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**Ferry Street Pedestrian Bridge**  
**Bridge Life Expectancy Memo (OBEC)**  
**Estimates for New Pedestrian Bridge (OBEC)**  
**Appendix K**

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## Technical Memo

To: Sue Hollis, City Manager, Dayton

CC: Denny Muchmore, P.E., Westech Engineering

From: Jason Kelly, P.E., Field Engineer

Date: July 11, 2008

Re: Life Expectancy and Cost Analysis for  
City of Dayton's Ferry Street Pedestrian/Utility Bridge, Yamhill River  
OBEC Job No. 299-5

### Introduction

The Ferry Street Bridge is a 540-foot-long suspension bridge comprised of timber glulam stringers, columns, and caps; solid timbers; and steel support rods. The initial construction date of the bridge is unknown to OBEC Consulting Engineers (OBEC), but is estimated to be 1975. A rehabilitation project was performed in 1987 to realign and brace the structure along with new channel protection measures. OBEC has been involved with inspection and engineering of this bridge since the year 2000. OBEC was initially hired to inspect this structure and then to provide repair designs and related construction engineering management.

The structure carries pedestrian traffic and supports utilities vital to the Cities of Dayton and Lafayette. Utilities supported by this bridge include: water, pressure sanitary sewer, and telecommunication lines. This bridge is a substantial structure given the span and is an essential piece of infrastructure for the City.

The following technical memo has been compiled to satisfy Task 11 of the 2008 Construction Engineering (CE) contract between OBEC and the City of Dayton pertaining to the Ferry Street Pedestrian Bridge. Task 11 states OBEC will provide a technical memo identifying the theoretical life expectancy of the bridge and supply maintenance and cost estimates.

### Findings

A design life of 35 years is a common industry standard for timber structures. However, this life can vary greatly given the type of material, treatment, environmental conditions and maintenance of the structure. The approximate age of the structure is currently 33-years-old and some members are at the end of their life. The Ferry Street Bridge was originally constructed of high quality materials; however, given the harsh, wet environment of the Northwest the expected life is still only 35 to 40 years.

The following is a description of each element, current condition, estimate of remaining life and replacement costs, starting with the element with the worst condition state.



- *Timber Glulam Decking:* The decking is currently in fair to poor condition with numerous panels showing signs of decay. In June 2008, seven of the most severely decayed deck panels were replaced with new glulam panels. The timber deck sections that bridged the steel rods at Bents 3 and 5 were replaced. These repairs have corrected any immediate danger of local failures and safety concerns. However, I estimate the deck to continue to decay at an accelerated rate and repairs to continue over the next ten years until the deck is completely replaced. Replacement of additional portions of the deck should be scheduled within the next 3 to 5 years. Based on current unit costs of the 2008 contract, the City can expect to spend at least \$200,000 to replace the entirety of the remaining deck.
- *Timber Bridge Rail:* The timber bridge rail is currently in satisfactory condition with signs of surface wear. The rail will continue to wear and decay with the possibility of individual posts and rails breaking and fasteners failing. The condition of the rail is not as much of a concern as is the design; it should be noted that the rail does not comply with current safety design standards. The rail has been modified previously with the addition of chain link fencing on the lower third. To repair damaged and decayed section will cost approximately \$5,000, at current prices, every 5 years. If the City were to upgrade the rail to current design standards you could expect to spend \$200/ft. for a steel-backed timber rail for a total cost of \$300,000.
- *Timber Glulam Columns, Caps and Girders:* The elements that support the bridge, the columns, caps and girders, are in fair condition with only minor signs of wear. The City can expect 10 to 20 years of life out of these members under current conditions. These members are an integral part of the structure and estimating the cost of repair is difficult, but is expected to be over \$200,000. However, replacing these members with new steel members would be very costly, requiring heavy equipment and temporary shoring.
- *Steel Suspension Rods:* The suspension rods are in good condition with minor paint loss on the ends and chalking throughout. This element has the most remaining life out of any element of the bridge and required major maintenance or repairs are not anticipated in the next 20 years. On-going maintenance should include cleaning and painting any exposed metal to prevent any corrosion loss that would affect the strength of the member. Budgeting a few hundred dollars on an annual basis should be sufficient to maintain the paint system.
- *On-going Inspections:* Given the material type, state of deck and the age of the bridge, we recommend this bridge be inspected on a two year cycle. Budgeting \$3,000 per inspection should be sufficient.

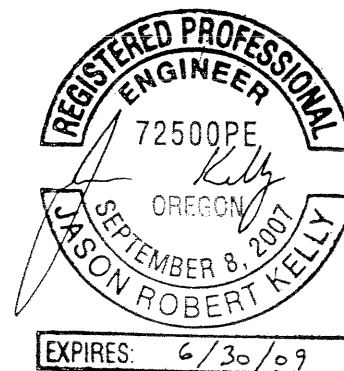
## Conclusion

This structure has many timber elements that are nearing the end of their safe and useful life. Recognizing that this structure is a vital piece of city infrastructure, it is recommended that maintenance and/or replacement funds be a high priority. No matter which course of action the City takes in the management of this bridge, it will be costly given the length and height of the structure. As stated in the letter by Kevin Boyle dated January 11, 2008 that quoted new replacement bridge costs: preliminary cost estimates range from \$6.9 million for a signature bridge to \$3.8 million for a simple girder bridge.

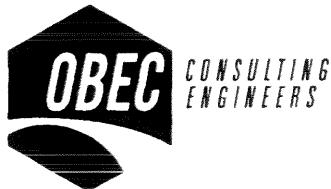
## Sources

Information used to arrive at theoretical cost estimates came from the most current project sources from OBEC and ODOT. Actual costs from OBEC's numerous construction projects, including the most recent rehabilitation of this bridge, as well as restoration projects in Benton and Polk County were used. ODOT's webpage containing 2007 and 2008 average bid item prices from Region 2 (Northwest Oregon) were used.

Inspection condition ratings were based on the 2008 ODOT Bridge Inspection Manual and current National Bridge Inventory System (NBIS) standards. Inspection procedures and practices follow industry Best Management Practices, specifically ODOT inspection guidelines as well as guidelines accepted by the US Forest Services outlined in their Timber Bridges Design, Construction, Inspection and Maintenance Manual.







January 11, 2008

To: Sue Hollis  
Dayton City Manager  
416 Ferry Street  
PO Box 339  
Dayton, OR 97114

Re: Dayton Pedestrian Bridge Repairs  
OBEC Job No. 299-05

WESTECH  
JAN 14 2008  
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We are sending you:

By Mail

By Messenger

By FedEx

- Description:**
1. Two (2) copies of draft ODOT Project Prospectus, parts 1-2, and cost estimate for signature structure and a girder type structure
  2. One (1) copy of Project Scoping Notes
  3. One (1) copy each of five different structure type illustrations for a new bridge

**Remarks:** Sue, enclosed for your files are copies of the documents mentioned above. They are for the City to consider if and when a decision is made to pursue funding for a new bridge across the Yamhill River.

The bridge types considered are a specialty, or signature, structure (cable-stayed and stress ribbon) as well as more conventional concrete or steel girder types. The preliminary cost estimates range from \$6.9 million for the signature bridge to \$3.8 million for the girder bridge. I have included cost estimates for each type because the cost per square foot is considerably different, ranging from \$400/square foot down to \$200/square foot, depending on the type of bridge being considered. Preliminary engineering, construction engineering, and construction contingencies have also been added to the cost to provide the City with as realistic a cost as possible. Also included are elevation drawings to give you a general idea of the appearance of each type of bridge across the river.

In previous phone conversations, I mentioned that this project appears to be a good candidate for the Transportation Enhancement program through ODOT. If you choose to pursue this funding opportunity, a Notice of Intent to Apply is due at ODOT by February 1, 2008 with formal applications due in May 2, 2008. Funding for the projects under this solicitation will not be available until the 2011-2012 biennium. I have reviewed the application information ODOT provided and it appears that they may place a dollar limit of \$1.5 million per project.

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SALEM  
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2235 Mission Street SE, Suite 100  
Salem, Oregon 97302-1295

MEDFORD  
541.774.5590  
Fax: 541.774.5591  
1335 Poplar Drive  
Medford, Oregon 97504-5207



However, should the City decide to make application for Transportation Enhancement funding, you will need a contingency plan that identifies where the additional monies would come from to fully fund the project. My recommendation is to begin the process now to locate other funding opportunities from water and sanitary sewer grants or other sources of grant monies.

