



# Oregon

Theodore R. Kulongoski, Governor

Department of Land Conservation and Development

635 Capitol Street, Suite 150

Salem, OR 97301-2540

(503) 373-0050

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[www.lcd.state.or.us](http://www.lcd.state.or.us)



## NOTICE OF ADOPTED AMENDMENT

02/04/2009

TO: Subscribers to Notice of Adopted Plan  
or Land Use Regulation Amendments

FROM: Mara Ulloa, Plan Amendment Program Specialist

SUBJECT: Lincoln County Plan Amendment  
DLCD File Number 002-08

The Department of Land Conservation and Development (DLCD) received the attached notice of adoption. A Copy of the adopted plan amendment is available for review at the DLCD office in Salem and the local government office. This amendment was submitted without a signed ordinance.

Appeal Procedures\*

DLCD ACKNOWLEDGMENT or DEADLINE TO APPEAL: Monday, February 23, 2009

This amendment was submitted to DLCD for review prior to adoption. Pursuant to ORS 197.830(2)(b) only persons who participated in the local government proceedings leading to adoption of the amendment are eligible to appeal this decision to the Land Use Board of Appeals (LUBA).

If you wish to appeal, you must file a notice of intent to appeal with the Land Use Board of Appeals (LUBA) no later than 21 days from the date the decision was mailed to you by the local government. If you have questions, check with the local government to determine the appeal deadline. Copies of the notice of intent to appeal must be served upon the local government and others who received written notice of the final decision from the local government. The notice of intent to appeal must be served and filed in the form and manner prescribed by LUBA, (OAR Chapter 661, Division 10). Please call LUBA at 503-373-1265, if you have questions about appeal procedures.

**\*NOTE:** THE APPEAL DEADLINE IS BASED UPON THE DATE THE DECISION WAS MAILED BY LOCAL GOVERNMENT. A DECISION MAY HAVE BEEN MAILED TO YOU ON A DIFFERENT DATE THAT IT WAS MAILED TO DLCD. AS A RESULT, YOUR APPEAL DEADLINE MAY BE EARLIER THAN THE ABOVE DATE SPECIFIED.

Cc: Jessica Bondy, Lincoln County  
Doug White, DLCD Community Services Specialist  
Paul Klarin, Coastal Policy Analyst  
Laren Woolley, DLCD Regional Representative

<paa> Y



D L C D NOTICE OF ADOPTION

This form must be mailed to DLCD within 5 working days after the final decision per ORS 197.610, OAR Chapter 660 - Division 18

(See reverse side for submittal requirements)

Jurisdiction: Lincoln County Local File No.: 2-TA-09 (If no number, use none)

Date of Adoption: 1-7-09 (Must be filled in) Date Mailed: 1-13-09 (Date mailed or sent to DLCD)

Date the Notice of Proposed Amendment was mailed to DLCD: 9-23-08

- Comprehensive Plan Text Amendment, Comprehensive Plan Map Amendment, Land Use Regulation Amendment, Zoning Map Amendment, New Land Use Regulation, Other: Exception to Goal 16 (Please Specify Type of Action)

Summarize the adopted amendment. Do not use technical terms. Do not write "See Attached."

Reasons Exception under Statewide Planning Goal 2 to Goal 16 to allow placement of fill within an estuary designated as a natural management unit for the Millport Slough Bridge replacement project on Siletz Bay

Describe how the adopted amendment differs from the proposed amendment. If it is the same, write "Same." If you did not give notice for the proposed amendment, write "N/A."

Same

Plan Map Changed from: to

Zone Map Changed from: to

Location: MP 120.84 / US Highway 101 Acres Involved:

Specify Density: Previous: New:

Applicable Statewide Planning Goals: 2, 12, 16

Was an Exception Adopted? Yes: No:



Did the Department of Land Conservation and Development receive a notice of Proposed Amendment **FORTY FIVE (45) days prior to the first evidentiary hearing.** Yes:  No:

If no, do the Statewide Planning Goals apply. Yes:  No:

If no, did The Emergency Circumstances Require immediate adoption. Yes:  No:

Affected State or Federal Agencies, Local Governments or Special Districts: US. Fish + Wildlife, Oregon Dept. of Transportation, Kernville - Glededen Water District

Local Contact: Jessica Bondy Area Code + Phone Number: 541-265-4192

Address: 210 SW 2nd St

City: Newport Zip Code+4: 97365

## ADOPTION SUBMITTAL REQUIREMENTS

This form **must be mailed** to DLCD **within 5 working days after the final decision** per ORS 197.610, OAR Chapter 660 - Division 18.

1. Send this Form and TWO (2) Copies of the Adopted Amendment to:  
**ATTENTION: PLAN AMENDMENT SPECIALIST**  
**DEPARTMENT OF LAND CONSERVATION AND DEVELOPMENT**  
**635 CAPITOL STREET NE, SUITE 150**  
**SALEM, OREGON 97301-2540**
2. Submit **TWO (2) copies** the adopted material, if copies are bounded please submit **TWO (2) complete copies** of documents and maps.
3. Please Note: Adopted materials must be sent to DLCD not later than **FIVE (5) working days** following the date of the final decision on the amendment.
4. Submittal of of this Notice of Adoption must include the text of the amendment plus adopted findings and supplementary information.
5. The deadline to appeal will be extended if you submit this notice of adoption within five working days of the final decision. Appeals to LUBA may be filed within **TWENTY-ONE (21) days** of the date, the "Notice of Adoption" is sent to DLCD.
6. In addition to sending the "Notice of Adoption" to DLCD, you must notify persons who participated in the local hearing and requested notice of the final decision.
7. **Need More Copies?** You can copy this form on to 8-1/2x11 green paper only ; or call the DLCD Office at (503) 373-0050; or Fax your request to:(503) 378-5518; or Email your request to [Larry.French@state.or.us](mailto:Larry.French@state.or.us) - **ATTENTION: PLAN AMENDMENT SPECIALIST.**

FEB 05 2009

LAND CONSERVATION AND DEVELOPMENT

FORM 2

D L C D NOTICE OF ADOPTION

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(See reverse side for submittal requirements)

Jurisdiction: Lincoln County Local File No.: 2-TA-09 (If no number, use none)

Date of Adoption: 1-7-09 (Must be filled in) Date Mailed: 1-13-09 (Date mailed or sent to DLCD)

Date the Notice of Proposed Amendment was mailed to DLCD: 9-23-08

- Comprehensive Plan Text Amendment
Comprehensive Plan Map Amendment
Land Use Regulation Amendment
Zoning Map Amendment
New Land Use Regulation
Other: Exception to Goal 16 (Please Specify Type of Action)

Summarize the adopted amendment. Do not use technical terms. Do not write "See Attached."

Reasons Exception under Statewide Planning Goal 2 to Goal 16 to allow placement of fill within an estuary designated as a natural management unit for the Millport Slough Bridge replacement project on Siletz Bay.

Describe how the adopted amendment differs from the proposed amendment. If it is the same, write "Same." If you did not give notice for the proposed amendment, write "N/A."

Same

Plan Map Changed from : to

Zone Map Changed from: to

Location: MP 120.84 / US Highway 101 Acres Involved:

Specify Density: Previous: New:

Applicable Statewide Planning Goals: 2, 12, 16

Was an Exception Adopted? Yes: No:

DLCD File No.: 002-08

1                                   **BEFORE THE BOARD OF COMMISSIONERS**

2                                   **FOR LINCOLN COUNTY, OREGON**

3                                   ORDINANCE # 457

4 \_\_\_\_\_  
5  
6 **Amending the Lincoln County Comprehensive Plan granting a “Reasons Exception” under**  
7 **Statewide Planning Goal 2 (Land Use Planning) (implemented by OAR 660-004) to Statewide**  
8 **Planning Goal 16 (Estuarine Resources) to allow placement of fill within an estuary designated**  
9 **as a natural management unit for the Millport Slough Bridge replacement project on Siletz**  
10 **Bay located on U.S. Highway 101 between the intersection of Highway 101 and Immonen**  
11 **Road and Highway 101 and OR 229 (milepost 120.84) (Case File #2-TA-08); and declaring an**  
12 **emergency.**  
13 \_\_\_\_\_

14           WHEREAS on November 10, 2008 the Lincoln County Planning Commission held a public  
15 hearing to consider the request from the Oregon Department of Transportation (ODOT) for approval  
16 of an exception, under Statewide Planning Goal 2 (Land Use Planning) as implemented by Oregon  
17 Administrative Rules Chapter 660 Section 004, to Statewide Planning Goal 16 (Estuarine  
18 Resources). The purpose of the exception is to allow ODOT to proceed with a project to replace the  
19 Millport Slough Bridge which crosses Siletz Bay. The Bay is a tidal estuary protected under  
20 Statewide Planning Goal 16 and is placed under the Lincoln County Estuary Management Plan  
21 within Siletz Bay Management Unit No. 5, a natural management unit. Permitted uses within a  
22 natural management area include bridge crossings and pilings; fills, however, are not permitted  
23 outright and require taking an exception to the statewide planning goals. An exception to the  
24 statewide planning goals constitutes an amendment of the county’s comprehensive plan; and

25           WHEREAS at the conclusion of the hearing the Planning Commission voted 7-1 to  
26 recommend that the Board approve the amendment and goal exception. On November 24, 2008 the



1 Planning Commission adopted findings, conclusions and final order making that recommendation;  
2 and

3 WHEREAS after published and mailed notice in accordance with law, the Lincoln County  
4 Board of Commissioners held a public hearing on January 7, 2009 to consider the request; and

5 WHEREAS at the conclusion of that hearing, the Board voted unanimously to approve the  
6 request;

7 NOW, THEREFORE, IT IS HEREBY ORDAINED AS FOLLOWS:

8 **SECTION 1.**

9 1. The Planning Commission's recommendation is adopted, and the Comprehensive Plan  
10 Map is amended by granting a "Reasons Exception" under Statewide Planning Goal 2 (Land Use  
11 Planning) (implemented by OAR 660-004) to Statewide Planning Goal 16 (Estuarine Resources) to  
12 allow placement of fill within an estuary designated as a natural management unit for the Millport  
13 Slough Bridge replacement project on Siletz Bay located on U.S. Highway 101 between the  
14 intersection of Highway 101 and Immonen Road and Highway 101 and OR 229 (milepost 120.84)  
15 (Case File #2-TA-08).

16 2. The findings and conclusions supporting this plan amendment and goal exception are  
17 adopted as set forth in Exhibit "A" attached hereto and incorporated herein.

18 3. Copies of this ordinance shall be forwarded to County Surveyor; County Assessor;  
19 County Counsel; Jessica Bondy, Lincoln County Planner; Matt Spangler, Lincoln County Planning  
20 Department Director; John deTar ODOT Senior Planner and Serah Overbeek, Angelo Planning  
21 Group, ODOT agent.

22 4. The Department of Planning and Development shall forward a copy of this ordinance to  
23 the Oregon Department of Land Conservation and Development.

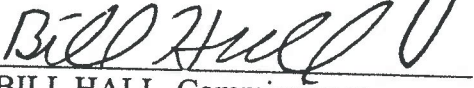
1            **SECTION 2.**

2            This Ordinance being necessary for the immediate preservation of the public peace, health  
3            and safety, an emergency is declared to exist and this Ordinance shall take effect upon its passage.

DATED this 7<sup>th</sup> day of January, 2009.

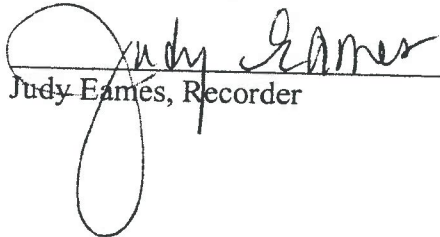
LINCOLN COUNTY BOARD OF COMMISSIONERS

  
\_\_\_\_\_  
DON LINDLY, Chair

  
\_\_\_\_\_  
BILL HALL, Commissioner

  
\_\_\_\_\_  
TERRY N. THOMPSON, Commissioner

ATTESTED TO:

  
\_\_\_\_\_  
Judy Eames, Recorder

APPROVED AS TO FORM:

  
\_\_\_\_\_  
Wayne Belmont, County Counsel

BEFORE THE PLANNING COMMISSION  
OF  
LINCOLN COUNTY, OREGON

Exception to Statewide Planning ) Case File #2-TA-08  
Goal 16; Comprehensive Plan Amendment ) Findings, Conclusions and  
Final Order )

**Nature of the Application**

ODOT is proposing to replace the existing Millport Slough Bridge crossing the Siletz Bay, a tidal estuary protected under Oregon Statewide Planning Goal 16 (Estuarine Resources). The Lincoln County Estuary Management Plan places the bridge within Siletz Bay Management Unit No. 5, a natural management unit. Permitted uses within a natural management unit include replacement bridge crossings and pilings; however, fill is not permitted. Because the Millport Slough Bridge replacement project will involve some fill, an exception to Goal 16 is required. By definition, a goal exception is an amendment to the comprehensive plan. Therefore, ODOT is submitting this application for a plan amendment in order to request approval of the goal exception. Detailed findings in support of the plan amendment and goal exception are provided in documents accompanying the application.

**Relevant Facts**

The following is a summary of the facts and testimony found to be relevant to this decision.

1. Millport Slough Bridge is located on U.S. Highway 101 between the intersection of Highway 101 and Immonen Road and Highway 101 and OR 229 (milepoint 120.84).
2. The Lincoln County Estuary Management Plan places the Millport Slough Bridge within Siletz Bay Management Unit No. 5, a natural management unit (M-W, marine waterway).
3. Millport Slough Bridge crosses the Siletz Bay Estuary and is surrounded by the Siletz Bay National Wildlife Refuge. The bridge is located north of Salishan Lodge and Golf Resort and south of Siletz Keys, a residential subdivision.
4. Two utility district providers are affected by the proposed project. Currently, the Kernville-Gleneden Beach-Lincoln Beach Water District has a water distribution line which lies within the existing ODOT right-of-way. The line will be relocated once the bridge replacement project is underway. The Siletz Keys Sanitary District will be relocating an existing sewer line bored under the estuary.
5. All application materials and staff's report is by reference incorporated into the record. A general description and purpose of the project is as follows: The existing Millport Slough Bridge is a two-lane, wood supported structure built in 1941. Inspections in 2002 revealed that the bridge was structurally deficient. The stretch of Highway 101



containing the bridge is a major north-south route. As a result ODOT determined that the bridge should be replaced. ODOT is proposing to replace the bridge wide enough to accommodate four lanes, rather than two. Traffic studies and capacity analysis indicate that the volume of traffic over a two lane bridge would exceed design capacity shortly after completion. Thus it was determined that the four-lane bridge rather than a two lane structure would best meet the purpose and need of the bridge replacement project, while anticipating future needs, reducing costs and further environmental impacts. The new bridge will be lengthened to 330 feet (existing is 210 feet) and widened to 68 feet. Two of the four lanes will be barricaded off until demand warrants and safe passing design improvements are made.

The Siletz Bay occurs within the Cascadia Subduction Zone. An evaluation was conducted in order to assess the susceptibility of the bridge highway embankments to movement following an earthquake. Based on the presence of extremely deep, soft sediments in the Siletz Bay, it was determined that ground improvements would be needed to maintain the bridge during a major seismic event. The original ground improvement design consisted of placing 3000, 12 inch diameter timber pilings near the new abutments, installed 60-feet deep into the soft sediment of the slough. However, the number of pilings is likely to be reduced to roughly 850. The number of pilings will be refined during final plan design. Once completed, the pilings will be entirely below the soil surface. Riprap will be placed around the pilings to protect from scour. Other fill material will be needed for bridge support structures and bridge approaches. Removal-fill volumes include roughly 7264 cubic yards of removal and 27,475 cubic yards of fill for a net gain of just over 20,000 cubic yards of fill.

6. Extensive research, documentation and analysis of the need, alternatives and impacts of the project have been provided in documents submitted by ODOT. It is the purpose of this element of the Comprehensive Plan amendment to provide a compilation of relevant factual material from these documents which form the basis for the proposed findings and conclusions.

The findings and conclusions contained herein are based on the information contained in the following documents:

- Millport Slough Bridge Replacement Plan Amendment and Goal Exception Land Use Application- Submitted on behalf of Oregon Department of Transportation Region 2 2008; Prepared by Angelo Planning Group, Inc.
  - Joint Permit Application - US Army Corps of Engineers/Division of State Lands - Submitted by Oregon Department of Transportation Region 2 August 2008.
7. A public hearing was held on November 10, 2008 before the Lincoln County Planning Commission in consideration of the requested amendment. All interested parties were given an opportunity to testify.
  8. John DeTar, representing Oregon Department of Transportation, presented testimony on behalf of the request and responded to questions raised by the Planning Commission. Mr. deTar explained that the focus of the application is on the current bridge replacement project. ODOT has not engaged in the evaluation process for future highway improvements crossing the entire Siletz Estuary, nor are there funding

resources available at this time to accomplish such a plan. There was discussion concerning the deteriorated condition of the existing bridge. Mr. deTar stated that it was likely the number of pilings anticipated to support the replacement bridge would be reduced from the original 3000, but the number would be determined during final plan review. Mr. deTar pointed out that the proposed bridge design and mitigation plan satisfies requirements of the regulatory resource agencies and has the support of the manager of the U.S. Fish and Wildlife Siletz Bay Wildlife Refuge. Any future Highway 101 improvement projects involving a goal exception would require authorization from Lincoln County.

9. The Department of Land Conservation and Development submitted a letter into the record dated October 24, 2008. The DLCD support the proposed Goal 16 exception, but also recommended the County consider a goal exception for this highway segment that would allow the subsequent widening for the length of highway within the estuary.
10. No opposition testimony was entered into the record.
11. There were no requests for continuances or for the record to be held open.

### **Relevant Criteria**

#### **A. Statewide Land Use Planning Goals**

1. Goal 2: Land Use Planning and Exceptions
2. Goal 12: Transportation
3. Goal 16: Estuarine Resources

#### **B. Committed Lands Exception Requirements**

1. ORS 197.732(1)(b) and Goal Two: Part 11(c): Exception Requirements
2. OAR 660-04-018; Planning and Zoning for Exception Areas
3. OAR 660-04-0020; Goal 2, Part II(c), Exception Requirements
4. OAR 660-04-0022: Reasons Necessary to Justify an Exception Under Goal 2, Part II(c)

#### **C. Lincoln County Code**

1. Lincoln County Code Section 1.0190(12) Plan Designations - Estuarine Management Units
2. Lincoln County Code Section 1.1367 Marine Waterway (M-W) Zone
3. Lincoln County Estuary Management Plan: Siletz Management Unit No. 5 (Natural)

### **Findings and Conclusions**

The Planning Commission finds that the findings and conclusions supporting this action are adopted as set forth in Exhibit "A" attached hereto and incorporated herein. The findings and conclusions contained herein are based on the information contained in the following documents:

1. Millport Slough Bridge Replacement Plan Amendment and Goal Exception Land Use Application - Submitted on behalf of Oregon Department of Transportation Region 2 2008; Prepared by Angelo Planning Group, Inc.

2. Joint Permit Application - US Army Corps of Engineers/Division of State Lands - Submitted by Oregon Department of Transportation Region 2 August 2008.

**Order**

It is ORDERED by the Lincoln County Planning Commission that Case File #2-TA-08 be APPROVED. This approval serves as a recommendation to the Lincoln County Board of Commissioners.

This ORDER was presented to and approved by the Lincoln County Planning Commission on November 24, 2008.



Cris Torp, Chair  
Lincoln County Planning Commission



MILLPORT SLOUGH BRIDGE REPLACEMENT  
PLAN AMENDMENT & GOAL EXCEPTION  
LAND USE APPLICATION

Submitted to:  
Lincoln County Community Development  
Department – Planning Division

Submitted on Behalf of:  
Oregon Department of Transportation  
Region 2

September 2008

Prepared by:  
Angelo Planning Group, Inc.



## TABLE OF CONTENTS

I.	Project Introduction.....	2
II.	Consistency with Plan Amendment Criteria.....	5
III.	Goal Exception Findings.....	10

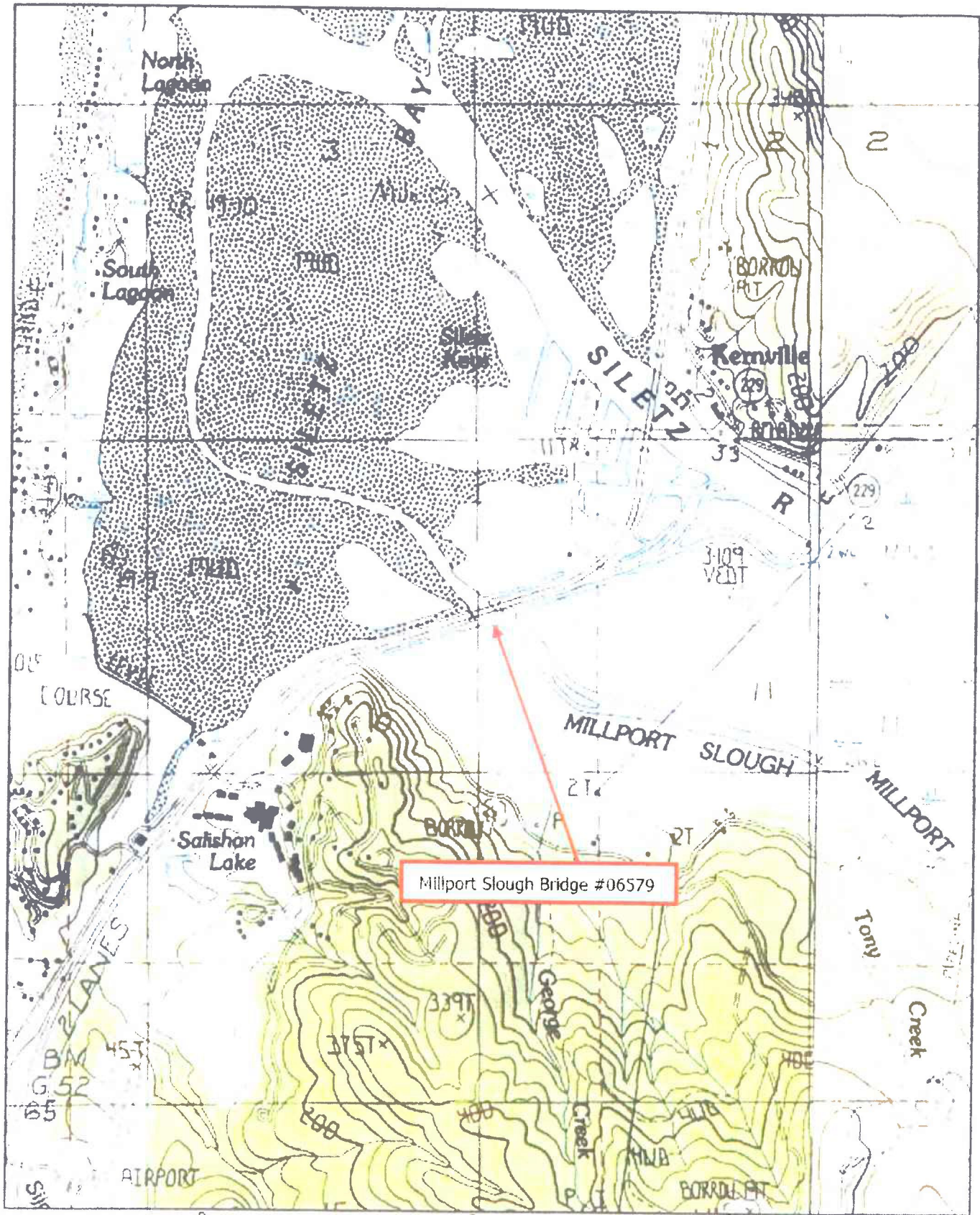
### Attachments

Attachment A.	Updated Capacity Analysis Report
Attachment B.	Letter from US Fish and Wildlife Service

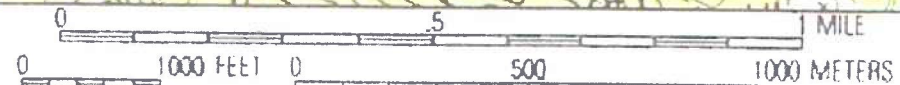
### Exhibits

Sheet 1:	Proposed Bridge Plan
Sheet 2:	Staging Plan
Sheet 3:	Final Lane Configuration
Sheets 3A - 5A:	General Construction Plans

Project Vicinity

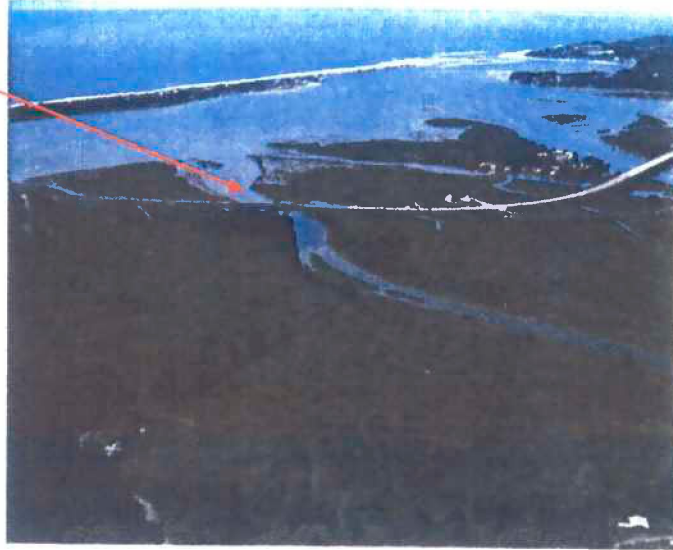


Millport Slough Bridge #06579





Bridge  
Location



## I. PROJECT INTRODUCTION

The Millport Slough Bridge is located on US Highway 101 between the US-101/OR-229 intersection and the US-101/Immonen Road intersection (milepoint 120.84). It is a two-lane, wood-supported structure constructed in 1941 within a right-of-way width of 200-305 feet. According to ODOT right-of-way maps, the existing highway right-of-way was acquired before July 1, 1987. The Siletz Bay National Wildlife Refuge surrounds the right-of-way on all sides, providing protection for the estuary. In June 2002, inspections revealed that the bridge was structurally deficient with a poor substructure, inadequate rails and transitions, and “intolerable” deck geometry. The 14-inch diameter piles supporting the bridge have as much as 12 inches of interior rot and other wood elements are also showing signs of decay. The stretch of US-101 containing Millport Slough Bridge is a major north-south route and part of the National Highway System. It is designated as a rural principal arterial and National Scenic Byway. The bridge is heavily used, especially in the summer months, and traffic volumes along this stretch of highway are expected to increase in the foreseeable future. If the bridge is not replaced, the existing bridge would likely fail, creating a significant safety risk for users. As such, the ODOT Bridge Section determined that the bridge should be replaced. The project is listed on the 2006-2009 State Transportation Implementation Plan (STIP) as a Programmed Roadway Improvement.

No additional travel lanes, signalization, channelization, or speed zone changes were initially planned as part of the bridge replacement. However, ODOT is proposing to replace the Millport Slough Bridge with a bridge wide enough to accommodate four lanes, rather than two lanes. Traffic analyses have concluded a two-lane segment over the Millport Slough Bridge would exceed Highway Design Manual (HDM) mobility standards by 2014, just three years after the anticipated completion date. A four lane bridge can be expected to function well below the HDM standard beyond the projected analysis year of 2035. Analyses also conclude that, until US-101 has also been widened to four lanes for at least a mile on either end of the bridge, the bridge should operate as a two-lane highway. Providing a short four-lane segment over the bridge could increase collision risks if drivers attempt to use it as a passing opportunity. For more detail, see the Updated Capacity Analysis Report provided in Attachment A.

The draft Lincoln County Transportation System Plan (TSP), scheduled for adoption in September 2008, calls for evaluation of the 4.75-mile segment of US-101 between Lincoln City and Lancer Street (MP 118.70 to 123.49) for capacity improvements to provide two travel lanes in each direction. The Millport Slough Bridge is located within this segment. High travel demand along this stretch of highway, especially during the summer months, has resulted in congestion and safety problems that exceed acceptable conditions. Traffic analyses forecast that these problems will worsen within the 20-year planning horizon unless they are addressed.

The widening of this segment of US-101 is listed in Table 7-2 of the draft TSP as a Priority 3 capacity project within the preferred alternative. Priority 3 indicates improvements that will be needed soon in order to meet applicable standards and policies. This stretch of US-101 is expected to exceed Oregon Highway Plan (OHP) mobility standards by the year 2015. The US-101 capacity improvement project is not considered a "planned improvement", meaning funding has not been secured and the draft TSP does not assume construction will occur within the 20-year planning horizon. Because widening this segment of US-101 will likely result in additional impacts to Siletz Bay, the capacity project will require further study to determine the necessary comprehensive plan amendments/goal exceptions, and their approval would be required before the project could be programmed.

The US-101 widening project description (TSP Table 7-2) states that the anticipated future capacity improvements would require that the Millport Slough Bridge be widened from two lanes to four lanes. Therefore, it is reasonable to replace the Millport Slough Bridge with a bridge wide enough to accommodate four lanes now. This will eliminate the need for a second bridge widening or replacement at the time of the future highway capacity improvements. It will also eliminate the need to build a detour bridge to accommodate traffic during construction. This is explained in more detail in the next section. Analysis of the two alternatives demonstrates that constructing a four-lane bridge now, rather than a two-lane bridge, will result in cost savings and reduced environmental impacts in the long term.

### **Bridge and Highway Design**

The proposed Millport Slough Bridge replacement will be constructed to adjoin the existing two-lane US-101. The new bridge will be lengthened to 330 feet (the existing bridge is 210 feet long) and shifted slightly to the west to minimize impacts to sensitive fishery areas and eelgrass beds. The US-101 causeway will be widened slightly to the west to align with the shifted bridge. New guardrails will be required along the full length of the project. Guardrails are required for protection due to the steep embankment slope that will be constructed to minimize estuary impacts. This slope will be steeper than the existing embankment. The entire project will take place within existing ODOT right-of-way.

The proposed design for the Millport Slough Bridge replacement consists of two 12-foot travel lanes with 10-foot shoulders and raised curbs. This configuration also includes a 28-foot wide deck area that will be separated from the rest of the bridge by a barricade and will not be accessible to vehicles. The deck area will be reserved for additional travel lanes in the event of future widening of US-101. If US-101 is widened, the bridge will be reconfigured to four 12-foot travel lanes, a four-foot median, and 10-foot shoulders on each side. In total, the new bridge will be 52-feet wide, as compared with the existing 35-foot wide structure. See Sheet 3 for a detailed drawing of the two configurations.

The interim, two-lane configuration is necessary because US-101 is currently two lanes at both ends of the bridge. Striping the bridge for four lanes of traffic would create an unsafe passing condition because adding travel lanes north and south of the bridge is not part of this project. The 330-foot four-lane bridge will be too short to function as a passing lane. The bridge replacement is not of sufficient length to transition between four lanes and two lanes.

The proposed bridge design eliminates the need to build a detour bridge to accommodate traffic during construction. As demonstrated on Sheet 2, bridge construction will take place in two stages. Essentially, vehicles can travel along one “half” of the bridge while the other “half” is under construction. Eliminating the need to build a detour bridge results in cost savings, a reduction in environmental impacts, and waste reduction because detour bridges are typically discarded after use.

### **Ground Improvements**

The Siletz Bay occurs within the Cascadia Subduction Zone with 500- and 1,000-year hazard level earthquake events. An evaluation was conducted in order to assess the susceptibility of the bridge highway embankments to movement following an earthquake. Based on the presence of extremely deep, soft sediments in the Siletz Bay, it was determined that ground improvements would be needed to maintain the US-101 causeway during a major seismic event. Specifically, a significant risk of slope movement along the bridge approach embankments would likely occur at the 500- and 1,000-year hazard levels.

This risk can be substantially reduced by installing ground improvements using closely-spaced timber piles placed below the ground surface around the abutments of the new bridge. This ground improvement design represents the most practical, cost-effective means to mitigate potential earthquake damage at the bridge approaches and abutments. Another approach involves using the injected stone column technique used at the Spencer Creek Bridge. However, constructing stone columns would have a greater impact on the estuary than installing timber piles.

The ground improvement design will consist of untreated timber piles placed three to four feet apart within 30 feet of the new abutments. In total, a maximum of 3,000 twelve-inch diameter timber piles will be installed 60 feet deep into the soft sediment of the slough. Impact hammers will be used to install the timber piles. Installation of the timber piles will take place during the winter in-water work period and the effects would be temporary. A work isolation system will be utilized to contain any disturbed sediments by the pile-hammering installation. After the work has been completed, all of the piles will be entirely below the soil surface and not visible during minus tide events. The timber piles will result in significantly less impact on the estuary in terms of the amount of displaced sediment and the volume of fill needed below the surface of the channel. Timber piles require approximately one-tenth the volume of fill relative to the injected stone column approach.

The ground improvement areas are shown on Sheet 4A.

### **Statewide Goal Exceptions**

The Millport Slough Bridge is located within Siletz Bay, a tidal estuary protected under Oregon Statewide Planning Goal 16 (Estuarine Resources). Siletz Bay is classified as a conservation estuary by the state's overall estuary classification standards. A conservation estuary can contain both conservation and natural units; natural units receive the highest level of protection under state law.



The Lincoln County Estuary Management Plan (1982) places the Millport Slough Bridge within Siletz Bay Management Unit No. 5, a natural estuary unit. Permitted uses within a natural estuary include replacement bridge crossings and pilings; however, fill is not permitted. Because the Millport Slough Bridge replacement project will involve some fill, an exception to Goal 16 is required.

By definition, a goal exception is an amendment to a comprehensive plan. Therefore, ODOT is submitting this application for a plan amendment in order to request approval of the goal exception. Detailed findings in support of the plan amendment and goal exception are provided in subsequent sections of this narrative.

## **II. CONSISTENCY WITH PLAN AMENDMENT CRITERIA**

Lincoln County procedures require that plan amendment applications demonstrate consistency with Lincoln County Comprehensive Plan policies and the Statewide Planning Goals. The plan policies and goals are addressed in the following section. Only those Comprehensive Plan policies with direct relevance to the proposed bridge replacement were included.

### **Lincoln County Comprehensive Plan**

#### 1.0085 Estuarine Resource Policies

The purpose of the estuarine policies is to protect, maintain, and restore Lincoln County's estuaries. The policies provide the framework for the Lincoln County Estuary Management Plan and establish the estuarine management unit classifications. Per the policies, management of estuaries must ensure adequate provision for development at a level of intensity consistent with the classifications. Significant habitats such as salt marshes and tidal flats shall be preserved in natural management units unless a Goal Exception is provided. Permissible uses within a natural management unit do not include the placement of fill within the estuary. As such, an exception is necessary.

