Corvallis Bypass
Pacific Highway West
Benton and Linn Counties, Oregon

FINAL
ENVIRONMENTAL IMPACT STATEMENT

Submitted pursuant to 42 U.S.C. 4332 (2)(c)
Section 4(f) of the DOT Act
Federal Highway Administration
and
Oregon Department of Transportation

This action complies with Executive Order 11990, Protection of Wetlands

5/14/83
Date

Federal Highway Administration Official

8/24/82
Date

E. S. Hunter, Assistant State Highway Engineer

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Abstract: This final environmental impact statement analyzes the probable effects of a No-Build and four Build Alternatives bypassing the CBD of Corvallis, Oregon. The Eastern Corridor alternative, on new alignment, has been selected. The Eastern Corridor would have positive impacts on the economic viability of the CBD, decreases congestion, improves safety, decreases noise, improves air quality, and supports future development plans. It would have adverse impacts on wildlife, wetlands, agricultural soils, and open space. The project would displace 68 living units and 7 businesses. Standard compensation and relocation practices will be followed during right-of-way acquisition. A mitigation measure proposed in addition to standard protection measures is replacement of wetlands displaced by the project.
Department of Transportation
HIGHWAY DIVISION
TRANSPORTATION BUILDING, SALEM, OREGON 97310

May 18, 1983

TO WHOM IT MAY CONCERN:

The enclosed copy of the Final Environmental Impact Statement for Corvallis Bypass in Benton County, Oregon, has been adopted by the Federal Highway Administration and filed with the Environmental Protection Agency and is being submitted for your review and comment. This document is being distributed on behalf of the Federal Highway Administration in accordance with 23 CFR 771.

If it is your desire to further explore the impact of this project on the community, please address your comments to the Federal Highway Administration, The Equitable Center, Suite 100, 530 Center Street NE, Salem, Oregon 97310. This office would appreciate a copy of your comments.

Very truly yours,

Campbell M. Gilmour, Manager
Environmental Section
412 Transportation Building
Salem, OR 97310

CMG:1b
Enclosure
FINAL
ENVIRONMENTAL IMPACT STATEMENT

THE CORVALLIS BYPASS
CORVALLIS, OREGON

OREGON DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
1. Description of Project

The purpose of the project is to provide an alternate route for through traffic, particularly heavy truck traffic, so that it can bypass the central business area of Corvallis. The project is designed to reduce congestion, improve safety, and reduce noise and air pollution in the downtown area. This would result in enhancement of the economic viability of the downtown due to improvement of the shopping environment.

2. Preferred Alternative

The Eastern Corridor Alternative is preferred and has been selected for advancement. During the public hearing, a modified bypass concept was introduced and supported as an alternative to the full bypass. The concept received support and was incorporated as a Phase I construction of the Full Bypass project. This document considers the impact of both Phase I and the Full Bypass (Eastern Corridor Alternative).

The Eastern Corridor Alternative was selected for advancement because it best accomplished the goals of traffic removal and received the overwhelming support of the community as expressed at the hearing. Current land use planning also supports the Eastern Corridor Alternative.

3. Alternatives Considered

a. No-Build Alternative

b. Eastern Corridor Alternative (Preferred)

This alternative would connect the US 20, ORE 34 and ORE 99W interchange located south of the CBD via an alignment on the east side of the Willamette River, to an interchange with US 20 and with ORE 99W near the Southern Pacific Railroad overpass north of the CBD. An interchange with ORE 34 east of the Willamette River would also be provided. This alternative would be implemented in at least two phases - Phase I and the Full Bypass. Phase I would consist of 2-lane roadway from the south ORE 99W interchange to Highway 34 and involve one bridge crossing of the Willamette River. The Full Bypass would consist of a 4-lane roadway completing the bypass to ORE 99W north of the CBD, a second bridge crossing of the Willamette River, and a full interchange with ORE 34. A Coast Guard permit will be required for the bridge crossings. A hearing will be required prior to issuance of the permit. This FEIS will be used as documentation for the permit.

c. Central Corridor Alternative

This alternative would connect the same northern and southern locations via an alignment along the west bank of the Willamette River, generally along First Street. Partial interchanges would be located at the southern and northern termini, and the Albany-Corvallis Highway (U.S. 20). A full interchange would be provided at the Van Buren-Harrison one-way couplet with local
streets used as ramps. Local street access would be made available at four at-grade intersections. The typical section would provide two lanes for each direction separated by a continuous or two-way left-turn median; curb-to-curb width would be 68 feet. The Van Buren Avenue bridge would have to be replaced to provide adequate clearance over the bypass route.

d. Western Corridor Alternative
This alternative would follow Ninth Street from the north to a connection with US 20 and ORE 34 on the south; the northern terminus would be tied to ORE 99W with a semi-directional intersection. Local street access would be partially controlled since most of the east-west cross streets would be severed. Two 12-foot lanes would be provided in each direction; the 14-foot median lane would be marked for two-way left turns at appropriate locations. A 4-foot bikeway would be provided in each direction adjacent to the curb.

e. Street Modification Alternative
This alternative would consist of several possible traffic improvements other than a downtown bypass, including the following key elements: development of First Street as the northbound element of a First-Fourth Street one-way couplet; extension of Ninth Street to Western Boulevard with an improved linkage to U.S. 20 via Fifteenth Street; redesign of Second and Third Streets to function as pedestrian-oriented streets; and development of new or improved pedestrian amenities and linkages, transit service and parking facilities.

4. Environmental Impacts

a. No-Build Alternative
This alternative would have significant adverse traffic and transportation impacts. Traffic volumes on downtown streets would be at or near capacity, operating at low speeds. Accident hazards would increase and heavy truck traffic would not be reduced on downtown streets. Overall downtown accessibility would be impaired as would system-wide mobility. This alternative is in conflict with local planning goals and would not enhance the economic viability of the downtown. Downtown noise and air quality would not be improved: in 1990, 103 residences and 17 commercial buildings would be exposed to noise levels in excess of design noise levels.

b. Eastern Corridor Alternative
The Eastern Corridor Alternative would involve the greatest reduction of CBD traffic, 27 percent less traffic than that associated with the No-Build Alternative. This alternative would provide improved system-wide traffic characteristics, substantial accident reduction potential, improved downtown accessibility, and improved emergency vehicle access. Implementation would comply with Corvallis' planning goals and objectives and enhance downtown economic viability. Air pollutant concentrations and noise levels would be significantly reduced in the
downtown. Special water quality and erosion controls would be required, and some existing wildlife habitat, including 3.4 acres of wetlands, would be either removed or converted to other habitats. The visual quality of the east bank would be altered and two new river crossings would be established. Right-of-way would require fifty acres for the Full Bypass, 32 of which are now in State or City ownership, and 11 in OSU ownership. Seven acres would be required from private owners. Sixty-eight living units and 7 businesses would be displaced. Displacement is less with Phase I. Displacement of open space, agricultural and Oregon State University properties would occur. Construction costs would be approximately $5.9 million for Phase I and $30 for the Full Bypass.

c. Central Corridor Alternative
This alternative would reduce CBD traffic on 3rd and 4th Streets by 11 percent, improve system-wide traffic characteristics, significantly reduce accident potential, improve accessibility to the central retail area, and reduce emergency vehicle response times. It would require traffic circulation changes in the downtown, eliminating direct connections with Buchanan Avenue, and encouraging excessive speeds on Third and Fourth Streets north of Harrison Boulevard. This alternative would be in some conflict with the City's proposed comprehensive plan, and could be in conflict with the proposed Madison Avenue Improvement Project. The economic viability of the downtown area would be slightly enhanced. Air pollutants in the downtown and residential areas would be reduced, excluding a minor increase in carbon monoxide concentrations west of Second Street near Polk Avenue. Noise Impacts in the downtown would be reduced with the exception of areas along the Greenway. A total of 56 residences and 15 commercial buildings would experience noise levels in excess of standards. Vegetation within the Willamette Greenway would be displaced, and roadway pollutant runoff into the river might increase. Acquisition of 2 acres of supplemental lands and 18 buildings of which 14 are businesses, 2 residences and 2 multifamily structures, would occur. In total, 50 living units would be displaced. Displacement of park, open space, and recreational lands constituting a potential 4 (f) involvement would also occur. Expenses of $16.3 million would be required to implement this alternative. These costs include the cost of the required reconstruction of the Van Buren Avenue bridge.

d. Western Corridor Alternative
The Western Corridor Alternative would reduce CBD traffic by 10 percent. In addition, minor improvements in system-wide traffic characteristics would occur, accident potential would be reduced significantly in the downtown, but would increase along Ninth Street, and downtown accessibility would be marginally improved. Emergency vehicle access would also be improved. This alternative would restrict east-west movement across Ninth Street, increase undesirable circulation movement on adjacent local streets, and reduce accessibility of properties adjacent to Ninth Street. Traffic on the congested Van Buren-Harrison
one-way couplet between Fourth and Ninth Streets would increase, and heavy truck traffic would be introduced on Ninth Street south of Monroe Avenue. The curb parking supply along Ninth Street would be eliminated. This alternative does generally comply with the City's proposed comprehensive plan, but commercial activities along Ninth Street would be encouraged in conflict with local planning goals. Economic viability of the downtown would be enhanced as a result of reduced traffic. This corridor would create a barrier between the OSU campus and the CBD.

This alternative would significantly increase carbon monoxide concentrations along Ninth Street, and subject most buildings along Ninth Street to increased noise levels. A total of 116 residences and 25 commercial buildings would be exposed to adverse noise levels. Overall, however, noise levels would be reduced in the downtown. Significant degradation of the visual quality of Ninth Street would occur. Approximately 9 acres of supplemental lands would be acquired and 9 businesses, 4 single family residences and 8 multifamily units would be displaced. Implementation costs would total $4.6 million. (Recent construction has increased these costs by as much as $5 million.)

e. Street Modification Alternative
This alternative would have various impacts on traffic and transportation including an estimated 4 percent diversion of downtown through traffic to non-CBD routes, minor accident reduction potential, improved downtown accessibility, and minor improvements in system-wide mobility. Heavy traffic flows on Fourth Street would be maintained. This alternative is not in compliance with Corvallis' planning goals, and would result in little enhancement of the economic viability of downtown. Minor air quality impacts are predicted, including an increase in carbon monoxide on Ninth Street and west of Second Street. Noise impacts would include a noise reduction throughout most of downtown, with a noise increase on Ninth Street, adversely impacting 92 residences and 26 commercial buildings. Implementation of this alternative would require acquisition of one acre of land, and displacement of one residence. Implementation costs would total approximately $1.8 million, the least of any of the corridor alternatives.

5. Areas of Controversy

No major controversy has surfaced over selection of the Eastern Corridor.

6. Other Federal Actions Required Because of the Proposed Action

A bridge permit for the bridges crossing the Willamette River, a navigable waterway, will be required from the U.S. Coast Guard.
A Section 404 permit will be required from the U.S. Corps of Engineers.
# TABLE OF CONTENTS

Summary .................................................................................................................. i
Foreword .................................................................................................................. I-3
Chapter I - PURPOSE AND NEED ......................................................................... I-3
  Project Setting ........................................................................................................ I-3
  Purpose .................................................................................................................... I-3
  Need ......................................................................................................................... I-4
    Traffic Volumes .................................................................................................... I-4
    Truck Traffic ....................................................................................................... I-4
    Traffic Safety ...................................................................................................... I-4
  Project History and Development ........................................................................ I-7
Chapter II - PROJECT ALTERNATIVES ................................................................. II-1
  Selected Alternative ................................................................................................ II-1
    Reasons for Selection ........................................................................................... II-1
    Description .......................................................................................................... II-2
    Alignment and Design .......................................................................................... II-2
      Phase I .................................................................................................................. II-2
      Full Bypass ........................................................................................................ II-9
  Alternatives Not Advanced .................................................................................... II-9
    No-Build Alternative ............................................................................................ II-9
    Central Corridor Alternative ............................................................................... II-9
    Western Corridor Alternative ............................................................................. II-15
    Street Modification Alternative ......................................................................... II-18
Chapter III - AFFECTED ENVIRONMENT AND CONSEQUENCES OF THE SELECTED ALTERNATIVE ................................................................. III-1
  Transportation ....................................................................................................... III-1
  Right-of-Way ........................................................................................................... III-4
  Fiscal Impacts ......................................................................................................... III-10
  Planning .................................................................................................................... III-10
  Land Use .................................................................................................................. III-16
  Parks and Recreation ............................................................................................. III-22
  Corvallis Riverfront Area ....................................................................................... III-27
  Aesthetic Considerations ....................................................................................... III-30
  Socioeconomic Background .................................................................................. III-31
  Economics ............................................................................................................... III-33
  Community Service ............................................................................................... III-35
  Utilities ..................................................................................................................... III-37
  Cultural Resources ................................................................................................. III-37
  Geology .................................................................................................................... III-38
  Biology .................................................................................................................... III-42
  Wetlands .................................................................................................................. III-47
    Wetlands Finding .................................................................................................. III-54
  Water Quality and Aquatic Biology ...................................................................... III-56
  Hydrology ............................................................................................................... III-59
    Floodplain Finding ............................................................................................... III-66
  Noise ......................................................................................................................... III-66
  Air Quality ............................................................................................................. III-75
  Energy Consumption Analysis .............................................................................. III-76
# LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>CBD Accident Rates</td>
<td>I-7</td>
</tr>
<tr>
<td>2</td>
<td>Accidents by Type - 1976-1980</td>
<td>I-7</td>
</tr>
<tr>
<td>3</td>
<td>Traffic Volume Comparison</td>
<td>III-1</td>
</tr>
<tr>
<td>4</td>
<td>Right-of-Way Acreage Requirements by ownership</td>
<td>III-4</td>
</tr>
<tr>
<td>5</td>
<td>Right-of-Way Requirements - Acreage and Displacements</td>
<td>III-7</td>
</tr>
<tr>
<td>6</td>
<td>Right-of-Way Requirements by Existing Land Use</td>
<td>III-21</td>
</tr>
<tr>
<td>7</td>
<td>Population in Benton County</td>
<td>III-31</td>
</tr>
<tr>
<td>8</td>
<td>1970 Income Characteristics - City of Corvallis and State of Oregon</td>
<td>III-32</td>
</tr>
<tr>
<td>9</td>
<td>Benton County Labor Force Trends</td>
<td>III-34</td>
</tr>
<tr>
<td>10</td>
<td>Comparison of Potential Erosion</td>
<td>III-40</td>
</tr>
<tr>
<td>11</td>
<td>Comparison of Rock Quantities</td>
<td>III-41</td>
</tr>
<tr>
<td>12</td>
<td>Number of Common, Resident Species in Each Reproductive Guild</td>
<td>III-43</td>
</tr>
<tr>
<td>13</td>
<td>Number of Habitat Units for Each Evaluation Species - No-Build Alternative</td>
<td>III-44</td>
</tr>
<tr>
<td>14</td>
<td>Average Annual Habitat Units of the Alternatives Compared</td>
<td>III-45</td>
</tr>
<tr>
<td>15</td>
<td>Existing Wetland Distribution</td>
<td>III-48</td>
</tr>
<tr>
<td>16</td>
<td>Navigation Clearances</td>
<td>III-65</td>
</tr>
<tr>
<td>17</td>
<td>Existing Noise Measurement</td>
<td>III-67</td>
</tr>
<tr>
<td>18</td>
<td>Future Noise Levels and Contour Distances</td>
<td>III-69</td>
</tr>
<tr>
<td>19</td>
<td>Noise Impact Summary</td>
<td>III-70</td>
</tr>
<tr>
<td>20</td>
<td>Total Emissions Analysis</td>
<td>III-77</td>
</tr>
<tr>
<td>21</td>
<td>Estimated Energy Required for Construction</td>
<td>III-80</td>
</tr>
<tr>
<td>22</td>
<td>Estimated Energy Required for Vehicles</td>
<td>III-80</td>
</tr>
<tr>
<td>23</td>
<td>Displacement Summary</td>
<td>IV-12</td>
</tr>
<tr>
<td>24</td>
<td>Residential Noise Impact Comparison - 1990</td>
<td>IV-17</td>
</tr>
<tr>
<td>25</td>
<td>Commercial Building Noise Impact Comparison</td>
<td>IV-17</td>
</tr>
<tr>
<td>26</td>
<td>Land Requirements</td>
<td>IV-35</td>
</tr>
<tr>
<td>Figure No.</td>
<td>Title</td>
<td>Page</td>
</tr>
<tr>
<td>-----------</td>
<td>----------------------------------------------------------------------</td>
<td>-------</td>
</tr>
<tr>
<td>Fig. 1</td>
<td>Regional Setting</td>
<td>I-2</td>
</tr>
<tr>
<td>Fig. 2</td>
<td>1980 Existing Traffic</td>
<td>I-5</td>
</tr>
<tr>
<td>Fig. 3</td>
<td>No-Build Alternative - 1995 Average Daily Traffic</td>
<td>I-6</td>
</tr>
<tr>
<td>Fig. 4</td>
<td>Eastern Corridor with Typical Section</td>
<td>II-3</td>
</tr>
<tr>
<td>Fig. 5</td>
<td>Alignment of Phase I - Eastern Corridor</td>
<td>II-5</td>
</tr>
<tr>
<td>Fig. 6</td>
<td>Phase I - Intersection Design</td>
<td>II-7</td>
</tr>
<tr>
<td>Fig. 7</td>
<td>Alignment of Full Bypass - Eastern Corridor</td>
<td>II-9</td>
</tr>
<tr>
<td>Fig. 8</td>
<td>Central Corridor with Typical Section</td>
<td>II-11</td>
</tr>
<tr>
<td>Fig. 9</td>
<td>Western Corridor with Typical Section</td>
<td>II-14</td>
</tr>
<tr>
<td>Fig. 10</td>
<td>Street Modification Alternative with Typical Section</td>
<td>II-16</td>
</tr>
<tr>
<td>Fig. 11</td>
<td>Full Bypass - 1995 Average Daily Traffic</td>
<td>III-2</td>
</tr>
<tr>
<td>Fig. 12</td>
<td>Phase I - 1995 Average Daily Traffic</td>
<td>III-3</td>
</tr>
<tr>
<td>Fig. 13</td>
<td>Location of Properties From Which Right-of-Way is Required</td>
<td>III-5</td>
</tr>
<tr>
<td>Fig. 14</td>
<td>Future Land Use</td>
<td>III-13</td>
</tr>
<tr>
<td>Fig. 15</td>
<td>Existing Land Use</td>
<td>III-15</td>
</tr>
<tr>
<td>Fig. 16</td>
<td>Corvallis Downtown Urban Renewal/Redevelopment Plan</td>
<td>III-18</td>
</tr>
<tr>
<td>Fig. 17</td>
<td>Open Space Parks and Recreation Facilities in the Project Area</td>
<td>III-23</td>
</tr>
<tr>
<td>Fig. 18</td>
<td>Corvallis Riverfront Park Master Plan</td>
<td>III-28</td>
</tr>
<tr>
<td>Fig. 19</td>
<td>Available Habitat Units for Each Alternative</td>
<td>III-46</td>
</tr>
<tr>
<td>Fig. 20A</td>
<td>Phase I - Wetlands Impacts</td>
<td>III-51</td>
</tr>
<tr>
<td>Fig. 20B</td>
<td>Full Bypass - Wetlands Impacts</td>
<td>III-53</td>
</tr>
<tr>
<td>Fig. 21</td>
<td>Wetlands Management Area</td>
<td>III-56</td>
</tr>
<tr>
<td>Fig. 22</td>
<td>Drainage Basins and Floodplains</td>
<td>III-62</td>
</tr>
<tr>
<td>Fig. 23A</td>
<td>Traffic Links for Existing and No-Build Alternatives</td>
<td>III-71</td>
</tr>
<tr>
<td>Fig. 23B</td>
<td>Traffic Links for Phase I</td>
<td>III-72</td>
</tr>
<tr>
<td>Fig. 23C</td>
<td>Traffic Links for Full Bypass</td>
<td>III-73</td>
</tr>
<tr>
<td>Fig. 24</td>
<td>Existing Major Street Network and Study Area</td>
<td>IV-2</td>
</tr>
<tr>
<td>Fig. 25</td>
<td>Traffic Volumes 1976-77</td>
<td>IV-3</td>
</tr>
<tr>
<td>Fig. 26</td>
<td>1990 Traffic Volumes No-Build Alternative</td>
<td>IV-5</td>
</tr>
<tr>
<td>Fig. 27</td>
<td>1990 Traffic Volumes Eastern Corridor Alternative</td>
<td>IV-7</td>
</tr>
<tr>
<td>Fig. 28</td>
<td>1990 Traffic Volumes Central Corridor Alternative</td>
<td>IV-8</td>
</tr>
<tr>
<td>Fig. 29</td>
<td>1990 Traffic Volumes Western Corridor Alternative</td>
<td>IV-9</td>
</tr>
<tr>
<td>Fig. 30</td>
<td>1990 Traffic Volumes Street Modification Alternative</td>
<td>IV-10</td>
</tr>
<tr>
<td>Fig. 31</td>
<td>Existing Land Use</td>
<td>IV-23</td>
</tr>
<tr>
<td>Fig. 32</td>
<td>Open Space, Parks and Recreation with Possible 4(f) Involvements</td>
<td>IV-25</td>
</tr>
<tr>
<td>Fig. 33</td>
<td>Alignment of Full Bypass - Eastern Corridor</td>
<td>VI-3</td>
</tr>
<tr>
<td>Fig. 34</td>
<td>Corvallis Riverfront Park</td>
<td>VI-5</td>
</tr>
<tr>
<td>Fig. 35</td>
<td>Land Ownership in Impact Area</td>
<td>VI-6</td>
</tr>
<tr>
<td>Fig. 36</td>
<td>Impacts of Project on 4(f) Properties</td>
<td>VI-8</td>
</tr>
</tbody>
</table>
The Final Environmental Impact Statement (FEIS) has been substantially revised from the Draft Environmental Impact Statement (DEIS). This was done for two reasons: 1) the selected alternative was slightly different from that presented in the DEIS in that it will be implemented in at least two phases, each having distinct impacts, and 2) several subject areas evaluated in the DEIS required reanalysis and supplementing. Chapters I and II have been revised, Chapter III is new and Chapter IV contains the DEIS impact analysis, only slightly revised, for the readers reference. The traffic analysis has been redone with updated population and employment figures. The new analysis did not change the order of preference of the alternatives. A reanalysis was therefore done only for the selected alternative.
Chapter I
PURPOSE AND NEED

PROJECT SETTING

The project is located in Corvallis, Oregon, a town of approximately 42,420 population. The Central Business District (CBD) is located on the west bank of the Willamette River. Residential and industrial areas fan out to the west, north and south from this central core.

The local economy is dominated by Oregon State University (OSU) and by Hewlett-Packard, which manufactures electronic equipment. OSU is located just 6 blocks west of the CBD. The campus layout, with a large landscaped entry quadrangle and residence halls between the CBD and the campus, establishes a strong spatial tie between the campus and the CBD. The campus’ predominance on the street plan has created a strong east-west orientation to local traffic, which is reflected in the importance of Harrison Boulevard, Van Buren, Monroe and Madison Avenues.

In contrast, highways entering Corvallis, ORE 34, US 20 and ORE 99W, enter on the north or south end of the CBD and are carried coincidentally on the north-south one-way couplet, Third and Fourth Streets. This couplet intersects and passes through the primary shopping area of the CBD. The north-south pattern is reinforced by more recent industrial growth to the north and south, (Hewlett-Packard is located north) and residential development in the northwest. The result is a conflict between those who enter the CBD to shop and those with destinations outside the CBD.

Local traffic consists of students who are predominantly pedestrians and bicyclists, and local traffic which largely enters the CBD on east-west streets and circulates north-south in the core area. Through traffic travels north and south on Third and Fourth, respectively, the two main shopping streets.

PURPOSE

The purpose of the project is to provide an alternate route for through traffic, particularly heavy truck traffic, now going through the CBD. This would make the CBD more hospitable and safe for pedestrians and reduce negative aesthetic factors such as noise and congestion. Removal of through traffic is an integral part of the Corvallis Downtown Urban Renewal/Redevelopment Plan, which is aimed at improving the economic viability of the downtown business area and enhancing redevelopment of activities.

Corvallis is attempting to revitalize the downtown area, using the aesthetic resources provided by the riverfront, and the village atmosphere provided by the university and abundance of streets lined with mature trees. Plans call for the construction of a downtown shopping mall and parking structure to capture Corvallis' potential as a regional shopping center. The plan also envisions a refocusing of the city on the riverfront with walkways, cafes and shops. Excessive traffic is incompatible with the atmosphere the plan is attempting to achieve and is felt to be detrimental to economic viability.
Traffic Volumes
The 1980 average daily traffic volumes within the study area are shown in Figure 2. Third and Fourth Streets, and Second Street north of Van Buren, serve substantial volumes of non-CBD oriented traffic - both long dis-
tance through trips and shorter cross town trips. Critical intersections are those where these north-south arterials cross Harrison Boulevard and Van Buren Avenue, which comprise a key east-west, one-way street couplet linking the CBD with the existing Willamette River bridges.

Third and Fourth Streets carry 18,500 and 14,300 vehicles per day (VPD), respectively, just south of Van Buren Avenue. Peak hour traffic vol-
ums at these locations operate at Service Level* "B-C", which is considered good. The east-west couplet on Harrison Boulevard and Van Buren Avenue carries from 8,500 VPD to 15,300 VPD in the downtown area, while 9,300 daily vehicles cross the Willamette River bridges. Peak hour traffic on this couplet operates at Service level "B-C".

The maximum volumes on these streets, however, are reached in the core of the shopping area between Jefferson and Monroe Avenues. Here daily volumes reach 20,500 and 16,500 on Third and Fourth Streets, respectively, placing the highest volumes in conflict with the highest pedestrian usage.

Future (1995) traffic volumes are expected to increase by 5,000-8,000 vehicles per day over the 1980 volumes, producing a poor service level of D-E on Third Street between Jefferson Avenue and Harrison Boulevard. See Figure 3. Van Buren Avenue will also operate at service level D-E from Third Street across the narrow Willamette River Bridge. Traffic on the Willamette River Bridges will increase by 50 per cent.

Truck Traffic
Heavy trucks account for 5 percent of the total daily vehicle traf-
ic on Third and Fourth Streets, but constitute 10 percent of total traffic during the midday shopping period. Approximately 75 percent of these trucks have destinations outside the CBD.

By 1995 daily truck volume using the Third and Fourth Street and Harrison Boulevard-Van Buren Avenue couplets is projected to increase by 500 trucks, a 35 percent increase.

Traffic Safety
The accident rate on the Third-Fourth Street couplet - 13.61% acci-
dents per million vehicle miles - is substantially higher than the average rate of 5.11 for primary urban state highways. Corvallis also appears high when compared to other city CBD couplets which are designated highways as shown in Table 1.

*Service Levels vary from A to F with A being free flow and F being stop and go traffic. For a more definitive description of the various service levels, see Appendix A.
FIGURE 2
1980 EXISTING TRAFFIC
(ADT In Thousands)
FIGURE 3
NO-BUILD ALTERNATIVE
1995 AVERAGE DAILY TRAFFIC
(In Thousands)
TABLE 1

CBD Accident Rates

<table>
<thead>
<tr>
<th>City</th>
<th>CBD Coupled</th>
<th>Accident Rate */</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corvallis</td>
<td>3rd and 4th Streets</td>
<td>13.61</td>
</tr>
<tr>
<td>Eugene</td>
<td>6th and 7th Streets</td>
<td>7.91</td>
</tr>
<tr>
<td>McMinnville</td>
<td>Baker and Adams Streets</td>
<td>7.85</td>
</tr>
<tr>
<td>Salem</td>
<td>Liberty and Commercial</td>
<td>9.10</td>
</tr>
</tbody>
</table>

*/ The number of accidents per million vehicle miles of travel.

Over 420 accidents were reported on this couplet during the five-year period from 1976 through 1980 in the section between Western Boulevard and Harrison Boulevard. Accident type is shown in Table 2.

TABLE 2

Accidents by Type - 1976-1980

<table>
<thead>
<tr>
<th>Fourth Street Southbound</th>
<th>Third Street Northbound</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angle</td>
<td>79</td>
</tr>
<tr>
<td>Head-on</td>
<td>33</td>
</tr>
<tr>
<td>Rear-end</td>
<td>12</td>
</tr>
<tr>
<td>Sideswipe Meeting</td>
<td>52</td>
</tr>
<tr>
<td>Sideswipe Overtaking</td>
<td>9</td>
</tr>
<tr>
<td>Turning</td>
<td>1</td>
</tr>
<tr>
<td>Parking</td>
<td>1</td>
</tr>
<tr>
<td>Non-Collision</td>
<td>1</td>
</tr>
<tr>
<td>Fixed-Object</td>
<td>4</td>
</tr>
<tr>
<td>Pedestrian</td>
<td>1</td>
</tr>
<tr>
<td>Backing</td>
<td>1</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>191</td>
</tr>
</tbody>
</table>

The accident table reflects the typical pattern of traffic that must stop frequently and where many turns are taking place. There are also a significant number of pedestrian accidents occurring.

PROJECT HISTORY & DEVELOPMENT

For more than 28 years a Central Business District bypass for Corvallis, Oregon, has been in various stages of planning and discussion. The proposal has at times been controversial, but in recent years a unified effort has resulted in this new study to assess alternative locations and to prepare an Environmental Impact Statement.
In October, 1950, a First Street bypass was proposed, but was not adopted because the costs of abandoning a sawmill (near the south end of Second Street) and a railroad spur on First Street were prohibitive. In April, 1951, the Oregon Highway Commission agreed to purchase right-of-way along First Street from Tyler Avenue to a connection with Third and Fourth Streets. The commission further considered the selection of a northern connection from Third and Fourth Streets to ORE 99W. Also at that time, the Commission noted that First Street appeared to be the best route for ORE 99W, but that the re-routing would not be considered until the sawmill shut down. The Commission decided not to construct a temporary connection between First Street and Third and Fourth Streets.

In March, 1955, the Corvallis Timber Company closed its sawmill and the land was purchased for right-of-way by joint State-City action. In March, 1963, the City of Corvallis requested that the State prepare plans for a First Street bypass. However, the State was reluctant to proceed until financing of the project was more realistic.

In April, 1969, the City of Corvallis, for the first time, formally proposed use of the Willamette riverfront land along First Street as a park. In June, 1969, the State deeded to the City a portion of the right-of-way jointly acquired in 1955. This land was used to construct a boat basin on the Marys River.

The Corvallis Area Transportation Study (CATS) was undertaken in 1965 and completed in 1969. Three alternatives were included for improving traffic conditions in the Corvallis Central Business District. These were a First Street bypass, a Linn County (eastbank) bypass, and a First-Second Street Couplet. In December, 1969, the Corvallis City Council declared its opposition to the location of a highway bypass along or near the west bank of the Willamette River within the City of Corvallis.

On November 18, 1970, a Corridor/Design public hearing was held in Corvallis for a First Street bypass of the Central Business District. This proposal was met with strong citizen disfavor.

The 1971 Corvallis Urban Area Traffic Safety Study and Recommended Street System Improvements report prepared by Cornell, Howland, Hayes, and Merryfield recommended an "Eastbank Expressway" to bypass the Central Business District and gave the project the second highest priority in its recommended street improvements. However, between 1973 and 1977, Corvallis was not able to get a funding priority from either the District 4 Council of Governments or the State 6-Year Improvement Program, although, an environmental study and preliminary engineering was funded in 1975.

In 1977, Corvallis City Council went on record as unanimously favoring an "eastbank bypass" of the Central Business District. Policy No. 150 of the proposed Comprehensive Plan for the City of Corvallis states that "The City shall vigorously pursue the construction of an eastbank bypass for the City of Corvallis". The City's proposed Updated Comprehensive Plan was in the public review stage. This plan was revised to state that the City should pursue development of a downtown bypass, rather than specifically support an "Eastbank Bypass".

The Draft Environmental Impact Statement was released for public review on January 24, 1979 and a corridor hearing was held on July 26, 1979. The Eastside Bypass was selected for advancement.
Following the hearing, the owner of the land south of ORE 34 and east of the Willamette River put his land up for sale and approached the City as a possible purchaser. The City received permission for an opportunity purchase, negotiated an agreement and held a bond election to cover costs.

In November 1980, voters of the City of Corvallis authorized the bond issue to acquire right-of-way and fund preliminary engineering for Phase I of the project. The property was subsequently acquired as an opportunity purchase, some of which will be used as right-of-way following final approval.

In the fall of 1981, the Oregon Transportation Commission Placed Phase I on the current Six-Year Highway Improvement Plan for the year 1986. The estimated construction cost is $5.9 million for Phase I of the bypass and $30 million (exclusive of right of way) for the Full Bypass.
Chapter II

PROJECT ALTERNATIVES

Representative locations and design concepts for a highway bypass in each of the alternative corridors described in Chapter I were defined originally by the Oregon Department of Transportation. These design concepts were carefully reviewed with regard to potential adverse environmental impacts, and various modifications were suggested to mitigate these impacts.

The design concepts and all potential modifications were reviewed with the Citizens Advisory Committee and the City of Corvallis and five were selected by the Oregon Department of Transportation for further study. The results of the study were published in the Draft EIS and circulated for public review. A public hearing was then held on July 26, 1979.

SELECTED ALTERNATIVE

Reasons for Selection

Following the public hearing, the Eastern Corridor was selected for advancement. The selection was made on the basis that this alternative was supported by the local governmental jurisdictions, the land use plan, private interest groups, and the majority of those testifying at the hearing. The alternative maximizes the removal of through traffic from the downtown area, which is the major purpose of the project, while maintaining the integrity of the relationship of the downtown with both the riverfront and Oregon State University.

The other alternatives sacrificed one or more of these basic design criteria. The Central Corridor would separate the riverfront area from the downtown, significantly reducing the riverfront's value as the esthetic focus of the downtown redevelopment plan. This corridor would divert less than half as much traffic as the selected alternative.

The Western Corridor would also divert less than half as much traffic as the selected alternative. This corridor would create a significant barrier between the downtown and the university campus. Accident problems occurring in the downtown would be transferred to Ninth Street and its visual quality would be diminished by the removal of several mature trees.

The Street Modification Alternative diverts very little traffic from the Third-Fourth Street couplet and redistributes it on the other downtown streets. This alternative therefore fails to meet the main goals of the project.

Just prior to the hearing, a consultant, developing a traffic study for the city, proposed a modified version of the selected alternative and presented it at the hearing. The modified version proposed construction of only the southern half of the eastern corridor and reduction of the roadway to two lanes. The modified version was estimated to cost about one-third as much as the original proposal.

The feasibility of this option was further evaluated after the public hearing, and it was determined that the modified version would not fully satisfy the long term transportation need. However, considering the funds limitation, it was determined that the modified bypass would be an appropriate first phase construction of the Full Bypass. The Full Bypass is therefore being proposed with a Phase I construction, for the 1986 fiscal year.
Because Phase I has a unique traffic pattern, different from the Full Bypass, the environmental research in preparation of this document treated Phase I and the Full Bypass as separate actions. In this way, interim impacts, resulting from the construction of Phase I, and final impacts, caused by the construction of the Full Bypass, could be identified.

Following is a complete description of the selected alternative.

**Description - Eastern Corridor Alternative (selected)**

Although not far removed from the urban area, a bypass route in this corridor would have rural character. The limited existing development permits use of freeway design concepts for most of the proposed alignment. Estimated cost would be about $30,000,000. Figure 4 illustrates the general alignment and cross-section of the Eastern Corridor Alternative.

**Alignment and Design**

**Phase I**

The initial construction phase would connect to Third Street with at-grade intersections. The connecting ramps would be on fill embankments in order to gain sufficient height at their connection with the west end of the southerly Willamette River bridge crossing. The roadway would have two 12-foot traffic lanes and 8-foot shoulders. The roadway would have an at-grade intersection with ORE 34 at its northern terminus. The alignment of the connection would be identical to the alignment of the future northbound to eastbound ORE 34 ramp. See Figure 5.

Signals will be provided at four intersections: the bypass with ORE 34, on the north end and Third and Fourth Streets at "B" Street and Third Street at "B" Street. The phasing of the Third Street and eastbound bypass ramp will be uniquely phased to allow for right turns from the left-hand lane. Traffic in the right-hand lane will be stopped during this phase. This allows eastbound US 20 traffic to cross safely to the bypass route. See Figure 6.

"B" Avenue would be made one-way westbound and "C" Avenue would be made one-way eastbound. A connection to ORE 34 will be made to give access to Nelson Park and the farmland that would otherwise be isolated by the alignment. An access roadway and bikeway connections will be maintained under the west end of the bridge.

The proposed design of the south Willamette River Bridge crossing has less clearance than either of the existing bridges in order to reduce the project cost: the future bridge would provide 21 feet at ordinary high water (OHW) and 31 feet at normal summer flow. In contrast, Harrison Boulevard Bridge provides 38 feet at OHW and 48 feet at normal flow and Van Buren Avenue Bridge (in the closed position) provides 28 feet at OHW and 38 feet at normal flow. Vertical clearance is unlimited when the swing span is open. The lower vertical clearance is proposed because navigational interests requiring a higher clearance have not been identified, and the lower clearance will reduce project costs. The proposed clearance will save an estimated $400,000 in embankment costs, compared to the cost of higher embankments needed for road approaches with a 38-foot OHW vertical clearance. This savings is the total for both Phase I and the Full Bypass.

Horizontal clearance on the Van Buren Avenue Bridge is about 110 feet on either side of the main swing span pier on this bridge. Harrison Boulevard Bridge has 180 foot horizontal clearance. The proposed bridge would have a similar horizontal clearance.
0.000 1990 AVERAGE DAILY TRAFFIC
* SIGNALIZED INTERSECTION
Since it is not known at this time whether the Coast Guard will issue a bridge permit for a lower structure, impacts associated with the highway approaches have been calculated assuming embankment sizes necessary for a 38-foot vertical clearance at OHW. In the event a lower clearance is permitted, the acreage required for highway embankment would be reduced approximately two percent, or 0.8 acres for the entire project, except for the highway approach to the southernmost bridge. The height of this fill is controlled by the elevations coming off of US 20/ORE 34.

**Full Bypass**

The construction of additional elements of the Bypass may be accomplished in additional phases which are not yet defined. The completed bypass, however, would be widened to four lanes, and have an overcrossing and full interchange with ORE 34, and eliminate the at-grade intersections at the south end. See Figure 7. An overcrossing of the Marys River would be built to provide 23 feet of clearance at OHW. The existing overcrossing of Marys River provides 18 feet of clearance at OHW.

The Willamette River bridge crossing to be constructed under Phase I is designed to be expanded by two lanes on its south side. Phase I ramps would be converted to connect to full interchanges with US 20 and ORE 99W.

The Phase I connection to ORE 34 would become a northbound to ORE 34 off ramp. A new overcrossing of ORE 34 would be constructed and three other ramps added to form a complete interchange.

On the north end, a second bridge crossing which would also cross US 20, would be constructed. The proposed clearances for this bridge are 26 feet at OHW and 36 feet a normal summer flow. Exit and entrance ramps to US 20 would be constructed. The roadway would continue on a fill embankment to its connecting ramps with ORE 99W north of Corvallis. The southbound ORE 99W to bypass ramp requires an overcrossing structure to cross ORE 99W.

A new access connection from ORE 34 would be made to provide access to the OSU crew facility. Fillmore Street would be extended to join Third and Fourth Streets replacing an existing access one block north.

**ALTERNATIVES NOT ADVANCED**

**No-Build Alternative**

This alternative would not include any new construction or reconstruction of old streets. A "No-Build" approach, however, could include very small expenditures for revising or adding to signing, signals or other types of standard traffic control devices. An expanded system of one-way streets could also be included to handle increased traffic volumes. Elimination of parking and rerouting of through traffic would also be considered in a No-Build situation.