If I can be of any further assistance, please do not hesitate to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Kevin E. Boyle". The signature is fluid and cursive, with the first name "Kevin" and last name "Boyle" clearly distinguishable.

Kevin E. Boyle  
Project Manager

KEB/gr  
Enclosure

cc

A thick, black horizontal bar redacting a line of text.  
Corporate File (w/encl.)



## LOCAL AGENCY - PROJECT SCOPING NOTES

Date: 25-Oct-2007 Name: OBEC Consulting Engineers Phone: 503-589-4100

Project Name: DAYTON PEDESTRIAN BRIDGE

Road or Street Name: Ferry Street Local Agency Road Number: \_\_\_\_\_

Agency: City of Dayton Mile Post / Length: \_\_\_\_\_

Location Quad Map: Dayton Coordinates: N 45° 13' 23" W 123° 04' 15"

Section: 16 Township: 4S Range: 3W

**PRELIMINARY COST ESTIMATE:** Information taken from approved project prospectus

COST ELEMENTS	FUNDING TYPE	DOLLARS
Preliminary Engineering Cost		
Right-of-Way Cost		
Safety Improvement Cost		
Roadway Cost		
Bridge Cost		
Const. Engr & Contingencies		
Total Construction Cost		
<b>TOTAL ESTIMATE</b>		

**PROPOSED SCHEDULE:**

STIP Year	Quarter
Begin Survey Work	Begin Prelim. Design work
Begin Environ. Work	Begin R/W Acquisition

**TRAFFIC DATA:**

Functional Classification:	Current ADT (Year):
Accident History (Injuries - Fatalities) Yes / No	1.0% growth - Design ADT (Yr):
Accident Location Proximity: Mile Point	

**GEOMETRIC DESIGN STANDARDS**

TYPE OF PROJECT: \_\_\_\_\_ DESIGN STANDARDS: \_\_\_\_\_ TYPE OF TERRAIN: \_\_\_\_\_

DESIGN ELEMENTS	EXISTING	STANDARD	PROPOSED	EXCEPTION
DESIGN SPEED (MPH)		20 MPH		
LANE WIDTH (FT)				
SHOULDER WIDTH (FT)				
BIKE LANE WIDTH (FT)	9'	12'-14'	10'	
SIDEWALK WIDTH (FT)				
BRIDGE LENGTH & WIDTH (FT)	540' (L) x 9' (W)		540' (L) x 10' (W)	
HORIZONTAL CURVATURE (MIN. RADIUS) (FT)		100'		
VERTICAL CURVATURE (CREST) (K VALUE = L/A)		25		
VERTICAL CURVATURE (SAG) (K VALUE = L/A)				
GRADE (MAX. PERCENT)		5%		
STOPPING SIGHT DISTANCE (MIN) (FT)		150'		
CROSS SLOPE (MIN. PERCENT)		2%		
SUPERELEVATION (MAX. PERCENT)		2%		
VERTICAL CLEARANCE (FT)		10'		
SUPERELEVATION RUNOFF (@ MAX. E) (%)				
RUN-OUT LENGTH & TAPER RATE				

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**JAN 14 2008**  
**RECEIVED**

## Project Sketch Area

### **PROBLEM IDENTIFICATION:**

The existing pedestrian bridge was constructed in the 1970's with repairs and utility lines added in the 1980's. The bridge is beginning to show its age and the City is interested in replacing the bridge with a more permanent structure. The bridge carries a waterline that can change direction of flow as necessary. Also under the bridge is a pressure sanitary sewer line that transports sewage to the City's treatment lagoons located on the north side of the Yamhill River. The City has concerns that in a major flood or seismic event, the structure may sustain damage that would result in failure of the bridge and rupture of the water and sewer lines.

### **PROPOSED ALTERNATIVES (SCOPE):**

Construct a new concrete or steel bridge that will provide a minimum of 75 years of service for the City of Dayton for the waterline, sanitary sewer line expansion, and provide safe pedestrian and bicycle crossing for residents living on the north side of the bridge that need city services and for residents wanting to access Alden Park for recreation.

- CHECK PROJECT LIMITS (PRIOR PROJECT LIMITS, MISSED SECTIONS, APPROPRIATE START & END, SAFETY, FUNDING LIMITS):  
The proposed project will begin near the intersection of Ferry Street, First Street, and Water Street and extend  $\pm 600$  feet in a northerly direction across the Yamhill River and its floodplain to a landing within City property near the sewage treatment lagoons and Alden Park.
- ACCIDENT LOCATIONS (ACCIDENT PROBLEMS, SEE TRAFFIC ACCIDENT REPORTS, SIGHT DISTANCE):  
There is damage to the timber end rails as the result of a car attempting to drive out on the bridge.
- TYPICAL SECTION, DESIGN SPEED & PAVEMENT NEEDS (LANE WIDTH VS. DESIGN STANDARDS, WIDENING / LEVELING / SUBGRADE REPAIR / PAVEMENT DESIGN) SEE TABLE ON FIRST PAGE FOR ADDITIONAL INFORMATION:  
The proposed typical section for the bridge is a 12-14 foot wide bridge with a paved sidewalk or pedestrian path. The proposed width is wider than was discussed during the site visit. The AASHTO bicycle book states that shared use facilities should be 10 feet wide (page 35). It goes on to state that structures should be the width of the approach path plus 2 feet of clearance (shy distance) on each side (page 55). So, the "correct, standard" width for the bridge should be 14 feet. It is noted that the bridge is referred to as a pedestrian bridge. However, it will function as a shared use facility. The additional width will also assist with maintenance vehicle access.
- SHOULDERS / DITCHES (ADEQUATE WIDTH / SLOPES / SHOULDER ROCK / DITCH WORK):  
Not applicable
- DRAINAGE NEEDS (FISH CULVERTS, DAMAGED OR PLUGGED CULVERTS, EXTENSIONS, OFFSITE DRAINAGE, FLOODING PROBLEMS, CATCH BASINS, DITCHES):  
Stormwater runoff will need to be carried to the ends of the bridge and drained into the storm sewer system or some kind of vegetated ditch. The existing slopes appear to provide sufficient room to allow the runoff to pass through the grasses before entering the river.
- ROAD APPROACHES / ACCESSES (PAVE OR GRAVEL / CLOSURE? / SIGHT DISTANCE PROBLEMS?):  
Grading and paving of existing roadways and pedestrian path is recommended at each end of the bridge.
- DESIGN EXCEPTIONS AND CONCURRENCES (VERTICAL/HORIZONTAL CLEARANCES, ALIGNMENTS, BRIDGE WIDTHS & RAIL, SHOULDER & LANE WIDTHS, SIDE SLOPES, CLEAR ZONE, ETC.):  
There are no design exceptions anticipated for the project.

- SPECIAL DESIGN FEATURES TO BE ADDRESSED (EXISTING SLOPES VS. DESIGN STANDARDS – HORIZONTAL & VERTICAL ALIGNMENT VS. DESIGN STANDARDS; BOAT RAMPS IN VICINITY OF BRIDGE [OREGON MARINE BOARD CONTACT]):  
The project will need to work around the sanitary sewer pump station located at the south end of the bridge. Accommodations will be required to get the sanitary line across the bridge and into the lagoons. The installation of removable bollards to restrict vehicular access is recommended for the project.
- BRIDGE/RETAINING WALLS/STRUCTURE NEEDS (NUMBER OF SPANS PROPOSED, BRIDGE RAILING, END TREATMENTS):  
The existing bridge is a 540' long x 9' wide timber structure with steel rods functioning as suspension members. There are several options to be considered to meet the needs of City services and the residents in the community. The approach at the south end of the bridge is adjacent to the local city street and will likely require some type of retaining wall to maintain access on the street.  
  