As demonstrated in subsequent sections of this narrative, historic estuarine habitat will be restored as part of the mitigation activities associated with the bridge replacement. This is consistent with the overall goal of restoring the "long term environmental, economic and social values, diversity and benefits of Lincoln County's estuaries".

#### 1.0145 Transportation Policies

The transportation policies state that Lincoln County shall review improvements to the state highway system within the county for consistency with the county comprehensive plan. This application narrative is being provided for that review and demonstrates consistency with Lincoln County policies, except where goal exceptions are noted.

Transportation policies also state that existing rights-of-way shall be used where appropriate. The proposed bridge replacement will take place entirely within existing ODOT right-of-way and is therefore consistent with this policy. Lincoln County also encourages the provision of pedestrian and bicycle routes. The proposed bridge replacement will have ten foot shoulders on both sides to allow for safer and more convenient bicycle and pedestrian access over the bridge.

## **Oregon Statewide Planning Goals**

### Goal 1 Citizen Involvement

Goal 1 requires opportunity for citizens to be involved in all phases of the planning process. Generally, Goal 1 is satisfied when a local government follows the public involvement procedures set out in its acknowledged comprehensive plan and land use regulations. In order to provide opportunities for citizen involvement in the bridge replacement project, ODOT held a public open house on May 21, 2008. The purpose of the open house was to present information regarding the process, design, timing, construction, and impacts of the bridge replacement. Citizen input was gathered, both verbally and in writing. Two weeks prior to the open house, informational brochures were distributed in the Glen Eden Beach area to a total of 47 individuals and organizations. Brochures also were sent to the local water and sanitation district offices for distribution to customers and to the Gleneden Beach Post Office. Project information is available on the ODOT website at: [http://www.oregon.gov/ODOT/HWY/REGION2/Millport\\_Slough.shtml](http://www.oregon.gov/ODOT/HWY/REGION2/Millport_Slough.shtml).

Lincoln County Code Section 1.0025 provides Lincoln County's Goals for public involvement. Lincoln County provides notice to the Oregon Department of Land Conservation and Development (DLCD) as required by Oregon Law. Public notice of the goal exception and plan amendment hearings will be provided to the public and to nearby landowners. Public testimony about the bridge project can be submitted prior to and during the hearings. Compliance with these procedures demonstrates compliance with Goal 1.

### Goal 2 Land Use Planning

Goal 2 Part I requires coordination with affected governments and agencies, evaluation of alternatives, and an adequate factual base. ODOT has evaluated alternatives for the bridge design and has coordinated with DLCD, the U.S. Fish and Wildlife Service (USFW), and the manager of the Siletz Bay Estuary to ensure their participation in the bridge replacement. Attachment B contains a letter from Roy Lowe, Project Leader with the USFW indicating their involvement in and support of the proposed project. Additionally, ODOT understands that Lincoln County will condition the plan amendment on approval of all required permits from natural resource agencies. For these reasons, Goal 2 Part I will be met.

Goal 2 Part II addresses goal exceptions. For this project, an exception to Goal 16, Estuarine Resources is required because the proposed bridge replacement and widening involves fill to be placed within the estuary. Goal 16 does not permit the placement of fill within estuaries without an exception.

### Goal 3 Agricultural Lands

Goal 3 requires counties to preserve and maintain agricultural lands for farm uses. The proposed bridge replacement will not take place on designated agricultural lands. Therefore, this Goal does not apply.

### Goal 4 Forest Lands

Goal 4 requires counties to preserve and maintain forest lands for forest uses. The proposed bridge replacement will not take place on designated forest lands. Therefore, this Goal does not apply.

#### Goal 5 Natural Resources, Scenic and Historic Areas, and Open Spaces

Goal 5 requires local governments to adopt programs to protect natural resources and conserve scenic, historic, and open space resources for present and future generations as provided in LCDC's Goal 5 administrative rule (OAR 660, Division 23). There are no Goal 5 resources identified at the project site. Therefore, Goal 5 is not applicable to this exception/plan amendment.

#### Goal 6 Air, Water and Land Resources Quality

Goal 6 addresses the quality of air, water and land resources. In the context of comprehensive plan amendments, a local government complies with Goal 6 by explaining why it is reasonable to expect that the proposed uses authorized by the plan amendment will be able to satisfy applicable federal and state environmental standards, including air and water quality standards. The proposed bridge replacement will impact protected estuary habitat within Siletz Bay. A discussion of anticipated impacts and mitigation measures is provided in the goal exception findings in Section III of this narrative. The mitigation ratios will be based on the Oregon Department of State Lands (ODSL) rules and regulations for estuarine mitigation. In addition, ODOT will be required to obtain approval from the U.S. Corps of Engineers prior to construction of the bridge in order to ensure compliance with federal standards. Compliance with those procedures will ensure consistency with Goal 6.

#### Goal 7 Areas Subject to Natural Hazards

Goal 7, which was amended on June 1, 2002, addresses hazards to development. The amended goal states that new hazard inventory information provided by state and federal agencies will be reviewed by DLCD. After review, DLCD will notify local governments if new hazard information requires a local response. DLCD has not notified Lincoln County of new hazard information in the area of the Millport Slough Bridge. Therefore, this goal does not apply.

#### Goal 8 Recreational Needs

Goal 8 provides for local governments to meet the recreational needs of the citizens of Oregon. US-101 is a National Scenic Byway and is the primary route serving the Oregon coast, which is a major recreational destination. A safe and functional bridge along US-101 is needed to ensure continued access to coastal recreational locations within Oregon. Additionally, the bridge replacement will include a ten-foot shoulder on both sides of the bridge which will provide for safer and more convenient bicycle and pedestrian travel. Finally, the initial bridge configuration will have a 28-foot wide deck on one side that will be limited to bicycle and pedestrian travel only. Based on the above information, the Millport Slough Bridge replacement is consistent with Goal 8.

#### Goal 9 Economic Development

Goal 9 requires local governments to adopt comprehensive plans and policies that "contribute to a stable and healthy economy in all regions of the state." Tourism contributes significantly to Oregon's economy and US-101 is the major tourist route along the Oregon coast. Providing a replacement bridge that is safe and can accommodate existing and future tourist travel along this route will contribute to the overall health of the economy. Therefore, the proposed bridge replacement is consistent with Goal 9.

#### Goal 10 Housing

Goal 10 requires local governments to do their fair share to provide for the housing needs of people of all income levels. "Buildable lands" are defined in Goal 10 as lands inside urban growth



boundaries that are suitable, available, and necessary for residential use. Because the subject site is not located inside an urban growth boundary, Goal 10 does not apply.

#### Goal 11 Public Facilities and Services

Goal 11 requires local governments to plan and develop a timely, orderly, and efficient arrangement of public facilities and services. The goal provides that urban and rural development “be guided and supported by types and levels of services appropriate for, but limited to, the needs and requirements of the urban, urbanizable and rural areas to be served.” The Millport Slough Bridge is located on rural land outside of urban growth boundaries. No public facilities (other than transportation facilities covered under Goal 12) will be developed as part of the proposed bridge replacement. Therefore, Goal 11 is not applicable.

#### Goal 12 Transportation

Goal 12 requires local governments to “provide and encourage a safe, convenient and economic transportation system.” Goal 12 is implemented through the Transportation Planning Rule, OAR 660, Division 12 (TPR). The bridge replacement is necessary due to deficiencies identified in the existing bridge that could eventually lead to bridge failure. The new bridge will be structurally sound and resistant to earthquake damage, providing safety improvements consistent with Goal 12.

ODOT is proposing to replace the Millport Slough Bridge with a bridge wide enough to accommodate four lanes in anticipation of the future widening of US-101. The draft Lincoln County Transportation System Plan (TSP) calls for the segment of US-101 containing the Millport Slough Bridge to be evaluated for capacity improvements that include additional northbound and southbound travel lanes, making the entire segment four lanes. The proposed capacity improvements in the draft TSP would require that the Millport Slough Bridge be widened from two lanes to four lanes. Therefore, it is reasonable to replace the Millport Slough Bridge with a bridge wide enough to accommodate four lanes now. Prior to the future widening of US-101, the new bridge will be striped for two travel lanes and concrete barriers will be installed to prevent use of the additional lanes, consistent with the TSP. In the event of future widening of US-101, the barriers will be removed and the bridge restriped into four lanes in order to align with the highway. This will eliminate the need to again impact the estuary at the bridge at the time of the highway capacity improvements. It will also eliminate the need to build a detour bridge to accommodate traffic during construction. Analysis of the two alternatives demonstrates that constructing a four-lane bridge now, rather than a two-lane bridge, will result in cost savings in the long-term, providing an economic system consistent with Goal 12.

The US-101 widening project is not considered a “planned improvement” and will require a goal exception prior to programming due to its location in the protected estuary. However, the Draft Lincoln County TSP states that “the County shall make land use decisions that preserve the opportunity to widen this segment of Highway 101 in the future.” Building a bridge wide enough to accommodate four lanes is consistent with this policy.

The provisions of the TPR establish that uses provided for in ORS 215.283(1) are transportation improvements that can be permitted on rural lands without an exception to Goal 12. Replacing an existing bridge with a new bridge constitutes “reconstruction or modification” of a highway that does not include additional travel lanes, which is provided for in ORS 215.283(1)(L). While the bridge is being widened, additional travel lanes will not be provided. The new bridge will be

constructed entirely within the existing right-of-way, and that right-of-way was acquired before July 1, 1987.

For the above reasons, the proposed bridge replacement is consistent with Goal 12.

#### Goal 13 Energy Conservation

Goal 13 directs cities and counties to manage and control land and uses developed on the land to maximize the conservation of all forms of energy, based on sound economic principles. It is anticipated that the proposed bridge replacement project will result in long-term energy savings for a number of reasons. The proposed replacement bridge will be wide enough to accommodate four travel lanes in order to allow for the future widening of US-101. Doing so removes the need for a second bridge project at the time of the highway improvements. It also eliminates the need to construct a detour bridge to accommodate traffic during construction. The efficiency of this design will result in time, energy and cost savings in the long term and will reduce cumulative impacts on the estuary. Furthermore, existing and future congestion delays along this stretch of US-101 have energy impacts relating to fuel inefficiencies from stop-and-go traffic conditions, or from out-of-direction travel to avoid congestion. The eventual four-lane configuration of the bridge will accommodate future traffic volumes, thus reducing congestion-related inefficiencies. As such, the proposed project is consistent with Goal 13.

#### Goal 14 Urbanization

Goal 14 requires local governments to establish urban growth boundaries in accordance with seven factors listed in the goal in order to separate urban and urbanizable lands from rural lands. Pursuant to Goal 14, the cities in Lincoln County have established UGBs for their respective urban areas.

#### Goal 15 Willamette River Greenway

The Millport Slough Bridge is not located within the Willamette River Greenway. Therefore, this Goal does not apply.

#### Goal 16 Estuarine Resources

The proposed Millport Slough Bridge replacement will be located within the Siletz Bay estuary in Management Unit Number 5, which is classified as "natural". Bridge crossings and pilings are permitted uses in this designation; however, fill is not permitted. The proposed bridge replacement involves fill and therefore is not consistent with Goal 16. As such, an exception to Goal 16 is required. Findings in support of a Goal 16 exception are addressed separately in Section III of this narrative.

#### Goal 17 Coastal Shorelands

Goal 17 states that lands within 50 feet of an estuary are classified as coastal shorelands. This definition includes the relatively narrow strip of highway embankment at either end of the Millport Slough Bridge elevated above the estuary. However, there are no inventoried resources that are subject to Lincoln County's coastal shorelands standards in the embankment. The wetlands are entirely estuarine wetlands protected by the Lincoln County Estuary Management Plan. Lincoln County's Coastal Shoreline Overlay Zone implements Goal 17 in Lincoln County. The requirements of this Overlay Zone mirror those found in the Estuary Management Plan. Demonstrating compliance with Goal 16 requirements also demonstrates compliance with Goal 17 requirements.

*(d) The proposed uses are compatible with other adjacent uses or will be so rendered through measures designed to reduce adverse impacts. The exception shall describe how the proposed use will be rendered compatible with adjacent land uses. The exception shall demonstrate that the proposed use is situated in such a manner as to be compatible with surrounding natural resources and resource management or production practices. "Compatible" is not intended as an absolute term meaning no interference or adverse impacts of any type with adjacent uses.*

Each criterion is addressed separately below with facts to support the findings that the proposed bridge replacement is consistent with the goal exception requirements.

**660-004-0020 Goal 2, Part II(c) Exception Requirements**

**OAR 660-004-0020(2)(a)**

***Reasons justify why the state policy embodied in the applicable goals should not apply.***

OAR 660-004-0022 contains reasons necessary to justify an exception under Goal 2, Part II(c) above. There are general reasons in OAR 660-004-0022(1) that can be used for uses not specifically provided for in subsequent sections of the rule. In addition, OAR 660-004-0022 contains reasons specific to Goal 16. However, the proposed bridge replacement project is not a use specifically provided for in 660-004-0022(7) or (8), so the provisions of these sections do not apply. As a result, the reasons for this goal exception must meet the requirements of OAR 660-004-0022(1) as highlighted below:

*OAR 660-004-0022 Reasons Necessary to Justify an Exception Under Goal 2, Part II(c)*

*(1) For uses not specifically provided for in subsequent sections of this rule or in OAR 660-012-0070 or chapter 660, division 14, the reasons shall justify why the state policy embodied in the applicable goals should not apply. Such reasons include but are not limited to the following.*

*(a) There is a demonstrated need for the proposed use or activity, based on one or more of the requirements of Goals 3 to 19, and either*

*(b) A resource upon which the proposed use or activity is dependent can be reasonably obtained only at the proposed exception site and the use or activity requires a location near the resource. An exception based on this subsection must include an analysis of the market area to be served by the proposed use or activity. That analysis must demonstrate that the proposed exception site is the only one within that market area at which the resource depended upon can reasonably be obtained, or*

*(c) The proposed use or activity has special features or qualities that necessitate its location on or near the proposed exception site.*

The following facts demonstrate a need for the bridge replacement as required by Subsection (1)(a) and demonstrate that the proposed bridge replacement has special qualities that necessitate its location at the exception site to show compliance with Subsection (1)(c). Subsection (1)(b) is not addressed because it is not relevant to the proposed bridge replacement.

**Facts:**

2. There must be a demonstrated need for the proposed use based on one or more of the requirements of Goals 3 through 19 in order to meet the requirements of OAR 660-004



0020. Replacement of the Millport Slough Bridge is a use authorized in OAR 660-012-0065 as consistent with the requirements of Goal 12 - Transportation, which mandates that the state provide a safe, efficient and economic transportation system. The proposed bridge replacement is necessary due to the substandard conditions of the existing bridge. In June 2002, an inspection of the bridge revealed structural deficiencies including a poor substructure, inadequate rails and transitions, and "intolerable" deck geometry. If the existing bridge were to remain, it would likely fail, creating a significant risk to users. Replacement of the bridge and included in the State Transportation Improvement Program (STIP) as a funded Roadway Improvement (Key Number 12802).

- o This segment of US-101 is a major north-south route and part of the National Highway System. It is designated as a rural principal arterial and National Scenic Byway. The bridge is heavily used, especially in the summer months, and traffic volumes along this stretch of highway are expected to increase in the foreseeable future. Traffic analyses have concluded a two-lane segment over the Millport Slough Bridge would exceed Highway Design Manual (HDM) mobility standards by 2013, just three years after the anticipated completion date. A four lane bridge can be expected to function well below the HDM standard beyond the projected analysis year of 2035.
- o The Millport Slough Bridge currently has two travel lanes and both the STIP and County TSP describe the bridge replacement as having no additional lanes. However, the proposed replacement bridge will be wide enough to ultimately accommodate four travel lanes. This is consistent with identified transportation needs in the TSP. The draft Lincoln County Transportation System Plan (TSP), scheduled for adoption in September 2008, calls for the 4.75-mile segment of US-101 between Lincoln City and Lancer Street (MP 118.70 to 123.49) to be evaluated for capacity improvements that include additional northbound and southbound travel lanes, making the entire segment four lanes. High travel demand along this segment creates congestion and safety problems that exceed acceptable conditions. Traffic analyses predict that conditions will continue to deteriorate over the 20-year planning horizon unless they are addressed.

Constructing the replacement bridge wide enough to accommodate four lanes is consistent with this future project but does not obligate construction of a four-lane highway. The US-101 capacity improvements are not funded and would require a goal exception. It is more cost-effective and sensitive to the natural environment to construct a wider bridge now than to construct a two-lane bridge now, and to then widen the bridge at the time of the highway widening.

- o The draft TSP states that the County shall make land use decisions that preserve opportunities to widen Highway 101 in the future. Replacing the Millport Slough Bridge with a bridge wide enough to accommodate four lanes in the future is consistent with this policy. This will eliminate the need for a second bridge replacement or widening in the event of future highway capacity improvements.
- o The reasons language in OAR 660-004-0022(1)(c) states that the proposed use or activity must have special features or qualities that necessitate its location on or near the proposed exception site. The proposed use is a replacement of the Millport Slough Bridge within

existing ODOT right-of-way connecting to an existing highway. In order to connect to the existing highway embankment at each end of the bridge, the replacement bridge must be located at the existing bridge location. Any other location for the replacement bridge would necessitate a shift in highway alignment outside the existing right-of-way.

The Siletz Bay estuary surrounds the highway and associated right-of-way. Ground improvements are needed to provide seismic stability and fill material is needed for bridge support structures and for the bridge approaches. Ground improvements and fill material will be installed wherever the bridge is constructed within the estuary. An alternative that entirely avoids installing material in the estuary would require the entire bridge to be constructed outside the estuary. Alternatives on another alignment would increase impacts to the estuary because additional highway embankment would have to be constructed to replace portions through Siletz Bay. Neither of these are reasonable alternatives for the bridge replacement.

The Siletz Bay National Wildlife Refuge also surrounds the highway right-of-way. A new highway alignment would require use of land in the Siletz Bay National Wildlife Refuge. Federal transportation regulations (23CFR774.3) prohibit using land from a wildlife refuge for transportation purposes if there is a feasible and prudent alternative. Replacing the bridge at the current location is a feasible and prudent alternative because the highway right-of-way is not part of the wildlife refuge.

**Findings:** Based on the above information, there is a demonstrated need for the proposed Millport Slough Bridge replacement within the exception site. Therefore, the proposed use is consistent with the general reasons language in OAR 660-004-0020(2)(a) and the more specific provisions set forth in OAR 660-004-0022(1) (a) and (c).

**660-004-0020 Goal 2, Part II(c) Exception Requirements**

**OAR 660-004-0020(2)(b)**

**Areas which do not require an exception cannot reasonably accommodate the use.**

**Facts:**

- o The goal exception is necessary because the proposed bridge replacement involves fill, and fill is not allowed in estuaries designated as natural management areas. Due to the proximity of the estuary to the highway, necessary seismic upgrades, and the configuration of the bridge support structures within the estuary, there is no bridge design alternative that does not involve fill in the exception area.
- o The Siletz Bay estuary surrounds the highway right-of-way and the highway. Ground improvements are needed to provide seismic stability and fill material is needed for bridge support structures and for the bridge approaches. Ground improvements and fill material will be installed wherever the bridge is constructed within the estuary. An alternative that entirely avoids installing material in the estuary would require the entire bridge to be constructed outside the estuary. Alternatives on another alignment would increase the impacts to the estuary because additional highway embankment would have to be constructed to replace portions through Siletz Bay. Neither of these are reasonable alternatives for the bridge replacement.

**Findings:** Based on the above information, there is no area not requiring an exception that can reasonably accommodate the bridge replacement. In addition, there is no alternative bridge design that does not involve fill at this location. Therefore, the proposed use is consistent with the reasons language in OAR 660-004-0020(2)(b).

**660-004-0020 Goal 2, Part II(c) Exception Requirements**

**OAR 660-004-0020(2)(c)**

***The long-term environmental, economic, social and energy (EESSE) consequences resulting from the use at the proposed site with measures designed to reduce adverse impacts are not significantly more adverse than would typically result from the same proposal being located in other areas requiring a Goal exception.***

**Facts:**

- o No other sites requiring goal exceptions are being considered because of the unique locational aspects of the use. This is not a new use, but rather the replacement of an existing, structurally deficient bridge within existing right-of-way. Locating the replacement bridge within the existing right-of-way is both necessary and practical because the bridge aligns with the highway embankment at each end of the bridge. Relocating the bridge replacement project outside the existing US 101 right-of-way would require ODOT to relocate the approaches at considerable additional cost and would impact significantly more lands protected under Goal 16.
- o Given the replacement nature of the project and the fact that crossing Millport Slough is unavoidable, there are no feasible and prudent alternatives. Accordingly, in terms of EESSE consequences, there are no areas warranting comparison. That stated, ODOT believes that the potential impacts of the proposed bridge replacement and the measures designed to reduce them should be stated.

**Environmental**

Due to the close proximity of the estuary to the existing highway and bridge, impacts to the estuarine habitats are anticipated as part of the bridge replacement. Impacted estuarine habitats include subtidal sloughs, intertidal mud flats, intertidal salt marshes, and eelgrass beds. Mitigation of the proposed bridge replacement will restore lost habitats and functions by replacing natural biological productivity and diversity. It is anticipated that the mitigation plan will provide a net gain of estuarine function in the long term due to restoration of estuarine areas that were filled during highway construction in the early 1900's. In addition to mitigation, avoidance and minimization measures will be utilized to further reduce impacts to the estuary. The following summarizes the avoidance, minimization and mitigation measures proposed as part of the bridge replacement project.

**Avoidance/Minimization**

- o The proposed new bridge will be widened to the west in order to avoid impacts to existing juvenile salmonid habitat and eelgrass beds east of the bridge.



- o The highway alignment was slightly adjusted at each end of the bridge to maximize the use of existing causeway and reduce the area of new highway footprint. This reduced the amount of fill needed at each end of the project area.
- o The highway was designed to have steeper shoulder slopes than the existing highway in order to minimize the amount of fill needed in the estuary. The shoulder slope will be 1:2 along the entire length of the project, a slope that is steeper than allowable for standard vehicle recovery. Guardrails must be installed along the entire length of a project when shoulder slopes are that steep.
- o Constructing a wider bridge provides adequate space to allow for staged construction, and avoids use of a detour bridge. This will further minimize impacts by eliminating the construction activity to place roadway fill and bridge piles in the estuary, and to then remove the piles at end of the three-year construction period.
- o Additional bridge bents will be used on the ends of the bridge structure to lessen the load requirements. The extra end bents will allow smaller diameter interior piles, resulting in less fill in the estuary.

#### Mitigation

- o Eelgrass beds are found on the landward side of the Millport Slough Bridge within the main channel. Impacted eelgrass beds will be removed and transplanted to suitable area within the project site.
- c To mitigate for impacts to subtidal slough and intertidal mud flat habitats, existing fill material associated with the bridge and highway will be removed. This will lower the ground surface elevation and create a wider, submerged channel that is similar to the historic channel that existed prior to construction of US-101 and the Millport Slough Bridge. This action will result in better exchange/flushing of tidal waters and will improve fish passage during low tide cycles. The mitigation measures will replace lost function by directly restoring similar habitat at the impact site. Furthermore, this mitigation is intended to re-establish historic estuarine areas that have been under fill since US-101 was originally constructed in the early 1900's and since the Millport Slough Bridge was reconstructed in 1941.
- o Impacts to intertidal salt marsh habitats will be mitigated through the removal of fill material along an old portion of US-101 adjacent to the project site (shown as "abandoned highway" on Sheet 3A). The excavation will lower this area to historical marsh elevations that were buried during the original highway construction. This mitigation action is intended to expose the area to incoming tides and to blend with adjacent marsh habitat. The area will naturally re-vegetate and re-create habitat conditions similar to the impacted marsh areas.
- o Prior to construction of the proposed bridge replacement, ODOT is required to obtain a permit from the US Army Corps of Engineers (COE) and the Oregon Department of State Lands (DSL) for the placement of fill within the estuary. The following fill and removal volumes were taken from information ODOT provided to COE/DSL as part of the permit application process. Impacts from the bridge replacement will be temporary, but will last

longer than one year. Therefore, for the purposes of mitigation, these impacts are considered permanent.

**Millport Slough Bridge Replacement - Fill and Removal Volumes**

Construction Activity	Fill Volume (cubic yards)	Removal Volume (cubic yards)
New bridge	22,175	.
Ground Improvements <sup>a</sup>	5,300	.
Mitigation	.	7,264
<b>Totals</b>	<b>27,475</b>	<b>7,264</b>

Impacts from the ground improvements are considered temporary by DSL because the top of the timber piles will be approximately five feet below the ground surface.

**Economic**

- o No long-term adverse economic impacts are anticipated to occur as a result of the Millport Slough Bridge replacement. As mentioned previously, this stretch of US-101 is a designated National Scenic Byway and is heavily used during the summer tourism season. It is the major route used to access the Oregon Coast and connects coastal communities such as Lincoln City and Newport. The existing bridge and highway are too narrow to effectively accommodate current and future traffic volumes, resulting in congestion and delays. Traffic analyses have concluded a two-lane segment over the Millport Slough Bridge would exceed Highway Design Manual (HDM) mobility standards by 2013, just three years after the anticipated completion date. A four lane bridge can be expected to function well below the HDM standard beyond the projected analysis year of 2035. Therefore, building a bridge wide enough to eventually accommodate four lanes will contribute to the health of the tourism economy and the ability of the highway to effectively move people and goods along the Oregon coast.
- o Replacement of the bridge with a wider bridge will eliminate the need to again disturb the estuary in order to widen the bridge to four lanes. It will also eliminate the need for a detour bridge during the anticipated three years of construction. The temporary detour bridge would also require mitigation for the extra bridge pilings/road fill, further increasing the cost of the project. Avoiding the need for a detour bridge results in significant cost savings in the long-term, leaving public dollars available for other capital improvement projects. It also avoids future estuarine disruption at the Millport Slough location.

**Social**

- o There are no long-term adverse social impacts anticipated as a result of the proposed bridge replacement. The new bridge will be safer, better equipped to sustain a major earthquake event, and will allow for more efficient flow of traffic, especially during the busy summer months. It will allow for continued access to the recreational amenities along the Oregon coast and to the nearby coastal communities such as Lincoln City and Newport.
- o Because the new bridge will be wide enough to eventually accommodate four travel lanes, it will be consistent with the Lincoln County TSP's identified transportation need for additional highway capacity on US-101 to reduce congestion and delays along this segment of the highway. Additionally, construction of a four lane bridge rather than a two-lane bridge eliminates the need for a detour bridge during construction and a second bridge

widening or replacement at the time US-101 is widened. This will reduce the overall amount of noise, visual, and congestion impacts related to construction of the bridge.

- o The replacement bridge will have ten-foot shoulders, providing safer and more convenient bicycle and pedestrian access across the bridge. The bridge will also have a 28-foot wide deck area that will be separated from the rest of the bridge by a barricade and inaccessible to vehicles until US-101 is widened to add travel lanes.

### **Energy**

- o In terms of energy consequences resulting from the proposed bridge replacement, it is anticipated that the project, as designed, will result in long-term energy savings for a number of reasons. The proposed replacement bridge will be wide enough to accommodate four travel lanes in order to allow for the likely future widening of US-101. Building a bridge with such future capacity removes the need for a second bridge project at the time of the highway improvements and eliminates the need to construct a detour bridge to accommodate traffic during construction. The efficiency of this design will result in time, energy and cost savings in the long term and will reduce cumulative impacts on the estuary. Furthermore, existing and future congestion delays along this stretch of US-101 have energy impacts relating to fuel inefficiencies from stop-and-go traffic conditions, or from out-of-direction travel to avoid congestion. The eventual four-lane configuration of the bridge will be consistent with the anticipated widening of US-101 and will accommodate future traffic volumes, thus reducing congestion-related inefficiencies.

**Findings:** Based on the facts provided above, adverse long-term environmental, economic, social and energy impacts from the proposed bridge replacement will be minimized to the greatest extent possible. No alternative exception site could reasonably accommodate the proposed use. Therefore, the proposed use is consistent with the reasons language in OAR 660-004-0020(2)(c).

### **660-004-0020 Goal 2, Part II(c) Exception Requirements OAR 660-004-0020(2)(d)**

***The proposed uses are compatible with other adjacent uses or will be so rendered through measures designed to reduce adverse impacts.***

### **Facts:**

- o The Millport Slough Bridge crosses the Millport Slough and is surrounded on both sides by the Siletz Bay National Wildlife Refuge. As noted previously, the bridge replacement has been designed to minimize adverse impacts to the surrounding estuarine habitats. A detailed discussion of how impacts will be minimized and mitigated is provided in the previous section of this narrative.

**Findings:** Based on the above information, the proposed bridge replacement is consistent with adjacent uses or will be designed to minimize adverse impacts where they occur. Therefore, the proposed use is consistent with the reasons language in OAR 660-004-0020(2)(d).



# ATTACHMENT A

# STATE OF OREGON

# INTEROFFICE MEMO

## Department of Transportation Region 2 Traffic

455 Airport Road SE, Building A  
Salem, Oregon 97301-5397  
(503) 986-2857 FAX (503) 986-5817

File Code: T9-25

Date: August 8, 2008

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**TO:** John deTar  
Area 4 Senior Planner

**FROM:** Stephen B. Wilson, PE  
Region 2 Senior Traffic Analyst

**SUBJECT:** Millport Slough Bridge Replacement, Key #12802  
UPDATED Capacity Analysis Report  
Oregon Coast Highway – US 101 (Highway #9)  
Milepost 120.84  
Lincoln County

### Executive Summary:

A capacity analysis was initially submitted on February 3, 2005 to analyze the functionality of a two-lane highway segment over the new *Millport Slough Bridge*, for an assumed Day of Opening in 2007. From this analysis, it was determined a two-lane bridge design would exceed HDM mobility standards by 2013. Subsequently, the structure has been redesigned as a four-lane structure, with a revised Day of Opening in 2010. As a four-lane structure, the new *Millport Slough Bridge* should function well below the HDM Mobility Standard of 0.60, beyond the projected analysis year of 2035.

### Capacity Analysis:

The existing *Millport Slough Bridge* (#06579) is slated to be replaced, starting in 2009 and completed in 2010. The existing bridge is a narrow, 2-lane wood-pile structure, with 12-foot lanes, no shoulder, and narrow sidewalks. Initially, the proposed replacement structure design also had two 12-foot lanes, but with a 10-foot shoulder/bike-lane combination in both directions. This design was determined to be inadequate, with regards to traffic capacity through the *Design Year* of 2027. The current design is for a four-lane structure, with 12-foot lanes and 10-foot shoulders/bike-lanes. To meet FHWA guidelines, the roadway over this new structure must meet current ODOT Highway Design Manual (HDM) mobility standards.

The Oregon Coast Highway in this vicinity is classified as a *Statewide Highway*, it is not considered a freight route, and the posted speed is 55 mph. According to the 2003 *English Highway Design Manual (HDM)*, mobility standard for this highway segment is a volume to capacity ratio (*v/c*) of 0.60 (HDM, Table 10-1).

To determine the functionality of this four-lane roadway section, traffic data was developed for an assumed *Day of Opening (2010)*, a *2030 Design Year*, and a *Design Year plus five (2035)*. For this level of analysis, full manual counts were not considered necessary. Instead, the traffic volumes used in this analysis were based on volumes in ODOT's 2006 Transportation Volume Table (TVT). To generate 30<sup>th</sup>-hour traffic volume for analysis, the 2006 ADT is factored with data from *Traffic Volumes and Vehicle Classification* database. Based on information from this data set, the 2007 Average Daily Traffic (ADT) volume is 11,700 vehicles per day, in the vicinity of the *Millport Slough Bridge*. According to the classification count data at this location, the 30<sup>th</sup> Highest Hour factor is 11.2% and the heavy vehicle percentage approximately 9.3%. A yearly growth rate for the segment of highway in this vicinity was obtained from the *2026 Future Volumes Table*, developed by ODOT's Transportation Planning Analysis Unit (TPAU). The yearly growth rate for this segment of US 101 is approximately 1.6% per year. The estimated directional split is 60% northbound and 40% southbound. Table 1 lists the traffic volumes used in this analysis.

**Table 1: Analysis Traffic Volumes**

	2007	2010	2030	2035
ADT	11700	12270	16050	16990
30 <sup>th</sup> Hour	n/a	1370	1800	1900
30 <sup>th</sup> Hour NB	n/a	820	1080	1140
30 <sup>th</sup> Hour SB	n/a	550	720	760

Following the *2000 Highway Capacity Manual (HCM)*, *Two-Lane and Multilane Highways* methodologies, analyses were made for 2010, 2030 and 2035 traffic volumes. The assumed a *Peak Hour Factor (PHF)* of 0.95, a heavy vehicle percentage of 7%, a recreational vehicle percentage of 2%, and zero access points per mile. Table 2 lists the analysis results.

**Table 2: Analysis Results**

	2010	2030	2035
ADT	12270	16050	16990
30 <sup>th</sup> Hour	1370	1800	1900
4-Lane VIC	0.22	0.29	0.31



**Conclusions:**

As a four-lane section, traffic on the *Millport Slough Bridge* will not exceed capacity within the design life of this structure, and will remain below the HDM mobility standard of 0.60 well beyond 2035. Until US 101 in this vicinity is widened to four lanes, for at least a mile on either side of the new *Millport Slough Bridge*, the roadway should be striped as a two-lane highway. Having a short four-lane segment could encourage the more aggressive drivers to use this as a passing opportunity; increasing the potential for a high-speed *Side-Swipe Meeting or Rear-End Collision*.



EXPIRES: 07/15/2003

Cc: Steve Dockins  
Matthew Stucker  
David Warren  
Angela Kargel  
File

# ATTACHMENT B

RECEIVED  
JUL 17 2008



## United States Department of the Interior

FISH AND WILDLIFE SERVICE  
Oregon Coast National Wildlife Refuge Complex  
2127 SE Marine Science Drive  
Newport, OR 97365

July 16, 2008

Mr. John G. deTar, Senior Region Planner  
Oregon Department of Transportation  
3700 SW Philomath Blvd.  
Corvallis, Oregon 97333

Dear John:

The U.S. Fish and Wildlife Service owns and administers the lands adjacent to Millport Slough Bridge replacement project on U.S. Highway 101. Our lands there are included within Siletz Bay National Wildlife Refuge.

I have appreciated being involved with your planning process for the bridge replacement project from the beginning. This letter is to express my support for this project. The bridge replacement and proposed mitigation measures will not only improve the health and safety of motorists using on Highway 101, but also will enhance intertidal wetlands, estuarine hydrology and improve fish and wildlife habitats within the refuge.