**The Central Corridor Alternative**

This would be an urban corridor using First Street as the primary route to bypass the central business district. Estimated cost would be about $16,300,000. See Figure 8.

**Alignment**

The southern terminus would be located at the existing partial interchange of the Corvallis-Newport Highway (U.S. 20) and the Pacific Highway West (Oregon 99W) where the Third and Fourth Street one-way couplet converge.
An extension of U.S. 20 from the railroad grade separation would be used as the mainline section of the bypass. This extension would cross over Third and Fourth Streets and then turn to the First Street corridor at "B" Avenue and continue along the west bank of the Willamette River, passing under the river-crossing structures of the Van Buren-Harrison one-way couplet. The continuing alignment would swing to the northwest in the vicinity of N.W. Fillmore Avenue with grade separations provided at Second and Third Streets. The proposed route then would merge with existing Fourth Street, terminating immediately south of the existing Oregon 99W railroad grade separation.

As with most urban corridors, lateral alignment shifts within the corridor are severely limited due to dense and costly adjacent development characterized by intense and well established use. This corridor is particularly restrictive between Western Boulevard and Van Buren Avenue with large commercial buildings on the west side of First Street and the riverbank development and parking facilities on the east side.

The southern portion of this alignment would be centered on the east half of the blocks between First and Second Streets and would return to the centerline of existing First Street just prior to undercrossing the Van Buren Avenue bridge. This location would necessitate demolition of all commercial buildings along the alignment from "B" Avenue to Jackson Avenue. However, the riverside, bicycle trail and most of the parking would remain intact with little, if any, disturbance. Existing First Street would be removed and could provide additional park and/or vehicle parking area.

The Van Buren-Harrison one-way couplet would form a major interchange with the bypass route by utilizing the local street network for approach ramps. The Van Buren Avenue bridge would have to be replaced in order to achieve adequate horizontal and vertical clearance for overcrossing the mainline of the alternative. This is the only alternative that would require replacement of the Van Buren Avenue bridge with a new structure.

**Typical Section**

The mainline typical section would provide two lanes for each direction separated with a continuous or two-way left turn median. The median also would allow use of left turn lanes at designated intersections with raised channelization. Total curb-to-curb width would be 68 feet.

**Access**

Partial interchanges with directional ramps connecting existing facilities would be located at the U.S. 20/Oregon 99W existing interchange (southern terminus), the Albany-Corvallis Highway (U.S. 20) proposed overcrossing, and at the Third and Fourth Street couplet connection to Oregon 99W at the northern terminus.

A full interchange would be provided at the Van Buren-Harrison one-way couplet with local streets used as ramps for all of the nondirectional movements.

Local street access from and to the central business district would be made available at five grade intersections:

- S.W. Western Boulevard
- S.W. Jefferson Avenue
- Monroe Avenue
- N.W. Jackson Avenue
- N.W. Tyler Avenue

II-12
Vehicular access to private property in the urban area would be available from either direction with northbound traffic using the continuous left turn median lane. This movement would be restricted somewhat at intersections that require raised channelization to protect the priority left turn. Pedestrian access across the mainline to the riverside park development would be provided at appropriate intersections with adequate protection. If the pedestrian mall on Madison is extended to the river, a ramped overcrossing structure would be considered for safe access to the riverfront.

Western Corridor Alternative

This is an urban corridor that would bypass the central business district on the west side using Ninth Street as the primary route. As defined, the project could be implemented for about $4,600,000. See Figure 9.

Alignment

The southern terminus would be located on the Corvallis-Newport Highway (U.S. 20) at the existing intersection of Fifteenth Street turning to the northeast across the old Roosevelt Elementary School grounds. The roadway then would turn to the north, crossing the railroad tracks just prior to aligning with S.W. Ninth Street at S.W. Washington Avenue.

From S.W. Washington Avenue to the north, the centerline would be coincident with that of Ninth Street and would tie back into existing ORE 99W between N.W. Grant and N.W. Hayes Avenues at its northern terminus. The tieback to ORE 99W was accomplished with a semi-directional intersection.

Typical Section

The section north of Washington Avenue proposed for this alternative would be five lanes with a total curb-to-curb width of 70 feet. Five-foot sidewalks on each side also would be included to fit in the existing right-of-way of 80 feet.

Two 12-foot lanes would be provided for each of the primary directions northbound and southbound. The 14-foot median lane would be marked for two-way left turns at appropriate locations. No parking lanes would be included, but a 4-foot bikeway would be striped for each side of the street adjacent to the curbs.

Access

Local street access would be partially controlled with most of the east-west cross streets being severed. Full access would be allowed by grade intersections only for:

S.W. Western Boulevard
S.W. Jefferson Avenue
S.W. Monroe Avenue
N.W. Van Buren Avenue
N.W. Harrison Boulevard
N.W. Buchanan Avenue

Intersections also would be provided at the north and south terminals of the alignment that would also allow local access to the facility.
Left and right turn access would be permitted to local business and other private property access from either direction to most properties throughout the total length of the project. At intersections, however, left turn access to private property would not be allowed because the center turning lane would be restricted by raised channelization on each side of the intersecting street. This alternative would not allow direct access to 99W for north-south trips at the southern terminal. These movements would be completed to Ninth Street by using Western Boulevard and the Third and Fourth Street one-way couplet. Both movements would require some out-of-direction travel.

Street Modification Alternative

This alternative, which would involve certain street modifications, would offer many of the desired bypass project benefits at relatively modest cost, without precluding the possibility of a full highway bypass development at some future time. Initial construction, designated as Phase I, would cost about $1,200,000. If alignment improvements to the First Street connection, Phase II, were accomplished at a later date, construction cost would amount to an additional $600,000. See Figure 10.

Alignment

Southbound Fourth Street, half of the existing one-way couplet, would be retained as designated but the northbound movement would be changed to First Street. No new construction would be needed for Fourth Street except for minor revisions to signing and possibly signalization. Initial construction for the northbound movement would consist of reconstruction of Western Boulevard between Second and First Streets; reconstruction of First Street from Western Boulevard to Tyler Avenue; and reconstruction of Tyler Avenue between First and Third Streets.

Phase II of this alternative would remove the right angle turns for the connections to First Street. This phase would be implemented only when increases in traffic volumes indicated the need.

Another major construction feature would be the southerly extension of Ninth Street to Western Boulevard to allow improved access to U.S. 20 via Fifteenth Street.

Other minor improvements to facilitate traffic movement would consist of signing, signalizing, redesignation of major streets, and development of one-way couplets. Some of these improvements would consist of the following, none of which are included in the previously stated costs:

1. Redesign of Third, as well as Second with landscaping and other amenities to perform the function of pedestrian-oriented shopping streets, and precluding their use by through traffic while allowing for slow-moving access traffic;

2. Implementation of the Madison Avenue project—a pedestrian-oriented link between the University campus and the downtown core area;
FIGURE 10
STREET MODIFICATION ALTERNATIVE
WITH TYPICAL SECTION
3. Development of riverbank amenities and more attractive linkages for pedestrians between the downtown core area and the riverbank via Madison and selected other locations at which special provisions for pedestrian crossings of First Street would be provided;

4. Development of new downtown parking facilities at the fringe of the pedestrian-oriented core area created by the diversion of traffic from Third Street;

5. Eventual reconstruction of the Van Buren Avenue bridge across the Willamette River;

6. Development of a more attractive linkage between Third and Fourth Streets at the south edge of the core area and the improved Ninth Street, possibly by converting Adams and Washington to one-way operations; and

7. Developing more attractive public transit services linking the University, Civic Center and downtown core areas.

**Typical Section**

Major street reconstruction for First Street, Western Boulevard, Tyler Avenue, and Ninth Street would use the same typical street section of 42 feet from curb-to-curb with 6-foot sidewalks on each side. This section would allow for three lanes of traffic. Depending on traffic volumes and parking requirements, Ninth Street might need additional width.

**Access**

All existing street accesses would be retained with this alternative. Changes to one-way operation for some streets would require different movements at certain intersections. Access to private property also would remain unchanged except for a change in direction of approach required by one-way streets.
Chapter III

AFFFECTED ENVIRONMENT AND CONSEQUENCES
OF THE SELECTED ALTERNATIVE

TRANSPORTATION

Methodology

A new traffic study was required prior to the preparation of the Final EIS to determine if Phase I, introduced after release of the Draft EIS, was a viable concept. During development of the study, a new traffic base was generated using the most recent population projections. Traffic projections used in the DEIS, retained in Chapter IV, are therefore not based on the same population assumptions as in the traffic data discussed here. However, it has been determined that the relative difference between the various alternatives would remain the same even if the new data were applied to the original alternatives. Therefore, data for the discarded alternative was not updated for the FEIS.

Environmental Consequences

Full Bypass - Projected 1995 traffic volumes for the Full Bypass are shown in Figure 11 and a comparison of selected sections is shown in Table 3.

TABLE 3
Traffic Volume Comparison

<table>
<thead>
<tr>
<th>3rd-4th Couplet</th>
<th>Existing</th>
<th>No-Build</th>
<th>Full Bypass</th>
<th>Phase I</th>
</tr>
</thead>
<tbody>
<tr>
<td>North of Harrison</td>
<td>16,900</td>
<td>24,800</td>
<td>14,000</td>
<td>24,800</td>
</tr>
<tr>
<td>South of Van Buren</td>
<td>32,800</td>
<td>43,800</td>
<td>29,300</td>
<td>39,700</td>
</tr>
<tr>
<td>South of Monroe</td>
<td>37,000</td>
<td>52,000</td>
<td>30,300</td>
<td>41,700</td>
</tr>
<tr>
<td>South of Jefferson</td>
<td>30,400</td>
<td>45,200</td>
<td>23,400</td>
<td>32,800</td>
</tr>
<tr>
<td>Willamette River Bridges</td>
<td>18,500</td>
<td>27,000</td>
<td>14,600</td>
<td>21,800</td>
</tr>
</tbody>
</table>

As shown in Table 3, downtown (3rd and 4th Streets) volumes are reduced in 1995 by from 14,500 to 21,800 Vehicles Per Day (VPD) between Van Buren and south of Jefferson Avenue. Traffic on the Willamette River Bridges will be reduced by 12,400 vehicles per day. The shift in traffic to the bypass route will alleviate future capacity deficiencies expected in the CBD. Peak hour traffic volumes in the CBD will operate at Level of Service "C" or better.

It is estimated that over half of future truck traffic would use the bypass. This estimate is based on the assumption that the city will restrict through truck traffic from the downtown.
With the Full Bypass, the accident rate in the CBD would probably drop significantly while the accident rate on the bypass route would probably range from 1.5 to 2.0 based on the accident experience of similar highway facilities.

Phase I - Figure 12 shows Phase I with 1995 traffic. Phase I will reduce traffic volume on the 3rd - 4th Street Couplet by from 4,100 to 12,400 vehicles per day between Van Buren Avenue and south of Jefferson Avenue. The volume on the Willamette River Bridges would be reduced by 5,200 vehicles per day. Assuming there will be a CBD truck restriction, truck volumes on 3rd and 4th Streets between Western Boulevard and Van Buren Avenue would be identical to the Full Bypass. More than half of the truck traffic would be diverted to the bypass along with about 10,000 autos. Peak hour traffic volumes in the CBD would operate at approximately Level of Service "C".

Altogether, Phase I provides about half the improvement in the downtown area as is provided by the Full Bypass. By 1995, Phase I volumes in the CBD are similar to 1980 No-Build volumes. Therefore, with respect to volume, Phase I provides a 15-year solution. Truck traffic, however, would be reduced.

Accident experience should be reduced with Phase I. Advance "Signal Ahead" signing will be provided to inform approaching traffic of the limited sight distance on OR 34 approaching the signal at Highway 99W and C Avenue.

RIGHT-OF-WAY

Environmental Consequences

Because a bypass of the central core area has been considered over a 30-year period, much of the right-of-way required on the west side of the Willamette River is already in the ownership of the Oregon Transportation Commission or the City of Corvallis. Most property necessary for right-of-way on the east side is in the ownership of OSU or the City of Corvallis. The City purchased the land as an opportunity purchase when the owner made it available.

Right-of-way for the Full Bypass will likely be acquired concurrently with Phase I right-of-way. While displacement and relocation could occur at anytime following purchase, occupants may be allowed to rent or lease parcels north of OR 34 until they are actually needed.

Tables 4 and 5 indicate the ownership of needed right-of-way and displacements. As evident from the tables, over 80% of the right-of-way is in ownership of various governmental jurisdictions. Figure 13 shows the general location of various displaced properties.

| TABLE 4 |
| Right-of-Way Acreage Requirements by Ownership |
|-------|-------|------|-------|------|-------|
|       | Private | Corvallis | OSHD | OSU | Lands | Total |
| Phase I | 3.1    | 16.2     | 6.1  | --- | 1.0   | 26.4  |
| Phase II| 4.1    | 16.2     | 7.5  | 11.4| 1.0   | 24.0  |
| Total  | 7.2    | 16.2     | 13.6 | 11.4| 2.0   | 50.4  |

III-4
TABLE 5

Right-of-Way Requirements
Acreage and Displacements

<table>
<thead>
<tr>
<th></th>
<th>Acreage</th>
<th>No. of Parcels</th>
<th>Residential Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase I</td>
<td>26.4*</td>
<td>17</td>
<td>4</td>
</tr>
<tr>
<td>Phase II</td>
<td>24.0</td>
<td>24</td>
<td>1</td>
</tr>
<tr>
<td>Total (Full Bypass)</td>
<td>50.4**</td>
<td>41</td>
<td>5</td>
</tr>
</tbody>
</table>

* .5 acres is in the Willamette River.
** 2.0 acres are in the Willamette River and 5.6 acres are existing OSHD right-of-way.
*** One of the businesses listed under Phase I, a 5 unit apartment house, is also listed in the multi-family residential category; three of the businesses (2 apartment buildings and a motel/cabins complex) are also listed in the multi-family residential category.

Residential

Acquisitions for Phase I include:

4 single family residences*
3 owner occupied (one residence with associated business)
1 tenant occupied

1 apartment house
5 units

Additional acquisitions for Phase II include:

1 single-family residence (tenant occupied)

2 apartment houses (39 units total)
24 units
15 units

1 motel/apartment complex
19 units

* City of Corvallis has purchased one and is negotiating for the other three at this time.

The residents were not surveyed to determine number of minorities, elderly, or possible relocation plans. The proposed construction date is significantly in the future and existing data would be invalid by the time

III-7
acquisition takes place. Based upon available census data it is assumed that approximately 9 percent of the relocatees will be minorities and there will be some elderly relocatees. The area does not have a concentration of any particular ethnic or age group.

**Commercial**

*Phase I*

Two businesses would be displaced under Phase I of the bypass.  A single family residence that was converted into a five unit apartment building would be displaced, as well as a single family residence on ORE 34 with an attached business, "Vern's Archery Shop".

The owners of both businesses intend to relocate their businesses and remain in the area.

No other commercial property would be affected by Phase I.

*Full Bypass*

The Full Bypass would displace a total of seven commercial businesses.

Four of the displaced businesses are multi-family dwellings: the Patio Motel, the Sunshine Terrace apartments, the Willamette Court apartments, and the converted single family residence. These businesses contain 63 multi-family living units (relocation of the residents was already discussed).

Three of the businesses are located in a three-story low-rise office building on the riverfront.

Another riverfront business that would be displaced is the Riverview Marina. The marina lies adjacent to the office building.

The remaining two businesses are also adjacent to one another. Oscar's Restaurant is a remodeled structure on a small riverfront lot. An old service station is located immediately to the south. Both structures would be displaced.

The real estate value of Cascade Printing would also be affected by the Full Bypass alternative. Although it would not be displaced, Cascade Printing would lose about half of its parking area, and may be forced to relocate. An unimproved lot presently used for parking would also be severed, leaving an uneconomic remnant.

The businesses to be displaced employ less than 20 employees collectively. Nearly all businesses are expected to relocate and acquisition will therefore not have a negative impact on the community. None of the businesses have been identified as minority businesses.

**Governmental Properties**

*Oregon State Highway Division (OSHD)*

Slightly more than a fifth of the required property is currently in OSHD ownership. Some of this is used as open space, particularly that near the confluence of the Marys and Willamette Rivers. The rest is vacant or next to an existing facility and currently functions as highway fill, shoulder, or excess right-of-way.

*City of Corvallis*

The City of Corvallis owns much of the confluence area jointly with OSHD. Small parcels owned exclusively by the City will be needed at the west end of the southern bridge crossing and south of the Marys River. On the east
side of the Willamette, the City purchased a 143-acre lot, of which 14.6 acres will be used for the highway facility; 50 acres were resold for private use. The overall parcel is used agriculturally at present; no public recreational land is affected. Following construction, access will be reestablished so that the severed remnants may continue to be used for this purpose.

Oregon State University
OSU owns 241 acres of land north of ORE 34. Of this, 11.4 acres will be acquired for highway use. Construction on this property will probably not begin until after 1995. It is likely that a golf course, planned for this property, will be in place by that time and that the existing driving range may no longer be in use. The golf course is designed to avoid conflict with highway right-of-way needs, although the existing driving range would be displaced if it were still in use. The Crew facilities would be unaffected and adequate access would be provided. The OSU property is discussed extensively under Parks and Recreation.

Mitigation

Residential
Corvallis traditionally has had one of the lowest vacancy rates in the State. For example, in February, 1981, the total average vacancy rate was 1.3 percent. While in total there was a sufficient supply available of comparable replacement housing that is decent, safe, and sanitary, it may be difficult to match available housing with the relocatees' varying space needs and ability to pay.

The highest rate of vacancy, which is largely affected by the large student population in Corvallis, occurs between the first week of July and the first week of August. Relocation efforts would be timed with this pattern for best results.

If comparable, adequate, decent, safe, and sanitary replacement dwellings are not available on the market or within the financial means of the displacee, suitable replacement housing would be made available through the Last Resort Housing Program. The Last Resort Housing Program is initiated when a housing shortage develops prior to right-of-way acquisition or when the relocatees require special housing. This allows unique and innovative methods to be used to provide the needed housing, including rehabilitation or relocation of existing housing or construction of new housing.

All relocatees will be given advisory assistance to enable them to occupy decent, safe, and sanitary replacement housing. Relocation advisory services and assistance will be provided regardless of race, color, religion, sex, or national origin. This will be done in accordance with the Oregon Department of Transportation's Relocation Assistance Program. U.S. Department of Transportation Order No. 5630.1 sets forth the same requirement for federally assisted projects.

Commercial

All businesses are eligible for relocation advisory assistance, moving costs, and for a site search benefit, or for an "in lieu of moving costs" benefit if replacement property is not available or the business is unable to reestablish elsewhere. All of the businesses being displaced have elected to remain in the area and to pursue relocation plans in the immediate vicinity (at the time of this writing).

III-9
In accordance with right-of-way acquisitions procedures, business properties (land and improvements) are purchased at fair market value. Businesses are also entitled to reimbursement for reasonable moving expenses, including the cost of searching for replacement property, or they may receive an amount equal to the annual net earnings of the business in lieu of other relocation benefits.

Both improved and unimproved commercial sites for sale in the Corvallis area are limited. However, there appears to be sufficient land available to meet the needs of commercial displacements resulting from this project. The marina, however, may not be able to relocate due to the unique needs of this establishment.

FISCAL IMPACTS

The construction cost for Phase I (excluding right-of-way) is $5,900,000; the cost of constructing the Full Bypass is approximately $30,000,000. Construction expenditures would involve several economic benefits in the form of employment and payments for labor and material. Both state and local economies would be affected, and both reap economic benefits. One of these benefits involves the multiplier effect, whereby the initial injection of highway construction monies is circulated throughout various sectors of the economy by repeated spending.

Purchasing private property for highway right-of-way decreases the local tax base and spreads the tax levy over the remaining taxable property. The effects of this loss, although inevitable, are negligible and should be offset by economic growth produced by the project.

Properties to be acquired for right-of-way currently contribute $11,940 (.004 percent) Phase I and $44,150 (.013 percent) Full Bypass annual tax revenue to local taxing districts. This amount of levy would likely be redistributed to other taxable properties as a result of the project.

The No-Build would have negative fiscal impacts locally. Selecting the No-Build Alternative would nullify any potential construction expenditures and forfeit the "multiplier effect" of those expenditures that, under the build alternatives, would otherwise flow into the local economy.

Heavy traffic volumes, particularly trucks, and decreased accessibility could adversely affect overall business sales and contribute to an already deteriorating condition. The residential areas in close proximity to the current alignment would gradually be affected by diverted traffic. As this occurred, the character and integrity of these neighborhoods would suffer. The symptoms would be most visible in deteriorating houses and property values.

PLANNING

Affected Environment

Planning Jurisdictions and Plan Status, and Pertinent Policies

Statewide Planning - The Land Conservation and Development Commission has statewide land use planning responsibility and authority. Local land use plans must conform to statewide goals and local plans must go through an LCDC acknowledgement review following local adoption.
City of Corvallis - The Comprehensive Plan for the City of Corvallis was adopted in December, 1980. The plan has been sent to LCDC for acknowledgement review. The City of Corvallis only has planning jurisdiction for the portion of the study area west of the Willamette River.

The transportation element of the plan indicates a bypass of Corvallis is needed because through traffic is creating severe problems downtown. The emphasis in the core area of the downtown is to be on pedestrian movement.

The Corvallis Downtown Urban Renewal/Redevelopment Plan was adopted in January, 1978, and amended in September, 1980. One of the objectives identified in the plan is to route through automobile and truck traffic around the commercial core area by constructing Phase I of the Eastern Corridor Bypass. Another objective is to establish a compact pedestrian-oriented commercial core area to serve as the regional shopping center for the Corvallis trade area. The plan specifies protection of the existing greenspace character of the east bank of the Willamette River and encourages its use for recreational purposes. Preservation of significant natural features is emphasized. Above ground utilities are to be relocated underground where feasible.

In order to achieve the goals and objectives of the Corvallis downtown plan, "B" Avenue from 3rd Street to middle of the river is identified as available for street right-of-way in order to build a bypass.

The 1981-86 Corvallis Capital Improvement Program, adopted in the fall of 1980, is considered one of the major implementing mechanisms for the comprehensive plan. The east side bypass is identified in this program. Corvallis voters approved funding for the first three years of the CIP in November, 1980.

The Linn County Comprehensive Plan was adopted on August 27, 1980. It has been sent to LCDC for acknowledgement review. The Corvallis Bypass is not addressed in the Linn County plan at this time but is being considered for inclusion.

Though it is not specifically identified in the county's comprehensive plan, the Linn County Board of Commissioners supports the construction of the Corvallis modified eastern corridor bypass. Construction of the project requires that Linn County grant an exception to the agricultural goal which has been done.

Willamette River Greenway - The 1973 State Legislature enacted statutes which provide for the development and maintenance of the Willamette River Greenway through the cooperative efforts of state agencies and local governments. The goal of the Willamette River Greenway is to protect, conserve, enhance, and maintain the natural, scenic, historical, agricultural, economic, and recreational qualities of lands along the Willamette River. Coordination of the development and maintenance of the Greenway rests with the Parks and Recreation Division of the Oregon Department of Transportation (ODOT), in cooperation with local governmental units.

Within the study area, the Greenway-designated lands total approximately 40 acres on the west bank and 60 acres on the east bank.

Corvallis' Greenway policy, adopted December, 1980, emphasizes the diverse aspects of the Greenway within the planning area. The plan policy also encourages the use of the riverfront for commercial, residential, and open space/recreation purposes within the downtown area if consistent with the Greenway goal.
Existing uses in the Greenway on the west side include both urban and rural segments. The Greenway, northeast of the city limits, is anticipated to remain rural. Uses within the city limits include commercial and open space. If the plan for the riverfront area is implemented, intensification of both commercial and open space uses should occur in the future.

The City of Corvallis requires a Conditional Development Permit for any change of use, intensification, or development within the Greenway boundary. The compatibility review process allows for the location of transportation corridors.

The Greenway within Linn County's jurisdiction in the project vicinity is presently used as open space, farmland, and for OSU Crew facilities. The east bank, under heavy vegetative cover, is considered a significant natural and scenic area, and has been deemed particularly significant in its scenic value to the City of Corvallis. Any development proposals, intensification or change of use for the area within the Greenway boundary requires a conditional use permit.

Environmental Consequences

Statewide Goals
Projects of State agencies must be in conformance with statewide goals or a local acknowledged comprehensive plan. If the local plan has not been acknowledged, the project must be evaluated for conformance with the goals. Appendix B contains the full evaluation of the selected alternative with each goal. The project is in potential conflict with four goals - 3: Agricultural Lands; 5: Open Spaces; 6: Air, Water, and Land Resources; and 15: Willamette River Greenway. The project will require that the exception process be undergone for the Agricultural Land Goal (#3).

City of Corvallis Goals and Policies
The Full Bypass and Phase I are consistent with the Corvallis comprehensive plan (see Figure 14) and with the Corvallis Downtown Urban Renewal/Redevelopment Plan. The No-Build Alternative is inconsistent with the redevelopment plan.

Linn County Goals and Policies
The project is in potential conflict with Linn County's Comprehensive Plan in that the project traverses Agricultural Resources Lands which are currently zoned Exclusive Farm Use. An LCDC goal exception has been obtained.

The Corvallis Bypass would also be in potential conflict with the Linn County goals to conserve open spaces and protect natural and scenic resources. Where it is determined that a land use proposal will impact a scenic view or site, the Linn County policies state that provisions shall be made to minimize or eliminate the impact. Seeding and mulching and landscaping will be part of the final project plans, minimizing visual impacts.

Willamette River Greenway
Any change of use, intensification, or development within the Greenway boundary must be reviewed to determine conformance with adopted Greenway regulations. Both Phase I and the Full Bypass traverse land within the Willamette River Greenway in Corvallis and in Linn County. Since almost
all of the property required for right-of-way is within the Greenway boundaries, a conditional development permit will be required from the City of Corvallis and Linn County. Until the Corvallis and Linn County plans have been acknowledged, Greenway Development Permit issuance will be based on criteria in the LCDC Order Adopting Preliminary Willamette River Greenway Plan (Greenway Interim Order).

LAND USE

Affected Environment

Existing Land Use

Existing land use for the project vicinity is shown in Figure 15. The Central Business District (CBD) is the major commercial area in Corvallis, and is of particular importance to the Corvallis Bypass project. Predominantly commercial west of the river and east of 6th Street, the CBD contains a mix of land uses, providing professional, governmental, financial, and cultural services, as well as entertainment and open space.

Planned retail developments and intensification of uses are expected to continue in the CBD. As more commercial land is needed for growth of the CBD, city planners expect most expansion to occur to the west to 6th Street and north of Harrison Boulevard, where conversion of residential to commercial use has occurred in the past.

Single and multiple family residential constitute the principal land uses west of 6th Street in the project vicinity. Since 1960 this area has become increasingly utilized for multiple family residential, since it lies between the CBD and Oregon State University, making it a desirable location for university students. Residential uses in the project area are largely multiple family residential near the northern terminus and single family residential near the southern terminus.

Oregon State University is a prominent feature of Corvallis and constitutes much of the public/semi-public use in the city. Other public/semi-public uses include county and city government buildings, churches, and the post office. The waste water treatment facility and the City's general maintenance facility, north of Corvallis CBD along Water Works Road, is the only public use near the project.

Industrial areas, which can generate considerable traffic, lie adjacent to the railroad tracks along 5th Street and 9th Street, and along Crystal Lake Drive southeast of the Pioneer Boat Basin. In addition, industrial uses have been developing and expanding north of the CBD, east of OR 99W. There is no industrial land use in the project area within the City of Corvallis.

Park and recreational areas in the project area include: the Riverfront area, the Pioneer Boat Basin, and the Pioneer Park. Other parks in the vicinity are: Washington Park, Central Park, and Avery Park. Park and recreational areas near the project will be further discussed in the Parks and Recreation section of this document. The Willamette River and adjacent riparian vegetation are significant elements in Corvallis' open space plans.

There is a large open space area near the confluence of the Willamette and Marys Rivers. This land is jointly owned by the City of Corvallis and the Oregon State Transportation Commission, and part of it is committed to transportation use for the bypass. Besides open areas with designated uses, there is a limited amount of developable, vacant land within the city limits.
of Corvallis. (Vacant land in this context excludes the Riverfront area and the Pioneer Boat Basin). Besides infilling, most future urbanization of Corvallis will have to occur in the urban fringes (that area lying outside of the city limits but within the urban growth boundary). Most of the current residential development in the city is occurring in northwest Corvallis. Excluding the park and recreation areas, the only developable, vacant property in the immediate project area in Corvallis is located at the north end of the proposed facility, to the west of ORE 99W.

Linn County — Floodplain limitations in the eastern portion of the study area have caused Linn County to impose building restrictions. Therefore, development has been minimal and severely restricted in this area.

Lands south of ORE 34 are predominantly in agricultural usage. In addition, about 14-1/2 acres of land, previously utilized as a landfill, are currently being reclaimed for agricultural use. Nelson Park (located immediately south of the Van Buren Bridge on the east bank of the Willamette River), two small light industries, and three residences are also located on the south side of ORE 34 in the project area.

Lands north of ORE 34, are owned by OSU. The existing uses are educational and agricultural research. In the future, most of this area will be converted to a golf course.

Agricultural Soils
Both the federal and state governments have developed policies to protect agricultural lands.

The U.S. Soil Conservation Service has identified prime soils in the project area: Class IIw in Linn County and Classes I, IIw, and IVw in the City of Corvallis. There are no unique soils in the project area.

State policy is intended to preserve and maintain agricultural lands for agricultural uses. In general, Class I-IV soils are considered by LCDC to be agricultural lands in western Oregon. Exceptions to this are those lands within an urban growth boundary which has been officially acknowledged by the Oregon Land Conservation and Development Commission (LCDC), as lands which are already committed to nonfarm use or marginal lands. The preservation of agricultural land is to be implemented by locally adopted comprehensive plans.

All of the land in the project area east of the Willamette River is considered agricultural by LCDC goals. These soils are Class IIw prime agricultural soils. Lands to the west of the river are within the Corvallis city limits and are therefore exempt from goals on agricultural soils.

Zoning
The City of Corvallis adopted a Land Development Code with districts which serves as the city's zoning document. The project would traverse the following districts: Linear Commercial District, Medium and Medium High Density Residential Districts, Central Business Fringe District, the Willamette River Greenway Special District at the north end, the Willamette River Greenway Special District, the Central Business District, and a High Density Residential District at the south end.

Linn County zoning in the project area is primarily Exclusive Farm Use. There is, however, a small amount of land zoned Limited Industrial which the project traverses. This industrial zone is located on the south side of ORE 34.
FIGURE 16
CORVALLIS DOWNTOWN URBAN RENEWAL/REDEVELOPMENT PLAN

1. Downtown Retail/Residential/Commercial Center Structure
2. Retail Center Garages
3. Motor Hotel
4. Town Center Complex
5. Modified Eastern Corridor Bypass

Urban Renewal Area

Proposed Land Use

City of Corvallis - The future land use map for Corvallis adopted in December, 1980 proposes no significant changes from the existing land use pattern within the immediate project area. The Corvallis Downtown Urban Renewal/Redevelopment Plan, would, however, intensify existing land uses. The plan is shown in Figure 16. The fundamental objective of the downtown redevelopment is to maintain and further develop downtown Corvallis as the regional retail center for the Corvallis trade area.

As identified in the Corvallis Downtown Urban Renewal/Redevelopment Plan, there are five urban renewal projects planned in or for downtown Corvallis. The following is a brief description of these projects:

PROJECT 1: DOWNTOWN RETAIL/RESIDENTIAL/COMMERCIAL CENTER

A retail shopping complex is to occupy a four square block area bounded by Third Street, First Street, Van Buren Avenue, and Monroe Avenue. The center, containing a minimum of approximately 300,000 square feet of gross leasable area, will be constructed over a one-level public parking structure. Retail shops will front on the streets where continuation of pedestrian movement is important, and entrances will be located to reinforce the center's connection with the existing retail core along Madison Avenue. Emphasis will also be placed on reorientation of the retail center to the river.

The minimum time frame for construction of the center would tentatively be 1985-1986.

PROJECT 2: RETAIL CENTER GARAGES

The other element of the retail center project is two Retail Center Garages; one bound by Third Street, Van Buren Avenue, Fourth Street, and Monroe Avenue and the other bound by Van Buren Avenue, Harrison Boulevard, First and Third Streets. This element will consist of a ground level of possible retail space with several levels of parking above. A pedestrian connection will be made between the retail center and the retail center garages.

PROJECT 3: MOTOR HOTEL COMPLEX

A motor hotel complex of approximately 200-250 rooms will occupy a three block area bounded by Second Street on the west, Washington Avenue on the north, the Willamette River on the east, and "B" Avenue on the south, and all property bounded by Third Street on the west, Western Boulevard on the north, Second Street on the east, and "B" Avenue on the south.

PROJECT 4: TOWN CENTER COMPLEX

Located at the eastern terminus of Madison Avenue, this complex is intended to create a strong physical focus for the community through the creation of a "Town Square" bordered by an intensification of retail and entertainment uses.
City-owned property along the riverfront will be leased or sold to a developer for a variety of commercial uses. In conjunction with this project, volunteers have been planning and making aesthetic improvements along Madison Avenue in order to develop an effective pedestrian-oriented link between OSU, the commercial core area of downtown Corvallis, and the Willamette riverbank.

PROJECT 5: MODIFIED EASTERN CORRIDOR BYPASS

This project is herein referred to as Phase I of the Full Bypass and is described in the Alternatives section.

**Linn County** - Almost all of the land which the project would utilize is designated as Agricultural Resource on the plan map. Linn County utilizes the Exclusive Farm Use zone to protect lands designated Agricultural Resource.

There is also a comparatively small parcel of industrial land planned in the project area south of ORE 34. Zoned Light Industrial and currently utilized for light industrial, commercial and agricultural uses, a portion of the parcel would be required for project construction. The Industrial Lands designation is applied primarily to existing industries, along with some adjacent land to allow for expansion.

**Environmental Consequences**

Primary impacts, those caused by conversion of lands to transportation use, fall most directly on agricultural and open space - vacant lands. See Table 6.

The most significant impact of Phase I is on agricultural use, 14.6 acres of which will be converted to transportation use. The next largest change is open space and vacant land. Because most of this has been reserved for transportation use for a number of years, conversion to transportation is not a change in intended use but a change in condition.

The Full Bypass impacts, primarily, most of the open space - vacant category. This includes use of the OSU property. The public use category shown in the table is primarily more intensive use of land already used as highway right-of-way.

Secondary impacts are land use changes stimulated by the project but not a direct result of right-of-way acquisition. The most significant secondary impact of the project is the probable development of the downtown retail center. Developers examining the project have made diversion of through traffic a prerequisite to pursuing development plans. The project is therefore a determining factor in the downtown redevelopment plan although not the only determining factor. Even with the bypass, development will depend on the health of the regional economic climate.

On the east side of the Willamette, at the project's intersection with ORE 34, pressure to change the land use designation of this area to allow commercial development would likely occur. All of the land here is in the 100 year floodplain which should act as some deterrent to pressure for land use changes. Prevention of this occurrence rests with the Linn County Planning Commission. Adherence to the comprehensive plan will prevent commercial strip development here.

No other significant secondary land use changes are expected.
TABLE 6

RIGHT-OF-WAY ACREAGE REQUIREMENTS BY EXISTING LAND USE

<table>
<thead>
<tr>
<th></th>
<th>Commercial</th>
<th>SF</th>
<th>MF</th>
<th>Agricultural</th>
<th>Public Use</th>
<th>Open Space and Vacant</th>
<th>Willamette River</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase I</td>
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<td>2.4</td>
<td>--</td>
<td>14.6</td>
<td>.2</td>
<td>8.2</td>
<td>1.0</td>
<td>26.4</td>
</tr>
<tr>
<td>Phase II</td>
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<td>.1</td>
<td>1.0</td>
<td>--</td>
<td>5.8*</td>
<td>14.1</td>
<td>1.0</td>
<td>24.0</td>
</tr>
<tr>
<td>Total</td>
<td>2.0</td>
<td>2.5</td>
<td>1.0</td>
<td>14.6</td>
<td>6.0*</td>
<td>22.3</td>
<td>2.0</td>
<td>50.4</td>
</tr>
</tbody>
</table>

*Includes additional use of highway right-of-way but no tax lots.
PARKS AND RECREATION

Affected Environment

Parks and recreational lands within close proximity of the project area are Nelson Park, Pioneer Park, Pioneer Boat Basin, OSU properties, and the Riverfront Area. See Figure 17 for location of parks.

Pioneer Boat Basin

The Pioneer Boat Basin is a 4.11 acre designated park located to the east of ORE 99W (Third Street), separated from the highway by right-of-way owned by the State Transportation Commission and a section of property owned by the City which is undeveloped. These parcels were deeded to the City by ODOT in June, 1969. The boat basin is within the Willamette River Greenway boundary and is owned by the City of Corvallis. The boat basin, in addition to the adjacent property, was originally purchased as highway right-of-way for the Corvallis Bypass. The unneeded parcel was deeded back to the city.

The primary use of the park is as a bicycle motocross. This track was developed through a youth program coordinated by the Corvallis Parks and Recreation Board and the American Bicycle Association. Though open year round, the track is primarily used for motocross meets in the summer on Sundays and twice during the week. The track was developed through volunteer efforts. Park use is estimated at about 2200 people per year.

The park also provides launching ramps, floats, docks and a fisherman's platform, as well as some picnic tables (all developed by Volunteer efforts). Siltation is causing a problem to navigability at the boat basin, and the boat ramp may eventually be moved south to Willamette Park.

The Corvallis Parks and Recreation Board has recommended that the marina facilities be relocated or expanded depending on the most functional and economical alternative to the maintenance of the boat ramp. In addition, it is recognized that landscaping and parking should be provided and that a bikepath through the area should be constructed in order to link the Marys River Bridge with Willamette Park.

Pioneer Park

Pioneer Park occupies the area south of Philomath Boulevard (US 20 and ORE 34). Its eastern extremity is defined by the highway right-of-way and ramps between Third and Fourth Streets. No part of the area within the ramp system right-of-way is a part of the park.

The park contains two primary parcels divided by the Southern Pacific railroad. The westerly portion, about 15-1/2 acres, is developed with a ball diamond and supporting facilities. The eastern portion, about 6 acres, has some difficulty of access and remains undeveloped. Pioneer Park is most heavily used as a summer recreational facility. The baseball diamond is used for league games conducted by the Corvallis Parks and Recreation Department, as well as public used by permit for tournaments (usually on the weekends). Estimated park use is approximately 16,000 people per year.

Other than irrigation, there are no current plans for further development of Pioneer Park.
Nelson Park

Nelson Park is a small 0.88 acre natural area in the floodplain of the Willamette River. The park is located just south of the Van Buren Avenue bridge on the east bank of the river. It is now owned by the City of Corvallis, and was purchased from Harold and Ena Nelson in January, 1966.

The park is currently an undeveloped, unused natural area. There is no existing access to the park. However, the recent purchase of the large parcel to the south of Nelson Park by the City of Corvallis creates a potential for adequate access to the park.

There are no current plans for development of Nelson Park. It is likely that the park will be retained as open space in order to maintain the natural appearance of the riverfront.

Currently zoned as Exclusive Farm Use, any future development to Nelson Park would need to be approved by Linn County.

Oregon State University Property

The entire tract along the eastern side of the river and north of ORE 34 is owned by Oregon State University. Access to this property is from ORE 34, at a point about 800 feet east of the Willamette River. Oregon State University rowing crew facilities are provided immediately adjacent to the river and occupy about 5 acres of the parcel. To the east of this development is a golf driving range. Use of the facilities on this property is limited to students from OSU classes and athletic teams and faculty. The property is not open to the public except for spectators at athletic events. Much (about 110 acres) of the OSU property has, until recently, been in agricultural use. The agricultural lease was terminated in early 1981 and was not renewed in anticipation of the parcel's development.