For purposes of the scoping notes, the proposed bridge will is  $\pm 550$  feet long and 10 feet wide.
- BRIDGE APPROACH NEEDS (IMPACT PANELS, EXPANSION JOINTS):  
The new bridge will likely need expansion joints at each end.
- GUARDRAIL NEEDS (REPAIR / REPLACE / EXTEND / ADD / DELETE / APPROPRIATE LENGTH / END TYPE):  
Guardrail will not be needed on the project. However, pedestrian railing will be required for the approach embankment to the bridge.
- TRAFFIC CONTROL (DETOUR / STAGE CONSTRUCTION / TRAFFIC, ROAD CLOSURE, TEMPORARY BRIDGE):  
Minimal traffic control signing will be required for the project to notify the public of the work zone.
- CONSTRUCTION ACCESS / STAGING AREA LOCATION / CONSTRUCTABILITY CONSIDERATIONS:  
Access to the site will need to come from Ferry Street on the south end and through the sewage treatment plant property on the north end.
- FOUNDATION / GEOTECHNICAL / GEOLOGY CONSIDERATIONS / PH & RESISTIVITY (DRILLING NEEDED? / SURCHARGE? / OTHER?):  
Geotechnical exploration holes will be required for the new bridge. Depending on span length and number of piers, one hole per pier location is typically required. For purposes of these scoping notes, 4-5 holes are recommended for this project.
- HYDRAULICS CONSIDERATIONS (SCOUR / EROSION / RIPRAP / FEMA?):  
The new bridge piers will be located within the 100-yr floodplain.
- SIGNING REQUIREMENTS / PAVEMENT STRIPING / OTHER PAVEMENT MARKINGS (REPLACE OR REINSTALL / SIGNING PLANS? / SHOULDER DELINEATORS? / STRIPING PLANS? [DURABLE STRIPE PRODUCT?]):  
There are no existing signs present. This is an issue that may require input during the design phase.
- ADA NEEDS (RAMPS, DRIVEWAYS, CURBS, SIDEWALKS, PEDESTRIAN RAILING):  
The new bridge will need to conform applicable ADA requirements for vertical alignment and railing height. The standards for city street standards vs. recreational paths have slightly different requirements which will need to be determined prior to the start of design.
- MAILBOX NEEDS (REPLACE, MOVE OR COMBINE MAILBOXES):  
None identified within the vicinity of the project.

- MISCELLANEOUS ITEMS (FENCING / GATES / BOLLARDS / LANDSCAPING / ETC.):

It is recommended that removal bollards be placed near the approaches to the bridge to prevent unauthorized vehicles from accessing the bridge.

- UTILITY CONFLICTS (UNDERGROUND AND OVERHEAD CONFLICTS):

**Overhead** – There are power lines located on the easterly side of the existing r/w that may require relocation.

**Underground** – The existing bridge carries the City's pressure sanitary sewer trunk line to the treatment plant. There is also a waterline on the bridge that flows in either direction, as the City needs. There is a Verizon phone line hanging on the bridge that will require relocation.

Relocation of these facilities will need to take place after a new bridge has been constructed.

- ILLUMINATION / TRAFFIC SIGNALS (HISTORIC OR ORNAMENTAL STREET LIGHTING; PERMANENT OR TEMP SIGNALS):

There is no street lighting around the existing bridge. The City may want to consider some kind of illumination on the new bridge.

- SURVEYING NEEDS:

Right of way (r/w) retracement to determine actual location, hydraulic cross sections, and complete topographic survey of all natural and man-made features (e.g.: trees, terrain, utilities, building corners, fences, drainage features, street intersections, etc.)

- RIGHT-OF-WAY NEEDS:

The dedicated r/w was unknown at the time of site visit. The City believes that there is sufficient r/w to construct a new bridge. Temporary construction easements may be required for access during construction.

- How will additional R/W be paid for, if required? None anticipated  
(If federal funds are available, need a letter from Local Agency requesting programming with an estimating cost.)

- Who will prepare R/W Descriptions & Maps? If necessary, by consultant

- Who will perform R/W Appraisals & Negotiations work? By consultant

- ENVIRONMENTAL ISSUES: (LOOK AT STAGING AREAS & CONSTRUCTION ACCESS FOR ENVIRONMENTAL IMPACTS)

- HAZMAT:

The existing timber structure utilizes treated timber materials. The City sewer treatment plant is located on the northern end of the proposed project and there is a pump station on the south end of the project. A level 1 environmental site assessment needs to be performed for the project.

- HISTORICAL (BRIDGES, STRUCTURES, BUILDINGS, ETC.) [SECTION 106]:

There are no apparent historic buildings near the proposed bridge site. However, a historian needs to walk the adjacent area and make a determination.

- ARCHAEOLOGICAL SITES (KNOWN OR POSSIBLE SITES) [SECTION 106]:

A phase 1 archaeological survey needs to be performed around the area of impact for a new bridge siting.

- WETLANDS (KNOWN OR POSSIBLE WETLANDS / MITIGATION SITES):

It appears that wetlands may be limited to the bed and banks of the river. However, a wetland determination/delineation needs to be prepared for the project.

- SPECIAL EROSION / RIPARIAN NEEDS (RIPRAP / SEEDING AND MULCHING / TREE PLANTINGS / ETC.):

There are no apparent erosion or riparian needs for the project. The construction of a new pedestrian bridge will likely require the removal of some trees. It is recommended that any tree removed be replaced with native species to maintain the riparian needs of the river.

■ THREATENED & ENDANGERED SPECIES (FISH / WILDLIFE ANIMAL & PLANT ISSUES REQUIRING BA/BO):

A rare plant survey will be required for the project. A data search for T & E species for the nearby Yamhill River bridge in Lafayette identified the following species: Streaked Horned Lark, Chinook salmon, Steelhead, Oregon Giant Earthworm, and Thin-leaved Peavine. There is the possibility that fish and wildlife biological assessments may be required for the project in order to obtain a removal-fill permit from the Corps of Engineers.

■ REQUIRED LAND USE ACTIONS (CONDITIONAL USES FOR EFU, FARM/FOREST, INDUSTRIAL, ETC.):

No conditional use permits are anticipated at this time. The City owns all of the current r/w required for the project.

■ WATER QUALITY ISSUES AND/OR CONCERNS:

Runoff from the bridge will need to be directed into vegetated swales/ditches for passive treatment.

■ 4(f) – (PARK LANDS, RECREATION AREAS, WILDLIFE REFUGES, SCHOOL GROUNDS, ETC.):

There is a small park located at the northern end of the bridge that the City would like to develop for community use. It is likely that the project will require programmatic 4(f) documentation.

■ 6(f) – (LAND & WATER CONSERVATION FUNDS USED TO ACQUIRE PARKS, ETC?):

It is unknown if the City has received any 6(f) funds

■ NOISE:

The City likely has a noise ordinance. A noise variance may be required for construction.

■ IN-WATER WORK PERIOD (TRIBUTARY TO WHAT BODY OF WATER OR DRAINAGE OUTFALL?):

The in-water work period for the Yamhill River is July 1 – October 15. New structure and bridge removal will determine if there is any need for in-water work on this project.

■ NON-LISTED WILDLIFE ISSUES (MIGRATORY BIRD TREATY ACT, WILDLIFE PASSAGE, ETC.):

To comply with the Migratory Bird Treaty Act requirements of nesting birds, any tree removal will need to take place between the time the fledglings have left the nest and the start of the nesting season the following year. The time to complete tree removal is generally considered to be prior to February 28.

■ OTHER ENVIRONMENTAL ISSUES:

Nothing identified

● FEDERAL AGENCY COORDINATION (USFS, BLM, BIA, ETC.) (EASEMENTS AND/OR PERMITS):

There is no land owned by federal agencies near the project. Therefore, no additional coordination will be required.

● PERMITS (SECTION 404 – [REMOVAL-FILL FROM CORPS OF ENGINEERS & DSL], SECTION 10 [FROM CORPS OF ENGINEERS OR COAST GUARD], FLOODPLAIN, RAILROAD CROSSING ORDER, OTHER FEDERAL, STATE OR LOCAL PERMITS):

The project will likely require a COE/DSL Removal-Fill permit because the interior piers will be located within the floodplain of the Yamhill River. The project will also require a county floodplain permit with a no-rise certification for work within the 100-yr floodplain.

● POLITICAL OR CONTROVERSIAL ISSUES (THAT COULD DELAY PROJECT, CONSTRUCTION TIMING, RAILROAD CROSSINGS, APPROVED / PLANNED DEVELOPMENT):

There is concern with some in the City that the existing bridge is "plenty good enough" while others recognize the need to plan for the future.