We appreciate your efforts and look forward to continued collaboration on this project.

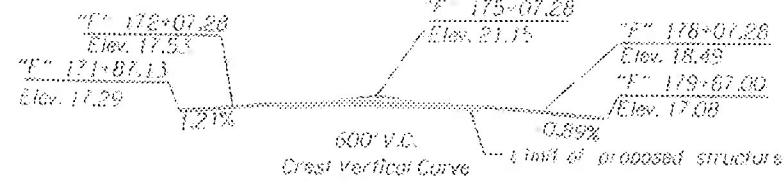
Sincerely,

Roy W. Lowe,  
Project Leader

*The mission of the US Fish and Wildlife Service is working with others to conserve, protect, and enhance fish, wildlife, plants, and their habitats for the continuing benefit of the American people.*

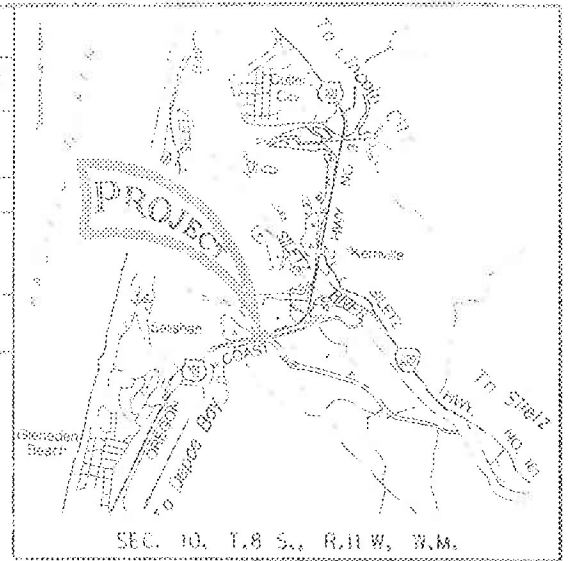


# EXHIBITS

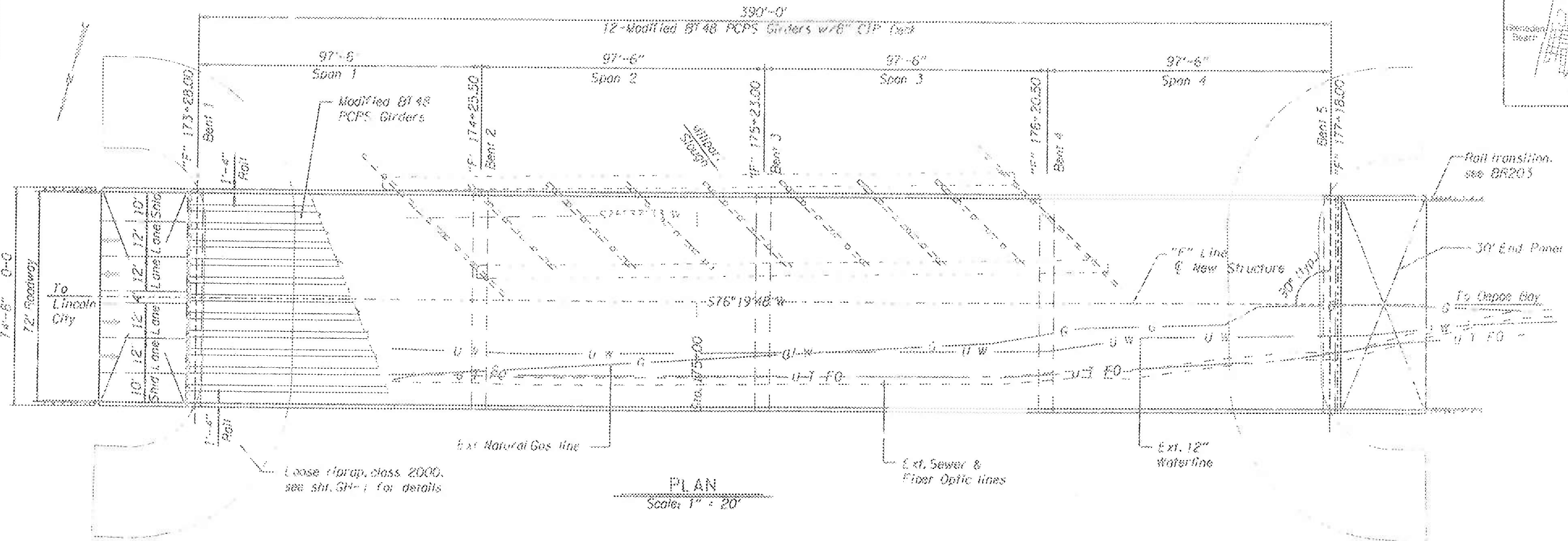


1" GRADELINE DIAGRAM

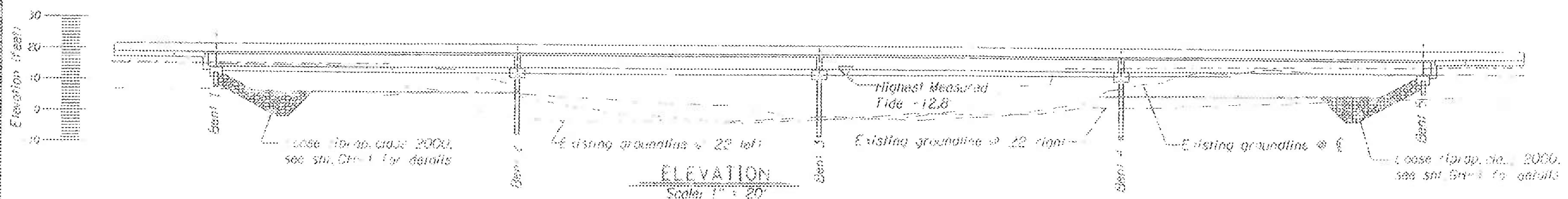
HYDRAULIC DATA				
ITEM	UNITS	DESIGN FLOOD	BASE FLOOD	FEASIBLE FLOOD
DISCHARGE	ft <sup>3</sup> /s			
REQUIRED DEPTH	ft			
HIGH WATER ELEVATION AT UPSTREAM FACE OF BRIDGE ALONG EMBANKMENT	ft			
BACKWATER	ft			



LOCATION MAP



PLAN  
Scale: 1" = 20'



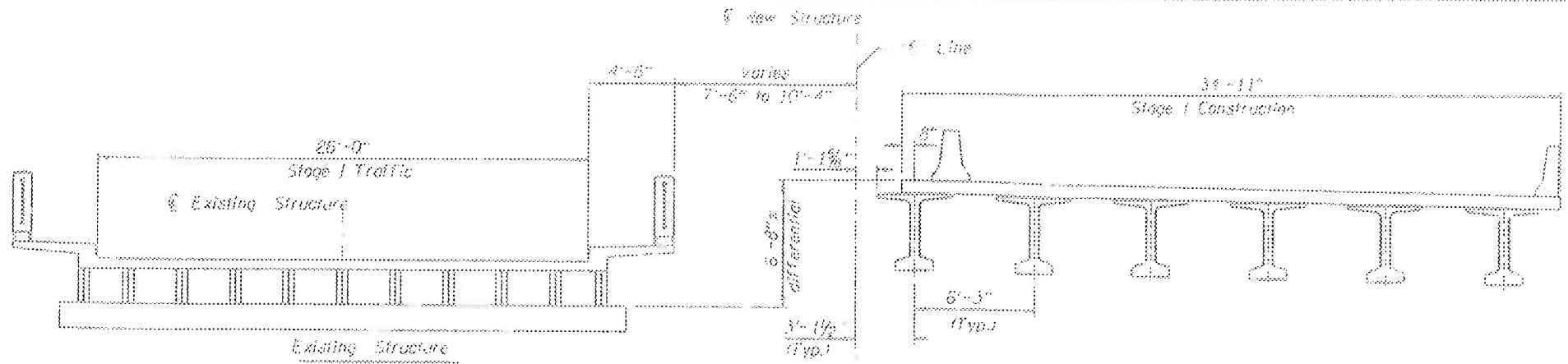
ELEVATION  
Scale: 1" = 20'

**APPROVED DESIGN**  
 INFORMATION ONLY  
 BRIDGE GEO/HYDRO  
 DESIGN UNIT

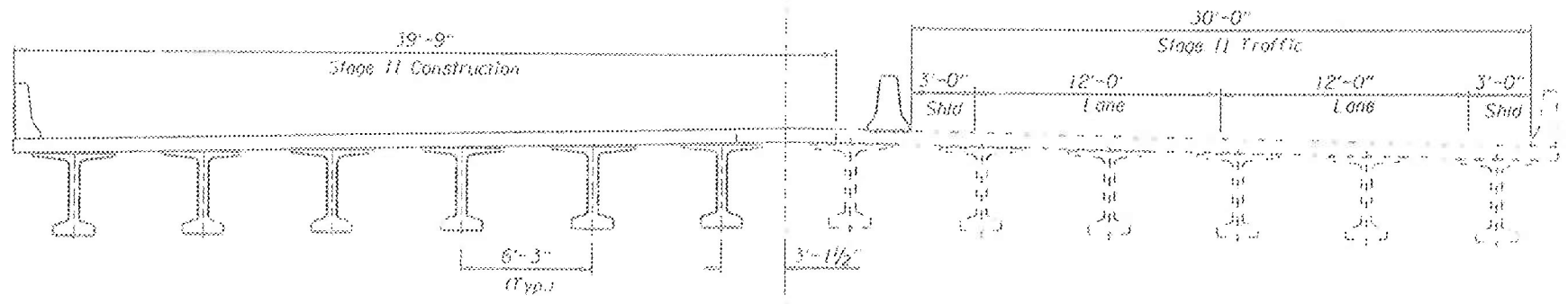
DATE	DESCRIPTION	BY	DESIGNED BY <i>Lynn J. Boyd</i> Lynn Boyd			STRUCTURE NO. 20401	MILLPORT SLOUGH, HWY 9 US101 MILLPORT SLOUGH BRIDGE SEC. OREGON COAST HWY (M.P. 120.84) LINCOLN COUNTY	SHEET 1 OF 00
DESIGNED BY	DATE	BY	BRIDGE NO. 2008			STRUCTURE NO. 20401		DRAWING NO. MPS01
REGION 7 TECH CENTER				REGION 7 TECH CENTER		PLAN AND ELEVATION		1/20/20

APPROVED DESIGN

INFORMATION ONLY  
BRIDGE GEO/HYDRO  
DESIGN UNIT



STAGE I  
Scale: 1/4" = 1'



STAGE II  
Scale: 1/4" = 1'

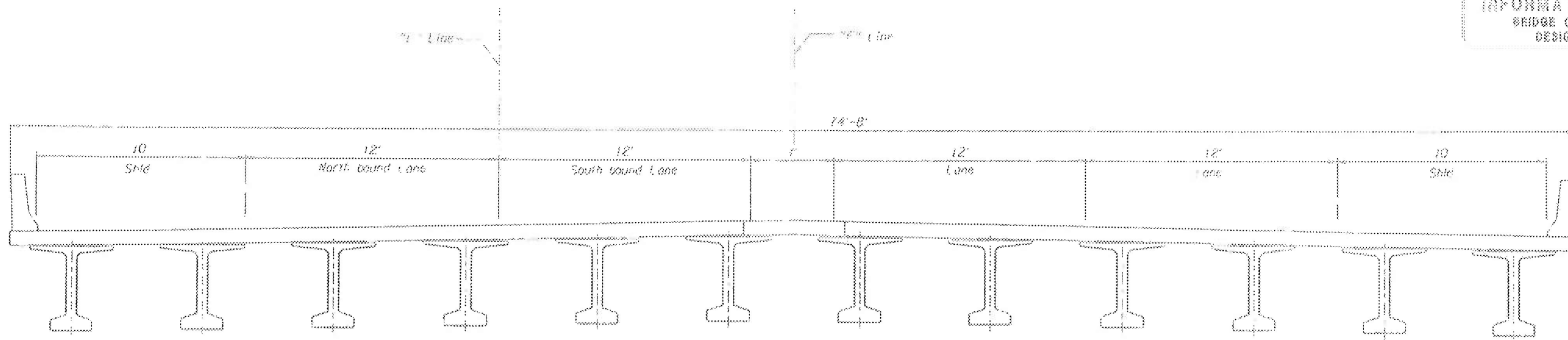
STAGING CONFIGURATION  
Scale: 1/4" = 1'

DATE	REVISION	BY	DESIGNER	PROJECT NO.	PROJECT NAME	SHEET NO.
				20401	MILLFORD SLOUGH HWY 9 US100 MILLFORD SLOUGH BRIDGE SEC OREGON COAST HWY (M.P. 120.84) LINCOLN COUNTY	2 OF 00
				2008		BRAND NO.
					STAGING PLAN	MPS02

1/2" Staging

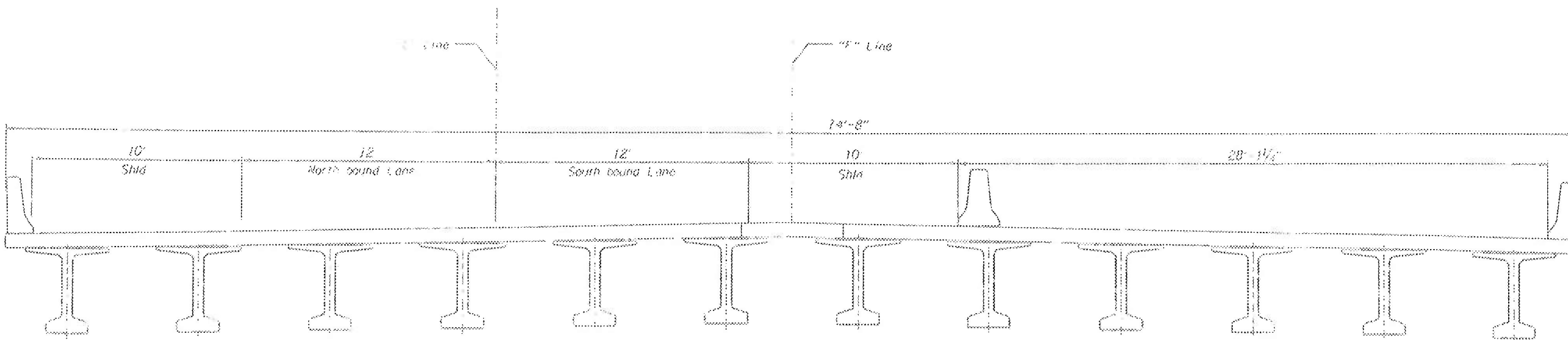


**APPROVED DESIGN**  
 INFORMATION ONLY  
 BRIDGE GEO/HYDRO  
 DESIGN UNIT



**FINAL FUTURE CONFIGURATION**

Scale: 1/8" = 1'



**FINAL (POST-CONSTRUCTION) CONFIGURATION**

Scale: 1/8" = 1'

DATE	REVISION	BY	DESIGNED			STRUCTURE NO.	MILLPORT SLOUGH, NW 1/4 S LISTON, MILLPORT SLOUGH BRIDGE SEC. OREGON - EAST NW 1/4, P. 120 641 LINCOLN COUNTY	SHEET
			DRAWN			20401		3
APPROVED			CHECKED			DATE		DRAWING NO.
					REGIONAL TECH CENTER	CALC. BOOK	FINAL LANE CONFIGURATION	4P503
						2008		

Sec. 10, T. 2 S., R. 11 W., W.M.

DEAN  
LAWSON DESIGN  
1500 1/2 ST. G. ST.  
SEASIDE, OREGON

ASSIGNED

ABANDONED HWY

"RW" LINE

"D" LINE  
(For Profile,  
See Sht. 30)

"L" LINE  
(For Profile,  
See Sht. 30)

OREGON COAST HWY (EXIST)

"T" LINE

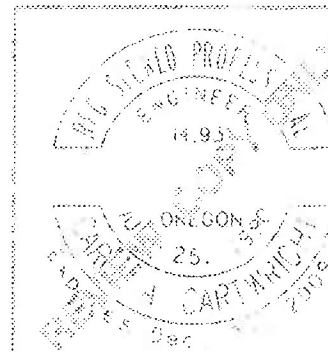
"D" Line Slope Line

"L" Line Slope Line

Existing Weirless Area Shown Thus.

S009X1911PE  
BEGINNING OF PROJECT  
STA "L" 163+15.92 (M.P. 120.82)

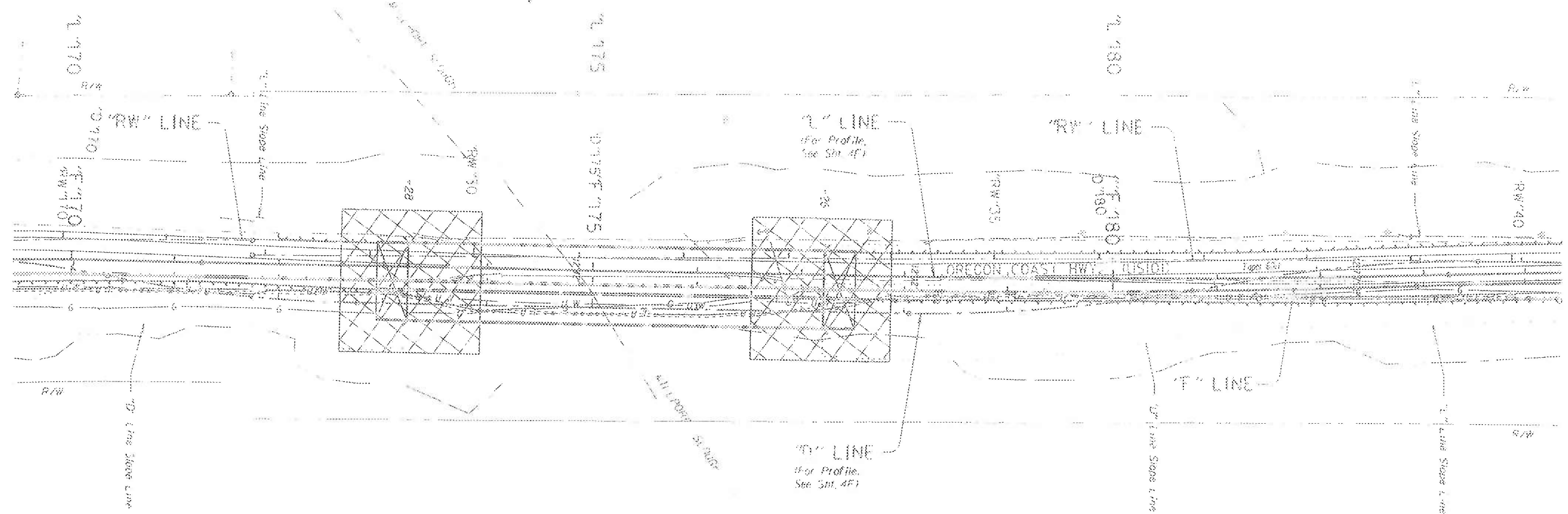
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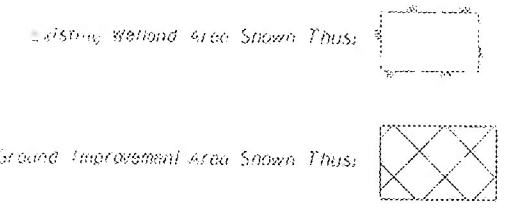
OREGON DEPARTMENT OF TRANSPORTATION ROADWAY ENGINEERING SECTION	
US101 MILLPORT SLOUGH BRIDGE SEC. OREGON COAST HIGHWAY LINCOLN COUNTY	
Design Team Leader	Comp. for Design
Reviewed by	George Kautz
Printed by	Jeff Larson
CONSTRUCTION	
SHEET NO.	3A

DATE  
APPROVED DESIGN  
11/25/2010  
11/25/2010

ASSUMED



STRUCTURAL DETAILS CHECKED

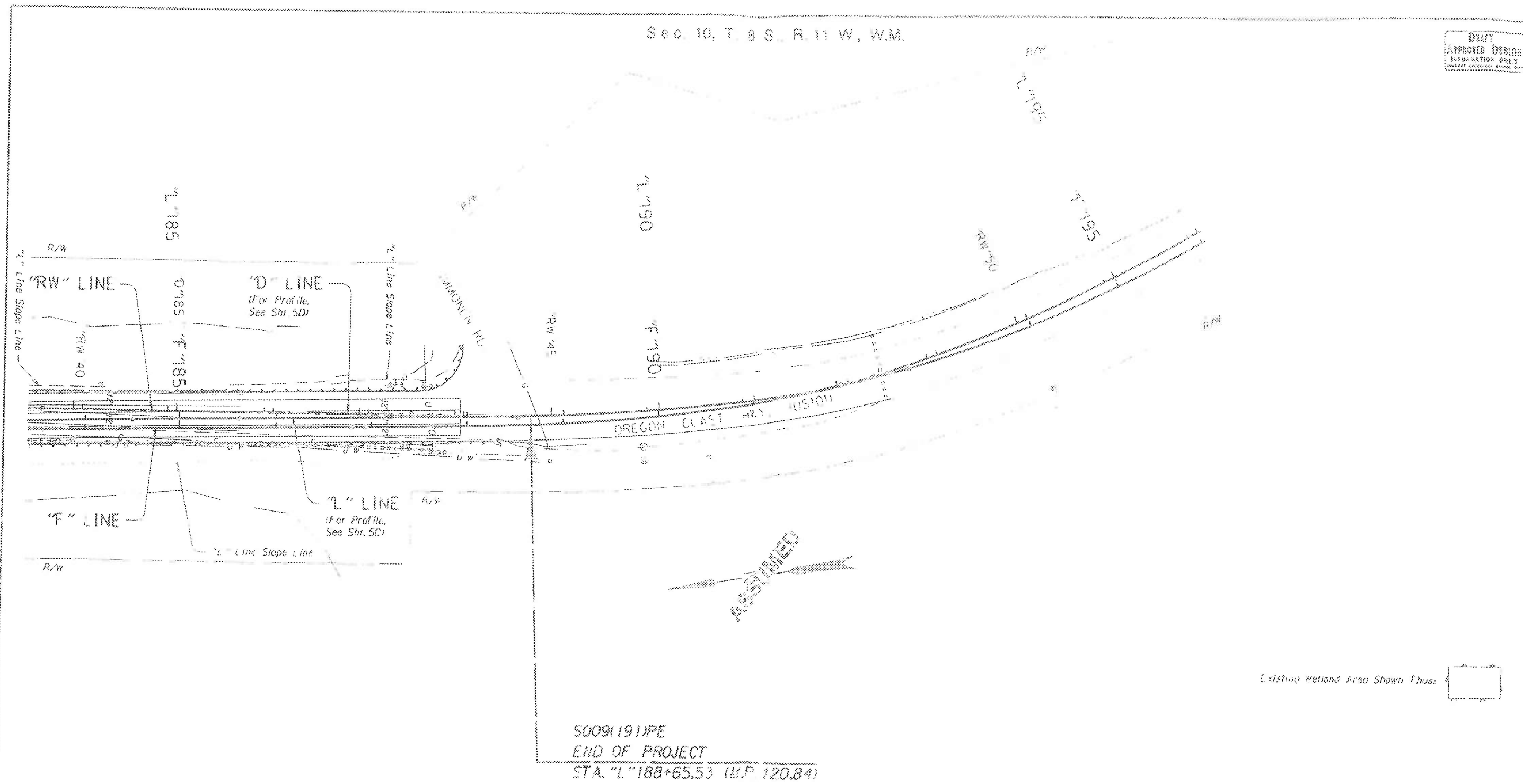


OREGON DEPARTMENT OF TRANSPORTATION ROADWAY ENGINEERING SECTION	
US101 MILLPORT SLOUGH BRIDGE SEC OREGON COAST HIGHWAY LINCOLN COUNTY	
Team Team Leader	Carol Johnson
Designed by	George Sutkamp
Drafted by	John Larson
GENERAL CONSTRUCTION	SHEET NO. 48



Sec. 10, T. 8 S., R. 11 W., W.M.

DEPT  
APPROVED DESIGN  
EXPLANATION ONLY  
PROJECT NUMBER 00000



5009(19)PE  
END OF PROJECT  
STA. "L" 188+65.53 (M.P. 120.84)



OREGON DEPARTMENT OF TRANSPORTATION  
ROADWAY ENGINEERING SECTION

05101 MILLPORT SLOUGH BRIDGE SEC.  
OREGON COAST HIGHWAY  
LINCOLN COUNTY

Project Team Leader: Carol Corstorph  
Designed by: George Kufert  
Drafted by: Jeff Larson

PRELIM CONSTRUCTION

SHEET  
NO.  
5A



K12802  
 US101 Millport Slough Bridge  
 EA: PE000759  
 SJ: 011 / AC: J17

# Joint Permit Application Form



**US Army Corps  
 Of Engineers (Portland District)**

DATE STAMP

DATE STAMP

AGENCIES WILL ASSIGN NUMBERS

Corps Action ID Number

Oregon Department of State Lands No

## SEND ONE SIGNED COPY OF YOUR APPLICATION TO EACH AGENCY

US Army Corps of Engineers:  
 District Engineer  
 ATTN: CENWP-OD-GPPO  
 Box 2946  
 Portland, OR 97208-2946  
 503-808-4373

AND

DSL - West of the Cascades:  
 State of Oregon  
 Department of State Lands  
 775 Summer Street, Suite 100  
 Salem, OR 97301-1279  
 503-378-3805

OR

DSL - East of the Cascades:  
 State of Oregon  
 Department of State Lands  
 1645 NE Forbes Road, Suite 112  
 Bend, Oregon 97701  
 541-388-6112

AND

Send DSL Application Fees to:  
 State of Oregon  
 Department of State Lands  
 PO Box 4395, Unit 18  
 Portland, OR 97208-4395  
 (Attach a copy of the first page of the application)

### (1) APPLICANT INFORMATION

Name and Address	Cory Engel Permits Coordinator Region 2 Environmental Unit Oregon Department of Transportation 455 Airport Rd SE Bldg B Salem OR 97301	Business Phone # Home Phone # Fax # Email	503-986-2933  503-986-2840  Cory.C.Engel@odot.state.or.us
Authorized Agent Name and Address		Business Phone # Home Phone # Fax # Email	
Check one	<input type="checkbox"/>		
Consultant			
Contractor			
Property Owner Name and Address If different from above <sup>1</sup>	Land Management Division Oregon Department of State Lands 775 Summer St NE Ste 100 Salem OR 97301-1279	Business Phone # Home Phone # Fax # Email	503-986-5279  503-378-4844

### (2) PROJECT LOCATION

Street, Road or Other Descriptive Location	Legal Description (attach <u>tax lot map</u> *)			
US 101 between Keys Place and South Immonen Road, 0.5 mile south from Siletz River Bridge.	Township	Range	Section	Quarter/Quarter
	8S	11W	10	NE
In or near (City or Town)	County	Tax Map #	Tax Lot # <sup>2</sup>	
Kernville	Lincoln	08 11 10 A	Within US101 ROW	
Wetland/Waterway (pick one)	River Mile (if known)	Latitude (in DD.DDDD format)	Longitude (in DD.DDDD format)	
Millport Slough*	0.0 (at mouth of slough)	44.89403	-124.01417	
* In addition to the main channel of the slough, the project area includes unnamed ditches & tributaries, and intertidal marshes & flats. However, all impacts are being described as "waters" impacts within Millport Slough because they are below highest measured tide of the slough. Impacts to different habitat types within these waters are described individually below.				
Directions to the site	From the interchange of OR18 and US101, take US101 south 10.5 miles.			

<sup>1</sup> If applicant is not the property owner, permission to conduct the work must be attached.

<sup>2</sup> Attach a copy of all tax maps with the project area highlighted.

\* *Italicized areas are not required by the Corps for a complete application, but may be necessary prior to final permit decision by the Corps.*

### (3) PROPOSED PROJECT INFORMATION

Type: Fill  Excavation (removal)  In-Water Structure  Maintain/Repair an Existing Structure

Brief Description:

**Fill**

Riprap  Rock  Gravel  Organics  Sand  Silt  Clay  Other:

Wetlands	Permanent (cy)	Temporary (cy)	Total cubic yards for project <small>(including outside OHW/wetlands)</small>	
	Impact Area in Acres	Dimensions (feet)		
		L'     W'     H'		
Waters below OHW	Permanent (cy)	Temporary (cy)	Total cubic yards for project <small>(including outside OHW/wetlands)</small>	27,475
	22,175	5,300		
	Impact Area in Acres	Dimensions (feet)		
	1.533 permanent, 0.62 temporary	Multiple areas; see attached plans		

**Removal**

Wetlands	Permanent (cy)	Temporary (cy)	Total cubic yards for project <small>(including outside OHW/wetlands)</small>		
	Impact Area in Acres	Dimensions (feet)			
		L'     W'     H'			
Waters below OHW	Permanent (cy)	Temporary (cy)	Total cubic yards for project <small>(including outside OHW/wetlands)</small>		
	Impact Area in Acres	Dimensions (feet)			
		L'     W'     H'			

Total acres of construction related ground disturbance (If 1 acre or more a 1200-C permit may be required from DEQ) About 2

Is the disposal area upland? Yes  No  Impervious surface created? <1 acre  >1 acre?

*ODOT will either dispose of the material in upland itself, or contractually obligate its contractor(s) to comply with state and federal removal/fill laws.*  
 Are you aware of any state or federally listed species on the project site?  
 Are you aware of any Cultural/Historic Resources on the project site?  
 Is the project site within a national Wild & Scenic River?  
 Is the project site within a State Scenic State Scenic Waterway?\*

Yes	No
X	
	X
	X

### (4) PROPOSED PROJECT PURPOSE AND DESCRIPTION

**Purpose and Need:**

*Provide a description of the public, social, economic, or environmental benefits of the project along with any supporting formal actions of a public body (e.g. city or county government), as appropriate.\**

See next page.



US101 is a principal route to population centers, ports, airports, public facilities, military bases, and interstate commerce. Heavily used by tourists and regional traffic, this state highway is the main route along the Oregon coast. The purpose of this project is to replace a two-lane structurally deficient bridge with a new four-lane structure to maintain an appropriate level of service on this principal highway. The project would meet immediate and long-term needs.

**Immediate Needs**

Inspections of the existing bridge between June 2002 and July 2004 found it to be structurally deficient with a poor substructure and inadequate bridge rails and transitions. ODOT Bridge recommends that the two-lane bridge be replaced due to severe deterioration of its timber components. The 14-inch diameter piles supporting the structure have as much as 12 inches of interior rot. Other timber elements such as caps and planks are also showing signs of decay.

**Long-term Needs**

Typically, a bridge would be replaced with an in-kind two-lane structure. However, a traffic study and capacity analysis completed in September 2006 indicates that four lanes would be warranted by the year 2010. ODOT's Highway Design Manual (HDM) recommends a volume to capacity ratio (V/C) of 0.60 as the standard for mobility on all rural statewide highways which are not considered freight routes. It was determined that the current V/C for a two-lane bridge is 0.56. Based on the traffic analysis, a new two-lane bridge's V/C would exceed the HDM mobility standard within three years after being completed (2014). By 2027, the V/C for this segment would be 0.85, which would require added capacity. In anticipation of future traffic demands on this principal route, constructing a four-lane bridge would keep the V/C below 0.60 for the next 25 years. Table 1 presents data from the traffic study analysis for the US101 Millport Slough Bridge.

**Table 1: Traffic Study Analysis Results for the US101 Millport Slough Bridge**

	2002	2007	2027	2032
<b>Average Daily Traffic (ADT)</b>	12,700	14,605	22,225	24,130
<b>Two-lane V/C</b>	0.48	0.56	0.85	0.92
<b>Four-lane V/C</b>	N/A	0.25	0.38	0.42

Other fiscal and environmental factors contributed to the decision to build a four-lane bridge in place of the two-lane structure. A two-lane bridge would require construction of a three-year detour route including a bridge and roadway approaches to meet freight mobility requirements. This detour route would cost almost as much as the primary structure itself, and would require road fill and bridge pilings to be placed in the estuary and associated compensatory mitigation without any permanent benefit. Later, when the highway would inevitably be expanded to meet future capacity needs, a wider bridge would need to be constructed, again placing road fill and bridge pilings back into the estuary requiring additional compensatory mitigation.

The four-lane bridge design provides sufficient room for staged construction, eliminating the need for the detour route and additional work in the estuary. Therefore, it was determined that construction of a four-lane bridge rather than a two-lane structure would best meet the purpose and need of the bridge replacement project, while anticipating future needs and reducing costs and adverse environmental impacts.

**Project Description:**

Please describe in detail the proposed removal and fill activities, including the following information:

- Volumes and acreages of all fill and removal activities in waterway or wetland separately
- Permanent and temporary impacts
- Types of materials (e.g., gravel, silt, clay, etc.)
- How the project will be accomplished (i.e., describe construction methods, equipment, site access)
- Describe any changes that the project may make to the hydraulic and hydrologic characteristics (e.g., general direction of stream and surface water flow, estimated winter and summer flow volumes.) of the waters of the state, and an explanation of measures taken to avoid or minimize any adverse effects of those changes.
- Is any of the work already complete?      Yes       No       If yes, please describe the completed work.

*In addition, for fish habitat or wetland restoration or enhancement activities, complete the information requested in supplemental Fish Habitat or Wetland Restoration and Enhancement form.*

The design and its activities are limited to accomplish the purpose and need of replacing this structurally obsolete bridge. The proposed regulated activities to construct this project are shown on Figure 6. The major construction components of the project are as follows:

- **New Bridge Construction:** A new, longer four-lane bridge will be constructed to adjoin the existing 2-lane US 101 highway. Specifically, the existing 210-foot long bridge will be lengthened to a four-span, 330-foot long structure. The new bridge will be shifted slightly downstream to avoid sensitive fishery areas and scattered eelgrass (*Zostera marina*) beds. The new four-span bridge will be supported by two end bents and three interior concrete bents, having 8-10 pilings each. After construction, the new bridge deck will accommodate four travel lanes and shoulders with raised curbs to meet current minimum safety and design standards for cars, trucks, bicycles, and pedestrians. New concrete railing will be constructed along the widened bridge. The new bridge will be 68 feet wide at completion, compared to the existing 35-foot wide structure. The existing 42 in-water timber pilings will be pulled out or broken below the ground line of the subtidal channel, as part of the bridge removal process. Lastly, Class 2000 riprap with excavated toe trenches will be installed to protect the bridge from scour forces.

\* Italicized areas are not required by the Corps for a complete application, but may be necessary prior to final permit decision by the Corps.