An 18-hole golf course is planned to occupy about 165 acres of this 241-acre parcel. The golf course will be located east and northeast of the present crew facilities. The current plan for the golf course is preliminary, but does indicate that a minimum acreage course has been designed to reflect the constrained land availability. Access to the golf course would be via Smith Lane, approximately 2,900 feet east of the existing access. The architect, who designed the course, utilized the current bypass designs, therefore the project will not impact the golf course.

The golf course will be developed by the Oregon State University Foundation, a private, non-profit organization which assists OSU financially. The foundation will lease the property from OSU, and will then build the golf course with private funds. The stated purpose of the golf course, which is expected to be self-supporting, is: education (for OSU courses), research (for turf management and seed production), and recreation (for the public). Linn County officials voted on August 26, 1981, to approve the conditional use permit allowing for development of the golf course. One of the conditions for county approval of the golf course is that a walking path must be established between the golf course and the river.

Environmental Consequences

Pioneer Park

In spite of near proximity to the project, neither Phase I nor the Full-Bypass would impact Pioneer Park.
Pioneer Boat Basin

The Full-Bypass will require a portion of city property that lies between ORE 99W and property owned by Oregon Department of Transportation that was previously purchased as a transportation corridor. The city owned property is not a part of the Pioneer Boat Basin and is not designated park or public recreation area. It is likely that following construction, an exchange of ODOT property for city property will be made as the ODOT corridor through this area will not be needed for the project. This would result in more land being made available to the Pioneer Boat Basin and would benefit the park. Noise levels will not exceed 67 dBA within the present park boundaries. However, as the park is expanded toward the roadway, noise levels would be approximately 68 dBA. This level will not interfere with activities in the park.

Nelson Park

While no direct access is planned to the park in conjunction with the project, construction of an access road to the city's property with Phase I will allow easier access to the park in the future. This will be accomplished without use of park property. Second, the Full Bypass would result in decreased noise levels of 3 dBA to the park area. Phase I would not affect the noise levels of the park. No right-of-way acquisition is required from the park and no other land use changes associated with the project would affect Nelson Park.

Oregon State University Property

The OSU property would be affected only by the Full Bypass. Approximately eleven acres would be required for right-of-way. This would result in the removal of about 3/4 acre of riparian vegetation, about five acres of land currently used as a driving range and about six acres of open space. Much of this area has been planned by OSU for use as a turfed practice area until the bypass is constructed. This turfed area is not considered essential to the golf course, as other practice areas will be provided. The golf course, planned for most of this parcel, would be unaffected because the bypass was incorporated into the design plans for the golf course. As previously indicated, access to the golf course would be via Smith Lane, approximately 2900 feet east of existing property access.

The OSU crew facilities would be unaffected by the Full Bypass except that access to the facilities would be relocated about 400 feet west of the existing access road. However, the OSU property would be severed and the crew facilities would be separated from the golf course by the transportation corridor.

Federal design noise levels on the OSU property would be exceeded by the Full Bypass. Construction of the Full Bypass would result in a significant increase of 25 dBA within 50 feet of the bypass centerline. This is an increase from 50 to 75 dBA, and would exceed federal design noise levels. About 180 feet from the bypass centerline, noise levels would increase 17 dBA (an increase from 50-67 dBA), but would not exceed federal design noise levels of 67 dBA. (These figures were calculated from noise measurements taken midway between ORE 34 and the north river crossing.)
CORVALLIS RIVERFRONT AREA

Affected Environment

The area referred to as the Corvallis riverfront area encompasses a narrow corridor extending from the Marys River to a point approximately 950 feet north of Tyler Avenue, and generally includes First Street. Ownership of the parcels that make up the riverfront include the City of Corvallis, and the Oregon State Highway Division.

Much of the land was originally purchased for highway right-of-way in 1955 to construct a bypass on the west bank of the Willamette, along First Street, as was explained in Chapter 1 under Project History. Financing never became available to accomplish the original bypass design. In the meantime, the concept of a riverfront park developed. In April, 1969, the City of Corvallis proposed use of the Willamette riverfront land along First Street as a park. In June, 1969, the Transportation Commission deeded to the City a portion of the right-of-way south of Marys River jointly acquired in 1955. The land was used to establish the Pioneer Boat Basin.

City planning for development of the downtown area during the 1970's and to date has been focused on establishing an eastbank bypass and a riverfront park area. Because the bypass is of the highest priority and placement of the alignment has certain constraints, the City has avoided officially designating park boundaries for the riverfront park until highway right-of-way needs are clearly established.

At the same time, the City has taken steps for establishing a riverfront park once the bypass is constructed. On June 2, 1981, the City Council voted to actively pursue the development of a park on the west bank of the Willamette River.

A plan for the riverfront area (entitled Master Plan - Corvallis Riverfront Park) was adopted by the Corvallis Parks and Recreation Advisory Board in November, 1981. See Figure 18. The plan was then accepted as a conceptual plan by the City Council in December, 1981. The Corvallis bypass is incorporated into and was considered in all phases of development of this plan. On the south end, the plan shows proposed development on property jointly owned by the City and Transportation Commission. Following construction, the remainder of this parcel could be deeded back to the exclusive ownership of the City. The plan also shows a low level of development on the east bank property recently acquired by the City to be partially used as right-of-way for the bypass. A bicycle/pedestrian path could be established which would tie in with the path required on the OSU golf course.

As proposed, the park would serve both recreational needs and as an attraction for food and entertainment establishments clustered near the proposed retail center and at the intersection of First Street and Madison. Currently, much of the riverfront is undeveloped. Trees and shrubs line the riverbank, but occasionally allow views of the river.

The linear west bank of the riverfront area is used for pedestrian and bicycle activity. There is a bike path along the entire riverfront south of Tyler Avenue to Marys River. The bike path in the project area is part of an 8 mile bikeway extending from Tyler Avenue to Philomath. The bike path was constructed utilizing State funds and no federal or local matching funds. The bike path was completed in 1976, and the State performs maintenance such as major repairs. The City of Corvallis performs minor maintenance on the bike path, such as patching, minor repairs, and sweeping.
There are also parking areas within the riverfront area. A large parking lot located east of First Street from Madison Avenue to Van Buren Avenue contains public permit parking and leased parking to private businesses. A smaller parking area has been developed east of First Street for a park-and-ride lot and the other half is contracted for use by a car dealer. North of Harrison Boulevard the parking area is utilized by Linn-Benton transit for a park-and-ride site. There are no designated parking spots for riverfront area parking.

Other improvements to the riverfront have been largely volunteer efforts. Benches and some landscaping have been placed at intermittent locations along the bike path. However, most of the improvements are concentrated at the end of Madison Avenue, where there are benches, flower boxes, a water fountain, some landscaping, and a deck which overlooks the river. The City of Corvallis has not formally designated the riverfront area as a park.

There is a boat launching facility immediately to the north of Tyler Avenue. This property was previously owned by the Aquathusiasts, a private, non-profit organization devoted to boating safety and water activities. In anticipation of construction of a bypass along First Street, ownership of this property passed to the Oregon State Highway Commission in 1952. The City of Corvallis retained ownership of the platted unpaved extension of First Street.

The State Transportation Commission has allowed this boat launching area to remain open to the public and to provide public access to the river. Most of the land is open space and is used for river-oriented purposes. The area is under a limited use permit to Corvallis which is landscaping the area and maintaining access to the launch area. The permit can be cancelled at any time. There are no available statistics for the number of people using the facilities in this area. There are no current plans for further development of this site.

Environmental Consequences

The Project passes through the open space area at the confluence of the Willamette and Marys Rivers. With the Full Bypass alternative, about 5-1/4 acres of open space would be converted to highway right-of-way; Phase I would require the same amount for right-of-way. Phase I would, however, initially disrupt less open space and would therefore allow utilization of more acreage for open space use. With both alternatives, an additional 1/2 acre would be required from the confluence area for a construction easement to reroute the bike path. See Chapter VI for 4(f) Evaluation.

In addition to the change of use, the confluence property would be visually cut off from most of the mixed commercial and residential area on the south end of the CBD because the roadway would be on fill. Isolation of the area would limit access to that at the northeast and southwest corners of the parcel but provide an area of retreat.

A total of 800-feet of bikepath will be affected by the project. A 500-foot length will be replaced by a 400-foot length and a 300-foot length will be moved 20 to 30 feet. There will be a loss in the overall length of the bikeway of 100 feet, but this will not impair bicycling or pedestrian use in any way. Current plans reroute the bike path under the west end of the proposed bridge. While less land is required for fill under the Phase I alternative, the bike path would be constructed in the same location as under the Full Bypass. Therefore, once relocated, the bike path would not have to be disturbed again when the Full Bypass is constructed. Bicycle access to city streets would remain largely unaltered.
Noise levels are anticipated to increase about 10-12 dBA under both Phase I and the Full Bypass in the confluence area adjacent to the bypass. The difference between the two would be that Phase I would exceed federal design noise levels within 170 feet of the roadway, while the Full Bypass would exceed these levels within 210 feet. The main riverfront area, between Western Boulevard and Tyler will not be impacted by the project. In fact, the Full Bypass would result in a decrease (over no-build conditions) of Van Buren and Harrison Bridge traffic and, in comparison to no-build conditions, would result in lower noise levels (-7 dBA) to the riverfront area in the vicinity of these bridges. Phase I would not significantly alter noise levels from no-build conditions.

At the north end of the riverfront, no land from the boat ramp will be required by the Full Bypass, although noise levels would increase 13 dBA over existing levels in this area. This increase will not interfere with boat launching.

AESTHETIC CONSIDERATIONS

Affected Environment

The most dominant visual element in the study area is the Willamette River. The river exhibits a strong, natural scenic quality. Both riverbanks are covered with dense foliage. As the river passes through the city, breaks in the riparian vegetation allow outstanding views of this natural resource. Current downtown planning emphasizes the importance of Corvallis' relationship to the Willamette River, and it is recognized that one of the City's greatest potentials is a publicly-owned and easily accessible waterfront.

To the south of the CBD, the Willamette River is joined by the Marys River, another scenic river which passes through two of the City's more attractive and highly utilized parks—Avery Park and Pioneer Park.

The CBD itself is an attractive visual element in the City. The buildings are of consistent scale and compatible architecture. An extensive, ongoing tree-planting program has helped preserve the character of downtown. Land in the project area to the east of the Willamette River is basically open land and riparian vegetation, with the exception of several residences, the industrial buildings along Roche Street, and the Oregon State University crew facilities. A rural atmosphere typifies the visual qualities of the area. The east bank with its vegetative cover is of great scenic value to the entire eastern boundary of the City of Corvallis.

Environmental Consequences

An adverse aesthetic impact associated with the build alternatives is the conversion of open area to highway use. Both Phase I and the Full Bypass Alternatives affect open areas south of ORE 34. This includes agricultural land, riparian vegetation and open space in the confluence area.

In order to help mitigate the loss of vegetation, and aesthetic impact, care will be taken to limit clearing to the narrowest limits feasible, preserve vegetation during construction and replant cleared areas.
River users, as well as people viewing the river at certain locations, would be affected by the project in that they would be exposed to one (Phase I) or two (Full Bypass) more bridges over the Willamette River. Also, the Full Bypass would have an additional bridge over the Marys River. The bridge structure will be visible, however, much of the roadway would be screened from view by the riparian vegetation on the east bank of the river. Travellers on the bypass would be provided with good views of the river and the city. The removal of truck and through traffic from downtown will result in a more cohesive and aesthetically pleasing urban environment.

SOCIOECONOMIC BACKGROUND

Affected Environment

Population and Demographic Characteristics
Recent population growth and population projections for Benton County and the City of Corvallis are shown in Table 7.

Table 7

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Benton County</td>
<td>39,165</td>
<td>53,776</td>
<td>68,211</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Corvallis</td>
<td>20,669</td>
<td>35,056</td>
<td>40,960</td>
<td>59,135</td>
<td>74,565</td>
</tr>
</tbody>
</table>

Corvallis accounts for two thirds of the county's growth. Net in-migration is the principal factor in the area's growth. Approximately 85% of future growth is anticipated to result from this phenomenon.

Racial composition is as follows:

Caucasian (Includes 2% Spanish-American) 93.1%
Black .9%
American Indian, Eskimo & Aleut .5%
Asian and Pacific Islanders 3.6%
Other 1.9%

Income factors are shown in Table 8.
<table>
<thead>
<tr>
<th>Income Characteristics</th>
<th>Corvallis</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median Family Income</td>
<td>$9,542</td>
<td>$9,489</td>
</tr>
<tr>
<td>Mean Family Income</td>
<td>$11,362</td>
<td>$10,692</td>
</tr>
<tr>
<td>Per Capita Personal Income</td>
<td>$3,011</td>
<td>$3,163</td>
</tr>
<tr>
<td>All Unrelated Individuals</td>
<td>$1,465</td>
<td>$2,400</td>
</tr>
<tr>
<td>Percent Families Below Poverty Level</td>
<td>7.5%</td>
<td>8.6%</td>
</tr>
<tr>
<td>Percent Family Income</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than $5,000</td>
<td>20.5%</td>
<td>19.2%</td>
</tr>
<tr>
<td>$5,000-$9,999</td>
<td>32.1%</td>
<td>34.7%</td>
</tr>
<tr>
<td>$10,000-$14,999</td>
<td>24.4%</td>
<td>28.1%</td>
</tr>
<tr>
<td>$15,000</td>
<td>23.0%</td>
<td>18.0%</td>
</tr>
</tbody>
</table>

*1980 Income figures will not be available from the U.S. Bureau of the Census until mid-1983.

**Housing**

In 1979 approximately 45 percent of the dwelling units in Corvallis were owner-occupied and 55 percent were occupied by renters which reflects a decline in owner occupancy over the years. About 95 percent of the student population are renters and 40 percent of the non-student population are renters.

In January, 1979, the median sales price for a new home was $51,000. Rising interest rates (18 percent in April, 1981) have reduced the number of people able to buy a new house to 5 percent of the population. As the price of the traditional single family home has surpassed the financial means of a majority of the city's residents, alternatives to the single family residence have become increasingly attractive and viable. By 1979, single family dwellings comprised half of the total housing supply, multi-family dwelling totaled 46 percent, and mobile homes made up 4 percent.

Using affordability guidelines established by the federal government, at least 20 to 30 percent of the households in Corvallis are unable to rent adequate housing given the price structure of the local housing market. Despite the high rent, vacancy rates are unusually low: 1.5 percent for single family units, 3.2 percent for multiple family units, and 1.6 percent for mobile homes (1980).

**Environmental Consequences**

No impacts are expected to the population and demographic characteristics of Corvallis as a direct result of this project. To the extent that the project contributes to the economic viability of Corvallis, the population could be impacted toward growth and higher income per capita.
During relocation of households identified in the right-of-way section, the housing supply could be temporarily limited. These impacts are discussed fully as it relates to the relocatees under that section. There also could be secondary impacts to the rest of the population. If relocation takes place during the summer as recommended, the housing supply, particularly for returning students could be noticeably reduced.

ECONOMICS

Affected Environment

Employment

Benton County is characterized by a somewhat diversified economic base with its stability dependent on a few major employers in a few economic sectors, Oregon State University (8,190 employees); other local, state, and federal government employers; electronics firms, particularly Hewlett-Packard (2,550 employees); forest products, and consulting. The total work force in 1979 was 29,330. See Table 9 for county work force trends.

Over the last ten years there has been a broadening of the economic base largely due to Hewlett-Packard's move to Corvallis in 1976. Diversification is important for the future growth of Corvallis. Very little employment growth can be expected at OSU in the future because the State Board of Higher Education has effectively placed a ceiling on enrollment.

In July, 1981, Hewlett-Packard announced plans to increase the size of its manufacturing plant in Corvallis by adding another structure. This facility would allow Hewlett-Packard to employ as many as 5,000 people in total. The building was scheduled to be operational by 1984, however due to the present economic climate, plans have been suspended.

Commercial Activity

The CBD in Corvallis is the major commercial area; it provides professional, governmental, financial, and cultural resources as well as entertainment and open spaces. A secondary commercial area, characterized by strip development lies along Ninth Street north of Harrison Boulevard. The City of Corvallis is currently attempting to expand the downtown area to include a regional retail center in the four block area bounded by Van Buren, Monroe, SW First and SW Third Streets. Corvallis is geographically located in the center of a regional market area that extends from the coast to the Cascades and 20 miles to the north and south of the City.

The City of Corvallis has recognized that a market exists for a 300,000 square foot regional shopping center, and has scheduled one for development within the next few years. In 1977 retail sales total $79 per square foot, which approximates sales expected for a major regional shopping center. This amount would be increased if the percentage of households shopping outside Corvallis were reduced. According to a household survey, about 60 percent of the households in Corvallis regularly shop outside the city limits. The results of this survey indicate a potential for capturing more trade from the local market area. Studies also indicate that 80 percent of the current business accomplished downtown comes from local households.

The supply of land available for industrial use within the Corvallis city limits is quite limited. Only two parcels larger than 10 acres are vacant and serviced. The balance of suitable land lies outside the city limits, and is therefore under the jurisdiction of Benton County.
<table>
<thead>
<tr>
<th></th>
<th>1970 (% of total)</th>
<th>1979 (%)</th>
<th>1970 to 1979 Change</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Civilian Labor Force</td>
<td>20,980</td>
<td>29,330</td>
<td>+8,350</td>
<td>40%</td>
</tr>
<tr>
<td>Unemployment</td>
<td>1,310</td>
<td>1,790</td>
<td>+480</td>
<td>37%</td>
</tr>
<tr>
<td>Percent of Labor Force</td>
<td>6.2</td>
<td>6.1</td>
<td>-.1</td>
<td>--</td>
</tr>
<tr>
<td>Employment</td>
<td>19,670</td>
<td>27,540</td>
<td>+7,870</td>
<td>40%</td>
</tr>
<tr>
<td>Total Wages and Salary</td>
<td>17,940</td>
<td>26,240</td>
<td>+8,300</td>
<td>46%</td>
</tr>
<tr>
<td>Manufacturing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Durable Goods</td>
<td>1,840 (10.3)</td>
<td>3,660 (13.9)</td>
<td>+1,820</td>
<td>99%</td>
</tr>
<tr>
<td>Lumber and Wood</td>
<td>1,470 (8.3)</td>
<td>2,050 (7.8)</td>
<td>+580</td>
<td>39%</td>
</tr>
<tr>
<td>Other Durables</td>
<td>370 (2.0)</td>
<td>1,610 (6.2)</td>
<td>+1,240</td>
<td>335%</td>
</tr>
<tr>
<td>Nondurable Goods</td>
<td>540 (3.0)</td>
<td>510 (1.9)</td>
<td>-30</td>
<td>-6%</td>
</tr>
<tr>
<td>Food Products</td>
<td>300 (1.7)</td>
<td>220 (.8)</td>
<td>-80</td>
<td>-27%</td>
</tr>
<tr>
<td>Other Nondurables</td>
<td>240 (1.3)</td>
<td>290 (1.1)</td>
<td>+50</td>
<td>21%</td>
</tr>
<tr>
<td>Nonmanufacturing</td>
<td>15,560 (86.7)</td>
<td>22,070 (84.1)</td>
<td>+6,510</td>
<td>42%</td>
</tr>
<tr>
<td>Contract Construction</td>
<td>540 (3.0)</td>
<td>630 (2.4)</td>
<td>+90</td>
<td>17%</td>
</tr>
<tr>
<td>Transportation/Utilities</td>
<td>660 (3.6)</td>
<td>810 (3.1)</td>
<td>+150</td>
<td>23%</td>
</tr>
<tr>
<td>Trade</td>
<td>2,740 (15.3)</td>
<td>4,580 (17.5)</td>
<td>+1,840</td>
<td>67%</td>
</tr>
<tr>
<td>Finance, Insurance, and</td>
<td>500 (2.8)</td>
<td>1,060 (4.0)</td>
<td>+560</td>
<td>112%</td>
</tr>
<tr>
<td>Real Estate</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service and</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>2,280 (12.7)</td>
<td>4,120 (15.7)</td>
<td>+1,840</td>
<td>81%</td>
</tr>
<tr>
<td>Government</td>
<td>8,840 (49.3)</td>
<td>10,870 (41.4)</td>
<td>+2,030</td>
<td>23%</td>
</tr>
<tr>
<td>Federal</td>
<td>570 (3.2)</td>
<td>560 (2.1)</td>
<td>-10</td>
<td>-2%</td>
</tr>
<tr>
<td>State and Local Public</td>
<td>680 (3.8)</td>
<td>1,480 (5.6)</td>
<td>+800</td>
<td>118%</td>
</tr>
<tr>
<td>Administration</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>State and Local Education</td>
<td>7,590 (42.3)</td>
<td>8,830 (33.7)</td>
<td>+1,240</td>
<td>16%</td>
</tr>
</tbody>
</table>

Source: State Employment Division Statistics for Benton County

III-34
Environmental Consequences

Accessibility to the downtown shopping area is hindered by high traffic volumes on the key commercial blocks. The unusually high accident rate is an indicator of conflicts and circulation problems. Commercial businesses are expressing concern about negative impacts on their sales due to excess traffic. Preliminary discussions with potential developers of a regional center have led to the stipulation that they are only willing to go forward with development if they have assurances that through traffic will be rerouted out of the CBD area. This stipulation underscores the importance of an appropriate traffic level to a healthy business climate.

Timing is of critical importance. Regional shopping center locations are also being investigated in the Albany area and within 15 miles of the Corvallis CBD. It is anticipated that 40 percent of the existing businesses downtown would either go out of business or move to the site of a regional center within the first three years of operation if a regional center were developed at any other location within the regional market area.

The No-Build Alternative would lead to a gradual deterioration of the downtown business area. If, in addition, a regional shopping center were constructed elsewhere, the downtown would decline more rapidly.

Phase I provides sufficient diversion of traffic until 1995 to support a revitalization effort in the CBD. The general health of the local and state economy will ultimately determine the outcome of the effort to establish Corvallis as the center of the regional shopping area, but timing of the commitment of funds to the project could be a significant factor.

The Full Bypass would need to be implemented by 1995 to maintain the benefits of reduced congestion in the downtown area. Reduction of truck traffic, the most objectionable traffic factor, would be sustained even if construction of the Full Bypass were delayed.

COMMUNITY SERVICE

Affected Environment

Sewage and Water
Properties within the city limits are served by the City of Corvallis. Residents of the Linn County portion of the project obtain water through individual wells and rely on septic tanks for sewage disposal.

Health
Residents in the project area utilize Good Samaritan Hospital which is located in the north Corvallis area.

Ambulance service for the city portion of the project area is provided by the Corvallis Fire Department. Ambulance service for the county portion is provided by the Corvallis Rural Fire Protection District.

Fire
The Corvallis Fire Department provides fire protection and ambulance service to the City of Corvallis and also to adjacent rural areas by agreement through the Corvallis Rural Fire Protection District. The Linn County project vicinity is served by this rural fire district. The engines normally utilized for this county area are located at the fire station at 5th Street and Van Buren Avenue and must cross the existing bridges (Van Buren and Harrison) to provide services.

III-35
City of Corvallis Capital Improvement Program

The program identified a proposal to move the location of the main fire station south of the commercial core area of Corvallis, but north of Marys River. A location has not yet been established. Such a move would not occur prior to 1984.

Churches

There are 56 churches (with 23 denominations) in Corvallis and the surrounding area. The project area contains no churches or church property.

Police

The project area under City jurisdiction is provided police protection by the City Police. The Linn County Sheriff's Department provides police protection to the unincorporated area east of the river. In addition, the State Police, operating out of a headquarters located on Philomath Boulevard (U.S. 20/ORE 34) southwest of central Corvallis, provide service to the area.

Schools

The City of Corvallis School District 509J provides educational services to the Corvallis area. Intermediate and senior high pupils from the area east of the river are bused into Corvallis for school, mostly to Highland View Intermediate School and Corvallis Senior High School. In 1981, approximately 130 students in four buses crossed the river two times daily. This number included about nine children attending special classes at various schools.

Environmental Consequences

Health/Fire/Police

With the construction of Phase I, traffic would be less likely to hinder emergency vehicles traveling south, but would have to maneuver in more congested traffic north of the CBD. This congestion will be alleviated when the Full Bypass is constructed. Short-term construction impacts to emergency services would occur. However, advance notices of foreseeable construction delays would allow for alternate routes. An effective notification system between these emergency services and the Highway Division will maintain transport routes for emergency services. These services have the highest priority.

The Full Bypass would shorten response times for emergency services in and through the central area of Corvallis. Besides fire protection, emergency medical services and police protection, the Full Bypass would also improve the response capabilities of forest fire personnel due to the reduction in involvement between local and through traffic.

Schools

The only impacts to the school district concern possible delays to school buses caused by traffic congestion under the No-Build Alternative. Phase I would partially alleviate congestion south of Van Buren Avenue. The Full Bypass would most effectively reduce traffic congestion in the downtown area. Construction of the Full Bypass, and to a lesser extent, Phase I, would therefore probably be beneficial and time-saving to the school district. Construction delays will be minimized, if not alleviated, by arranging advance notice to the school district in case of foreseeable delays.
Churches

Churches or church property would not be affected by the project.

UTILITIES

Affected Environment

The following utilities have facilities within the limits of the proposed project: Pacific Power and Light, Pacific Northwest Bell, Northwest Natural Gas, Corvallis TV Cable Company, and the City of Corvallis.

Environmental Consequences

Disruptions to these utilities, if any, will be held to a minimum by coordination between the affected utility companies and the contractor. No long term utility impacts would be created by this project.

CULTURAL RESOURCES

Affected Environment

Archaeological Resources

An archaeological reconnaissance survey of the land affected by the project was conducted on October 8, 1981 by the Survey Archeologist for Highways, Oregon State Museum of Anthropology, University of Oregon, Eugene.

The project alignment is routed through an area which has not been extensively disturbed by urban development and previous construction. A small archaeological site was located in October, 1981 at the northern end of the project along Dixon Creek. Subsurface testing done in February 1982 by the Oregon State Museum of Anthropology at the University of Oregon found that the site was not significant enough to be eligible for the National Register.

Historic Resources

The only property listed on the National Register of Historic Places in the vicinity of the project is the Jesse H. Caton House (Dixon House) at 602 N.W. 4th. The house was built in 1860 and was occupied by William F. Dixon, who is considered to be the second white settler in Benton County. This property is approximately two blocks southwest of the project.

Other properties of historic significance are scattered throughout the older portions of the city, but, like the Caton House, would not be affected by the project.

Although some of the buildings in the Oregon State University's crew area may have some historic value, they will not be affected by the project because the alignment lies some distance away.

Among the properties to be displaced by the project are three buildings of vintage character. These structures are not unique to the area nor do they meet the criteria for listing on the National Register.

--- Residence at 741 S.W. 3rd Street - A two-story bungalow built in 1914 and converted to five, low-cost apartments.

--- Residence at 737 S.W. 3rd Street - A one-and-a-half story bungalow with shed dormer built in 1916.
Environmental Consequences

Archaeological Resources

No significant resources were found during the archaeological survey or site exploration. In the event that archaeological or historic resources not previously identified are discovered during the construction of the project, appropriate mitigation measures will be followed to assure their identification, evaluation, and disposition. Section 105.13 of the Standard Specifications for Highway Construction (Oregon State Highway Division, 1974) requires the contractor to cease work immediately at the site of a discovery and to avoid further damages to the resource on the site. Highway personnel will be notified who in turn will contact the Federal Highway Administration (FHWA), the State Historic Preservation Office (SHPO), and the State Museum of Anthropology of the discovery.

Historic Resources

The Corvallis Planning Department was contacted for information regarding historic properties in the project area. Local citizens knowledgeable about historic properties in the Corvallis area were interviewed. A field survey, including photographic coverage, and document searches were also completed.

The State Historic Preservation Office was contacted to determine whether any historically significant properties exist in the project area. Appropriate coordination documentation from the SHPO is attached (see Appendix C), in compliance with the National Historic Preservation Act and Executive Order 11593.

None of the properties in the project study area which are listed on, nominated to, or considered potentially eligible for the National Register, nor cultural properties protected under Section 4(f), will be affected by this project. Therefore, a finding of no effect is made and concurred with by the State Historic Preservation Office (SHPO).

GEOLOGY

Affected Environment

Topography & Geology

The project area is relatively flat except for some minor swales and terraces on the east side of the Willamette River. These features parallel the flow direction of flood waters and offer little or no hindrance to their passage. The west bank of the river has been intermittently filled-in to provide for the commercial development of downtown Corvallis, whereas the east bank remains much in its natural form with gentle slopes to the river.

Unconsolidated rock materials deposited by the meandering Willamette River during the Holocene (recent) geologic epoch underlie the project area. The materials are predominantly basaltic and andesitic in composition and range in size from silt to cobbles, the latter measuring from 2.5 to 10 inches in diameter. The reworked alluvial terraces are composed principally of sand and gravel, whereas the lower slopes adjacent to the river are mainly silt.

III-38
The foundation materials of silt, sand, and gravel appear to be stable throughout the project and no consolidation settlement problems are anticipated. Very little clay is present and that is limited to a narrow swale in the southeast part of the project.

A potential danger that could cause foundation settlement would be an earthquake that would compact the unconsolidated materials considerably. The low seismic activity record of the area, however, makes this possibility highly unlikely.

**Mineral Resources**

Sand and gravel are abundant in the vicinity of the project and aggregate rock is located a short distance west of Corvallis. Commercial rock sources within 8 miles of the project are expected to supply all rock materials.

Other than rock materials suitable for construction purposes, there are no mineral resources in the project area now having commercial value.

**Soils**

The soils underlying the project area are loams, silt loams, silty clay loams, and fine sandy loams. They are characterized by slow runoff, slight erosion, a thickness greater than 60 inches, moderate permeability, and good drainage.

All of the proposed right-of-way in Linn County overlies prime farmland*: the Cloquato silt loam, the McBee silty clay loam, and the Newberg fine sandy loam, for a total of approximately 18 acres for the Phase I Alternative and 29 acres for the Full Bypass Alternative. These soils are classified by the S.C.S. as Capability Class II soils. Capability classes range from one through eight, with the low-numbered classes having the greater capability to produce crops.

**Ground Water**

The water table in the project area is in hydraulic connection with the Willamette River and therefore reflects subdued duplication of its seasonal fluctuations. The fluctuations are considerable, and in some years flooding inundates most of the project area in Linn County, flowing across ORR 34 just east of the proposed alignment. Aside from flooding, the area is subject to a seasonally high ground water table.

*Prime farmland is defined by the U.S. Soil Conservation Service (S.C.S.) as available land having the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops.
Impacts & Mitigation

Erosion and Siltation Control

The principal potentially adverse impacts to the project are those resulting from erosion of the roadway embankments - clearing, grubbing, and grading activities - and excavations for the bridge piers, as well as the resultant siltation of the two rivers. The rock source sites may also be subject to erosion and siltation.

Table 10 compares the acreages to be exposed to potential erosion along the two Build Alternatives.

Table 10

Comparison of Potential Erosion*

<table>
<thead>
<tr>
<th>Areas Subject to Erosion</th>
<th>Phase I</th>
<th>Full Bypass</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clearing and Grubbing</td>
<td>17 acres</td>
<td>40 acres</td>
</tr>
<tr>
<td>Embankment slopes</td>
<td>8 acres</td>
<td>29.2 acres</td>
</tr>
</tbody>
</table>

*Figures are approximate and subject to change.

Erosion and siltation control requirements will be implemented as soon as is reasonably practical during construction.

The requirements will include:

1. Provisions for proper drainage at the floodway swale.

2. Constructing the embankment slopes to 4:1 (4 feet horizontal to 1 foot vertical) with 95 percent compaction of the embankment slopes wherever possible.

3. Protecting the embankment ends with riprap to prevent flood damage.

4. Spreading straw or other material on bare areas as a temporary erosion deterrent.

5. Seeding, fertilizing, and mulching all bare areas in sufficient time during the growing season to assure germination and growth.

6. Transporting to shore for proper disposition, material excavated for the bridge piers taking care to avoid causing siltation.
To control or alleviate erosion and siltation, specifications will stipulate the following:

"Under no conditions shall the amount of surface area of erodible material exposed at one time by excavation, borrow, or fill within the right-of-way exceed 750,000 square feet (17.22 acres) without prior approval by the engineer".

and

"Under no conditions shall the surface area of erodible earth material exposed at one time by clearing and grubbing exceed 750,000 square feet without approval by the engineer".

Within the limits of the above specifications, the project engineer may increase or decrease the amount of surface area of erodible earth material to be exposed at any one time, as determined by his appraisal of project conditions.

Material Quantities and Rock-Source Sites

Table 11 lists the excavation quantities and the quantities of embankment and aggregate rock to be supplied by local sources. As yet, undetermined quantities of riprap will be placed at the ends of the embankments for protection against floods. Rock blankets will not be required to protect to the embankment slopes for flood protection because of the gravel and cobble content of the embankment material.

Due to the stable condition of the foundation materials, there are no geologic problems associated with the size or weight of the proposed embankments.

Efforts will be made, whether by contouring, leveling, spreading soil, or by other means, to return the sites to some use. The reclamation of these sites is under the jurisdiction of the Mined Land Reclamation Division of the State Department of Geology and Mineral Industries.

Table 11

Comparison of Rock Quantities*

<table>
<thead>
<tr>
<th>Rock Materials</th>
<th>Phase I</th>
<th>Full Bypass</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excavation</td>
<td>4,270 c.y.</td>
<td>6,270 c.y.</td>
</tr>
<tr>
<td>Embankment</td>
<td>140,000 c.y.**</td>
<td>660,000 c.y.**</td>
</tr>
<tr>
<td>Aggregate</td>
<td>32,200 tons***</td>
<td>96,800 tons***</td>
</tr>
</tbody>
</table>

*Figures are rounded and are subject to change.
**Figures are factored for expansion.
***Figures include rock in asphaltic concrete surfacing.
BIOLOGY

Methodology

Wildlife impacts were analyzed using the "Habitat Evaluation Procedures" developed by the U.S. Fish and Wildlife Service (H.E.P./U.S.F.W.S., 102 ESM, 1980). HEP is a process in which the vegetative cover in a defined study area is classified ("typed") and inventoried. Cover types are then related to the habitat needs of selected "evaluation species" (species selected to represent larger groups of species with similar habitat needs). With this information the quality and number of standard "habitat units" (HU's) can be estimated.1

Nine evaluation species were selected for this analysis. The number of habitat units for each species and the total number of habitat units were calculated for existing conditions in a 1690 acre study area, selected to represent both urban and rural habitats.

Similar estimates were then made for the predicted conditions in the study area for Phase I, the Full Bypass and the No-Build Alternative for: the existing year; Target Year 1, the first year of construction effects; Target Year 30, the last year of the economic life of the project plus two intervening years. By this process estimates were made of the long and short term biological costs of each project stage and a basis was established by which appropriate mitigation plans could be developed.

Affected Environment

There are a total of twelve cover-types in the study area. Eight of these are classified as uplands and occupy 87 percent (1,470 acres) of the land surface in the study area. The remaining four cover-types are classed as wetland and occupy 13 percent (220 acres) of the land surface in the study area. The majority of the wetlands in the Willamette Valley are "riverine" and are concentrated within the natural floodplain, consequently, the study area has a disproportionately high ratio of wetlands to uplands.

With the exception of these wetlands there are only very minor areas in which the existing cover-type is the result of natural processes. The dominant cover-type is classed as "Urban-Built Up" land which occupies 33% of the study area; all of this type is located on the western side of the river in Benton County. Agricultural cover-types, some of which include cultivated wetland, are dominant in Linn County on the east side of the river.

Some cover types support more species than others and different cover types may support the same species for different activities. A group of species which share a cover type for a particular activity is called a "guild".

Table 12 lists the number of common species which reproduce in each guild located in the study area (See Appendix D).

---

1 The habitat unit is a standardized measure of habitat quantity and quality. If the habitat is of maximum quality, then 1 acre would constitute one habitat unit. If the habitat is of lesser quality then more acreage is required to make up an HU. For example, if the habitat were of half the maximum quality, then 2 acres would be required to make up an HU.
Table 12
NUMBER OF COMMON RESIDENT SPECIES IN EACH REPRODUCTIVE GUILD

<table>
<thead>
<tr>
<th>No.</th>
<th>Guild by Cover Type</th>
<th>Number of Species</th>
<th>Percent of Total Guild Membership</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Cropland</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>2.</td>
<td>Pasture and Hayland</td>
<td>12</td>
<td>7</td>
</tr>
<tr>
<td>3.&amp;4.</td>
<td>Urban and Built-Up Land</td>
<td>13</td>
<td>8</td>
</tr>
<tr>
<td>5.</td>
<td>Upland Deciduous Forest</td>
<td>20</td>
<td>12</td>
</tr>
<tr>
<td>6.</td>
<td>Upland Shrub</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td>7.</td>
<td>Upland Grassland-Forbland</td>
<td>11</td>
<td>7</td>
</tr>
<tr>
<td>8.</td>
<td>Barren Surface</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>9.</td>
<td>Wetland Deciduous Forest</td>
<td>50</td>
<td>31</td>
</tr>
<tr>
<td>10.</td>
<td>Wetland Shrub</td>
<td>18</td>
<td>11</td>
</tr>
<tr>
<td>11.</td>
<td>Wetland Herbaceous</td>
<td>18</td>
<td>11</td>
</tr>
<tr>
<td>12.</td>
<td>Wetland Open Shore and Bottom</td>
<td>6</td>
<td>4</td>
</tr>
</tbody>
</table>

As is evident from the table, the wetland guilds, and primarily the Wetlands Deciduous Forest Guild, are an extremely valuable habitat element in the study area. See Appendix D for a list of species common to the study area listed by reproductive guild.

As is shown in Table 13, the study area will contain an average of 1857 habitat units for the nine evaluated species each year during the next 34 years of project evaluation if the No-Build Alternative were selected. Although only 13% of the land surface is classed as wetlands, these lands will contribute 37% of the Average Annual Habitat Units.
Table 13
Number of Habitat Units for Each Evaluation Species No-Build Alternative

<table>
<thead>
<tr>
<th>EVALUATION SPECIES</th>
<th>HABITAT UNITS BY TARGET YEAR*</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Beaver</td>
<td>69</td>
<td>68</td>
<td>68</td>
<td>65</td>
<td>66</td>
<td>67</td>
</tr>
<tr>
<td>Black-tailed Deer</td>
<td>632</td>
<td>631</td>
<td>632</td>
<td>632</td>
<td>632</td>
<td>632</td>
</tr>
<tr>
<td>Brush Rabbit</td>
<td>177</td>
<td>176</td>
<td>177</td>
<td>176</td>
<td>178</td>
<td>176</td>
</tr>
<tr>
<td>Mink</td>
<td>104</td>
<td>104</td>
<td>104</td>
<td>100</td>
<td>100</td>
<td>101</td>
</tr>
<tr>
<td>Cooper's Hawk</td>
<td>112</td>
<td>111</td>
<td>111</td>
<td>110</td>
<td>110</td>
<td>111</td>
</tr>
<tr>
<td>Mourning Dove</td>
<td>230</td>
<td>230</td>
<td>230</td>
<td>232</td>
<td>232</td>
<td>230</td>
</tr>
<tr>
<td>Belted Kingfisher</td>
<td>124</td>
<td>124</td>
<td>124</td>
<td>116</td>
<td>119</td>
<td>120</td>
</tr>
<tr>
<td>Black-capped Chickadee</td>
<td>235</td>
<td>234</td>
<td>234</td>
<td>232</td>
<td>232</td>
<td>233</td>
</tr>
<tr>
<td>Yellow Warbler</td>
<td>191</td>
<td>190</td>
<td>190</td>
<td>178</td>
<td>186</td>
<td>187</td>
</tr>
</tbody>
</table>

| TOTALS               | 1874                          | 1868   | 1870   | 1841   | 1855   | 1857   |


** "Average Annual Habitat Units"

Environmental Consequences

The No-Build Alternative

There would be an average of 1857 habitat units per year for all the evaluation species between the years 1985 and 2015 under "No-Build" conditions. The annual distribution of the habitat units is shown in Figure 19.

