Ordinance. The cost of LID participation is considered an assessment against the property, which is a lien equivalent to a tax lien. Individual property owners typically have the option of paying the assessment in cash or applying for assessment financing through the city. Since the passage of Ballot Measure 5, cities have most often funded local improvement districts through the sale of special assessment bonds.

Local Trust Funds and Fees

Although not commonly implemented, local trust funds and local fees can be assessed by a local jurisdiction to generate revenue. In Wheeler, this could be a method for generating revenue for additional parking. A parking trust fund would be an alternative for meeting parking requirements, i.e. in lieu of providing parking spaces, a fee could be charged for parking spaces. The fees generated in the trust fund would then be used to assist in the financing of a public parking lot or structure.

Businesses could be assessed an annual public parking fee. The parking fee could be based on square footage of the business or by seating capacity for restaurants and charter boats. This would provide the City with an ongoing income that could be used to provide additional parking and to retire any debt incurred to provide additional parking.

GRANTS AND LOANS

There are a variety of grant and loan programs available, most with specific requirements relating to economic development or specific transportation issues, rather than for the general construction of new streets. Many programs require a match from the local jurisdiction as a condition of approval. Because grant and loan programs are subject to change, as well as statewide competition, they should not be considered a secure long-term funding source for Wheeler. Most of the programs available for transportation projects are funded and administered through ODOT and/or the Oregon Economic Development Department (OEDD).

Bike-Pedestrian Grants

By law (ORS 366.514), all road or highway construction or reconstruction projects must include facilities for pedestrians and bicyclists, with some exceptions. ODOT's Bike and Pedestrian Program administers two programs to assist in the development of walking and bicycling improvements: local grants, and Small-Scale Urban Projects. Cities and counties with projects on local streets are eligible for local grant funds. An 80 percent state/20 percent local match ratio is required. Eligible projects include curb extensions, pedestrian crossings and

intersection improvements, shoulder widening, and re-striping for bike lanes. Projects on urban state highways with little or no right-of-way acquisition and few environmental impacts are eligible for Small-Scale Urban Project Funds. Both programs are limited to projects costing up to \$100,000. Projects that cost more than \$100,000, require right-of-way acquisition, or have environmental impacts should be submitted to ODOT for inclusion in the STIP.

Enhancement Program

This federally funded program earmarks \$8 million annually for projects in Oregon. Projects must demonstrate a link to the intermodal transportation system, compatibility with approved plans, and local financial support. A 10.27 percent local match is required for eligibility. Each proposed project is evaluated against all other proposed projects in the region. Within the five Oregon regions, the funds are distributed on a formula based on population, vehicle miles traveled, number of vehicles registered, and other transportation-related criteria. The initial solicitation for applications was mailed to cities and counties October 1998. Local jurisdictions had until January 1999 to complete and file applications for funding available during the 2000-2003 fiscal years, which began October 1999.

Highway Bridge Rehabilitation or Replacement Program

The Highway Bridge Rehabilitation Program (HBRR) provides federal funding for the replacement and rehabilitation of bridges of all functional classifications. A portion of the HBRR funding is allocated for the improvement of bridges under local jurisdiction. A quantitative ranking system is applied to the proposed projects based on sufficiency rating, cost factor, and load capacity. They are ranked against other projects statewide, and require state and local matches of 10 percent each. It includes the Local Bridge Inspection Program and the Bridge Load Rating Program.

Transportation Safety Grant Program

Managed by ODOT's Transportation Safety Section (TSS), this program's objective is to reduce the number of transportation-related accidents and fatalities by coordinating a number of statewide programs. Program funds are intended as seed money, funding a program for three years. Eligible programs include programs in impaired driving, occupant protection, youth, pedestrian, speed enforcement, bicycle and motorcycle safety. Every year, TSS produces a Highway Safety Plan that identifies the major safety programs, suggests counter measures to existing safety problems, and lists successful projects selected for funding, rather than granting funds through an application process.

Special Transportation Fund

The Special Transportation Fund (STF) awards funds to maintain, develop, and improve transportation services for people with disabilities and people over 60 years of age. Financed by a two-cent tax on each pack of cigarettes sold in the state, the annual distribution is approximately \$5 million. Three-quarters of these funds are distributed to mass transit districts, transportation districts, and where such districts do not exist, counties, or a per-capita formula. The remaining funds are distributed on a discretionary basis.

Special Small City Allotment Program

The Special Small City Allotment Program (SCA) is restricted to cities with populations under 5,000 residents. Unlike some other grant programs, no locally funded match is required for participation. Grant amounts are limited to \$25,000 and must be earmarked for surface projects (drainage, curbs, sidewalks, etc.) However, the program does allow jurisdictions to use the grants to leverage local funds on non-surface projects if the grant is used specifically to repair the affected area. Criteria for the \$1 million in total annual grant funds include traffic volume, the five-year rate of population growth, surface wear of the road, and the amount of time since the last SCA grant.