- Ground Improvements: The Siletz Bay occurs within the Cascadia Subduction Zone with 500- and 1,000-year hazard events. An evaluation of the highway embankment was conducted in order to assess the degree of induced liquefaction following an earthquake. Based on the presence of extremely deep, soft sediments in Siletz Bay, and in consideration of shear strengths of the existing embankment and underlying sediments, it was determined that a significant risk of slope movement along the approach embankments would likely occur during the 500- and 1,000-year events. Ground improvements are therefore needed to maintain the US 101 causeway during a major seismic event.

The risk of liquefaction occurring below and adjacent to the embankment can be significantly reduced by installing ground improvement using closely-spaced timber piles placed below the ground surface around the new abutments of the new bridge. This ground improvement design represents the most practical alternative to mitigate liquefaction and subsequent lateral spreading at the bridge approaches and abutments. The ground improvement design will consist of untreated timber pile (Douglas fir or yellow pine) placed on three- to four foot on-center spacing within 30 feet of the new abutments. A maximum of 3,000 twelve-inch diameter timber piles will be installed 60 feet deep into the soft sediment of the slough. Impact hammers, such as air or diesel-driver arms, will be used to install the timber piles. Timber piles placed further out into the estuary will be driven to a minimum depth of 0.0 ft (1988 NAVD), which will be around five feet below the ground elevation of the subtidal channel. The action to install the timber piles will take place during the winter in-water work period and the effects would be temporary. The work isolation system will contain any disturbed sediments by the pile-hammering installation. After the work has been completed, no piles will be exposed, even during minus tide events.

Above the pile within the roadway, the piles will be buttressed with fragmented rock. The fragmented rock will add strength to resist slope instability and lateral spreading. In total, approximately 240 linear feet of embankment slope will be constructed with the fragmented rock. Piles placed into the slough will not be covered with the fragmented rock avoiding any additional impacts to the estuary.

The extent of ground improvement considered was based on a variety of factors including allowable deformations and constructability. The areas of ground improvements will extend back from the bridge end panels to a distance equal to twice the height of the embankment, which is a distance of about 70 feet into the slough and 30 along the side of the highway. The ground improvements will extend to the bottom of the potentially liquefiable soil at a depth of 60 feet below the ground surface.

- Temporary Work Bridge: Thirty-foot-wide temporary work bridges will be installed in to support equipment necessary to construct the new bridge and ground improvements. An estimated 50 piles will be necessary. The work bridge piles will either consist of steel or wood. To minimize their footprint, the work bridges will be set approximately five feet from the existing bridge. The first work bridge will be placed on the upstream side of the existing structure during the first construction stage. All temporary piles (considered permanent fill due to their installation period potentially exceeding one year) will be removed or broken off below the ground line of the subtidal channel prior to completion of the project.
- Environmental Mitigation. To mitigate impacts to habitat area and its functions and values, ODOT will provide the following general categories of mitigation within the project site.
  - Impacts to **subtidal water and intertidal mud flats** are proposed to be mitigated through the restoration of the Millport Slough channel through the removal of 60 feet of the existing causeway fill at the bridge and removal of fill associated with a historic utility road that currently constricts flows at minus tides immediately downstream from the existing bridge. will be pulled back on each side of the channel to restore it to its historic width and allow unobstructed movement of tidal waters.
  - Impacts to **intertidal low and high salt marsh** areas will be mitigated along the old US 101 section at the northerly extent of the project area. Here, roadway embankment will be removed to restore estuarine habitats in-kind with the impact areas.
  - Impacts to **eelgrass beds** will be mitigated onsite through transplanting under the direction of Dr. Steve Rumrill at the South Slough National Estuarine Research Reserve.

As mentioned above, the new four-lane bridge will allow construction to occur in stages over a three year period. The initial stage will move traffic onto the upstream side of the highway while the downstream side is constructed. The downstream ground improvements and a temporary work bridge will also be started during the first year of construction. Stage 1, including the installation of erosion control measures, is expected to be completed through the winter of 2010. The second stage will shift traffic to the downstream side to complete the upstream bridge and ground improvements through the 2010-2011 winter construction seasons.

Staging and material storage areas will occur in previously filled (upland) areas located on or near the old section of US 101. ODOT standard and special provisions regarding equipment storage and fueling will be implemented in order to avoid any inadvertent harm to the tidal lands.

Bridge demolition will occur after the staged construction shifts traffic to the upstream side. The existing bridge will be removed by a crane once the deck and sub-structure have been cut up. A contractor-designed containment system underneath the structure will prevent material from entering the slough and adjacent marshes. All existing piles will be pulled out or broken off below the ground surface of the subtidal elevation of the channel.

Temporary impacts to the adjacent estuary are limited to work bridges and gravel crane pads. The ground improvement areas require temporary actions during installation with no associated permanent or indirect impacts.

The work will be sequenced such that it considers ODFW-preferred in-water work period as well as the need for continuous mobility on US 101. The anticipated sequence is outlined below:

**Phase 1**

Install temporary traffic and erosion controls;  
 Construct highway embankments;  
 Construct work isolation system;  
 Fish salvage;  
 Install ground improvements;  
 Remove and restore ground within isolation area;  
 Construct work bridge (downstream side);  
 Install new bridge piles (downstream side);  
 Construct bridge and switch traffic;  
 Remove existing bridge and substructure;  
 Remove work isolation system;

**Phase 2**

Construct work isolation system;  
 Fish salvage;  
 Install ground improvements;  
 Remove/restore contours w/in containment area;  
 Construct work bridges (upstream side);  
 Install bridge piles (upstream side);  
 Complete construction of new bridge;  
 Remove detour bridges;  
 Construct wetland/biology mitigation;  
 Remove work isolation system;  
 Demobilize and finish project.

The design of the new bridge minimizes estuarine impacts to the maximum extent practicable. Temporary impacts from construction of the project are also anticipated. "Temporary" impacts having a duration of more than one year are considered permanent for the purpose of fill permitting and determining compensatory mitigation. Mitigation measures to compensate for the impacts will occur on site within ODOT right-of-way located immediate adjacent to the new bridge and within the old section of US 101. Table 2 and Figures 6-9 describe the estuarine impacts within the project area. Tidal and intertidal estuarine habitats and potential impacts were calculated using CAD software. Impact calculations occur below the HMT elevation of 12.8 ft. (NAVD).

**Table 2: Permanent Impacts Within Estuarine Habitats**

Construction Activity	Habitat Type	Fill Area/Volume	Removal Area/Volume	Proposed Mitigation
<b>New Bridge:</b> 66 30" diameter piles, approx. 80' & 140' long	Subtidal Slough (E1UBL)	A = 0.010 ac. V = 1,500 yd. <sup>3</sup>	No permanent removal  (All project elements requiring removal are for mitigation.)	Establish subtidal and mud flat habitats at the opened ends of the new bridge.
<b>New Bridge:</b> Toe trenches at new bridge abutments using Class 2,000 riprap	Subtidal Slough (E1UBL)	A = 0.300 ac. V = 9,000 yd. <sup>3</sup>		Establish subtidal and intertidal mud flat habitats at the opened ends of the new bridge.
<b>Widened Highway Slopes</b>	Subtidal Slough (E1UBL) Mud Flats (E2US3M) LSM (E2EM1N or EFB) HSM (E2EM1P or EFB) Upland below HMT	A = 0.063 ac./V = 105 yd. <sup>3</sup> A = 0.044 ac./V = 190 yd. <sup>3</sup> A = 0.241 ac./V = 1,945 yd. <sup>3</sup> A = 0.220 ac./V = 1,775 yd. <sup>3</sup> A = 0.623 ac./V = 7,035 yd. <sup>3</sup>		Establish subtidal habitat at the new bridge and intertidal mud flats/LSM/HSM with fringe willows at the old US 101 road.
<b>Staging Pad for Cranes*:</b> Gravel fill in estuarine areas for cranes	Subtidal Slough (E1UBL) Mud Flats (E2US3M)	A = 0.010 ac. V = 65 yd. <sup>3</sup>		Establish subtidal and mud flat habitat at the opened ends of the new bridge.
<b>Work Bridges*:</b> 48 24" diameter piles, approx. 60' long	Subtidal Slough (E1UBL)	A = 0.007 ac. V = 560 yd. <sup>3</sup>		Establish subtidal and mud flat habitat at the opened ends of the new bridge.
<b>West and East Work Bridges*:</b> Shading impacts to eelgrass beds.	Eelgrass Beds (E1AB3L)	A = 0.015 ac. V = 0.000 yd. <sup>3</sup>		Transplant impacted beds within submerged land within northerly upstream tidal ditch.
<b>Ground Improvements:</b> Up to 3,000 12" diameter piles, 60' long	Subtidal Slough (E1UBL) Mud Flats (E2US3M) LSM (E2EM1N or EFB) HSM (E2EM1P or EFB) HSM (E2SS1P or EFB) Upland below HMT	A = 0.620 ac. (0.310 ac. under each abutment)  V = 5,300 yd. <sup>3</sup>		Pursuant to DSL & ACE guidance, this is considered a temporary impact because top of piles will be ~5' below ground surface. Therefore, no mitigation is proposed.

\* Impacts resulting from these activities are temporary, but will last longer than one year, and are thus being considered permanent with regard to mitigation obligations.



## Project Drawings

State the number of project drawing sheets included with this application: 18, not including three additional attachments

A complete application must include a location map, site plan, cross-section drawings and recent aerial photo as follows and as applicable to the project:

- **Location map** (must be legible with street names)
  - Site plan including:
    - Entire project site and activity areas
    - Existing and proposed contours
    - Location of ordinary high water, wetland boundaries or other jurisdictional boundaries
    - Identification of temporary and permanent impact areas within waterways or wetlands
    - Map scale or dimensions and north arrow
    - Location of staging areas
    - Location of construction access
    - Location of cross section(s), as applicable
    - Location of mitigation area, if applicable
- **Cross section drawing(s)** including:
  - Existing and proposed elevations
  - Identification of temporary and permanent impact areas within waterways or wetlands
  - Ordinary high water and/or wetland boundary or other jurisdictional boundaries
  - Map scale or dimensions
- **Recent Aerial photo** (1:200, or if not available for your site, the highest resolution available)

Will any construction debris, runoff, etc., enter a wetland or waterway? Yes  No

If yes, describe the type of discharge and show the discharge location on the site plan.

**NOTE: Unless prohibited by law, ODOT requests that permit(s) issued in response to this application allow the proposed work during the entire construction period indicated below:**

Estimated project start date: November 2009 Estimated project completion date: December 2011

## (5) PROJECT IMPACTS AND ALTERNATIVES

### Alternatives Analysis:

*Describe alternative sites and project designs that were considered to avoid or minimize impacts to the waterway or wetland. (Include alternative design(s) with less impact and reasons why the alternative(s) were not chosen. Reference OAR 141-085-0025 (3(j)) and 141-085-0029 (4through 6) for more information\*).*

#### No build

Although a "no build" alternative would result in a continuation of current conditions with no new adverse impacts to the estuarine habitats, it would also result in continued deterioration of the bridge. This would reduce the level of service to the traveling public, and ultimately compromise the principal US 101 route to population centers, ports, airports, public facilities, military bases, and commerce along the Oregon coast. Maintenance of the obsolete bridge would eventually exceed the cost to replace the structure. This alternative would also not provide any of the habitat benefits provided by the project.

#### Two-lane structure

ODOT considered replacing the bridge with a similar two-lane structure, rather than the proposed four-lane structure. As described in the "purpose and need" section above, the four-lane bridge design reduces long-term adverse impacts to the estuary by avoiding the need to carry out additional construction efforts in the relatively near future. The four-lane design also provides better stewardship of public monies by accommodating long-term ADT rates, thus avoiding future expenditures.

#### Alternative sites

The obvious expense and environmental harm that would result from a failure to utilize the existing causeway precludes the use of alternative sites for a US 101 crossing.

Note: Other various design features which minimize the project's impacts are discussed below.

## Measures to Minimize Impacts

Describe what measures you will use (before and after construction) to minimize impacts to the waterway or wetland. These may include but are not limited to the following:

- *For projects with ground disturbance include an erosion control plan or description of other best management practices (BMP's) as appropriate. (For more information on erosion control practices see DEQ's Oregon Sediment and Erosion Control Manual)*
- *For work in waterways where fish or flowing water are likely to be present, discuss how the work area will be isolated from the flowing water.*
- *If native migratory fish are present (or were historically present) and you are installing, replacing or abandoning a culvert or other potential obstruction to fish passage, complete and attach a statement of how the Fish Passage Requirements, set by the Oregon Department of Fish and Wildlife will be met.*

### **Sediment and Erosion Control and Work Area Isolation**

BMPs will be selected and implemented consistently with section 00280 of ODOT's standard specifications, as well as project-specific specifications to be developed prior to the bid let phase of project development.

ODOT's standard specifications and special provisions for erosion control and environmental protection will be provided upon request, or they can be viewed in their entirety online at:

[http://www.oregon.gov/ODOT/HWY/SPECS/docs/08book/08\\_00200.pdf](http://www.oregon.gov/ODOT/HWY/SPECS/docs/08book/08_00200.pdf)

[http://www.oregon.gov/ODOT/HWY/SPECS/special\\_provisions.shtml#Part\\_00200](http://www.oregon.gov/ODOT/HWY/SPECS/special_provisions.shtml#Part_00200)

In-water work will be isolated through the use of a supported sediment fence. The fence will be installed around the new bridge and ground improvement areas to contain turbidity and sedimentation into the main channel of the slough. The supported sediment fence will be placed into the subtidal channel and around the causeway, up to the existing highway shoulders. Once the areas are isolated, fish will be removed. After completion of the in-water work during each of the two stages, the fence will be removed.

Additional BMPs that may be utilized during this project may include:

- \* Limiting regulated work within jurisdictional waters to the ODFW IWWW unless a variance is granted by ODFW.
- \* Designating fueling and greasing stations with spill kits away from protected resources.
- \* Following all conditions of the appurtenant BO.
- \* Minimizing vegetation removal to the maximum extent practicable.
- \* Having BMP materials (such as matting, biofilter bags, straw bales, etc.) available on site to accommodate ground conditions as they arise.
- \* Applying the principles outlined in the ODOT Erosion Control Manual.
- \* Complying with the conditions of ODOT's NPDES 1200CA, if applicable.

### **Fish Passage**

Overall, the channel restoration element of the project will be beneficial to fish passage. ODOT continues to actively consult with ODFW; if, during application processing, additional fish passage provisions are determined to be required by the project, the relevant information will be conveyed to DSL and the Corps, including modification of this application if necessary.

### **Other Minimization Efforts**

Following consultation with regulatory agencies, it was decided to shift the alignment of the bridge and roadway downstream to minimize harm to existing juvenile salmonid habitat and eelgrass beds found on the upstream side. (Listed fish species were found using the southerly upstream corner of the subtidal channel as a refuge during low tides.)

The highway adjustment was also slightly realigned to maximize use of the existing causeway fill. This action avoided the need for additional fill in the abutting estuary upstream, and reduced the need for fill at the ends of the project.

The highway was designed to have longer stretches of steeper shoulder slopes than normal to minimize fill in the abutting estuary. Instead of standard 1:3 shoulder slopes beyond guardrail sections, extra guardrail lengths were added to enable 1:2 slopes to be used throughout the length of the project. Steeper 1:1.5 slopes and retaining walls were considered, but these options did not result in any additional minimization of estuarine impacts.

In addition to the long-term benefits of the 4-lane bridge described in the "purpose and need" section above, this design also enables staged construction that avoids the need for a detour route through the estuary and associated impacts.

The bridge's abutting bents use construction that minimizes load requirements in the interior of the structure, thus reducing the required number and diameter of the interior piles.

Prior to application submittal, ODOT discussions with DSL and the Corps presumed that stone columns would be used for liquefaction mitigating ground improvements. Continuing efforts to minimize impacts, ODOT's geotechnical consultant determined just prior to submittal of this application that untreated wood piles are sufficient for this purpose. This will result in a reduction of fill below the ground surface of subtidal lands by over 90% (5,300 cubic yards instead of 60,000 cubic yards) and further reduced temporary construction impacts to estuarine habitats through the reduced need for equipment in the channel, less displacement of sediment, and use of a supported sediment fence instead of sheet pile to isolate the work area, allowing further minimization of direct eelgrass impacts.



## Description of resources in project area

Ocean

Estuary

River

Lake

Stream

Freshwater Wetland

Describe the existing **physical and biological characteristics** of the wetland/waterway site by area and type of resource (Use separate sheets and photos, if necessary).

**For wetlands**, include, as applicable:

- *Cowardin and Hydrogeomorphic (HGM) wetland class(s)\**
- *Dominant plant species by layer (herb, shrub, tree)\**
- Whether the wetland is freshwater or tidal
- *Assessment of the functional attributes of the wetland to be impacted\**
- Identify any vernal pools, bogs, fens, mature forested wetland, seasonal mudflats, or native wet prairies in or near the project area.)

**For waterways**, include a description of, as applicable:

- *Channel and bank conditions\**
- *Type and condition of riparian vegetation\**
- *Channel morphology (i.e., structure and shape)\**
- *Stream substrate\**
- Fish and wildlife (type, abundance, period of use, significance of site)
- *General hydrological conditions (e.g. stream flow, seasonal fluctuations)\**

### General Overview

The Siletz Bay consists of many different types of estuarine habitats, being semi-enclosed from the Pacific Ocean by the Salishan Spit and a headland located just south of Lincoln City (Taft area). The spit and headland create a shallow entrance into the bay causing muted tides extending up the Siletz River and through Millport Slough. US 101 through the project area consists mostly of causeway through the bay. The bay, which lies at the mouth of the Siletz River, was formed by rising sea levels and land subsidence and subsequent flooding and sediment deposition within the former valley.

This drowned river mouth system is characterized by broad tidal flats flooded by a mixture of salt and fresh water during semi-diurnal tide cycles. The approximate 1,100-acre bay contains subtidal and intertidal estuaries with tidal channels, mud flats, and salt marshes. High volumes of fresh water flood the estuary in the winter lowering salinity, while low summer stream flow results in brackish conditions.

The Siletz Bay occurs within the Siletz-Yaquina fourth field HUC (# 17100204) watershed along the Oregon's central coast. The watershed covers approximately 200 square miles extending from the Pacific Ocean inland to abrupt mountain slopes associated with the Oregon Coast Range. Land ownership within the watershed is a combination of public (especially submerged lands) and private (predominantly mountain slopes). The head of tide through the bay extends 19.6 miles from its mouth east to Cedar Creek.

The bay has received extensive sediments from upgradient logging practices occurring in the 1920-1950's, accelerating the formation of salt marshes. Timber harvesting within the watershed has also resulted in hundreds of drift logs found within the bay. US 101 and other human alterations such as housing developments have fragmented the large tidal flats and severed tidal channels. In addition on the USFWS refuge property, conversion of salt marshes to agriculture lands at the turn of the century, including diking and ditching, altered the historical setting of tidal lands. In 2003, the USFWS breached the dikes on the upstream side of US 101 Millport Slough Bridge restoring 100 acres of tidal marsh habitat. Evidence of the marsh restoration work is apparent by dead spruce trees killed by the re-introduction of saline water within converted agricultural lands.

### Millport Slough Project Area

Millport Slough is a small slough of the Siletz River, diverting water from the river near mile 1.4, and discharging to the bay at Millport Slough Bridge, 0.2 mile southwest from the mouth of the Siletz River. Surface elevations for the project study area vary from about -5.0 feet at the lowest point within the slough to 15.0 feet along causeway of US 101. Adjacent to the state highway and bridge, land use consists of natural areas managed by the USFWS and the Confederated Tribes of the Siletz Indians.

Estuarine habitats at the bridge crossing consist of a natural subtidal channel (the slough) and excavated channels adjacent to intertidal mud flats and salt marshes (Figure 5). These channels are continuously submerged even during lower-low tidal events. The broad intertidal mud flats and salt marshes occur on slightly higher ground where sediment has been deposited and stabilized, allowing vegetation to become established. Along US 101, fringe high salt marshes exist on fill-associated causeway and an old utility road within the channel downstream of the bridge.

Low salt marshes dominate the estuary around the slough, reflecting brackish conditions where tidal flushing is not as complete as in the Siletz River. Lyngby sedge (*Carex lyngbyei*) dominates the low salt marshes. Twice a day, the low salt marshes are inundated by high tidal waters and slightly exposed at low tide. Native and introduced high salt marshes associated with the causeway are also influenced by brackish conditions. These marshes are submerged only during higher-high tide sequences. Plant species within the high salt marshes reflect less tolerance to flooding and salinity.

Near the slough many smaller tidal channels are found; many of these smaller channels were cut off by the highway causeway circa 1900's. These small tidal channels now exchange tidal water to the subtidal ditches and the hydraulic opening underneath the Millport Slough Bridge.

\* *Italicized areas are not required by the Corps for a complete application, but may be necessary prior to final permit decision by the Corps.*



Additional alterations near the slough include a linear stretch of high salt marsh formed on an old roadbed over utilities located along the downstream side of the bridge. The substrate of the old road consists of angular gravels and fine-grained sediment extending into the main channel of Millport Slough. The old road covers utilities associated with the Keys Place housing development. In addition, an old tidegate located at the southerly upstream corner of the bridge once regulated flow. This tidegate blew out in 1981 and was not replaced. Remnant fill associated with the tidegate still remains, slightly constricting the exchange of tidal waters into and out of the side channel.

### Estuarine Habitat Descriptions

The estuary at Millport Slough is comprised of brackish conditions within the protected bay. The general flat tidal lands are sheltered from strong currents, producing both non-vegetated and vegetated habitats. Slight topography changes cause subtle transitions between both non-vegetated areas and low and high salt marshes. The project area consists of the subtidal Millport Slough channel, ditches, eelgrass beds, and mud flats with intertidal mud, low and high salt marshes, cobbles/gravels with a fringe of shrubs associated with the US 101 causeway. The following paragraphs discuss the estuarine habitats found within the project study area. (Note: uplands found on the existing highway embankment below the 12.8 foot tidal elevation are described as technically intertidal, but they are not considered an estuarine habitat).

#### Subtidal Habitats

**Millport Slough and Ditches:** Through the opening of the bridge and running parallel with US 101, subtidal channels are found. The unvegetated substrate of the subtidal channels consists of a mud subclass composing primarily of silts and clays with a limited amount of organic matter. Tidal water velocity is higher here than other habitats around the US 101 causeway. Widths of the channels generally range from five to 45 feet. The channels gradually transition to mudflats and abrupt vegetated marshes. These fixed main channels convey tidal waters through the bay, while smaller dendritic tidal channels generally drain the adjacent salt marshes. The channels are used by a variety of resident and anadromous fish species such as Coho, Chinook, chum salmon, steelhead, and coastal cutthroat trout, as well as other aquatic organisms and mammals.

**Eelgrass Beds (*Zostera marina*):** Eelgrass beds are found on the upstream side of the bridge in the main channel, as well as the northerly upstream ditch. The eelgrass occurs on a gradient in the subtidal channels, with scattered beds found on the upper slopes of the channel and thicker beds in the side ditch. The eelgrass beds are vegetated shallow special aquatic sites under CFR 40 Part 230 Section 404(b)(1). The eelgrass beds provide important sources of detritus and habitat for microorganisms, fish, and crab species.

#### Intertidal Habitats

**Mud Flats/Algal Beds:** Mud flats found within the project area represent the transitional zones between the subtidal channels and the vegetated salt marshes. The substrate of the mud flats is mostly silts from sediment deposition associated from past logging practices. The habitat near the bridge contains some algae on the surface of mud in certain areas, but overall the area consists primarily of a non-vegetated mud substrate with some minor colonization of Lyngby sedge (*Carex lyngbyei*). Further out into the tidal land downstream from the bridge, more extensive areas of blue-green algae are found. Underneath both ends of the bridge, narrow fringe areas of mud flats continue above subtidal elevations (greater than 5 ft. NAVD). These areas are shaded, inhibiting the growth of vegetation. The exposed mud is intermixed with riprap found at the toe of the bridge abutments. Minor amounts of algae are attached to the mud and rock. These areas are flooded only during higher high tide episodes. This habitat accounts for an extremely small portion of the habitat within the project area.

**Low Salt Marsh:** Low salt marshes occur as fringe areas immediately next to the causeway and as broad vegetated flats extending into the bay. The marshes are dominated by a monoculture of Lyngby sedge with smaller amounts of pickleweed (*Salicornia virginica*), lilaopsis (*Lilaeopsis occidentalis*), and seaside arrowgrass (*Triglochin maritimum*). Drift logs and other woody debris also occur within the marshes. The marsh habitat includes small subtidal channels that convey tidal waters transporting detritus and plant material. This habitat is flooded by most high tides and slightly exposed during low tidal episodes.

**High Salt Marsh:** High salt marshes also occur as fringe areas immediately next to the causeway and as vegetated flats extending into the bay. These marshes occur on a native substrate of mud (silts and clays) and on gravelly fill material associated with both sides of the US 101 causeway and the old utility road. The marshes are dominated by a greater richness of plant species, including tufted hairgrass (*Deschampsia cespitosa*), Baltic rush (*Juncus balticus*), spreading bentgrass (*Agrostis stolonifera*), gumweed (*Grindelia integrifolia*), saltweed (*Atriplex patula*), paintbrush owl-clover (*Orthocarpus castillejoideis*) and Pacific silverweed (*Potentilla anserina* ssp. *pacifica* or *Argentina egedii*). Drift logs and other woody debris brought in by higher-high tides are found scattered throughout this habitat. The marsh habitat also includes small subtidal channels that serve to convey tidal waters transporting detritus and plant material. This habitat is flooded by the highest tides and exposed during low tides.

**Fringe Scrub-shrub:** Occurring just above the toe of the US 101 causeway (southerly upstream corner of bridge), a line of Hooker's willow (*Salix hookeriana*) is found. This shrub is set above the high salt marsh habitat beyond the influence of the brackish tides not receiving flood water—only moisture from rainfall on a gravelly substrate. This habitat accounts for an extremely small portion of the habitat within the project area.

**Uplands below HMT:** Within the project area, uplands are found below the 12.8-foot HMT elevation, yet above estuarine habitats. The causeway consists of rocky/gravelly/mixed soil fill material. These upland areas are above the influence of the brackish tides not receiving flood water—only moisture from rainfall on the fill material. Vegetation on highway shoulder side slopes consists of scattered Sitka spruce (*Picea sitchensis*), twinberry (*Lonicera involucrata*), Scots broom (*Cytisus scoparius*), blackberry (*Rubus discolor* and *R. ursinus*) horsetail (*Equisetum arvense*), cow parsnip (*Heracleum lanatum*), thimbleberry (*Rubus parvifolia*), salal (*Gaultheria shallon*), swordfern (*Polystichum munitum*), English ivy (*Hedera helix*), and various grasses.

Listed below in Table 3 are the classifications and sizes of the jurisdictional non-upland estuarine habitats found within the project area.

**Table 3: Estuarine Habitats within the Millport Slough Bridge Project**

Estuarine Habitats	Cowardin Classification	Hydrogeomorphic Type	Approximate Size*
Subtidal Waters (Millport Slough)	E1UBL	N/A	Seaward = 1.40 ac. Inland = 1.45 ac.
Subtidal Waters (Ditches)	E1UBL	N/A	Seaward = 0.85 ac. Inland = 1.60 ac.
Subtidal Eelgrass Beds	E1AB3L	N/A	Inland = 1.40 ac.
Intertidal Waters (Mud Flats)	E2US3M	N/A	Seaward = 0.85 ac. Inland = 1.15 ac.
Intertidal Low Salt Marshes	E2EM1N	Estuarine Fringe Embayment (EFB)	Seaward = 7.30 ac. Inland = 1.85 ac.
Intertidal High Salt Marshes	E2EM1P E2SS1P	Estuarine Fringe Embayment (EFB)	Seaward = 0.60 ac. Inland = 0.20 ac.
Upland Ground below HMT	N/A	N/A	Seaward = 0.80 ac. Inland = 0.80 ac.

\* Approximate sizes of estuarine habitats measured only within limits of the project area.

E1UBL = Estuarine, Subtidal, Unconsolidated Bottom, Subtidal  
 E1AB3L = Estuarine, Subtidal, Aquatic Bed, Rooted Vascular, Subtidal  
 E2US3N = Estuarine, Intertidal, Unconsolidated Shore, Regularly Flooded  
 E2EM1N = Estuarine, Intertidal, Emergent, Persistent, Regularly Flooded  
 E2EM1P = Estuarine, Intertidal, Emergent, Persistent, Irregularly Flooded  
 E2SS1P = Estuarine, Intertidal, Scrub-Shrub, Persistent, Irregularly Flooded

**Functional Assessment of Resources To Be Impacted**

Within the project, the estuarine habitats are within the EFB hydrogeomorphic (HGM) class, due to (1) their water levels being controlled by daily tidal cycles, (2) water levels not being affected by 24-hour storm events, and (3) fringing a bay. The proposed mitigation areas and reference sites are also EFB class.

To better understand the estuarine habitats and potential affects that bridge replacement project will have on the resources, a functional evaluation was conducted using the *Hydrogeomorphic (HGM) Assessment Guidebook for Tidal Wetlands of the Oregon Coast, Part 1: Rapid Assessment Method* (Adamus, P.R. 2006). The assessment also included the reference areas for compensatory mitigation considerations. Best professional judgment was used as part of the assessment, roughly following the functions listed in the guidebook. Results of the assessment are summarized below:

Overall, estuarine habitats within the project site and in the larger Siletz Bay system provide a high capacity to perform functions and values as compared with unaltered water resources of the Oregon coast. Although transportation facilities, residential developments, and past logging operations have resulting some degradation the tidal lands, the proportion of the alterations compared within the larger estuary is moderate. Past human development including the causeway of US 101 (blocking tidal water exchange and severing tidal channel connectivity) and the heavy sediment load from logging within the watershed (raising ground elevations and accelerating the development of marshlands) represents the greatest sources of degradation.

In all, the estuarine resources have high functions for native invertebrate habitat; stability of the tidal system (presence of high salt marshes and full daily tidal circulation from the Pacific Ocean); integrity of major channels (Millport Slough) with adjacent, diverse vegetated lands; maintaining habitat for anadromous and resident fish and mammals; diverse mixture of large woody debris, bare substrate, pannes, and plant forms; large extent of salt marshes; maintaining habitat for shore, migratory, and nekton-feeding birds; internal channel complexity; and primary production. Recent dike removal by the USFWS has reversed alterations from past farm land conversion to improve overall conditions near the project and throughout the bay.

Moderate functions include a relatively marginal buffer between estuary and lands; the risk of sediment overload; and marginal element cycling rates, pollutant processing, and stabilizing sediment.

**Endangered Species**

Oregon Coastal Coho are expected to be present within the project vicinity. ODOT is preparing a Biological Assessment and expects a determination of "likely to adversely affect."

*Describe the existing navigation, fishing and recreational use of the waterway or wetland.\**

Millport Slough is navigable for recreational craft. Siletz Bay is used for fishing, clamming, and crabbing, and birding. Siletz Bay Refuge (including the tidal marsh restoration project) is closed to public use, except during special events.

\* *Italicized areas are not required by the Corps for a complete application, but may be necessary prior to final permit decision by the Corps.*



**Site Restoration/Rehabilitation**

▪ For temporary disturbance of soils and/or vegetation in waterways, wetlands or riparian areas, please discuss how you will restore the site after construction including any monitoring, if necessary\*

Temporary disturbance of soils and vegetation within waterways, wetlands and riparian areas is not expected. However, in the event restoration of any such areas are necessary, then at minimum, ODOT's contractor will restore disturbed areas pursuant to ODOT Standard Specifications Section 00280 (Erosion and Sediment Control), 00290 (Environmental Protection), 01030 (Seeding), and 01040 (Planting).

**Mitigation**

Describe the reasonably expected adverse effects of the development of this project and how the effects will be mitigated.\*

- For permanent impact to wetlands, complete and attach a Compensatory Wetland Mitigation (CWM) Plan. (See OAR 141-085-0121 to OAR 141-085-0176 for plan requirements)\*
- For permanent impact to waterways or riparian areas, complete and attach a Compensatory Mitigation (CM) plan (See OAR 141-085-0115 for plan requirements)\*
- For permanent impact to estuarine wetlands, you must submit an Estuarine Resource Replacement Plan. (See OAR 141-085-0240 to OAR 141-085-0257 for plan requirements)\*

See attached Estuarine Resource Replacement Plan.

**Mitigation Location Information (Fill out only when mitigation is proposed or required)**

Proposed mitigation (Check all that apply):	<input checked="" type="checkbox"/> Onsite Mitigation	Type of mitigation:	<input checked="" type="checkbox"/> Wetland Mitigation
	<input type="checkbox"/> Offsite Mitigation		<input checked="" type="checkbox"/> Mitigation for impacts to other waters
	<input type="checkbox"/> Mitigation Bank		<input type="checkbox"/> Mitigation for impacts to navigation, fishing, or recreation
	<input type="checkbox"/> Payment to Provide		

Street, Road or Other Descriptive Location	Legal Description (attach tax lot map*)			
	Township	Range	Section	QQ
<b>Mitigation at bridge:</b> US 101 between Keys Place and South Immonen Road, 0.5 mile south from Siletz River Bridge <b>Mitigation at old US 101 site:</b> directly across the highway from the Keys Place intersection	8S	11W	10	NE
	8S	11W	11	NWNW

In or near (City or Town)	County	Tax Map #	Tax Lot # <sup>3</sup>
Kernville	Lincoln	08 11 10 A 08 11 11	Within US101 ROW (current) Within US101 ROW (old)
Wetland/Waterway (pick one)	River Mile (if known)	Latitude (in DD.DDDD format)	Longitude (in DD.DDDD format)
Millport Slough	0.0	44.89403 44.89568	-124.01417 -124.00768

Name of waterway/watershed/HUC	Name of mitigation bank (if applicable)
Siletz-Yaquina fourth field HUC (# 17100204)	n/a

<sup>3</sup> Attach a copy of all tax maps with the project area highlighted.  
 \* *Italicized areas are not required by the Corps for a complete application, but may be necessary prior to final permit decision by the Corps.*

## (6) ADDITIONAL INFORMATION

Adjoining Property Owners and Their Address and Phone Numbers (if more than 5, attach printed labels\*)

Map #	TL #	Owner Name/Address
08 11 10	802	United States Of America c/o Fish & Wildlife Service Division Of Realty Region 1 911 NE 11th Av Ste 1 Portland OR 97232-4181
08 11 10 A	400	
08 11 10 A	600	
08 11 10 A	800	
08 11 10 A	900	
08 11 10 A	1000	
08 11 11	402	
08 11 11	500	
08 11 11	501	
08 11 11	600	
08 11 11	800	

Map #	TL #	Owner Name/Address
08 11 10 A	700	Nettleship Frank W Trustee & Nettleship Janet A Trustee PO Box 270 Lincoln City OR 97367
08 11 10 A	n/a (Siletz Bay / Millport Slough)	Land Management Division Oregon Department of State Lands 775 Summer St NE Ste 100 Salem OR 97301-1279

Has the proposed activity or any related activity received the attention of the Corps of Engineers or the Department of State Lands in the past, e.g., wetland delineation, violation, permit, lease request, etc.?

