

# **ANNOTATED MINUTES**

*Thursday, August 18, 1994 - 9:30 AM*

*Multnomah County Courthouse, Room 602  
1021 SW Fourth, Portland*

## **REGULAR MEETING**

*Vice-Chair Tanya Collier convened the hearing at 9:30 a.m., with Commissioners Sharron Kelley, Gary Hansen and Dan Saltzman present, and Chair Beverly Stein excused.*

### **CONSENT CALENDAR**

**UPON MOTION OF COMMISSIONER KELLEY, SECONDED BY COMMISSIONER SALTZMAN, THE CONSENT CALENDAR (ITEM C-1) WAS UNANIMOUSLY APPROVED.**

### **NON-DEPARTMENTAL**

- C-1** *Ratification of an Intergovernmental Agreement, Contract #500095, between the State Forestry, the US Forest Service and Multnomah County to Allow County Employees to Participate in the Incident Command System (ICS) "Shadow Team" Program, Effective August 18, 1994 through August 18, 1995*

### **REGULAR AGENDA**

### **NON-DEPARTMENTAL**

- R-1** *PROCLAMATION in the Matter of Proclaiming August 20, 1994 as Homeless Animals Day*

**COMMISSIONER KELLEY MOVED AND COMMISSIONER HANSEN SECONDED, APPROVAL OF R-1. VICE-CHAIR COLLIER PRESENTED EXPLANATION AND PROCLAMATION WAS READ FOR THE RECORD. PROCLAMATION 94-150 WAS UNANIMOUSLY APPROVED.**

### **PUBLIC CONTRACT REVIEW BOARD**

*(Recess as the Board of County Commissioners and convene as the Public Contract Review Board)*

- R-2** *ORDER in the Matter of Exempting from Public Bidding, the Purchase of Recombivax Hepatitis B Vaccine*

**COMMISSIONER KELLEY MOVED AND COMMISSIONER SALTZMAN SECONDED, APPROVAL OF R-2. PEGGY HILLMAN PRESENTED EXPLANATION AND RESPONSE TO BOARD QUESTIONS. ORDER 94-151 WAS UNANIMOUSLY APPROVED.**

*(Recess as the Public Contract Review Board and reconvene as the Board of County Commissioners)*

**DEPARTMENT OF ENVIRONMENTAL SERVICES**

**R-3 ORDER in the Matter of the Sale of Real Property on the County Farm at NE 223rd Avenue and Columbia River Highway in Troutdale, Oregon**

**COMMISSIONER KELLEY MOVED AND COMMISSIONER HANSEN SECONDED, APPROVAL OF R-3. BOB OBERST PRESENTED EXPLANATION AND RESPONSE TO BOARD QUESTIONS. ORDER 94-152 WAS UNANIMOUSLY APPROVED.**

**R-4 PUBLIC HEARING and Consideration of RESOLUTION in the Matter of Adopting the Willamette River Bridges Accessibility Project Final Report**

**COMMISSIONER HANSEN MOVED AND COMMISSIONER KELLEY SECONDED, APPROVAL OF R-4. ED PICKERING AND DAN LAYDEN PRESENTED EXPLANATION AND RESPONSE TO BOARD QUESTIONS. TESTIMONY SUPPORTING REPORT PRESENTED BY RICH MILLER, JAMES THROCKMORTON, NANCY CHRISTIE, ELIZABETH HUMPHREY, BILL BARBER, PETER FRY, JIM FERNER, LENNIE SOBO, JAN CAMPBELL, LIDWIEU RAHMAN AND DAVID PARISI. RESOLUTION 94-153 WAS UNANIMOUSLY APPROVED.**

**PUBLIC COMMENT**

**R-5 Opportunity for Public Comment on Non-Agenda Matters. Testimony Limited to Three Minutes Per Person.**

**NONE.**

*There being no further business, the meeting was adjourned at 10:23 a.m.*

**OFFICE OF THE BOARD CLERK  
for MULTNOMAH COUNTY, OREGON**

  
**Carrie A. Parkerson**

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**Thursday, August 18, 1994  
Multnomah County Courthouse, Room 602  
1021 SW Fourth, Portland**

**BOARD BRIEFING**

**B-1 Briefing on Financial and Budget Policy. Presented by David Boyer and Barry Crook.**

**DAVID BOYER, BARRY CROOK AND DAVE WARREN PRESENTATIONS AND RESPONSE TO BOARD QUESTIONS AND DISCUSSION. STAFF TO SCHEDULE ADDITIONAL BRIEFING AND UPDATE REGARDING UPCOMING BALLOT MEASURES AND POSSIBLE EFFECT ON MULTNOMAH COUNTY.**



# MULTNOMAH COUNTY OREGON

OFFICE OF THE BOARD CLERK  
SUITE 1510, PORTLAND BUILDING  
1120 S.W. FIFTH AVENUE  
PORTLAND, OREGON 97204

BOARD OF COUNTY COMMISSIONERS		
BEVERLY STEIN •	CHAIR •	248-3308
DAN SALTZMAN •	DISTRICT 1 •	248-5220
GARY HANSEN •	DISTRICT 2 •	248-5219
TANYA COLLIER •	DISTRICT 3 •	248-5217
SHARRON KELLEY •	DISTRICT 4 •	248-5213
CLERK'S OFFICE •	248-3277 •	248-5222

## AGENDA

### MEETINGS OF THE MULTNOMAH COUNTY BOARD OF COMMISSIONERS

#### FOR THE WEEK OF

AUGUST 15, 1994 - AUGUST 19, 1994

*Thursday, August 18, 1994 - 9:30 AM - Regular Meeting . . . . . Page 2*

*Thursday, August 18, 1994 - 10:15 AM\* - Board Briefing . . . . . Page 3*

*Thursday Meetings of the Multnomah County Board of Commissioners are taped and can be seen by Paragon Cable subscribers at the following times:*

*Thursday, 6:00 PM, Channel 30  
Friday, 10:00 PM, Channel 30  
Saturday, 12:30 PM, Channel 30  
Sunday, 1:00 PM, Channel 30*

**INDIVIDUALS WITH DISABILITIES MAY CALL THE OFFICE OF THE BOARD CLERK AT 248-3277 OR 248-5222, OR MULTNOMAH COUNTY TDD PHONE 248-5040, FOR INFORMATION ON AVAILABLE SERVICES AND ACCESSIBILITY.**

Thursday, August 18, 1994 - 9:30 AM

Multnomah County Courthouse, Room 602  
1021 SW Fourth, Portland

**REGULAR MEETING**

**CONSENT CALENDAR**

**NON-DEPARTMENTAL**

- Ad* C-1 Ratification of an Intergovernmental Agreement, Contract #500095, between the State Forestry, the US Forest Service and Multnomah County to Allow County Employees to Participate in the Incident Command System (ICS) "Shadow Team" Program, Effective August 18, 1994 through August 18, 1995

**REGULAR AGENDA**

**NON-DEPARTMENTAL**

- Ad* R-1 PROCLAMATION in the Matter of Proclaiming August 20, 1994 as Homeless Animals Day 94-150

**PUBLIC CONTRACT REVIEW BOARD**

(Recess as the Board of County Commissioners and convene as the Public Contract Review Board)

- Ad* R-2 ORDER in the Matter of Exempting from Public Bidding, the Purchase of Recombivax Hepatitis B Vaccine 94-151

(Recess as the Public Contract Review Board and reconvene as the Board of County Commissioners)

**DEPARTMENT OF ENVIRONMENTAL SERVICES**

- Ad* R-3 ORDER in the Matter of the Sale of Real Property on the County Farm at NE 223rd Avenue and Columbia River Highway in Troutdale, Oregon 94-152

- Ad* R-4 PUBLIC HEARING and Consideration of RESOLUTION in the Matter of Adopting the Willamette River Bridges Accessibility Project Final Report - 9:45 AM TIME CERTAIN - 30 MINUTES REQUESTED 94-153

**PUBLIC COMMENT**

- R-5 Opportunity for Public Comment on Non-Agenda Matters. Testimony Limited to Three Minutes Per Person.



*Thursday, August 18, 1994 - \*APPROX. 10:15 AM or  
IMMEDIATELY FOLLOWING REGULAR MEETING*

*Multnomah County Courthouse, Room 602  
1021 SW Fourth, Portland*

**BOARD BRIEFING**

*B-1      Briefing on Financial and Budget Policy. Presented by David Boyer and  
Barry Crook. 1 HOUR REQUESTED.*



# Beverly Stein, Multnomah County Chair

Room 1410, Portland Building  
1120 S.W. Fifth Avenue  
P.O. Box 14700  
Portland, Oregon 97204  
(503) 248-3308

## MEMORANDUM

TO : Board of County Commissioners  
Office of the Board Clerk  
FROM : Beverly Stein  
DATE : May 10, 1994  
RE : Vacation/Absence from Board Meetings

I will be on vacation the week of August 15-19, 1994 and will miss the August 16 and August 18 Board meetings.

cc: Chair's Staff  
Department Directors  
Division Managers  
MSS Managers

BOARD OF  
COUNTY COMMISSIONERS  
1994 MAY 12 PM 1:48  
MULTNOMAH COUNTY  
OREGON



BOARD OF COUNTY COMMISSIONERS  
FORMAL BOARD MEETING  
RESULTS

MEETING DATE: 8-18-94

Agenda Item #	Motion	Second	APP/NOT APP
<u>Q-1</u>	<u>SK</u>	<u>DS</u>	<u>App</u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u>R-1</u>	<u>SK</u>	<u>GH</u>	<u>App</u>
<u>R-2</u>	<u>SK</u>	<u>DS</u>	<u>App</u>
<u>R-3</u>	<u>SK</u>	<u>GH</u>	<u>App</u>
<u>R-4</u>	<u>GH</u>	<u>SK</u>	<u>App</u>
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MEETING DATE: AUG 18 1994  
AGENDA NO.: C-1

(Above Space for Board Clerk's Use ONLY)

AGENDA PLACEMENT FORM

SUBJECT: Regional ICS "Shadow Team" Agreement-1994

BOARD BRIEFING Date Requested:

Amount of Time Needed:

REGULAR MEETING Date Requested: 8-18-94

Amount of Time Needed: 2 min

DEPARTMENT: Non-Departmental

DIVISION: Emergency Management

CONTACT: Penny Malmquist

TELEPHONE #: 251-2466

BLDG/ROOM#: 313-118

PERSON(S) MAKING PRESENTATION: Penny Malmquist

ACTION REQUESTED:

☐ INFORMATIONAL ONLY ☐ POLICY DIRECTION ☒ APPROVAL ☐ OTHER

**SUMMARY** (Statement of rationale for action requested, personnel and fiscal/budgetary impacts, if applicable):

This agreement is between the State Forestry and the US Forest Service and Multnomah County. The agreement allow county employees to participate in the Incident Command System Overhead Team Program (Shadow).