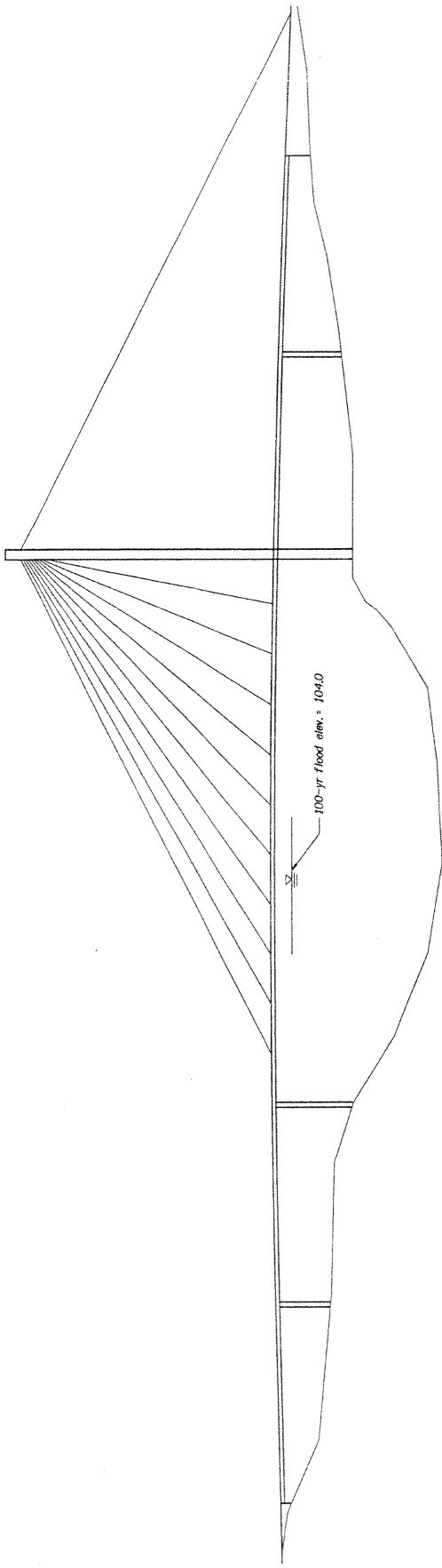
- OTHER:

The City has plans to upgrade sanitary pump station located at the south end of the bridge and bring it up to current standards. The design of a new bridge will need to accommodate the pump station location. Therefore, the City will need to provide "as-built" plans to the design team.

ATTENDEES:

LOCAL AGENCY: (City of Dayton) Kurt Riemer

CONSULTANTS: (OBEC) Kevin Boyle, Eric Bonn



**ALTERNATE 1A - CABLE STAY**

1'-0"

WESTECH  
JAN 14 2008  
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**FORER CONSULTING ENGINEERS**  
 2074 MARSHALL STREET, SUITE 100  
 SALEM, OREGON 97302-1285  
 PHONE: 503.738.4400 FAX: 503.738.4401  
 WWW.FORER-ENG.COM

PROJECT: DAYTON PEDESTAL BRIDGE  
 DATE: 10/10/07  
 DRAWN: J. W. WILSON  
 CHECKED: J. W. WILSON

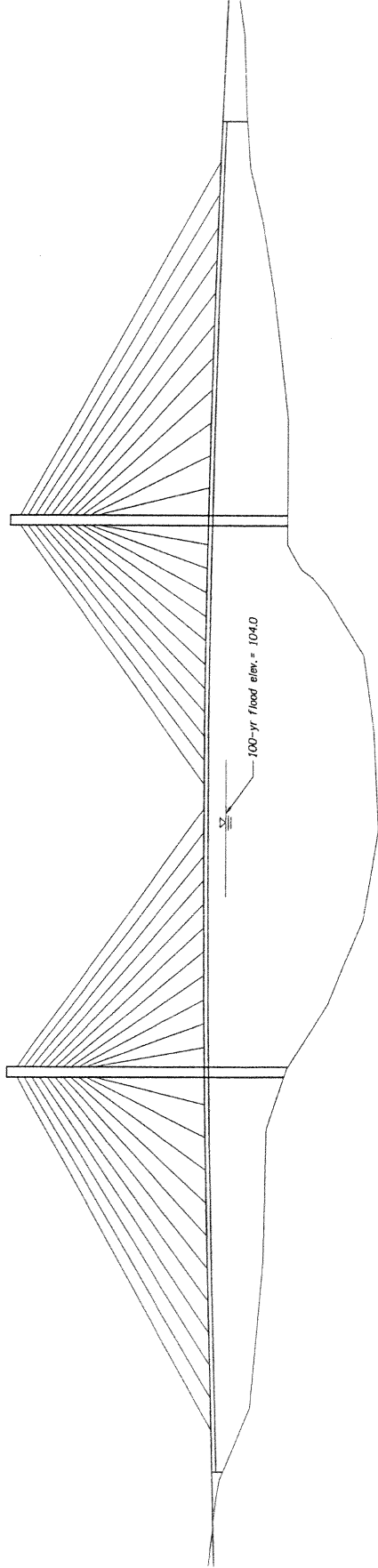
DAYTON PEDESTAL BRIDGE  
 DAYTON, OREGON

YAMHILL COUNTY  
 OREGON  
**BRIDGE REPLACEMENT ALTERNATIVES  
 ALTERNATE 1A**


DESIGNED: ERIC E. WILSON, P.E. PROJ. NO. 299-5 SHEET 1 OF 5  
 DRAWN: JWS/JDC CHK'D: DATE: FILE NO. DATE: DIST.:

REGISTERED PROFESSIONAL ENGINEER  
 ERIC E. WILSON  
 16,586  
 JULY 20, 1993  
 OREGON  
 EXPIRES: 12/31/

REV.	DESCRIPTION	BY	DATE



ALTERNATE 1B - CABLE STAY


**CONSULTING ENGINEERS**  
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DAYTON PEDESTRIAN BRIDGE  
 DAYTON  
 YAMHILL COUNTY  
 OREGON