Yes  No

If yes, what identification number(s) were assigned by the respective agencies:

Corps #	NWP-2005-587	State of Oregon #	n/a
---------	--------------	-------------------	-----

Has a wetland delineation been completed for this site? Yes  No

If yes by whom?\* n/a

Has the wetland delineation been approved by DSL or the COE? Yes  No

If yes, attach a concurrence letter. \*

## (7) CITY/COUNTY PLANNING DEPARTMENT AFFIDAVIT (TO BE COMPLETED BY LOCAL PLANNING OFFICIAL) \*

I have reviewed the project outlined in this application and have determined that:

- This project is not regulated by the comprehensive plan and land use regulations.
- This project is consistent with the comprehensive plan and land use regulations.
- This project will be consistent with the comprehensive plan and land use regulations when the following local approval(s) are obtained.
- Conditional Use Approval
- Development Permit
- Other

This project is not consistent with the comprehensive plan. Consistency requires a

- Plan Amendment
- Zone Change
- Other

An application has  has not  been filed for local approvals checked above.

Local planning official name (print)	Signature	Title	City / County	Date

Comments:

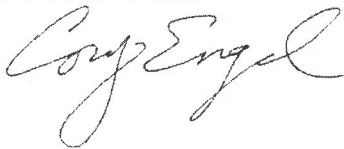


**(8) COASTAL ZONE CERTIFICATION \***

If the proposed activity described in your permit application is within the Oregon coastal zone, the following certification is required before your application can be processed. A public notice will be issued with the certification statement, which will be forwarded to the Oregon Department of Land Conservation and Development for its concurrence or objection. For additional information on the Oregon Coastal Zone Management Program, contact the department at 635 Capitol Street NE, Suite 150, Salem, Oregon 97301 or call 503-373-0050.

**CERTIFICATION STATEMENT**

I certify that, to the best of my knowledge and belief, the proposed activity described in this application complies with the approved Oregon Coastal Zone Management Program and will be completed in a manner consistent with the program.

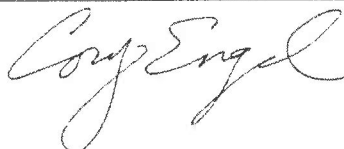
Print /Type Name	Title
Cory Engel	Permits Coordinator
Applicant Signature	Date
	August 20, 2008

**(9) SIGNATURES FOR JOINT APPLICATION**

Application is hereby made for the activities described herein. I certify that I am familiar with the information contained in the application, and, to the best of my knowledge and belief, this information is true, complete, and accurate. I further certify that I possess the authority to undertake the proposed activities. By signing this application I consent to allow Corps or Dept. of State Lands staff to enter into the above-described property to inspect the project location and to determine compliance with an authorization, if granted. I hereby authorize the person identified in the authorized agent block below to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.

I understand that the granting of other permits by local, county, state or federal agencies does not release me from the requirement of obtaining the permits requested before commencing the project. *I understand that payment of the required state processing fee does not guarantee permit issuance. The fee for the state application must accompany the application for completeness.*

Amount enclosed	\$995.00
-----------------	----------

Print /Type Name	Title	Print /Type Name	Title
Cory Engel	Permits Coordinator		
Applicant Signature	Date	Authorized Agent Signature	Date
	August 20, 2008		

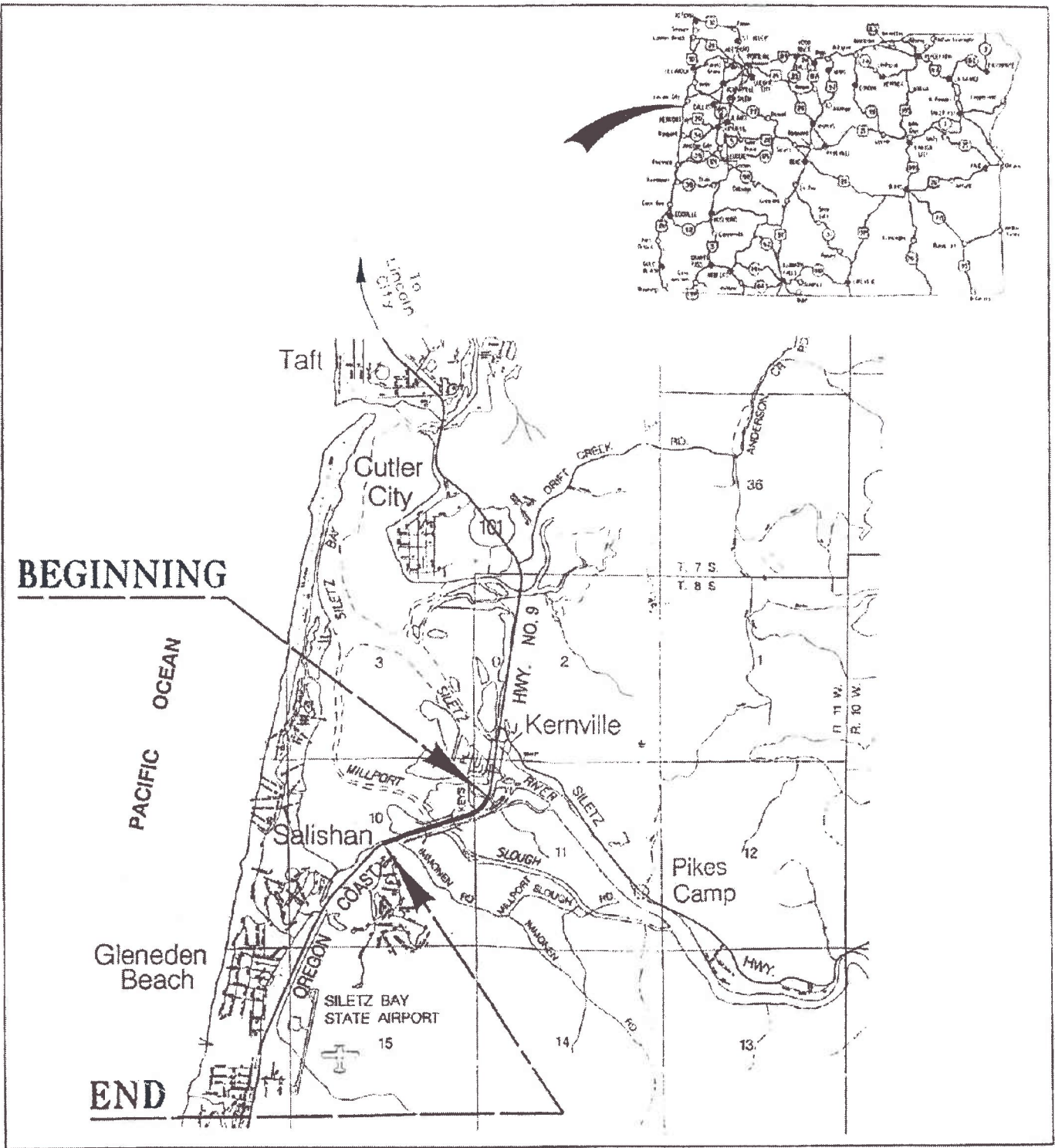
**Landowner signatures:** *For projects and/or mitigation work proposed on land not owned by the applicant, including state-owned submerged and submersible lands, please provide signatures below. A signature by the Department of State Lands for activities proposed on state-owned submerged/submersible lands only grants the applicant consent to apply for authorization to conduct removal/fill activities on such lands. This signature for activities on state-owned submerged and submersible lands grants no other authority, express or implied.*

Print /Type Name	Title	Print /Type Name	Title
Property Owner Signature	Date	Mitigation Property Owner Signature	Date

\* *Italicized areas are not required by the Corps for a complete application, but may be necessary prior to final permit decision by the Corps.*

## Figures

1. Vicinity map
2. Lincoln County tax lot map 08 11 10
3. Lincoln County tax lot map 08 11 10 A
4. Lincoln County tax lot map 08 11 11
5. Map of existing estuarine habitats
6. Map of regulated activities (and aerial photo)
7. Cumulative project impacts (northerly project area)
8. Cumulative project impacts (bridge area)
9. Cumulative project impacts (southerly project area)
10. Highway widening cross-section
11. Bridge plan and elevation views
12. Detail of supported turbidity barrier
13. Conceptual work bridge plan
14. Proposed mitigation areas
15. Subtidal & intertidal mud flat mitigation grading plan (bridge area)
16. Subtidal & intertidal mud flat cross section
17. Old US 101 mitigation site existing conditions
18. Old US 101 mitigation site grading & planting plan



**FIGURE 1**  
**PROJECT VICINTY**

OR 101: Millport Slough Bridge Replacement Section  
Rural Lincoln County, Oregon  
(source: ODOT, 1997)

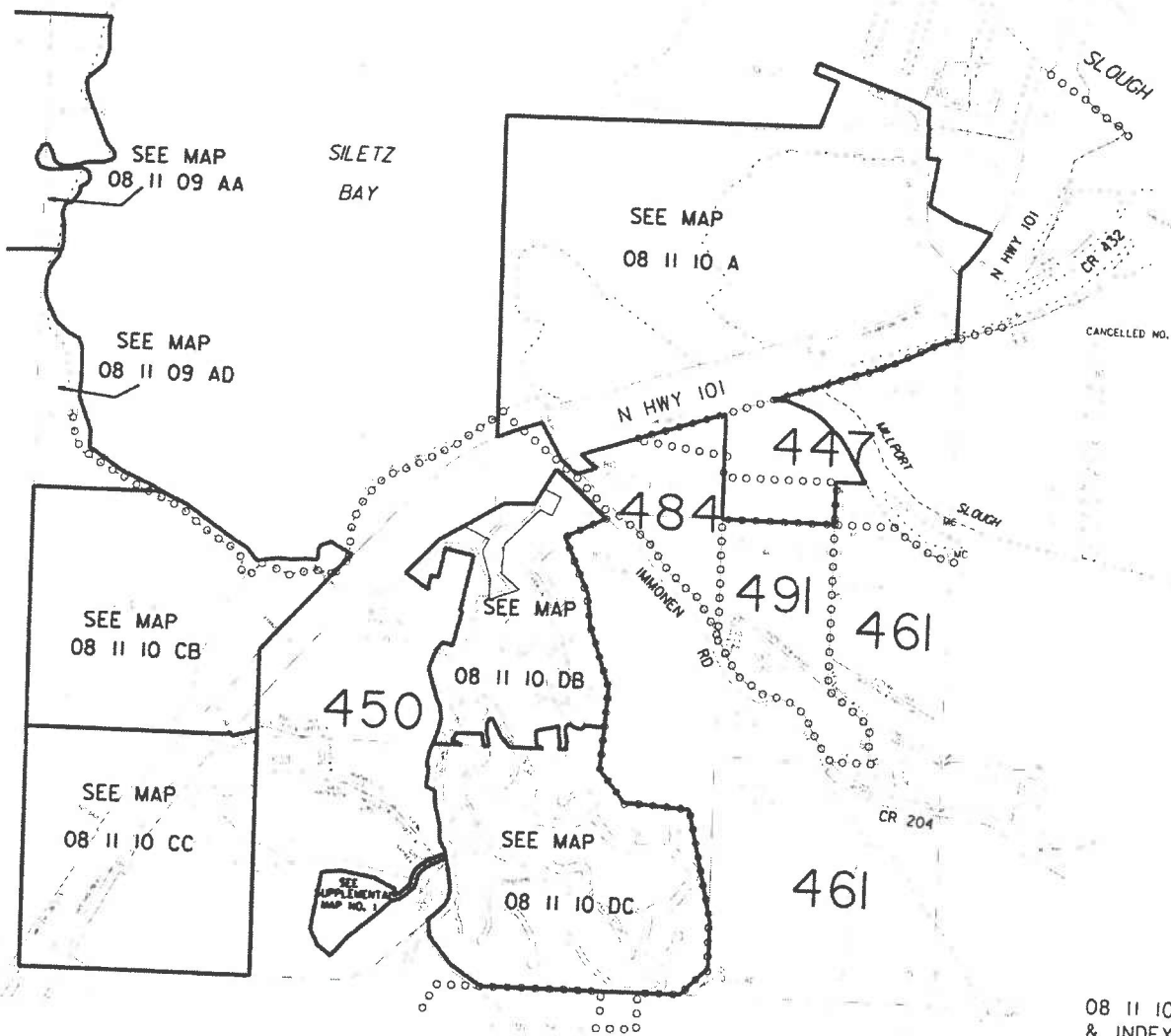
Not To Scale



THIS MAP WAS PREPARED FOR ASSESSMENT PURPOSE ONLY

SECTION 10 T8S R11W WM  
LINCOLN COUNTY

08 11 10  
& INDEX



08 11 10  
& INDEX

Figure 2

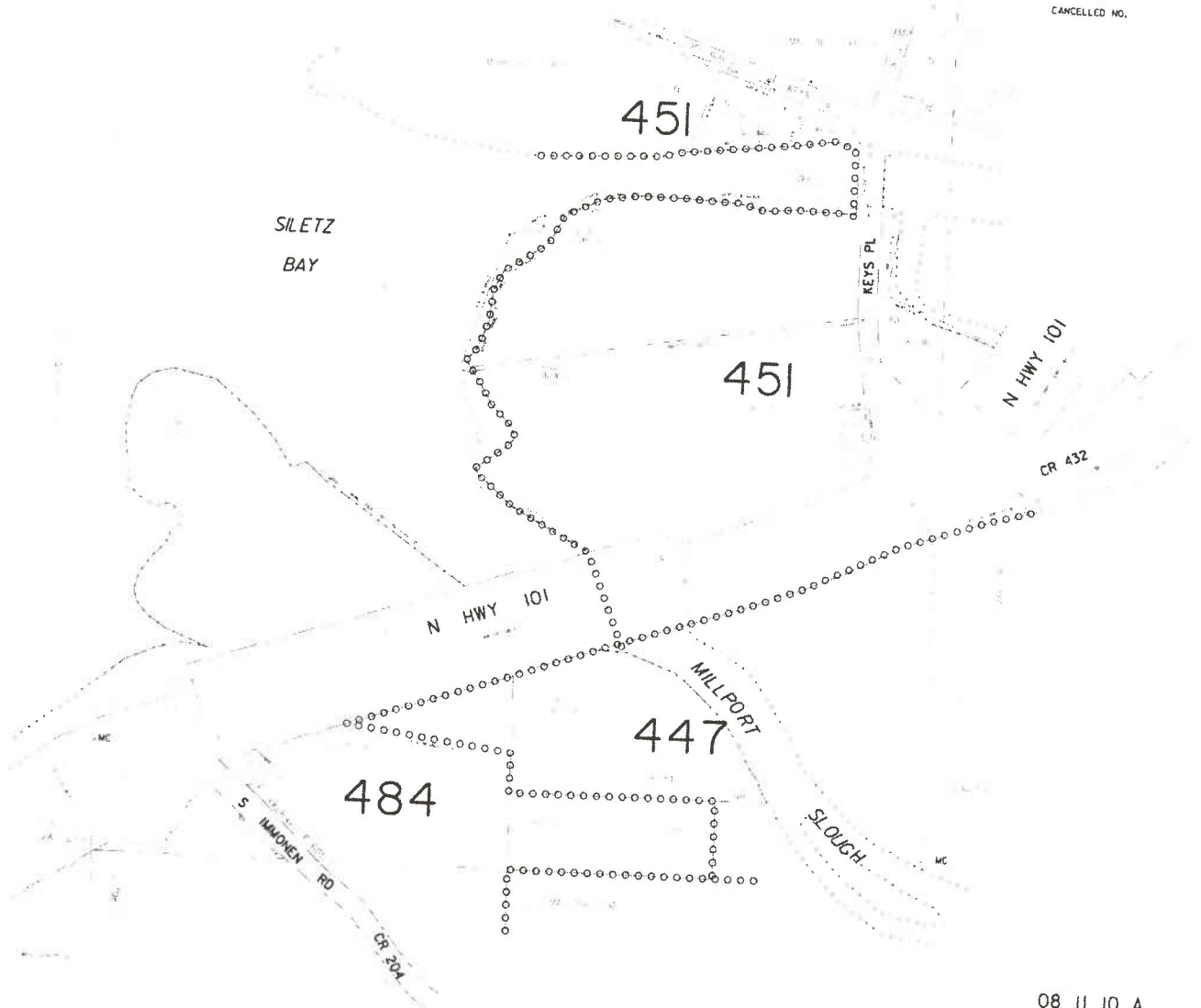


THIS MAP WAS PREPARED FOR  
ASSESSMENT PURPOSE ONLY

NE 1/4 SECTION 10 T8S R11W WM  
LINCOLN COUNTY

08 11 10 A

CANCELLED NO.



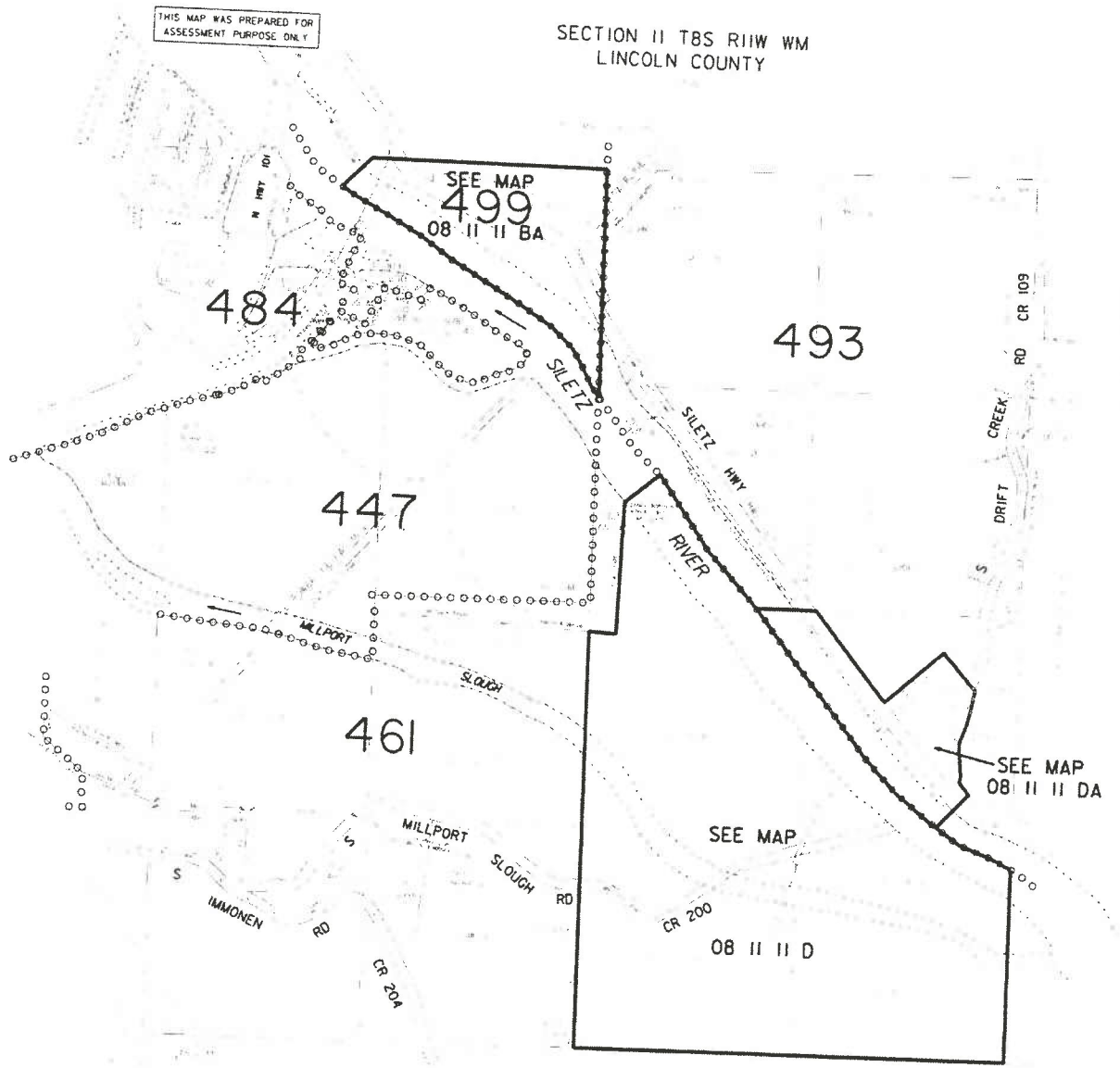
08 11 10 A

Figure 3

THIS MAP WAS PREPARED FOR ASSESSMENT PURPOSE ONLY

SECTION II T8S R11W WM  
LINCOLN COUNTY

08 11 11











CANCELLED NO.

08 11 11

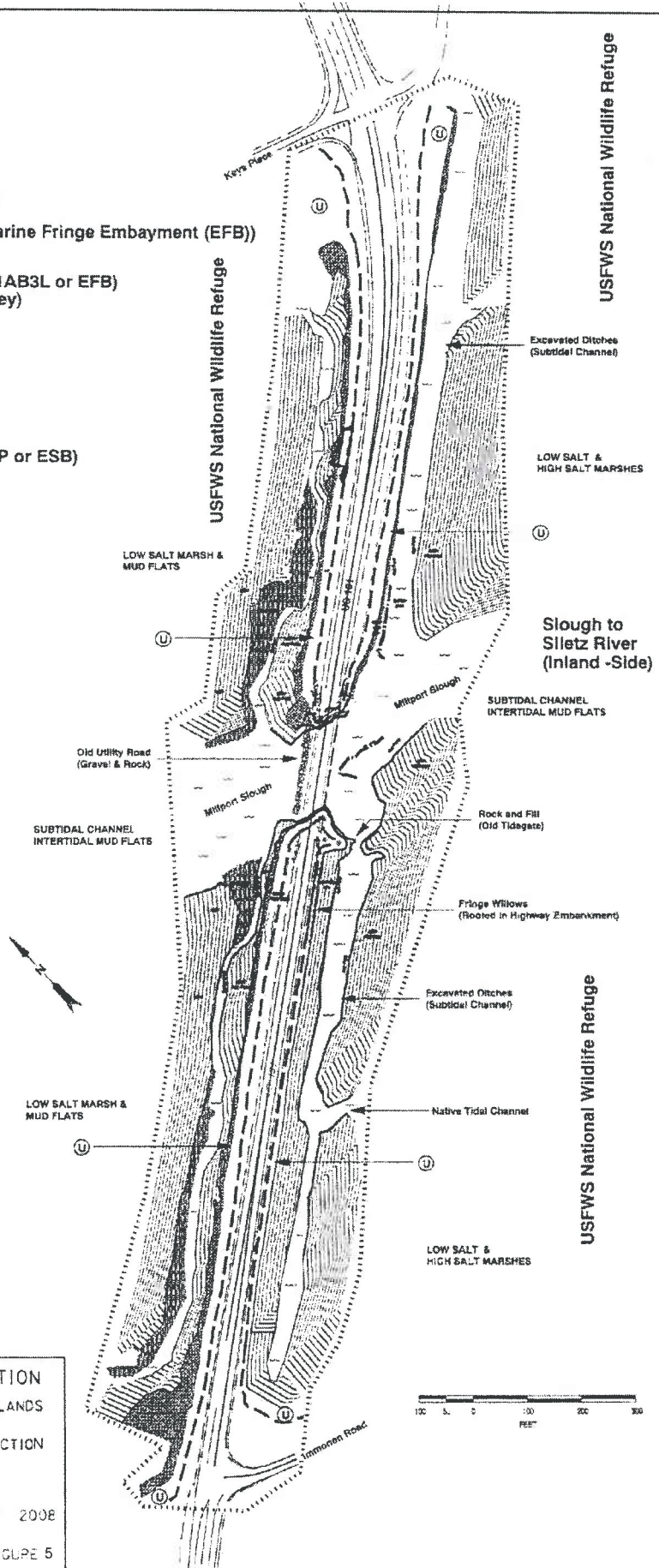
Figure 4

**LEGEND**

-  Project Construction Area
-  Highest Measured Tide (HMT)/  
High Tide Line (12.8 ft. 1988 NAVD)
-  Subtidal Channels (E1UBL or Estuarine Fringe Embayment (EFB))
-  Eelgrass (*Zostera marina*) Beds (E1AB3L or EFB)  
(Based on ODOT Spring 2008 Survey)
-  Mud Flats (E2US3M or EFB)
-  Low Salt Marsh (E2EM1N or EFB)
-  High Salt Marsh (E2EM1P or EFB)  
w/ fringe willows (*Salix* sp.) (E2SS1P or ESB)
-  Uplands Below HMT Elevation

Siletz Bay to Pacific Ocean  
(Seaward Side)

USFWS National Wildlife Refuge

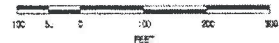


OREGON DEPARTMENT OF TRANSPORTATION  
EXISTING ESTUARINE HABITATS & ADJACENT TIDE LANDS

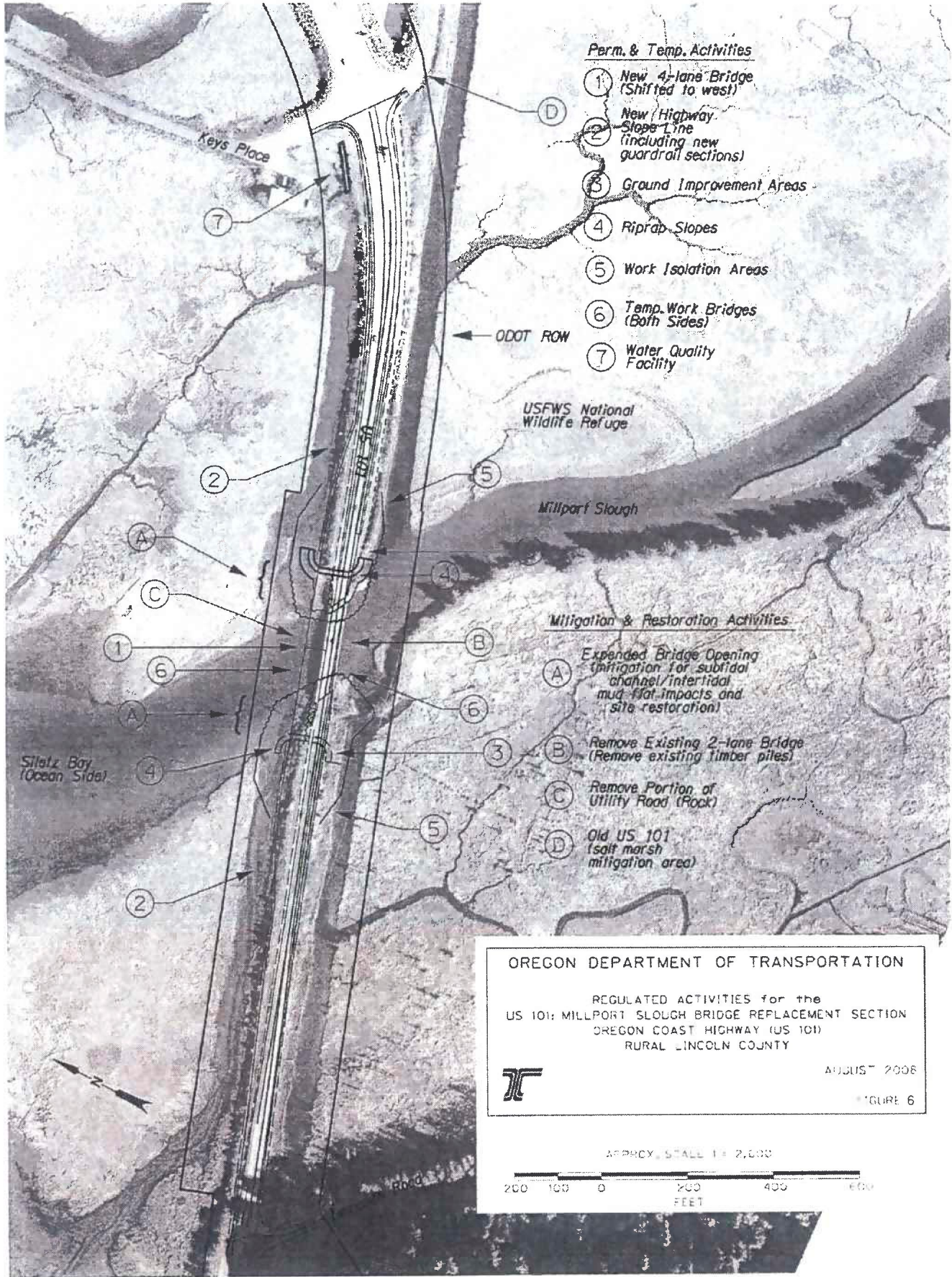
US 101: MILLPORT SLOUGH BRIDGE REPLACEMENT SECTION  
OREGON COAST HIGHWAY (US 101)  
RURAL LINCOLN COUNTY

AUGUST 2008

FIGURE 5







Perm. & Temp. Activities

- ① New 4-lane Bridge (Shifted to west)
- ② New Highway Slope Line (including new guardrail sections)
- ③ Ground Improvement Areas
- ④ Riprap Slopes
- ⑤ Work Isolation Areas
- ⑥ Temp. Work Bridges (Both Sides)
- ⑦ Water Quality Facility

Mitigation & Restoration Activities

- Ⓐ Expanded Bridge Opening (navigation for subtidal channel/intertidal mud-flat impacts and site restoration)
- Ⓑ Remove Existing 2-lane Bridge (Remove existing timber piles)
- Ⓒ Remove Portion of Utility Road (Rock)
- Ⓓ Old US 101 (salt marsh mitigation area)

OREGON DEPARTMENT OF TRANSPORTATION

REGULATED ACTIVITIES for the  
 US 101; MILLPORT SLOUGH BRIDGE REPLACEMENT SECTION  
 OREGON COAST HIGHWAY (US 101)  
 RURAL LINCOLN COUNTY



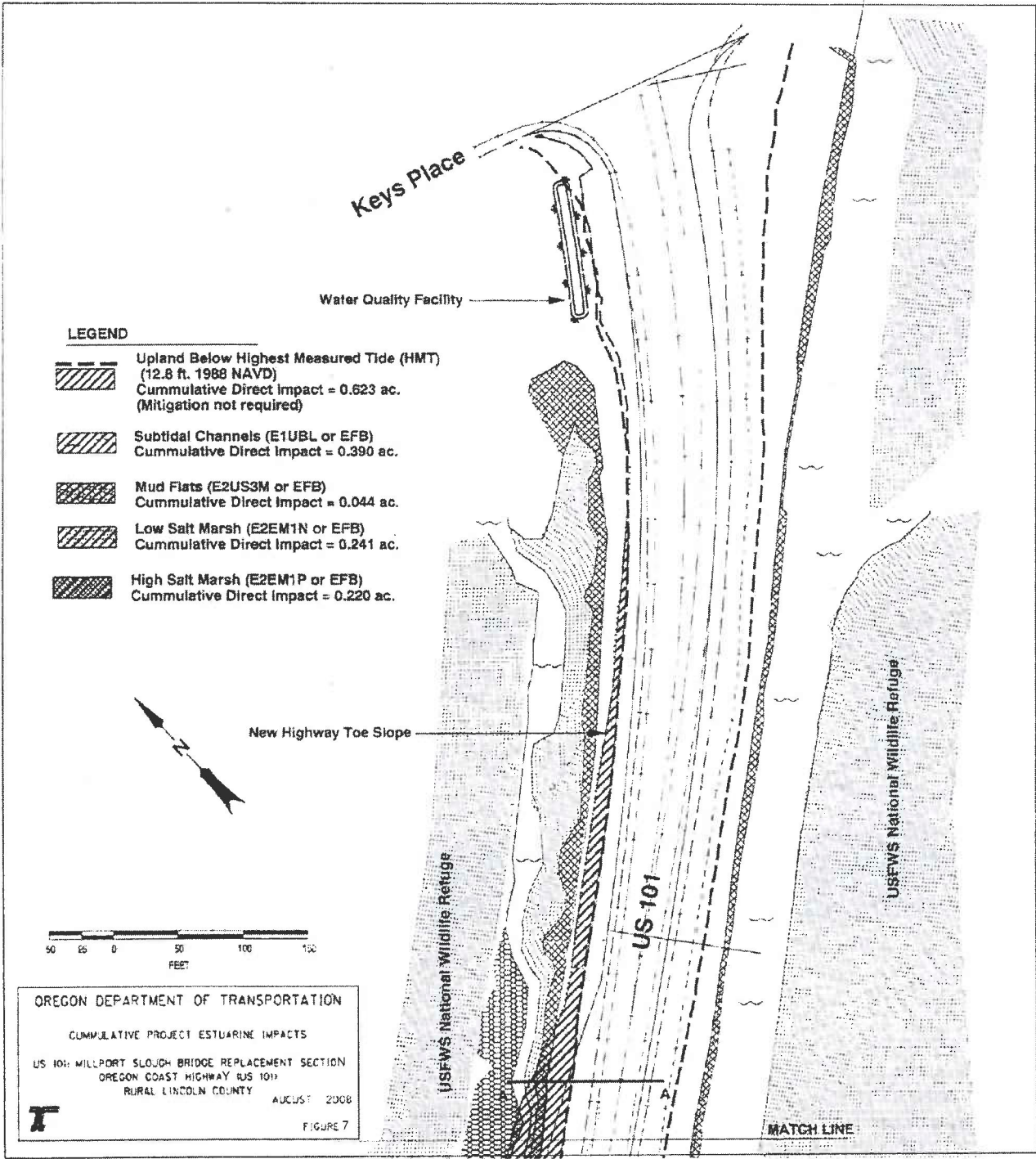
AUGUST 2008

FIGURE 6






APPROX. SCALE 1" = 2,000'

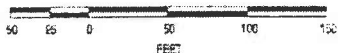







**LEGEND**

- 
 Upland Below Highest Measured Tide (HMT)  
 (12.8 ft. 1988 NAVD)  
 Cumulative Direct Impact = 0.623 ac.  
 (Mitigation not required)
- 
 Subtidal Channels (E1UBL or EFB)  
 Cumulative Direct Impact = 0.390 ac.
- 
 Mud Flats (E2US3M or EFB)  
 Cumulative Direct Impact = 0.044 ac.
- 
 Low Salt Marsh (E2EM1N or EFB)  
 Cumulative Direct Impact = 0.241 ac.
- 
 High Salt Marsh (E2EM1P or EFB)  
 Cumulative Direct Impact = 0.220 ac.