SIGNATURES REQUIRED:

ELECTED OFFICIAL: Beverly Stein

OR

DEPARTMENT MANAGER: \_\_\_\_\_

ALL ACCOMPANYING DOCUMENTS MUST HAVE REQUIRED SIGNATURES

Any Questions: Call the Office of the Board Clerk 248-3277/248-5222

*Originals sent to Penny Malmquist on 8-22-94*

BOARD OF  
COUNTY COMMISSIONERS  
1994 AUG - 9 PM 3:29  
MULTNOMAH COUNTY  
OREGON

BOARD OF COUNTY COMMISSIONERS  
AGENDA ITEM BRIEFING  
STAFF REPORT SUPPLEMENT

TO: BOARD OF COUNTY COMMISSIONERS  
FROM: PENNY MALMQUIST  
MULTNOMAH COUNTY EMERGENCY MANAGEMENT

TODAY'S DATE: August 9, 1994

REQUESTED PLACEMENT DATE: August 18, 1994

RE:

I. Recommendation/Action Requested:

Approval of the Regional ICS Shadow Team Agreement for 1994

II. Background/Analysis:

This agreement is between the State Forestry and the US Forest Service and Multnomah County. The agreement allows county employees to participate in the Incident Command System Shadow Team Program. This agreement allows County personnel to attain training and experience in the use of the Incident Command System that is unavailable through other means. This is the fourth year this agreement has been brought before the Multnomah County Board of Commissioners for approval.

III. Financial Impact:

Participation in the Shadow Team Program is voluntary. The Office of Emergency Management upon approval by the Board of County Commissioners sends out participation invitations to county employees who have completed the Introduction to the Incident Command System (ICS) Training. The invitation states that participation is voluntary and must be approved by department/division managers through normal approval channels. Over the past three years the county has averaged between ten and twelve county employees each year who have met the requirements to participate in the Shadow Team program.

The Forest Service through this agreement limits the on-site visits to 24 to 48 hours and provides food and sleeping arrangements for personnel once they reach fire camp. The financial impact to departments depends on the location of the fire, there is a potential impact to departmental budgets for the following items:

1. Personnel cost- County departments are asked to pick up the normal personnel cost for the employee while participating on the Shadow Team. The agreement limits the on-site visit to 24 to 48 hours, this combined

with travel time has the potential to have an employee away from the county for three to four days.

2. Overtime Cost-The Forest Service runs two twelve hour shifts to support fire operations. County personnel would be shadowing during these twelve hour shifts. There is the potential that county personnel could be asked to shadow during the full twelve hours causing an overtime cost to county departments. Per agreement county personnel are limited to an on-site visit of 24 to 48 hour, the potential here is for two twelve hour shifts.
3. Travel Cost- There is a potential cost to county departments for mileage incurred while traveling to and from the fire camp location. County employee's sent under this agreement are asked to car pool with other members of the Shadow Team being dispatched. Shadow Teams are usually composed of personnel from several jurisdiction and car pool together.

IV. Legal Issues:

The County has participated in this agreement for the past three years, at this time the Office of Emergency Management is unaware of any legal issues pertaining to this agreement.

V. Controversial Issues:

At this time the Office of Emergency Management is unaware of any controversial issues pertaining to this agreement.

VI. Link to Current County Policies:

Resolution # 91-8 is a resolution adopting the Incident Command System portion of the National Interagency Incident Management System for development of emergency response plans and an Emergency Management and Operations Plan for the County. Resolution #91-8 requires the County to integrate the Incident Command System into all response plans. To effectively implement response plans during emergency events County personnel must be trained in the use of the system to effectively carry out assigned responsibilities.

This agreement also parallels with City/County Benchmark entitled "Emergency Services Preparedness". It allows County employees the opportunity to be trained in procedures that will be implemented during emergency events and to effectively carry out their responsibilities as list under response and recovery plans.

VII. Citizen Participation:

None

VIII. Other Government Participation:

Multnomah, Clackamas, Washington and Columbia counties and the cities and special districts within those counties have also been offered this agreement for participation. During the past three years jurisdictions within this County who have sent employees to take advantage of this training opportunity are Troutdale, Fairview, Gresham, Portland, Fire District 14 and Multnomah County.

**CONTRACT APPROVAL FORM**

(See Administrative Procedure #2106)

MULTNOMAH COUNTY OREGON

Contract # 500095

Amendment # \_\_\_\_\_

CLASS I	CLASS II	CLASS III
<input type="checkbox"/> Professional Services under \$25,000	<input type="checkbox"/> Professional Services over \$25,000 (RFP, Exemption) <input type="checkbox"/> PCRB Contract <input type="checkbox"/> Maintenance Agreement <input type="checkbox"/> Licensing Agreement <input type="checkbox"/> Construction <input type="checkbox"/> Grant <input type="checkbox"/> Revenue	<input checked="" type="checkbox"/> Intergovernmental Agreement <b>APPROVED MULTNOMAH COUNTY BOARD OF COMMISSIONERS</b> AGENDA # <u>C-1</u> DATE <u>8/18/94</u> <u>Carrie A. Parkerson</u> <b>BOARD CLERK</b>

Department Non-Departmental Division Emergency Management Date 8-3-94Contract Originator Penny Malmquist Phone 251-2456 Bldg/Room 313/118

Administrative Contact \_\_\_\_\_ Phone \_\_\_\_\_ Bldg/Room \_\_\_\_\_

Description of Contract Agreement between State Forestry and the USFS and Multnomah County to participate in the ICS Overhead Team Program (Shadow)

RFP/BID # \_\_\_\_\_ Date of RFP/BID \_\_\_\_\_ Exemption Exp. Date \_\_\_\_\_

ORS/AR # \_\_\_\_\_ Contractor is ☐ MBE ☐ WBE ☐ QRF

Contractor Name \_\_\_\_\_

Mailing Address \_\_\_\_\_

Phone \_\_\_\_\_

Employer ID# or SS# \_\_\_\_\_

Effective Date 8-18-94Termination Date 8-18-95

Original Contract Amount \$ \_\_\_\_\_

Total Amount of Previous Amendments \$ \_\_\_\_\_

Amount of Amendment \$ \_\_\_\_\_

Total Amount of Agreement \$ \_\_\_\_\_

**REQUIRED SIGNATURES:**Department Manager [Signature]Purchasing Director (Class II Contracts Only) [Signature]County Counsel [Signature]County Chair / Sheriff [Signature]

Contract Administration (Class I, Class II Contracts Only) \_\_\_\_\_

Remittance Address \_\_\_\_\_  
(If Different) \_\_\_\_\_**Payment Schedule****Terms**☐ Lump Sum \$ \_\_\_\_\_ ☐ Due on receipt☐ Monthly \$ \_\_\_\_\_ ☐ Net 30☐ Other \$ \_\_\_\_\_ ☐ Other \_\_\_\_\_☐ Requirements contract - Requisition required.

Purchase Order No. \_\_\_\_\_

☐ Requirements Not to Exceed \$ \_\_\_\_\_Encumber: Yes ☐ No ☐

Date \_\_\_\_\_

Date \_\_\_\_\_

Date August 4, 1994Date August 18, 1994

Date \_\_\_\_\_

VENDOR CODE			VENDOR NAME						TOTAL AMOUNT \$		
LINE NO.	FUND	AGENCY	ORGANIZATION	SUB ORG	ACTIVITY	OBJECT/ REV SRC	SUB OBJ	REPT CATEG	LGFS DESCRIPTION	AMOUNT	INC/ DEC IND
01.											
02.											
03.											
* If additional space is needed, attach separate page. Write contract # on top of page.											

INSTRUCTIONS ON REVERSE SIDE

WHITE - CONTRACT ADMINISTRATION

CANARY - INITIATION

PINK - FINANCE



## REGIONAL ICS "SHADOW TEAM" AGREEMENT-1994

During the past several fire seasons, the Pacific Northwest Wildfire Coordinating Group(PNWCG) and individual Incident Commanders have entered into a training agreement with the local governments and agencies participating in the Regional ICS Steering Committee. Under this agreement, representatives from participating local governments, who have received training in the Incident Command System, visit "project" wildfires and "shadow " their counterparts. The exposure to the fully expanded ICS and the opportunity to question and work with experienced personnel has been of great value to local efforts to implement NIIMS-ICS.

Under this agreement, participating local governments/agencies agree to:

- 1 ) Absorb all costs and liability associated with participation of their personnel.
- 2 ) Ensure that all participating personnel meet the minimum qualifications , as defined in the attached "Guidelines for the 'Shadow Team Agreement'".
- 3 ) Provide their own logistical coordination and transportation to and from the incident.
- 4 ) Limit visiting personnel to one per each Command and General Staff position, and visits to 24-48 hours. Additional personnel and longer visits may be negotiated on a case-by-case basis.
- 5 ) Abide by all rules, regulations and restrictions imposed by the host agency or overhead team.