Immediate Opportunity Grant Program

The Oregon Economic Development Department (OEDD) and ODOT collaborate to administer a grant program designed to assist local and regional economic development efforts. The program is funded to a level of approximately \$7 million per year through state gas tax revenues. The following are primary factors in determining eligible projects:

- Improvement of public roads;
- Inclusion of an economic development-related project of regional significance;
- Creation or retention of primary employment; and
- Ability to provide local funds (50/50) to match grant.

The maximum amount of any grant under the program is \$500,000. Local governments which have received grants under the program include: Washington County, Multnomah County, Douglas County, the City of Hermiston, Port of St. Helens, and the City of Newport.

Oregon Special Public Works Fund

The Special Public Works Fund (SPWF) program was created by the 1995 State Legislature as one of several programs for the distribution of funds from the Oregon Lottery to economic development projects in communities throughout the state. The program provides grant and loan assistance to eligible municipalities primarily for the construction of public infrastructure, which support commercial and/or industrial development and result in permanent job creation or job retention. To be awarded funds, each infrastructure project must support businesses wishing to locate, expand, or remain in Oregon. SPWF awards can be used for improvement, expansion, and new construction of public sewage treatment plants, water supply works, public roads, and transportation facilities.

While SPWF program assistance is provided in the form of loans and grants, the program emphasizes loans in order to assure that funds will return to the state over time for reinvestment in local economic development infrastructure projects. Jurisdictions that have received SPWF funding for projects that include some type of transportation-related improvement include the cities of Baker City, Bend, Cornelius, Forest Grove, Madras, Portland, Redmond, Reedsport, Toledo, Wilsonville, Woodburn, and Douglas County.

Oregon Transportation Infrastructure Bank

The Oregon Transportation Infrastructure Bank (OTIB) program is a revolving loan fund administered by ODOT to provide loans to local jurisdictions (including cities, counties, special districts, transit districts, tribal governments, ports, and state agencies). Eligible projects include construction of federal-aid highways, bridges, roads, streets, bikeways, pedestrian facilities, and right-of-way costs. Capital outlays such as buses, light-rail cars and lines, maintenance yards, and passenger facilities are also eligible.

ODOT FUNDING OPTIONS

The State of Oregon provides funding for all highway related transportation projects through the Statewide Transportation Improvement Program (STIP) administered by the Oregon Department of Transportation. The STIP outlines the schedule for ODOT projects throughout the State. The STIP, which identifies projects for a three-year funding cycle, is updated on an annual basis. Starting with the 1998 budget year, ODOT will then identify projects for a four-year funding cycle. In developing this funding program, ODOT must verify that the identified projects comply with the Oregon Transportation Plan (OTP), ODOT Modal Plans, Corridor Plans, local comprehensive plans, and TEA-21 planning requirements. The STIP must fulfill federal planning requirements for staged, multi-year, statewide, intermodal program of transportation projects. Specific transportation projects are prioritized based on federal planning requirements and the different State plans. ODOT consults with local jurisdictions before highway related projects are added to the STIP.

The highway-related projects identified in Wheeler's TSP will be considered for future inclusion on the STIP. The timing of including specific projects will be determined by ODOT based on an analysis of all the project needs within Region 2. The City of Wheeler, Tillamook County, and ODOT will need to communicate on an annual basis to review the status of the STIP and the prioritization of individual projects within the project area. Ongoing communication will be important for the city, county, and ODOT to coordinate the construction of both local and state transportation projects.

ODOT also has the option of making small highway improvements as part of their ongoing highway maintenance program. Types of road construction projects that can be included within the ODOT maintenance programs are intersection realignments, additional turn lanes, and striping for bike lanes. Usually, ODOT field crews, using state equipment, complete maintenance related construction projects. The maintenance crews do not have the staff or specialized road equipment needed for large construction projects.

An ODOT funding technique that may have future application to Wheeler's TSP is the use of state and federal transportation dollars for off-system improvements. ODOT has the authority and ability to fund transportation projects that are located outside the boundaries of the highway corridors. It is expected that this funding technique will be used to finance local system improvements that reduce traffic on state highways or reduce the number of access points for future development along state highways.

Financing Tools

In addition to funding options, the recommended improvements listed in this plan may benefit from a variety of financing options. Although often used interchangeably, the words financing and funding are not the same. Funding is the actual generation of revenue by which a jurisdiction pays for improvements, some examples include the sources discussed above: property taxes, SDCs, fuel taxes, vehicle registration fees, LIDs, and various grant programs. In contrast, financing refers to the collecting of funds through debt obligations.

The City of Wheeler has a number of available debt financing options. The use of debt to finance capital improvements must be balanced with the ability to make future debt service payments and to deal with the impact on its overall debt capacity and underlying credit rating. Again, debt financing should be viewed not as a source of funding, but as a time shifting of funds. The use of debt to finance these transportation-system improvements is appropriate since the benefits from the transportation improvements will extend over the period of years. If such improvements were to be tax financed immediately, a large short-term increase in the tax rate would be required. By utilizing debt financing, local governments are essential, spreading the burden of the costs of these improvements to more of the people who are likely to benefit from the improvements and lowering immediate payments.