OREGON DEPARTMENT OF TRANSPORTATION  
 CUMULATIVE PROJECT ESTUARINE IMPACTS  
 US 101: MILLPORT SLOUGH BRIDGE REPLACEMENT SECTION  
 OREGON COAST HIGHWAY (US 101)  
 RURAL LINCOLN COUNTY      AUGUST 2008  

   FIGURE 7

Keys Place

Water Quality Facility

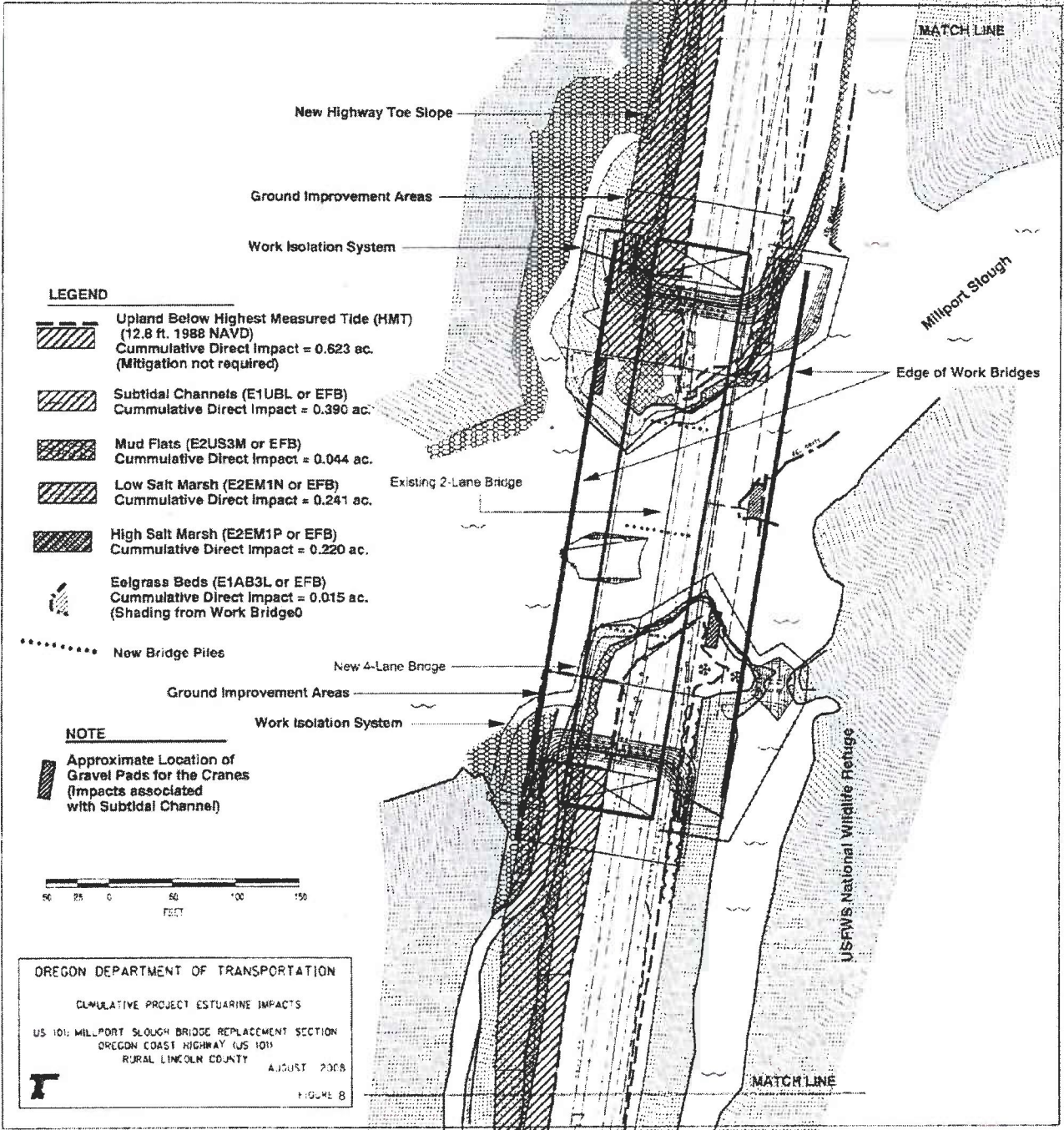
New Highway Toe Slope

US-101







USFWS National Wildlife Refuge

USFWS National Wildlife Refuge



MATCH LINE

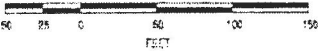



**LEGEND**

-  Upland Below Highest Measured Tide (HMT)  
(12.8 ft. 1988 NAVD)  
Cumulative Direct Impact = 0.623 ac.  
(Mitigation not required)
-  Subtidal Channels (E1UBL or EFB)  
Cumulative Direct Impact = 0.390 ac.
-  Mud Flats (E2US3M or EFB)  
Cumulative Direct Impact = 0.044 ac.
-  Low Salt Marsh (E2EM1N or EFB)  
Cumulative Direct Impact = 0.241 ac.
-  High Salt Marsh (E2EM1P or EFB)  
Cumulative Direct Impact = 0.220 ac.
-  Eelgrass Beds (E1AB3L or EFB)  
Cumulative Direct Impact = 0.015 ac.  
(Shading from Work Bridge)

**NOTE**

-  New Bridge Piles
-  Approximate Location of Gravel Pads for the Cranes  
(Impacts associated with Subtidal Channel)



OREGON DEPARTMENT OF TRANSPORTATION  
 CUMULATIVE PROJECT ESTUARINE IMPACTS  
 US 101: MILLPORT SLOUGH BRIDGE REPLACEMENT SECTION  
 OREGON COAST HIGHWAY (US 101)  
 RURAL LINCOLN COUNTY AUGUST 2008  
 FIGURE 8



**LEGEND**

- Upland Below Highest Measured Tide (HMT)  
 (12.8 ft. 1988 NAVD)  
 Cumulative Direct Impact = 0.623 ac.  
 (Mitigation not required)
- Subtidal Channels (E1UBL or EFB)  
 Cumulative Direct Impact = 0.390 ac.
- Mud Flats (E2US3M or EFB)  
 Cumulative Direct Impact = 0.044 ac.
- Low Salt Marsh (E2EM1N or EFB)  
 Cumulative Direct Impact = 0.241 ac.
- High Salt Marsh (E2EM1P or EFB)  
 Cumulative Direct Impact = 0.220 ac.

New Highway Toe Slope

MATCH LINE

USFWS National Wildlife Refuge

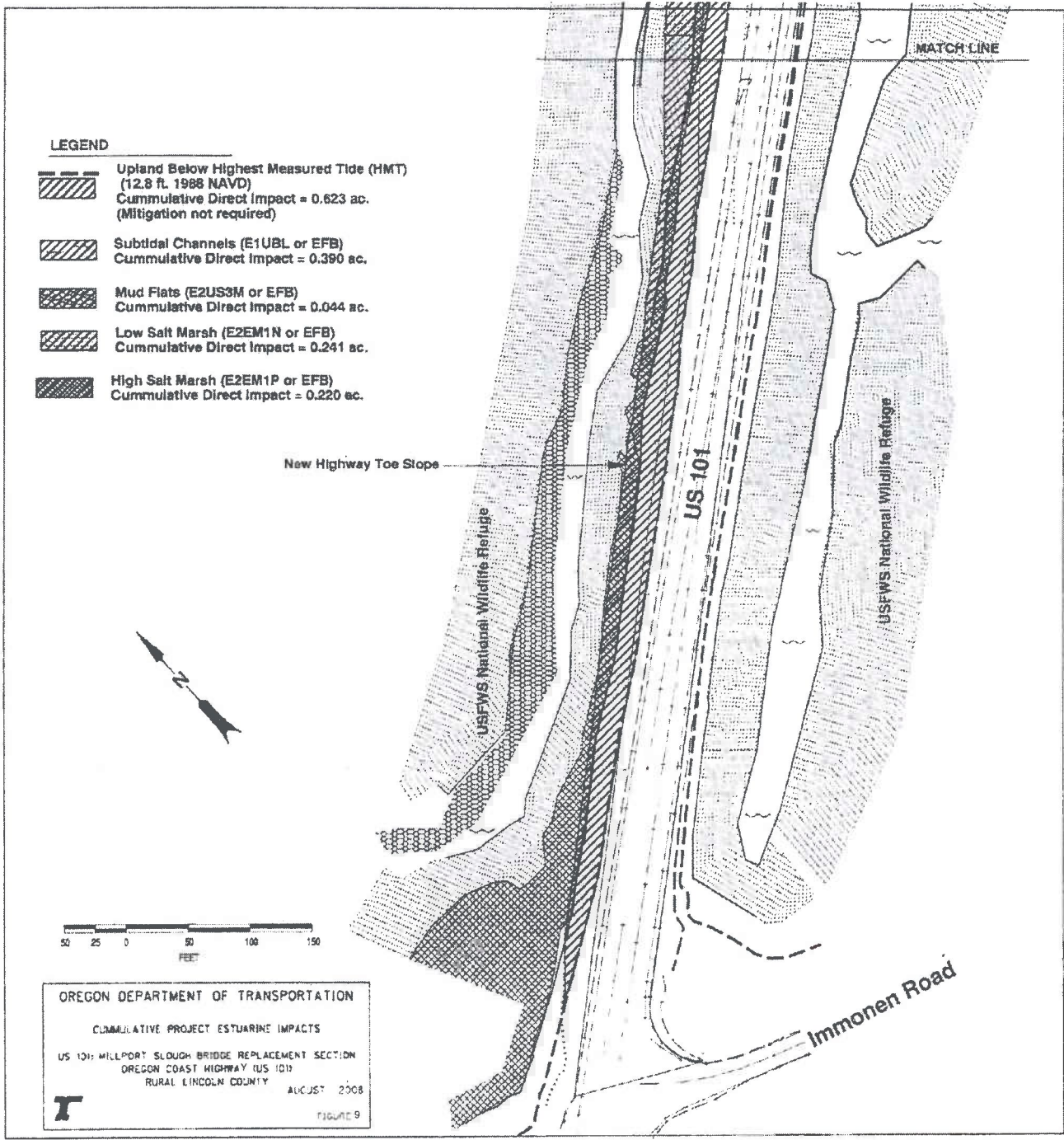
US 101

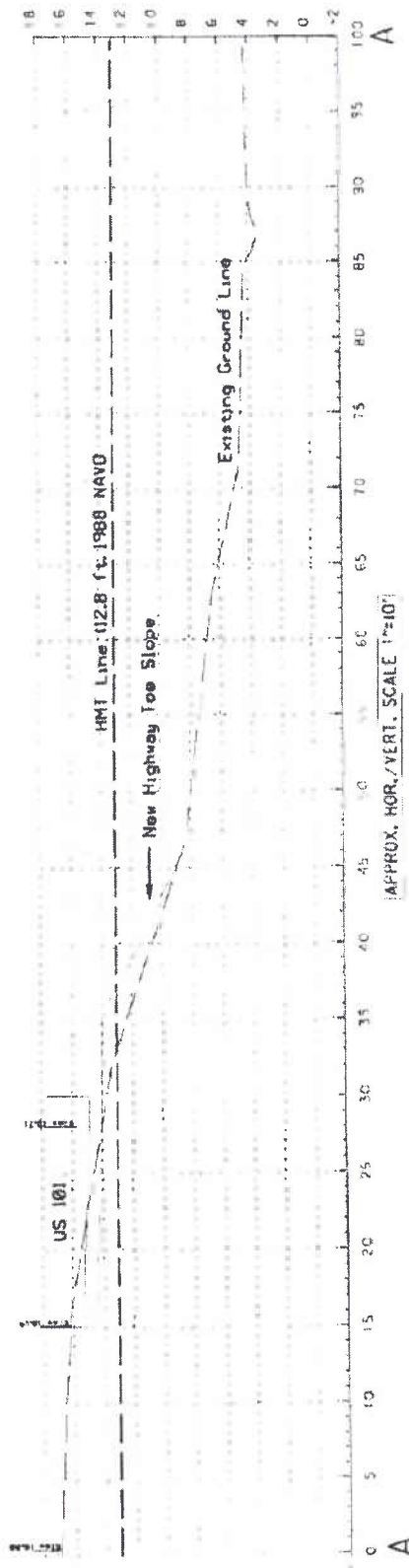
USFWS National Wildlife Refuge

Immonen Road



OREGON DEPARTMENT OF TRANSPORTATION  
 CUMULATIVE PROJECT ESTUARINE IMPACTS  
 US 101 MILLPORT SLOUGH BRIDGE REPLACEMENT SECTION  
 OREGON COAST HIGHWAY (US 101)  
 RURAL LINCOLN COUNTY      AUGUST 2008  
      FIGURE 9



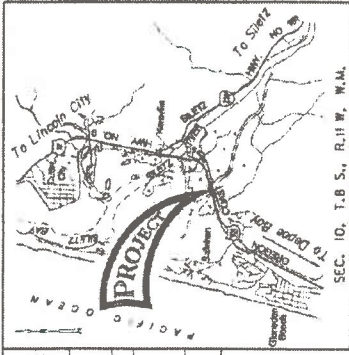


APPROX. HOR./VERT. SCALE 1"=10'

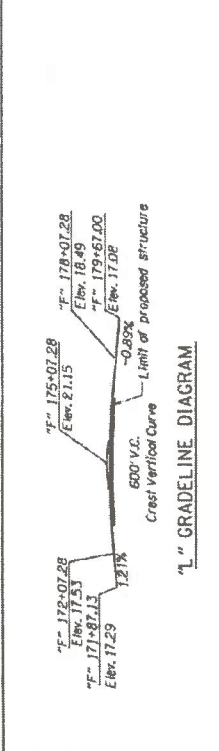
**OREGON DEPARTMENT OF TRANSPORTATION**  
 HIGHWAY WIDENING CROSS-SECTION  
 US 101: MILLPORT SLOUGH BRIDGE REPLACEMENT SECTION  
 OREGON COAST HIGHWAY (US 101)  
 RURAL LINCOLN COUNTY  
 AUGUST 2008  
 FIGURE 10



HYDRAULIC DATA				
ITEMS	UNITS	DESIGN FLOOD	BASE FLOOD	MAX. PROBABLE FLOOD
DISCHARGE	cfs			
REQUIRED INTERNAL	ft			
HIGH WATER ELEVATION AT UPSTREAM FACE OF BRIDGE ALONG EMBANKMENT	ft			
BACKWATER	ft			



HYDRAULIC DATA				
ITEMS	UNITS	DESIGN FLOOD	BASE FLOOD	MAX. PROBABLE FLOOD
DISCHARGE	cfs			
REQUIRED INTERNAL	ft			
HIGH WATER ELEVATION AT UPSTREAM FACE OF BRIDGE ALONG EMBANKMENT	ft			
BACKWATER	ft			



**APPROVED DESIGN**  
INFORMATION ONLY  
BRIDGE GEO/HYDRO  
DESIGN UNIT

STRUCTURE NO.		MILLPORT SLOUGH, US 101	
DATE		US101: MILLPORT SLOUGH BRIDGE SEC.	
CALC. BOOK		OREGON COAST HWY. (M.P. 120.84)	
REVISION		LINCOLN COUNTY	
DATE		PLAN AND ELEVATION	

STRUCTURE NO.		MILLPORT SLOUGH, US 101	
DATE		US101: MILLPORT SLOUGH BRIDGE SEC.	
CALC. BOOK		OREGON COAST HWY. (M.P. 120.84)	
REVISION		LINCOLN COUNTY	
DATE		PLAN AND ELEVATION	

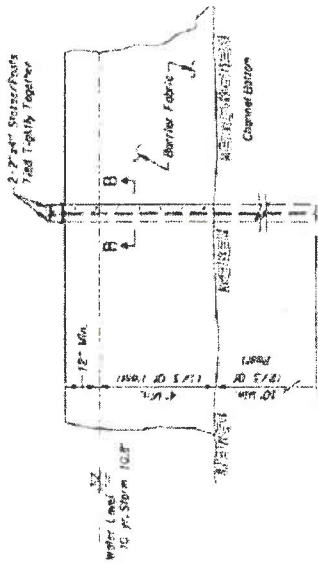
STRUCTURE NO.		MILLPORT SLOUGH, US 101	
DATE		US101: MILLPORT SLOUGH BRIDGE SEC.	
CALC. BOOK		OREGON COAST HWY. (M.P. 120.84)	
REVISION		LINCOLN COUNTY	
DATE		PLAN AND ELEVATION	

STRUCTURE NO.		MILLPORT SLOUGH, US 101	
DATE		US101: MILLPORT SLOUGH BRIDGE SEC.	
CALC. BOOK		OREGON COAST HWY. (M.P. 120.84)	
REVISION		LINCOLN COUNTY	
DATE		PLAN AND ELEVATION	

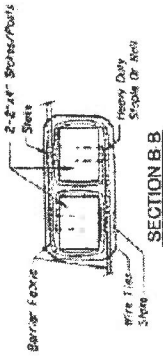
STRUCTURE NO.		MILLPORT SLOUGH, US 101	
DATE		US101: MILLPORT SLOUGH BRIDGE SEC.	
CALC. BOOK		OREGON COAST HWY. (M.P. 120.84)	
REVISION		LINCOLN COUNTY	
DATE		PLAN AND ELEVATION	



**SUPPORTED TURBIDITY BARRIER**



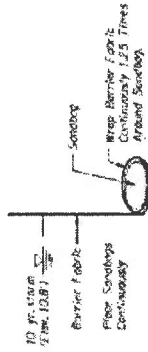
**ELEVATION**



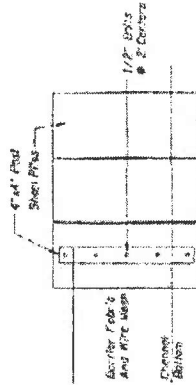
**SECTION B-B**

**RECOMMENDED METHOD OF JOINING  
SECTIONS OF SUPPORTED TURBIDITY BARRIER**

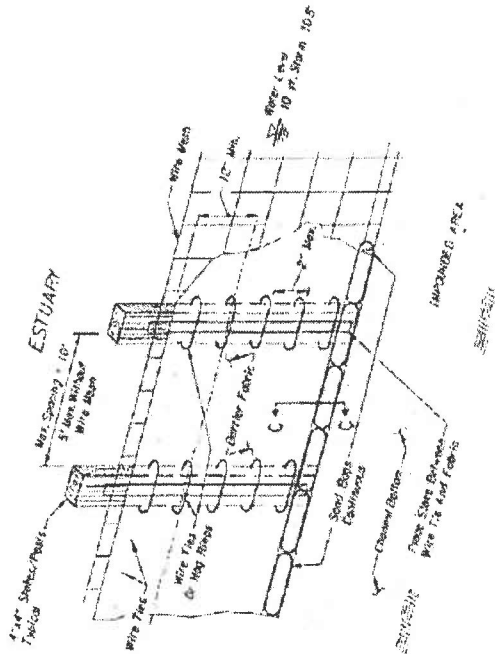
NOT TO SCALE



**SECTION C-C**



**SUPPORTED TURBIDITY BARRIER  
CONNECTION TO SHEET PILE**

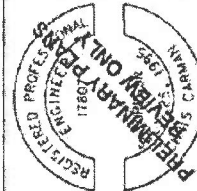


**TYPICAL CONSTRUCTION OF  
SUPPORTED TURBIDITY BARRIER**

**GENERAL NOTES**

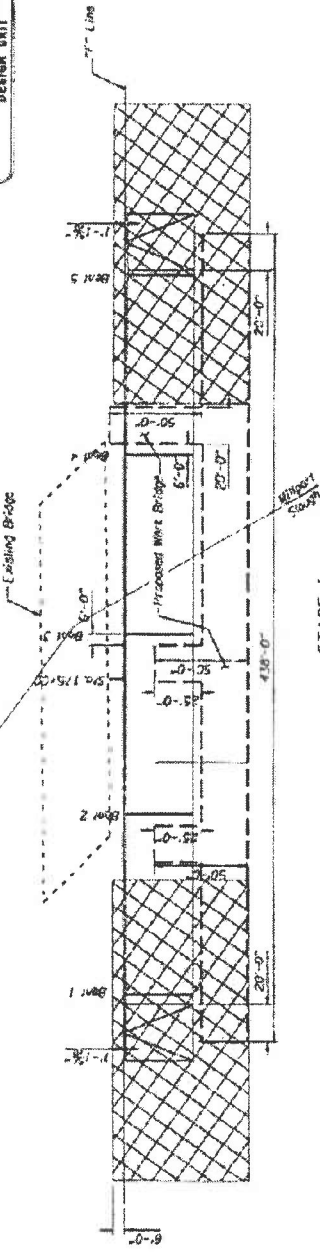
- The Contractor, Adjustments, Measurements and Approval of Them (Include Control Measures in The Responsibility of The Contractor For The Duration of The Project).
- Excavate Control Measures Shown On 115 Plan A14 For Anticipated Site Conditions. Adjust Or Upgrade These Measures For Unanticipated Site Events To Ensure That Sediment And Settlement-Loaded Water Does Not Leave The Site.
- Develop A Particle Size Of The Erosion Control Measures Shown As Required By Section 100000 Oregon Standard Specifications For Construction (Amended) Table F101 For All Locations And Grading Activities And In Sooner's Application To Each Grading Phase. Conduct In Such A Manner So As To Ensure That Sediment And Settlement-Loaded Water Does Not Enter The Highway Or Drainage System Or Affect A Adjacent Water Structure.
- Install Measures Within The Right Of Way (Include Directed Dimensions).
- Construct Sediment Fence 15 Feet Downstream From The Top Of The Slope Where Sediment-Loaded Water Hits A Potential Of Entering Waterway Or Leaving The HWY.

<b>OREGON DEPARTMENT OF TRANSPORTATION</b>	
<b>REGION 2 TECH CENTER</b>	
MILLPORT BLVD. HWY. 1 MILLPORT BRIDGE BRIDGE SEC. OREGON COUNTY LINCOLN COUNTY	
Drawn By: TFP	Checked By: TFP
Designed By: Chris Dancy	Reviewed By: Chris Dancy
Contract No. 11-0000-0000	Project No. 11-0000-0000
Scale: 1/8\"/>	Figure: 12

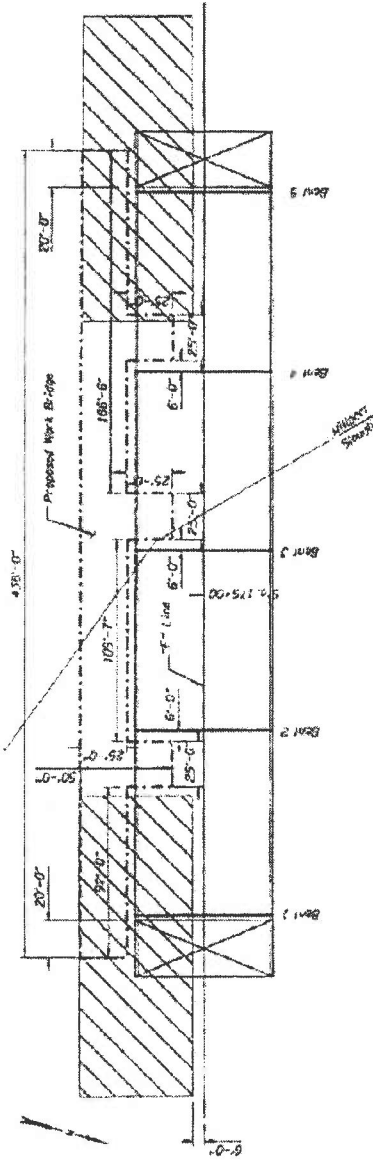


REVISION DATE: 12-30-2011





**PRELIMINARY PLANS**  
**INFORMATION ONLY**  
 BRIDGE GEO/HYDRO  
 DESIGN UNIT





**STAGE I**  
 Scale: 1"=30'



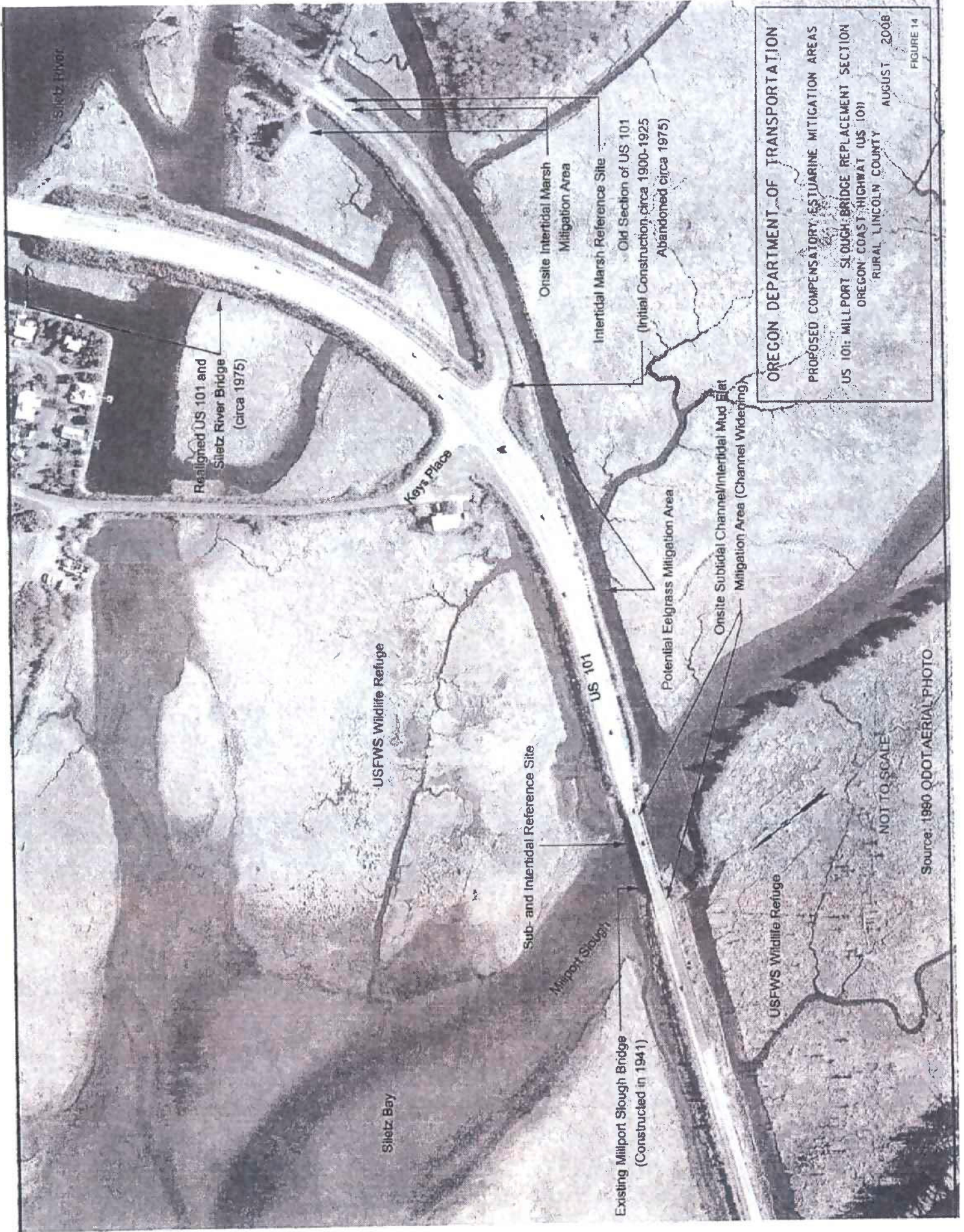
**STAGE II**  
 Scale: 1"=30'

-  Stage I Work Bridge
-  Stage II Work Bridge
-  Stage I Ground Improvement
-  Stage II Ground Improvement

 OREGON DEPARTMENT OF TRANSPORTATION REGION 2 TECH CENTER		STRUCTURE NO. 20401		FIGURE 13	
 STATE OF OREGON DEPARTMENT OF TRANSPORTATION		DATE PROJ.		DRAWN BY MPP/SJT	
DRAWN BY: [Signature] CHECKED BY: [Signature] APPROVED BY: [Signature]		CALC. BOOK 10000		PROJECT NO. MPP/SJT	
REGION: [Blank] SECTION: [Blank] COUNTY: [Blank]		PROJECT NO. 10000		PROJECT NAME CONCEPTUAL WORK BRIDGE PLAN	
PROJECT NO.: [Blank] PROJECT NAME: [Blank]		PROJECT NO.: [Blank] PROJECT NAME: [Blank]		PROJECT NO.: [Blank] PROJECT NAME: [Blank]	

US101 MILLPORT SLOUGH, HWY 9  
 OREGON COAST HWY. (M.P. 120.84)  
 LINCOLN COUNTY





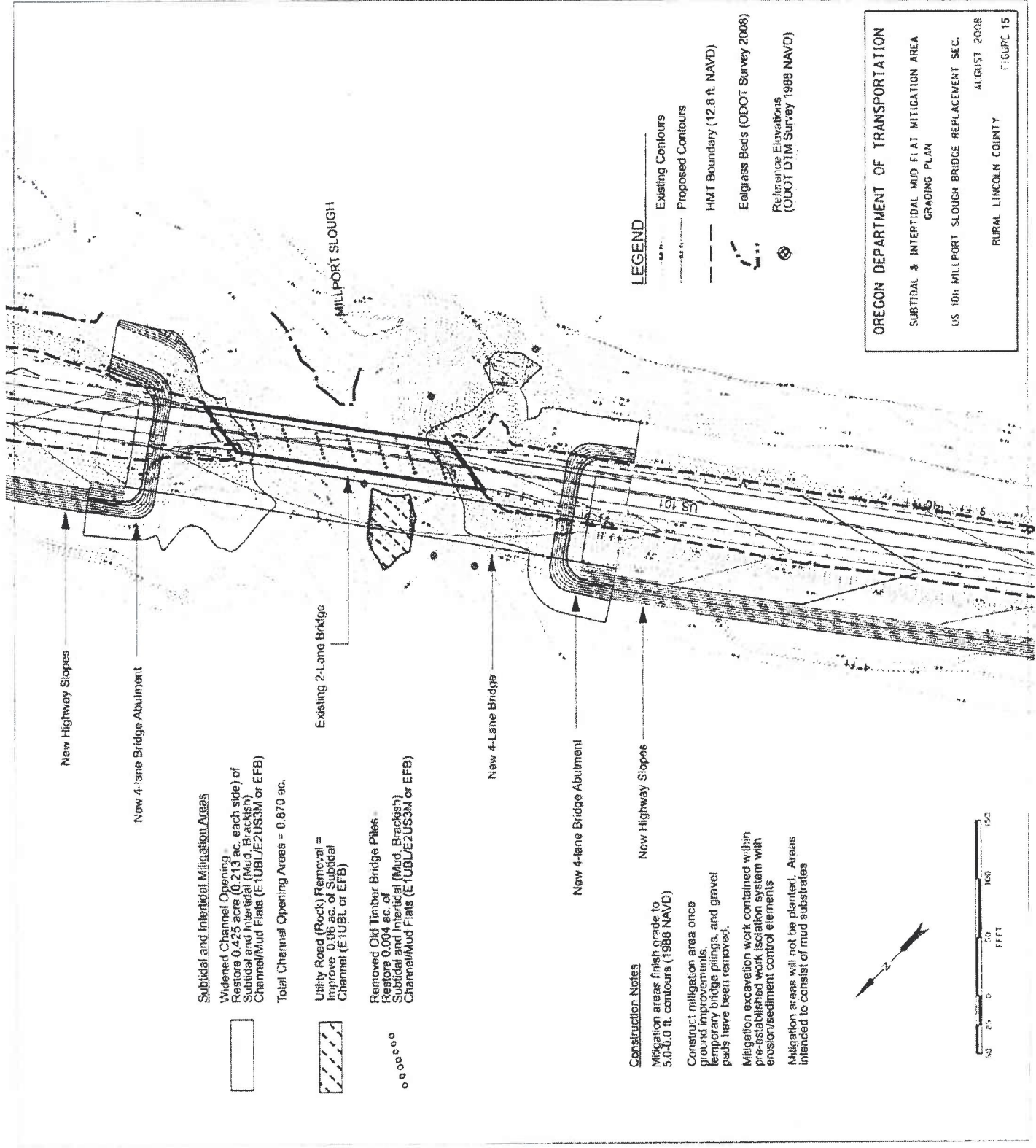
**OREGON DEPARTMENT OF TRANSPORTATION**  
 PROPOSED COMPENSATORY ESTUARINE MITIGATION AREAS  
 US 101: MILLPORT SLOUGH BRIDGE REPLACEMENT SECTION  
 OREGON COAST HIGHWAY (US 101)  
 RURAL LINCOLN COUNTY     AUGUST 2008

FIGURE 14

NOT TO SCALE

Source: 1980 QDOT AERIAL PHOTO





New Highway Slopes

New 4-lane Bridge Abutment

Existing 2-Lane Bridge

New 4-Lane Bridge

New 4-lane Bridge Abutment

New Highway Slopes

MILLPORT SLOUGH

US 101

**Subtidal and Intertidal Mitigation Areas**

**Widened Channel Opening**  
Restores 0.425 acre (0.213 ac. each side) of Subtidal and Intertidal (Mud, Brackish) Channel/Mud Flats (E1UBL/E2US3M or EFB)  
Total Channel Opening Areas = 0.870 ac.