The Black-tailed Deer, the Black-capped Chickadee, and the Mourning Dove are species for which there would be the most habitat units (Table 14).
### Table 14

Average Annual Habitat Units of the Alternatives Compared

<table>
<thead>
<tr>
<th>EVALUATION SPECIES</th>
<th>No-Build AAHU</th>
<th>Phase I AAHU</th>
<th>DIFF.</th>
<th>Full Bypass AAHU</th>
<th>DIFF.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beaver</td>
<td>67</td>
<td>65</td>
<td>-2</td>
<td>65</td>
<td>-2</td>
</tr>
<tr>
<td>Black-tailed Deer</td>
<td>632</td>
<td>630</td>
<td>-2</td>
<td>627</td>
<td>-5</td>
</tr>
<tr>
<td>Brush Rabbit</td>
<td>176</td>
<td>176</td>
<td>0</td>
<td>175</td>
<td>-1</td>
</tr>
<tr>
<td>Mink</td>
<td>101</td>
<td>100</td>
<td>-1</td>
<td>99</td>
<td>-2</td>
</tr>
<tr>
<td>Cooper's Hawk</td>
<td>111</td>
<td>110</td>
<td>-1</td>
<td>109</td>
<td>-2</td>
</tr>
<tr>
<td>Mourning Dove</td>
<td>230</td>
<td>226</td>
<td>-4</td>
<td>225</td>
<td>-5</td>
</tr>
<tr>
<td>Belted Kingfisher</td>
<td>120</td>
<td>126</td>
<td>+6</td>
<td>122</td>
<td>+5</td>
</tr>
<tr>
<td>Black-capped Chickadee</td>
<td>233</td>
<td>226</td>
<td>-7</td>
<td>226</td>
<td>-7</td>
</tr>
<tr>
<td>Yellow Warbler</td>
<td>187</td>
<td>186</td>
<td>-1</td>
<td>186</td>
<td>-1</td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td><strong>1857</strong></td>
<td><strong>1845</strong></td>
<td><strong>-12</strong></td>
<td><strong>1834</strong></td>
<td><strong>-23</strong></td>
</tr>
</tbody>
</table>

Figure 19 shows a decline in the total number of habitat units until target year twenty, at which time there is a gain. This dip is the effect of periodic channelization and brush removal along urban and suburban stream channels. These changes during the next 34 years would affect each of the evaluation species in a different manner. The predicted number of habitat units which would be available for each evaluation species, at each future target year, is shown in Table 13.

**Impacts of Phase I**  
Phase I would result in an average of 1845 habitat units per year (AAHU for all evaluation species) between 1985 and 2015. This value would be 12 AAHU less than the value of the No-Build Alternative and would represent a 0.6% loss for evaluation species within the 1690 acre study area. More than one third of this loss (37%) would result from loss and change of wetlands cover types.

A comparison of Phase I and the No-Build Alternative appears in Figure 19 and in Table 14. The Black-capped Chickadee, and the Mourning Dove would experience the largest losses of habitat units, minus seven and minus four units respectively. However, when losses are considered in relation to the number of habitat units which are available to a species, then the beaver and the Black-capped Chickadee are the major losses, each with a loss of 3%. These two evaluation species are representative of the species listed in Guilds 5, 9 and 12 (Appendix D).
Wetlands losses, and the wildlife losses would be fully compensated by the provisions of the Combined Wetlands - Wildlife Mitigation Plan discussed under Wetlands mitigation.

**Impacts of the Full Bypass**

The impacts of the Full Bypass do not differ from those of Phase I until target year 10 (Figure 19) because construction of the Full Bypass is not expected to occur until after 1995. There would be an average of 1834 habitat units per year between 1985 and 2015 if the Full Bypass were chosen. Compared to the No-Build Alternative, the Full Bypass would result in a 1.2% annual decrease for all evaluation species within the study area. A little more than two thirds (67%) of the predicted loss of habitat units would result from loss and change of wetlands cover types.

A comparison of the Full Bypass with Phase I and the No-Build Alternative appears in Figure 19 and in Table 14. The Black-capped Chickadee, the Mourning Dove, and the Black-tailed Deer would experience the largest losses of annual habitat units; these losses would be minus 7, minus 5, and minus 5 respectively. However, when habitat losses are considered in relation to the number of habitat units which are available to a species, then the beaver and Black-capped Chickadee, the Mourning Dove, and the Mink have the greatest relative habitat losses (these losses are -3%, -3%, -2.2% and -2% respectively). These evaluation species are representative of the species belonging to Guild numbers 5, 9, 10, 11 and 12 (Appendix D).

Wetlands losses, and the wildlife losses which are related to wetlands losses, would be fully compensated by the provision of the Combined Wetlands-Wildlife Compensation Plan discussed under Wetlands mitigation.

**Threatened and Endangered Species**

There are no threatened or endangered species on the U.S. Fish and Wildlife Service Species list for this vicinity, nor are there any species which are "proposed" for either category. A fourth category, "candidate species", identifies species which are not fully protected but which are to be considered during environmental planning. In Benton County the candidate species are: Meadow Checker Mallow (*Sidalcea campestris*), Nelson's Checker Mallow (*S. nelsoniana*), Bradshaw's Desert Parsley (*Lomatium bradshawii*) and Peacock Larkspur (*Delphinium pavonaceum*). In Linn County the candidate species is Meadow Checker Mallow (*S. campestris*).

An onsite investigation of habitat suitable for their growth lead to the conclusion that none of these species are currently present. However, there is a definite possibility that certain portions of the fill slopes of Phase I, or the Full Bypass would be suitable for the growth of Meadow Checker Mallow (*Sidalcea campestris*); that species is known to occur on recently disturbed roadside slopes within 10 miles or less of this project.

**WETLANDS**

**Affected Environment**

Wetland impacts have already been discussed generally within the Biology section. This section supplements that discussion with more specific information concerning wetlands.
Predominantly, wetlands in the study area owe their origin to the riverine processes of the Willamette River and its tributaries. As a consequence, the 219 acres of wetlands of the study area tend to be distributed roughly parallel to the Willamette and Marys Rivers. The study area therefore has a higher than normal percentage of wetlands (13%) than is characteristic of the Willamette Valley as a whole.

There are five wetland cover types in the study area. The most important and most abundant of these types are "Forest wetlands" and "Open Water-Shore and Bottom" of the perennial reaches of the Willamette and Mary's River. Table 15 shows the distribution of wetlands and the distribution of impacts by cover type.

Table 15
EXISTING WETLAND DISTRIBUTION
(Acres)

<table>
<thead>
<tr>
<th>Wetlands Cover Type</th>
<th>Study Area</th>
<th>Full Bypass Construction Zone</th>
<th>Phase I Construction Zone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deciduous Riparian</td>
<td>118</td>
<td>4.0</td>
<td>2.1</td>
</tr>
<tr>
<td>Wetland Scrub/Shrub</td>
<td>34</td>
<td>0.6</td>
<td>0</td>
</tr>
<tr>
<td>Wetland Herbaceous</td>
<td>17</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Wetland Open Shore-Bottom</td>
<td>50</td>
<td>1.9</td>
<td>0.8</td>
</tr>
<tr>
<td>TOTAL</td>
<td>219</td>
<td>6.5</td>
<td>2.9</td>
</tr>
</tbody>
</table>

Affected Wetlands of the Construction Zone

Only three of the five types will be impacted by construction of the project. Phase I impacts the open water shore and bottom of the Willamette and Marys Rivers and the Forested wetlands. The Full Bypass impacts these plus a small amount of scrub/shrub wetland.

Forest Wetland. The most abundant wetlands type is the Deciduous Riparian Forest which accounts for 58% of the total of the five wetlands types located in the study area. This cover-type is classified as: Palustrine, Forested, Broad-leaved Deciduous, non-tidal, intermittently flooded. The dominant flora of a typical community is Black cottonwood; sub-dominants include Bigleaf Maple and Douglas Fir.

This is the second most important wetlands cover-type in the study area; only the open water areas of the Willamette and Mary's rivers have greater functional importance. Of the eleven functions for which site-specific estimates were made, the riparian forest was considered beneficial in seven. Particularly important are its wildlife habitat characteristics, both the structure and the fauna of this cover-type are considered to be far more diverse than any other in the study. It would take between 60 to 100 years to reestablish a stand of Deciduous Forested wetland on a suitable site in this portion of the Willamette Valley.
Open Water-Shore Bottom. The second most abundant wetland cover type is open water. There are approximately 50 acres of open water in the study area but this figure is a combination of two wetlands inventory classes which have very different importance values. The least valuable and least abundant of the open water classes have been excavated and include ponds, settling basins and waste disposal pits. This type is not affected by the project.

The open water-shore bottom of the Willamette and Mary's River comprise 68% of this wetland type in the study area. This open water-shore-bottom has the highest Relative Importance Value of those found in the study area. The wetlands type is classified; Riverine, of the lower perennial subsystem, open water, non-tidal and permanently flooded. Seven of the eleven functions are rated for this wetlands class and the average rating is higher for this class than for any other class.

Scrub/Shrub Wetlands. Within the context of this study the scrub/shrub wetland is a seral stage of the Deciduous forested (riparian) wetland. This class of wetlands are most frequently located on disturbed sites which for one reason or another tend to be neglected for long periods of time (10, 20, or even 30 years). Scrub/shrub may also occur as a zone which lies along the boundary between Open water-shore bottom and Forested wetlands. In the first instance the flora dominants tend to be Black Cottonwood, Oregon Ash, or Bigleaf Maple; in the latter sites the dominants tend to be willows and Black Cottonwood.

There are approximately 34 acres of this wetlands class within the study area. The scrub/shrub wetlands class has the third highest Relative Importance Value of the five wetlands classes found in the study area. The major functions are erosion control, wildlife habitat, water quality effects, and productivity.

A stand of scrub/shrub may generally be reestablished on a suitable site in the Willamette Valley within 20 to 25 years.

Environmental Consequences

There are 2.1 and 4.0 acres of wetlands in the construction zones of Phase I and the Full Bypass (See Figure 20). Open water wetlands of the Willamette and Marys Rivers would be subject to the short term impacts. Forested and shrub/scrub wetlands compose the remaining area. A portion of each will be displaced by new paving, while approximately one-half of the remainder will retain their characteristics after construction, and will regenerate a recognizable wetlands cover type given sufficient time and non-interference.

The sites involved have the potential to succeed to a Deciduous Riparian Forest wetland. The process would require approximately 80 or 100 years to replicate existing conditions. However, the land will have become a part of the highway right-of-way, and natural succession will be arrested at the shrub/scrub wetland stage.

Specific long and short term wetlands impacts will occur with either Phase I or the Full Bypass by the following process:

1. Destruction by Clearing and Filling and/or Paving. This is a long term impact which is seldom reversed, although the process is reversible. With Phase I, 1.4 acres of Forested (Riparian) wetland will be lost. With the Full Bypass 2.7 acres (including Phase I impacts) of Forested wetland and 0.6 acres of shrub/scrub wetland will be eliminated.
2. Creation by Excavation. This is a long term beneficial impact and is the basis for the Wildlife-Wetlands Mitigation Plan. Phase I will create slightly less than 0.1 acre of new herbaceous (cattail) wetland at two locations along the ditch at the toe of the highway fill. The Full Bypass will extend this area.

3. Conversion to a new wetlands type. This effect occurs slowly as a result of natural processes and is called natural succession. It occurs rapidly when a site is cleared of its existing vegetation. The duration of this impact depends upon the nature of the original cover type, and the surface which results after clearing is finished. Cover-type conversions effect the value of the habitat for wildlife.

Phase I will cause the conversion of 0.7 of an acre of Forested (Riparian) wetland to shrub/scrub wetland by target year 10 for the remainder of the life of the project.

The Full Bypass will cause the conversion of 1.3 acres of Forested (Riparian) wetland to scrub/shrub wetland by target year 10 and it will be maintained as such for the remainder of the life of the project.

During the 30-year life of the project the average net effect of Phase I is a loss of 1.5 acres of wetland.

The average net effect of the Full Bypass for the same period is a loss of 3.4 acres of wetland. There would be an average annual loss of 15.5 habitat units for the evaluation species.

Wetlands Finding

This FEIS sets forth the basis for finding there is no practical alternative to construction in the wetlands located in the alignment of the proposed Federal-Aid highway project, and that the highway proposal includes all practicable measures to minimize harm to and mitigate loss of the wetlands which will result from such use. This finding is made in accordance with the requirements of Executive Order (E.O.) 11990 on the Protection of Wetland; dated May 24, 1977.

Alternatives to Construction in Wetlands

This project involves the construction of a new highway alignment. The wetlands impacts involve a net loss of 1.5 acres for Phase I and 3.4 acres for the Full Bypass.

Four alternatives to the action were considered. None of the alternatives sufficiently satisfied the objectives of the project, principal of which was the removal of traffic from the downtown. Additionally, other impacts such as right-of-way impacts and severe interruption of the riverfront plan dismissed the other alternatives from further consideration. A more in depth discussion can be found under "Selected Alternative".

Minimization

Alteration of the selected alignment would not materially reduce the impacts of the project. Construction of only Phase I would reduce the magnitude of wetlands impacts by 56%, however, traffic would eventually necessitate full construction of the full bypass.
Mitigation

The mitigation plan is designed primarily to replace wetlands habitat, although some other wildlife needs will be met as well. The management area, shown in Figure 21, is located in the cropland which immediately adjoins the zone of Deciduous Riparian Forest on the eastern bank of the Willamette River. The southern triangular portion would comprise about 4 acres and be adequate to compensate for the losses resulting from Phase I, while an additional 2.5 acres would be required to compensate the losses resulting from the Full Bypass. It is likely that full mitigation will be done during Phase I to avoid redisturbing the area. Two design goals of this location are to have the management area adjacent to highway right-of-way and to minimize conflict with use of the remainder of the city's property between the river and the highway facility. This area will be retained in public ownership.

Approximately 40% of the total management area would be excavated, possibly as a source of fill materials. Excavation would be conducted in several small pits approximately eight feet below ground level at their deepest point. Shoreline (side) slopes would be between 6:1 and 4:1. Each excavation would be irregularly shaped to maximize shoreline and increase the number of shoreline embayments. Excess material may be used to build low embankments along the eastern edges of the excavation. If it is deemed necessary, the excavation would be sealed by adding bentonite in order to impound water. If during final design this plan is found to be unworkable, a new plan to compensate wetlands losses will be developed with the consultation of U.S. Fish and Wildlife Service and the Oregon Department of Fish and Wildlife.

Conclusion

Based upon the above considerations, it is determined that there is no practicable alternative to the proposed new construction in wetlands, and that the proposed action includes all practicable measures to minimize and compensate for harm to wetlands which will result from the action.

WATER QUALITY AND AQUATIC BIOLOGY

Affected Environment

Water Quality

The Willamette River and its tributaries are governed by Department of Environmental Quality (DEQ) general standards for waters of the Willamette River Basin (DEQ, 1976). Beneficial water uses to be protected in the river above Salem by maintenance of water quality standards include the following:

Public and private domestic water supply
Industrial water supply
Irrigation
Livestock watering
Anadromous fish passage
Salmonid fish rearing and spawning
Resident fish and aquatic life
Wildlife and hunting
Fishing
Boating
Water contact recreation
Aesthetic quality
Willamette River

Water quality has generally met DEQ standards since 1968. Most of the failures to meet standards are seasonal, relating to unusually high or low flows.

Water temperatures range between 6° C and 20° C in a normal year. However, for a short period in late summer, temperatures rise above the DEQ standard of 17.8° C (based on the needs of salmonid fishes). The pH level is well within the 6.5 to 8.5 range set by DEQ. Turbidity has averaged 10 Jackson turbidity units (JTU's), a fairly low value, over several years. High levels are related to heavy runoff in winter, when turbidity occasionally rises to 30 JTU's or more. Increases of turbidity are to be held to 10% above natural levels, although no numerical standards have been established by DEQ.

Dissolved oxygen is one of the most essential characteristics in the measurement of water quality. When the level is too low, usually because of pollution, fish and other aquatic organisms may not be able to survive. The minimum DEQ standard for the Willamette River at Corvallis is 90% of saturation. As the long-term average value observed here is 96%, the standard is met most of the time. However, the dissolved oxygen level occasionally falls to 85% saturation or lower.

The number of fecal coliform bacteria is a pollution-related measurement, which is useful in determining a river's suitability for drinking or swimming. The mean count of these bacteria at Corvallis is 491 per 100 ml. The DEQ has no standard on fecal coliform bacteria, but the EPA recommended limit for the log mean value is 200. The measured value (491) is high enough to indicate that it is outside the EPA limit, although the means are not calculated in the same way. The mean value total coliform bacteria count for 1977 was 2,580, which is much higher than the maximum of 1,000 established by DEQ.

Marys River

In most respects, water quality of the Marys River near its mouth is very similar to that of the Willamette, as described above. The main difference is that the bacteria counts are quite a bit higher.

DEQ standards for this river differ from those for the Willamette. This is partly because it has coho salmon, a salmonid species, and partly because Willamette River tributaries are treated as a separate class. For salmonid fish, a temperature of 58° F (14.4° C) or below is recommended by DEQ; but the mean temperature at its mouth is slightly higher than this. Thus, temperatures are unfavorable for salmon part of the year, although winter temperatures (10° C) are within a favorable range for spawning.

Turbidity values are approximately 15 units, somewhat higher than in the Willamette, but still quite low. Values of pH average 7.15, and other measurements all fall within the 6.5-8.5 range of the DEQ standard.

Dissolved oxygen averages 96% saturation, meeting DEQ standards most of the time. The mean fecal coliform count is 1,174 MPN per 100 ml, which is far above the EPA standard. The total coliform count averages 2,428, which is ten times as high as the DEQ standard for Willamette basin tributaries. These figures show that Marys River is usually unsafe for swimming or drinking.

Dixon Creek

For this small stream, no published data are available. Measurements made in August, 1981 yielded a turbidity of 6 nephelometric units, a pH of 7.5, and a dissolved oxygen level of 8.5 mg per liter. These are all acceptable by DEQ standards.
Aquatic Biology

As water quality improved in recent years, the river's habitat value also increased for both anadromous and warm-water species. Of the former group, four species inhabit the Willamette. These are coho salmon, spring and fall chinook salmon, white sturgeon and steelhead. Two trout species, rainbow and cutthroat, are also fairly common. The warm-water fishes are more abundant, especially in local sloughs and oxbows. White crappie and blue gill are the most common.

Spawning rarely occurs in the project area, because temperatures and other conditions are unsuitable. An exception is that coho salmon have been known to spawn in Oak Creek, a tributary of Marys River in west Corvallis.

Environmental Consequences

Most impacts of the project will be similar in nature but different in magnitude for Phase I and the Full Bypass. Water Quality impacts vary over time and are therefore grouped here according to the duration of the expected impact.

Construction Period

Small areas of the riverbed will be excavated for pier placement (.04 acre, Phase I and additional .05 acre, Full Bypass) causing localized and temporary increases in turbidity and decreases in dissolved oxygen levels.

Near the bridge sites and at staging areas, some trees and other vegetation will be removed, causing additional erosion and stream turbidity until new vegetation has become established (1.6 acres, Phase I and additional 1.2 acres, Full Bypass). Exposed fill slopes will have a similar impact. Fish and other aquatic organisms will be affected to some degree by increased turbidity, which interferes with photosynthesis and feeding. Another temporary construction impact, which may affect water quality is possible spills of fuel, oil, or concrete at a staging area.

Short Term

For a few years after construction is completed, there will be somewhat higher erosion and associated turbidity from the new fill slopes construction and staging areas. This will decline as plantings form an effective ground cover. Time will also help in stabilizing the disturbed bottom sediments where piers have been placed.

Long Term

Small areas of stream bottom will be lost to pier construction, and slight changes in stream flow will occur. The increased amount of paved surface will cause a measurable increase in runoff, compared with that under existing land uses. However, the storm runoff, which contains a variety of pollutants, will be negligible compared to the volume of water it will empty into.

A slight increase in water temperature where vegetation is removed from streambanks will be more or less balanced by the additional shade provided by the proposed bridges, except that organic debris useful to stream organisms would be lacking under bridges.
An extension of a culvert along Dixon Creek will eliminate 197 feet of the natural channel. This construction is not in compliance with the Corvallis Drainage Master Plan, which has the preservation of natural drainage in this section of Dixon Creek as first priority.

Work done on the Marys River bridge is unlikely to affect coho salmon, as they are few in number and do not spawn during the summer, when piers would be placed.

Minimization and Mitigation

Construction Period

Impacts directly related to construction activity will be mitigated in the following ways.

1. Cofferdams will be used wherever necessary to control turbidity at pier construction sites.

2. The Oregon Department of Fish and Wildlife recommends that in-water activity be limited to the season of low flow—July 15 to August 31 on the Willamette and July 1 to September 15 on Marys River. This time span may be too restrictive to accomplish the necessary work, so adjustments will be requested from ODFW.

3. No heavy equipment or fill will be allowed in the riverbed, and barges or work trestles will be used for access to in-water work sites.

4. Exposed fill areas and staging areas will be mulched, seeded and planted.

Long Term

Permanent mitigation will be carried out in the following ways.

1. Bridge piers and approaches will be designed to reduce scour, debris accumulation, backwater effects, and riparian vegetation losses.

2. Cover will be restored by seeding, mulching and planting on new fill slopes, and other areas where vegetation was temporarily removed.

3. Culverts will be placed where needed to minimize drainage problems.

HYDROLOGY

Affected Environment

Surface Drainage

The project area lies within the Willamette River basin, which drains an area of 4,400 square miles upstream from Corvallis. The river flows
in a series of large meanders, and at Corvallis swings over to the west bank terrrace, leaving a broad floodplain to the east. See Figure 22. The Willamette here is between 250 and 500 feet wide, with a moderate gradient of 2 feet per mile. Most of the drainage basin is either in forest or agricultural use. The steep slopes quite common in the watershed tend to produce rapid runoff, although forest cover acts to moderate this.

The Marys River begins north of Marys Peak and flows eastward to join the Willamette at the south end of the project area. The stream drains a 300 square mile watershed containing a variety of terrain. In the lower portion of the stream, the gradient averages 6 feet per mile. At Corvallis, near the confluence with the Willamette, Marys River is 100 feet wide, and flows between banks 25 feet high.

Dixon Creek is a small, short tributary which enters the Willamette from the west near the north end of the project. Although the creek's drainage area covers four square miles, about one half of this is built up and served by storm sewers. Dixon Creek is usually just a trickle except after heavy rains.

Streamflow and Flood History

**Willamette River**

The mean discharge of the Willamette at Corvallis (ORE 34 bridge) is approximately 13,500 cubic feet per second (cfs). In major floods the flow is close to 200,000 cfs and it had been considerably higher in the period before 1941, when construction of reservoirs began. The discharge has a distinct seasonal pattern with peak flows between November and March, during the rainy season.

Since 1910, the greatest flood on the Willamette at Corvallis occurred in 1945, when peak flow reached 188,000 cfs. Somewhat lesser floods took place in 1943, 1948, 1961, and 1964. The 1964 flood had a peak discharge of 146,000 cfs. A 100-year flood (with 1% change of recurrence in any given year) would have a flow of 190,000 cfs and a level one foot higher.

Although the floodplain is very broad east of Corvallis, local conditions cause flooding of ORE 34 at times when the Willamette has not yet reached flood stage at the bridge. During the major 1964 flood, water in the East Channel had reached an elevation of 211.5 feet, and began to flood across Highway 34. At the same time, the level in the main channel was 3.3 feet lower, measured at the bridge. This is a fairly typical flood situation, caused by the different flow patterns in both channels. In 1966, the highway grade was raised to an elevation of 214 feet. However, this was still not high enough to prevent occasional flooding of the highway near the East Channel, where floodwaters are a few feet higher.

Two "relief" channels in the project vicinity serve as floodwater passageways. One near the bridge approach on the east bank on the south end of the project acts as a shortcut across a bend in the Willamette River. Water begins to flow in this channel fairly early in a flood, as soon as the water surface elevation rises to 204 feet. The other, midway between ORE 34 and the south bridge crossing, only functions when flood elevations exceed 210 feet. This channel carries flow from East Channel westward to the main river channel.
Marys River
Mean discharge of this small tributary is approximately 775 cfs, at its mouth. However, the flow varies greatly according to seasonal precipitation. In most years flow reaches 4,000 cfs in the winter wet season, dropping to 10 cfs or less by the end of the dry season.

The largest flood since 1940, when records began, took place in December, 1964. Peak discharge at the mouth was approximately 22,000 cfs, based on records from Marys River at Philomath and its tributary Muddy Creek. Occasionally the lower stretches of Marys River experience high levels not associated with peak flows. This occurs because of backwater from flooding of the Willamette.

Dixon Creek
No flow data are available for this stream. Based on local rainfall intensity and the size of the drainage basin, mean flow is about 5 cfs, and flood peaks are less than 200 cfs.

Navigation
Between 1850 and 1900, large paddle boats navigated the Willamette between Portland and Eugene. But by 1910, the river meant little to the commercial life of Corvallis. After this time, only an occasional tugboat used the river to tow log rafts downstream. The river's transportation function had been supplanted by the growing highway system.

Navigational records do not exist for this stretch of the Willamette River. Since 1960, the Van Buren Street Bridge swing-span has been opened only once, for maintenance purposes. Until 1972, this bridge was required to be opened upon one day's notice. This requirement was rescinded on May 8, 1982, and replaced with a seven-day notification requirement. The Oregon State Highway Division had requested from the U.S. Coast Guard a six-month notice, but a commercial sand and gravel business opposed this, and the seven-day period was agreed to. As discussed, no requests to open the bridge have been received since at least 1960; bridge opening records do not exist for the period prior to 1960.

A lumber mill located at the confluence of the Marys and Willamette Rivers, which utilized the Willamette River to transport logs, ceased to operate in 1955. It is believed that the operation of tug-boats in conjunction with this mill did not require openings of the Van Buren Street Bridge. Presently, a commercial sand and gravel firm is mining gravel deposits at Endicott Bar, upstream from the proposed southern crossing. This mining operation is under a lease agreement with the Oregon Division of State Lands, and drag-lines operated from the shoreline are the method of extracting the gravel. Dredges and barges are not required, nor is their use anticipated, according to the Division of State Lands.

The Corps of Engineers ceased dredging on the Willamette River in July of 1973. The portion of the river affected by the proposed project has not been subject to Corps dredging operations, nor does the Corps have any

2 Corning, p. 190.
plans for dredging.\footnote{From phone conversations with the Corps of Engineers in February, 1983} While there are commercial gravel interests in the area, none are known to need access under the bridges for mining gravel deposits.\footnote{From phone conversation with the Division of State Lands in February, 1983}

Due to the lack of commercial navigation on this reach of the Willamette River, research was conducted to determine why the two existing bridges either open (Van Buren Street) or have a substantially higher (Harrison Boulevard) clearance than those proposed for this project.

The Van Buren Street Bridge is a swing-span built in 1913. In its closed position, it is the constraining height, at 28 feet OHW, in this reach of the river. Bridges built in this era were opening bridges because of economy—they were less expensive to build than fixed spans with higher clearances. During this period, tugboats requiring the higher clearance were still operated occasionally in this reach of the river.

The Harrison Boulevard Bridge, which was open to traffic in 1965, was designed with a 38-foot vertical clearance (OHW). This clearance is comparable to clearances associated with other bridges on the Willamette River. It now appears that this bridge height could have been lower, since the Van Buren Street Bridge has been opened only once—for maintenance purposes, since 1966.

The present navigational use of the river is moderate, consisting of OSU crew racing, canoeing,\footnote{Observation by local residents} hydroplanes, and motor boats. Water skiing occurs during the summer months.

Environmental Consequences

\underline{Runoff}

Construction will increase paved surface by 6.5 acres for Phase I and 26 acres for the Full Bypass. The runoff during a 10-year peak discharge is estimated at 22 cfs and 83 cfs respectively. The latter would amount to 2% of the Willamette discharge in late summer (the extreme case). Highway runoff will be distributed by deck drains, by flowing off into adjacent right-of-way, and by the existing storm sewer system where feasible.

\underline{Floodplain Encroachment}

Highway fills will occupy 8.3 acres (Phase I) and 26 acres (Full Bypass) of the 100-year floodplain. This accounts to 0.75% of an assumed floodplain area which might be affected by this construction. Backwater is projected to only increase by 0.03-foot as a result of the fills.

\underline{Flood Patterns}

Both Phase I and the Full Bypass affect flood patterns in the same way. Some alteration of flow would occur in the two relief channels. The new embankment near the south east-side bridge approach will cause ponding until the water rises above 214 feet in elevation. Then the floodwater would flow around the embankment at the adjacent bridge and into the main current. The result of blocking off the channel midway between ORE 34 and the south bridge crossing is that water will pond deeper and earlier during a flood. Flood
patterns north of ORE 34 would remain the same. There is no need for any drainage structure in either of the above channels. Any water trapped against the fill upon recession of the flood would recede into the ground, reflecting the elevation of the water surface in the adjacent river. No redirection of flow patterns easterly away from the embankment occurs.

Any of the embankment contained in what might be considered the floodplain of Marys River is in a dead water area or areas of very low velocities; therefore, it will cause no backwater effect nor redirection of existing flow patterns.

**Navigation**

The Willamette River is navigable, so a Coast Guard Bridge Permit is required for the proposed bridge construction. The proposed bridges will provide less vertical clearance than the Van Buren Street Bridge, as shown in Table 16. The lower clearance is proposed because no navigational interests requiring a higher clearance are known, and lower structures will save approximately $400,000, because the size of embankments for the bridge approaches can be substantially reduced. There are no known records on commercial navigation for this stretch of the Willamette River. There are presently two commercial sand and gravel companies in the area, but only one has a lease from the Oregon Division of State Lands, to mine gravel from the river. The gravel is being extracted using drag-line equipment operated from the banks of the river; dredges and barges are not in use nor are there known plans for their use. Because navigational interests are limited to recreational boating, the proposed clearances will not constrain any existing navigation or foreseeable future navigation. The horizontal clearance for the bridge will approximate that which now exists for the Harrison Street Bridge—180 feet.

A marine will be displaced by the project. While its displacement may inconvenience existing customers, it will not impact navigational use of the river. Other marinas are available within 10 miles of the project area.

Table 16

<table>
<thead>
<tr>
<th>Bridge</th>
<th>100 years Flood</th>
<th>Ordinary High Water</th>
<th>Normal Summer flow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing Structures</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Harrison Blvd.</td>
<td>21'</td>
<td>38'</td>
<td>48'</td>
</tr>
<tr>
<td>Van Buren Ave.</td>
<td>11'</td>
<td>28'</td>
<td>38'</td>
</tr>
<tr>
<td>Highway 99W Nb. (Marys River)</td>
<td>1'</td>
<td>18'</td>
<td>28'</td>
</tr>
<tr>
<td>Proposed Structures</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>North Willamette</td>
<td>9'</td>
<td>26'</td>
<td>36'</td>
</tr>
<tr>
<td>South Willamette</td>
<td>5'</td>
<td>21'</td>
<td>31'</td>
</tr>
<tr>
<td>Marys River</td>
<td>6'</td>
<td>23'</td>
<td>38'</td>
</tr>
</tbody>
</table>

*This table is based on elevations for the 100 year flood of 219' for ordinary high water of 202' and normal summer flow of 192'.

III-65
The structure over the Marys River will be higher than the existing structure for Highway 99W northbound traffic, so navigation will not be impeded in any way.

**Floodplain Finding**

This FEIS sets forth the basis for finding there is no practical alternative to construction of the alignment of the proposed Federal-Aid highway project in the floodplain of the Willamette River and that the highway proposal includes all practicable measures to minimize harm. This finding is made in accordance with the requirements of FHWA 6-7-3-2 on Location and Hydraulic Design of Encroachments on Flood Plains.

**Description**

This project involves construction of a new alignment, which results in an approximate 1-mile longitudinal crossing of and a 26 acre encroachment on the 100 year floodplain of the Willamette River.

**Alternatives Considered**

Four alternatives were considered, none of which were on the floodplain. These are discussed in the Alternatives section of this document. None of the alternatives sufficiently satisfied the objectives of the project, principal of which was the removal of traffic from the downtown. Additionally, other impacts such as right-of-way and severe interruption of the riverfront plan dismissed the other alternatives from further consideration. A more in depth discussion can be found under "Selected Alternative".

**State and Local Regulations**

LCDC Goal 7 - Natural Hazards is the primary state regulation which must be met. The following flood-related guidelines have been complied with:

1. The project "Will not require protection through dams, dikes and levies (sic)".
2. The project will avoid causing "an impediment to the flow of floodwaters".
3. "Runoff from paving" has been provided for.

Local Linn County regulations are bound to the federal flood insurance program. Major projects must be reviewed by the Federal Insurance Administration prior to Linn County approval. This process is underway. Federal regulations require that the total number of structures in the floodplain not raise the flood level more than 1 foot. This project increases the level by only 0.03-foot and does not alter pre-existing flood patterns in a way to impact other properties. It is therefore considered in compliance with the federal standards upon which local compliance is based.

**NOISE**

**Affected Environment**

Noise impacts were investigated for the selected route, which is primarily rural and quiet, and for the downtown area which the project is projected to benefit. The following Federal Highway Administration Design Noise Levels were used to evaluate the impacts.
<table>
<thead>
<tr>
<th>Design Noise Level (Leq)</th>
<th>Description of Activity Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>57</td>
<td>A - Tracts of land in which serenity and quiet are of extraordinary significance. (Example - amphitheaters)</td>
</tr>
<tr>
<td>67 (Exterior)</td>
<td>B - Recreation areas, residences churches, hospitals, hotels, etc.</td>
</tr>
<tr>
<td>72 (Exterior)</td>
<td>C - Commercial properties or non-living areas.</td>
</tr>
<tr>
<td>52 (Interior)</td>
<td>E - Residences, churches, hospitals, schools, etc.</td>
</tr>
</tbody>
</table>

*The Leq is the average hourly sound level and contains the same acoustic energy as the time varying sound level. Sound is measured in decibels, here measured on the A-scale which is adjusted for human hearing perception.

Noise measurements were taken to determine existing noise levels and to calibrate the computer model used to predict future noise levels. See Table 17.

<table>
<thead>
<tr>
<th>Table 17</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Existing Noise Measurements</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Site</th>
<th>Location</th>
<th>Measured Leq</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sunshine Terrace Apartments</td>
<td>62</td>
<td>North Interchange Area - representative of existing noise levels</td>
</tr>
<tr>
<td>2</td>
<td>4th and Tyler</td>
<td>63</td>
<td>Downtown Area - representative of existing noise levels</td>
</tr>
<tr>
<td>3</td>
<td>OSU Crew Area Driving Range</td>
<td>50</td>
<td>Central Bypass Area - representative of existing noise levels</td>
</tr>
<tr>
<td>4</td>
<td>Proposed Riverfront Park Property (Triangle of land formed by Marys and Willamette River)</td>
<td>50</td>
<td>South Interchange Area - representative of existing noise levels</td>
</tr>
</tbody>
</table>
Environmental Consequences

Properties where noise levels exceed the design noise level listed earlier or where a change in the noise level will be greater than 10 dBA are considered impacted. Unshielded Leq 67 dBA noise level contour distances for the year 1995* were calculated for the No-Build, Phase I and the Full Bypass. They are shown, by roadway section, in Table 18, and the roadway sections are shown in Figures 23A, 23B and 22C.

For the purpose of describing the noise impact, the project area was divided into four areas: the downtown, the bypass, the southern interchange and the northern interchange. See Table 19 for a summary of noise impacts.

Downtown—Year 1995 noise levels are predicted to decrease between 1 and 9 dBA in the downtown area with both Phase I and the Full Bypass. The noise level decreases would be limited to the area south of the Harrison-Van Buren couplet with Phase I.

Bypass Area—Year 1995 noise levels are predicted to increase up to 25 dBA next to the proposed roadway. However, the only area receiving regular human use is the golf driving range, which is located in the OSU crew area. Noise levels at the golf driving range with the Full Bypass are predicted to increase 7 dBA over No-Build noise levels. This increase is not considered significant, and noise levels would still be well under the federal design noise level of Leq 67 dBA.

A golf course is planned for the area northeast of the OSU crew area and the proposed bypass. Noise levels from the bypass should be considered when planning this facility.

The only other potential human use area is Nelson Park (see Parks and Recreation section). This park presently is not developed, and does not receive any regular human use. Predicted noise levels in the park will decrease 3 dBA with the Full Bypass as compared to the No-Build Alternative.

Southern Interchange Area—Year 1995 noise levels at the triangle of land formed by confluence of the Marys and Willamette River, will increase approximately 12 dBA with Phase I and 10 dBA with the Full Bypass. This land is currently owned by the State of Oregon Transportation Commission and the City of Corvallis and contains bicycling and jogging trails.

Several residences, located north and west of the proposed interchange, are currently exposed to high noise levels from 3rd and 4th Streets. The Bypass would divert through traffic from the 3rd and 4th Street couplet, thereby decreasing the noise levels. The most severely impacted of these residences would be acquired for right-of-way.

North Interchange Area—Predicted 1995 noise levels at residences along the Albany-Corvallis Highway (US 20) and the 3rd and 4th Street couplet are 1 to 3 dBA less with the Full Bypass than with the No-Build Alternative.