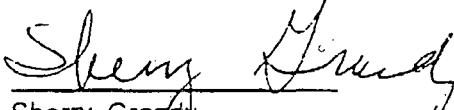
In return, the PNWCG and its overhead teams agree to:

- 1 ) Host, by invitation, ICS teams from participating local governments/agencies.
- 2 ) Allow visiting teams to observe planning and shift meetings and briefings.
- 3 ) Allow visiting team members to observe their counterparts during the duration of the visit.

Additional participation and hands-on experience may be granted at the discretion of the host organization, and commensurate with the skills, training and abilities of the visitors. In addition, visiting teams agree to make available to their host organizations, any specialized skills in liaison, law enforcement, or structural fire suppression which may be of value to the incident.

This program is voluntary. Neither party is under obligation to participate on any given incident.

Wildfire overhead management teams at the State and Federal level represent the state of the art in the application of NIIMS ICS. The Regional ICS Steering Committee appreciates the willingness of wildfire agencies to assist in ICS implementation at the local level.

  
Sherry Grandy  
Regional ICS Training Committee

\_\_\_\_\_  
Rich Wands, USFS  
Incident Commander

## Guidelines for 1994 "Shadow Team" Agreement

1. The Oregon Department of Forestry(ODF) and the Pacific Northwest Wildfire Coordination Group(PNWCG) have requested the Regional ICS Training Committee(RICSTC) designate one point of contact for the 'shadow team' program. The 'shadow team' coordinator for 1994 is Sherry Grandy. The 'shadow team' coordinator will be the only point of contact for the program. Individual RICSTC agencies will not contact ODF, local dispatch offices or Incident Commanders on their own. Unauthorized contacts will be denied.
2. Participating agencies of RICSTC are responsible for developing a list of qualified potential participants, and their contact numbers. In addition, each RICSTC agency must provide the program coordinator with a point of contact for their agency.

Qualified participants are defined as those meeting the minimum requirements established by RICSTC.

Completion of "Introduction to Incident Command" (2 day class)

A full understanding of the position they are shadowing; RICSTC strongly encourages participants to complete the ICS course for their Command or General staff position.

Identification as part of their agency's ICS staffing pattern for incident management.

3. Each participating RICSTC agency contact person is responsible for contacting their personnel in the event of a 'shadow team' invitation.
4. When the 'shadow team' coordinator receives an invitation, all participating agencies will be contacted. Positions will be filled on a first-come, first served basis.

APPROVED MULTNOMAH COUNTY  
BOARD OF COMMISSIONERS  
AGENDA # C-1 DATE 8-18-94  
Arrish. P. Peterson  
BOARD CLERK

MEETING DATE: August 18, 1994

AGENDA NO: R-1

(Above Space for Board Clerk's Use ONLY)

**AGENDA PLACEMENT FORM**

SUBJECT: Proclamation - Homeless Animals Day

BOARD BRIEFING Date Requested: \_\_\_\_\_

Amount of Time Needed: 5 Minutes

REGULAR MEETING: Date Requested: August 18, 1994

Amount of Time Needed: 5 Minutes

DEPARTMENT: Non-Departmental

DIVISION: \_\_\_\_\_

CONTACT: Tanya Collier

TELEPHONE #: 248-5217

BLDG/ROOM #: 106/1530

PERSON(S) MAKING PRESENTATION: Tanya Collier

**ACTION REQUESTED:**

☐ INFORMATIONAL ONLY ☐ POLICY DIRECTION ☒ APPROVAL ☐ OTHER

SUMMARY (Statement of rationale for action requested, personnel and fiscal/budgetary impacts, if applicable):

Proclamation in the Matter of Proclaiming August 20, 1994  
as Homeless Animals Day.

BOARD OF  
COUNTY COMMISSIONERS  
MULTNOMAH COUNTY  
OREGON  
1994 AUG 11 AM 9:36

**SIGNATURES REQUIRED:**

ELECTED OFFICIAL: Tanya Collier

OR

DEPARTMENT MANAGER: \_\_\_\_\_

**ALL ACCOMPANYING DOCUMENTS MUST HAVE REQUIRED SIGNATURES**

Any Questions: Call the Office of the Board Clerk 248-3277/248-5222

0516C/63 Original Proclamation 94-150 given to Stuart F.  
on 8-18-94.

BEFORE THE BOARD OF COUNTY COMMISSIONERS  
FOR MULTNOMAH COUNTY, OREGON

In the matter of Proclaiming August 20, 1994 )  
as Homeless Animals Day )

PROCLAMATION  
94-150

WHEREAS, last year, in Oregon alone, 80,000 animals were euthanized in both government and non-profit agencies.

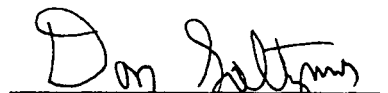
WHEREAS, to combat problems of homeless animals and pet overpopulation encouraging spaying and neutering of companion pets is the simplest solution.

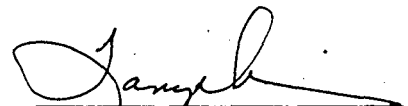
WHEREAS, the observance of National Homeless Animal's Day in Portland by holding a candlelight vigil is an appropriate forum for delivering the message of responsible pet ownership.

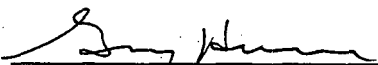
THEREFORE BE IT FURTHER RESOLVED, that the Multnomah County Board of Commissioners recognize August 20, 1994 as **Homeless Animals Day**. We encourage the citizens of Multnomah County to have their pets spayed and neutered and to encourage their family, friends and neighbors to do the same.


Approved this 18th day of August, 1994.

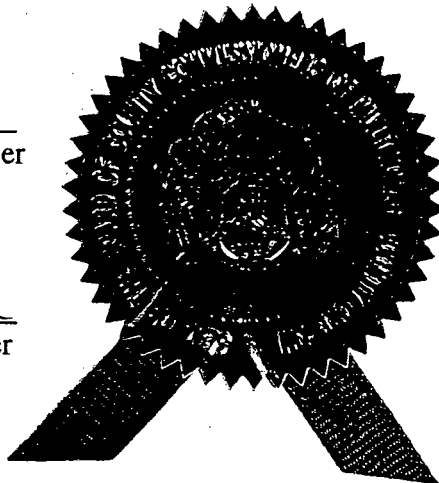
  
Beverly Stein, Chair of the Board

  
Dan Saltzman, Commissioner

  
Tanya Collier, Commissioner

  
Gary Hansen, Commissioner

  
Sharron Kelley, Commissioner



MEETING DATE: AUG 18 1994

AGENDA NO: R-2

(Above Space for Board Clerk's Use ONLY)

**AGENDA PLACEMENT FORM**

SUBJECT: PCRB EXEMPTION REQUEST FOR RECOMBIVAX HEPATITIS B VACCINE

BOARD BRIEFING Date Requested: \_\_\_\_\_

Amount of Time Needed: \_\_\_\_\_

REGULAR MEETING: Date Requested: August 18, 1994

Amount of Time Needed: 15 Minutes

DEPARTMENT: Health Department DIVISION: Purchasing/Health

CONTACT: Lillie Walker/Billi Odegaard TELEPHONE #: 248-5111/248-3674

BLDG/ROOM #: 421/1st/160/8th

PERSON(S) MAKING PRESENTATION: Lillie Walker

**ACTION REQUESTED:**

☐ INFORMATIONAL ONLY ☐ POLICY DIRECTION ☒ APPROVAL ☐ OTHER

SUMMARY (Statement of rationale for action requested, personnel and fiscal/budgetary impacts, if applicable):

Request of Board of County Commissioners, acting as PCRB, for an exemption to purchase Recombivax Hepatitis B Vaccine from Merck & Co. Inc.

**SIGNATURE REQUIRED:**

ELECTED OFFICIAL: \_\_\_\_\_

OR

DEPARTMENT MANAGER: \_\_\_\_\_

**ALL ACCOMPANYING DOCUMENTS MUST HAVE REQUIRED SIGNATURES**

Any Questions: Call the Office of the Board Clerk 248-3277/248-5222

*Copy of Order 94-151 Sent to PCRB Pres. Lillie Walker & Billi Odegaard on 8-22-94.*

BOARD OF  
COUNTY COMMISSIONERS  
1994 AUG - 9 AM 10:28  
MULTICOM/H  
DRECH

**AGENDA ITEM BRIEFING  
STAFF REPORT SUPPLEMENT**

TO: BOARD OF COUNTY COMMISSIONERS

FROM: Lillie Walker, Purchasing Director

TODAY'S DATE: August 1, 1994

REQUESTED PLACEMENT DATE: August 18, 1994

RE: Exemption request from formal competitive bid process for the Health Department to purchase Recombivax Hepatitis B vaccine.

I. RECOMMENDATION: The Health Department requests a PCRB Exemption from the Competitive Bidding Process to purchase Recombivax Hepatitis B vaccine.

II. Background/Analysis:

In the past, Recombivax Hep. B vaccine was purchased off the Multi-State pharmaceutical contract. Recombivax is the same formulation of vaccine which the Health Department has been receiving free from the Federal Government for vaccine administration to all newborns under universal coverage. Dosage of the vaccine are administered as .25 ml for newborns up to the age of 11, .5 ml from ages 11 through 19, and 1 ml for 20 years and older.

The new Multi-State contract has now been changed to Engerix Hep. B which has a different dosage schedule. This schedule is .5 ml for all children up to age 11 and 1 ml of vaccine for anyone older. The effect of this change in dosage level is that it would double the cost of vaccine for anyone receiving it under the age of 20 years. It would also require that two different types of vaccine with two different dosage schedules be housed in all of the clinics. This could result in under or over dosing because of confusion. The Health Department also distributes vaccine to community clinics for administration. These clinics are generally manned by volunteers. The training requirements for changing vaccine are very considerable both for county staff, on-call staff, and volunteers at the County and in the Community.