General Obligation Bonds

General obligation (GO) bonds are voter-approved bond issues, which represent the least expensive borrowing mechanism available to municipalities. GO bonds are typically supported by a separate property tax levy specifically approved for the purposes of retiring debt. The levy does not terminate until all debt is paid off. The property tax levy is distributed equally throughout the taxing jurisdiction according to assessed value of property. GO debts typically are used to make public improvement projects that will benefit the entire community.

State statutes require that the GO indebtedness of a city not exceed three percent (3%) of the real market value of all taxable property in the city. Since GO bonds would be issued subsequent to voter approval, they would not be restricted to the limitations set forth in Ballot Measures 5, 47, and 50. Although new bonds must be specifically voter approved, Measure 47 and 50 provisions are not applicable to outstanding bonds, unissued voter-approved bonds, or refunding bonds.

Limited Tax General Obligation Bonds

Limited tax general obligation (LTGO) bonds are similar to general obligation bonds in that they represent an obligation of the municipality. However, a municipality's obligation is limited to its current revenue sources and is not secured by the public entity's ability to raise taxes. As a result, LTGO bonds do not require voter approval. However, since the LTGO bonds are not secured by the full taxing power of the issuer, the limited tax bond represents a higher borrowing cost than GO bonds. The municipality must pledge to levy the maximum amount under constitutional and statutory limits, but are not the unlimited taxing authority pledged with GO bonds. Because LTGO bonds are not voter approved, they are subject to the limitations of Ballot Measures 5, 47, and 50.

Bancroft Bonds

Under Oregon Statute, municipalities are allowed to issue Bancroft bonds, which pledge the city's full faith and credit to assessment bonds. As a result, the bonds become general obligations of the city, but are paid with assessments. Historically, these bonds provided a city with the ability to pledge its full faith and credit in order to obtain a lower borrowing cost without requiring voter approval. However, since Bancroft bonds are not voter approved, taxes levied to pay debt service on them are subject to the limitations of Ballot Measures 5, 47, and 50. As a result, since 1991, Bancroft bonds have not been used by Oregon municipalities, which were required to compress their tax rates.

VOLUNTEER LABOR AND MATERIAL DONATION

Volunteer labor and material donation is a potential mechanism for implementing transportation related improvements. However, this type of implementation mechanism typically should not be viewed as an ongoing long-term solution for making improvements.

WHEELER TRANSPORTATION SYSTEM PLAN PROJECT LIST					
<u>#</u>	<u>Project</u>	<u>Priority</u>	<u>Cost Implications</u>	<u>Constraints</u>	<u>Potential Implementation Mechanisms</u>
FUNCTIONAL STREET CLASSIFICATION					
A.	Establish Functional Street Classification System	High	None	--	City of Wheeler
STREET DESIGN STANDARDS					
B.	Adopt Street Design Standards	High	None	--	City of Wheeler
ACCESS MANAGEMENT					
C.	Establish Ordinance Restricting Hwy 101 Access	High	None	--	City, County, ODOT
HIGHWAY 101/DOWNTOWN IMPROVEMENTS					
D.	Prepare a Downtown Refinement Plan	High	\$15,000-25,000 for study Significant cost for final design and construction. Downtown Refinement Plan needs to include phasing plan	Obtain grant for Plan	City, State Grant
STREET MAINTENANCE					
E.	Street Maintenance	High	Limited funds	Limited funding	City, ODOT
LOCAL STREET NETWORK CONNECTIONS					
F.	First Street Extensions	Medium	Limited funds	Topographical constraints	City, State, Developers/Property Owners
G.	Fourth Street Extensions	Medium	Limited funds	Topographical constraints	City, State, Developers/Property Owners
SITE SPECIFIC STREET-RELATED IMPROVEMENT PROJECT					
H.	Waterfront Circulation and Parking Improvements	High	Limited funds		Port of Tillamook Bay, State
I.	Highway 101/Pennsylvania Intersection Realignment	Medium	Limited funds	Topographical constraints	State
J.	Hall Street/Third Street Curve	Medium	Acquisition of land if not able to negotiate access easement	Negotiations with current property owner	City
K.	Hemlock Street/Third Street	Medium	Acquisition of land if not able to negotiate access easement	Negotiations with current property owner	City
L.	Additional and Convenient RV Parking	Medium	Limited funds	Limited locations	
M.	Gateway Improvements	Medium	Limited funds		City, ODOT
N.	Maintain Access to Amenities and to Undeveloped Land	High	None	None if ordinance implemented	City
O.	Circulation Connectivity with New Development	High	None	None if ordinance implemented	City