Noise levels at the Walnut Court Apartments, an apartment complex north of the proposed interchange would increase 4 dBA more than with the No-Build conditions. The resulting noise level at the apartments with the Full Bypass Alternative would be Leq 65 dBA. Since there is no outside activity

*The unshielded Leq 67 dBA noise contour is the distance from the center line that the maximum design level for exterior uses would extend if there were no structures between the noise source and the listener. If barriers or structures do exist, then the actual noise contour would not extend the distance shown in the Table.
# TABLE 18

**FUTURE NOISE LEVELS AND CONTOUR DISTANCES**

<table>
<thead>
<tr>
<th>Link</th>
<th>Existing</th>
<th>No-Build</th>
<th>Phase I</th>
<th>Full Bypass</th>
<th>Leq 67 dBA unshielded Noise Contour Distance#</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>67</td>
<td>66</td>
<td>66</td>
<td>63</td>
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<tr>
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<tr>
<td>3</td>
<td>67</td>
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<td>63</td>
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<td>7</td>
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<tr>
<td>8</td>
<td>66</td>
<td>67</td>
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<td>61</td>
<td>40'</td>
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<td>9</td>
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</tr>
<tr>
<td>10</td>
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<td>60'</td>
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<tr>
<td>11</td>
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<td>62</td>
<td>62</td>
<td>60'</td>
</tr>
<tr>
<td>12</td>
<td>68</td>
<td>71</td>
<td>71</td>
<td>63</td>
<td>60'</td>
</tr>
<tr>
<td>13</td>
<td>67</td>
<td>69</td>
<td>69</td>
<td>63</td>
<td>50'</td>
</tr>
<tr>
<td>14</td>
<td>66</td>
<td>69</td>
<td>69</td>
<td>64</td>
<td>45'</td>
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<tr>
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<tr>
<td>16</td>
<td>63</td>
<td>64</td>
<td>64</td>
<td>67</td>
<td>30'</td>
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<td>17</td>
<td>66</td>
<td>68</td>
<td>67</td>
<td>61</td>
<td>45'</td>
</tr>
<tr>
<td>18</td>
<td>66</td>
<td>68</td>
<td>67</td>
<td>61</td>
<td>45'</td>
</tr>
<tr>
<td>19</td>
<td>55</td>
<td>55</td>
<td>55</td>
<td>68</td>
<td>---</td>
</tr>
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<td>76</td>
<td>---</td>
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<td>35'</td>
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<td>26</td>
<td>60</td>
<td>60</td>
<td>66</td>
<td>59</td>
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</tr>
</tbody>
</table>

*Noise Contour distances were not calculated where roadways will not be in existence.*
<table>
<thead>
<tr>
<th>Area</th>
<th>No-Build</th>
<th>Phase I</th>
<th>Full Bypass</th>
</tr>
</thead>
<tbody>
<tr>
<td>Downtown</td>
<td>Approximate 1 dBA increase over existing noise levels due to increase traffic volumes.</td>
<td>Variable decrease of 0-8 dBA in downtown area south of Harrison-Van Buren couplet. No change from No-Build levels north of the Harrison-Van Buren couplet.</td>
<td>Variable decrease of 0-8 dBA in entire downtown area.</td>
</tr>
<tr>
<td>Center of Bypass Route</td>
<td>No impacts.</td>
<td>No impacts-No Noise impacts at any human use area</td>
<td>Increase of 7dBA at OSU Crew Area driving range-not considered to be an impact.</td>
</tr>
<tr>
<td>Southern Interchange</td>
<td>13 residential receptors exceeding federal design noise levels.</td>
<td>3 residential receptors exceeding federal design noise levels. Noise levels in triangle of land formed by Marys and Willamette River increased by 12 dBA.</td>
<td>1 residential receptor exceeding federal design noise levels. Noise levels in triangle of land formed by Marys and Willamette River increased by 10 dBA.</td>
</tr>
<tr>
<td>Northern Interchange</td>
<td>No impacts.</td>
<td>No impacts.</td>
<td>Increase of 13 dBA in beach area adjacent to bypass alignment-Noise levels at Walnut Court Apartments exceeding federal design noise levels.</td>
</tr>
</tbody>
</table>
FIGURE 23A
TRAFFIC LINKS FOR EXISTING AND NO BUILD ALTERNATIVE
FIGURE 23B
TRAFFIC LINKS FOR PHASE 1

[Diagram of traffic links with labeled streets and numbers]
area, the apartments would be subject to the federal interior design noise level of Leq 62 dBA at the exterior of the structure, and are therefore impacted.

Noise levels on the river bank adjacent to the proposed bypass route would increase approximately 13 dBA. This increase is considered significant and hence the area will be impacted by the noise increase. The area is privately owned and regularly used during the summer months as a beach front and water activity area.

Mitigation

The bypass will functionally provide mitigation for existing noise impacts in the downtown area by moving it to an area of minimal human use. Noise levels predicted to result from operation of the bypass assumed that heavy trucks would be restricted from the downtown. The City of Corvallis will enact such an ordinance following completion of Phase I.

Other measures including barriers were investigated for the north and south interchange areas, but are not being proposed. The noise dynamics in these areas where noise originates from several directions makes barriers ineffective. A barrier could be erected on the bridge to protect the private beach area, however the negative aesthetic impact for both the motorist and outside observer eliminated this barrier from consideration.

Construction Noise

Construction noise is expected to create a temporary adverse noise condition on this project. However, construction noise rarely occurs in any one location for an extensive length of time. On this project, much of the construction would take place away from concentrated use areas.

In order to mitigate noise levels on this project, the following construction noise abatement measures will be included in the project:

1. In accordance with Corvallis City Ordinance No. 6238 (as amended), no construction shall be performed within 1,000 feet of an occupied dwelling unit between the hours of 6:00 p.m. and 7:00 a.m. on Sundays, legal holidays, or other days without the approval of the engineer.

2. All equipment used shall have sound control devices no less effective than those provided on the original equipment. No equipment shall have an unmuffled exhaust.

3. All equipment used shall comply with pertinent equipment noise standards of the U.S. Environmental Protection Agency.

4. No pile driving operations shall be performed within 3,000 feet of an occupied dwelling unit on Sundays, legal holidays, and between the hours of 8:00 p.m. and 8:00 a.m. on other days, without the approval of the engineer.
5. No blasting operations shall be performed within 3,000 feet of an occupied dwelling unit on Sundays, legal holidays, or between the hours of 7:00 p.m. and 7:00 a.m. on other days, without the approval of the engineer. (Corvallis City Ordinance #6236 as amended).

6. Rock crushing or screening operations performed within 3,000 feet of an occupied dwelling shall block the direct view of the affected dwelling units through the strategic placement of material stockpiles or as directed by the engineer.

Should a specific noise impact complaint occur during the construction of the project, the contractor at his own expense may be required to implement one or more of the following noise mitigations as directed by the engineer.

1. Locate stationary construction equipment as far from nearby noise sensitive properties as possible.

2. Shut off idling equipment.

3. Schedule noisy construction operations near the middle of the day.

4. Notify nearby residents whenever extremely noisy work will be occurring.

5. Install permanent or portable acoustic barriers around stationary construction noise sources.

AIR QUALITY

Affected Environment

The City of Corvallis is within the Portland Interstate Air Quality Control Region No. 193. Corvallis and the surrounding region are designated as attainment areas, which means that the National Ambient Air Quality Standards (NAAQS) are attained in this area.

Total suspended particulates (TSP) and lead are currently monitored in the Corvallis area. Sulfur dioxide was monitored until 1978 and then discontinued. There have not been any recorded violations of any of these pollutants in the Corvallis area.

Carbon monoxide was monitored briefly during a 1975 air quality study for the Hewlett Packard facility in Corvallis. No violations of the standards were recorded during that study, but the study did predict that the eight-hour carbon monoxide standard may be violated in the downtown area during extremely adverse meteorological conditions, such as an air stagnation period.
Environmental Consequences

Methodology

A construction date of 1985 was assumed for Phase I and a construction date of 1995 was assumed for the Full Bypass. The analysis for critical years and total emissions utilized traffic data generated for years 1981, 1985, 1995, using the average daily traffic (ADT) volumes and speeds.

The Environmental Protection Agency's (EPA) MOBILE2 computer program was used to calculate motor vehicle emission factors. The MOBILE2 program uses the equation and factors as stated in the EPA publication "Mobile Source Emission Factors," EPA-400/9-78-006.

The year 1981 was found to be the year of maximum impact. However, it was also desirable to compare both project stages and the No-Build Alternative in terms of air quality impacts. Since the projected construction date of the Full Bypass is 1995, the year 1995 was also selected for further analysis.

Total Emission Analysis

The total emissions summary for the project is shown in Table 20.

Carbon Monoxide

A 31 to 35 percent reduction in carbon monoxide (CO) emissions is indicated for the project area from 1981 to 1995 for Phase I, the Full Bypass and the No-Build Alternative. This is due largely to the reduction in vehicle emission rates as a result of federal requirements. The reduction in vehicle emission rates is offset in future years by the increase in traffic volumes resulting in a leveling off of the CO emissions.

Since the overall project emissions summary does not show a marked difference between alternatives in year 1995, the four primary links of the downtown area (Harrison, Van Buren, 3rd, and 4th Streets) were analyzed and compared for CO emissions. Phase I shows a 3 percent reduction in CO emissions over the No-Build Alternative in year 1995, and the Full Bypass shows a 30 percent reduction. This improvement is the result of the diversion of traffic from the downtown area to the rural area along the Bypass route. Hence, the project would be beneficial to the downtown area in terms of the reduction of CO emissions.

Reactive Hydrocarbon

The total hydrocarbon (HC) emissions for the project area show a 59 to 61 percent decrease for Phase I, the Full Bypass and the No-Build Alternative from 1981 to 1995. Interactions of reactive hydrocarbons with nitrogen oxides form ozone. As in the case of CO, the factor to which the HC emissions reduction program. An analysis of the downtown area revealed a pattern similar to that discussed under carbon monoxide.

Nitrogen Oxides

The total nitrogen oxides (NO) emissions for the project area show a 13 to 35 percent reduction for Phase I, the Full Bypass and the No-Build Alternative from 1981 to 1995. Again, as in the case of CO and hydrocarbons, the reductions are due to the federal vehicle emissions reductions, no impacts are predicted for the future.
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Year</td>
<td>Tons/Year</td>
<td>Pct*</td>
<td>Tons/Year</td>
<td>Pct</td>
</tr>
<tr>
<td>No-Build</td>
<td>1981</td>
<td>1137.07</td>
<td>100.0</td>
<td>108.17</td>
<td>100.0</td>
</tr>
<tr>
<td></td>
<td>1995</td>
<td>740.85</td>
<td>65.2</td>
<td>42.05</td>
<td>38.9</td>
</tr>
<tr>
<td>Full Bypass</td>
<td>1981</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td>1995</td>
<td>764.26</td>
<td>67.2</td>
<td>43.18</td>
<td>39.9</td>
</tr>
<tr>
<td>Phase I</td>
<td>1981</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td>1995</td>
<td>788.52</td>
<td>69.3</td>
<td>44.57</td>
<td>41.2</td>
</tr>
</tbody>
</table>

* Percent shows each pollutant relative to No-Build in 1981.
Nitrogen oxides will decrease 5 percent in the downtown area for the Phase I over the No-Build in year 1995, and will decrease 24 percent for the Full Bypass over the No-Build Alternative in year 1995.

Ozone
There are no known ozone impacts in the project area and it is unlikely that any violation will occur in the future. There will be approximately a 10 percent increase in lead emissions for the Full Bypass by year 1995 and a 14 percent decrease for Phase I by year 1995. The increase in lead emissions for the Full Bypass is attributed to the faster travel speeds on the bypass route after project completion. However, this increase is small, and since monitored lead levels in the project have been well below the standard, no impacts are predicted for the project area.

Even though total lead emissions will increase with the project, lead emissions in the downtown area will decrease with either Phase I or the Full Bypass. The downtown area will benefit greatly from the reduction in lead emissions with the project because the increase will occur in rural areas outside the downtown area.

Total Suspended Particulates
The total suspended particulates (TSP) standards have not been violated in the past in the project area. Even though the higher travel speeds made possible by the project will contribute to higher total TSP levels, the increase should be very slight. The project will not cause violations of the TSP standard.

Construction Impacts
Carbon monoxide emissions and TSP will be increased during the time of construction. However, since CO levels are already low, violations are not expected to occur. Therefore, no mitigation of CO emissions is necessary. To mitigate the potential impact of fugitive emissions (TSP), dust control measures, such as watering, will be required.

Project Consistency
The Corvallis region is regarded as an attainment area. The intent of the State Implementation Plan (SIP) is to reduce emissions to attain standards. Except for lead and TSP, all other pollutants will decrease in the future for Phase I, the Full Bypass and the No-Build Alternative. Lead and TSP are currently being monitored in the area. Monitored data does not show any violations of the NAAQS since monitoring began. The increase in lead and TSP will be very slight and is not predicted to exceed standards. For these reasons, the project is considered to be consistent with all portions of the SIP.

ENERGY CONSUMPTION ANALYSIS

The BTU (British Thermal Units) construction and operational energies that would be used for the proposed project were determined by computer analysis as listed in the following two tables.

III-78
Table 21 shows the estimated BTU's that would be consumed in constructing the two Build Alternatives. Phase I is approximately one mile long, is two-laned, and has one structure; the Full Bypass is about 1.8 miles long, is four-laned, and has seven structures.

Table 22 shows the estimated annual BTU's that would be consumed by vehicles traveling on Phase I, the Full Bypass, and the No-Build Alternative, based on 1995 projections, as well as the daily energy consumed during the peak traffic hour periods. The traffic figures developed for these projections are based on the City of Corvallis mandating that through truck traffic on US 20 and ORE 99W use the Phase I or the Full Bypass and encouraging through car traffic to do likewise. These vehicles, traveling the longer "out of direction" routes at higher speeds, are the main reason the analysis shows the No-Build Alternative to be the most energy-efficient for vehicles.

However, the "state of the art" of determining energy consumption is by no means perfected, particularly when dealing with millions and billions of units of BTU's. In such cases, a difference of several units is not significant. Therefore, because the energy consumption of the three scenarios is relatively close, this analysis is inconclusive.
### TABLE 21

**ESTIMATED ENERGY REQUIRED FOR CONSTRUCTION**
*(In Billions of BTU's)*

<table>
<thead>
<tr>
<th>Materials</th>
<th>Phase I</th>
<th>Full Bypass</th>
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</thead>
<tbody>
<tr>
<td>Embankment</td>
<td>10.691</td>
<td>39.026</td>
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<tr>
<td>Excavation</td>
<td>0.253</td>
<td>0.371</td>
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<tr>
<td>Cement Treated Base</td>
<td>14.451</td>
<td>42.812</td>
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<tr>
<td>Surfacing</td>
<td>49.961</td>
<td>159.310</td>
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<tr>
<td>Concrete Guard Rail</td>
<td>0.847</td>
<td>12.348</td>
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<tr>
<td>Steel Guard Rail</td>
<td>---</td>
<td>0.858</td>
</tr>
<tr>
<td>Structures:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Portland cement concrete</td>
<td>10.125</td>
<td>58.050</td>
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<tr>
<td>Steel</td>
<td>16.830</td>
<td>95.527</td>
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<tr>
<td><strong>TOTALS</strong></td>
<td>103.158</td>
<td>408.302</td>
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</table>

### TABLE 22

**ESTIMATED ENERGY REQUIRED FOR VEHICLES**
*Based on the Year 1995*

<table>
<thead>
<tr>
<th>Alternatives</th>
<th>Year Use (Billion BTU's)</th>
<th>Peak Hour Use (Million BTU's)</th>
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</thead>
<tbody>
<tr>
<td>No-Build</td>
<td>245.073</td>
<td>62.561</td>
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<tr>
<td></td>
<td>(1,960,000)*</td>
<td>(500)*</td>
</tr>
<tr>
<td>Phase I</td>
<td>250.321</td>
<td>61.742</td>
</tr>
<tr>
<td></td>
<td>(2,000,000)*</td>
<td>(494)*</td>
</tr>
<tr>
<td>Full Bypass</td>
<td>253.431</td>
<td>63.087</td>
</tr>
<tr>
<td></td>
<td>(2,030,000)*</td>
<td>(505)*</td>
</tr>
</tbody>
</table>

*Approximate gasoline equivalency in gallons is shown in parenthesis.*
Chapter IV

ENVIRONMENTAL IMPACTS OF OTHER CORRIDORS CONSIDERED

This chapter contains the original impact analysis of all the alternatives. Some sections have been altered slightly in accordance with new information developed during the preparation of this document. New traffic data was generated for the final evaluation. This data outdated the Transportation and Traffic Air Quality and Noise sections, however, the relative differences have not changed so this chapter was not updated. More precise planning information has also been made available since the preparation of this chapter.

TRANSPORTATION AND TRAFFIC

Affected Environment

The existing major street network in Corvallis is shown in Figure 24. Major highways and streets providing access to the downtown area include: Ninth Street, ORE 99W, and U.S. 20 from the north; ORE 34 from the east via a narrow and obsolete eastbound bridge at Van Buren Avenue and a more adequate and newer bridge for westbound traffic at Harrison Boulevard; ORE 99W from the south; U.S. 20/ORE 34 and Western Boulevard from the Southwest, south of the OSU campus; and the Harrison Boulevard/Van Buren Avenue one-way couplet and Monroe Avenue (north of OSU) on the west. U.S. 20 and ORE 34 generally follow the same route through Corvallis, and they are coincident with ORE 99W through the downtown area.

Traffic Volumes

The patterns of average daily traffic volumes within the study area are shown in Figure 25. Third and Fourth Streets in the Corvallis CBD function as a one-way couplet, and have been designated as State Route ORE 99W and, for a portion of their length, as U.S. 20 and ORE 34. U.S. 20 follows Second Street north of Van Buren Avenue. These three streets are the major north-south arterials of the existing street system in the Corvallis downtown area, and presently serve substantial volumes of "non-CBD" traffic—both long distance inter-urban through trips and shorter inter-regional trips. Critical intersections are those where these north-south arterials cross Harrison Boulevard and Van Buren Avenue which comprise a key east-west one-way street couplet linking the CBD with the existing crossings of the Willamette River.

Third and Fourth Streets each carry 12,000 to 14,000 vehicles per day in the downtown area, and about 8,000 vehicles per day north of Tyler Avenue. These volumes are well within the 18,000 vehicle-per-day capacity of these three-lane one-way arterials. Harrison Boulevard and Van Buren Avenue are major arterials linking the downtown with the highly developed residential areas to the west and northwest with I-5 and areas east of the Willamette River; each carries 9,000 to 14,000 vehicles per day in the downtown area and 8,000 to 9,000 at the river and at Ninth Street. Harrison Boulevard operates at or near capacity and is congested at peak periods.

About 100,000 vehicles per day enter and leave the Corvallis downtown area on typical weekdays. About 26 percent of this total volume is carried by Second, Third, Fourth and Fifth Streets at the north edge of the
NOTE:
THESE FIGURES REPRESENT THE AVERAGE DAILY TRAFFIC (ADT) BASED ON A MINIMUM OF ONE WEEKS COUNT AT EACH LOCATION

FIGURE 26
TRAFFIC VOLUMES
1976-1977

City of Corvallis, Oregon
area; 17 percent crosses the Willamette River to and from the east; 30 percent utilizes Second to Fifth Streets at the south edge of the area; and 27 percent enters and leaves via Jefferson, Monroe and Van Buren Avenues and Harrison Boulevard on the west side.

**Truck Traffic**

Heavy truck traffic generally accounts for 6 to 10 percent of the total vehicle traffic on downtown arterials during midday periods, and considerably less (2 to 3 percent) during peak traffic hours. The heavy trucks are those considered most objectionable by citizens—primarily due to perceived noise levels.

**Bicycle Traffic**

The close proximity of Oregon State University results in a measurable amount of bicycle traffic in the Corvallis downtown area. Recent counts by the City indicate that bicycles represent from 0.5 to 0.8 percent of the total traffic.

**Public Transit**

Transit service is not a significant factor in Corvallis today. The Corvallis Transit Authority operates 3 fixed route buses and 1 commuter bus on eight fixed routes radiating from the central business district to the suburban areas, serving approximately 470 person-trips per day.

**Traffic Safety**

The accident rates for the state highways in the downtown core part of the study area are higher than the state-wide average for highways in urban areas. Of the 119 accidents recorded between January, 1976 and September, 1977 at the 18 intersections in the study area, 83 were of accident types that occurred more than once. Of these repeating accidents, 59 percent involved a vehicle running a red light, 21 percent involved an improper turning movement, 8 percent involved improper lane use, 6 percent involved angle collisions, and 6 percent "other". See "Safety" in Chapter 3 for updated safety data.

**Environmental Consequences**

**No-Build Alternative**

Projected 1990 traffic volumes for the No-Build Alternative indicate that traffic flows on major downtown streets would be at or near the practical street capacity. One result of the increased traffic volumes would be a reduction in average travel speeds on the major street system. Average vehicle speeds ranging between 8 and 12 miles per hour would be typical. Figure 26 illustrates the anticipated pattern of traffic flows in 1990 with the existing network (the "No-Build" option). Typical daily volumes on Third and Fourth Streets would range between 15,000 and 17,500 vehicles per day at Harrison Boulevard, and 5,000 to 11,000 between Monroe and Van Buren Avenues. The number of vehicles using downtown streets would increase from 100,000 vehicles per day at present to 125,000 vehicles per day in 1990. The volume of trucks using downtown streets would increase to 8,600 light trucks and 2,400 heavy trucks, an overall increase of 25 percent over present conditions. The existing high number of traffic accidents characteristic of major downtown streets would increase in proportion to the 25 percent traffic growth.
Eastern Corridor Alternative

Projected 1990 traffic volumes for the Eastern Corridor Alternative indicate that 19,700 vehicles would use the bypass reducing downtown cordon daily traffic to 91,600 vehicles, a 27 percent reduction over the No-Build option. Major roadways in the study area would provide service to through traffic at average speeds of 35 to 39 miles per hour, as compared with speeds of 8 to 12 miles per hour for the No-Build option. Figure 27 illustrates the projected traffic volumes for the Eastern Corridor Alternative. Approximately 90 percent of the estimated 1990 truck volumes through central Corvallis would be diverted to the bypass. Accident reduction in the downtown area would be proportionate to the projected traffic reduction. Accident reductions in the downtown would be somewhat offset by accidents occurring on the bypass; the accident rate on the bypass, however, would be significantly less than that characteristic of downtown streets.

Central Corridor Alternative

As shown in Figure 28 the Central Corridor Alternative would serve an estimated 24,000 vehicles per day in 1990. This diversion of traffic would reduce CBD cordon Traffic volumes to 111,200 vehicles per day, an 11 percent reduction over the No-Build option. Average speeds on the bypass would range from 21 to 30 miles per hour compared with the 8 to 12 miles per hour average which would be characteristic of through routes in the downtown under the No-Build Alternative. A 90 percent diversion of projected through traffic to the bypass is anticipated. Accident reduction in the downtown would occur in proportion to the predicted traffic reduction.

Western Corridor Alternative

Projected 1990 traffic volumes for the Western Corridor Alternative indicate a 10 percent reduction in downtown traffic volume, comparable to the reduction provided by the Central Corridor Alternative (see Figure 29). Approximately 21,300 vehicles per day would use the western bypass, at average speeds of 16 to 29 miles per hour. Since the alternative would not divert significant truck volumes from Third and Fourth Streets and from Van Buren Avenue and Harrison Boulevard the potential for truck traffic diversion is less than that associated with the other build alternatives, but nevertheless would represent reduced through truck traffic in CBD. Heavy truck traffic would, however, increase significantly, and accident rates on Third and Fourth Streets, which are currently higher than the area-wide average for major arterials, would not be significantly reduced.

Street Modification Alternative

The Street Modification Alternative would generate a 4 percent reduction in downtown traffic flows when compared with the No-Build concept. The projected pattern of 1990 traffic flow with the Street Modification Alternative is shown in Figure 30. Typical daily volumes on Third Street would be greatly reduced from current levels. First and Fourth Streets would each carry 10,000 to 12,000 vehicles per day in the core area. Ninth Street traffic flows would be greater than if the existing system were to remain as it is today, with volumes ranging between 8,000 and 14,000 vehicles per day south of Van Buren Avenue, and approximately 19,000 north of Harrison Boulevard. First Street currently serves 1,000 to 2,000 vehicles per day.
Through traffic would experience a minor increase in average travel speeds operating at 20-32 miles per hour northbound on First Street and 11-14 miles per hour southbound on Fourth Street. The Street Modification Alternative would divert most of the trucks presently using Third Street onto First Street but would achieve no improvement on Fourth Street. A slight reduction in traffic accidents on CBD streets would be anticipated over that associated with the Do-Nothing option.

**Mitigating Measures**

A detailed evaluation of the adverse impacts and proposed mitigating measures was performed during the course of this study. Most of these relate to design details, such as ramp connections, turning movements and conflicts and local traffic control, access and circulation problems; these aspects are generally related to specific design features which exceed the level of detail required for a corridor evaluation. The following discussion addresses only those impacts and mitigations which are inherent to the design concepts and which probably cannot be fully alleviated by design improvements.

**Eastern Corridor Alternative**

To minimize any reduction in the accessibility of east bank lands and O.S.U. facilities, a special access road under Willamette River Bridge would be developed.

**Central Corridor Alternative**

The creation of special pedestrian access facilities such as the installation of pedestrian actuated traffic signals would serve to prevent the Central Corridor Alternative from creating a barrier to pedestrian and bicycle access to the west river bank. The lack of a direct ramp connection between both the Willamette River and Van Buren Avenue bridges and the bypass would require connecting traffic to circulate through downtown. Functional modifications to downtown streets would serve to reduce the impact.

**Western Corridor Alternative**

The barrier effect which would be created along Ninth Street would be mitigated somewhat by the introduction of additional intersections and crossings for vehicles, pedestrians and bicycles with traffic signalization or other appropriate traffic controls. Additional intersections or crossings would tend to degrade the operational effectiveness of the bypass in this corridor.

**Street Modification Alternative**

Any pedestrian barrier effect between the downtown and the river bank which would be due to the development of First Street as an arterial street would be effectively mitigated by the provision of pedestrian actuated traffic signals at all at-grade intersections.
DISPLACEMENT AND RELOCATION

Affected Environment

Each of the alternatives would require displacement of families in one or two neighborhoods in central Corvallis. Neighborhood 5, located west of Sixth Street between the CBD and OSU, would be impacted by the Western Corridor Alternative. Neighborhood 9, which is located east of Sixth Street in proximity to the CBD, would experience displacements due to the Eastern, Central, and the Street Modification Alternatives. Neighborhood 5 has a total of 1,030 living units, of which 34 need no repairs, 227 need some repairs, 369 need substantial rehabilitation, and 400 are beyond rehabilitation.

Neighborhood 9 currently has a total of 114 living units, of which 5 need no repairs, 12 need some repair, 34 need substantial rehabilitation, and 63 are beyond rehabilitation.

The alternatives would also impact commercial business oriented areas of the Corvallis CBD, and areas currently devoted to open space and agricultural uses within the proposed Willamette River Greenway.

Environmental Consequences

Table 23 summarizes the impacts of each alternative in terms of the residential units, persons, and the commercial businesses which may be displaced in each case.

Table 23

<table>
<thead>
<tr>
<th>Displacement Type</th>
<th>Eastern</th>
<th>Central</th>
<th>Western</th>
<th>Street Mod.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single-family Units</td>
<td>5</td>
<td>2</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Multiple-family Units</td>
<td>63</td>
<td>48</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>TOTAL</td>
<td>68</td>
<td>50</td>
<td>12</td>
<td>1</td>
</tr>
<tr>
<td>Approximate Number of Persons</td>
<td>130</td>
<td>115</td>
<td>28</td>
<td>3</td>
</tr>
<tr>
<td>Businesses</td>
<td>9</td>
<td>14</td>
<td>9</td>
<td>0</td>
</tr>
</tbody>
</table>

No-Build Alternative

Inherently this alternative would involve no acquisition of additional right-of-way for highway facilities and, therefore, would have no displacement impacts.

Eastern Corridor Alternative

See Chapter 3 - Right-of-Way Section for updated information.
Central Corridor Alternative
Displacement and relocation of 56 dwelling units holding 115 persons would be associated with implementation of this alternative. This alternative also would involve displacement of 14 businesses including the Riverview Marina and the Patio Motel. In addition the U.S. Postal Service's annex building located adjacent to the original Post Office building would be displaced. Equivalent functional replacement of this facility would be required.

Western Corridor Alternative
This alternative would displace 12 dwelling units requiring relocation of approximately 12 persons. Nine businesses, primarily shops and warehouses would also be displaced.

Street Modification Alternative
The Street Modification Alternative would require the least amount of displacement and relocation of all the alternatives. One residential unit and no businesses would be displaced.

Mitigating Measures
ODOT's Relocation program will help mitigate the impacts of business and residential displacements.

In general the Relocation program provides for:

1. Relocation advisory assistance to all displacees.
2. Move payments to both business and residential displacees.
3. Replacement housing payments to residential displacees.
4. Payment of expenses incidental to the purchase of a replacement dwelling.

CONSTRUCTION
Standard equipment and methods of construction would be used for building all of the alternatives being considered.

Duration
The time needed to construct each alternative plan is estimated as:

- Street Modification Corridor, 1 Year
- Eastern Corridor Alternative, 2-1/2 years
- Central Corridor Alternative, 2 Years
- Western Corridor Alternative, 1-1/2 Years

Staging
Staged construction methods would be used for all plans. The proposed designs and their locations allow flexibility in staging plans to optimize the contractors' operations as well as to minimize construction impacts.
Environmental Consequences and Mitigation

The construction impact for all of the alternative plans would be similar and differ only in magnitude.

Traffic

Construction activities would unavoidably slow local as well as through traffic. Temporary detours might become necessary but would be infrequent and of short duration. Some traffic would divert to adjacent local streets and would cause safety problems and deteriorate neighborhood quality. This effect would be lessened by adequate signing, traffic control and enforcement. Construction traffic is not expected to have a significant impact on overall traffic conditions for any of the plans.

Access and Parking

Local access to adjacent areas would not be seriously affected. Some streets may be temporarily blocked requiring short out-of-direction travel. Access to businesses during construction would be seriously restricted at times but this condition would be of short duration. Parking problems caused by construction are expected to be sporadic and of limited duration. No special measures to deal with this problem are expected to be necessary.

Utilities

None of the alternatives would seriously disrupt utility service. Planned severance of service would include adequate warning time for those affected. Accidental disruptions would be rare with service usually restored rapidly.

Air Quality

Project construction would cause temporary increases in air pollution, mainly in the form of dust generated by demolition and excavation. Dust would be minimized by following the requirements of the State's standard construction specifications.

Noise

Increased noise is an unavoidable feature of street and highway construction. Noise would be minimized by following applicable local and State regulations.

Water Quality

Construction would increase the amount of sediment in storm water runoff. Sedimentation could be limited by minimizing the duration of soil exposure, protecting exposed soil, and using containment measures where appropriate. Minor amounts of oil, grease, and other petroleum derivatives from construction equipment may also be picked up by runoff, but their amounts are expected to be very minute and not cause any detectable adverse impact.

AIR QUALITY

The Willamette Valley in general, and the Corvallis area in particular does experience frequent periods of atmospheric stagnation in the fall and winter months. Previous ambient air monitoring, however, has not recorded any violations of air quality standards. A 1975 study for the new Hewlett Packard facility suggested that 8-hour averages of carbon monoxide may occasionally exceed the 10 mg/m³ standard.
Environmental Consequences and Mitigating Measures

The impact analysis for this study was begun with a calculation of motor vehicle exhaust emissions in the Corvallis area for the various alternatives. Only minor difference were noted, with the alternatives having slightly less emissions than the Do-Nothing option. Further analysis was done by designating specific residential areas for a carbon monoxide dispersion analysis. Three areas were identified: Ninth and Harrison, Fourth between Polk and Fillmore, and Second at Polk Avenue. Nearby roadway links were modeled assuming a one meter per second south wind (blowing toward the north) and a stability class E (inversion condition). The results indicate that the least favorable alternative in terms of adverse impacts to the residential areas would be the Western Corridor Alternative, while the most favorable to air quality in downtown Corvallis would be the Eastern Corridor Alternative. The rank-best to worst is as follows:

1. Eastern Corridor Alternative
2. Central Corridor Alternative
3. Street Modification Alternative
4. Western Corridor Alternative

The area-wide photochemical oxidant problem would not be significantly affected by the small differences in the alternative gross pollutant emissions. However, under extremely stagnant conditions the local oxidant levels would tend to be higher near the traffic source (bypass links). Federal auto regulations should steadily reduce the auto air pollutant emission rates. It does not appear that any ambient air standard would be violated as a result of the alternatives. Auto pollution in Corvallis does not now seem to be an impending problem. However, this does depend on adequate future street capacity to avoid heavy traffic congestion conditions.

NOISE

Noise impacts were quantified and compared to the design guidelines and standards of the U.S. Department of Transportation. The regulations are written for protection of any developed land and dedicated portions of undeveloped land such that reasonable maximum noise levels will not be exceeded.

Three qualities characterize the effects of noise on the listener: (a) the frequencies of the noise; (b) intensity; and (c) the time-varying levels and frequencies of the noise.

The human ear is sensitive to a wide range of sound intensities. A logarithmic scale is used to compress the wide range. The logarithmic scale, called the decibel (dB) scale, also relates to the way people hear. That is, people hear changes in sound intensities in proportion to the logarithm of the intensities. The "A" frequency-weighting scale, that which closely resembles human ear response, is used in this assessment and is noted by the symbol (dBA).
In this report the time-varying character of environmental noise is accounted for statistically. The $L_{10}$ noise levels, which are used in accessing traffic-related noise in this report, measure the dBA sound level which would not be exceeded more than 10 percent of the time. An $L_{10}$ noise level in excess of 70 dBA is considered undesirable in residential areas and 75 dBA is considered undesirable in commercial districts.

**Affected Environment**

The highest statistical $L_{10}$ noise levels measured at selected noise sensitive properties were between 65 and 69 dBA.\(^{(1)}\)\(^{(2)}\) These noise levels were found at Fourth Street and Fillmore Avenue (69 dBA), Second Street and Polk Avenue (69 dBA), Ninth Street and Garfield Avenue (66 dBA), Ninth Street and Monroe Avenue (65 dBA), and First Street and Jefferson Avenue (65 dBA). The lowest noise levels measured and the most sensitive neighborhoods are defined in the noise technical report (see Volume II).

**Environmental Consequences and Mitigating Measures**

The noise impacts of each alternative would be reflected over a large area of arterials away from the alternative corridors as well as along the corridor routes. None of the negatively impacted arterials would lend themselves to any positive means of noise reduction other than strict traffic volume control or acoustic treatment of the impacted structures. Furthermore, most of the non-corridor arterials affected are not included as a part of the proposed work to build any particular alternative.

No noise sensitive properties were found in the 70 dBA and above $L_{10}$ zone in the sample of measured existing noise levels. All of the counted noise sensitive properties expected to be within the 70 dBA and above zone for each alternative are representative of the total number of negatively impacted properties. The number of residential and commercial properties impacted for each alternative are shown in Tables 24 and 25.

**No-Build Alternative**

This alternative ranks fourth best out of five with regard to residential noise impacts and third with regard to commercial property noise impacts. This is one of the least desirable alternatives because of increased traffic volumes through the downtown area and unrelieved traffic access into and out of the central business district through neighborhoods of substantially residential use.

\(^{(1)}\) $L_{10}$ is the sound pressure level exceeded 10 percent of the time.

\(^{(2)}\) dBA is a weighted decibel measure of the sound pressure level spectrum.
### Table 24

**RESIDENTIAL NOISE IMPACT COMPARISON - 1990**

<table>
<thead>
<tr>
<th>ALTERNATIVE</th>
<th>Number</th>
<th>Percent of Total Sample(1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No-Build</td>
<td>103</td>
<td>70</td>
</tr>
<tr>
<td>Eastern Corridor</td>
<td>53</td>
<td>37</td>
</tr>
<tr>
<td>Central Corridor</td>
<td>56</td>
<td>38</td>
</tr>
<tr>
<td>Western Corridor</td>
<td>116</td>
<td>78</td>
</tr>
<tr>
<td>Street Modification</td>
<td>91</td>
<td>62</td>
</tr>
</tbody>
</table>

### Table 25

**COMMERCIAL BUILDING NOISE IMPACT COMPARISON - 1990**

<table>
<thead>
<tr>
<th>ALTERNATIVE</th>
<th>Number</th>
<th>Percent of Total Sample(1)</th>
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</thead>
<tbody>
<tr>
<td>No-Build</td>
<td>17</td>
<td>341</td>
</tr>
<tr>
<td>Eastern Corridor</td>
<td>11</td>
<td>20</td>
</tr>
<tr>
<td>Central Corridor</td>
<td>15</td>
<td>27</td>
</tr>
<tr>
<td>Western Corridor</td>
<td>25</td>
<td>45</td>
</tr>
<tr>
<td>Street Modification</td>
<td>26</td>
<td>47</td>
</tr>
</tbody>
</table>

(1) For a total of 14 sampled noise sensitive study zones (see Volume 2 for more detailed description)
Eastern Corridor Alternative

See Chapter III for the updated Noise analysis.

This alternative ranks best out of five for residential and commercial property noise impacts. The percent of negatively impacted residences and commercial properties would be 37 and 10, respectively. This corridor would reduce the No-Build noise levels mainly by separating trucks out of the populated area's traffic. A reduction in local traffic volume in and out of the central business district through neighborhoods would also be realized. The alternative provides the greatest noise reduction benefit along Third, Fourth, and Ninth Streets. This alternative would, however, subject areas within the Willamette River Greenway to undesirable noise levels particularly along the undeveloped east bank.

Central Corridor Alternative

This corridor ranks second best out of five for both residential and commercial property noise impacts. The percent negatively impacted residences and commercial properties would be 38 and 27, respectively. This corridor would effectively bypass the central business district and residential area. Both truck and auto volumes would be reduced through sensitive areas. The commercial properties negatively impacted would be those along First Street. Major noise reduction benefits would be provided along Third, Fourth, and Ninth Streets.

Western Corridor Alternative

This alternative ranks worst with respect to negative residential noise impacts and fourth best out of five with respect to noise impacts on commercial properties. The percent of negatively impacted residences and commercial properties would be 78 and 45, respectively. This alternative would open up some quiet neighborhoods to high traffic volumes along Ninth Street south of Monroe Avenue and on Jefferson Avenue between Fifth and Ninth Streets. This alternative would only benefit noise levels in the central business district along Third, Fourth and Fifth Streets. The negative noise impacts on residences and commercial properties outside of the central business district make this alternative less desirable than the No-Build Alternative.

Street Modification Alternative

This alternative ranks third best out of five with respect to residential negative noise impacts and ranks last with regard to commercial property negative noise impacts. The Third Street noise levels in the central business district would be reduced significantly, but this would be accomplished by shifting traffic to First Street and thus causing negative noise impacts on commercial properties along First Street. Fourth Street and Harrison Avenue noise levels would be little affected by this alternative. The connection from Ninth Street to Western Boulevard would increase the negative residential impacts on Ninth Street south of Monroe Avenue.
NATURAL ENVIRONMENT

Hydrology

Affected Environment

The principal water courses in the study area are the Willamette and Marys Rivers. These, and their tributaries, drain the entire area. Natural drainage basins within the sub-basin are augmented by storm drains, artificial water catchments and diversions in many locations. The water quality of the Willamette and Marys Rivers is generally good, with the exception that total coliform, bacterial pollution, concentrations have exceeded the acceptable standards for recreational water uses in 1975, 1976 and 1977. The 100-year flood plain of the two rivers encompasses a portion of the study area east of the Willamette River.

Environmental Consequences

The impact on water quality of the Willamette River by a bypass along the Eastern or Central Corridor is not expected to be detectable, except during construction. The impervious surfaces along the river would cause an increase in the runoff and pollutants washed into the river. This can be mitigated with appropriate construction techniques such as ditching and siltation ponds.

The Eastern Corridor is within the 100-year flood plain, as defined by the Corps of Engineers. The embankment for the bypass would not interfere appreciably with passage of the 100-year flood since the flood plain is very broad in this area due to relatively flat ground. Embankment fill would displace an equal volume of floodwater, but this would cause less than a one-foot rise in the water level on the broad flood plain.

A bypass along First Street, the Central Corridor Alternative, would not affect flooding patterns. However, a sewer interceptor is located on First, and all major storm drains cross First Street. If this alternative is selected, any depressed section of the highway may involve relocation of this utility.

The Western Corridor and Street Modification Alternatives are not within the flood plain. The No-Build Alternative, if selected, would not directly impact the water quality or flood plains of the rivers. The existing conditions should remain nearly the same. Increased traffic volume will unavoidably result in more petroleum products washed into storm drains, ultimately reaching the river.

Water pollutants generated by construction along streams include sediments, organic material and sometimes fertilizers used in revegetating the site. Localized thermal pollution by solar energy is a possible result of streamside tree removal. The thermal effect of tree removal differs among the alternatives. The greatest temperature increase would be expected from the alternative that removes the most tall vegetation and buildings from the west river bank. This is the Eastern Corridor Alternative, which would require removal of approximately 200 linear feet of vegetation on the west bank at the southern Willamette crossing and approximately 250 feet at the northern crossing. The net impact on water temperature of these modifications is expected to be imperceptible.