**Utility Road (Rock) Removal =**  
Improve 0.06 ac. of Subtidal Channel (E1UBL or EFB)

**Removed Old Timber Bridge Piles =**  
Restores 0.004 ac. of Subtidal and Intertidal (Mud, Brackish) Channel/Mud Flats (E1UBL/E2US3M or EFB)



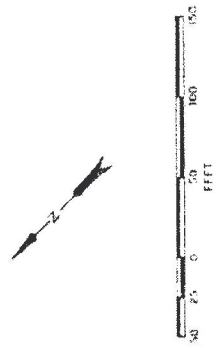
**Construction Notes**

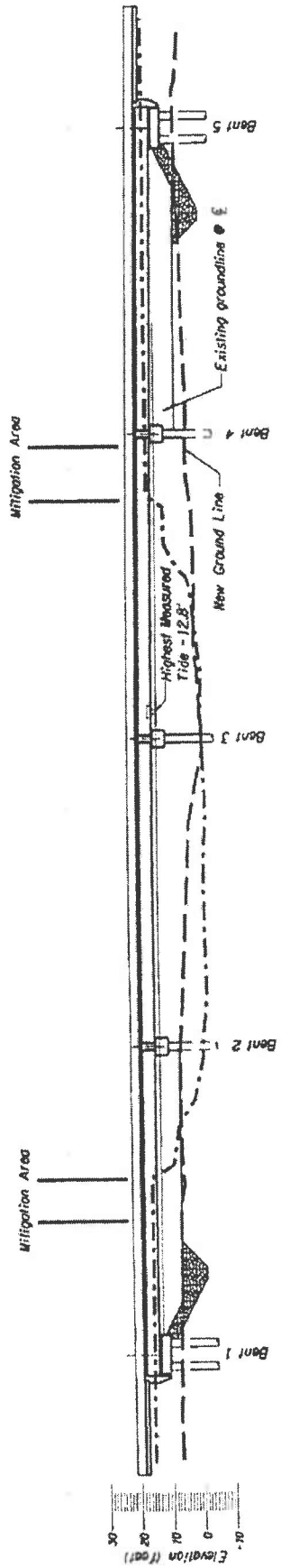
- Mitigation areas finish grade to 5.0-5.0 ft. contours (1988 NAVD)
- Construct mitigation area once ground improvements, temporary bridge pilings, and gravel pads have been removed.
- Mitigation excavation work contained within pre-established work isolation system with erosion/sediment control elements
- Mitigation areas will not be planted. Areas intended to consist of mud substrates

**LEGEND**

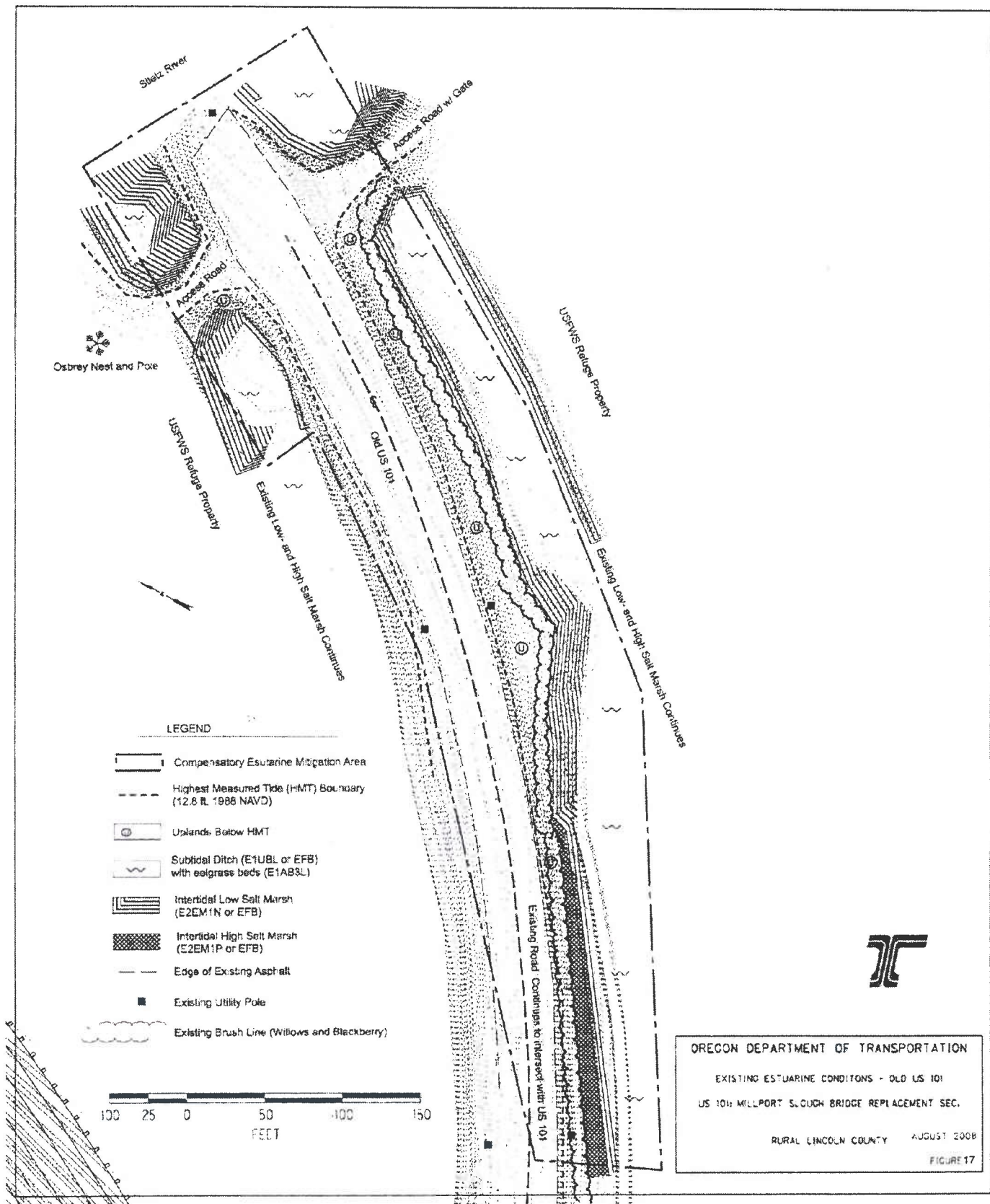
- Existing Contours
- Proposed Contours
- HMT Boundary (12.8 ft. NAVD)
- Eatgrass Beds (ODOT Survey 2008)
- Reference Elevations (ODOT DTM Survey 1989 NAVD)

**OREGON DEPARTMENT OF TRANSPORTATION**  
**SUBTIDAL & INTERTIDAL MUD FLAT MITIGATION AREA**  
**GRADING PLAN**  
 US 101: MILLPORT SLOUGH BRIDGE REPLACEMENT SEC.  
 AUGUST 2008  
 RURAL LINCOLN COUNTY  
 FIGURE 15





OREGON DEPARTMENT OF TRANSPORTATION  
 SUBTIDAL CHANNEL & INTERTIDAL MUD FLAT  
 CROSS SECTION  
 US 101 MILLPORT SLOUGH BRIDGE REPLACEMENT SEC.  
 RURAL LINCOLN COUNTY AUGUST 2008  
 FIGURE 16



Slutz River

Access Road w/ Gate

OSBrey Nest and Pole

USFWS Refuge Property

USFWS Refuge Property

Old US 101

Existing Low and High Salt Marsh Continues

Existing Low and High Salt Marsh Continues

LEGEND

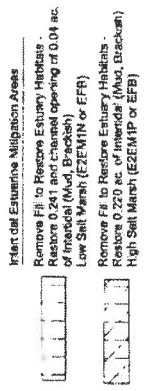
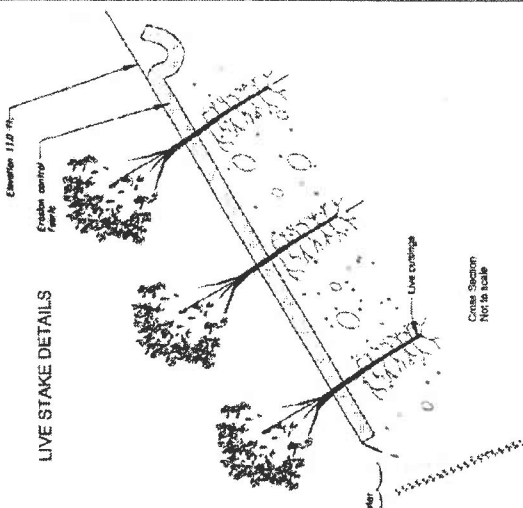
- Compensatory Estuarine Mitigation Area
- Highest Measured Tide (HMT) Boundary (12.8 ft. 1988 NAVD)
- Uplands Below HMT
- Subtidal Ditch (E1UBL or EFB) with eelgrass beds (E1AB3L)
- Intertidal Low Salt Marsh (E2EM1N or EFB)
- Intertidal High Salt Marsh (E2EM1P or EFB)
- Edge of Existing Asphalt
- Existing Utility Pole
- Existing Brush Line (Willows and Blackberry)



OREGON DEPARTMENT OF TRANSPORTATION  
 EXISTING ESTUARINE CONDITIONS - OLD US 101  
 US 101 MILLPORT SLOUGH BRIDGE REPLACEMENT SEC.  
 RURAL LINCOLN COUNTY AUGUST 2008  
 FIGURE 17



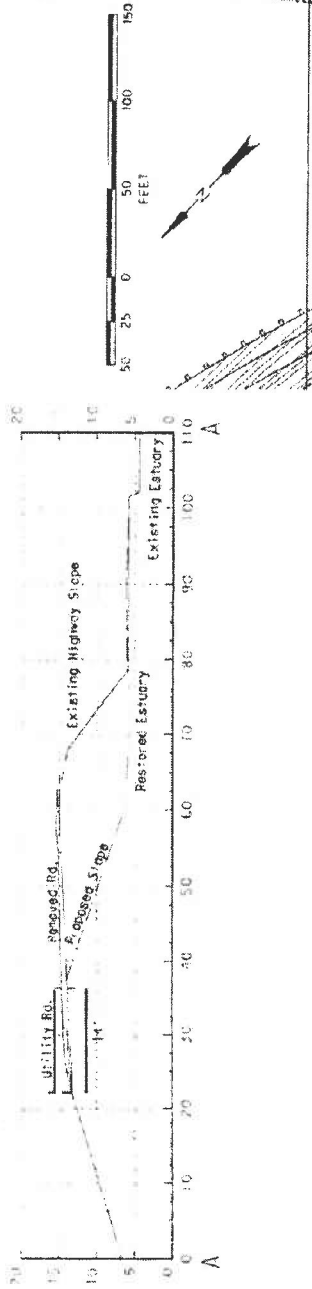
LIVE STAKE DETAILS



**LEGEND**  
 Existing Contours  
 Proposed Contours  
 Reference Elevations  
 (ODOT DTM Survey 1988 NAVD)

**Construction Notes:**  
 Install erosion control measures along existing estuarine habitat prior to start of excavation.  
 Mitigation areas (Low Salt Marsh) finish grades to 5.0 - 7.0 ft. contours (1988 NAVD).  
 Mitigation areas (High Salt Marsh) finish grades to 6.0 - 7.5 ft. contours (1988 NAVD).  
 Construct fence w/p gate at US 101 intersection.

- 1 Construct Migration Site Slope (12.5%) and install erosion control fabric (i.e. job matting) over 0.35 ac. new slope. Plant live willow cuttings (Salix lasiolepis) - approx. 500 plants on 4-5 ft. o.c. Live willow cuttings will start along the of new slope (7.0 ft. to 11.0 elevation) after final contours have been established.
- 2 Seed with narrow leaved woody debris (e.g. Salix lasiolepis) along the project wetland boundary and engineer (ODOT).
- 3 Cut spruce tree and place salvaged woody debris with low salt marsh, as directed by the project wetland specialist and engineer (ODOT).



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### **Attachments**

1. Estuarine resource replacement plan
2. Programmatic agreement memo for archeological resources
3. Programmatic agreement memo for historic resources

**Estuarine Resource Replacement Plan**  
**Ron Francis, Wetland Specialist**  
**ODOT Highway Division, Region 2**

**COMPENSATORY ESTUARINE MITIGATION PLAN**

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Measures to offset lost estuarine habitats resulting from this bridge replacement project shall entail onsite compensatory mitigation at the opened ends of the new bridge and at an upland setting associated with the old section of US 101. Onsite mitigation was determined to be the most practical means to offset estuarine impacts due to the availability of suitable land for restoration and the direct overall benefits to the Siletz Bay tidal flats and Siletz River watershed. Specifically, compensatory mitigation will restore -- based on estuarine replacement ratios -- tidal land habitats within ODOT ROW to replace lost area and functions by replacing natural biological productivity and diversity. Mitigation for the direct eelgrass impacts will occur within ODOT ROW or an ODSL permanent easement (submerged lands). The concepts of the proposed compensatory mitigation actions and the justification for restoration credits are briefly discussed below:

Subtidal Slough and Intertidal Mud Flat Mitigation: Estuarine mitigation for these two habitats include removing fill material associated with the bridge abutments (highway causeway) lowering ground surface elevations to form a wider, submerged channel with adjacent intertidal mudflats within Millport Slough. This action will result in better exchange/flushing of tidal waters. Subtidal mitigation also includes partial removal of rock from the western utility road to improve fish passage during low tide cycles. These mitigation actions shall replace lost function/values by directly restoring similar habitat at the impact site.

The above mitigation concept is based on the restoration of an estuarine area that was lost by past alterations (highway construction via turn of the century and in 1941 when the existing Millport Slough was re-constructed). Since US 101 essential occurs over the tidal land within the Siletz Bay, it is a fair to assume that estuarine habitats existing prior to the construction of the early roadway. The mitigation area has been underneath filled for 100 years or more. Removing the roadbed or causeway material will re-established historical sub- intertidal areas with similar functional characteristics and processes.

Intertidal Salt Marsh Mitigation: Intertidal habitats impacts will be offset by removing fill material along a portion of the old section of US 101 down to historical (buried) marsh elevations. The excavation will expose the natural tidal land substrate of silts/sands (mud), while blending in with adjacent marsh habitats. Incoming tides will inundate the lowered ground surfaces with brackish water to support native, salt-tolerant marsh plants. It is anticipated that the mitigation area will naturally re-vegetate itself with recruited marsh species (from seeds and plant propagules) supplied by the incoming tides. The estuary restoration effort will also include strategic plantings and seeding of native emergent and shrub plantings at high erosive areas. The restored estuarine habitat will not only replace lost area, but it would generate similar habitat conditions as the impacted high/low salt marshes.

Similar as above, this mitigation concept is also based on the restoration of an estuarine area that was lost by past alterations (highway construction via turn of the century and in 1975 when the existing Siletz River Bridge was replace and realigned). Since this old section of US 101 also essential also covers historical tidal land within the Siletz Bay, it is a fair to assume that estuarine habitats can also be re-established with similar functional characteristics and processes by removing the roadbed material.

In summary, the restored estuarine areas are part of the much larger Siletz Bay system found immediately abutting US 101. Specifically, onsite mitigation will ultimately restore the subtidal Millport Slough (E1UBL); Un-vegetated Mud Flats (E2US3M), Low Salt Marsh (E2EM1N), and High Salt Marsh (E2EM1P) or Estuarine Fringe Embayment (EFB) habitats. The mitigation plan will replace or slightly provide a net gain of estuarine functions (i.e. water storage/delay, sediment stabilization/phosphate retention, nitrogen removal, and primary production, and wildlife habitat) compared with impacted functions/values at the result of this ODOT bridge project. Since the ODOT compensatory mitigation sites consist of upland settings, no adjacent estuarine habitats will be degraded by excavation and/or planting actions.



Eelgrass Mitigation: Direct impacts for eelgrass bed will involve the removal and transplant of effected beds. The impacted eelgrass will be moved to a suitable near the project site. Such mitigation actions will be under the direction by local experts (i.e. Dr. Rumrill, Oregon Department of State Lands).

**Table 1: Subtidal Mitigation and Site Restoration**

Construction Activity	Estuarine Habitat	Fill Area/Volume	Removal Area/Volume
<b>Expanded Channel Opening:</b> Removal of existing fill associated with bridge abutments	Subtidal Slough (E1UBL) Mud Flats (E2US3M)	No mitigation fill.	A = 0.870 ac. V = 7,000 yd. <sup>3</sup>
<b>Removal of Old Bridge Piles:</b> 42 24" diameter, about 30' long	Subtidal Slough (E1UBL)		A = 0.004 ac. V = 195 yd. <sup>3</sup>
<b>Removal of Old Utility Road:</b> Partial removal of rock from main channel of slough.	Subtidal Slough (E1UBL)		A = 0.006 ac. V = 69 yd. <sup>3</sup>

**COMPENSATORY MITIGATION REQUIREMENTS**

Compensatory mitigation ratios for estuarine impacts are determined by ODSL administrative rules based on the "Estuarine Mitigation: The Oregon Process". Mitigation is a required condition of the fill/removal permits from intertidal and tidal estuarine marshes. Mitigation ratios are determined by calculating "relative values" of impacted and replaced estuarine habitats based on the following equation:

$$AM = (RVd/RVm) \times (AD) \text{ where...}$$

- AM = Area of mitigation site
- RVd = Adjusted relative value of the development (impact) site
- RVm = Adjusted relative value of the mitigation site
- AD = Area of development (impact) site.

Proposed Onsite Compensatory Estuarine Mitigation (Relative Values):

For the US 101: Millport Slough Bridge Replacement project, the following relative values have been calculated and are presented in the following table:

**Table 2: Relative Values – Oregon Estuaries**

Substrate/Salinity	Subtidal		Intertidal		
	Un-vegetated	Seagrass	Un-vegetated	Low Marsh	High Marsh
Mud/Brackish	3.0	6.0	3.0	5.0	4.0

Based on the relative values and in-kind replacement, compensatory estuarine mitigation areas are calculated below:

- Subtidal Un-vegetated Channel and Mud Flats (Millport Slough & Transitions to Intertidal Mud Flats): (3.0/3.0) (0.434 ac.) = 0.434 acre.
- Subtidal Seagrass (eelgrass): (6.0/6.0) (0.015 ac.) = 0.015 acre.
- Intertidal Low Salt Marsh: (5.0/5.0) (0.241 ac.) = 0.241 acre.
- Intertidal High Salt Marsh: (4.0/4.0) (0.220 ac.) = 0.220 acre.

## **SITE SELECTION RATIONALE**

As described above, the two areas are proposed for compensatory estuarine mitigation occurring within and north of the US 101 bridge replacement area. The intent of estuarine mitigation plan is to restore similar habitats as what was impacted within the Siletz Bay. This option is the most practicable means of providing compensatory mitigation because restoring estuarine habitats will directly offset lost area and functions within the same sensitive tidal lands as the impacts, as opposed to offsite locations outside of the Siletz Bay. No estuarine mitigation banks are within the Siletz River watershed, so Permittee-Responsible Mitigation is the only feasible option for this project.

## **COMPENSATORY WETLAND MITIGATION SITE BASELINE INFORMATION**

Existing conditions within the two proposed wetland mitigation areas are described as prior-filled, upland ground over historical tidal flats. Specifically, the two mitigation areas basically consist of existing roadway material (i.e. asphalt, rock, gravel, soil) with little vegetation cover. Within 500 feet of the mitigation areas, the surrounding ground mostly consists of native estuarine habitats associated with the Siletz Bay. These adjacent tidal areas are managed by the USFWS and the Confederated Tribes of the Siletz Indians (see JPA Figure 14).

Description of Mitigation Areas: As briefly mentioned above, the mitigation areas consist of upland ground as part of prior-filled state roadways. From a landscape perspective, both mitigation areas abut submerged tidal channels and nearly-level marshes. Surface elevations for both of the mitigation areas vary from about -5.0 feet at the lowest point within the subtidal channels to 15.0 feet along the top of the roadbeds.

The mitigation areas are located within rural area of Lincoln County with climate that is typical of the Central Oregon Coast. In the vicinity of the mitigation areas, approximately 88 inches of steady rainfall normally occurs between fall and late spring/early summer. Westerly winds modify air temperatures producing cool summers and mild winters.

Currently, the mitigation areas consist of upland ground dominated by un-vegetated asphalt with vegetated side slopes. The vegetated, upland side slopes have been colonized with both native and weedy species including scattered Sitka spruce and red alder with English ivy, Himalayan blackberry, cow parsnip, elderberry, sword fern, Scot's broom, and grasses. Native willows (Hooker's willow) are found at toe of the fill slope along the old section of US 101. Some existing willows will need to be removed to construct the mitigation site; however, these shrubs will be replaced.

The *Soil Survey Lincoln Area, Oregon* (NRCS 1997), formally the Soil Conservation Service, has mapped the hydric Coquille silt loam, 0-1% slope soil phase surrounding the US 101 roadways. From onsite soil sampling, the Coquille series is found adjacent to and underneath the proposed mitigation areas. The Coquille series consisted of deep, very poorly-drained soils formed from recent alluvium in tide-influenced lands. This mapped hydric soil provides evidence of the mitigations areas were historically part of the estuary to warrant restoration-type mitigation in conjunction with known past disturbance history of the area from highway construction and physical observations of buried estuarine habitats underneath fill material.

## **COMPENSATORY WETLAND MITIGATION DESIGN ASSUMPTIONS**

Design of the compensatory estuarine plan for the bridge replacement project included limited assumptions, since the concept of restoring tidal lands is pretty straight forward. In particular, questions regarding whether or not there would be sufficient hydrology is all based on establishing the correct elevations in order to re-establish brackish tidal waters. Lowering grades to match in with the adjacent estuarine habitats is the general premise of the mitigation concept. Both mitigation areas have natural-functioning reference sites to compare the design against. Matching these reference elevations with the mitigation areas will naturally re-establish brackish, sub- and intertidal conditions, since historically that's that the land was prior to being filled for roadways.

It's anticipated that sediments will naturally be deposited by in-coming tides. Therefore, it is important to account for the natural accumulation of sediment in the overall design of the grading plan. In order to ensure that the anticipated habitat will be restored (i.e. low- and high salt marshes), the desired elevations will be slightly lower (by a few inches) than the reference elevation to account for the potential of a small raise in elevation due to the accumulation sediments once the restoration actions are complete. The re-established grades would produce various water depths from flooded to shallow inundation/saturated soils close to the ground surface during the seasonal tidal cycles to support recruited obligate/facultative wet and saline- tolerant plant species. In addition, precipitation recharge in the amount of an average of 88 inches of rainfall/year would provide a small amount of hydrology to augment the in-coming tide waters.

### **FUNCTIONAL ASSESSMENT OF RESOURCES TO BE IMPACTED**

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Within the project, the estuarine habitats are within the EFB hydrogeomorphic (HGM) class, due to (1) their water levels being controlled by daily tidal cycles, (2) water levels not being affected by 24-hour storm events, and (3) fringing a bay. The proposed mitigation areas and reference sites are also EFB class.

To better understand the estuarine habitats and potential affects that bridge replacement project will have on the resources, a functional evaluation was conducted using the *Hydrogeomorphic (HGM) Assessment Guidebook for Tidal Wetlands of the Oregon Coast, Part 1: Rapid Assessment Method* (Adamus, P.R. 2006). The assessment also included the reference areas for compensatory mitigation considerations. Best professional judgment was used as part of the assessment, roughly following the functions listed in the guidebook. Results of the assessment are summarized below:

Overall, estuarine habitats within the project site and in the larger Siletz Bay system provide a high capacity to perform functions and values as compared with unaltered water resources of the Oregon coast. Although transportation facilities, residential developments, and past logging operations have resulting some degradation the tidal lands, the proportion of the alterations compared within the larger estuary is moderate. Past human development including the causeway of US 101 (blocking tidal water exchange and severing tidal channel connectivity) and the heavy sediment load from logging within the watershed (raising ground elevations and accelerating the development of marshlands) represents the greatest sources of degradation.

In all, the estuarine resources have high functions for native invertebrate habitat; stability of the tidal system (presence of high salt marshes and full daily tidal circulation from the Pacific Ocean); integrity of major channels (Millport Slough) with adjacent, diverse vegetated lands; maintaining habitat for anadromous and resident fish and mammals; diverse mixture of large woody debris, bare substrate, pannes, and plant forms; large extent of salt marshes; maintaining habitat for shore, migratory, and nekton-feeding birds; internal channel complexity; and primary production. Recent dike removal by the USFWS has reversed alterations from past farm land conversion to improve overall conditions near the project and throughout the bay.

Moderate functions include a relatively marginal buffer between estuary and lands; the risk of sediment overload; and marginal element cycling rates, pollutant processing, and stabilizing sediment.

### **ESTUARINE FUNCTION LOSSES AND GAINS**

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Per the functional assessment, the existing estuarine habitats have an overall high- to moderate capacity to perform natural processes being part of larger Siletz Bay system. The functional assessment for the mitigation areas -- based on conditions of the adjacent reference sites near the old US 101 for example -- received slightly lower scores, since they consists of uplands/roadways. The lower functional scores indicate that there is an opportunity to increase functions/values to justify the compensatory mitigation actions. While construction of this project won't significantly eliminate the estuaries ability to perform functions, there will be a reduction in area in which the natural process can occur. The intent of the mitigation plan is to replace area in a setting having the natural ability to perform or replace lost functions.



Specifically, functions will be gained or matched primarily by removing the existing road embankment to restore sub- and intertidal estuarine habitats. The proposed compensatory actions shall provide a functional lift to most of the naturally-occurring process/fish-habitats, including some net benefits to shore/migratory bird habitats. The largest functional gain comes from widening of the natural channel (Millport Slough) and removing fill from historic tidal area along the old section of US 101 where tidal water exchange/flushing (connectivity) will be greatly improved. Other significant gains will be made by increasing area of marsh habitat to improve element cycling rates/pollutant processing/stabilizing sediment loads/primary production. Limitation of net benefits include the prior existence of marginal buffer area between estuary and uplands, the risk of sediment overload, and frequency of human visitations/busy roadway/nearby structures (US 101, old section of US 101, Keys Place housing development). These degradation actions cannot be totally reversed or improved.

Once constructed, the compensatory mitigation actions -- in concurrence with the bridge replacement project -- shall offset lost functions fairly rapid by returning natural processes (i.e. tidal influences). The immediate gains will be achieved near the project-related impact areas, which have also suffered from past degradation actions. These onsite areas would receive the most benefits from the restoration work relative to other part of the bay. The overall maintenance and gains of estuarine functions will benefit the onsite area, as well as the larger Siletz Bay and watershed. Moreover, the mitigation areas are adjacent to the USFWS wildlife refuge further increasing benefits to the bay/watershed.

#### **ESTUARINE MITIGATION IMPLEMENTATION SCHEDULE AND PLAN DETAILS**

Implementation of the compensatory estuarine mitigation plan would occur after the Section 404 and Fill/Removal permits have been issued to ODOT by the ACOE and ODSL. Management of the project, including implementation of the mitigation plan, will be the responsibility of the ODOT District 4 Construction office located out of Corvallis, Oregon. Compensatory mitigation relating to the eelgrass transplanting will be based on coordination with Dr. Rumrill. Further details will be provided by work plan dealing directly the selection of a suitable site and restoration techniques.

The bid let date for this three-year project is expected to be May 2009 with in-water construction work occurring during the starting in ODFW preferred winter November 1<sup>st</sup>-February 15<sup>th</sup> In-water work period. Construction of the mitigation plan will occur at the later part of the 3-year project construction schedule. Access to the mitigation areas will be provided through the ODOT ROW off of US 101. No temporary gravel access roads or any other inadvertent impact to the abutting estuary are anticipated in order to construct the mitigation plan. Access to the mitigation areas will be provided at the ends of the bridge via the widened structure and crane pads and on the remaining portion of the old US 101 roadway.

Grading Plans: At both of the mitigation areas, upland ground will be sufficiently removed and contoured to re-establish tidal influence (see JPA Figures 14-18). Along the old section of US 101, it is anticipated that once ground elevations are lowered, seasonal wetland hydrology will support native planted/seeded vegetation and appropriate volunteer hydrophytic species. No vegetation cover is anticipated at the subtidal channel and intertidal mud flats. Variations of inundation and soil saturation levels will likely occur between various tidal episodes and seasons (i.e. spring and fall).

Approximately 1 to 15 feet of upland ground will be excavated to achieve the desired elevations restoring subtidal and intertidal estuarine. The excavation depths or elevations are based on the abutting reference sites including subtidal channels and intertidal mud flats and marsh habitats. Grade control will be set based in the 1988 NAVD benchmarks. The restored habitats will consists of a nearly level floor with subtle variations of  $\pm 2$  inches to produce microtopographic conditions. The roadway transition slopes adjacent to the mitigation areas will be contoured with 1:2 slopes at the widened bridge abutments and 1:2.5 along the old section of US 101. The areas will include contours that will naturally blend in with the adjacent tidal lands.

Large excavation equipment and cranes are anticipated to be needed to construct this project due to the excavation depth. It's anticipated that the grading work will take several weeks to complete during the in-water work period. All

exposed soil will be seeded for erosion control purposes before the onset of fall rains. All excavated material will be moved and stored in an appropriate upland setting.

**Planting Plan:** The major action of the mitigation plan is to restore estuarine habitats by removing fill material to re-establish brackish tide waters. This action will generate levels of inundation during the diurnal tide cycles naturally leaving the subtidal channel and intertidal mud flats un-vegetated. For the intertidal salt marshes, it is anticipated that once ground elevations are lowered native vegetation would naturally colonized the estuarine setting. For example, Lyngby's sedge located immediately adjacent to the mitigation area will be flushed by daily tidal action to re-establish marsh habitat. Since a native plant materials and seed sources are readily available, the majority of the restored marsh areas will not be extensive planted as part of this mitigation plan.

To accommodate the ODFW winter in-water work period, spring seeding of the upper margins of the high salt marsh will occur initiate the re-vegetation process. The seeding mix will consist of tufted hairgrass and meadow barley (*Hordeum brachyantheum*); these species will be seeded around the 7.0 ft. elevation.

**Table 3: High Salt Marsh Seeding (0.10 ac.)**

Species	Percent of Mixture	Comments
Tuft-hairgrass	65	Broadcast seeds along 7.0 ft. contours Seeding rate 25-30 lbs./acre
Meadow barley	35	Broadcast seeds along 7.0 ft. contours Seeding rate 25-30 lbs./acre

**Large Woody Debris:** Large woody debris (i.e. one cut conifer log with or without a rootwad) will be placed within the salt marsh mitigation area. The large woody debris will provide structural complexity and habitat cover for fish and invertebrate species. The large woody debris will be secured in a manner to limit movement from the mitigation area during storm events or peak runoff periods.

**Upland Buffer (old section of US 101):** The lower portion of the cut slope of the old section of US 101 will be planted with willows, while the upper margins will be seeded with yarrow (*Achillea millefolium*)/grass mixture to provide bank stability, as well as adding wildlife habitat values. Specifically, from the toe of the cut slope up to elevation 11.0 ft., live willow cuttings will be installed through an erosion control fabric (i.e. jute matting). The live willow cuttings will be spaced based on 4-5 feet on-center plantings over approximately 0.23 acre. The yarrow/grass mixture will be seeded over a 0.12 acre between elevation 11.0 and 14.0 feet. The upland buffer plantings shall also act as a visual screen to the mitigation area (see JPA Figure 14).

**Table 4: Upland Buffer Planting and Seeding (0.35 ac.)**

Species	Planting/Seeding Rates	Comments
Hooker's Willow	Spacing of 4-5 ft. on-center Total 500 cuttings	Life cuttings above 7.0 ft. contours
Yarrow and grasses (grass coast mixture of meadow barley, California brome, Romers fescue)	2 lbs/1,000 ft. <sup>2</sup>	Broadcast seeds above 11.0 ft. contours

**MITIGATION GOAL, OBJECTIVE AND PERFORMANCE STANDARDS**

The proposed mitigation plan involves the restoration of two separate onsite areas (bridge opening at Millport Slough and along the old US 101 roadway). The restored estuarine areas are part of the much larger bay system found immediately abutting the bridge replacement project. Specifically, onsite mitigation will restore the subtidal Millport Slough (E1UBL); Un-vegetated Mud Flats (E2US3M), Low Salt Marsh (E2EM1N), and High Salt Marsh (E2EM1P)



or EFB habitats. The following goal is stated to broadly show what the mitigation plan is trying to accomplish, whereas, specific elements to achieve the goal are cited in the mitigation objective. To determine whether or not the mitigation objectives are successful, the following performance standards are suggested to measure the results of the mitigation plan.

Mitigation Goal: The goal of this compensatory mitigation plan is to restore estuarine habitats to replace lost area and functions/habitat values resulting from this state bridge project. Excavation work to lower the surface elevation will re-establish diurnal tidal influence.

Mitigation Objective: The goal of the compensatory mitigation plan is to restore estuarine habitats adjacent to an existing tidal marsh setting. Excavation work served to re-establish sub- and intertidal brackish hydrology. The restored marshes will re-establish by salt-tolerance emergent species. These restoration actions are expected to develop into a diverse, self-sustaining ecosystem within the Siletz Bay.

Restoration of the sub- and intertidal habitats will be assessed using area, hydrology, and construction performance standards or success criteria. As a part of the success criteria, monitoring will be conducted to evaluate the development of the mitigations areas after construction. The following outlines the performance standards and the monitoring actions that will be used to gauge success of the estuarine restoration plan:

Performance Standards/Success Criteria:

**1) Restore sub- and intertidal estuarine habitat areas within target acreages five years after construction. This includes the following habitat areas:**

Subtidal Un-vegetated Channel and Mud Flats = 0.434 acre.

Subtidal Seagrass (eelgrass) = 0.015 acre.

Intertidal Low Salt Marsh = 0.241 acre.

Intertidal High Salt Marsh = 0.220 acre.

This performance standard will be measured after the initial construction and 5-years of monitoring by professional-grade survey or resource-grade GPS equipment. Since the habitats are based on re-establishing tidal waters, assessments of the areas will occur during low and high tide cycles. Surveys will be performed during average high tides in the spring months. Various tidal regimes and their influence on the estuarine habitats will be observed throughout the year in order evaluate the overall effectiveness of the restoration actions.

**2) Restored estuarine habitats will be similar in terms of vegetation, soils, and elevations to the reference tidal lands 5-years after construction.** Specifically, this means that subtidal channel and intertidal mud flats will have similar physical characteristics to the habitats found near the bridge area. Intertidal low- and high salt marshes will be similar in appearance with abutting habitats immediate east of the old section of US 101. This performance standard will be based by observations noting physical characteristics of the abutting tidal lands and comparing them to the restored habitats. Baseline data at the abutting reference sites will be gathered during the first year of monitoring. This information will be used to assess the development of the restored habitats 5-years after construction. In order to successfully meet the performance standard, similar tidal regimes, substrates, native plant diversity/cover will be re-established at the mitigation areas. Observation of the physical characteristics will occur throughout the year, but the data will be based in late spring conditions.

**3) Elevations of the restored estuarine habitats shall match within a tolerance of 4-6 inches of the grading plans.** The excavation work will have final contours with roughly-graded flat bottoms at the grade control based on the 1988 NAVD. This performance standard will be measured by survey conducted after construction.

**4) Re-introduce brackish water influence that will inundate the mitigation areas by Mean High tides during 24 hour cycle.** This performance standard will be measured by field observations to determine the Mean High tide coverage based on inundation and saturated soil within 12 inches of the surface. Observation



of the Mean High tide elevations will occur throughout the year. but the performance standard will be based on late spring conditions.

**5) The upland buffer along the old section of US 101 shall have minimum of 50 live cuttings per 1,000 ft.<sup>2</sup>, including the natural recruitment of other appropriate shrub species 5-years after installation.**

This performance standard will be measured by field counts within a representative 1,000 ft.<sup>2</sup> during the 5-year monitoring period. The representative area will be determined for the first monitoring report. Stems counts and general observations will occur throughout the year, but the performance standard will be based on late spring conditions.