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#	Project	Priority	Cost Implications	Constraints	Potential Implementation Mechanisms
P.	Ensure Transportation Facilities and Services Accommodate Special Needs	High	None		City
Q.	Citywide Stormwater Master Plan	Medium	\$15,000 to \$25,000 to produce plan		City, State Grant
PUBLIC TRANSPORTATION					
R.	Improve Public Transportation Services	Low		Limited funding	City, County, ODOT
PEDESTRIAN AND BIKEWAY SYSTEM ELEMENT					
S.	Highway 101	Medium	Limited funds		City, ODOT
T.	Fourth Street	Low	Limited funds	Topographic constraints	City, State Grant
U.	Hemlock Street	Low	Limited funds		City, State Grant
V.	Country Road	Low	Limited funds		City, State Grant
W.	Gregory Street	Low	Limited funds	Topographic constraints	City, State Grant
X.	Gervais Creek Pathway	Low	Limited funds	Topographic constraints	City, State Grant
Y.	Akin Street	Low	Limited funds		City, State Grant
Z.	Third Street	Low	Limited funds	Topographic constraints	City, State Grant
AA.	Rowe Street/Hospital Road	Low	Limited funds		City, State Grant
BB.	First Street	Low	Limited funds		City, State Grant
CC.	Second Street	Low	Limited funds		City, State Grant
DD.	Vosburg Creek Pathway	Low	Limited funds		City, State Grant
EE.	Third Street and Dichter Drive	Low	Limited funds		City, State Grant
RAIL, WATER, PIPELINE, AND AIR TRANSPORTATION SYSTEM ELEMENT					
FF.	Intercity Passenger and Freight Rail Service	Low			
GG.	Regional Passenger Rail Service	Low			
HH.	Coordination with the Port of Tillamook Railroad	High		Requires agreements with Port of Tillamook Railroad	
II.	Maintain and Improve Access to and within Nehalem Bay	High			City, Port of Tillamook Bay, State
JJ.	Maintain Use of Pipelines	High			City, Utility Companies

APPENDIX A. WHEELER COMPREHENSIVE PLAN AMENDMENT RECOMMENDATIONS

Recommended amendments to the Wheeler Comprehensive Plan Transportation Section.

Wheeler Comprehensive Plan Transportation Section (pages 10-11)

TRANSPORTATION

GOALS:

1. Achieve an efficient, safe, convenient, and economically viable transportation system. This system includes roads, pedestrian and bicycle facilities, public transportation, and pipeline facilities. The Wheeler transportation system shall be designed to serve the existing and projected needs of the City. The system shall provide connections between different modes of transportation to reduce reliance on the single-occupancy vehicle.
2. Have an ongoing transportation planning process and maintain a transportation plan that meets the needs of the City and its residents. The transportation plan and facilities of Wheeler shall be coordinated with the plans and facilities of Tillamook County and the State of Oregon.

POLICIES:

A. COORDINATION AND IMPLEMENTATION OF THE TRANSPORTATION SYSTEM PLAN

1. The City of Wheeler shall:
 - a. Identify local, regional and state transportation needs;
 - b. Develop a transportation plan that shall address those needs;
 - c. Review and update the plan every three to five years;
 - d. Continue to coordinate transportation planning with local, regional and state plans by reviewing any changes to regional transportation plans, the Oregon Transportation Plan, and ODOT's State Transportation Improvement Plan (STIP); and
 - e. Continue public and interagency involvement in the transportation planning process.
2. The City of Wheeler shall notify ODOT concerning:
 - a. All land use proposals or actions that would create access onto the state highway or add >100 ADT to any County road intersection with a state highway;
 - b. Any proposed land use or development within 500 feet of a state highway; and
 - c. Required ODOT road approach permits.
3. The City of Wheeler shall protect approved or proposed transportation project sites through:
 - a. Access control measures;

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- b. Review of future large development and transportation projects that significantly affect the City transportation system; and
 - c. The imposition of conditions of approval on developments and transportation projects that have a significant effect on the City's transportation system.
 4. The City of Wheeler shall coordinate local plans and land use decisions with state transportation plans, including the Oregon Transportation Plan, Oregon Highway Plan, modal plans, and corridor plans. These plans provide ODOT policies and performance standards for statewide highways within Wheeler. The statewide plans also provide the framework for access management on statewide to protect the capacity and function of the highways.
 5. The lead agency for transportation project review in Wheeler shall be:
 - a. The City of Wheeler for projects within the city limits and UGB;
 - b. The State of Oregon and the City of Wheeler on projects involving state-owned facilities.
 6. Transportation Projects
 - a. The City shall have a list of transportation projects, adopted by the Wheeler City Council, in accordance with the policies set forth below.
 - b. The initial Transportation Project List shall be identified in the Transportation System Plan and adopted as part of the Transportation Element of the Comprehensive Plan. The City Council shall update the Transportation Project List periodically by resolution adopted by the City Council, without need of a formal amendment to the TSP.
 - c. New transportation projects shall be included on the City's Transportation Project List. A transportation project proposed for addition to the list shall be subject to an individual land use review only if applicable administrative rules or land use regulations require such review.
 - d. Transportation or development projects that require a plan text amendment or a conditional use permit may be required to fulfill conditions or implement mitigation measures before approval is granted. Mitigation and conditions may include, but are not limited to:
 - Improvement of surrounding roads;
 - Limits on level of development;
 - Revision of development placement;
 - Addition or redesign of access;
 - Addition of traffic management devices such as traffic signals, medians, turn lanes or signage; and/or
 - Improvements that reduce transportation impacts.

The City of Wheeler acknowledges that land use designations have a significant impact on the overall transportation system and any alterations shall be completed with consideration to traffic impacts on the City road system.