If the Central Corridor Alternative is constructed, a bridge approximately 45 feet wide would replace the existing 30-foot-wide Van Buren Street bridge. A 30-foot ramp would also cross the Marys River. The effects of these would be the same as described above, but of lesser magnitude.
The other "build" alternatives have no direct thermal impact on the rivers, since they require no bridges or riparian tree removal. The No-Build Alternative would maintain the existing conditions along the rivers, providing shade in the morning and afternoon on the Willamette and none on the Marys River.

Geology

Affected Environment

Corvallis is located on the western edge of the Willamette Valley geologic province, consisting primarily of unconsolidated sediments which were deposited on an eroded bedrock surface. West of Corvallis lies the older Coast Range geologic province consisting primarily of sedimentary and volcanic rocks. These older rocks are exposed in the highlands and hills within the Willamette Valley floor, ranging from the river flood plain to the river terraces. The foothills to the west are outside the planning area.

Ground water aquifers in the study area consist of the older volcanic and marine sedimentary rocks and the younger alluvial deposits. Position of the water table fluctuates as much as 10 feet throughout the year as a result of climatic changes. When the natural contour of the land is changed by cuts or fills, these alterations frequently change the depth of the water table relative to the surface, divert surface water to new drainageways, and/or accelerate erosion.

The soils in the study area are predominantly silts and clays that have low permeability and generally poor drainage. All but portions of the east bank corridor have been urbanized. The undeveloped east bank consists of silty loams that are suitable for agriculture. There are no unique farmlands in Benton or Linn Counties. Twenty-six acres of the Eastern Corridor Alternative overlies prime farmland in Linn County. The soils which are designated "prime farmland" by the U.S. Soil Conservation Service are the Cloquato silt loam and the McBee silt loam.

Environmental Consequences and Mitigation

Construction of the Corvallis bypass will not affect the geology or seismicity of the area and will make minor, if any, changes in the topography. If the Eastern Corridor is selected, the bypass will be constructed on prime farmland.

Increased erosion is expected during bypass construction due to the removal of soil cover, especially along the Willamette River bank. The erosion hazard can be reduced by following prescribed construction procedures such as siltation ponds, ditching and slope protection.

Established local mineral sources (sand, gravel and rock aggregate) will be utilized for construction.

Biology

Affected Environment

The study area habitats are predominantly devoted to intense land uses. The majority of existing habitat has either been created or changed in quality by urban, light industrial, or agricultural use. This alteration has disrupted communities through much of the study area, expanded the area of biologically unproductive land, and simplified remaining areas of potentially complex habitat. This trend to less complex, less productive, and less stable habitat conditions results in fewer areas which are able to meet the particular combination of needs for survival of wildlife.
Environmental Consequences

Selection of the No-Build Alternative would have no direct impact on the vegetation and wildlife of the corridors. However, there are secondary impacts that are common to all of the alternatives. As urban land uses spread throughout the study area, some of the remaining agricultural grassland, woodland and shrubland will be replaced by industrial, commercial or residential development. Those areas designated as open space, parks, or low density residential will have the greatest value to existing species. Local wildlife populations are expected to decrease as the proportion of unproductive land increases.

Most of the impacts of the "build" alternatives on wildlife and vegetation in the study area cannot be mitigated or avoided. Areas already paved would change very little, but if areas supporting plant life are paved, it would result in a long-term loss of productivity. This is particularly true for the Eastern Corridor Alternative.

The Central Corridor Alternative has about 5.2 acres of wildlife habitat crossed by frequently-used pedestrian and bicycle paths. Of this 5.2 acres, approximately 2.4 acres would be cleared. At the north end, 1.1 acres of low growing vegetation cover would be in the direct impact zone.

Any in-stream construction for the bypass should be done during periods designated by the Department of Fish and Wildlife to avoid interruption of fish migrations. For the Willamette River, this is from July 15 to August 31, and July 1 to September 15 for Marys River. Construction techniques, such as a berm around the construction area or diversion ponds, would be used to protect the fish populations and the quality of the Willamette River.

The 80-foot wide bypass in the Western Corridor Alternative along Ninth Street would encompass existing sidewalks and planting strips in some areas. As a result, some trees and plants would be removed. About 95 percent of the north end and 80 percent of the south end of the corridor is covered by impervious surface or barren habitat. There are about 40 large trees and various shrubs along the corridor that, if not removed, would be adversely impacted during construction or by increasing the pavement surrounding them.

The Street Modification Alternative is primarily urban in character, consisting of impervious surfaces and some landscaped areas. Some trees along the corridor would be affected during construction or if there is additional pavement.

VISUAL CHARACTERISTICS

Affected Environment

The most dominant visual element in the study area is the Willamette River. The river exhibits a strong natural scenic quality. Both riverbanks are covered with dense foliage as the river passes through the city. Strategically located breaks in this foliage allow outstanding views of this handsome natural resource. To the south of the CBD, the Willamette River is joined by the Marys River, another scenic stream which passes through two of the city's more attractive and highly utilized parks--Avery Park and Pioneer Park. While both banks of the river are part of the Willamette River Greenway, the east bank has mainly been left in its natural state. The west bank,
adjacent to the CBD, has been developed with bicycle and jogging trails, additional landscaping, scenic overlooks, seating, sculpture, etc. Open land typifies visual quality on the east bank of the Willamette River. OSU rowing crew facilities are located in this area as are other University facilities for river-oriented recreation.

The CBD itself is an attractive visual element in the city. The buildings are of consistent scale and compactible architecture while public buildings such as the Post Office tend to reinforce the city's identity. Visual quality varies somewhat in areas south of the CBD, primarily because of mixed, sometimes conflicting land uses. This area is characterized by modest frame dwellings.

West of the CBD, between the downtown commercial district and the University, is one of the city's older and more prominent residential areas. While the area has suffered some decline in recent years, a new trend toward rehabilitation and revitalization has been established.

The areas immediately north of the CBD are among the least attractive in the study area, mainly because of conflicting and incompatible land uses.

Environmental Consequences

The construction of the Eastern Corridor Alternative would significantly and permanently alter the visual quality of the east bank of the Willamette River as viewed from the city. The natural riverbank and flood plain beyond would be dominated visually by the introduction of a major freeway-type roadway facility. However, travelers would be provided with a handsome view of the river and city, and local streets would be left to serve local traffic, thus taking on a character desired by several factions in the community.

The Central Corridor and Street Modification Alternatives would convert the visual character of the existing First Street corridor from one of a seldom used "back street" to a major arterial. The development of First Street as a major arterial would adversely add to the already urban visual quality of the west bank. Construction of the Central Corridor Alternative would, however, physically improve the appearance of urbanized forms along the waterfront, removing several visually ill-appearing buildings and structures, and alleviating the "back alley" appearance of this corridor.

Ninth Street (Western Corridor Alternative) would take on the character of a busy, commercial artery throughout its length, which is now the case only in its northern sections. The Ninth Street widening and removal of landscaping in this corridor would have a negative impact on visual quality.

LAND USE

Affected Environment

The study area encompasses land under jurisdiction of City, County, and State authorities. The majority of the study area lies within the corporate limits of the City of Corvallis. The western portion is located in Benton County and the eastern portion is located in Linn County, across the Willamette River from the Corvallis CBD. Existing land use is shown in Figure 31.
The west bank area is largely urbanized with commercial uses in the CBD ringed by industrial and residential uses. Avery and Pioneer Parks are major open space areas south of the CBD. A narrow greenbelt also exists along the Willamette River. East bank land uses include a major agricultural area and the OSU lands devoted to open space and recreational use.

Future land use patterns are guided by the Urban Area Comprehensive Plan for Corvallis and Benton County. The Linn County Zoning Ordinance designates all lands in the study area east of the river as an Open Land Use, Recreation and Resource District. Land use planning also is guided by the state-wide planning goals and the Willamette River Greenway Program.

Environmental Consequences

No-Build Alternative

By its nature this alternative would have no direct land use impacts. With regard to indirect impacts, however, the No-Build Alternative would allow increasing volumes of through traffic to disrupt pedestrian/shopping activities in the CBD. As a result of this, added impetus would be given to the establishment of a competing regional shopping center further diminishing the viability of the downtown area.

Eastern Corridor Alternative

See Chapter III for an updated analysis of this corridor.

Central Corridor Alternative

The Central Corridor Alternative would be compatible with most existing and planned land uses along the route. However, there would also be some isolated instances where lands desired for future public recreation would have to be utilized. Riverview Marina, at the north end of the project, would have to be acquired for Central Corridor Alternative right-of-way.

Some degree of conflict between the bypass project and the Greenway program would exist with any Central Corridor Alternative location. Thus, there may be some conflict of interest involved with the use of Greenway-designated lands, even though this designation is simply a desired usage for the property as green space.

In concept, the Central Corridor Alternative would accommodate local land use planning goals and objectives in that it would correct an unsightly area west of First Street and would enhance the development of the Greenway along the River. However, as the route travels north of the Van Buren-Harrison bridges, it would clearly be in conflict with riverfront development. Ramps to and from these bridges, with respect to the bypass, would be in conflict with the developed areas of the Greenway. The northbound off-ramp from the proposed facility to U.S. 20 would bisect the Riverview Marina, a recreational boat launch facility, on the west bank of the River. Reduced CBD traffic would encourage new development in the downtown.

Western Corridor Alternative

The Western Corridor Alternative is a proposal to extend Ninth Street southward from Washington Street through vacant school property to the present intersection of ORE 34/U.S. 20 and Fifteenth Street.

Ninth Street is a particularly attractive street south of the commercial strip. Large trees line this street on both sides, beyond which are homes of substantial size and quality. If the bypass facility were
constructed along Ninth Street, the required additional roadway width would necessitate removal of all of the trees presently located in the parking strip between the curb and sidewalk. This would be a significantly detrimental impact in itself, but the setting for the residential structures would also be significantly impaired. The removal of through traffic from the CBD would provide the potential for new downtown development.

Street Modification Alternative

The Street Modification Alternative would have no serious impacts with regard to existing land use, and, unlike the other west bank alternative, would be in general compliance with local planning goals. The reduction of traffic on Third Street would open the area between Fourth and First Streets to new development in the CBD.

OPEN SPACE, PARKS AND RECREATION

Existing Parks and Open Space

The City of Corvallis has extensive dedicated park and other recreation areas supported by development and preservation programs which create its open space system. The dedicated recreation space in this system comprises about 430 acres of which 60 percent is in Avery, Pioneer, and Willamette Parks located along the Marys and Willamette Rivers near their confluence. These areas are supplemented by developed, but informal, recreation areas and by the Willamette River Greenway. The Greenway Program seeks to preserve the natural qualities of the river and its banks.

The following parks are a part of the dedicated system of recreational areas. They are identified in Figure 32.

- Avery Park
- Pioneer Park and Boat Basin
- Central Park
- Washington Park
- Nelson Park

In addition the open space areas along the banks of the Willamette River have been designated as the Willamette River Greenway. The objective of the Greenway Program is to preserve the natural characteristics of the Willamette River and its banks. Portions of the Greenway on both the east and west banks are actively used as formal and informal recreational areas. Two dedicated parks, Nelson Park and Pioneer Boat Basin are within the Greenway boundary.

Environmental Consequences and Mitigating Measures

The potential impacts and possible 4(f) involvements of the alternatives on each open space, recreational, or park site in the study area are presented in the following sections.

No-Build Alternative

The No-Build Alternative would not have any direct impacts on the identified parks, recreation and open space sites. Increased traffic
congestion in and around the central area would increase problems of accessibility to recreation areas. Traffic noise and the resultant increase in air pollution would marginally detract from the use and enjoyment of central area recreational facilities. The increase in the level of traffic and traffic noise would not be expected to be significant when compared to the existing condition on the more heavily travelled streets. Major increases in traffic would not be expected to occur adjacent to recreation areas near the CBD. This alternative would likewise have no perceivable impact on the Greenway program nor upon the objectives of the Park and Recreation Plan. By definition, this alternative would not constitute any 4 (f) involvements.

Eastern Corridor Alternative - See Chapter 3 for impacts of this alternative.

Central Corridor Alternative
The Central Corridor Alternative would involve the physical acquisition of land areas within the west bank portion of the Willamette River Greenway. No lands would be taken from Pioneer Boat Basin or Pioneer Park, as highway development would be confined to existing state owned right-of-way. Impacts on the Greenway and Pioneer Park would constitute 4 (f) involvements, since these state owned lands are now used for recreation.

Greenway Program
Adverse impacts in the areas of land use, traffic, noise, and air quality are predicted. Approximately 7 acres of Greenway designated lands would be required to construct the Central Corridor Alternative. These lands, however, include the existing First Street right-of-way. The most significant impact of the development of this corridor on the Greenway program would be the limitation of access to the river bank. This alternative would eliminate the Riverview Marina boating facility. Currently 1,000 - 2,000 vehicles per day utilize First Street on an average weekday. In contrast the Central Corridor Alternative would accommodate approximately 24,000 vehicles per day in 1990. The area around First Street would be converted to a major traffic corridor with adverse impacts on accessibility to the Greenway as noted above. Noise levels of 70 dBA or greater on the L10 scale are considered as being incompatible with park and open space recreational uses. In 1990, under the No-Build Alternative, it is estimated that approximately 6 acres of the west bank Greenway zone would be subjected to noise levels equal to or in excess of 70 dBA. With implementation of the Central Corridor Alternative approximately 25 acres of the total Greenway area would experience unacceptable noise levels. Regionally, implementation of the Central Corridor Alternative should provide improved air quality by 1990. Areas of the Greenway, however, in the immediate vicinity of the corridor may experience increased oxidation levels.

Pioneer Park
The Central Corridor Alternative would not displace any land, facilities, or activities from Pioneer Park. This alternative would, however, require conversion of state-owned highway right-of-way from an open area to highway use. The right-of-way is located at the northern boundary of the park between Third and Fourth Streets. Noise levels in the park would increase slightly due to traffic using the Central Corridor. In 1990, however, areas of the park exposed to unacceptable noise levels, 70 dBA or greater, would not be increased.
Avery Park

The Central Corridor Alternative would not have any significant impacts on Avery Park.

Central Park and Washington Park

The Central Corridor Alternative would not have significant impacts on either Central Park or Washington Park, although the increased traffic volumes which would utilize Monroe Avenue may slightly reduce the accessibility of Central Park.

Western Corridor Alternative

The Western Corridor Alternative does not involve the physical taking of any 4 (f) lands or facilities.

Greenway Program

This corridor improvement would not impinge upon any element of the Greenway program, and it assists the objectives of the park and recreation plan by making provision for a bikeway which would connect Avery and Pioneer Park facilities to other elements of the overall recreation plan.

Pioneer and Avery Parks

The Western Corridor Alternative would not significantly impact either Pioneer or Avery Parks.

Washington and Central Parks

Improvement of this corridor could indirectly affect the use of Central and Washington Parks, each of which are well buffered from the primary Ninth Street traffic artery by 300-600 feet of intervening development. However, due to the channeling of traffic to specific streets as a result of intersection closures, traffic volumes would be approximately doubled on Monroe Avenue, over that anticipated on the No-Build Alternative. This could affect the accessibility and the use and enjoyment of Central Park both for normal conditions and for the periodic festivals now accommodated at this site.

Street Modification Alternative

The Street Modification Alternative would not require the use of any 4 (f) lands or facilities. This alternative utilizes the existing First Street right-of-way in the Greenway zone and does not require acquisition of lands currently devoted to 4 (f) uses within the Greenway zone, nor will its implementation impair the achievement of the goals of the Greenway program. This right-of-way is not presently devoted to open-space, park, or recreational uses.

Greenway Program

Aside from the barrier effect a primary traffic artery with relatively high traffic volumes would impose on accessibility to the riverfront development, this alternative would have no adverse impact on informal recreation development or the Greenway program. In that First Street would be a oneway, surface facility which would be carrying volumes similar to those on Fourth Street, it could be expected that traffic controls could be utilized similar to those required on Fourth Street to permit access to the riverfront development. Significant areas of the west bank Greenway would be exposed to
undesirable noise levels in excess of 70 dBA in 1990. A deterioration of air quality immediately adjacent to First Street would also occur, although ambient air quality standards would not be violated.

Other Parks

The Street Modification Alternative would not involve any significant impacts to Washington, Central, Avery, or Pioneer Parks.

CULTURAL RESOURCES

Affected Environment

When the first settlers arrived, the Corvallis area was inhabited near the Marys River by the Chepanafa tribe of the Calapooya Indians. Although once numerous throughout the Willamette River Valley, these people suffered great losses in the epidemics of the late 1820's, and in 1855 those remaining were relocated to the Grande Ronde Reservation. Discovery of archeological sites is a possibility in this area along the banks of the Willamette River. The Calapooyans often maintained seasonal villages in such locations in order to return each year for the salmon runs. Presence of this fishery resource and dietary staples, camas and bitterroot, were important considerations in establishment of semi-permanent habitation. Such areas in the Willamette River Valley may have mounds or kitchen middens containing shells, tools, and utensils. From these artifacts and their arrangement in relation to various living levels or strata, information can be obtained on the period of habitation as well as the culture and lifestyle of aboriginal peoples.

Environmental Consequences and Mitigating Measures

Eastern Corridor Alternative

See Chapter 3 for impacts of this alternative.

Central Corridor Alternative

The Central Corridor Alternative involves no buildings registered in the National Register. The U.S. Post Office and the Marysville Landing Site are part of the historic Statewide Inventory of Historical Sites and Buildings and a commercial building on Madison (104 S.W.) is a historic property of local interest. Removal of the Post Office annex on First Street must give consideration to the appearance of the original Post Office. This can be done by protecting the exterior wall and using landscaping to enhance its setting. A historical marker could be placed on the east side of First Street adjacent to the river to identify the Marysville Landing Site. Before the commercial building is removed, all possible alternatives would be explored to determine if it can be salvaged.

Western Corridor Alternative

The Western Corridor Alternative involves no properties in the National Register but there are eight historic residences of local interest and one of state interest. Most of the residences would be impacted by the removal of parking, access restrictions and a gradual change in land use from residential to commercial development. Problems of access and parking for the
residents would be considered in the final design plans in an effort to mitigate any impacts on the residents. Interested individuals or historical societies could investigate methods of establishing historic districts or zones to protect these houses as resources.

**Street Modification Alternative**

No historic properties would be impacted by the Street Modification Alternative. The Do-Nothing Alternative would also have no adverse effect on cultural resources.

**ECONOMICS**

**Affected Environment**

**The Regional Economy**

The economy of Corvallis is to a large extent based upon the presence of Oregon State University. In 1976, the University had a full-time employment of 4,030 persons (in addition, 3,110 students were employed by OSU). In 1970, the entire Corvallis labor force amounted to about 12,500 persons. The majority of workers in Corvallis fall into three occupational types: professional (31.1 percent), clerical (19.0 percent) and service workers (15.3 percent). Manufacturing employment accounted for only 8.3 percent of the work force in Corvallis, substantially below the state figure of 21.4 percent; however, the recent opening of the Hewlett-Packard Advanced Products Division, with its present employment of about 2,550 persons and a future (1990) potential work force of 5,000 persons, is expected to significantly increase manufacturing employment in Corvallis.

Historical trends in population, per capita income, and employment growth show that while population has grown between 3 and 3.5 percent, employment has not kept pace. Total and per capita income (in constant dollars) have increased, but rates of increase have varied considerably since 1950. The 1960-1969 period was one of prosperity for the region, but the recession of the early 1970's significantly decreased the growth rate of income.

**Environmental Consequences**

**No-Build Alternative**

By permitting the existing situation to remain there would be no immediate impact on the property tax base. Since congestion in the downtown area may be expected to continue and accelerate, shoppers and commercial establishments may turn to alternative areas, some of which will be outside of the city limits. If consumers and commercial establishments seek alternative areas, the downtown may be expected to experience decreased property values and, therefore decreased tax revenues for the City government.

**Eastern Corridor Alternative**

See Chapter 3 for impacts of this alternative.

**Central Corridor Alternative**

The right-of-way for the Central Corridor Alternative would require the taking of properties and buildings north and south of the CBD. The 1978 assessed value of displaced lands and improvements amounts to approximately
$2,731,000 which represents 0.48 percent of the City's total 1978 tax base. Therefore, the impact on the local tax rate is considered negligible.

The displacement of these businesses would have the effect of reducing economic activity in the downtown. The major reduction in traffic on Third and Fourth Streets which would be associated with the Central Corridor Alternative would provide an incentive to develop the downtown as a cohesive regional center for shopping and commercial activity. The Central Corridor Alternative would divert through traffic from downtown streets. Economic activity associated with this movement of traffic, such as use of downtown motels, restaurants, stores, and gas stations would be reduced. This alternative would eliminate approximately 100 parking spaces on First Street. This reduction in the downtown parking supply would reduce the accessibility of existing downtown businesses.

Western Corridor Alternative

The Western Corridor Alternative would require the dislocation of the largest number of structures of all the alternatives. Properties and buildings at the northern and southern ends of this corridor which would be taken for the right-of-way of the Western Corridor Alternative have a total 1978 assessed value of about $1,019,000*. This equals 0.18 percent of the city's total 1978 assessed value of $570 million; this would have no impact on the tax rate.

The Western Corridor Alternative would develop Ninth Street as a major limited access roadway facility, reducing east-west access across Ninth Street. Currently, OSU and the CBD are separated by nine blocks. The restriction of access across Ninth Street would tend to further increase the separation of OSU and the CBD, and may reduce the economic activity in the CBD associated with staff, visitors, and OSU students, as well as economic activity associated with the residential areas west of Ninth Street.

The increased traffic flows in the Ninth Street Corridor which would be associated with the Western Corridor Alternative would tend to encourage the development of new commercial activity along Ninth Street. The Western Corridor Alternative would produce a major reduction in downtown traffic volumes. This reduction in traffic would provide the potential to develop the CBD as a cohesive multi-block regional center for shopping and commercial activities.

Street Modification Alternative

The Street Modification Alternative would require the taking of only one residential property south of the Corvallis CBD. This alternative would have no impact on the tax rate. The Street Modification Alternative would increase traffic flows along Ninth Street encouraging commercialization of this corridor. As this alternative would maintain an existing east-west crossing of Ninth Street, there would be no major reduction in east-west accessibility. Thus, there should be no significant impact on economic ties between the CBD and OSU. The Street Modification Alternative would de-emphasize Third Street as a major traffic artery, displacing through traffic flows to First Street. Thus, the area of the CBD between Fourth and First Street would not be penetrated by a north-south traffic artery, providing the potential for development of this area as a cohesive multi-block shopping area.

*Recent residential construction at the southern end of this corridor would increase the assessed value to about $5 million.
district. This alternative would continue the use of downtown street to serve downtown traffic and thus would not significantly impact economic activity related to through traffic movements, such as use of downtown restaurants, motels, gas stations, and stores.

PUBLIC SERVICE

Affected Environment

Police services and protection are provided by the City Police Department within the municipal limits and by Benton County in the rural area. These two agencies are housed in a common facility recently constructed and opened in downtown Corvallis. There are no precinct stations in Corvallis and none are currently planned. The Oregon State Police operate a station located on U.S. 20 - ORE 34, southwest of Corvallis.

The Corvallis Fire Department provides both fire protection and ambulance service in the city and adjacent rural areas. There are presently three fire stations staffed full-time. The main station is located in the downtown area at Fifth Street and Van Buren Avenue and will continue to serve the entire impact area of the proposed Corvallis Bypass. It is supplemented by two substations, located on Circle Boulevard near Thirteenth Street and one on 35th Street near Washington Way. The new stations are situated to reduce response times to most sections of the urban area.

The new Good Samaritan Hospital, the major medical facility in Corvallis, is a 166 bed installation with modern equipment and is fully staffed. It is located north of Walnut Boulevard along Samaritan Drive.

The only schools within the study area are the Benton Center of Linn-Benton Community College (formerly Washington Elementary School) and Corvallis Senior High School. School age children in the study area attend Corvallis Senior High School, Western View and Highland View Intermediate Schools, and Lincoln, Adams and Franklin Elementary Schools.

Environmental Consequences

All the alternatives would improve (shorten) response times for emergency services in the central area of Corvallis. Only the Do-Nothing Alternative would allow existing traffic volumes to increase to the point where congestion might delay emergency services. Although access to certain cross streets from Ninth Street (Western Corridor Alternative) would be prohibited, improved traffic flow on Ninth Street would compensate for lack of direct access to these areas. Access to non-emergency public services and facilities would be improved by all the alternatives. The Western Corridor Alternative may somewhat restrict access to local schools for those study area residents who must cross Ninth Street to reach the school site.

SOCIAL CHARACTERISTICS AND NEIGHBORHOOD QUALITY

Affected Environment

The present (1977) population of the City of Corvallis is approximately 39,000 persons which includes about 15,500 students enrolled at Oregon State University. During the period from 1960 to 1970, the population of Corvallis increased at an annual rate of 5.5 percent from 20,669 persons to 35,153.

IV-32
The ethnic and racial makeup of the population of Corvallis is predominantly white (96 percent) with only 4 percent of the population classified as non-white. The largest minority group is Chinese with 1.2 percent of the total population, followed by the Japanese (1.0 percent), Blacks (0.5 percent), American Indians (0.2 percent), Filipinos (0.1 percent) and "others" (1.0 percent). (See revised data under Population and Housing in Chapter 3.)

A comparison of income levels indicates that the percentage of families in each income level is similar for both Corvallis and for the state, although Corvallis had slightly fewer families with incomes below the poverty level and slightly more families with annual incomes above $15,000.

On the average, housing costs are higher, and vacancy rates are lower in Corvallis than for the State of Oregon as a whole.

Partly as a result of these factors the growth rate of new dwelling units during the early seventies exceeded the population growth rate.

Residential areas which either give the visual impression of a cohesive neighborhood or function as such are located in the southern and western portions of the study area. The neighborhood between Seventh Street and Thirteenth Street south of Western Boulevard consists of modest frame houses, mostly occupied by young families. This description is typical of neighborhoods south of Central Park, between the CBD and the University.

Sixth Street appears to be the north-south neighborhood boundary for neighborhoods between OSU and the CBD, probably because a Southern Pacific rail line extends along the center of this street. Ninth Street, north of Monroe Avenue, becomes an additional north-south boundary. Residences in these areas are older, more substantial houses, many with two floors. Their turn-of-the-century style architecture lends character and identity to their immediate neighborhood and to the city as a whole.

Environmental Consequences

No-Build Alternative

Current population trends would continue or accelerate under the No-Build Alternative. Residential areas in the central city would probably continue to decline or diminish in favor of newer, less congested areas to the north and west.

The No-Build Alternative would not have any significant effect on personal income. The lack of relief from CBD congestion and through traffic could cause a shift in areas of employment away from the central city.

A trend away from owner-occupied to rental occupancy of housing units would continue as a result of the No-Build Alternative. This trend would result from the fact that increased congestion and through traffic will make the central city less desirable for home ownership.

The Third and Fourth Street couplet presently serves as a divisive factor in the neighborhood environment. It restricts interaction between the neighborhood and the adjoining commercial areas, the University and other neighborhoods. Failure to take any measures to relocate this negative element can only serve to intensify an already undesirable situation.

Eastern Corridor Alternative

The Eastern Corridor Alternative would greatly assist in alleviating many of the physical problems which plague the Corvallis CBD including traffic congestion and a threatening decline in retail trade.

IV-33
This alternative would remove a great deal of through traffic from the streets of the Corvallis CBD, and would encourage the eventual upgrading of the pedestrian environment, thereby strengthening the relationship between the CBD and the University.

In addition, that portion of Linn County in and near the study area would have substantially improved access to existing and future employment areas north and south of the Corvallis CBD in Benton County and would thereby be more attractive for future residential development and population increases.

The Eastern Corridor Alternative seems as likely to enhance Corvallis as a regional center as to provide an easy route to other centers. The removal of through traffic as a result of the Eastern Corridor Alternative should enhance the business environment for retail shopping in the Corvallis CBD and stimulate a strengthening of the employment opportunities downtown.

The Eastern Corridor Alternative would not have any severe negative impacts with respect to neighborhoods in the central city. By removing through traffic from the CBD the Eastern Corridor Alternative would assist in encouraging greater interaction between the downtown business community and the inner city neighborhoods.

Central Corridor Alternative

The Central Corridor Alternative would assist in alleviating many of the physical problems which plague the Corvallis CBD including traffic congestion and a threatening decline in retail trade.

The Central Corridor Alternative, by removing a great deal of north-south through traffic from the streets of the Corvallis CBD, would likely encourage the eventual upgrading of the pedestrian environment.

The alternative would necessitate the relocation of the largest amount of economic activity of all the alternatives considered. The removal of through traffic from the major business streets as a result of the Central Corridor Alternative should stimulate a strengthening of the employment opportunities downtown.

The Central Corridor Alternative would not impose any severe negative impacts with respect to the neighborhoods or the central city. Without some improvement to accommodate through traffic, the Third and Fourth Street couplet would continue to be a barrier to accessibility between OSU and the CBD. The Central Corridor Alternative would function to improve the accessibility between OSU and the CBD and strengthen the neighborhoods adjoining both.

Western Corridor Alternative

Extending Ninth Street from its present termination southward to U.S. 20/ORE 34 and the diversion of through traffic along this route would probably cause a shift in population away from Ninth Street as that street becomes more heavily traveled and commercialized.

It is unlikely that the trend toward renter-occupied housing in the central city would be halted or reversed by construction of the Western Corridor Alternative. In fact, it might even be accelerated as Ninth Street develops commercially, and homeowners find themselves isolated between two areas of commercial land uses.

The Western Corridor Alternative would be highly disruptive to central area neighborhoods, particularly along the existing southern portions of Ninth Street. This alternative, generally along Ninth Street, would impair
neighborhood interaction as a result of the closing of access across Ninth Street at several locations. Ninth Street would increasingly become a barrier to accessibility between OSU and the CBD.

Street Modification Alternative
Extending Ninth Street from its present terminus southward to Western Boulevard would probably cause a shift in population away from Ninth Street as that street becomes more heavily traveled and commercialized. Population along Third Street would probably increase and/or stabilize as traffic along First Street would have negligible effects on population trends or characteristics.

The Street Modification Alternative would help significantly to stabilize employment in the CBD. This would result primarily from the de-emphasis of Third Street as a through facility, creating a pedestrian-oriented atmosphere more conducive to shopping. In the residential areas west of the CBD, a trend away from owner-occupied to rental occupancy of housing units would probably accelerate when Ninth Street is extended southward to Western Boulevard. The removal of through traffic from Third Street would significantly improve the cohesiveness of central area neighborhoods. However, the extension of Ninth Street southward to Western Boulevard would be disruptive to the adjacent neighborhood.

RESOURCE COMMITMENTS

The major resources committed to street and highway construction are land, materials and labor. Most of these resources are committed as irreversible and irretrievable.

Environmental Consequences

Land
All of the alternative corridors would require acquisition of additional land for right-of-way. Most of this land is presently on the local tax rolls and appears to be well-suited to its present use. The following table shows the supplemental land needed to build each plan:

Table 26
LAND REQUIREMENTS

<table>
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<th>Alternative</th>
<th>Acres</th>
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<td>Eastern Corridor</td>
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<tr>
<td>Central Corridor</td>
<td>9</td>
</tr>
<tr>
<td>Western Corridor</td>
<td>9</td>
</tr>
<tr>
<td>Street Modification</td>
<td>1</td>
</tr>
</tbody>
</table>

Materials
A majority of the materials used in highway construction can be considered as irretrievable after incorporation. In some instances structural steel, pipe and some appurtenances can be economically retrieved for their salvage value but in most cases items like reinforcing steel, concrete and
asphalt cannot be retrieved except for use as fill material. The alternatives listed below are in order, from least to greatest materials commitment:

1 - Street Modification Alternative
2 - Western Corridor Alternative
3 - Central Corridor Alternative
4 - Eastern Corridor Alternative

**Implementation Expense**

Engineering, construction and right-of-way acquisition expense would be required to implement the alternatives. The No-Build Alternative involves zero capital expense. The greatest capital costs would be associated with the Eastern Corridor Alternative, approximately $30 million in 1982 dollars. The Central Corridor Alternative would involve $16.3 million (1978 dollars) in implementation costs. Approximately $4.6 million (1978 dollars) in capital expense would be required to implement the Street Modification Corridor Alternative.

**Fuel Consumption**

Vehicle fuel consumption is generally related to travel speeds, the uniformity of traffic flows, roadway grades and surface conditions. This means that a longer trip on a roadway with free-flow traffic conditions could result in fuel savings in comparison with a shorter trip through congested areas with frequent stop or slowdown speed cycles.

The comparative fuel efficiency of the bypass alternatives in 1990 indicated that the alternatives could result in area-wide fuel reductions between 1.8 and 6.3 percent in comparison with the No-Build Alternative. The Street Modification Alternative would reduce fuel consumption by 1.8 percent and the Eastern Corridor Alternative would reduce fuel consumption by 6.3 percent with the performance of the other alternatives ranging in between.
Chapter V

PUBLIC AND AGENCY COMMENTS AND COORDINATION

PUBLIC INVOLVEMENT

In accordance with the Oregon Action Plan, a Citizens Involvement Committee (CAC) was organized for this project. This committee was composed of local residents and property owners representing various community constituencies. The CAC was effective in identifying sensitive areas, defining local attitudes and concerns, providing an information feedback mechanism and defining alternatives.

PUBLIC HEARING

A public hearing was held on July 26, 1979. Approximately 100 people attended. Of those testifying, a majority testified for the Eastern Corridor or the Modified Eastern Corridor. The Modified Eastern Corridor was a concept presented by a consulting firm working for the city. The objective of the concept is to substantially reduce the cost of the project while accomplishing the major goals. The concept has been adopted as Phase I of a Full Eastern Corridor Bypass.

AGENCY COORDINATION

Several agencies and local governments have been contacted for input during the preparation of this document. These include: Department of Land Conservation and Development, U.S. Fish and Wildlife Service, Linn County Planning Department and Commission, and City of Corvallis Planning Department, and the State Historic and Preservation Office.

AGENCY COMMENTS AND RESPONSES

Department of Housing and Urban Development; Portland Area Office; January 29, 1979

1. Comment: How does the relocation/displacement of 2 single-family residences, 48 multi-family units and 14 businesses correlate with the 56 units and 15 businesses adversely impacted by noise in the Central alternative? Are these structures in addition to each other or are the same structures being counted separately for each adverse impact.

Response: The Eastern Corridor Bypass was selected as the Build Alternative. Those businesses and residences referred to in the Central Corridor Alternative will not be affected by the selected alternative. Noise impacts discussed in the Environmental Impact Statement are only for those structures that are remaining after the project is completed. Those structures that are removed are not considered in the noise impact study.
2. **Comment:** The Central Corridor alternative appears to be least disruptive to the residential neighborhoods and also appears to have the least significant overall adverse environmental impact of the alternatives that provide a viable solution to projected traffic hazards.

**Response:** The Eastern Corridor alternative was selected. A modification has been incorporated as Phase I of the Full Bypass. The reasons for its selection can be found in the "Selected Alternative" Section in Chapter 2.

3. **Comment:** An opportunity for updating the local Comprehensive Plan could resolve some of the adverse influences associated with the various alternatives.

**Response:** The Corvallis Bypass proposal is included in the Corvallis Comprehensive Plan (December 1980), and in the Corvallis Downtown Urban Renewal/Redevelopment Plan (January 1978; and amended September 1980). It has also been included in the Corvallis Riverfront Park Master Plan (adopted by Corvallis Parks and Recreation Board, November, 1981, and adopted as a conceptual plan by the Corvallis City Council in December, 1981). All three of these plans have been updated and completed since the date the comment was made.

The Corvallis Bypass is not addressed in the Linn County Comprehensive Plan (August, 1980) at this time. ODOT's review of the plan pointed out this discrepancy to Linn County and LCDC, while Linn County has not specifically identified the Corvallis Bypass in its comprehensive plan, the Linn County Board of Commissioners sent a letter to the Transportation Commission (March 19, 1980) which indicates that the Linn County Board of Commissioners supports the proposed project.

Linn County's plan indicates that, in its implementing ordinances Linn County will establish a process for review of major transportation facilities. It is not known whether this process will be developed as originally projected: by the end of 1982.

United States Coast Guard; February 12, 1979

4. **Comment:** The Eastern and Central Corridor Alternatives would cross the Willamette River, a navigable waterway of the United States. The Eastern and Central Corridor Alternatives would also cross Marys River, a waterway for which no determination of navigability has been made. A bridge permit will be required for each navigable waterway crossing. Should either of the above Alternatives be selected, then a navigability determination must be made for the Marys River before we can advise you of bridge permit requirements for that waterway.
Response: The Marys River does not have a history of commercial navigation and is not considered to be a navigable river by the Oregon State Highway Division. The Corps of Engineers does not include this river among its list of navigable waters in Oregon.

5. Comment: Summary, page 1 - If either the Eastern or Central Corridor Alternative is constructed, Coast Guard bridge permits will be required. The Summary should note building of a bridge across a navigable waterway is a major federal action which requires a bridge permit from the Coast Guard. The Summary should state that the EIS will be used in support of bridge permit applications. The Summary should also acknowledge Coast Guard participation in preparation of the Final EIS by submission of information required for our agency's areas of concern.

Response: The fact that the construction of a bridge across a navigable waterway will require a bridge permit from the Coast Guard has been included in the Final Environmental Impact Statement (FEIS) and can be found in Chapter III under Hydrology and Navigation. The process will require a Coast Guard hearing and the FEIS will be used as documentation for the permit application. This is acknowledged in the Summary.

6. Comment: Page 28 (Page 38) - (Water Quality) - A description of the in-water construction of bridge piers and approaches is desirable to describe the control to be exercised to reduce water quality degradation. It is also appropriate to discuss the times of the year that all in-water construction will take place and any time limits established by fish and/or game agencies.

Response: Final design of the project has not yet been completed and specifications for the structures are still in the planning stages. However, when construction plans are completed, all precautions considered necessary to protect the water quality of the rivers will be taken. Requirements will be written into the job specifications to insure that these precautions are observed. Standard specifications for bridge construction such as the use of cofferdams and cribs will be required. Coordination with the Oregon Fish and Wildlife Department will continue throughout the project.

7. Comment: Page 47, para. 3 mentions that any instream construction for the bypass should be done during periods designated by the Department of Fish and Wildlife - the statement should be positive. It is suggested that a discussion be included addressing measures to be used to avoid oil spills and methods which will be available for clean-up of any accidental spills during and after construction.
Response: The Final Environmental Impact Statement has been revised to state the construction period agreeable to both the Fish and Wildlife Department and the Oregon State Highway Division. These agencies will continue to cooperate on this project throughout the construction of the Bypass.

8. Comment: Page 44, para. 3 - The statement "Any structures, like bridges, within the Willamette or Marys Rivers can and should be designed and constructed to avoid interference with the floodways.", does not resolve the question. Bridge piers and approaches can be constructed to provide a minimum restriction to flow, therefore, in consideration of your previous statement in para. 2 that "Embankment fill would displace an equal volume of floodwater, but this would cause less than a one-foot rise in the water level on the broad flood plain.", you should make a positive statement concerning the design of bridge piers and approaches which will minimize backwater effect.

Response: The Final EIS addresses, in a positive manner, that the bridge piers and approaches will be constructed in a manner as to provide minimal, if any, restrictions to riverflow in the Willamette and Marys Rivers. See Hydrology section of this document.

9. Comment: Page 45, para. 1 - This para. discusses roadway widths of bridges only. This may be an appropriate section of the document to discuss the provisions for navigation which will be made if either the Eastern or Central Corridor Alternative is selected. If any or all of the three bridges proposed across the Willamette will provide clearances equal or greater than the existing bridge at Van Buren Avenue it should be so stated. If the clearances will be less than the Van Buren bridge then the document should catalogue the clearances. To describe navigation clearances on the Marys River you should insert similar information concerning the proposed Marys River crossings in relation to the existing bridge.