BRIDGE REPLACEMENT ALTERNATIVES  
 ALTERNATE 1B  
 ERIC E. BRINN, P.E.  
 DESIGNER

PROJECT NO. 23P-5 SHIT. 2 OF 5  
 DATE: OCT. 07

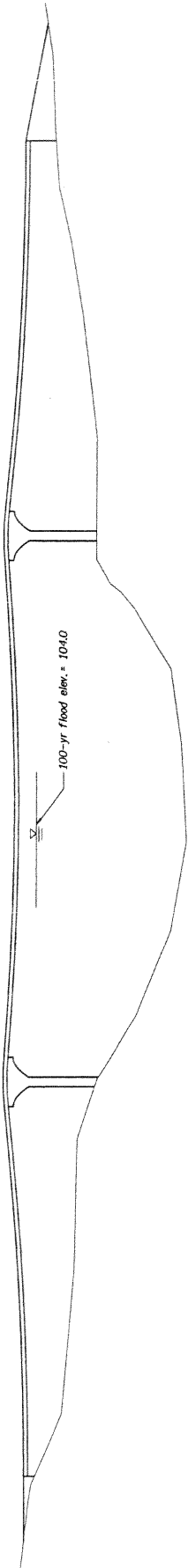
REV.	DESCRIPTION	BY	DATE

REGISTERED PROFESSIONAL ENGINEER  
 ERIC E. BRINN  
 10,648  
 OREGON  
 JULY 20 1989


PRIMARY DRAWING

EXPIRES: 12/31/

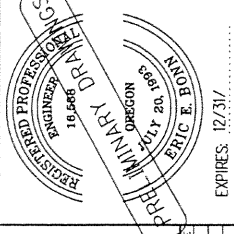




**ALTERNATE 2 - STRESS RIBBON**  
 1"=40'

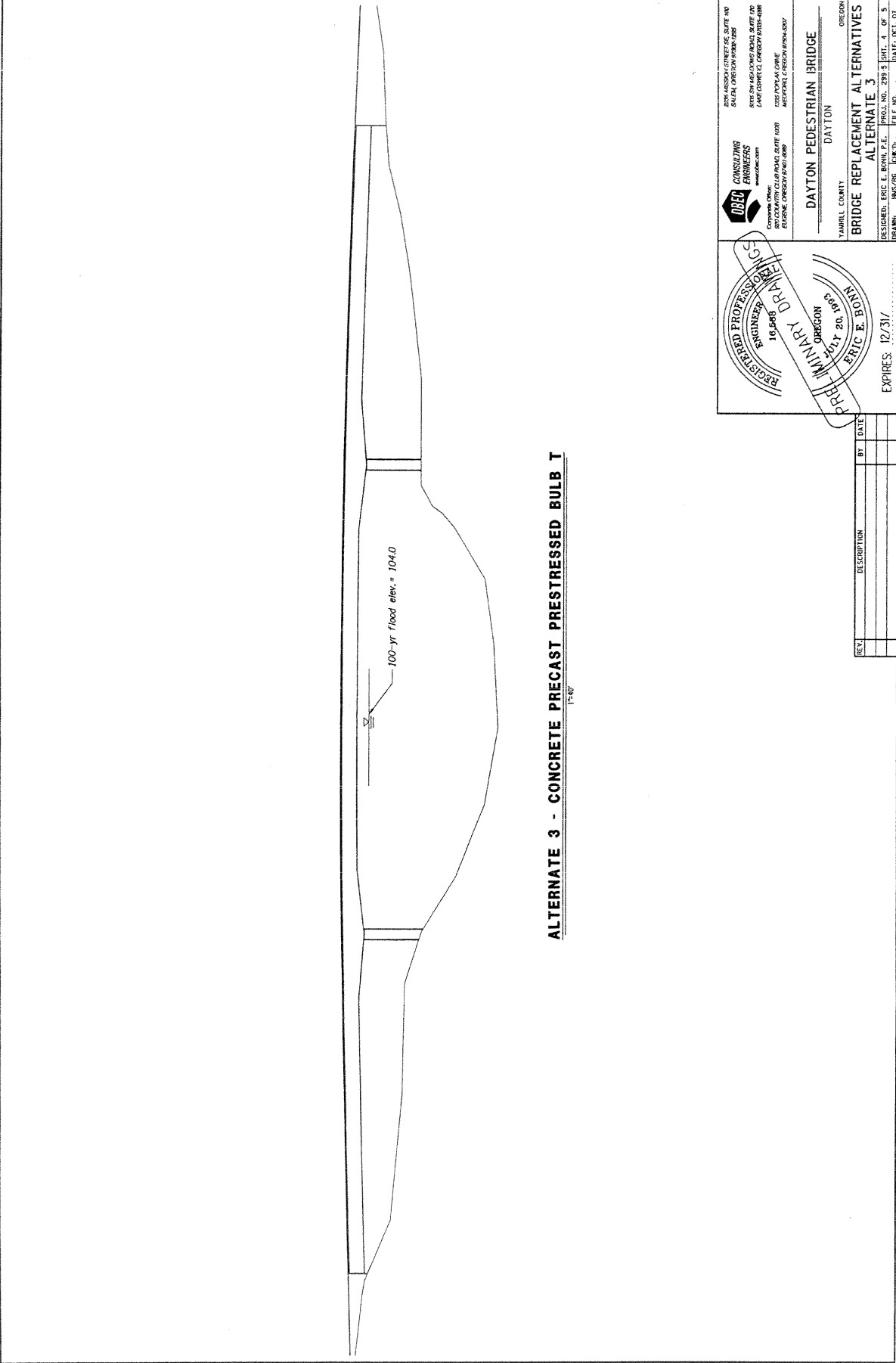
  
**OBEA CONSULTING ENGINEERS**  
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 CLATSOP COUNTY, OREGON 97107  
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DAYTON PEDESTRIAN BRIDGE  
 DAYTON  
 YAMHILL COUNTY  
 OREGON  
 BRIDGE REPLACEMENT ALTERNATIVES  
 ALTERNATE 2



REV.	DESCRIPTION	BY	DATE

DESIGNED: ERIC E. BERNER, P.E.      PROJ. NO. 298-5      SHEET 3 OF 5  
 DRAWN:      CHECKED:      DATE PLOTTED:



**ALTERNATE 3 - CONCRETE PRECAST PRESTRESSED BULB T**

1"=60'

**OBECO CONSULTING ENGINEERS**  
 2201 ANDERSON STREET, SUITE 100  
 SUDBURY, ONTARIO N0B 1B5  
 416-593-4600 FAX: 416-593-4601  
 1000 WEST 10TH AVENUE, SUITE 100  
 LAKE OSWEGO, OREGON 97035-4088  
 503-266-1400 FAX: 503-266-1401  
 1230 POPP LAKE DRIVE  
 ASTORIA, OREGON 97103-0007

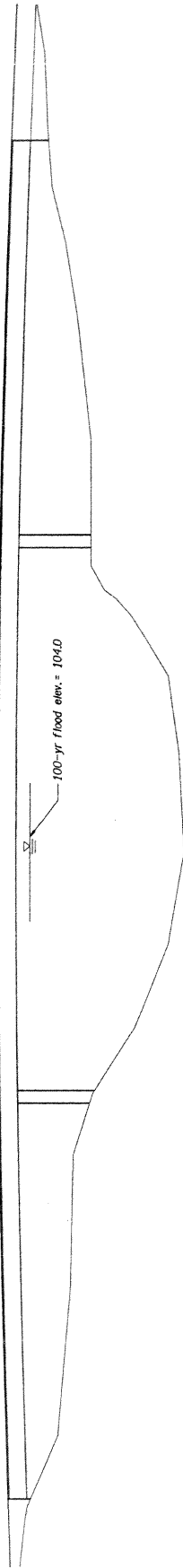
**DAYTON PEDESTRIAN BRIDGE**  
 YAMHILL COUNTY DAYTON OREGON

**BRIDGE REPLACEMENT ALTERNATIVES  
 ALTERNATE 3**

DESIGNED: ERIC E. BONNY, P.E. PROJ. NO. 299-5 SHEET 4 OF 5  
 DRAWN: JMS/MSD CHECKED: DATE: 12/1/07

**REGISTERED PROFESSIONAL ENGINEER**  
 ERIC E. BONNY  
 10,498  
 JULY 20, 1993  
 OREGON  
 EXPIRES: 12/31/

REV.	DESCRIPTION	BY	DATE



**ALTERNATE 4 - STEEL PLATE GIRDERS**

1"=40'

**OBEC CONSULTING ENGINEERS**  
www.obec.com

Corporate Office: 100 South Cliff Street, Suite 100  
Brazzaville, Oregon 97511-1000

2014 WASHINGTON STREET, SUITE 100  
SALINA, OREGON 97138-1000

2015 SW WASHINGTON ROAD, SUITE 100  
LAKE OSWEGO, OREGON 97036-1000

100 SOUTH CLIFF STREET, SUITE 100  
KEYPORT, OREGON 97143-1000

**DAYTON PEDESTRIAN BRIDGE**  
DAYTON

JAMHILL COUNTY  
OREGON

**BRIDGE REPLACEMENT ALTERNATIVES  
ALTERNATE 4**

DESIGNED: ERIC E. BONK, P.E.    PROJ. NO. 2395-1    SHEET 5 OF 5  
DRAWN: JIMMIE G. LUCK, C.E.    FILE NO.    DATE: 03/11/07

REGISTERED PROFESSIONAL ENGINEER  
16,588  
JANUARY 2011 TO 2014  
ERIC E. BONK  
EXPIRES: 12/31/

REV.	DESCRIPTION	BY	DATE



# PROJECT PROSPECTUS

Part 1 — Project Request (Page 1 of 2)