7. The City of Wheeler recognizes the need to amend its Comprehensive Plan and Implementing Ordinances to provide more certainty for highway and street construction

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projects. The City will consider making the appropriate amendments after the Oregon Department of Transportation develops model plan policies and ordinances.

B. FUNCTIONAL STREET CLASSIFICATION

1. The City of Wheeler shall periodically review functions of existing streets to ensure appropriate functional street classifications are designated for streets.

C. STREET DESIGN STANDARDS

1. Street development shall be designed to create a minimal need for cutting and filling. All sidehill streets and driveways shall be built entirely in cut-no-fill; surplus excavated materials must be removed to a location where it will not constitute a hazard.
2. Upon City adoption of the Wheeler Street Design Standards, all new and reconstructed City of Wheeler streets shall be built to those identified standards. The city may permit less than standard right-of-way and surface ways for streets in steeply sloped areas, consistent with safety for traffic and fire protection.

D. ACCESS MANAGEMENT

1. The City of Wheeler shall designate access and land uses appropriate to the function of a given road.
2. The City of Wheeler shall require new development to minimize direct access points onto arterials and collectors by encouraging the utilization of local streets that access arterials and collectors, and by encouraging the utilization of common driveways.
3. Proliferation of new access points to Highway 101 shall be discouraged by the city, Tillamook County, and the State Department of Transportation. Wherever possible, new residential developments shall not have direct access to Highway 101. New commercial uses should be clustered with access being provided by a consolidated access point.
4. The city shall be notified prior to the installation of any underground utility in an city right-of-way. The city will require reasonable efforts to improve or restore the road after construction.

E. STREET IMPROVEMENTS

1. The State Department of Transportation, when undertaking major highway improvements, shall address the following considerations:
 - a. The enhancement of pedestrian and vehicular access across Highway 101;
 - b. The maintenance or improvement of parking facilities along Highway 101;
 - c. The minimization of short-term disruptions which would adversely affect the business and residential areas of downtown Wheeler;
 - d. Assist the City in enhancement of the long range viability of the downtown area;

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- e. The minimization of noise and air pollution impacts on adjacent residential areas;
 - f. The provision of appropriate landscaping;
 - g. The protection of views across Nehalem Bay;
 - h. The enhancement of access to the waterfront;
 - i. Where appropriate, the Wheeler Planning Commission shall be used by the Oregon Department of Transportation as its citizen involvement committee.
2. The City of Wheeler shall pursue local street improvements that include access to the community without using Highway 101.

F. RAIL TRANSPORTATION

1. The Department of Transportation shall coordinate any highway improvements with the Port of Tillamook Bay Railroad to insure that their combined improvement plans are consistent with the criteria in policy E. Future improvement plans should not preclude passenger rail service to Wheeler.

G. PEDESTRIAN AND BICYCLE TRANSPORTATION

1. Establish an interconnected pedestrian/bicycle system throughout Wheeler. The system should connect destinations; and provide connections for recreational bicyclists, walkers, runners, and skaters.

H. PUBLIC TRANSPORTATION

1. The city supports efforts to provide public transportation.
2. The City of Wheeler shall work with ODOT, Tillamook County, the City of Tillamook, and other transit service providers to accommodate transit needs, secure additional funding, and promote transit services that may be underutilized.
3. The City of Wheeler shall identify and monitor transportation needs of the elderly and disadvantaged, and attempt to fulfill those needs.

RECOMMENDATION:

1. The State Department of Transportation should continue to improve the coastal bike route along Highway 101 by widening the Highway's shoulders or, where feasible, constructing separate bike lanes.
2. The City of Wheeler should adopt the Transportation System Plan and update the Plan every three to five years.
3. The City of Wheeler should develop a Downtown Refinement Plan that provides for multi-modal transportation improvements that are consistent with City and State standards.

APPENDIX B. WHEELER ZONING ORDINANCE AMENDMENT RECOMMENDATIONS

Appendix B identifies recommended amendments to transportation-related sections of the Wheeler Zoning Ordinance.

Definitions

1. Access. Means the way or means which pedestrians and vehicles enter and leave property.
3. Alley. A street which affords only a secondary means of access to property.
6. Bridge Crossing. The portion of a bridge spanning a waterway not including support structures or fill located in the waterway or adjacent wetlands.
7. Bridge Crossing, Support Structures. Piers, piling, and similar structures necessary to support a bridge span but not including fill for causeways or approaches.
25. Highway Development or Railroad Development. Major or significant realignment, change of grade, rerouting or expansion of an arterial highway or abandonment of a railroad line or reconstruction thereof, not including routine maintenance activities such as repaving, widening for bicycles, or installation of traffic signs.
40. Marina. A facility for the docking of boats in the water, involving eleven (11) or more boats or boatslips.
44. Moorage. A facility for the docking of boats in the water, involving ten (10) or fewer boats or boatslips.
45. Navigational Aid. A beacon, mooring buoy, or channel marker.
46. Navigational Improvements. Pile dikes, groins, fills, jetties, and breakwaters that are installed to help maintain navigation channels, control erosion or protect marinas and harbors by controlling water flow, wave action and sand movement.
51. Parking Space. Parking space means an area of 9 feet by 18 feet or full size spaces, and an area of 8 feet by 16 feet for compact spaces, located off the street right of way, and intended for the parking of vehicles.
54. Recreation Vehicle. A vacation trailer or other unit with or without motive power, which is designed for human occupancy and to be used temporarily for recreation or emergency purposes and has a floor space of less than 220 square feet, excluding built-in equipment such as wardrobes, closets, cabinets, kitchen units or fixtures and bath or toilet rooms.
60. Street. The entire width between the right-of-way lines of every public way for vehicular and pedestrian traffic and includes the terms "road", "highway", "land" (believe this is supposed to be "lane"), "place", "avenue", "alley", and other similar designations.