Response: The selected alternative would have two bridges across the Willamette River and one bridge across the Marys River. Clearances are discussed in the project description on page II-9. Also see Navigation in Chapter III.

10. Comment: Page 8-2, para. 4 - This para. mentions a separate technical report discussing 4 (f) involvement. Is the report available and will distribution be by separate document or combination EIS/4 (f)?

Response: A 4(f) evaluation is included as Chapter VI. Only the riverfront area is impacted.
11. **Comment:** Page 8-12, para. 3 – For the Central Corridor Alternative Riverview Marina at the north end of the project would also have to be acquired for right-of-way. It is appropriate to discuss how this marina would be relocated.

**Response:** The Central Corridor was not selected as the build alternative. However, the Riverview Marina will still have to be acquired for right-of-way for the selected alternative. Discussion of relocation assistance for all displaced businesses and residences is located in the "Right-of-Way" section, Chapter III, of this document.

Department of State Lands; February 1979

12. **Comment:** If the selected alternative includes plans for new bridge construction across Willamette or Marys Rivers, please contact us for information concerning easement over State owned waterways.

**Response:** Comment noted. Contact with the Department of State Lands will be made regarding information about easements and/or permits for the construction of bridges across the Willamette and Marys Rivers.

Department of Water Resources; February 23, 1979

13. **Comment:** Page 5-5 Floodplain, 2nd paragraph, 2nd sentence is misleading. Should change it to: "Once the floodway is defined, a community shall prohibit encroachments, including fill, new construction, substantial improvements and other development within the adopted regulatory floodway that would result in any increase in flood levels within the community during the occurrence of the base flood discharge".

**Response:** The hydrology report indicates that the floodplain encroachment will not appreciably raise flood levels. More information is available in the Hydrology section of Chapter III.

Department of Environmental Quality; February 23, 1979

14. **Comment:** The DEIS adequately presents the relative air quality impacts of the alternatives considered. The proposed project, once a corridor has been selected, would not require an Indirect Source Construction Permit.

**Response:** Comments noted. Additional air quality information for the selected alternative is contained in this Final Environmental Impact Statement.

Department of Geology and Mineral Resources; February 23, 1979

15. **Comment:** Eastern Alternative passes through the site presently being developed by Morse Brothers for sand and gravel extraction - major source for the area.
Response: Officials of Morse Brothers Co. indicated that the gravel pit located adjacent to the project has been closed. It was converted to a land fill and has since been filled and covered over. The only sand and gravel pit operations are limited to Fisher Island, southeast of the project. The City of Corvallis has purchased the land to the west of the old pit.

Department of Fish and Wildlife; February 23, 1979

16. Comment: The Draft Environmental Impact Statement for the Corvallis Bypass indicates on page 6-26, paragraph 4, Volume 2 that the impact of the Eastern Corridor could be mitigated by properly locating the route and minimizing the area cleared for construction and right-of-way. We suggest a more realistic approach would be to acquire additional land between the bypass route and the river and develop it as wildlife habitat.

Response: Federal funds are not available for the purchase of right-of-way for the development of wildlife habitat unless it is for the mitigation of wetlands that would be taken for the project. Because a substantial amount of the habitat is wetlands, however, a replacement plan is proposed in the area suggested.

17. Comment: The Oregon Department of Fish and Wildlife favors selection of the Western Corridor since it would have the least impact on fish and wildlife habitat. Implementation of this alternative would have no significant effect on sedimentation, water temperatures or riparian vegetation.

Response: The Eastern Corridor Bypass has been selected for construction. An explanation for and description of the alternative can be found in the Selected Alternative section of Chapter 2.

U.S. Environmental Protection Agency; Region X, Seattle, Washington; March 1, 1979

18. Comments: The noise study presents a detailed analysis of the noise environment for the design year. Design year noise contour and a table listing the number of residents within the L10 70 dBA contours are presented. We believe the noise section in the final EIS should be expanded to provide: 1) existing noise level contours, 2) the location (on a map) and number of noise sensitive receptors within the present 70 dBA or higher contours, 3) the location (on a map) of the noise sensitive receptors listed in Table 5-3, page 5-9. This data will help people in the project area to understand the effects the proposed action will have on them.

Response: Noise data for the selected alternative has been updated in the FEIS. A complete Noise Study Report is available upon request from the Environmental Section, Oregon State Highway Division.
19. **Comment:** Construction of the eastern alternative, on an elevated bed, may change the flood pattern which occurs during the occasional spring floods. The final EIS should present an analysis which indicates the extent and impact of any change in flood area (on a map) and mitigation measures to eliminate increased flood area.

**Response:** The Eastern Corridor Alternative has been selected as the build alternative. An analysis of the potential flood impact and mitigation measures is presented in the Hydrology section, Chapter III.

**U.S. Department of the Interior, Environmental Section**

April 3, 1979

20. **Comment:** Both the Eastern Corridor and Central Corridor Alternatives will displace the public boat dock at the foot of Polk Avenue. Additionally, the Central Corridor Alternative would significantly impact the City of Corvallis' developed riverfront park on the west bank of the Willamette River (Vol. 2, page 9-4).

**Response:** The selected corridor (Eastern) will not displace the public boat dock at the foot of Polk Avenue.

21. **Comment:** Depending upon final design considerations, both the Eastern Corridor and the Central Corridor Alternatives could seriously impact the existing bikeway along the west bank of the Willamette River (Vol. 2, page 9-7).

**Response:** The selected alternative will impact the bikepath in the confluence area; however, the pathway will be relocated to form a continuous and aesthetically pleasing path.

22. **Comment:** Potential impacts resulting from the removal of parking and access restrictions to eight historic residences of local significance and one of State significance (Vol. 1, page 59), cause us to believe that the Western Alternative may also involve Section 4(f). Since the draft environmental statement has been prepared on the basis of transportation corridors and not final roadway locations, it is difficult to determine whether additional Section 4(f) properties, such as the U.S. Post Office Building and Marysville Landing, will be impacted. Regardless of which alternative is selected, the draft statement should contain documentation indicating consultation with and conclusions of the Oregon State Historic Preservation Officer (SHPO).

**Response:** The selected alternative does not impact any historic 4(f) properties. The letter contained in Appendix C from SHPO verifies this conclusion. A 4(f) evaluation of impacts on the riverfront is contained in Chapter VI.
23. **Comment:** If the Eastern Corridor Alternative is selected, the roadway would create an 80-foot wide fill which would function as a "dike" directing floodflows to the east. The statement does not assess impacts of these redirected flows on the flood plain. Should the Eastern Corridor Alternative be selected, the final statement should discuss this matter.

**Response:** Information about the flood impacts caused by the construction of the Selected Alternative can be found in the Hydrology section Chapter III of this document.

24. **Comment:** Recent maps show that mining of sand and gravel is expanding in the area adjacent to the proposed Eastern Corridor Alternative. The statement should discuss the potential impacts of this alternative on existing and potential gravel pit operations.

**Response:** The sand and gravel operations in the project area are confined to Fisher Island, a considerable distance southeast of the proposed highway. An old gravel pit adjacent to the project has been used as a sanitary fill and is now completely filled and the area reclaimed. The land on the west end of the pit, where the alignment of the project is near, has been purchased by the City of Corvallis. There will be no conflict with gravel removal operations caused by this project.

25. **Comment:** The geologic map (figure 6-2) does not correspond to published maps of the area in that sizeable areas of terrace gravels are not shown.

**Response:** The geologic map has been revised to include the sand and gravel deposits in the area. These deposits were not originally shown on the map because of the vast amounts located in the project area. As it was alluded to in the text, the entire project area is underlain by these alluvial materials that have been deposited by the river. It was not felt that showing these on the map would contribute to the information shown.

26. **Comment:** The draft statement does not mention the probable need for a permit from the U.S. Coast Guard and/or the Corps of Engineers, pursuant to Sections 9 and 10 of the River and Harbor Act of 1899 and Section 404 of P.L. 92-500, for the implementation of certain project alternatives. Because the statement lacks adequate site-specific and design-level information on impacts and mitigation measures in the flood plains of the Willamette and Marys Rivers, the comments in this letter do not in any way preclude additional and separate evaluation and comment by the U.S. Fish and Wildlife Service (FWS), pursuant to the Fish and Wildlife Coordination Act (16 U.S.C. 661, et seq.), should such permits be required. In review of permit application, FWS may concur, with or without stipulations, or object to the proposed work depending on information available
at that time. Should there be adequate design plans available, FWS would be pleased to cooperate with you and the Coast Guard, Corps of Engineers in resolution now of these stipulations so they may be included in the final environmental statement.

Response: Comments are noted. A Coast Guard permit will be required for the construction of the bridges across the Willamette River. The project will also require a Section 404 permit from the Corps of Engineers. Additional information about the flood plain impacts and mitigation can be found in the Hydrology section of this document. At this time, final design plans have not been completed for this project.
Chapter VI

FINAL SECTION 4(f) EVALUATION

Proposed Action

The proposed project, described in Chapter II, is a bypass of the downtown area of Corvallis. The alignment will start at the interchange of ORE 99W, US 20, and ORE 34, south of the Corvallis Central Business District (CBD), cross the Willamette River on the south end of the project near the confluence of the Willamette and the Marys Rivers, and join with ORE 34 on the east side of the river, to form Phase I of the project. The second phase of the project proceeds north from ORE 34, crosses the Willamette River north of the CBD and joins US 20 and ORE 99W (see Figure 33).

The purpose of the project is to provide an alternate route for through traffic, particularly heavy truck traffic, now going through the CBD. This will make the CBD more hospitable and safe for pedestrians, and reduce negative aesthetic factors such as noise and congestion. Removal of through traffic is an integral part of the Corvallis Downtown Urban Renewal/Redevelopment Plan. This plan is aimed at improving the economic viability of the downtown business area through renewal and redevelopment activities.

Heavy trucks account for 5 percent of the total daily vehicle traffic on Third and Fourth Streets (the one way couplet in the CBD), but constitute 10 percent of total traffic during the midday shopping period. Approximately 75 percent of these trucks have destinations outside the CBD. Additionally, the accident rate on the Third-Fourth Street couplet—13.61 accidents per million vehicle miles—is substantially higher than the average rate of 5.11 for primary urban state highways.

Description of Section 4(f) Resource

The Corvallis Riverfront area encompasses a narrow corridor extending from Marys River to a point approximately 950 feet north of Tyler Avenue, and generally includes First Street. This area is not a designated park, but it is publicly owned, and subject to planning for park purposes. Significant portions of the riverfront area are now used for recreational purposes. Eventually, this area will be designated and developed as park as shown in Figure 34.

The riverfront area is owned by the Oregon State Highway Division (OSHD) and City of Corvallis. This Section 4(f) evaluation has been prepared because the proposed project requires land from two properties in the riverfront area, near the confluence of the Marys and Willamette Rivers.

The first property is 9.1 acres in size and is located at the confluence of the Marys and Willamette Rivers. This parcel is in the joint ownership of the city and OSHD. See Figure 35. It was originally purchased as right-of-way for a bypass, which was planned to follow First Street. An agreement signed in May, 1955, divides the ownership of the parcel once a highway alignment is formally established. This agreement stipulates that the area needed for highway right-of-way will be committed to OSHD ownership, and the remainder of the parcel will become city property.
The second property is located between B Street and the Van Buren Street Bridge. This property is owned by the City of Corvallis, and part of it is dedicated street right-of-way. The proposed action will require 1.2 acres of this land at the south end near B Street.

The riverfront property north of the Van Buren Street Bridge is owned by OSHD and is being used by the city, which has a limited-use permit from OSHD for landscaping and access to the river. The permit can be cancelled at anytime and is renewable on a yearly basis. The property is not subject to 4(f) because this permit is in effect. The area is used to access a public boat launch and neither access nor launching will be affected by the proposed action.

The riverfront is used recreationally for activities that include biking, jogging, walking, viewing of the river, and fishing. The principle facility in the area is a bikepath, which runs the length of the riverfront to Tyler Avenue. The path is part of an 8-mile long bikeway that extends to the city of Philomath. The bikepath was constructed utilizing State funds, and no federal or local matching funds. The bikepath was completed in 1976, and OSHD is responsible for doing major repairs. The City of Corvallis performs minor maintenance on the bikepath such as patching and sweeping.

Other improvements to the riverfront have been largely through volunteer efforts. Benches and some landscaping have been placed at intermittent locations along the bikepath. Most of the improvements are concentrated at the end of Madison Avenue, where there are benches, flower boxes, a water fountain, some landscaping, and a deck which overlooks the river. Some of these improvements have been constructed without the knowledge or sanction of the city.

There is steady use of the area daily, particularly use of the bikepath, although there are no statistics on its use. Access to the area is unlimited between B Street and the north end, and is provided by the bikepath in the confluence area.

There are also parking areas within the riverfront area. A large parking lot located east of First Street from Madison Avenue to Van Buren Avenue contains public permit parking and leased parking to private businesses. A smaller parking area has been developed east of First Street for a park-and-ride lot, and the other half is contracted for use by a car dealer. North of Harrison Boulevard the parking area is utilized by the Linn-Benton Transit District for a park-and-ride site. There are no designated parking spots for riverfront area parking.

A bikepath and viewing platform are in the immediate vicinity of the proposed alignment. The viewing platform is constructed on abandoned pilings. The platform was built by private persons and was not authorized by the city parks department or the State. There is no other development on the jointly-owned or city-owned property in this area. The vegetation is natural and not maintained, except for what is necessary to keep it from overgrowing the bikepath.

The city has been in various stages of planning for the bypass and the riverfront park since the early 1950's. As discussed, the city, with the Highway Division, acquired the confluence area in 1955 with the purpose of developing the bypass along First Street. Funding, however, was not available to complete the project at that time, and as time elapsed, plans for both highway and recreational use of the area evolved. The value of the riverfront as an aesthetic resource was recognized in the planning and resulted in community support for moving the bypass alignment to the east side of the Willamette River.
Since the city desires to have both the bypass and the riverfront park, the planning documents which guide the development of this area recognize both the construction of a bypass and development of the riverfront as plan goals. There are three planning documents which affect this area: the Comprehensive Plan, the Downtown Urban Renewal/ Redevelopment Plan, and Corvallis Riverfront Park Master Plan. The comprehensive plan, adopted December 1980, mentions the bypass as a plan objective. The Downtown Urban Renewal/ Redevelopment Plan (adopted in January 1978, amended September, 1980) is an implementing instrument of the comprehensive plan. The bypass is mentioned as an objective of the plan, and the plan establishes a corridor for the bypass on the plan map; it also mentions recreational development of the riverfront. The Corvallis Riverfront Park Master Plan is accepted as a conceptual plan but does not have the legal weight of the Downtown Plan; it shows the bypass as an element of the plan.

Development of the riverfront has occurred gradually. The bikeway, as mentioned, was completed in 1976. The city has allowed volunteer improvements, as discussed, but has avoided formally designating park boundaries until the exact right-of-way needs for the bypass have been determined, so the jointly-owned land can be divided.

Two-and-one-half years following publication of the DEIS, on June 2, 1980, the Corvallis City Council directed the Park Board to actively pursue developing the riverfront park system on the west bank of the Willamette River in harmony with the Downtown Urban Renewal/ Redevelopment Plan. This action was recommended by the Public Works Committee, because volunteer efforts at maintaining the riverfront area had been inconsistent. Later, in December, 1981, the City Council accepted the Corvallis Riverfront Park Master Plan, as a conceptual plan. See Figure 34.

The eventual character of the development of the confluence area is uncertain. While the conceptual master plan shows a gazebo in this area, indicating a more formal park development, public debate has raised the possibility of leaving the area natural.

When the Riverfront Park is completed, it will join a system of parks which the city has created along the Willamette and Marys Rivers. These include Pioneer Boat Basin, Pioneer Park, and Avery Park. The bikepath runs through all but the Pioneer Boat Basin, and is a unifying element in the overall park system.

Impacts on Resource

The proposed action passes through the riverfront area just north of the confluence of Marys River and the Willamette River. Approximately 4.0 acres of right-of-way will be required from the jointly-owned parcel and 1.2 acres from the city-owned parcels. While Phase I of the project will initially require less disruption, this analysis is based on the impacts of the Full Bypass. See Figure 36.

The proposed roadway is on fill approximately 20 feet high and 160 feet wide. The fill will reduce the area of open space, and visually separate the confluence area from most of the mixed commercial and residential area on the south end of the CBD. The fill will also limit access to that provided at the northeast and southwest corners of the parcel, but its presence will provide an area of retreat. The city-owned property at the end of B Avenue, needed for right-of-way, will receive little disruption because the roadway is on a structure at this point and full access will be maintained. Recreational
FIGURE 36
IMPACTS OF PROJECT ON 4(7) PROPERTIES AND MITIGATION

- BOUNDARY OF ROAD FILL
- EXISTING BIKE PATH NOT IMPACTED
- EXISTING BIKE PATH IMPACTED
- REPLACEMENT BIKE PATH
- ACCESS ROAD
activities in this area are dispersed and transitory, as they occur on the bikepath. Because the roadway is on a structure, which passes over the bike-
way, it will allow these activities to continue. The viewing platform located
on the embankment of the Willamette River off this parcel will be removed.
The city has no present plans to replace it since it was constructed without
the knowledge or sanction of the city. The platform is in questionable
condition and may be condemned and removed.

A total of 800 feet of bikepath will be affected by the project. A
500-foot length will be replaced by a 400-foot length, and a 300-foot length
will be moved 20 to 30 feet. There will be a loss in the overall length of
the bikeway of 100 feet, but this will not impair bicycling or pedestrian use
in any way.

Noise levels are anticipated to increase about 10-12 dBA under both
Phase I and the Full Bypass in the confluence area adjacent to the bypass.
The difference between the two phases is that Phase I is predicted to exceed
federal design noise levels (67 dBA) within 170 feet of the roadway, while the
Full Bypass would exceed these levels within 210 feet. (At the measured site
225 feet from the proposed centerline, No-Build 1995 noise levels would be 55
dBA, Phase I would be 67 dBA, and the Full Bypass would be 65 dBA.)

Presently the only developed facilities within this zone of impact
are the bikeway and the viewing platform. As mentioned earlier, the viewing
platform will be removed during Phase I construction. Should the city choose
to replace this platform, they would do so outside the zone of impact. Users
of the bikepath will experience higher noise levels, for a short distance, but
the activity itself will not be significantly impaired. A gazebo identified
on the master plan is located outside the noise impact zone.

The main riverfront area, between Western Boulevard and north of
Polk Avenue, will not be impacted by the project; the project requires no land
from this area. The Full Bypass will result in a decrease (over No-Build
conditions) of Van Buren and Harrison Bridge traffic and, in comparison to No-
Build conditions, will result in lower noise levels (-7 dBA) to the riverfront
area in the vicinity of these bridges. Phase I will not significantly alter
noise levels from No-Build conditions in this area.

At the north end of the riverfront, no land from the boat ramp (in
OSHD ownership) will be required by the Full Bypass, although noise levels
will increase 13 dBA over existing levels in this area. This increase will
not interfere with boat launching.

During construction, the confluence area will be closed for use when
safety necessitates its closure. The area will be used by heavy equipment.
Elevated noise levels and elevated particulate levels will occur in the imme-
diate vicinity of construction.

Avoidance Alternatives and Their Impacts

Of the other alternatives, only the No-Build and the Western
Corridor avoid impacts to the riverfront area. Neither alternative adequately
addresses the project goals in that they do not remove sufficient traffic from
the CBD. The No-Build does not remove traffic and the Western Corridor di-
verts less than half as much traffic as the selected alternative. The Western
Corridor would also create a significant barrier between the downtown and the
university campus, contrary to comprehensive plan goals of creating more unity
between the two. The Central corridor would have greater impacts on the
riverfront. It would require right-of-way from the jointly-owned parcel, a

VI-9
similar displacement of the bikeway, and divide the downtown from the riverfront, which is contrary to the concept of bringing the riverfront and CBD closer, a main thrust of the downtown redevelopment plan. The Street Modification Alternative has less direct physical impacts on the riverfront, but fails to meet the main goal of the project, which is to remove traffic from the CBD, and it also interjects traffic between the riverfront and the CBD. (See Chapter II, Selected Alternative, Reasons for Selection.)

No design modification of the selected alternative is possible which would miss the resource. Putting the roadway entirely on structure would minimize the direct land impact and the necessity of moving the bikepath; however, such a design would add excessively to the cost ($4.5 million) without significantly benefiting the bikepath or the use of the future park area.

Measures to Minimize Harm

Impacts resulting from the project are displacement of land, increased noise levels, realignment of the bikepath, and interference with recreational activities during construction. Impacts to the future park have been minimized by the fact that planning for the park has been done assuming that the bypass would be constructed at its proposed location.

The principal impact is to the bikepath, an existing facility. The function of the bikepath will be fully restored as well as most of the actual length of the bikepath. The bikepath will be kept open during construction as long as it is safe to do so. During periods of closure, a detour will be provided that links the remaining portions of the bikepath.

Once the right-of-way needs of the bypass are established, the remainder of the jointly-owned parcel will be deeded to the City of Corvallis. The city will then be able to proceed with park development plans for this area. Since the remainder of jointly-owned property will become city property (approximately 5.1 acres), acquiring replacement land is not proposed. To minimize the aesthetic impact of the presence of large bridge approach fill, the fill will be landscaped in harmony with the city park plans.

Noise levels in the confluence area will be slightly reduced by GM concrete barriers installed along the roadway. The noise reduction from this measure is approximately 1 dBA, and was accounted for in the noise level projections. Walls or earthen berms were not considered feasible because they would have to be located along the roadway shoulder area to be effective. Walls would create a tunnel effect, and berms would require a much wider fill. Both were judged to be more negative than the noise impact. The city will have the advantage of knowing the projected noise levels for the park as they proceed in planning and development. Activities which are noise sensitive can be planned for locations outside this area.

Construction noise abatement measures will be included in project construction specifications. (See Chapter III, Construction Noise.) Dust control measures, such as watering, will be employed.

While the existing casual access to the confluence area will be displaced, the existing formal access (the bikepath and an access road) will be maintained at their existing points of entry to the park.
Coordination with Appropriate Agencies

The project has been and will continue to be coordinated with:

1. City of Corvallis: The City of Corvallis Engineering, Park and Recreation, and Planning Departments have all been involved with the planning effort to establish the alignment and minimize impacts to recreational properties.

2. Linn County: Linn County has approved an exception to their Comprehensive Plan in order to enable advancement of the project.

3. U.S. Coast Guard: The project was coordinated with the Coast Guard to achieve minimum clearance requirements for the new bridge structures. Lower structures will result in smaller fills and consequently minimize the impacts to the proposed park.

Conclusion

This evaluation has shown that, while there are feasible alternatives, there are no prudent alternatives to the selection of the Eastern Corridor--Full Bypass, because none of the avoidance alternatives sufficiently achieve the basic goal of the project--removal of traffic from the CBD. The Eastern Corridor is the only alternative which accomplishes a significant removal of traffic from the CBD, while enhancing the development plans for both the downtown and the Riverfront Park.

The bikeway, the main facility on the riverfront, can be moved without affecting its long term function as a recreation and transportation facility. During construction, its function will be maintained by using detours where necessary. The right-of-way impacts were anticipated since 1955 when the land was purchased, and the city has made every effort, through planning, to avoid conflicts between the development of the bypass and development of the riverfront. See Appendix G for letter of confirmation from the City of Corvallis.

The Corvallis City Council has voted its unanimous support of the Eastern Corridor Alternative. The citizens of Corvallis have demonstrated their support by voting for a bond issue to finance preliminary engineering and right-of-way acquisition for the project. Testimony received at the public hearing also reflects this support.

Based upon the above considerations, it is determined that there is no feasible and prudent alternative to the use of land from the riverfront area of Corvallis, and all steps to minimize harm have been incorporated into the proposed project.
Appendix A

LEVELS OF SERVICE FOR INTERSECTIONS

<table>
<thead>
<tr>
<th>Level of Service</th>
<th>Type of Flow</th>
<th>Delay</th>
<th>Maneuverability</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Free Flow</td>
<td>No vehicle waits longer than one red indication</td>
<td>Turning movements are easily made, and nearly all drivers find freedom of operation.</td>
</tr>
<tr>
<td>B</td>
<td>Stable Flow</td>
<td>The number of vehicles waiting through one red indication is increased</td>
<td>Many drivers beginning to feel somewhat restricted within groups of vehicles.</td>
</tr>
<tr>
<td>C</td>
<td>Stable Flow</td>
<td>Occasionally vehicles may have to wait through more than one red indication.</td>
<td>Backups may develop behind turning vehicles. Most drivers feel somewhat restricted, but not objectionably so.</td>
</tr>
<tr>
<td>(Desired Design Level)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>Approaching Unstable Peak Hour Flow Level</td>
<td>Delays may be substantial during short periods, but excessive backups do not occur.</td>
<td>Maneuverability is severely limited during short periods due to temporary backups.</td>
</tr>
<tr>
<td>E</td>
<td>Unstable (Capacity) Flow</td>
<td>Delay may be great -- up to several signal cycles.</td>
<td>There are typically long queues of vehicles waiting upstream of the intersection.</td>
</tr>
<tr>
<td>F</td>
<td>Forced</td>
<td>Excessive delay.</td>
<td>Jammed conditions. Backups from other locations may restrict or prevent movement of vehicles at the intersection under consideration.</td>
</tr>
</tbody>
</table>

## APPENDIX B

### LCDC GOAL CONFORMANCE

<table>
<thead>
<tr>
<th>GOAL 1-Citizen Involvement. To develop a citizen involvement program that insures the opportunity for citizens to be involved in all phases of the planning process.</th>
<th>NO-BUILD</th>
<th>PHASE I</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consistent—A citizens advisory committee was appointed. Public hearings have been held on the project.</td>
<td>Consistent—A citizens advisory committee was appointed. Public hearings have been held on the project.</td>
<td>Consistent—A citizens advisory committee was appointed. Public hearings have been held on the project.</td>
</tr>
</tbody>
</table>

### GOAL 2-Land Use Planning. To establish a land use planning process and policy framework as a basis for all decisions and actions (This goal requires state actions to be consistent with local comprehensive plans). |
| NO-BUILD | PHASE I |
| Not applicable. | Consistent—Project developed under requirements of ODOT planning coordination program. However, utilization of agricultural land is of concern. |
| Consistent—Project developed under requirements of ODOT planning coordination program. However, utilization of agricultural land is of concern. |

### GOAL 3-Agricultural Lands. To preserve and maintain agricultural lands. |
| NO-BUILD | PHASE I |
| Consistent—Does not require acquisition of agricultural lands. | Potential Conflict—Requires acquisition of agricultural lands in Linn County. An exception may be required. | Potential Conflict—Requires acquisition of agricultural lands in Linn County. An exception may be required. |

### GOAL 4-Forest Lands. To conserve forest lands. |
| NO-BUILD | PHASE I |
| Consistent—No forest lands affected. | Consistent—Wooded riparian vegetation will be required for project construction. However, this vegetation is not planned or designated for forest use. (Forest lands defined in this case as forest lands in agricultural areas which provide urban buffers, wind breaks, wildlife and fisheries habitat, scenic corridors and recreational use.) However, this vegetation is not planned or designated for forest use. | Consistent—Wooded riparian vegetation will be required for project construction. However, this vegetation is not planned or designated for forest use. (Forest lands defined in this case as forest lands in agricultural areas which provide urban buffers, wind breaks, wildlife and fisheries habitat, scenic corridors and recreational use.) However, this vegetation is not planned or designated for forest use. |

### GOAL 5-Open Spaces, Scenic, and Historic Areas and Natural Resources. To conserve open space and protect natural and scenic resources. |
<p>| NO-BUILD | PHASE I |
| (a) Open Space Consistent—No open space affected. | Potential Conflict—Conversion of open space to highway use. | Potential Conflict—Conversion of open space to highway use. |
| (b) Mineral and Aggregate Resources | Not applicable. | Not applicable. |
| (c) Energy Sources | Not applicable. | Not applicable. |</p>
<table>
<thead>
<tr>
<th><strong>Appendi</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(d) Fish and Wildlife Areas and Habitat</td>
<td>Consistent—Would not affect existing fish and wildlife habitat.</td>
</tr>
<tr>
<td>(e) Ecologically and Scientifically Significant Natural Areas</td>
<td>Consistent—Would not affect designated or candidate natural areas.</td>
</tr>
<tr>
<td>(f) Outstanding Scenic Views and Sites</td>
<td>Consistent—Would not alter scenic views or bridge site.</td>
</tr>
<tr>
<td>(g) Water Areas, Wetlands, Watersheds, and Groundwater Resources</td>
<td>Consistent—No direct impacts on the resource.</td>
</tr>
<tr>
<td>(h) Wilderness Areas</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>(i) Historic Areas, Sites, Structures, and Objects</td>
<td>Consistent—Would not affect historic structures.</td>
</tr>
<tr>
<td>(j) Cultural Areas</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>(k) Recreation Trails</td>
<td>Consistent—Will not impact Bicentennial Route.</td>
</tr>
<tr>
<td>(l) Wild and Scenic Waterways</td>
<td>Not applicable.</td>
</tr>
</tbody>
</table>

**GOAL 6—Air, Water, and Land Resources.**  
To maintain and improve the quality of the air, water, and land resources of the state.

<table>
<thead>
<tr>
<th>(a) Air Quality</th>
<th>Consistent—Pollutant levels are not predicted to change.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(b) Noise</td>
<td>Consistent—Federal design noise levels have been met.</td>
</tr>
<tr>
<td>(c) Water Quality</td>
<td>Consistent—Water quality standards would not be violated.</td>
</tr>
<tr>
<td>(d) Land Quality</td>
<td>Not applicable.</td>
</tr>
</tbody>
</table>

**GOAL 7—Areas Subject to Natural Disaster and Hazards.**  
To protect life and property from natural disasters and hazards.

| (a) Stream Flooding | Consistent—No impact. |
| (b) Ocean Flooding | Not applicable. |
| (c) Groundwater | Consistent—No impact. |
### Appendix B (Cont.)

<table>
<thead>
<tr>
<th>Goal</th>
<th>Concern</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>(d) Erosion and Deposition</td>
<td>Consistent-No impact.</td>
<td>Consistent-Impact will be mitigated.</td>
</tr>
<tr>
<td>(e) Landslides</td>
<td>Consistent-No impact.</td>
<td>Consistent-No impact.</td>
</tr>
<tr>
<td>(f) Earthquakes</td>
<td>Not applicable.</td>
<td>Consistent-Earthquakes historically unlikely.</td>
</tr>
<tr>
<td>(g) Weak Foundation Soils</td>
<td>Not applicable.</td>
<td>Consistent-Stable foundation soils.</td>
</tr>
</tbody>
</table>

**GOAL 8 – Recreational Needs**
To satisfy the recreational needs of the citizens of the state and visitors.

| | Consistent-No recreation areas would be affected. |
| Potential Conflict | Inconsistent with local economic development plans. |
| Consistent-Would contribute to development of downtown business district. |
| Consistent-Four single family and 24 multi-family units would be displaced, but present housing supply could absorb these losses. |
| Consistent-Any short-term affect to facilities or services will be mitigated. Long term effects will be beneficial. |
| Consistent-Will provide a safe and convenient transportation system. |
| Consistent-Will not affect energy other than materials utilized for project construction and energy used in operation of the facility. |
| Consistent-Will exert pressure for land development in Linn County, but local and federal regulations concerning floodplains should inhibit development. Access control will assist as a mitigating measure. |

**GOAL 9 – Economy of the State**
To diversify and improve the economy of the state.

| | Consistent-Will not affect housing or housing plans. |
| Potential Conflict | Inconsistent with local economic development plans. |
| Consistent-Would contribute to development of downtown business district. |
| Consistent-Four single family and 24 multi-family units would be displaced, but present housing supply could absorb these losses. |
| Consistent-Any short-term affect to facilities or services will be mitigated. Long term effects will be beneficial. |
| Consistent-Will provide a safe and convenient transportation system. |
| Consistent-Will not affect energy other than materials utilized for project construction and energy used in operation of the facility. |
| Consistent-Will exert pressure for land development in Linn County, but local and federal regulations concerning floodplains should inhibit development. Access control will assist as a mitigating measure. |

**GOAL 10 – Housing**
To provide for housing needs of citizens of the state.

| | Consistent-Will not affect facilities and services. |
| Potential Conflict | Inconsistent with local economic development plans. |
| Consistent-Would contribute to development of downtown business district. |
| Consistent-Four single family and 24 multi-family units would be displaced, but present housing supply could absorb these losses. |
| Consistent-Any short-term affect to facilities or services will be mitigated. Long term effects will be beneficial. |
| Consistent-Will provide a safe and convenient transportation system. |
| Consistent-Will not affect energy other than materials utilized for project construction and energy used in operation of the facility. |
| Consistent-Will exert pressure for land development in Linn County, but local and federal regulations concerning floodplains should inhibit development. Access control will assist as a mitigating measure. |

**GOAL 11 – Public Facilities and Services**
To plan and develop a timely, orderly, and efficient arrangement of public facilities and services to serve as a framework for urban and rural development.

| | Consistent-Will not affect facilities and services. |
| Potential Conflict | Inconsistent with local economic development plans. |
| Consistent-Would contribute to development of downtown business district. |
| Consistent-Four single family and 24 multi-family units would be displaced, but present housing supply could absorb these losses. |
| Consistent-Any short-term affect to facilities or services will be mitigated. Long term effects will be beneficial. |
| Consistent-Will provide a safe and convenient transportation system. |
| Consistent-Will not affect energy other than materials utilized for project construction and energy used in operation of the facility. |
| Consistent-Will exert pressure for land development in Linn County, but local and federal regulations concerning floodplains should inhibit development. Access control will assist as a mitigating measure. |

**GOAL 12 – Transportation**
To provide and encourage a safe, convenient and economic transportation system.

| | Consistent-Will not provide safe and efficient transportation system. |
| Potential Conflict | Inconsistent with local economic development plans. |
| Consistent-Would contribute to development of downtown business district. |
| Consistent-Four single family and 24 multi-family units would be displaced, but present housing supply could absorb these losses. |
| Consistent-Any short-term affect to facilities or services will be mitigated. Long term effects will be beneficial. |
| Consistent-Will provide a safe and convenient transportation system. |
| Consistent-Will not affect energy other than materials utilized for project construction and energy used in operation of the facility. |
| Consistent-Will exert pressure for land development in Linn County, but local and federal regulations concerning floodplains should inhibit development. Access control will assist as a mitigating measure. |

**GOAL 13 – Energy Conservation**
To conserve energy.

| | Consistent-Will not affect energy resources. |
| Potential Conflict | Inconsistent with local economic development plans. |
| Consistent-Would contribute to development of downtown business district. |
| Consistent-Four single family and 24 multi-family units would be displaced, but present housing supply could absorb these losses. |
| Consistent-Any short-term affect to facilities or services will be mitigated. Long term effects will be beneficial. |
| Consistent-Will provide a safe and convenient transportation system. |
| Consistent-Will not affect energy other than materials utilized for project construction and energy used in operation of the facility. |
| Consistent-Will exert pressure for land development in Linn County, but local and federal regulations concerning floodplains should inhibit development. Access control will assist as a mitigating measure. |

**GOAL 14 – Urbanization**
To provide for an orderly and efficient transition from rural to urban land use.

| | Consistent-Will not affect urbanization. |
| Potential Conflict | Inconsistent with local economic development plans. |
| Consistent-Would contribute to development of downtown business district. |
| Consistent-Four single family and 24 multi-family units would be displaced, but present housing supply could absorb these losses. |
| Consistent-Any short-term affect to facilities or services will be mitigated. Long term effects will be beneficial. |
| Consistent-Will provide a safe and convenient transportation system. |
| Consistent-Will not affect energy other than materials utilized for project construction and energy used in operation of the facility. |
| Consistent-Will exert pressure for land development in Linn County, but local and federal regulations concerning floodplains should inhibit development. Access control will assist as a mitigating measure. |
GOAL 15-Willamette River Greenway.
To protect, conserve, enhance, and maintain the natural, scenic, historical, agricultural, economic and recreational qualities of land along the Willamette River as the Willamette River Greenway.

Consistent—Will not impact Willamette River Greenway.

Potential Conflict—Will traverse Willamette River Greenway.

GOAL 16-Estuarine Resources.
To recognize and protect the unique environmental, economic, and social values of each estuary and associated wetlands; and to protect, maintain, where appropriate, develop, and where appropriate, restore the long-term environmental, economic, and social values, diversity and benefits of Oregon's estuaries.

Not applicable.

Not applicable.

Not applicable.

GOAL 17-Coastal Shorelands.
To conserve, protect, where appropriate, develop and, where appropriate, restore the resources and benefits of all coastal shorelands, recognizing their value for protection and maintenance of water quality, fish and wildlife habitat, water-dependent uses, economic resources and recreation and aesthetics.

Not applicable.

Not applicable.

Not applicable.

GOAL 18-Beaches and Dunes.
To conserve, protect, where appropriate, develop, and where appropriate, restore the resources and benefits of coastal beach and dune areas; and to reduce the hazard to human or man-induced actions associated with these areas.

Not applicable.

Not applicable.

Not applicable.

GOAL 19-Ocean Resources.
To conserve the long-term values, benefits, and natural resources of the nearshore ocean and the continental shelf.

Not applicable.

Not applicable.

Not applicable.
Appendix C

LETTER FROM THE STATE
HISTORIC PRESERVATION OFFICE
PIETER DYKMAN  
ENVIRONMENTAL SECTION  
412 TRANSPORTATION BLDG  
SALEM OR 97310  

ATTN: Maxine Banks  

Dear Mr. Dykman  

RE: Corvallis Bypass  
Benton County:  

This letter is in response to the cultural resource survey carried out to assess impact of the above-mentioned project on archeological sites.  

After a careful review of the cultural resource survey carried out within the project area, our office can offer the following comments. We feel that no cultural resources of National Register potential have been identified which are likely to be impacted by this project. We therefore feel that Public Law 89-665 and Executive Order 11593 have been complied with and the project may go forward as planned.  

Thank you for your cooperation and concern. If you have any questions, please call Leland Gilsen at 378-5023.  

Sincerely,  

[Signature]  

D. W. Powers III  
Deputy SHPO  

DWP/LG: js
Appendix D

THE MEMBERSHIP OF EACH REPRODUCTIVE GUILD

Reproductive Guild of Upland Cropland (#1).

Kildeer
Camas Pocket Gopher

Long-tailed Weasel

Reproductive Guild of Pasture and Hayland (#2)

Savannah Sparrow
Northern Alligator Lizard
Ring-necked Pheasant
Kildeer
Western Meadowlark
Townsend Vole

Long-tailed Weasel
California Ground Squirrel
Mazama Pocket Gopher
Camas Pocket Gopher
Pacific Mole

Reproductive Guild of Urban and Built-Up Cover (#3).

Little Brown Bat
Myotis
California Myotis
Big Brown Bat
Spotted Skunk
House Sparrow
Camas Pocket Gopher

Striped Skunk
Norway Rat
House Mouse
Rock Dove
Starling
Long-tailed Weasel

Reproductive Guild of Upland Deciduous Forest (#5).

Western Gray Squirrel
Northern Flying Squirrel
Dusky-footed Woodrat
Red-tailed Hawk
Purple Finch
House Finch
Rufous-sided Towhee
Northern Alligator Lizard
Dark-eyed Junco
Long-tailed Weasel

Opossum
Starling
Common Bushtit
Robin
Brown-headed Cowbird
White-crowned Sparrow
Song Sparrow
Trowbridge Shrew
Deer Mouse

Reproductive Guild of Upland Shrubland (#6).