The amount of vaccine to be purchased will be approximately \$200,000. Last years purchase totaled \$192,450. This includes orders of vaccine for non-profit agencies in the community of which the County is reimbursed cost plus 10%. The Occupational Health Office will use about \$86,400 worth of vaccine which is administered to county employees or billed to other agencies such as Metro, Portland Police, etc. A recent study indicated that the County collects about 50% of the vaccine costs from clients. This percentage would drop with the doubling of costs for clients under the age of 20. The demand for Hep B vaccine is increasing significantly every year.

*Merck & Co is sole source provider*



III. Financial Impact:

The estimated annual usage will be approximately \$200,000.

IV. Legal Issues:

There are no legal issues anticipated.

V. Controversial Issues:

N/A

VI. Link to Current County Policies:

Current County policy requires a competitive process for the purchases that exceed \$1,000.00. Exemptions for sole source providers  
ph allowed under PCRB rules 10.100

VII. Citizen Participation

N/A

VIII. Other Government Participation:

The resulting exemption will be open to other county departments and other government agencies.



# MULTNOMAH COUNTY OREGON

OFFICE OF THE BOARD CLERK  
SUITE 1510, PORTLAND BUILDING  
1120 S.W. FIFTH AVENUE  
PORTLAND, OREGON 97204

BOARD OF COUNTY COMMISSIONERS

BEVERLY STEIN •	CHAIR •	248-3308
DAN SALTZMAN •	DISTRICT 1 •	248-5220
GARY HANSEN •	DISTRICT 2 •	248-5219
TANYA COLLIER •	DISTRICT 3 •	248-5217
SHARRON KELLEY •	DISTRICT 4 •	248-5213
CLERK'S OFFICE •	248-3277 •	248-5222

## NOTICE OF HEARING

*The Multnomah County Board of Commissioners, sitting as the Public Contract Review Board, will consider an application on Thursday, August 18, 1994, at 9:30 A.M. in Room 602 of the Multnomah County Courthouse, 1021 SW Fourth, Portland, Oregon, in the Matter of Exempting from Public Bidding, the Purchase of Recombivax Hepatitis B Vaccine.*

*A copy of the application is attached.*

*For additional information, contact Lillie Walker, Purchasing Director at 248-5111, or the Office of the Board Clerk at 248-3277 or 248-5222.*

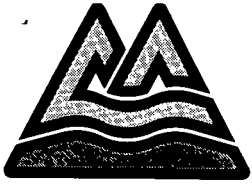
BOARD OF COUNTY COMMISSIONERS  
MULTNOMAH COUNTY, OREGON  
PUBLIC CONTRACT REVIEW BOARD

Carrie A. Parkerson  
Office of the Board Clerk

*enclosure*

*cc: Lillie Walker  
Billi Odegaard*





# MULTNOMAH COUNTY OREGON



HEALTH DEPARTMENT  
426 S.W. STARK STREET, 8TH FLOOR  
PORTLAND, OREGON 97204-2394  
(503) 248-3674  
FAX (503) 248-3676  
TDD (503) 248-3816

BOARD OF COUNTY COMMISSIONERS  
BEVERLY STEIN • CHAIR OF THE BOARD  
DAN SALTZMAN • DISTRICT 1 COMMISSIONER  
GARY HANSEN • DISTRICT 2 COMMISSIONER  
TANYA COLLIER • DISTRICT 3 COMMISSIONER  
SHARRON KELLEY • DISTRICT 4 COMMISSIONER

## EXEMPTION REQUEST

### MEMORANDUM:

TO: Lillie Walker, Purchasing Director

FROM: *B. Odgaard*  
B. Odgaard, Director  
Health Department

DATE: July 8, 1994

DATE ACTION IS REQUIRED: AT THE EARLIEST POSSIBLE CONVENIENCE

**BACKGROUND:** Question: Should we purchase Engerix or continue to receive Recombivax vaccine for Hepatitis B. In the past, Recombivax Hep. B vaccine was being purchased off the Multi-state pharmaceutical purchasing agreement. This is the same formulation of vaccine which we have been and are currently receiving free from the federal government for vaccine administration to all newborns under universal coverage. Dosages of the vaccine are administered as .25 ml for newborns up to age 11, .5 ml from 11 through 19 years and 1 ml for 20 years and older.

The new Multi-state contract has now been changed to Engerix Hep. B which has a different dosage schedule. This schedule is .5 ml for all children up to age 11 and 1 ml of vaccine for anyone older. This would double the cost of vaccine for anyone receiving vaccine under the age of 20 years. It would also require that two different types of vaccine with two different dosage schedules be housed in all of the clinics which would possibly result in under or over dosing because of confusion. We also distribute vaccine to community clinics for administration. These clinics are generally manned by volunteers. The training requirements for changing vaccine are very considerable both for county staff, on-call staff, and volunteers here and in the community.

The amount of vaccine to be purchased will be approximately \$200,000. (We spent \$192,450 last year). This includes orders for vaccine for non-profit agencies in the community and we are reimbursed cost plus 10%. Occupational Health Office will use about \$86,400 worth of vaccine which is administered to county employees or billed to other agencies such as Metro, Portland Police etc. The office is also administering vaccine to students many of whom would receive the .5 ml. A recent study indicated that we collect about 50% of the vaccine costs from the clients. This percentage would drop with the doubling of costs for clients under the age of 20. The demand for Hep B vaccine is increasing significantly every year.

### FINDINGS OF FACT:

### CONCLUSIONS:

- Merck is the only company that manufactures recombivax.
- Both vaccines cost the same for a 1 ml dose of vaccine
- The problems of switching including the training issues of 250 staff and volunteers, the possibility of under and over dosing when administering vaccine, and vaccine tracking and inventory would have an impact on the County's liability as well as very time consuming.
- The difference in dosage levels would increase the cost of the vaccine by \$30,000/year just for clients coming into our clinics for service.
- This exemption should be in effect as soon as possible for a maximum of three years or contingent on federal standards.

Therefore, we need to continue to purchase recombivax for our immunization program. Thank you for your consideration.

RECEIVED  
PURCHASING SECTION

94 JUL 12 AM 8:04

MULTNOMAH COUNTY



# MULTNOMAH COUNTY OREGON

OFFICE OF THE BOARD CLERK  
SUITE 1510, PORTLAND BUILDING  
1120 S.W. FIFTH AVENUE  
PORTLAND, OREGON 97204

BOARD OF COUNTY COMMISSIONERS

BEVERLY STEIN •	CHAIR •	248-3308
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TANYA COLLIER •	DISTRICT 3 •	248-5217
SHARRON KELLEY •	DISTRICT 4 •	248-5213
CLERK'S OFFICE •	248-3277 •	248-5222

## NOTICE OF APPROVAL

*On Thursday, August 18, 1994, the Multnomah County Board of Commissioners, sitting as the Public Contract Review Board, considered and approved a request for approval in the Matter of Exempting from Public Bidding, the Purchase of Recombivax Hepatitis B Vaccine.*

*For additional information, please contact Lillie Walker, Multnomah County Purchasing Director, (503) 248-5111.*

**BOARD OF COUNTY COMMISSIONERS  
MULTNOMAH COUNTY, OREGON  
PUBLIC CONTRACT REVIEW BOARD**

**Carrie A. Parkerson**  
*Office of the Board Clerk*

*cc:Lillie Walker  
Billi Odgeaard*

BEFORE THE BOARD OF COUNTY COMMISSIONERS  
FOR MULTNOMAH COUNTY, OREGON  
ACTING AS THE PUBLIC CONTRACT REVIEW BOARD

In the Matter of Exempting from Public  
Bidding, the purchase of Recombivax  
Hepatitis B vaccine

)  
) O R D E R  
) 94-151

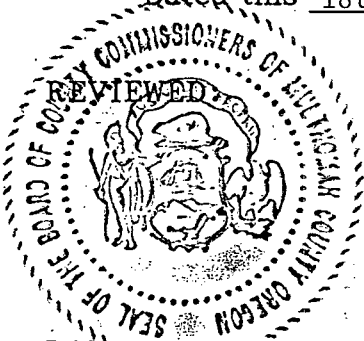
The above-entitled matter is before the Board of County Commissioners, acting in its capacity as the Multnomah County Public Contract Review Board, to review, pursuant to ORS 279.015(3) (A) through (5) (B) and PCRB Rule 10.140, an exemption for the Health Department to purchase Recombivax Hepatitis B vaccine from Merck & Co. the sole provider of this product. The annual amount of vaccine to be purchased will be approximately \$200,000.

It appearing to the Board that the request for exemption, as it appears in the order, is based upon the fact that in the past Recombivax was purchased off the Multi-State pharmaceutical contract. The new Multi-State pharmaceutical contract has been changed to Engerix Hepatitis B. This new vaccine has a different dosage schedule and would result in doubling the cost to anyone receiving the vaccine under the age of 20. In addition it would require the training of 250 staff and volunteers and run the risk of under and over dosing when administering the vaccine.

It appearing to the Board that this exemption request is in accord with the requirements of ORS 279.015 and PCRB Rule AR 10.100; now, therefore,

**IT IS ORDERED** that the purchase of Recombivax Hepatitis B vaccine be exempted from the requirements of a formal competitive bid process.

Dated this 18th day of August, 1994.



LAURENCE KRESSEL, County Counsel  
for Multnomah County, Oregon

By [Signature]  
Assistant County Counsel

BOARD OF COUNTY COMMISSIONERS  
FOR MULTNOMAH COUNTY, OREGON  
ACTING AS THE PUBLIC CONTRACT  
REVIEW BOARD.

By [Signature]  
Beverly Stein, County Chair

MEETING DATE: AUG 18 1994

AGENDA NO: R-3

(Above Space for Board Clerk's Use ONLY)

**AGENDA PLACEMENT FORM**

Sale of Real Property at N.E. 223rd & Columbia River Highway to  
**SUBJECT:** Oregon Department of Transportation.