Zoning Districts

All zoning districts (Articles 2-7) state, in the Development Standards, that parking shall be in accordance with Section 11.090.

Article 2. WRC Zone – Water-Related Commercial

Permitted principal uses/activities include marine transportation-related uses and facilities. Conditional uses/activities include railroad development and bicycle paths.

Article 3. IND Zone – Water-Related Industrial

Permitted uses/activities include marinas, piers, and wharves; navigational improvements; and boat ramps. Conditional uses/activities include park, wayside or bicycle paths; and railroad development.

Article 4. GC Zone – General Commercial

Conditional uses permitted include RV Parks on 4.5 acres or more.

Article 6. R-2 Zone – Residential Type 2

Permitted principal uses include park, wayside, bicycle paths and public owned recreation areas.

Article 7. P Zone – Public Lands Zone

Permitted principal uses (exclusively) include park and wayside area; bicycle paths; public dock; and new highway or railroad development.

Article 8. Estuary Zone

Within the Estuary Natural Zone (EN), uses permitted with standards include navigational aids and bridge crossings and bridge crossing support structures. Conditional uses include boat ramps for public use where no dredging or fill for navigational access is needed.

In the Estuary Development Zone (ED), permitted uses include navigational structures and navigational aids; and bridge crossing and bridge crossing support structure.

Conditional uses include water access structures, boat ramps, commercial docks, moorages and marinas, and water-borne transportation.

Article 10. Planned Development

Development standards include: Streets and Roads. Necessary streets and roads within the Planned Development shall be dedicated to the public and constructed to standards determined by the Planning Commission.

Article 11. Supplementary Provisions

Section 11.050. Design Review – parking lots should be divided into groups of no more than 8 spaces with landscaping and walkways dividing the groups. Plantings and/or fences should be provided to separate the parking from public streets and adjacent property.

Section 11.070. Access

Each lot and parcel shall abut a street other than an alley for a width of at least 25 feet or have vehicular access by means of a recorded easement for a width of 25 feet.

Section 11.075. Maintenance of Public Access

The City shall review, under ORS 368.326-368.366, proposals for the vacation of public easements or rights-of-way which provide access to estuarine waters. Existing rights-of-way which provide access to estuarine waters. Existing rights-of-way and similar public easements which provide access to coastal water shall be retained or replaced if they are sold, exchanged or transferred. Right-of-way may be vacated so long as equal or improved access is provided as part of a development project.

Section 11.080 Clear Vision Areas

A clear-vision area shall be maintained on the corners of all property at the intersection of two streets. See pages 58-59 of the Zoning Ordinance for a detailed description and standards.

Article 11.090. Off-Street Parking and Loading Requirements.

APPENDIX C. TRANSPORTATION PLANNING RULE COMPLIANCE

In April 1991, the Land Conservation and Development Commission, with the concurrence of ODOT, adopted the Transportation Planning Rule (TPR), OAR 660 Division 12. The TPR requires local jurisdictions to prepare and adopt a Transportation System Plan (TSP) by 1997. A list of TPR recommendations and requirements for a TSP, and how each of those were addressed in the City of Wheeler TSP is described below. The comparison demonstrates that the City of Wheeler TSP is in compliance with the provisions of the TPR.

Development of a Transportation System Plan

TPR Recommendations/Requirements

City of Wheeler TSP Compliance

Public and Interagency Involvement

- Establish Advisory Committees.
- Develop informational material.
- Schedule informational meetings, review meetings and public hearings throughout the planning process. Involve the community.
- Coordinate Plan with other agencies.

A Project Management Team and Advisory Committee were established at the outset of the project. Membership on the Project Management Team included City staff, ODOT staff, and the consultant team. Membership on the Advisory Committee included representatives from the Wheeler City Council, Wheeler Planning Commission, businesses, Nehalem Bay Wastewater Agency, and DLCD. Two Community Open Houses were also conducted to inform the community of the TSP and solicit input.

Project notebooks, technical memoranda, and meeting summaries were published and made available to the public throughout the project.

Four Project Management Team/Advisory Committee meetings, two Community Open Houses, and one public meeting were held through the planning process. The meetings were advertised by distribution of meeting notices.

Coordination with the City, ODOT, DLCD, Nehalem Wastewater Agency, Port of Tillamook, Tillamook County Public Transportation District, and Tillamook County was accomplished by including agency representatives on the project mailing list, individual project briefings/meetings, and participation on the Project Management Team and the AC.