American Goldfinch
Rufous-sided Towhee
Northern Alligator Lizard
Trowbridge Shrew
California Ground Squirrel

Vagrant Shrew
Brush Rabbit
California Quail
Long-tailed Weasel
Deer Mouse

*( ) Parenthesis indicate the species is an Evaluation Species.
Reproductive Guild of Upland Grassland and Forbland (#7).

Savannah Sparrow
Northern Alligator Lizard
Ring-necked Pheasant
Killdeer
Song Sparrow
House Mouse

Long-tailed Weasel
California Ground Squirrel
Mazama Pocket Gopher
Camas Pocket Gopher
Townsend Vole

Reproductive Guild of Barren Cover (#8).

Killdeer

(Belted Kingfisher)*

Reproductive Guild of Deciduous Wetland Forest (#9).

Little Brown Rat
Yuma Myotis
California Myotis
Silver Hired Bat
Big Brown Bat
Western Gray Squirrel
Northern Flying Squirrel
Dusky Footed Woodrat
White-crowned Sparrow
Northern Alligator Lizard
Trowbridge Shrew
Vagrant Shrew
Pacific Water Shrew
Pacific Mole
Raccoon
Yellow-rumped Warbler
Common Flicker
Starling
Robin
House Finch
Rufous-sided Towhee
Ruffed Grouse

(Mink)*
Spotted Skunk
(Black-tailed Deer)*
Dark-eyed Junco
Long-tailed Weasel
Mountain Beaver
California Ground Squirrel
Townsend Chipmunk
(Beaver)*
Deer Mouse
Nutria
Great Blue Heron
Red-tailed Hawk
American Kestrel
Crow
(Black-capped Chickadee)*
Common Bushtit
Brown-headed Cowbird
American Goldfinch
Song Sparrow
(Belted Kingfisher)*

Reproductive Guild of Shrub Wetland (#10).

Scrub Jay
Common Bushtit
Northern Alligator Lizard
Shrew-Mole
(Brush Rabbit)*
California Quail
Long-tailed Weasel
Deer Mouse

Brewer's Blackbird
Robin
Pacific Water Shrew
(Black-tailed Deer)*
Ruffed Grouse
Mountain Beaver
Nutria

*( ) Parenthesis indicate the species is an "Evaluation Species".
Reproductive Guild of Herbaceous Wetland (#11).

Long-billed Marsh Wren
Savannah Sparrow
Pacific Water Shrew
Pacific Jumping Mouse
Pintail
American Coot
Long-tailed Weasel
Townsend Vole
Rough-skinned Newt

Red-winged Blackbird
Vagrant Shrew
Shrew-Mole
Mallard
Green-winged Teal
Northern Alligator Lizard
(Mink)*
House Mouse
Nutria

Reproductive Guild of Open Shore and Bottom (#12).

(Beaver)*
Pacific Tree Frog
Bullfrog

Rough-skinned Newt
Red-legged Frog
Pacific Giant Salamander

*() Parenthesis indicate the species is an "Evaluation Species".
Appendix E

RIGHT-OF-WAY PAMPHLETS
When expanding or improving highway facilities in Oregon, the Department of Transportation has the task of acquiring rights-of-way. It is the aim and desire of the Department to obtain these necessary rights-of-way with fairness and equity to all.

The State is empowered to acquire private property for public use in order to provide the greatest good for the greatest number. With this power goes the obligation to protect the rights of the individual property owner. The Department of Transportation thus has a dual responsibility—recognition and protection of the individual who are affected by acquisition of land and competent and efficient service to the public.

PUBLIC HEARINGS

Public hearings, when requested, are held during the location and design stages of a project. Such hearings afford each person or agency full opportunity for effective public participation to ensure that highway locations and designs are consistent with Federal, State, and local goals and objectives.

The first hearing is held after preliminary studies have been made on several possible corridor routes. The data gathered in the studies is presented at a "Corridor Hearing". During the course of the hearing, testimony from interested persons is recorded for study by Department of Transportation personnel and the Oregon Transportation Commission.

Upon selection of a corridor location by the Transportation Commission, a detailed survey within that corridor is made and a preliminary design plan developed for later presentation at a "Design Hearing". During the course of the survey, a Liaison Agent attempts to interview all property owners affected concerning the affect the proposed highway has on their ownerships.

The holding of "Design Hearings" provides all interested persons and public agencies an opportunity to present testimony for consideration of final highway design.

In an instance where a choice of corridors is not involved, such as in the case of an improvement project on an existing highway, an "Combination Corridor - Design Hearing" may be held.

After all data and testimony have been studied, a final design is adopted by the Transportation Commission and the acquisition of necessary rights-of-way is authorized. The parcels of property needed for the improvement will be described, and the right-of-way acquisition activities then commence.

APRAILAL PROCEDURE

Department of Transportation appraisal procedures, which are designed to protect both the property owner and the taxpayer's dollar, call for an appraisal of every panel of right-of-way. These appraisals are performed by a staff appraiser, a professional fee appraiser, or both. When business and commercial properties are involved, more appraisers may be assigned. The property owner or his designated representative will be given an opportunity to accompany the appraiser during his inspection of the property.

The appraiser considers every indicator of value. Their differences in findings, if any, are studied and reconciled. The results are checked by the Department of Transportation Right of Way officials and then approved for acquisition.

This thoroughness, plus the busy work schedules of the professional fee appraiser, explains the occasional delays between the time of the appraisal and the arrival of the Right of Way Agent.

THE RIGHT OF WAY AGENT

The Right of Way Agent who calls on the property owner has studied the appraisal and can illustrate with maps and other data how the right-of-way will affect the property. The Agent has been authorized to recommend a price and obtain an option to purchase the property, which option is subject to approval of his supervisors and the Oregon Transportation Commission. It should be noted that the Agent is unable, under the procedures governing him, to engage in "horse trading"; he is confined to those monetary values indicated by appraisal.

It is desirable to complete acquisition and transfer as soon as possible, but not at the expense of the owner's thoughtful consideration of the State's proposal.

MARKET VALUE

Before the initiation of negotiations for real property, the Department of Transportation will establish an amount which is believed to be just compensation and will make a prompt offer to acquire the property for the full amount so established. In no event will the amount be less than the approved appraisal of the fair cash market value of the property. Fair cash market value may be defined as the price a willing buyer would pay for a property offered by a willing seller with neither party having any obligation to either buy or sell. This is known as the "willing buyer - willing seller" concept and is the basis for "market value".

In instances in which only a portion of a property is to be acquired, the compensation is based on either the value of the land taken and damages to the remainder, if any, or the "before-and-after" method. This means that the owner's loss is equal to the difference in the market value of his property before the State's acquisition and its market value immediately thereafter.

Any decrease or increase in the fair cash market value of the real property prior to the date of valuation caused by the public improvement for which the property is acquired, or by the likelihood that the property would be acquired for such improvement other than that due to physical deterioration within the reasonable control of the owner, will be disregarded in determining the compensation for the property.

Property damage payments, under Oregon law, can be made only to those persons whose property is actually purchased or used by the Department of Transportation.

MOVING IMPROVEMENTS

The law states that the property owner is entitled to money for his property; however, if he wishes to have his house or buildings moved, this may be done provided certain conditions are met.

The property owner must agree to such a move, and the total cost to the State must be less than a cash purchase.

The property owner must make his own arrangements for moving the building. The State is not able to undertake the work but to contract the work for the owner.

PAYMENT

An understanding of the processing of a signed agreement and the payment by check will alleviate some of the concern about a seemingly delayed payment.

The option agreement must be approved by the Oregon Transportation Commission. After approval has been received, the property owner is notified of
acceptance and conveyance of the title and payment may proceed. No payment of State funds may be made until a warranty deed conveying clear title has been recorded in the appropriate County records.

Any encumbrances to the title, such as unpaid taxes, assessments, mortgages, outstanding leases, or the like, must be cleared by releases prior to preparation of a voucher. As the time the deed is available for recording, a voucher is prepared and forwarded to the Highway Division Controller for preparation of a check in payment for the property. Under normal circumstances, in which no cloud obscures the title, about four weeks elapse between the time a deed is received from the property owner and the time a check is mailed to him.

In the event the property owner is unable to convey and clear title satisfactorily to the State, or in the event the State and the property owner cannot reach a mutually-satisfactory agreement, a condemnation action will be filed and the amount established by the State as just compensation will be deposited with the court for distribution in accordance with the order of the court.

POSSSESSION

At the time negotiations begin with a property owner, all tenants on the property as well as the owner will be notified in writing that it is the intent of the Department of Transportation to acquire the property and give the requirements for relocation benefits. No person lawfully occupying real property shall be required to move from his home, farm or business without at least 30 day's written notice. The displacement will be notified 30 or more days prior to the date the property must be vacated. The 30-day notice will not be given until the property owner has been paid for his property.

The Department is aware of the need of a reasonable time for relocation. If a property is not needed for several months, continued occupancy may be permitted at a reasonable rental through the Regional Property Agent.

EMINENT DOMAIN

The property owner need not accept the State's offer or enter into an agreement he feels is unfair. A refusal is simply a case of disagreement between the two parties on the value of the property. The Department of Transportation, in the expenditure of public funds, is restricted to competent appraisals in ascertaining fair cash market value.

The Department is ready and willing to reconsider its position in light of any new evidence of value presented by the owner, including a documented professional appraisal procured by the owner.

Only in the event the parties are unable to agree as to the compensation to be paid, or the owner cannot clear title, will a condemnation suit be filed. Time for an extended discussion on some projects may not be available if the State and the highway users are to avoid the loss of considerable money due to any delay in a project. Discussions can, of course, continue even after a suit is filed. The filing of the suit permits the State, under Oregon law, to authorize the contractor to enter on the property.

RIGHT OF WAY OFFICES

For the service and convenience of those affected by highway activities, the Oregon Department of Transportation maintains fully staffed Regional Right of Way Offices at the following locations:

5421 NE Glisan Street Portland 97213

9200 McLoughlin Blvd. Milwaukie 97222

Telephone No. 238-6215 Telephone No. 655-3113

2960 State Street Salem 97301

1058 W. Harvard Roseburg 97470

Telephone No. 376-2641 Telephone No. 672-6735

North Dallas

2111 Adams Street

California Highway

07730

La Grande

Telephone No. 382-1911 Telephone No. 963-8446

Persons having questions concerning right-of-way matters are encouraged to contact the nearest Regional Office.

QUESTIONS AND ANSWERS

1. What authority does the Right of Way Agent have in acquiring the property?

The Agent has authority to attempt to agree as to price and to submit his recommendation for presentation to the Oregon Transportation Commission.

2. Can the Right of Way Agent make a formal offer for the property?

No, he cannot. Only the Transportation Commission or its designated representative has authority to make an offer. The Agent may recommend a price for the necessary parcel.

3. Is earnest money received if an option is signed?

No. If the option is accepted by the Commission, the amount involved is mailed after the processing of the option.

4. What courses does the property owner have if negotiations fail?

He has the right to have a jury hear the case and make an award.

PAYMENT

1. Who prepares the deed and clears the title?

The Salem Right of Way Office of the Department of Transportation prepares and records most of the documents necessary to convey clear title; however, it is the property owner's obligation to secure signatures on any documents which may be necessary to provide clear title.

The State orders and pays for title insurance unless other arrangements are made.

2. How does the property owner know the State will fulfill its obligation?

The option approved by the Transportation Commission remains a binding contract even after the deed is signed. The State is bound by this agreement as to its own obligations; and, by the same token, it cannot exceed the authority contained therein.

3. Can the property owner rent or buy buildings?

Unless other specific arrangements are made, buildings will be sold at public auction after proper notification in the newspapers. All sales and rentals are handled by the Regional Property Agent.

CONSTRUCTION FEATURES

1. Why is new right-of-way necessary? Why can't the present highway be rebuilt?

The standards of the new Federal-aid highways, as established by the State and the Federal Highway Administration, are such that rebuilding many of the present highways to meet these standards is not economically sound. In addition, most of these existing highways will be needed to assist the freeways in carrying the heavy volume of traffic. In some cases, the present improved highway is to be used as two of the four lanes of the new freeway.

2. Who determines the necessity, location, width of right-of-way, access control, and schedule of construction for new State highways and public projects?

The Oregon Transportation Commission, upon recommendation of the Administrator and State Highway Engineer, and the Federal Highway Administration when required.

VALUE

1. How does the State arrive at the value of the property?

Real estate appraisals are prepared and submitted by staff or fee appraisers, or both. A staff appraiser is one which is prepared by an employee of the Department of Transportation who is qualified by education, training, and experience to make property appraisals. A fee appraisal is one prepared by a professional appraiser who is employed for a particular job. He is not a State employee, but an independent appraiser whose services are generally available to anyone wishing to retain him.

2. How about the appraiser the property owner hires?

The Department will gladly examine with open mind the appraisal prepared for the owner. If it is a duly-licensed appraisal, the State review staff is authorized to give it the same consideration as those prepared for the State.

Rev. 12-77
Public Law 91-646, Title II, Section 216, states as follows: "No payment received under this title (relocation payments) shall be considered as income for the purposes of the Internal Revenue Code of 1954; or for the purpose of determining the eligibility or the extent of eligibility of any person for assistance under the Social Security Act or any other Federal Law."

**RELOCATION SERVICES**

The Department of Transportation maintains fully-funded regional right of way offices in the following locations:

- 1821 NE Glisan Street, Portland 97232
  - Telephone No.: 238-8215
  - Telephone No.: 633-3113
- 9550 State Street, Salem 97304
  - Telephone No.: 278-2614
  - Telephone No.: 672-6755
- North 10th Avenue, California Highway, Bend 97701
  - Telephone No.: 211 Adams Street
  - Telephone No.: 963-3446

These offices maintain current lists of replacement dwellings, businesses, and farms for displaced persons, as well as current data on required deposits for utilities, clearing costs, typical down payments, interest rates, and FHA and VA requirements and information. The offices also have maps showing the location of schools, parks, playgrounds, and shopping areas. Public transportation routes are shown and schedules and fare information is available. An experienced right of way agent is available to answer questions and assist displaced persons to the fullest extent. Right of way agents do not accept or will not accept any fee for any service rendered.

**ELIGIBILITY**

It is most important to note that eligibility to receive any of the following benefits is not complete until the affected property has been purchased by the State.

**GENERAL MOVING EXPENSES**

Service charges for reconnecting utilities are reimbursable, except under "Schedule Move Procedures".

**INDIVIDUAL AND FAMILY MOVING EXPENSES**

Any individual or family displaced by a Department of Transportation project is entitled to receive a payment for reasonable expenses of moving personal property a distance not to exceed a 50-mile radius or to the nearest available and adequate site.

In order to obtain a moving expense payment, a displaced person must file, within 18 months after moving, a written claim with the Department of Transportation on a form provided for that purpose. In some cases, when it is to the benefit of the displaced person, a written arrangement with the Department of Transportation will allow the displaced person to present an unpaid commercial moving bill and the Department of Transportation will make payment directly to the mover. Residential moving costs may also be claimed according to a set schedule based upon the number of rooms of furniture to be moved.

**RESIDENTIAL MOVING SCHEDULE**

- Unfurnished
  - [Relocate own furniture] $40 [1 rm] $100 [2 rm] $120 [3 rm]
  - Five or more rooms – $300
- Furnished
  - [Relocate own furniture] $20 per room up to a maximum of $300

**MOBILE HOME MOVING SCHEDULE**

[Based upon total floor area]

- Amount of Payment
  - $100 Up to 200 sq. ft.
  - $200 201 sq. ft. - 500 sq. ft.
  - $300 More than 500 sq. ft.

In addition to the moving payment based on a room count or mobile home square-foot area, a relocation allowance of $200 will be paid.

**BUSINESS, FARM & NONPROFIT ORGANIZATION MOVING EXPENSES**

Displaced business, farm, and nonprofit organizations may receive payments for direct losses of tangible personal property resulting from the necessity to relocate.

In lieu of moving expense payments, a replaced or discontinued business or farm operation, except advertising sign owners, may, under certain conditions, elect to receive an amount equal to the average annual net earnings of the business or farm operation during the two tax years immediately preceding the year in which such business or farm operation is displaced. The payment cannot exceed $10,000 and will not be less than $250. Those who choose the "in lieu" payment are not eligible for any other relocation benefit payment.

**STORAGE OF PERSONAL PROPERTY**

Occasionally, unusual circumstances may make the storage of personal property mutually beneficial to the displaced owner and the State. The cost of such storage may qualify for a payment in addition to the actual moving expense payments. It should be clearly understood that these decisions are left to the exclusive discretion of the State’s Department of Transportation. The additional benefit is subject to the written approval from the Department of Transportation and may not exceed twelve months.

**REPLACEMENT HOUSING**

A displaced owner occupant of a dwelling actually owned and occupied by the owner for 180 days or more...
Transportation, we advise that you have this determination made prior to making a commitment to rent or buy. Please understand that the replacement dwelling decent, safe and sanitary inspection that will be conducted by agency personnel is for the sole purpose of determining a roboftee's eligibility for a relocation payment.

**POSSESSION**

No person lawfully occupying real property shall be required to move from his home, farm, or business location without at least 90 days' written notice.

The displaced will be notified 30 or more days prior to the date the property must be vacated. The 30-day notice will not be given until the property owner has been paid for his property.

**APPEALS**

Any relocatee who is dissatisfied with any ruling on his eligibility or claim for any relocation benefit payment shall have the right of appeal. Appeal forms can be secured from the right of way agent who is handling the property acquisition. The Chief Administrative Officer of the Department of Transportation has delegated his review authority to a two-member board. Appeals must be filed with the board within 90 days after the State acts on a claim or denies eligibility for a benefit.

Any person making such an appeal will be given full opportunity to be heard at an appeal hearing arranged to examine his complaint. A prompt decision will be provided giving reasons in support of the result reached. The decision by the board will be considered as final.

**RIGHT OF WAY AGENT**

Relocatees will be given detailed information regarding their eligibility and possible benefits by the right of way agent assigned to acquire the property.

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**1978 RELOCATION ACT – MONETARY BENEFITS**

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<th>Benefit</th>
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<tr>
<td>Moving Costs</td>
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</table>

**REV. 5-78**

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**STATEMENT**

Claims for housing add-ons and rent supplements must be made in writing to a Department of Transportation form supplied for this purpose and must be filed with the Department of Transportation no later than 18 months after the date of displacement or six months after final adjudication of a condemnation case.

Before payments for any replacement dwelling benefits can be made, the replacement dwelling must be checked by Department of Transportation personnel to ascertain that it meets the decent, safe and sanitary standards established by the Federal Department of...
January 29, 1979

Mr. Gary A. Potter  
Manager  
Environmental Section  
Dept. of Transportation  
412 Transportation Building  
Salem, Oregon 97310

Dear Mr. Potter:

We have reviewed the Draft Environmental Impact Statement for the Corvallis Bypass (FHWA-OR-EIS-78-09-D).

How does the relocation/displacement of 2 single-family residences, 48 multi-family units and 14 businesses correlate with the 56 units and 15 businesses adversely impacted by noise in the Central alternative? Are these structures in addition to each other or are the same structures being counted separately for each adverse impact?

The Central Corridor alternative appears to be least disruptive to the residential neighborhoods and also appears to have the least significant overall adverse environmental impact of the alternatives that provide a viable solution to projected traffic hazards.

Pedestrian and boating access may require more intensive design considerations, but other residential environments appear to be best addressed by the Central Corridor alternative which is not in the flood plain and will generate less secondary impacts.

An opportunity for updating the local Comprehensive Plan could resolve some of the adverse influences associated with the various alternatives.

We appreciate the opportunity to comment and trust our concerns for the residential environment will be considered.

Sincerely,

Clifford T. Safranski  
Environmental Clearance Officer
State of Oregon
Department of Transportation
ATTN: Mr. Gary A. Potter
Manager Environmental Section
Transportation Building
Salem, OR 97310

RE: DRAFT EIS Corvallis Bypass
Corvallis, Oregon

Gentlemen:

The reference Draft Environmental Impact Statement has been received and reviewed.

The Eastern and Central Corridor Alternatives would cross the Willamette River, a navigable waterway of the U.S. The Eastern and Central Corridor Alternatives would also cross Marys River, a waterway for which no determination of navigability has been made. A bridge permit will be required for each navigable waterway crossing. Should either of the above Alternatives be selected, then a navigability determination must be made for the Marys River before we can advise you of bridge permit requirements for that waterway.

With approval of the EIS by FHWA, it appears they will be the lead federal agency for the total project. The Coast Guard can utilize an FHWA approved EIS in support of bridge permit applications provided the provisions for navigation, water quality and other items under our responsibility are adequately described and discussed therein. In line with this requirement, the following comments are offered:

Summary, page i - If either the Eastern or Central Corridor Alternative is constructed, Coast Guard bridge permits will be required. The Summary should note building of a bridge across a navigable waterway is a major federal action which requires a bridge permit from the Coast Guard. The Summary should state the EIS will be used in support of bridge permit applications. The Summary should also acknowledge Coast Guard participation in preparation of the Final EIS by submission of information required for our agency's areas of concern.
Subj: DRAFT EIS Corvallis Bypass - Corvallis, Oregon

Page 28 - (Water Quality) - A description of the in-water construction of bridge piers and approaches is desirable to describe the control to be exercised to reduce water quality degradation. It is also appropriate to discuss the times of the year that all in-water construction will take place and any time limits established by fish and/or game agencies. Page 47, para. 3 mentions that any instream construction for the bypass should be done during periods designated by the Department of Fish and Wildlife - - the statement should be positive. It is suggested a discussion be included addressing measures to be used to avoid oil spills and methods which will be available for clean-up of any accidental spills during and after construction.

Page 44, para. 3 - The statement "Any structures, like bridges, within the Willamette or Marys Rivers can and should be designed and constructed to avoid interference with the floodways." does not resolve the question. Bridge piers and approaches can be constructed to provide a minimum restriction to flow, therefore, in consideration of your previous statement in para. 2 that "Embankment fill would displace an equal volume of floodwater, but this would cause less than a one-foot rise in the water level on the broad flood plain.", you should make a positive statement concerning the design of bridge piers and approaches which will minimize backwater effect.

Page 45, para. 1 - This para. discusses roadway widths of bridges only. This may be an appropriate section of the document to discuss the provisions for navigation which will be made if either the Eastern or Central Corridor Alternative is selected. If any or all of the three bridges proposed across the Willamette will provide clearances equal or greater than the existing bridge at Van Buren Avenue it should be so stated. If the clearances will be less than the Van Buren bridge then the document should catalogue the clearances. To describe navigation clearances on the Marys River you should insert similar information concerning the proposed Marys River crossings in relation to the existing bridge.

Page 8-2, para. 4 - This para. mentions a separate technical report discussing 4(f) involvement. Is the report available and will distribution be by separate document or combination EIS/4(f)?

Page 8-12, para. 3 - For the Central Corridor Alternative Riverview Marina at the north end of the project would also have to be acquired for right-of-way. It is appropriate to discuss how this marina would be relocated.
Subj: DRAFT EIS Corvallis Bypass - Corvallis, Oregon

It is requested you furnish 2 copies of the Final EIS and the 4(f) Statement for this project to support any bridge permit applications. The opportunity to comment on the document is appreciated.

Sincerely,

[Signature]

RICHARD F. MALM

Copies to:
(1) FHWA, Herb Schell, Salem, OR  
    Captain, U. S. Coast Guard  
    Chief of Staff, 13th Coast Guard District
(2) ODOT, Bob Ellison, Salem, OR
February 27, 1979

Gary A. Potter  
Environmental Section  
Department of Transportation  
Highway Division  
Transportation Building  
Salem, OR. 97310

Dear Mr. Potter:

RE: Corvallis Bypass  
PNRS 7901 4 670

Thank you for submitting your draft Environmental Impact Statement for State of Oregon review and comment.

Your draft was referred to the appropriate state agencies. The Departments of Fish and Wildlife, Geology, Environmental Quality, Water Resources, and Lands offered the enclosed comments which should be addressed in preparation of your final Environmental Impact Statement.

We will expect to receive copies of the final statements as required by Council of Environmental Quality Guidelines.

Sincerely,

Kay Wilcox,  
A-95 Coordinator

KW:cb
ENVIRO NMENTAL IMPACT REVIEW PROCEDURES

1. A response is required to all notices requesting environmental review.
2. OMB A-95 (Revised) provides for a 30-day extension of time, if necessary. If you cannot respond by the above return date, please call the State Clearinghouse to arrange for an extension.

ENVIRO NMENTAL IMPACT REVIEW

DRAFT STATEMENT

( ) This project does not have significant environmental impact.

( ) The environmental impact is adequately described.

( ) We suggest that the following points be considered in the preparation of a Final Environmental Impact Statement regarding this project.

( ) No comment.

REMARKS

If the selected alternative includes plans for new bridge construction across Willamette or Marys Rivers, please contact us for information concerning easements over State owned waterways.

If the project would require the removal, fill or alteration of 50 cubic yards or more of material within the banks of the waterway(s), we urge the applicant to apply for state fill or removal permits well in advance of construction deadlines to prevent unnecessary project delays. Specific information on the need for permits may be obtained from the Division of State Lands' office at 1445 State Street, Salem, OR 97310. Phone 378-3805.

Thank you for the opportunity to comment on this project.
ENVIRONMENTAL IMPACT REVIEW PROCEDURES

1. A response is required to all notices requesting environmental review.
2. OMB A-95 (Revised) provides for a 30-day extension of time, if necessary. If you cannot respond by the above return date, please call the State Clearinghouse to arrange for an extension.

ENVIRONMENTAL IMPACT REVIEW

DRAFT STATEMENT

( ) This project does not have significant environmental impact.

( ) The environmental impact is adequately described.

( ) We suggest that the following points be considered in the preparation of a Final Environmental Impact Statement regarding this project.

( ) No comment.

REMARKS

Page 6-5 Flood Plain 2nd paragraph 2nd sentence is misleading. Shall change it to:
Once the Floodway is defined, a community shall prohibit encroachments, including fill, new construction, substantial improvements, and other development within the adopted regulatory floodway that would result in any increase in flood levels within the community, thereby occurring any flooding due to the occurrence of the base flood discharge.
ENvironmenTal Impact Review
Draft Statement

( ) This project does not have significant environmental impact.

( ) The environmental impact is adequately described.

( ) We suggest that the following points be considered in the preparation of a Final Environmental Impact Statement regarding this project.

( ) No comment.

REMARKS

The DEIS adequately presents the relative air quality impacts of the alternatives considered. The proposed project, once a corridor has been selected, would not require an Indirect Source Construction Permit.
ENVIRONMENTAL IMPACT REVIEW PROCEDURES

1. A response is required to all notices requesting environmental review.
2. OMB A-95 (Revised) provides for a 30-day extension of time, if necessary. If you cannot respond by the above return date, please call the State Clearinghouse to arrange for an extension.

ENVIRONMENTAL IMPACT REVIEW
DRAFT STATEMENT

( ) This project does not have significant environmental impact.

( ) The environmental impact is adequately described.

( ) No comment.

REMARKS

Vol. 2  6-15

- Eastern alternative passes thru
  the site presently being developed
  by More Bros. for Sand & Gravel
  extraction - major source for
  the area -
ENVIROMENTAL IMPACT REVIEW PROCEDURES

1. A response is required to all notices requesting environmental review.
2. OMB A-95 (Revised) provides for a 30-day extension of time, if necessary. If you cannot respond by the above return date, please call the State Clearinghouse to arrange for an extension.

ENVIRONMENTAL IMPACT REVIEW

DRAFT STATEMENT

( ) This project does not have significant environmental impact.

( ) The environmental impact is adequately described.

( X ) We suggest that the following points be considered in the preparation of a Final Environmental Impact Statement regarding this project.

( ) No comment.

REMARKS

See attached comments

Agency: Fish & Wildlife

By: [Signature]

ENVIRONMENTAL MANAGEMENT SECTION 2/16/79
The Draft Environmental Impact Statement for The Corvallis Bypass indicates on page 6-26, paragraph 4, Volume 2 that the impact of the Eastern Corridor could be mitigated by properly locating the route and minimizing the area cleared for construction and right-of-way. We suggest a more realistic approach would be to acquire additional land between the bypass route and the river and develop it as wildlife habitat.

The Oregon Department of Fish and Wildlife favors selection of the Western Corridor since it would have the least impact on fish and wildlife habitat. Implementation of this alternative would have no significant effect on sedimentation, water temperatures or riparian vegetation.
From the standpoint of the Environmental Protection Agency's area of concern and expertise, we are rating this statement LO-2 (LO - Lack of Objections; 2 - Insufficient Information). This rating will be published in the Federal Register in accordance with our responsibility to inform the public of our views on proposed Federal actions under Section 309 of the Clean Air Act, as amended.

We appreciate the opportunity to review this draft environmental impact statement. Please do not hesitate to contact me or Dennis Ossenkop of my staff should you have questions or desire further information regarding our comments. We can be reached at (206) 442-1285 or (FTS) 399-1285.

Sincerely,

[Signature]
Alexandra B. Smith, Chief
Environmental Evaluation Branch
Mr. Glen L. Green  
Division Administrator  
Federal Highway Administration  
The Equitable Center, Suite 100  
530 Center Street N.E.  
Salem, Oregon  97301  

Dear Mr. Green:

We have completed our review of the draft environmental impact statement for the Corvallis Bypass in Corvallis, Oregon and would like to submit the following comments for your consideration.

**Noise**

The noise study presents a detailed analysis of the noise environment for the design year. Design year noise contours and a table listing the number of residents within the L10 70 dBA contour are presented. We believe the noise section in the final EIS should be expanded to provide: 1) existing noise level contours, 2) the location (on a map) and number of noise sensitive receptors within the present 70 dBA or higher contours, 3) the location (on a map) of the noise sensitive receptors listed in Table 5-3, page 5-9. This data will help people in the project area to understand the effects the proposed action will have on them.

**Effects of Diking**

Construction of the eastern alternative, on an elevated bed, may change the flood pattern which occurs during the occasional spring floods. The final EIS should present an analysis which indicates the extent and impact of any change in flood area (on a map) and mitigation measures to eliminate increased flood area.
March 5, 1979

Mr. Gary A. Potter, Manager
Environmental Section
Dept. of Transportation, Highway Division
Transportation Building
Salem, OR 97310

Dear Mr. Potter:

The Soil Conservation Service has reviewed the draft environmental impact statement, "The Corvallis Bypass" (FHWA-OR-EIS-78-09-D) and we have no comments to offer.

We appreciate the opportunity to review this draft statement.

Yours truly,

Guy W. Nutt
State Conservationist

 Acting

cc: Director, Office of Federal Activities (5)
Environmental Protection Agency, Wash., D.C. 20460

Administrator, SCS, Wash., D.C.
Mr. Glen L. Green
Division Administrator
Federal Highway Administration
Post Office Box 300
Salem, Oregon 97308

Dear Mr. Green:

This is in response to the request for the Department of the Interior's comments on the draft environmental statement for the Corvallis Bypass, Benton County, Oregon.

Preliminary Section 4(f) Comments

Our review of the statement showed that Section 4(f) of the Department of Transportation Act of 1966 could be applicable depending upon which alternative is selected. If any Section 4(f) lands are involved in the alternative selected, a draft Section 4(f) document will be necessary. Additional information will be needed demonstrating full consideration of the two provisos.

The Section 4(f) analysis in the draft environmental statement (Vol. 2, pages 9-1 through 9-16) presents four "build" alternatives in which two (Eastern Corridor and Central Corridor) will involve Section 4(f) lands while the third (Western Corridor) may possibly involve Section 4(f) lands.

Both the Eastern Corridor and Central Corridor Alternatives will displace the public boat dock at the foot of Polk Avenue. Additionally, the Central Corridor Alternative would significantly impact the City of Corvallis' developed riverfront park on the west bank of the Willamette River (Vol. 2, page 9-4). Depending upon final design considerations, both the Eastern Corridor and the Central Corridor Alternatives could seriously impact the existing bikeway along the west bank of the Willamette River (Vol. 2, page 9-7). Potential impacts resulting from the removal of parking and access restrictions to eight historic residences of local significance and one of State significance (Vol. 1, page 59), cause us to believe that the Western Alternative may also involve Section 4(f).
Since the draft environmental statement has been prepared on the basis of transportation corridors and not final roadway locations, it is difficult to determine whether additional Section 4(f) properties, such as the U.S. Post Office Building and Marysville Landing, will be impacted. Regardless of which alternative is selected, the draft statement should contain documentation indicating consultation with and conclusions of the Oregon State Historic Preservation Officer (SHPO).

Based on the information contained in the statement, it is the viewpoint of this Department that the Western Corridor Alternative would be the most feasible and prudent. Should another alternative be selected, e.g., the Eastern Corridor, Central Corridor or Street Modification Alternative (Willamette River Greenway area), detailed documentation pertaining to both provisos should be prepared.

Environmental Statement Comments

If the Eastern Corridor Alternative is selected, the roadway would create an 80-foot wide fill which would function as a "dike" directing floodflows to the east. The statement does not assess impacts of these redirected flows on the flood plain. Should the Eastern Corridor Alternative be selected, the final statement should discuss this matter.

Recent maps show that mining of sand and gravel is expanding in the area adjacent to the proposed Eastern Corridor alternative. The statement should discuss the potential impacts of this alternative on existing and potential gravel pit operations.

The geologic map (figure 6-2) does not correspond to published maps of the area in that sizeable areas of terrace gravels are not shown.

The draft statement does not mention the probable need for a permit from the U.S. Coast Guard and/or the Corps of Engineers, pursuant to Sections 9 and 10 of the River and Harbor Act of 1899 and Section 404 of P.L. 92-500, for the implementation of certain project alternatives. Because the statement lacks adequate site-specific and design-level information on impacts and mitigation measures in the flood plains of the Willamette and Marys Rivers, the comments in this letter do not in any way preclude additional and separate evaluation and comment by the U.S. Fish and Wildlife Service (FWS), pursuant to the
Fish and Wildlife Coordination Act (16 U.S.C. 661, et seq.), should such permits be required. In review of permit applications, FWS may concur, with or without stipulations, or object to the proposed work depending on information available at that time. Should there be adequate design plans available, FWS would be pleased to cooperate with you and the Coast Guard/Corps of Engineers in resolution now of these stipulations so they may be included in the final environmental statement.

Summary Comments

The "Preliminary Section 4(f) Comments" in this letter do not result from formal consultation by the Department of Transportation with the Department of the Interior, pursuant to the consultative requirements of Section 4(f) of the DOT Act. Should an alternative be selected which would involve Section 4(f), we would expect to have the opportunity to review the Section 4(f) statement in draft before preparation of the final environmental statement in order to satisfy the Section 4(f) consultation requirements.

As this Department has a continuing interest in the project, we would be willing to cooperate and provide technical assistance in further project assessment and in the development of additional documentation for review. The field office assigned responsibility for technical assistance on park and recreation matters and on cultural resources and properties is the Regional Director, Heritage Conservation and Recreation Service, Northwest Region, 915 Second Avenue, Room 990, Seattle, Washington 98174. For matters relating to fish and wildlife resources, flood plains and wetlands, dredge and fill, and channelization, please consult the Area Manager, Fish and Wildlife Service, U.S. Department of the Interior, 4620 Averland Road, Boise, ID 83705 (phone: FTS 554-1960).

We appreciate the opportunity to offer these comments and hope that resolution of our views and concerns will result in an environmentally acceptable project.

Sincerely,

Larry E. Meierotto
Assistant Secretary

cc: Mr. Robert A. Burco
Director
Oregon Dept. of Transportation
State Highway Building
Salem, Oregon 97310
APPENDIX G

LETTER FROM THE CITY OF CORVALLIS
February 8, 1983

Gary A. Potter, Manager  
Environmental Section  
Oregon Highway Division  
412 Transportation Building  
Salem, OR 97310

CORVALLIS BYPASS, PROJECT NO. 80-770

The City of Corvallis Parks & Recreation and Engineering Departments have reviewed the Section 4(f) Evaluation for the Corvallis Riverfront Area, and we concur with the findings contained in the 4(f) Evaluation. Extensive coordination has taken place between the City and the Oregon Highway Division relating to transportation planning in the Corvallis area and more specifically in regards to the proposed Corvallis Bypass and the development of the Corridor Study, the Environmental Impact Statement and the Section 4(f) Evaluation. We also concur with the steps outlined to minimize harm.

A. Gordon Wyatt  
Principal Engineer

Rene Moey, Director  
Parks and Recreation Department
INDEX

Aesthetics
  existing III-30, IV-21
  impacts III-30
Air Quality III-75, IV-14
  consistency III-76
  existing conditions III-75
  impacts III-73
  methodology III-73
  total emissions III-76
Alternatives II-1
  description
    No-Build Alternative II-8
    Eastern Corridor Alternative II-1
      Phase I II-2
    Full Bypass II-8
    Central Corridor Alternative II-8
    Western Corridor Alternative II-13
    Street Modification Alternative II-15
  history and development I-7
  others considered II-8
  selected alternative II-1
Bikeways III-27
  existing III-27, IV-3
  impacts III-29
Biology III-42
  existing III-42
  impacts III-44
  membership of guilds Appendix D
Comments V-1
  agency coordination V-1
  comments and responses V-1
  hearing V-1
  letters V-1
  public involvement V-1
Community Services III-35
Costs II-8, III-10
Construction IV-13
  noise III-74
  staging IV-13
Cultural Resources III-37, IV-29
  archeological III-37
  historic properties III-37
Displacement and Relocation IV-12
Economics III-33, IV-30
  commercial activity III-33
  employment III-33
  impacts III-35
  setting III-33
Emergency Services III-35
  impacts III-35
  setting III-35
Employment III-33
Energy III-78
Fiscal Impacts III-10
Geology III-36
  erosion and siltation III-40
  impacts III-40
  mitigation III-40
  setting III-38
  soils III-17
History, Project I-7
Housing III-32
Hydrology III-60, IV-19
  encroachments III-64
  floodplain III-61
  finding, floodplain III-65
  impacts III-64
  State & local regulations III-66
  streamflow history III-61
  surface drainage III-60
Land Use III-16, IV-22
  existing III-16
  planning III-10
  proposed III-19
  zoning III-17
Navigation III-63, III-64
Need I-4
Neighborhoods IV-32
Noise III-66, IV-15
  construction noise III-74
  impacts III-67
  methodology III-66
  mitigation III-72
Parks and Recreation III-22, IV-26
  Avery Park IV-26, IV-28
  Nelson Park III-25, III-26
  Oregon State University
    Property III-25, III-26
  Pioneer Park III-22, III-25
  Pioneer Boat Basin III-22, III-25
  Riverfront Area III-27
  Washington Park IV-26, IV-28
Planning III-10
  conformance III-10, III-12
  Corvallis Downtown Urban Renewal/Redevelopment Plan III-11, III-19
INDEX

Planning (Cont'd)
  Linn County III-11, III-12, III-20
  Willamette Greenway III-11, III-12
Population III-31
  socioeconomic background III-31
Project Setting I-3
Public Transit IV-3
Purpose I-3
Resource Commitments IV-35
Right-of-Way III-4
  commercial III-8, III-9
  governmental properties III-8
    Corvallis III-8
    Oregon State Highway Division III-8
    Oregon State University III-9
  relocation program III-9
  residential III-7, III-9
Riverfront Area III-27
Safety
  accidents I-4
  impacts III-4
Socioeconomic Background III-31
Transportation III-1, IV-1
  existing roadway I-4
  impacts III-1
  methodology III-1
  service levels Appendix A
  volumes III-1
    existing I-4
    projected I-4
  truck traffic I-4
Utilities III-37
Water Quality III-57
  aquatic biology III-59
    Dixon Creek III-58
    Marys River III-58
    mitigation III-60
    Willamette River III-58
Wetlands III-47
  finding III-55
  impacts III-49
  mitigation III-57
  setting III-47
Willamette Greenway III-11, III-12
Zoning III-17
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ODOT Word Processing Center