**BOARD BRIEFING**      Date Requested: \_\_\_\_\_

Amount of Time Needed: \_\_\_\_\_

**REGULAR MEETING:**      Date Requested: August 18, 1994

Amount of Time Needed: 5 minutes

**DEPARTMENT:** Environmental Services      **DIVISION:** Facilities & Property Management

**CONTACT:** Bob Oberst      **TELEPHONE #:** 248-3851  
**BLDG/ROOM #:** 421/3rd

**PERSON(S) MAKING PRESENTATION:** Bob Oberst

**ACTION REQUESTED:**

☐ INFORMATIONAL ONLY    ☐ POLICY DIRECTION    ☒ APPROVAL    ☐ OTHER

**SUMMARY** (Statement of rationale for action requested, personnel and fiscal/budgetary impacts, if applicable):

SEE SUPPLEMENT

BOARD OF  
COUNTY COMMISSIONERS  
1994 AUG - 9 AM 10:48  
MULTNOMAH COUNTY  
OREGON

**SIGNATURES REQUIRED:**

**ELECTED OFFICIAL:** \_\_\_\_\_

OR

**DEPARTMENT MANAGER:**  F. Wayne Gonzales Betty Willia

**ALL ACCOMPANYING DOCUMENTS MUST HAVE REQUIRED SIGNATURES**

Any Questions: Call the Office of the Board Clerk 248-3277/248-5222

0516C/63 Originals Sent to Bob Oberst on 8-22-94.



TO: BOARD OF COUNTY COMMISSIONERS

FROM: Robert Oberst, Facilities & Property Management



TODAY'S DATE: July 28, 1994

REQUESTED PLACEMENT: August 11, 1994

RE: Approval of Sale of Real Property on County Farm at NE 223rd Ave & Columbia River Highway to State of Oregon Department of Transportation.

I. Recommendation/Action Requested: Approval by Board of Commissioners of REAL ESTATE OPTION and DEED pursuant to which County will sell land located at NE 223rd Avenue and Columbia River Highway to Oregon Department of Transportation for its use in improving Columbia River Highway.

II. Background/Analysis: This parcel of land consists of a band of land 1.67 acres in area on the northwesterly corner of the County Farm property and bordering the Columbia River Highway at NE 223rd Avenue. It is a part of a larger parcel of approximately 23 acres located westerly of the Animal Control property and is included in the County Farm land which the Board of Commissioners earlier approved for sale.

III. Financial Impact: The proposed purchase price of \$52,000.00 is approximately \$31,137.72 per acre which compares with the general value of the parcel as appraised for the County by independent appraisal at \$20,000 to \$25,000 per acre in 1991. The proceeds of sale would be credited 50% each to the capital improvement fund and the natural areas acquisition fund.

IV. Legal Issues: None, to Facilities & Property Management (FM) knowledge.

V. Controversial Issues: None, to FM knowledge.

VI. Link to Current County Policies: None, to FM knowledge.

VII. Citizen Participation: None involved or expected.

VIII. Other Government Participation: The land is to be acquired by the State of Oregon for the purposes above stated. The degree of State involvement of other governmental bodies is not known to FM.

DEC 23 1993

**EDGEFIELD STATION, INC.**  
**c/o Troutdale Area Chamber of Commerce**  
**P.O. Box 245**  
**Troutdale, Oregon 97060**

July 13, 1994

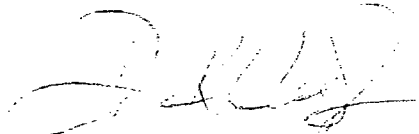
Mr. Robert Oberst  
Property Manager  
Multnomah County Oregon  
2505 S.E. 11th Avenue  
Portland, Oregon 97202

Dear Mr. Oberst:

I am responding to your letter addressed to me as President of the Troutdale Area Chamber of Commerce dated June 20, 1994 regarding the desire of ODOT to purchase approximately 1.67 acres of land out of the Edgefield County Farm. This is to advise you that the Edgefield Station, Inc., which is the new community development corporation established by the Troutdale Area and Gresham Area Chambers of Commerce for the proposed development, does not oppose the sale by the county of the requested acreage.

Please call if you have any questions.

Sincerely,



Don K. Lloyd

DKL/vsm

cc: Sharon Timko, Multnomah County  
Edgefield Station Board

June 20, 1994

Don Lloyd, President  
Troutdale Area Chamber of Commerce  
P.O. Box 245  
Troutdale, Oregon 97060

Dear Mr. Lloyd:

Oregon Department of Transportation has proposed acquisition of approximately 1.67 acres of land within the County's Edgefield County Farm property for the purpose of improving Crown Point Highway located adjacent to and north of the County Farm property. A map of the land to be acquired and a sketch of the County Farm property locating the parcel are enclosed.

The Multnomah County Board of Commissioners, by its Resolution 94-78, removed the land (referred to as Parcels A and C), including the parcel to be acquired by ODOT, from the market for a period of one year. The removal was done in order to allow the Troutdale Area and Gresham Chambers of Commerce time to secure financing for acquisition of Parcels A and C in connection with development of an "intermodal transit-oriented recreational development".

Considering the size, configuration and location of the parcel to be acquired by ODOT, it does not appear to Multnomah County that the sale of this parcel would have a detrimental effect upon the development proposed by the Chambers of Commerce. The improvements to Crown Point Highway should, in fact, be beneficial to the proposed development.

The County also wishes to avoid the cost and delay to both the State and County which would be involved in forcing ODOT to acquire the parcel through eminent domain.

If conveyance of the parcel shown on the enclosed map as

described in this letter is agreeable to the Troutdale Area and Gresham Chambers of Commerce, please so advise me by letter. If there is any reason the conveyance is objected to, I should be advised of this by July 15, 1994.

Very truly yours,



Robert Oberst  
Property Manager

CC: County Chair/Timco  
Betsy Williams  
F. Wayne George

BEFORE THE BOARD OF COUNTY COMMISSIONERS  
FOR MULTNOMAH COUNTY, OREGON

In the Matter of the Sale of )  
Real Property on the County )  
Farm at NE 223rd Avenue and )  
Columbia River Highway in )  
Troutdale, Oregon. )

O R D E R

# 94-152

It appearing that the State of Oregon intends to construct an improvement of the Columbia River Highway at N.C. 223rd Avenue and that Multnomah County owns real property located at this site, commonly referred to as the Multnomah County Farm; and

It appearing that the State needs to acquire 1.67 acres, more or less, of said real property for construction of such improvement; and

It appearing that the State has requested the REAL ESTATE OPTION and DEED which are before the Board this day to acquire said land and to pay to County for said land the sum of \$52,000.00; and

It appearing that the sum of \$52,000.00 is equal to market value of the property, as appraised for County, that the property is surplus to the need of Multnomah County and that the remainder of the County Farm Property will not be adversely affected by the sale of said real property; and

It appearing that the conveyance of said real property requested by the State will benefit Multnomah County and the Board being fully advised in the matter:

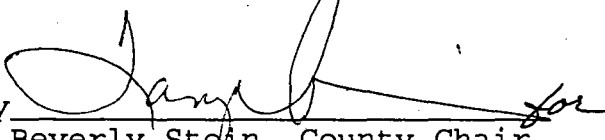
It is ORDERED that Multnomah County execute the REAL ESTATE OPTION and DEED before the Board this date and any other documents required for completion of this conveyance and that the County Chair be, and she is hereby, authorized and directed to execute the same on behalf of Multnomah County.

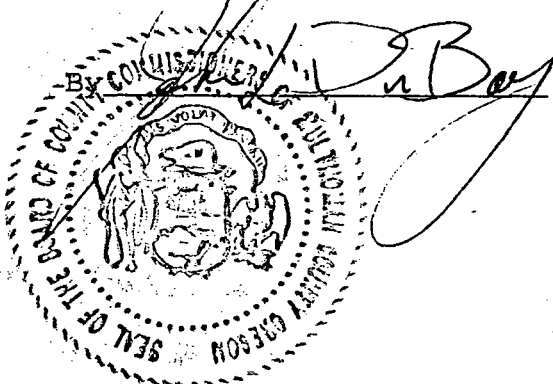
Dated this 18th day of August, 1994.

REVIEWED:

LAURENCE KRESSEL, COUNTY  
COUNSEL FOR MULTNOMAH  
COUNTY, OREGON

BOARD OF COUNTY COMMISSIONERS  
FOR MULTNOMAH COUNTY, OREGON

By   
Beverly Stein, County Chair



## REAL ESTATE OPTION

Fed. Aid No: \_\_\_\_\_

Grantor County of Multnomah, State of Oregon Address 2505 S.E. 11th, Portland, OR 97202  
Section NE 223rd-Troutdale Highway Columbia River  
County Multnomah Purpose Right of Way

IN CONSIDERATION of the offer to the undersigned for the hereinafter described property, the undersigned hereby gives and grant to the State of Oregon, by and through its Department of Transportation, upon the terms and conditions hereinafter stated, the option to purchase the property described on Exhibit "A" attached, bearing date of 7-15-94 and covering 1 parcel, subject to special provisions contained in Exhibit(s)        attached and by this agreement made a part of this option.

The Oregon Transportation Commission shall have the irrevocable right, at any time, within six (6)        months from the date hereof, to accept this option. The person(s) who have executed the option acknowledge that the signing and delivering of a deed and voucher at the same time the option was executed, does not constitute acceptance by the State of the deed and voucher and that the acceptance by the State of the deed and voucher is conditioned on the clearing of the title satisfactory to the State and acceptance of the option by the State.