Review Existing Plans, Policies, Standards, and Laws

- Review and evaluate existing comprehensive plan.
- Land use analysis - existing land use/vacant lands inventory.

The City of Wheeler Comprehensive Plan was reviewed and summarized in the TSP.

In developing the future traffic volumes, an analysis of current and projected land use was conducted to

- Review existing ordinances - zoning, subdivision, engineering standards.
- Review existing significant transportation studies.
- Review existing capital improvements programs/public facilities plans.
- Americans with Disabilities Act requirements.

Inventory Existing Transportation System

- Street system (number of lanes, lane widths, traffic volumes, level of service, traffic signal location and jurisdiction, pavement conditions, structure locations and conditions, functional classification and jurisdiction, truck routes, number and location of accesses, safety, substandard geometry).
- Bicycle ways (type, location, width, condition, ownership/jurisdiction).
- Pedestrian ways (location, width, condition, ownership/jurisdiction).
- Public Transportation Services (transit ridership, volumes, route, frequency, stops, fleet, intercity bus, passenger rail, special transit services).
- Intermodal and private connections.
- Air transportation.
- Freight rail transportation.
- Water transportation.
- Pipeline transportation.

determine the capacity for growth, which would increase demand for transportation services. Population and employment forecasts were prepared.

The Wheeler Zoning Ordinance was reviewed and summarized in the TSP.

Significant transportation related studies were reviewed as part of the TSP including the Downtown Resource Team Report and Waterfront Development Plan report.

Existing capital improvements plans and projects were identified as part of the TSP process.

The ADA requirements are as part of the TSP process.

An inventory of the existing street network, traffic volumes, traffic control devices, accident history, and levels of service is provided in TSP Section III. Assessment of Existing Conditions.

An inventory of the existing bicycle ways is provided in TSP Section III. Assessment of Existing Conditions.

An inventory of the existing pedestrian facilities is provided in in TSP Section III. Assessment of Existing Conditions.

A summary of the existing public transportation services is presented in TSP Section III. Assessment of Existing Conditions.

A summary of the existing intermodal and private connections is presented in TSP Section III. Assessment of Existing Conditions.

The TSP identifies that air transportation is not applicable in Wheeler.

TSP Section III. Assessment of Existing Conditions. documents freight rail transportation services within the City of Wheeler.

A summary of water transportation services is provided in TSP Section III. Assessment of Existing Conditions.

The TSP addresses pipeline transportation.

- Environmental constraints.
- Existing population and employment.

Development of the TSP includes identification of water-related and hillside constraints.

Existing population and employment are identified in TSP Section IV. Future Transportation Needs

Determine Transportation Needs

- Forecast population and employment
- Determination of transportation capacity needs (cumulative analysis, transportation gravity model).
- Other roadway needs (safety, bridges, reconstruction, operation/maintenance).
- Freight transportation needs.
- Public transportation needs (special transportation needs, general public transit needs).
- Bikeway needs.
- Pedestrian needs.

Population and employment forecasts were prepared and summarized in TSP Section IV. Future Transportation Needs

Travel demand forecasts were undertaken as part of this project. The methodology for travel forecasting and assumptions used in the transportation model are contained in TSP Section IV. Future Transportation Needs which presents an analysis of future transportation conditions and identifies capacity needs.

Non-capacity related transportation needs are identified and recommended for implementation in TSP Section VI. Transportation System Plan

Freight transportation needs are adequately met via motor carrier and rail freight services.

Public transportation needs are documented in TSP Section VI. Transportation System Plan

A future pedestrian and bicycle plan is part of TSP Section VI. Transportation System Plan.

Develop and Evaluate Alternatives

- Update community goals and objectives.
- Establish evaluation criteria.
- Develop and evaluate alternatives (no-build system, all build alternatives, transportation system management, transit alternative/feasibility, improvements/additions to roadway system, land use alternatives, combination alternatives).
- Select recommended alternative.

Project objectives were established as part of the TSP process and included in TSP Section I. Introduction.

Evaluation criteria was and used to evaluate alternatives identified in TSP Section V. Transportation Alternatives

TSP Section V. Transportation Alternatives includes a summary of Highway 101/Downtown Conceptual that were considered and analyzed.

A recommended alternative for Highway 101/Downtown improvements is contained in TSP Section VI. Transportation System Plan.

Produce a Transportation System Plan

- Transportation goals, objectives and policies. Specific recommendations regarding transportation goals and policies are identified in TSP Appendix A. Wheeler Comprehensive Plan Amendment Recommendations.
- Streets plan element (functional street classification and design standards, proposed facility improvements, access management plan, truck plan, safety improvements). The streets plan element is described in TSP Section VI. Transportation System Plan.
- Public transportation element (transit route service, transit facilities, special transit services, intercity bus and passenger rail). The public transportation element is described in TSP Section VI. Transportation System Plan.
- Bikeway system element. The bikeway plan is described in TSP Section VI. Transportation System Plan.
- Pedestrian system element. The pedestrian plan is described in TSP Section VI. Transportation System Plan.
- Airport element (land use compatibility, future improvements, accessibility/connections/conflicts with other modes). The airport element is not applicable in Wheeler.
- Freight rail element (terminals, safety). The rail element is described in TSP Section VI. Transportation System Plan.
- Water transportation element (terminals). The water transportation element is described in TSP Section VI. Transportation System Plan.
- Transportation System Management element (TSM). The TSM element is described in TSP Section VI. Transportation System Plan.
- Transportation Demand Management element (TDM). The TDM element is described in TSP Section VI. Transportation System Plan.