						Key Number:		Jurisdiction:		
Section: Dayton Pedestrian Bridge (Concrete/Steel Girder Option)						Region: 2		Area: Mid-Willamette Valley		District: 3
State Highway No.:		Highway Name:				Mile Point From: To:		Length: (MI)		
<input type="checkbox"/> Urban <input checked="" type="checkbox"/> Rural	City: Dayton	MPO:	<input type="checkbox"/> Within UGB <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	County: Yamhill		Road/Street Name: Ferry Street				
Route No.:		NHS <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	HPMS:	FC:	Applicant (If other than State): City of Dayton					
US Congressional District:			State Senate District:			State Representative District:				
Cost Estimates ( x \$ 1,000)			Project Components				Right Of Way			
Preliminary Engineering		\$ 390	Grading		X	Files		(#)	2	
Right Of Way		\$ 50	Paving		X	Acres		(#)	<1	
Utility Reimbursement				Structures		X	Relocations		(#)	0
				Signing			Acquisitions		(#)	0
Roadway		\$ 314	Signals			Easements		(#)	2	
Structures		\$ 2,004	Illumination		X	Work By: State / Consultant / Applicant				
Signals				Detour			Preliminary Engineering		(S,C,A)	C
Illumination		\$ 100				Construction Engineering		(S,C,A)	C	
Temp. Protection		\$ 22				Right of Way Descriptions		(S,C,A)	C	
Const. Contingencies		\$ 610				Right Of Way Acquisitions		(S,C,A)	C	
Const. Engineering		\$ 366	Project Categories				Constructed By			
our				Environmental Class (1, 2, 3, PCE)		2	<input checked="" type="checkbox"/> Contract	<input type="checkbox"/> County Force		
				Design Category (1-7)		7	<input type="checkbox"/> State Force	<input type="checkbox"/> Other		
Total CE and Construction:		\$ 3,416	Work Type Code (1-13)		5	<input type="checkbox"/> City Force				
Total Estimate:		\$ 3,856	Primary STIP Work Type:							
Recommended Let Date By Federal Fiscal Year (Quarter-Year):										
PE Fund:			R/W Fund:			UR Fund:			CE-CN Fund:	
PE EA:			R/W EA:			UR EA:			CE-CN EA:	
Item	Existing	Proposed	Define The Problem:							
Travel Lanes (#)	1	1	The existing timber pedestrian bridge was constructed in 1970 is reaching the end of its design life. The bridge provides access to residents living on one side of the Yamhill River to City services. The bridge also carries a water and sanitary sewer lines across the river to the treatment plant.							
Structures (#)	1	1								
Signals (#)	0	0								
Bike Way (#)	1	1								
Average Daily Traffic	N/A	N/A								
Year of ADT	N/A	N/A								
Throughway Y/N	N	N								
			Describe Proposed Solution: - Attach Sketch Map							
			Construct a new concrete bridge across the river that will serve the City of Dayton to a minimum of 75 years.							
Prepared By:			Date:		OTC Approval Date:		Program Year:		Funding Amount:	

WESTLOCH  
JAN 14 2009  
RECEIVED



# PROJECT PROSPECTUS

Part 1 Project Request (Page 2 of 2)

Key Number:	Jurisdiction:
0	0

Section:	Dayton Pedestrian Bridge (Concrete/Steel Girder Option)	Region:	2	Area:	Mid-Willamette Valley	District:	3
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## Project Justification

*(This area is currently blank for project justification.)*

## Additional Information For Project Requested By Local Jurisdictions

Responsible Local Office To Be Contacted For The Following Activities:

- |  |                       |          |                     |         |
|--|-----------------------|----------|---------------------|---------|
| 1. Public Hearing /<br>Citizen Involvement | <u>CITY OF DAYTON</u> | (Office) | <u>503-864-2221</u> | (Phone) |
| 2. Environmental / Planning                | <u>CITY OF DAYTON</u> | (Office) | <u>503-864-2221</u> | (Phone) |
| 3. Pre-Engineering                         | <u>CITY OF DAYTON</u> | (Office) | <u>503-864-2221</u> | (Phone) |

This Official Request is From:

City of: DAYTON and/or \_\_\_\_\_ County

By: \_\_\_\_\_ By: \_\_\_\_\_

By: \_\_\_\_\_ By: \_\_\_\_\_

By: \_\_\_\_\_

Applicable Intergovernmental Agreements:

IGA Number:	Jurisdiction Name:	Agreement Date:
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

## Administrative Recommendation

*(This area is currently blank for administrative recommendation.)*



# PROJECT PROSPECTUS

Part 2 Project Details (Page 1 of 2)

Key Number:	Jurisdiction:
0	0

Location:	Region:	Area:	District:
Dayton Pedestrian Bridge (Concrete/Steel Girder Option)	2	Mid-Willamette Valley	3

Enter: S-State C - Consultant A - Applicant E - Existing N - No

Activity Responsibilities					Permits and Clearances				
Surplus Property	N	Signs (Permanent)	C	Storm Sewer	C	Airport Clearance	N	Wetlands	C
Citizen's Advisory	N	Striping (Permanent)	N	Landscaping	C	Land Use Actions/Permits	C	Endangered Species	C
Photogrammetry	N	Project Signing	C	Irrigation	N	Flood Plain	C	Hazmat	C
Reconnaissance Survey	C	Detour	N	Borrow Source	N	Building	C	Historic Resource	C
Public Hearing	N	Illumination	C	Material Source	N	Corps Engrs/DSL Remove/Fill	C	DEQ Indirect Source Air	N
Field Survey	C	RR Crossing	N	Disposal Source	N	Coast Guard	N	DEQ Non-Point Source Water	C
Vicinity Map	C	RR Protection	N	Local Agreement	S	Geology and Minerals	N	Archaeology Survey	C
Soils/Geotech Investigation	C	RR Separation	N	Sensitive Land	N	Signals Warrants	N	Noise Study	N
Hydraulic Study	C	RR Encroachment	N	Value Engineering	N	Utilities (see below)	Y	Section4(F)	C
Utility Coordination	C	Utility Verify Vert Horiz (VVH)	C						

Right-Of-Way					List of Utilities:		
Right-Of-Way Liaison	Access Control (Y/N)		Curr	Propsd	Power (PGE) Phone (Verizon) Water (City) Sanitary Sewer (City)		
			N	N			
Acquisitions		Relocations					
Simple No.	Complex No.	Business No.	Residential No.				
N	N	N	2		Design Standards	Design Speeds	Exception (Y/N)
					AASHTO	20 MPH	N

Suggested Base Design					
Item	New Work Surface (in)	Over Existing Surface (in)	Item	New Work Surface (in)	Over Existing Surface (in)
Aggregate Base	8"				
AC Pavement	3"				

Structures									
Structures	Length	Width	Height	Cost	Structure	Length	Width	Height	Cost
Ped/Bike Br	550' long	14' wide							

Approved Area Manager	Date



# PROJECT PROSPECTUS

## Part 2 — Project Details (Page 2 of 2)

<b>Key No.:</b> 0	<b>Jurisdiction:</b> 0
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<b>SECTION:</b> Dayton Pedestrian Bridge (Concrete/Steel Girder Option)	<b>Region:</b> 2	<b>Area:</b> Mid-Willamette Valley	<b>District:</b> 3
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### Segment of Alternative 1:

Comments on Segment or Alternative:

Existing (below)      Units In: Feet      Comment on Existing: Timber Pedestrian Bridge only

Bike Path	Side-Walk	Curb Type	Parking	Shoulder/Bikelane	Lane 3	Lane 2	Lane 1	Median	Lane 1	Lane 2	Lane 3	Shoulder/Bikelane	Parking	Curb Type	Side-Walk	Bike Path
				9'												
				14'												

Proposed (above)      Units In: Feet      Comment on Proposed: Concrete Ped/Bike Bridge

### Segment or Alternative 2:

Comments on Segment or Alternative:

Existing (below)      Units In: Feet      Comment on Existing: Testing second alternative

Bike Path	Side-Walk	Curb Type	Parking	Shoulder/Bikelane	Lane 3	Lane 2	Lane 1	Median	Lane 1	Lane 2	Lane 3	Shoulder/Bikelane	Parking	Curb Type	Side-Walk	Bike Path

Proposed (above)      Units In: Feet      Comment on Proposed:

### Segment or Alternative 3:

Comments on Segment or Alternative:

Existing (below)      Units In:      Comment on Existing:

Bike Path	Side-Walk	Curb Type	Parking	Shoulder/Bikelane	Lane 3	Lane 2	Lane 1	Median	Lane 1	Lane 2	Lane 3	Shoulder/Bikelane	Parking	Curb Type	Side-Walk	Bike Path

Proposed (above)      Units In:      Comment on Proposed:

### Segment or Alternative 4:

Comments on Segment or Alternative:

Existing (below)      Units In:      Comment on Existing:

Bike Path	Side-Walk	Curb Type	Parking	Shoulder/Bikelane	Lane 3	Lane 2	Lane 1	Median	Lane 1	Lane 2	Lane 3	Shoulder/BIKELANE	Parking	Curb Type	Side-Walk	Bike Path

Proposed (Above)      Units In:      Comment on Proposed:

### Bridge Prospectus Cost Estimate

Applicant:		City of Dayton		NBIS Bridge No.	
Project / Section		DAYTON PEDESTRIAN BR (Concrete/Steel Girder)		Region:	Area:
				2	Mid-Willamette Valley
				District: 3	
New Bridge / Roadway Configuration:			Existing Bridge:		
Left Side Rail	2.5	feet	Bridge Length	540	feet
Left Sidewalk		feet	Bridge Width	9	feet
Shoulder		feet	Area	4860	square feet
Lane 2		feet			
Lane 1	5	feet	New AC Top Width	14	feet
---CL---		feet	New AC Depth	3	inches
Lane 1	5	feet	New Base Depth	8	inches
Lane 2	0	feet	Project Length	900	feet
Shoulder	0	feet	Net Road Work Length	350	feet
Right Sidewalk	0	feet	X-S Side Slope	1.5	
Right Side Rail	2.5	feet	AC Avg Width	14.375	feet
			Base Avg Width	15.75	feet
Bridge Length	550	feet	Asphalt Density	150	lbs/cu ft
Bridge Width	15	feet	Base Density	142	lbs/cu ft
New Area	8250	square feet	New AC Received	91.7	tons
			New Base Required	260.9	tons
COST ESTIMATE:		Quantity	Unit	Price per unit	Cost ( \$x1000s)
Right-of-Way	1	Acre		\$ 100,000	\$50
==Roadway==					
Mobilization	1	lump sum		\$ 221,774	\$222
Temporary Protection	1	lump sum		\$ 21,958	\$22
Clear & Grub	1	lump sum		\$ 21,740	\$22
Erosion Control	1	lump sum		\$ 21,525	\$22
Riparian Mitigation	1	lump sum		\$ 25,000	\$25
Temp Conc Barrier		feet		\$ 25	\$0
General Excavation	300	cubic yards		\$ 20	\$6
Embankment in Place	300	cubic yards		\$ 15	\$5
				\$ 120	\$0
Temp Impact Atten.		each		\$ 2,000	\$0
Aggregate Base	261	tons		\$ 20	\$5
Asphalt Concrete	92	tons		\$ 85	\$8
Riprap		cubic yards		\$ 75	\$0
Guardrail, Type 2A		feet		\$ 15	\$0
Guardrail, Type 3		feet		\$ 45	\$0
Guardrail Trans		each		\$ 2,000	\$0
Flared Terminals		each		\$ 2,100	\$0
Subtotal Roadway					\$336
Structures	8,250	square feet		\$ 200	\$1,650
Bridge End Panels		square yard		\$ 275	\$0
Extra/Drilled Shafts (5%)	1	lump sum		\$ 82,500	\$83
Temp Detour (Const & Remove)		lump sum		\$ -	\$0
Work Bridge (25x4100)	2,500	square feet		\$ 60	\$150
Retaining Walls		square feet		\$ 75	\$0
Illumination	1	lump sum		\$ 100,000	\$100
Remove Existing Bridge	4,860	square feet		\$ 25.00	\$122
		lump sum			\$0
		lump sum			\$0
Subtotal Structures					\$2,104
Subtotal Construction					\$2,440
==Engineering==					
Construction Engineering	15	percent of construction			\$366
Contingency	25	percent of construction			\$610
Subtotal Const. Eng.					\$976
Preliminary Engineering					
Consultant	14	percent of construction			\$342
State	1	percent of construction			\$24
City	1	percent of construction			\$24
Subtotal PE					\$390
<b>Total Estimate</b>					<b>\$3,856</b>





# PROJECT PROSPECTUS

Part 1 — Project Request (Page 1 of 2)

Key Number: \_\_\_\_\_ Jurisdiction: \_\_\_\_\_

Section: **Dayton Pedestrian Bridge (Cable-Stayed Option)** Region: **2** Area: **Mid-Willamette Valley** District: **3**

State Highway No.: \_\_\_\_\_ Highway Name: \_\_\_\_\_ Mile Point From: \_\_\_\_\_ To: \_\_\_\_\_ Length: \_\_\_\_\_ (MI)

Urban  Rural City: **Dayton** MPO: \_\_\_\_\_ Within UGB  Yes  No County: **Yamhill** Road/Street Name: **Ferry Street**

Route No.: \_\_\_\_\_ NHS  YES  NO HPMS: \_\_\_\_\_ FC: \_\_\_\_\_ Applicant (If other than State): **City of Dayton**

US Congressional District: \_\_\_\_\_ State Senate District: \_\_\_\_\_ State Representative District: \_\_\_\_\_

Cost Estimates ( x \$ 1,000)		Project Components		Right Of Way	
Preliminary Engineering	\$ 704	Grading	X	Files (#)	2
Right Of Way	\$ 50	Paving	X	Acres (#)	<1
Utility Reimbursement		Structures	X	Relocations (#)	0
		Signing		Acquisitions (#)	0
Roadway	\$ 527	Signals		Easements (#)	2
Structures	\$ 3,737	Illumination	X	<b>Work By: State / Consultant / Applicant</b>	
Signals		Detour		Preliminary Engineering (S,C,A)	C
Illumination	\$ 100			Construction Engineering (S,C,A)	C
Temp. Protection	\$ 40			Right of Way Descriptions (S,C,A)	C
Const. Contingencies	\$ 1,101			Right Of Way Acquisitions (S,C,A)	C

Const. Engineering		Project Categories		Constructed By	
our	\$ 660	Environmental Class (1, 2, 3, PCE)	2	<input checked="" type="checkbox"/> Contract	<input type="checkbox"/> County Force
		Design Category (1-7)	7	<input type="checkbox"/> State Force	<input type="checkbox"/> Other
Total CE and Construction:	\$ 6,165	Work Type Code (1-13)	5	<input type="checkbox"/> City Force	
Total Estimate:	\$ 6,919	Primary STIP Work Type:			

Recommended Let Date By Federal Fiscal Year (Quarter-Year): \_\_\_\_\_

PE Fund: \_\_\_\_\_ R/W Fund: \_\_\_\_\_ UR Fund: \_\_\_\_\_ CE-CN Fund: \_\_\_\_\_  
 PE EA: \_\_\_\_\_ R/W EA: \_\_\_\_\_ UR EA: \_\_\_\_\_ CE-CN EA: \_\_\_\_\_

Item	Existing	Proposed	Define The Problem:
Travel Lanes (#)	1	1	The existing timber pedestrian bridge was constructed in 1970 is reaching the end of its design life. The bridge provides access to residents living on one side of the Yamhill River to City services. The bridge also carries a water and sanitary sewer lines across the river to the treatment plant.
Structures (#)	1	1	
Signals (#)	0	0	
Bike Way (#)	1	1	
Average Daily Traffic	N/A	N/A	
Year of ADT	N/A	N/A	
Throughway Y/N	N	N	

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Describe Proposed Solution: - Attach Sketch Map  
 Construct a new concrete bridge across the river that will serve the City of Dayton to a minimum of 75 years.

Prepared By: \_\_\_\_\_ Date: \_\_\_\_\_ OTC Approval Date: \_\_\_\_\_ Program Year: \_\_\_\_\_ Funding Amount: \_\_\_\_\_



# PROJECT PROSPECTUS

Part 1 Project Request (Page 2 of 2)

Key Number:	Jurisdiction:
0	0

Section:	Dayton Pedestrian Bridge (Cable-Stayed Option)	Region:	2	Area:	Mid-Willamette Valley	District:	3
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## Project Justification

*(This area is currently blank for project justification.)*

## Additional Information For Project Requested By Local Jurisdictions

Responsible Local Office To Be Contacted For The Following Activities:

1. Public Hearing / Citizen Involvement	CITY OF DAYTON	(Office)	503-864-2221	(Phone)
2. Environmental / Planning	CITY OF DAYTON	(Office)	503-864-2221	(Phone)
3. Pre-Engineering	CITY OF DAYTON	(Office)	503-864-2221	(Phone)

This Official Request is From:

City of: DAYTON and/or \_\_\_\_\_ County

By: \_\_\_\_\_ By: \_\_\_\_\_

By: \_\_\_\_\_ By: \_\_\_\_\_

By: \_\_\_\_\_

Applicable Intergovernmental Agreements:

IGA Number:	Jurisdiction Name:	Agreement Date:
_____	_____	_____
_____	_____	_____
_____	_____	_____