The undersigned, hereinafter referred to as "Grantor," agree to deliver to the State of Oregon, by and through its Department of Transportation, hereinafter referred to as "State," a deed to said property, CONVEYING A GOOD AND MERCHANTABLE TITLE THERETO FREE FROM ALL OUTSTANDING LIENS AND ENCUMBRANCES, INCLUDING UNPAID AND DEFERRED REAL PROPERTY TAXES, AND FREE FROM ALL RIGHTS OF LESSEES, TENANTS, AND OTHER PERSONS CLAIMING ANY RIGHTS IN OR TO SAID PROPERTY. The conveyances shall include all buildings, fixtures and crops located on said property as well as appurtenances thereto (except for the items herein reserved by Grantors). Grantors further agree not to sell or encumber said property during the term of this option.

Upon delivery of said deed and the clearing of title satisfactory to State, Grantors, in the usual course and through the usual channels of auditing claims against State, shall be paid the sum of (\$ 52,000.00) FIFTY TWO THOUSAND and NO/100 DOLLARS Less \$ N/A for items as listed on Exhibit(s) N/A as full payment of the purchase thereof. Grantors are entitled to receive payment, less any deposits and allowances as listed on exhibits before State takes possession of the property.

Grantors shall surrender possession of the property upon payment from the State.  
Written notice to vacate the property will not be required.

Grantor does not have to provide title insurance. State will pay all recording charges for documents required to vest clear title in State; and prorate taxes as of the date of possession or transfer of title, whichever is earlier.

Grantor acknowledge all items of damages, all sums of money to be paid, and all things to be done by State are in this option. Grantor agree, the consideration recited herein is just compensation for the optioned property, including any and all damages to grantors remaining property, if any, which may result from the acquisition or use of said property and the construction or improvement of the highway. All claims for damages, injury or loss on account of failure to close this option are hereby expressly waived.

NOTICE: BEFORE SIGNING THIS OPTION BE SURE ALL OBLIGATIONS, INCLUDING THOSE YOU EXPECT STATE TO PERFORM, ARE SET OUT IN THIS OPTION AND THAT YOU FULLY UNDERSTAND ALL OF THE TERMS OF THIS OPTION.

Dated this 18th day of August, 1994

RECEIVED  
By [Signature]  
MULTNOMAH COUNTY COMMISSIONER

Fed. I.D. # 93-6002309

[Signature]  
Tanya Collier, Vice-Chair

## EXHIBIT A

File R6119023  
County of Multnomah  
CLM 7-15-94 1A-22-7

Survey Approval Project  
Section: N.E. 223rd Avenue - Troutdale  
Highway: Columbia River  
Throughway

### Fee

A parcel of land lying in the Addison C. Dunbar D.L.C. No. 41 and the James M. Stott D.L.C. No. 48, Township 1 North, Range 3 East, W.M., Multnomah County, Oregon and being a portion of that property described in that deed to County of Multnomah, recorded August 7, 1923 in Book 929, Page 291, Multnomah County Record of Deeds; the said parcel being that portion of said property lying Easterly of existing N.E. 244th Avenue; lying Southeasterly of the existing Columbia River Highway; lying Southerly of the existing Crown Point Highway; and included in a strip of land variable in width, lying on the Southeasterly side of the centerline of the relocated Columbia River Highway, which centerline is described as follows:

Beginning at Engineer's centerline Station 734+02.87, said station being 210.39 feet North and 169.67 feet East of the East quarter corner of Section 27, Township 1 North, Range 3 East, W.M.; thence North 63° 24' 48" East 695.86 feet to Engineer's centerline Station 740+98.73 Back equals 443+65.31 Ahead; thence North 63° 24' 48" East 749.30 feet; thence on a spiral curve right (the long chord of which bears North 64° 44' 48" East 399.91 feet) 400.00 feet; thence on a 2864.79 foot radius curve right (the long chord of which bears North 75° 09' 40" East 772.43 feet) 774.79 feet; thence on a spiral curve right (the long chord of which bears North 85° 34' 33" East 399.91 feet) 400.00 feet; thence North 86° 54' 33" East 1745.18 feet to Engineer's centerline Station 484+34.58.

The width in feet of said strip of land is as follows:

<u>Station</u>	<u>to</u>	<u>Station</u>	<u>Width on Southeasterly Side of Centerline</u>
737+25.00		738+70.00	315.00 in a straight line to 210.00
738+70.00		740+00.00	210.00 in a straight line to 175.00
740+00.00		446+00.00	175.00
446+00.00		452+00.00	175.00 in a straight line to 225.00

Bearings are based upon the Oregon Coordinate System of 1983, north zone.

The parcel of land to which this description applies contains 1.67 acres, more or less.

(CONTINUED ON PAGE 2)



clm 15 JUL 94

NOTE: Access Controlled by Permit.

In excess of 20 acres, remainder.

Prior files: 20635, RW14288; 11956, RW8327; and 14634.

This property lies in the S $\frac{1}{2}$ NW $\frac{1}{4}$  of Sec 26, T 1 N, R 3 E.

DEED

MULTNOMAH COUNTY, a political subdivision of the State of Oregon, Grantor, for the true and actual consideration of \$ 52,000.00 does convey unto the STATE OF OREGON, by and through its DEPARTMENT OF TRANSPORTATION, Grantee, fee title to the following described property:

A parcel of land lying in the Addison C. Dunbar D.L.C. No. 41 and the James M. Stott D.L.C. No. 48, Township 1 North, Range 3 East, W.M., Multnomah County, Oregon and being a portion of that property described in that deed to County of Multnomah, recorded August 7, 1923 in Book 929, Page 291, Multnomah County Record of Deeds; the said parcel being that portion of said property lying Easterly of existing N.E. 244th Avenue; lying Southeasterly of the existing Columbia River Highway; lying Southerly of the existing Crown Point Highway; and included in a strip of land variable in width, lying on the Southeasterly side of the centerline of the relocated Columbia River Highway, which centerline is described as follows:

Beginning at Engineer's centerline Station 734+02.87, said station being 210.39 feet North and 169.67 feet East of the East quarter corner of Section 27, Township 1 North, Range 3 East, W.M.; thence North 63° 24' 48" East 695.86 feet to Engineer's centerline Station 740+98.73 Back equals 443+65.31 Ahead; thence North 63° 24' 48" East 749.30 feet; thence on a spiral curve right (the long chord of which bears North 64° 44' 48" East 399.91 feet) 400.00 feet; thence on a 2864.79 foot radius curve right (the long chord of which bears North 75° 09' 40" East 772.43 feet) 774.79 feet; thence on a spiral curve right (the long chord of which bears North 85° 34' 33" East 399.91 feet) 400.00 feet; thence North 86° 54' 33" East 1745.18 feet to Engineer's centerline Station 484+34.58.

The width in feet of said strip of land is as follows:

Station	to	Station	Width on Southeasterly Side of Centerline
737+25.00		738+70.00	315.00 in a straight line to 210.00
738+70.00		740+00.00	210.00 in a straight line to 175.00
740+00.00		446+00.00	175.00
446+00.00		452+00.00	175.00 in a straight line to 225.00

Bearings are based upon the Oregon Coordinate System of 1983, north zone.

The parcel of land to which this description applies contains 1.67 acres, more or less.

7-20-94

RETURN TO  
OREGON DEPARTMENT OF TRANSPORTATION  
RIGHT OF WAY SECTION  
417 TRANSPORTATION BLDG.  
SALEM, OREGON 97310

Account No.: R94326 0190

Property Address: \_\_\_\_\_  
\_\_\_\_\_

THIS INSTRUMENT WILL NOT ALLOW USE OF THE PROPERTY DESCRIBED IN THIS INSTRUMENT IN VIOLATION OF APPLICABLE LAND USE LAWS AND REGULATIONS. BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON ACQUIRING FEE TITLE TO THE PROPERTY SHOULD CHECK WITH THE APPROPRIATE CITY OR COUNTY PLANNING DEPARTMENT TO VERIFY APPROVED USES AND TO DETERMINE ANY LIMITS ON LAWSUITS AGAINST FARMING OR FOREST PRACTICES AS DEFINED IN ORS 30.930.

Dated this 18th day of August, 1994.

MULTNOMAH COUNTY

X By [Signature]  
Vice-Chairperson

By [Signature]  
County Commissioner

By [Signature]  
County Commissioner

ATTEST:

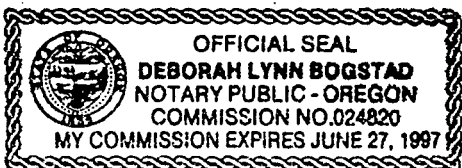
[Signature]  
County Clerk

STATE OF OREGON, County of Multnomah

August 18, 1994. Personally appeared Tanya Collier,  
Gary Hansen, Sharron Kelley, and Carrie Anne Parkerson, who, being  
sworn, stated that they are the Chairperson, County Commissioners and County Clerk of  
Multnomah County, Oregon, and that this instrument was voluntarily signed in behalf of the  
County by authority of an order of the Board of Commissioners. Before me:

[Signature]  
Notary Public for Oregon

My Commission expires 6/27/97



REVIEWED

[Signature]  
MULTNOMAH COUNTY COUNCIL

✓  
**PLEASE PRINT LEGIBLY!**

**MEETING DATE**

8/18/4

**NAME**

RICH MILLER

**ADDRESS**

3037 NE 14TH

**STREET**

PORTLAND

**CITY**

97212

**ZIP CODE**

**I WISH TO SPEAK ON AGENDA ITEM #**

R-4

**SUPPORT**

X

**OPPOSE**

**SUBMIT TO BOARD CLERK**

2/  
PLEASE PRINT LEGIBLY!