**6) Transplanted eelgrass beds will re-establish a minimum of 0.023 acre of area.** This performance standard will be measured by survey as part of a work plan developed by or under guidance of Dr. Rumrill. The replacement ratio for all impacted eelgrass beds shall be 1.5:1. Transplanted beds shall be monitored for a 10-year period to ensure successful replacement. The monitoring schedule would be annual for the first three-years following by additional assessment every other year. Photographic documentation and contingences will be including in the monitoring reports.

## **MITIGATION MONITORING PLAN**

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The following actions will be required to assess the development of this compensatory estuarine mitigation plan:

- 1) The estuarine mitigation areas will be monitored by ODOT Wetland Specialist staff. Monitoring will be performed on an annual basis for a period of five years, as required by regulatory agencies (ACOE and ODSL). Monitoring for tidal hydrology will be conducted during low- and high episodes in both the winter and summer months, and will include the identification of water levels and depths to soil saturation, hydric (wetland) soil development, and plant establishment including planted emergent and scrub-shrub vegetation, as well as, any volunteer species and their relative proportions.
- 2) Photographic monitoring will be conducted to provide a visual record of the mitigation effort. Established photograph points will demonstrate the development of the mitigation areas into functioning estuarine habitats.
- 3) A report documenting the monitoring results will be submitted to ACOE and ODSL by the end of December of each monitoring year. The monitoring reports will identify any gains and deficiencies in the estuarine restoration progress. The report shall also contain contingency measures that will be implemented if corrective actions are needed for deficiencies. Photographs taken from the photo points will be included with the reports.

## **CONTINGENCY PLANS**

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Contingency plans are designed to identify potential corrective measures that would need to be taken if the monitoring indicates that project goals are not being met. Any contingency plans determined to be necessary will be identified and discussed in the annual monitoring report. Corrective measures may include the following:

- 1) Addition excavation work to ensure that tidal hydrology is established within the mitigation areas.
- 2) Additional installation of emergent and scrub-shrub species, if monitoring reveals plant cover is not being recruited as expected. More suitable planting may be recommended and submitted in the annual monitoring report.

The anticipated tidal regimes and plant community within the mitigation areas will be similar to the estuarine setting that occurs in the reference sites. As the brackish water is re-established, volunteer species will likely dominate the re-vegetation process. This may result in a plant community that varies from the anticipated one; however, this situation would only be considered undesirable if the plant community consist of a high percentage of non-native marsh or upland species.



# Oregon

Theodore R. Kulongoski, Governor

Department of Transportation  
Transportation Building  
355 Capitol St. NE  
Salem, Oregon 97301

FILE CODE:

**DATE:** June 3, 2008  
**TO:** Interdepartmental Memo to the File  
**FROM:** <sup>KR</sup> Kurt Roedel, M.A., ODOT Archaeologist

*Lincoln City Quad*

*TSS, R11W, Sec. 11*

**SUBJECT: Revised Programmatic Agreement SHPO Tracking  
US101: Millport Slough Bridge Replacement Project, Wetland Mitigation  
Lincoln County, Oregon  
Key Number 12802, Federal Aid Number (Q10)S009(191)PE**

The Oregon Department of Transportation (ODOT) proposes to replace the existing two-lane Millport Slough Bridge with a four-lane bridge (Figure 1). This revised memo corrects the project description, which was described incorrectly in the June 2, 2008 memo.

ODOT archaeologist Pat O'Grady examined the project area in 2004 and did not identify any archaeological resources (O'Grady 2004) (Figure 1). The bridge replacement would impact about 0.5 acres of wetland. Subsequently, ODOT has identified an area for wetland mitigation (Figures 1 and 2). This memo addresses the wetland mitigation portion of the proposed project.

According to the Programmatic Agreement among the Federal Highway Administration, ODOT, the Oregon State Historic Preservation Officer, and the Advisory Council on Historic Preservation (Regarding the Implementation of Minor Transportation projects, signed October 15, 2001), the proposed project falls under Minor Transportation Projects (stipulation E) that are exempted from formal Oregon State Historic Preservation Office (SHPO) review. An ODOT archaeologist internally reviewed the project.

Proposed wetland mitigation would likely consist of removing the easternmost portion of the former alignment of US101, immediately east of the existing US101 alignment, to create new low salt and high salt marshes (Figures 2 through 6). The former US101 alignment is currently owned by Lincoln County. The west portion of the project area would remain intact and serve as access to existing utilities and the Siletz Bay National Wildlife Refuge. Excavation would extend approximately seven feet below existing ground surface, to the same elevation as existing low salt and high salt marshes. Asphalt and soil would be removed via track hoes and dump trucks. The general construction contractor would be responsible for identifying appropriate disposal areas in accordance with local, state, and federal laws.

ODOT archaeologist Kurt Roedel reviewed maps on file at SHPO to determine the presence of previous archaeological resources studies and recorded archaeological sites in the project area. No previous archaeological resources studies have been conducted in the project area.



and no archaeological sites have been recorded in the project area. In 1997, Bourdeau (1997) examined Millport Slough as part of a restoration project, and recorded the Millport Slough Dike Site; however, no trinomial was assigned (Figures 1 and 2). Bourdeau (1997) determined that the historic dike was not eligible for listing in the National Register of Historic Places (NRHP), and the dike was removed as part of the restoration project (Figures 1 and 2).

An 1876 General Land Office map (United States Surveyor General 1876) did not indicate any historic period activity in the project area. By 1939, two farmsteads are shown immediately east and west of the project area (Oregon Coast National Wildlife Refuge Complex 1939). These farmsteads are each indicated by one structure on a 1957 topographic map (United States Geological Survey 1957) and no longer appear on a 1984 topographic map (United States Geological Survey 1984).

Mr. Roedel visited the project area during a -0.1 tide on March 14, 2008 (Figures 3 through 6). Mr. Roedel walked a pedestrian transect along the east and west sides of the project area. Willows and Himalayan blackberries covered much of the slopes; however, banks of the adjacent slough subchannels were exposed and provided good visibility. It appears that the channels which are parallel to the east and west sides of the project area were excavated to create the embankment for the former alignments of US101 (Figure 2).

No archaeological resources, including fish weirs, were identified in or adjacent to the project area. The historic period farmsteads are outside of the project area and would not be impacted.

## TRIBAL CONSULTATION

Mr. Roedel contacted Robert Kentta (personal communication 2008), Cultural Resources Director, Confederated Tribes of Siletz Indians, regarding the proposed project. No comments were received.

## RECOMMENDATIONS

- The archaeological records search resulted in the determination that the proposed project is unlikely to impact intact, significant archaeological resources. Based on this review and findings, no further archaeological investigations are recommended at this time.
- In the event that archaeological resources or human remains are inadvertently discovered during ground disturbing activities, these activities should be halted immediately and an ODOT archaeologist should be contacted immediately for further instructions.

Copies to:

Robert Kentta, Cultural Resources Director, Confederated Tribes of Siletz Indians  
Adam Roberts, Region 2 Environmental Coordinator, ODOT  
Ron Francis, Region 2 Wetlands Specialist, ODOT  
Kurt Roedel, Archaeologist, ODOT  
SHPO Tracking File  
Key Number 12802, File Type C

**References Cited:**

Bourdeau, Alex

1997 *Cultural Resources Inventory at the Millport Slough Marsh Restoration Project, Lincoln County, Oregon*. U.S. Fish and Wildlife Service, Sherwood Oregon. 29 September.

Keutta, Robert

2008 Robert Keutta, Cultural Resources Director, Confederated Tribes of Siletz Indians, personal communication, e-mail, January 23 and April 24, 2008.

O'Grady, Pat

2004 *Programmatic Agreement SHPO Tracking, Millport Slough Bridge Replacement, Millport Slough Bridge, U.S. Highway 101, MP 120.8, Lincoln County, Key I.D. # 12802*. Interdepartmental Memo to File. Oregon Department of Transportation, Salem. 10 August.

Oregon Coast National Wildlife Refuge Complex

1939 *Aerial View of Millport Slough*. Oregon Coast National Wildlife Refuge Complex, Newport.

United States Geological Survey

1957 *Cape Foulweather Quadrangle, Oregon-Lincoln Co. 15 Minute Series (Topographic)*. United States Geological Survey, Denver, Colorado.

1984 *Lincoln City Quadrangle, Oregon 7.5 Minute Series (Topographic)*. United States Geological Survey, Denver, Colorado.

United States Surveyor General

1876 General Land Office Map, Township 8 South, Range 11 West, Willamette Meridian, University of Oregon Libraries, Eugene. URL: <http://libweb.uoregon.edu/map/GIS/Data/Oregon/GLO/index.htm>. Accessed 18 March, 2008.



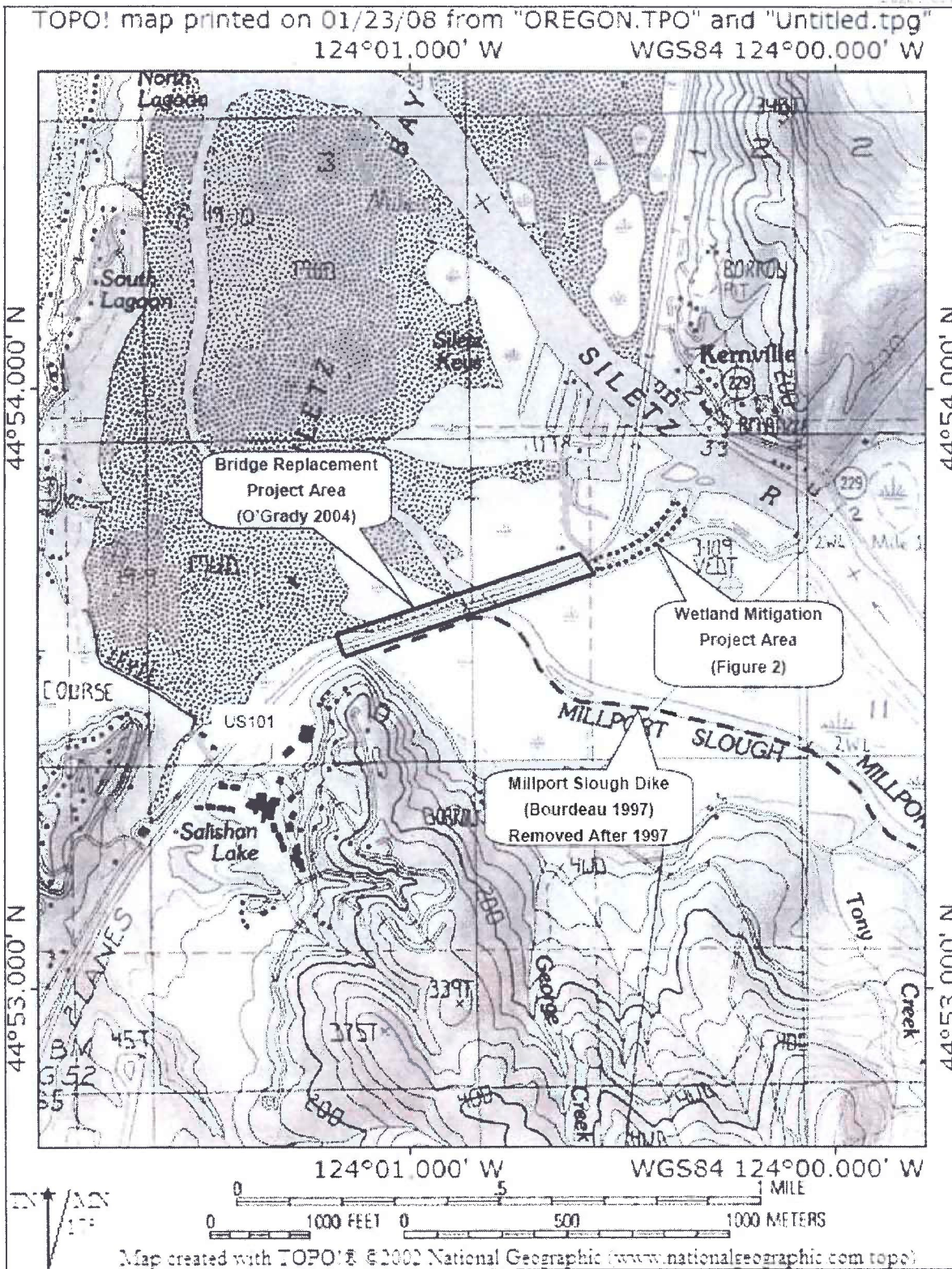


Figure 1. Approximate location of the US101 Millport Slough Bridge Replacement project area, showing the wetland mitigation project area.



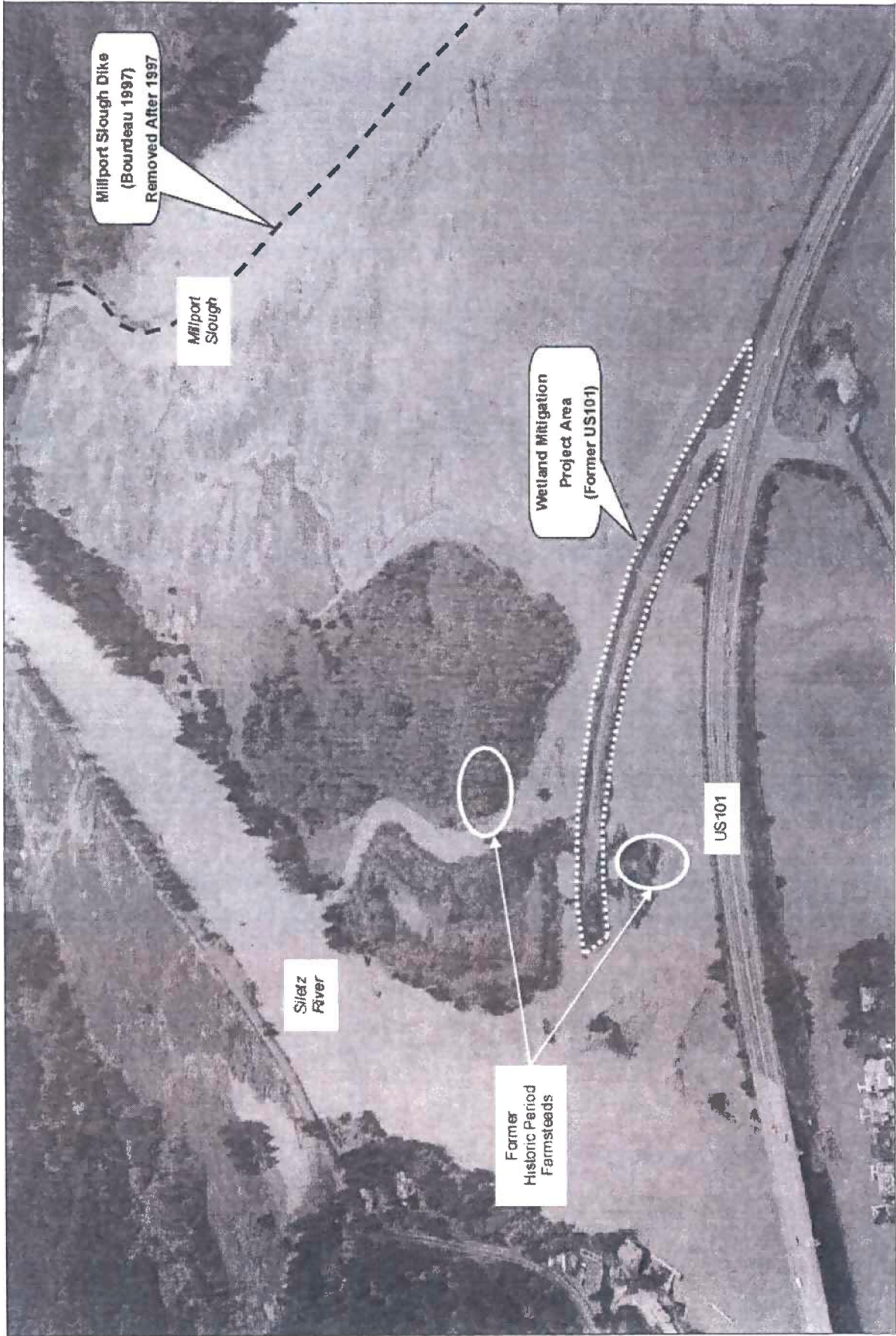


Figure 2. Aerial view of the wetland mitigation project area during high tide, showing approximate location of former farmsteads, facing east.

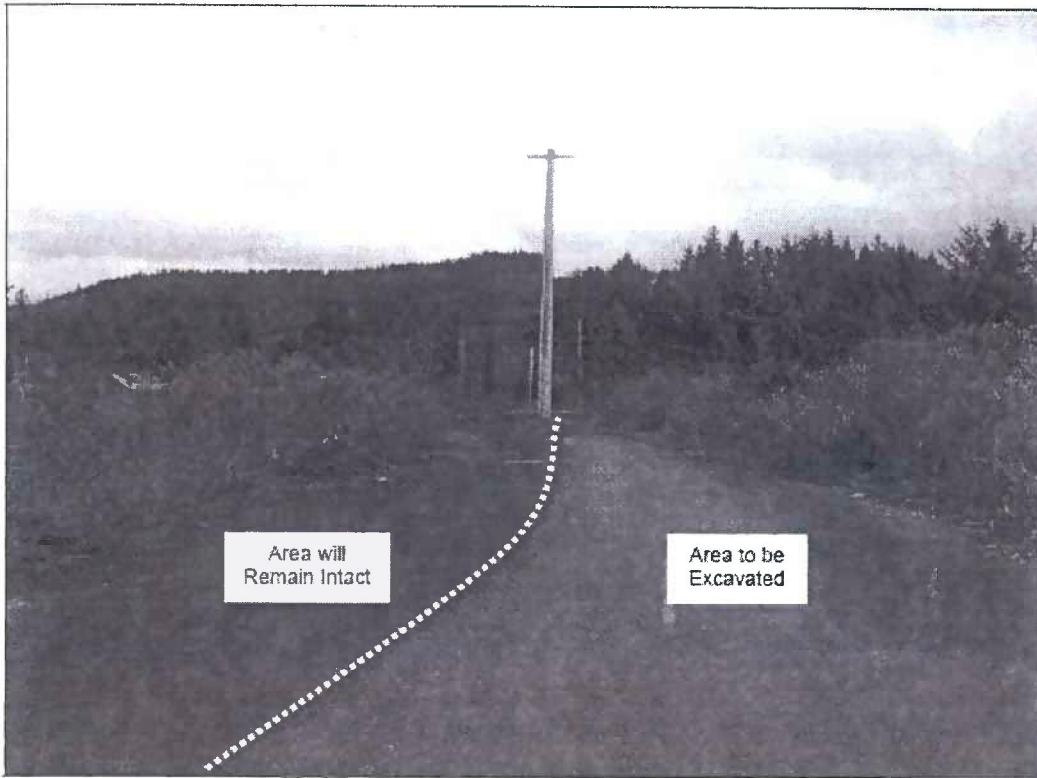


Figure 3. View of the north end of the project area, facing northeast.

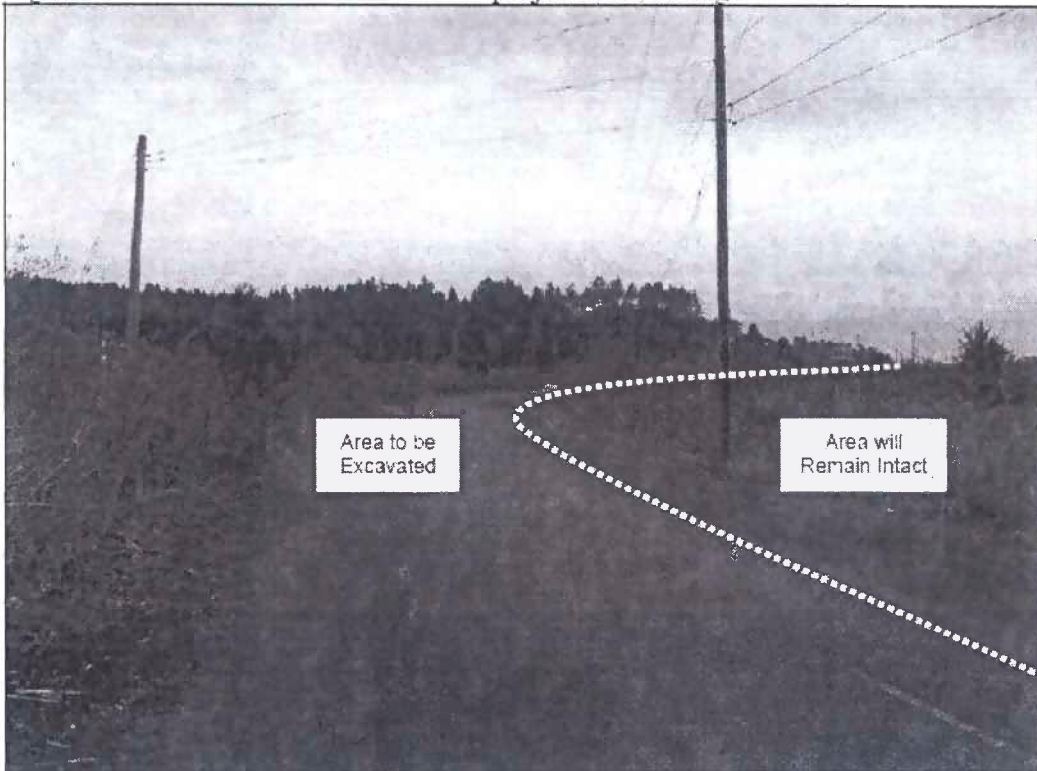


Figure 4. View of the south end of the project area, facing southwest.



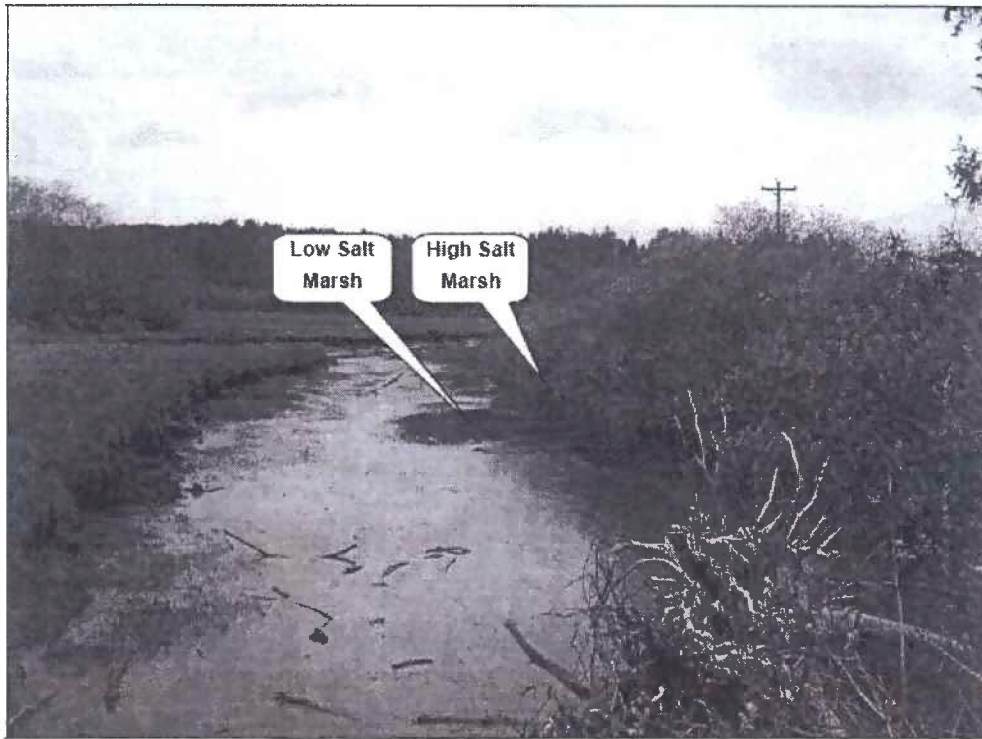


Figure 5. View of the slough channel during -0.1 tide along the east edge of the project area, facing southwest.

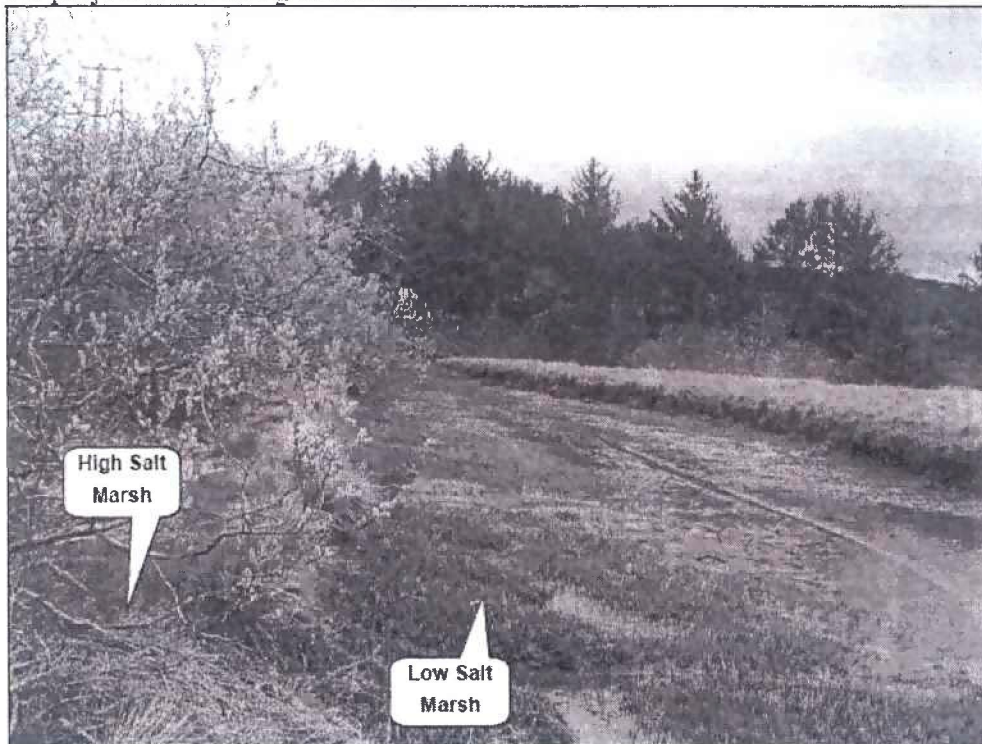


Figure 6. View of the slough channel during -0.1 tide along the east edge of the north end of the project area, facing northeast.

DATE: March 10, 2004

TO: Interdepartmental Memo to File

FROM: Alex McMurry, Cultural Resources Specialist

**SUBJECT: Programmatic Agreement SHPO Tracking  
US 101: Millport Slough Bridge Replacement  
Millport Slough Bridge #06579  
Oregon Coast Highway, US 101  
Lincoln County, Oregon  
Key No. 12802**

The proposed project is located on the Oregon Coast Highway, US 101, between MP 120.82 and MP 120.84 just south of the town of Kernville. The project will replace the existing Millport Slough Bridge #06579 with a new structure on the same alignment. The existing bridge has a low sufficiency rating, an "intolerable" deck geometry, inadequate rails and transition guardrails, and is supported by timber pile trestles. The surrounding coastal environment and placement of the timber piles in water have accelerated the decay of the bridge support structure. A temporary detour structure will be constructed for traffic use while the bridge is being replaced. Right of way acquisition is anticipated as a part of this project, and will come from the surrounding Siletz Bay National Wildlife Refuge in the form of an easement for the placement of the detour structure. The bridge will be replaced with a structure of approximately the same size in the same location on the existing alignment.

The project area was surveyed by Alex McMurry, ODOT Cultural Resources Specialist, on February 3, 2004 to determine the presence of potential historic resources within the project Area of Potential Effect. One historic resource, the existing Millport Slough Bridge #06579 (constructed 1941), was the only resource within the project APE that has achieved 45 years of age. Photographs of the bridge were taken during the field survey.

According to the Programmatic Agreement among the Federal Highway Administration, the Oregon Department of Transportation, the Oregon State Historic Preservation Office, and the Advisory Council on Historic Preservation Regarding the Implementation of Minor Transportation Projects, signed October 15, 2001, under projects exempted from formal review, the proposed project does not require SHPO review. The ODOT Environmental Services Cultural Resources Staff, who meet the qualifications of 36 CFR Part 61 Appendix A in the fields of history and architectural history, internally reviewed the project using the standards set forth in Section 106 of the National Historic Preservation Act (16 U.S.C. 470f).

Internal review by the ODOT Cultural Resources Staff resulted in the determination that the 1941 Millport Slough Bridge #06579 does not meet the criteria for listing on the National Register of Historic Places. The bridge is of a common type utilizing standard plans for the substructure (timber trestle), road deck, and railing. The bridge lacks the distinction necessary for listing on the National Register. In addition, the bridge has suffered an integrity loss through the replacement of the original steel picket railing with a two line steel angle railing.

This project is exempt from formal SHPO review under Stipulation E-9 of the Programmatic Agreement. ODOT, through formal field survey and internal review of historic resources located within the APE, has determined that there are no resources present that are considered potentially eligible for inclusion in the National Register of Historic Places. The project is classified as a Categorical Exclusion.

Alex McMurry was the lead Cultural Resources reviewer for this project, and is currently coordinating with the project team. For further information, contact him at (503)986-2822.

Copies to:

Rosalind Keeney, ODOT Cultural Resources Team Leader  
Susan Vickers, ODOT Environmental Project Manager  
Steve Dockins, ODOT Project Leader  
Alex McMurry, ODOT Cultural Resources Specialist  
Key No. 12802, File Type E: Cultural Resources  
SHPO Tracking File



Photo Log (3 February 2004)



Millport Slough Bridge, view from northwest.



Millport Slough Bridge, view from northwest.



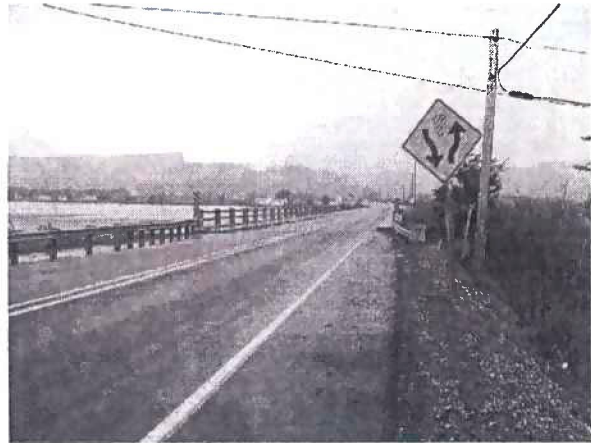
Millport Slough Bridge, view to south on west side.



Millport Slough Bridge, view to north under bridge.



Southeast abutment, typical.



Millport Slough Bridge, view from south.



Southwest railing end, typical.

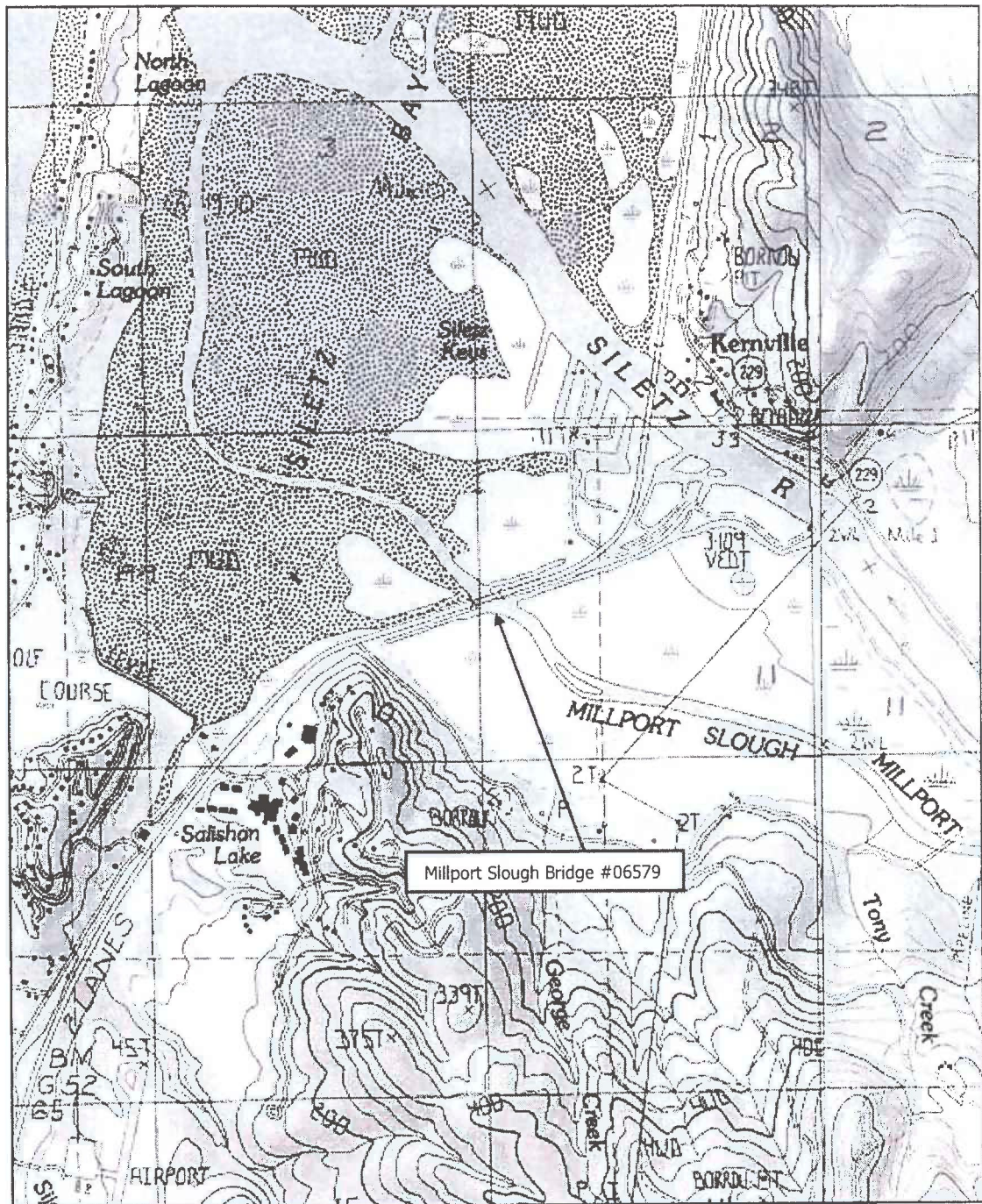


View to north on west side.



Typical bridge railing (altered).





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 Location Map: USGS Lincoln City, OR and Devils Lake, OR Quads, 1984 Edition