## Administrative Recommendation

*(This area is currently blank for administrative recommendation.)*



# PROJECT PROSPECTUS

Part 2 Project Details (Page 1 of 2)

Key Number:	Jurisdiction:
0	0

Location:	Region:	Area:	District:
Dayton Pedestrian Bridge (Cable-Stayed Option)	2	Mid-Willamette Valley	3

Enter: S-State C - Consultant A - Applicant E - Existing N - No

Activity Responsibilities					Permits and Clearances				
Surplus Property	N	Signs (Permanent)	C	Storm Sewer	C	Airport Clearance	N	Wetlands	C
Citizen's Advisory	N	Striping (Permanent)	N	Landscaping	C	Land Use Actions/Permits	C	Endangered Species	C
Photogrammetry	N	Project Signing	C	Irrigation	N	Flood Plain	C	Hazmat	C
Reconnaissance Survey	C	Detour	N	Borrow Source	N	Building	C	Historic Resource	C
Public Hearing	N	Illumination	C	Material Source	N	Corps Engrs/DSL Remove/Fill	C	DEQ Indirect Source Air	N
Field Survey	C	RR Crossing	N	Disposal Source	N	Coast Guard	N	DEQ Non-Point Source Water	C
Vicinity Map	C	RR Protection	N	Local Agreement	S	Geology and Minerals	N	Archaeology Survey	C
Soils/Geotech Investigation	C	RR Separation	N	Sensitive Land	N	Signals Warrants	N	Noise Study	N
Hydraulic Study	C	RR Encroachment	N	Value Engineering	N	Utilities (see below)	Y	Section4(F)	C
Utility Coordination	C	Utility Verify Vert Horiz (VVH)	C						

Right-Of-Way					List of Utilities:				
Right-Of-Way Liaison		Access Control (Y/N)		Curr	Propsd	Power (PGE)			
				N	N	Phone (Verizon)			
						Water (City)			
						Sanitary Sewer (City)			
Acquisitions		Relocations			Design Standards		Design Speeds		Exception (Y/N)
Simple No.	Complex No.	Business No.	Residential No.		AASHTO		20 MPH		N
N	N	N	2						

Suggested Base Design						
Item	New Work Surface (in)	Over Existing Surface (in)	Item	New Work Surface (in)	Over Existing Surface (in)	
Aggregate Base	8"					
AC Pavement	3"					

Structures									
Structures	Length	Width	Height	Cost	Structure	Length	Width	Height	Cost
Ped/Bike Br	550' long	14' wide							

Approved Area Manager	Date



# PROJECT PROSPECTUS

## Part 2 — Project Details (Page 2 of 2)

<b>Key No.:</b> 0	<b>Jurisdiction:</b> 0
<b>Region:</b> 2	<b>Area:</b> Mid-Willamette Valley
<b>District:</b> 3	

**ACTION:** Dayton Pedestrian Bridge (Cable-Stayed Option)

### Segment of Alternative 1:

Comments on Segment or Alternative:

**Existing (below)**      Units In: Feet      Comment on Existing: Timber Pedestrian Bridge only

Bike Path	Side-Walk	Curb Type	Parking	Shoulder/Bikelane	Lane 3	Lane 2	Lane 1	Median	Lane 1	Lane 2	Lane 3	Shoulder/Bikelane	Parking	Curb Type	Side-Walk	Bike Path
				9'												
				14'												

**Proposed (above)**      Units In: Feet      Comment on Proposed: Concrete Ped/Bike Bridge

### Segment or Alternative 2:

Comments on Segment or Alternative:

**Existing (below)**      Units In: Feet      Comment on Existing: Testing second alternative

Bike Path	Side-Walk	Curb Type	Parking	Shoulder/Bikelane	Lane 3	Lane 2	Lane 1	Median	Lane 1	Lane 2	Lane 3	Shoulder/Bikelane	Parking	Curb Type	Side-Walk	Bike Path

**Proposed (above)**      Units In: Feet      Comment on Proposed:

### Segment or Alternative 3:

Comments on Segment or Alternative:

**Existing (below)**      Units In:      Comment on Existing:

Bike Path	Side-Walk	Curb Type	Parking	Shoulder/Bikelane	Lane 3	Lane 2	Lane 1	Median	Lane 1	Lane 2	Lane 3	Shoulder/Bikelane	Parking	Curb Type	Side-Walk	Bike Path

**Proposed (above)**      Units In:      Comment on Proposed:

### Segment or Alternative 4:

Comments on Segment or Alternative:

**Existing (below)**      Units In:      Comment on Existing:

Bike Path	Side-Walk	Curb Type	Parking	Shoulder/Bikelane	Lane 3	Lane 2	Lane 1	Median	Lane 1	Lane 2	Lane 3	Shoulder/BIKELANE	Parking	Curb Type	Side-Walk	Bike Path

**Proposed (Above)**      Units In:      Comment on Proposed:

### Bridge Prospectus Cost Estimate

Applicant:		City of Dayton		NBIS Bridge No.	
Project / Section		DAYTON PEDESTRIAN BR (Cable Stayed)		Region:	Area:
				2	Mid-Willamette Valley
				District: 3	
New Bridge / Roadway Configuration:			Existing Bridge:		
Left Side Rail	2.5 feet	Bridge Length		540 feet	
Left Sidewalk	feet	Bridge Width		9 feet	
Shoulder	feet	Area		4860 square feet	
Lane 2	feet	New AC Top Width		14 feet	
Lane 1	5 feet	New AC Depth		3 inches	
---CL---	feet	New Base Depth		8 inches	
Lane 1	5 feet	Project Length		900 feet	
Lane 2	0 feet	Net Road Work Length		350 feet	
Shoulder	0 feet	X-S Side Slope		1.5	
Right Sidewalk	0 feet	AC Avg Width		14.375 feet	
Right Side Rail	2.5 feet	Base Avg Width		15.75 feet	
Bridge Length	550 feet	Asphalt Density		150 lbs/cu ft	
Bridge Width	15 feet	Base Density		142 lbs/cu ft	
New Area	8250 square feet	New AC Received		91.7 tons	
		New Base Required		260.9 tons	
COST ESTIMATE:		Quantity	Unit	Price per unit	Cost ( \$x1000s)
Right-of-Way	1 Acre			\$ 100,000	\$50
==Roadway==					
Mobilization	1	lump sum		\$ 400,274	\$400
Temporary Protection	1	lump sum		\$ 39,631	\$40
Clear & Grub	1	lump sum		\$ 39,239	\$39
Erosion Control	1	lump sum		\$ 38,850	\$39
Riparian Mitigation	1	lump sum		\$ 25,000	\$25
Temp Conc Barrier		feet		\$ 25	\$0
General Excavation	300	cubic yards		\$ 20	\$6
Embankment in Place	300	cubic yards		\$ 15	\$5
				\$ 120	\$0
Temp Impact Atten.		each		\$ 2,000	\$0
Aggregate Base	261	tons		\$ 20	\$5
Asphalt Concrete	92	tons		\$ 85	\$8
Riprap		cubic yards		\$ 75	\$0
Guardrail, Type 2A		feet		\$ 15	\$0
Guardrail, Type 3		feet		\$ 45	\$0
Guardrail Trans		each		\$ 2,000	\$0
Flared Terminals		each		\$ 2,100	\$0
Subtotal Roadway					\$567
Structures	8,250	square feet		\$ 400	\$3,300
Bridge End Panels		square yard		\$ 275	\$0
Extra/Drilled Shafts (5%)	1	lump sum		\$ 165,000	\$165
Temp Detour (Const & Remove)		lump sum		\$ -	\$0
Work Bridge (25x4100)	2,500	square feet		\$ 60	\$150
Retaining Walls		square feet		\$ 75	\$0
Illumination	1	lump sum		\$ 100,000	\$100
Remove Existing Bridge	4,860	square feet		\$ 25.00	\$122
		lump sum			\$0
		lump sum			\$0
Subtotal Structures					\$3,837
Subtotal Construction					\$4,403
==Engineering==					
Construction Engineering	15	percent of construction			\$660
Contingency	25	percent of construction			\$1,101
Subtotal Const. Eng.					\$1,761
Preliminary Engineering Consultant	14	percent of construction			\$616
State	1	percent of construction			\$44
City	1	percent of construction			\$44
Subtotal PE					\$704
<b>Total Estimate</b>					<b>\$6,919</b>