MEETING DATE

8/18/94

NAME

James Throckmorton

ADDRESS

1120 SW 5<sup>th</sup> Ave. Rm 730

STREET

Portland 97204

CITY

ZIP CODE

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R-4

SUPPORT

X

OPPOSE

SUBMIT TO BOARD CLERK

3/ Mail: PO Box 304, Beaverton 97075

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MEETING DATE

8-18-94

NAME

Nancy Christie

RESIDENCE

ADDRESS

012 SW Lowell

STREET

Portland 97201

CITY

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SUPPORT

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4 ✓  
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**MEETING DATE**

8/18/94

**NAME**

Elizabeth Humphrey, Tri-Met

**ADDRESS**

710 NE Holladay

**STREET**

Portland

**CITY**

97232

**ZIP CODE**

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R-4

**SUPPORT**

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**OPPOSE**

**SUBMIT TO BOARD CLERK**

5/

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**MEETING DATE**

8/18/94

**NAME**

Bill Barber

**ADDRESS**

Metro

**STREET**

600 NE Grand

97232

**CITY**

**ZIP CODE**

**I WISH TO SPEAK ON AGENDA ITEM #**

R4

**SUPPORT**

☒ **OPPOSE**

**SUBMIT TO BOARD CLERK**



6/

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**MEETING DATE** 8/18/84

**NAME** Peter F Fry

**ADDRESS** 722 SW 2nd #330

**STREET**

Portland, OR 97204

**CITY**

**ZIP CODE**

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**SUPPORT** X **OPPOSE**

**SUBMIT TO BOARD CLERK**

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MEETING DATE

8/18/94

NAME

Jim Ferner

ADDRESS

2247 N.E. Davis

STREET

PDX

97232

CITY

ZIP CODE

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R 4

SUPPORT

X

OPPOSE

SUBMIT TO BOARD CLERK

8 ✓  
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MEETING DATE

8/18/94

NAME

Lennie Sobo

ADDRESS

2128 NE 23rd

STREET

Portland, OR 97232

CITY

ZIP CODE

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R 4

SUPPORT

☒

OPPOSE

☐

SUBMIT TO BOARD CLERK

9/

**PLEASE PRINT LEGIBLY!**

**MEETING DATE** 8-18-94

**NAME** JAN CAMPBELL

**ADDRESS** 1120 SW fifth-

**STREET** PORTLAND. 97204-1989

**CITY** **ZIP CODE**

**I WISH TO SPEAK ON AGENDA ITEM #** R 4

**SUPPORT** X **OPPOSE** \_\_\_\_\_  
**SUBMIT TO BOARD CLERK**

10 ✓  
**PLEASE PRINT LEGIBLY!**

**MEETING DATE**

8/18/94

**NAME**

Lidwien Rahman

**ADDRESS**

ODOT 9002 SENELOUGHlin  
**STREET**

Milwaukee, WI 53222  
**CITY**

**ZIP CODE**

**I WISH TO SPEAK ON AGENDA ITEM #**

**SUPPORT**

✓

**OPPOSE**

**SUBMIT TO BOARD CLERK**

11 ✓  
**PLEASE PRINT LEGIBLY!**

**MEETING DATE** 8-18

**NAME** DAVID PARISI

**ADDRESS** 3264 NE COUCH ST.

**STREET**

PORTLAND

**CITY**

97232

**ZIP CODE**

**I WISH TO SPEAK ON AGENDA ITEM #** R-4

**SUPPORT**



**OPPOSE**

**SUBMIT TO BOARD CLERK**

MEETING DATE: August 18, 1994

AGENDA NO: R-4

(Above Space for Board Clerk's Use ONLY) \_\_\_\_\_

AGENDA PLACEMENT FORM

SUBJECT: Willamette River Bridges Accessibility Project

BOARD BRIEFING Date Requested: \_\_\_\_\_

Amount of Time Needed: \_\_\_\_\_

REGULAR MEETING: Date Requested: August 18, 1994

Amount of Time Needed: 30 Minutes

DEPARTMENT: Environmental Services DIVISION: Transportation

CONTACT: Dan Layden

TELEPHONE #: 248-5050 x6998

BLDG/ROOM #: 425

PERSON(S) MAKING PRESENTATION: Dan Layden

ACTION REQUESTED:

[ ] INFORMATIONAL ONLY [ ] POLICY DIRECTION [x] APPROVAL [ ] OTHER

SUMMARY (Statement of rationale for action requested, personnel and fiscal/budgetary impacts, if applicable): Action will adopt the Final Report of the Willamette River Bridges Accessibility Project (WRBAP). WRBAP is a comprehensive analysis of bicycle, pedestrian and disabled accessibility to the Willamette River Bridges. The Final Report recommends 37 projects totalling \$7 million. Initial funding of the projects will come from a \$1 million federal grant available in 1996.

SIGNATURES REQUIRED:

ELECTED OFFICIAL: \_\_\_\_\_

OR

DEPARTMENT MANAGER: \_\_\_\_\_

*[Signature: Dan Betsy Willia]*

ALL ACCOMPANYING DOCUMENTS MUST HAVE REQUIRED SIGNATURES

Any Questions: Call the Office of the Board Clerk 248-3277/248-5222

AGEN. PL

*Copy of Resolution 94-153 Sent to Dan Layden*

*Handled on 8-22-92.*

1994 AUG - 9  
MULNOMAH COUNTY  
BOARD OF  
COUNTY COMMISSIONERS  
6/93



# MULTNOMAH COUNTY OREGON

DEPARTMENT OF ENVIRONMENTAL SERVICES  
TRANSPORTATION DIVISION  
1620 S.E. 190TH AVE.  
PORTLAND, OREGON 97233  
(503) 248-5050

BOARD OF COUNTY COMMISSIONERS  
BEVERLY STEIN • CHAIR OF THE BOARD  
DAN SALTZMAN • DISTRICT 1 COMMISSIONER  
GARY HANSEN • DISTRICT 2 COMMISSIONER  
TANYA COLLIER • DISTRICT 3 COMMISSIONER  
SHARRON KELLEY • DISTRICT 4 COMMISSIONER

## MEMORANDUM

TO: BOARD OF COUNTY COMMISSIONERS

FROM: Dan Layden, Transportation Planner *DL*

TODAYS DATE: August 3, 1994

REQUESTED PLACEMENT DATE: August 18, 1994

RE: Resolution to adopt the Willamette River Bridges Accessibility Project final report.

I. Recommendation/Action Requested:

Adopt the Willamette River Bridges Accessibility Project final report which identifies bicycle, pedestrian, and disabled accessibility improvements to the Willamette River bridges.

II. Background/Analysis:

Several significant federal and state policy changes have sparked an increased interest in bicycle, pedestrian, and disabled accessibility. The County Transportation Division is diligently working to increase accessibility to County facilities through installation of sidewalks, curb cuts, and bicycle lanes. Providing increased accessibility to the Willamette River Bridges is critical to increasing alternative modes' use which is necessary to meet state and federal policy objectives.

In response to these issues the County conducted the Willamette River Bridges Accessibility Project. The project involved a comprehensive analysis of access to five county bridges, the Sellwood, Hawthorne, Morrison, Burnside, and Broadway. The Oregon Department of Transportation also agreed to provide resources to the County to examine the Ross Island and St. Johns bridges. In August 1992, the Board passed a resolution supporting the study.



The Transportation Division conducted a comprehensive study of the five bridges owned by Multnomah County (Sellwood, Hawthorne, Morrison, Burnside and Broadway) and two bridges owned by ODOT (Ross Island and St. Johns). The Board is asked to adopt the Final Report which details 38 accessibility improvements. Of the recommended improvements, 25 will be accomplished in the first implementation phase, which is funded by the Federal Government. Board adoption will validate the process, demonstrate a commitment to implementation of projects identified by the study, and facilitate the acquisition of other resources.

### III. Financial Impact

The Willamette River Bridges Accessibility Project study was funded by the County bike fund and bridge fund. The cost of the project was approximately \$100,000. The County will receive two grants from the Federal government for implementation, one grant for \$80,000 available this year, and \$1 million available in Fiscal Year 1996. Both grants will require a local match which is budgeted in the bike fund. The 20% match for the \$1 million will be provided by the jurisdiction responsible for the projects. The Transportation Division and other participating jurisdictions will pursue state and federal grants for the unfunded projects. The County Bridge Fund will not be used for project implementation.

### IV. Legal Issues

Staff is not aware of any legal issues with adoption of the plan.

### V. Controversial Issues

The plan recommends several changes to the traffic system crossing the bridges. The City of Portland conducted an extensive review of the traffic impacts and determined the impacts are minimal. Recently, several media stories have discussed project recommendations; the stories elicited several positive responses and no negative comments. The process was closely watched by several interest groups, and most expressed satisfaction with the process and most of the results. The project carefully examined all legitimate proposals offered by the public. The final report fully documents analysis of 79 projects.

### VI. Link to Current County Policies

The report is consistent with Comprehensive Plan Policy #33C addressing development of a comprehensive bicycle and pedestrian network. Adoption of this report does not require changes to any County policies.

VII Citizen Participation

The preparation of this report included extensive citizen involvement. The project Citizen Advisory Committee included representation from a diverse mixture of interests including alternative modes advocates, business groups, and neighborhood associations. The project solicited over 200 comments through public meetings, comment forms, and presentations at several community events. Several representatives from citizen groups involved in the process will testify at the Commission hearing.

VIII. Other Government Participation

The projects recommended by the final report will affect several other jurisdictions, notably the City of Portland, Tri-Met, and ODOT. County staff worked closely, through a technical advisory committee, with representatives of these agencies along with several other agencies including Metro and the Metro Human Rights Commission. The City of Portland Bureau of Traffic Management thoroughly reviewed the traffic impacts of proposed projects.