Implementation of a Transportation System Plan

Plan Review and Coordination

- Consistent with ODOT and other applicable plans. Identified in TSP Appendix A. Wheeler Comprehensive Plan Amendment Recommendations.

Adoption

- Is it adopted? To follow.

Implementation

- Ordinances (facilities, services and improvements; land use or subdivision) Identified in TSP Appendix B. Wheeler Zoning Ordinance Amendment Recommendations.



Oregon

John A. Kitzhaber, M.D., Governor

Department of Transportation

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June 5, 2001

To: Brian Dunn, TPAU
Erik Havig, Preliminary Design
Bob Cortright, DLCD

From: Julie Warncke, Grant Manager *JW*

Subject: Review of Draft Wheeler TSP

FILE CODE:
RECEIVED

JUN - 5 2001

Planning Section

Attached for your review is a draft of the Wheeler TSP. This will be presented at a joint public hearing with the Planning Commission and City Council on Tuesday, June 19th. Please provide comments to me by the morning of Friday, June 15th.

A couple of notes on the draft:

1. The Special Transportation Area (STA) Evaluation Matrix was accidentally left out – I am attaching it separately.
2. Appendix A – Wheeler Comprehensive Plan Amendment Recommendations shows proposed language – including both existing and new language without indication of what language is new. I have requested a copy with track changes so it is more obvious where changes are being proposed. If you want to see this, please let me know.
3. Appendix B – Wheeler Zoning Ordinance Amendment Recommendations is not yet complete. At this point it only includes relevant portions of the zoning ordinance without the recommended amendments.
4. Howard Stein indicated that he is updating some information regarding left turn warrant analysis based on on-going conversations with TPAU. He does not expect it to change the end result.

Thanks in advance for your review.

- Julie

cc: Dale Jordan, DLCD
Steve Jacobson, ODOT



*Wheeler Transportation System Plan
2000-2001*

STA STANDARDS/CHARACTERISTICS/CRITERIA	WHEELER STA CHARACTERISTICS/POTENTIAL	Status
STAs include convenient movement of pedestrians, bicycles, transit, and automobiles.	The commercial establishments located on Hwy. 101 necessitate convenient and safe movement of pedestrians, bicycles, transit, and autos in downtown Wheeler for both local residents and visitors.	TSP and STA
STAs typically have an interconnected local street system to facilitate automobile and pedestrian circulation.	Local streets connect to Hwy. 101	Existing
Speed typically do not exceed 25 mph	Current Hwy. 101 speed limit through downtown Wheeler is 30 mph and connecting local street speed limit is 25 mph.	Existing and STA
People who arrive by car or transit find it convenient to walk from place to place within the area.	...if existing Hwy. 101 parking spaces are available. TSP will recommend improvements.	Existing and STA
OTHER STA ATTRIBUTES		
Mixed Uses	Primarily consists of commercial uses with some residential, industrial, and public uses.	Existing TSP
Buildings spaced close together and located adjacent to the street with little or no setbacks.	Existing on east side of Hwy. 101	Existing
Sidewalks with ample width which are located adjacent to the highway and the buildings	Existing, for the most part, on the east side of Hwy. 101 within the proposed STA.	Existing, TSP, and STA
Interconnected local street networks to facilitate local automobile and pedestrian circulation except where topography severely constrains the potential for street connections.	Right-of-way exists. Needs to be improved. Topographic challenges.	TSP Future Design
On street parking and shared or general purpose parking lots which are located behind or to the side of buildings.	Existing on-street parking and some general purpose parking behind buildings. Need additional parking.	Existing TSP
Convenient automobile and pedestrian circulation within the center and off the state highway.	Existing grid system in place however improvements needed	Existing TSP
STA MANAGEMENT PLAN		
Goals and Objectives	To be prepared in STA	STA
Clearly defined STA Boundaries	To be prepared in STA	STA
Design Standards	To be prepared in STA	STA
Strategies for addressing freight and through traffic	To be prepared in STA	STA
Parking strategies	To be prepared in STA	STA
Provisions for a network of local traffic, transit, pedestrian, and bicycle circulation	To be prepared in STA	STA
Analysis of regional/local traffic and safety impacts	To be prepared in STA	STA
Identify needed improvements, responsible party(s) for implementation, likely funding source, and time frame	To be prepared in STA	STA
Identify maintenance and operational strategies	To be prepared in STA	STA

regulations).

- Transportation financing/capital improvements program.

Transportation financing and implementation mechanisms are summarized in TSP Section VI. Transportation System Plan.