BEFORE THE BOARD OF COUNTY COMMISSIONERS  
FOR  
MULTNOMAH COUNTY

In the Matter of Adopting the Willamette  
River Bridges Accessibility Project Final  
Report )  
\_\_\_\_\_ )

R E S O L U T I O N

94-153

WHEREAS, the Multnomah County Comprehensive Framework Plan calls for developing a bicycle and pedestrian network; and

WHEREAS, bicycle, pedestrian and disabled access to the Willamette River Bridges is critical to meet county and state policy objectives for increasing opportunities for alternative transportation; and

WHEREAS, the Multnomah County Transportation Division has developed the Willamette River Bridges Accessibility Project to comprehensively examine accessibility to the Willamette River bridges owned by the County and the State of Oregon; and

WHEREAS, the Final Report of the Willamette River Bridges Accessibility Project identifies 38 projects to improve bicycle, pedestrian, and disabled accessibility; and

WHEREAS, the Willamette River Bridges Accessibility Project Final Report was developed and approved by a Citizens Advisory Committee representing interested organizations including the Bicycle Transportation Alliance, the Willamette Pedestrian Coalition and the Central Eastside Industrial Council; and

WHEREAS, the Willamette River Bridges Accessibility Project hosted four public workshops and received over 200 comments; and

WHEREAS, the Willamette River Bridges Accessibility Projects Technical Advisory Committee involved all affected agencies; and

WHEREAS, the City of Portland and the Oregon Department of Transportation have expressed interest in constructing recommended projects; and

WHEREAS, County Transportation Staff have secured over \$1 million in Federal grants for construction of recommended projects.

NOW THEREFORE, BE IT RESOLVED, that the Board of County Commissioners of Multnomah County approve the Willamette River Bridges Accessibility Project Final Report recommending projects to improve disabled, pedestrian and bicycle access to the Willamette River Bridges.

ADOPTED THIS 18th day of August, 1994



BOARD OF COUNTY COMMISSIONERS  
FOR MULTNOMAH COUNTY, OREGON

By:

Beverly Stein  
Multnomah County Chair

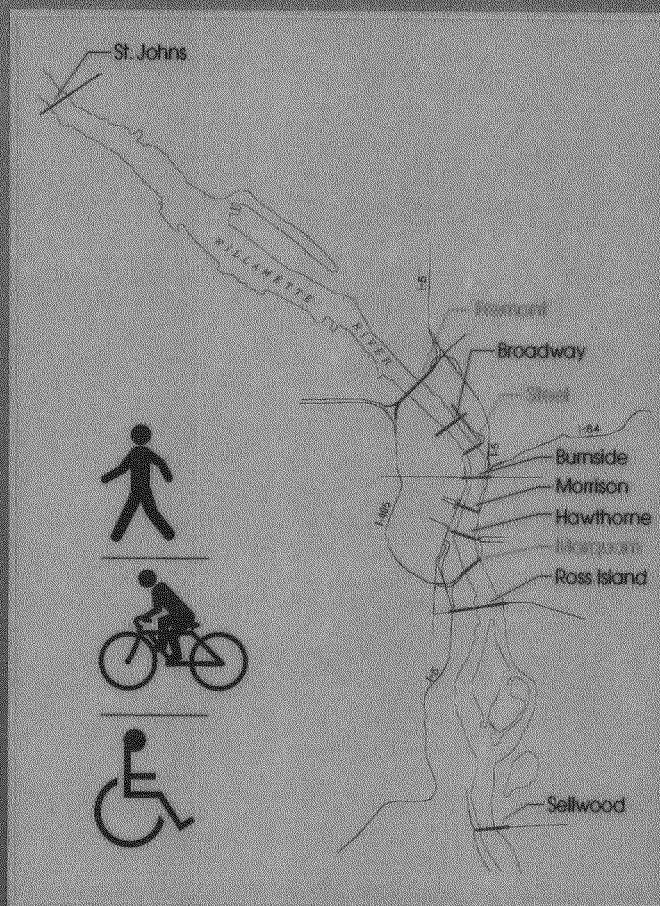
REVIEWED:

LAURENCE KRESSEL, COUNTY COUNSEL  
FOR MULTNOMAH COUNTY, OREGON

Assistant County Counsel

# FINAL REPORT

## WILLAMETTE RIVER BRIDGES ACCESSIBILITY PROJECT



*Prepared for*



**MULTNOMAH COUNTY  
OREGON**

*Prepared by*

**CH2M HILL**

Kittelson & Associates, Inc.  
Browning • Shono Architects

AUGUST 1994

# Willamette River Bridges Accessibility Project

## Project Participants

### Committees

#### Citizen Advisory Committee

Jay Beattie, Bicycle Transportation Alliance  
Rick Browning, Neighbors Northwest  
Nancy Christie, Willamette Pedestrian Coalition  
Jim Ferner, Bicycle Transportation Alliance  
Margueritte Feursanger, Southeast Uplift  
Charles Flake, Northeast Coalition of Neighborhoods  
Peter Fry, Central Eastside Industrial Council  
Marvin Rambo, Portland Wheelmen Touring Club  
Melissa Senac, Access Oregon  
Lennie Sobo, City of Portland Bicycle Advisory Committee  
Scott Thompson, Oregon Automobile Association  
Rich Williams, Association for Portland Progress

#### Technical Advisory Committee

Nina DeConcini, Department of Environmental Quality  
Jan Campbell, Metro Human Rights Commission  
Tim Collins, Metro Transportation Planning  
Kym Dilorio, Metro Transportation Planning  
Mike Hoglund, Metro Transportation Planning  
John Lindenthal, Multnomah County Bridge Section  
Stan Ghezzi, Multnomah County Bridge Section  
Larry Olson, Oregon Department of Transportation  
Lidwein Rahman, Oregon Department of Transportation  
Bill Hoffman, Portland Pedestrian Program  
Michael Maher, Portland Bicycle Program  
Zari Santner, Portland Parks and Recreation  
Jamie Throckmorton, Portland Bureau of Traffic Management  
Elizabeth Humphrey, Tri-Met  
Trudy Toliver, Tri-Met

### Multnomah County

#### Board of County Commissioners

Beverly Stein, Chair  
Dan Saltzman, District 1 Commissioner  
Gary Hansen, District 2 Commissioner  
Tanya Collier, District 3 Commissioner  
Sharron Kelley, District 4 Commissioner

#### Planning and Program Development

Kathy Busse, Administrative Services Officer  
Ed Pickering, Transportation Planning Administrator  
Dan Layden, Project Manager

#### Department of Environmental Services

Betsy Williams, Director

#### Transportation Division

Larry Nicholas, Director

#### Technical Support

Velda Howell  
Rosemary Justice  
Cathey Kramer  
John Shigo

### Consultants

#### CH2M HILL

David Parisi, Project Manager  
David Simmons  
Vicki DeWolf  
Janet Simons  
Vickie Nissen

#### Browning • Shono Architects

Rick Browning

#### Kittelson & Associates

Dan Seeman  
Lee Rodegerdts

#### Sextent Consultants

Kurt Wehbring

#### Solutions

Kent Layden



August 3, 1994

Dan Layden  
Multnomah County, Environmental Services  
Transportation Division, Planning  
1620 S.E. 190th Avenue  
Portland, OR 97233-5999

Subject: Final Report for the Willamette River Bridges Accessibility Project

Dear Dan:

We are pleased to present the Final Report for the Willamette River Bridges Accessibility Project. The report summarizes the study's process, identifies existing multi-modal bridge circulation problems, and presents opportunities for improving pedestrian, bicyclist and disabled person access to and across the following bridges in Portland: St. Johns, Broadway, Burnside, Morrison, Hawthorne, Ross Island and Sellwood.

The combined efforts of many people were needed to address the numerous and complex issues involved in solving the bridge's access dilemmas. Special thanks to everybody listed (on the back of the cover) for all of their hard work and dedication, particularly those who volunteered to serve on the Citizens and Technical Advisory Committees. The CAC and TAC met monthly for over a year and were responsible for the research of existing conditions and the development of the highly effective project evaluation criteria. The criteria led to the selection of 38 independent improvement projects, 25 of which could be implemented in the next two years.

I really enjoyed working with you and Ed Pickering on this project. It will be exciting for all of us to see these seven classic bridges made more accessible to all modes in the near future.

Sincerely,

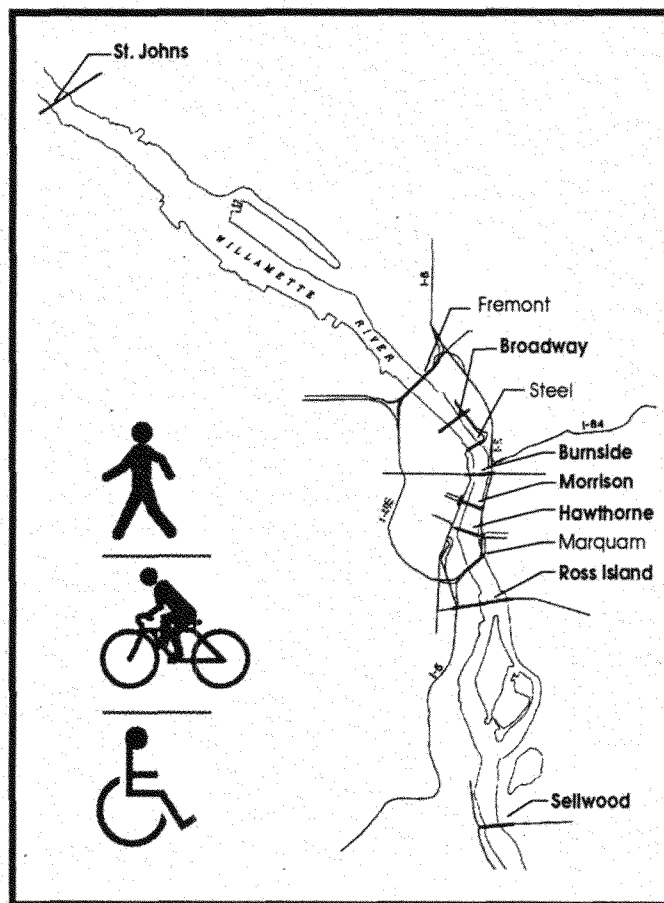
CH2M HILL

A handwritten signature in cursive script, reading 'David Parisi', is located below the CH2M HILL text.

David Parisi, P.E.  
Project Manager

# FINAL REPORT

## WILLAMETTE RIVER BRIDGES ACCESSIBILITY PROJECT



*Prepared for*



**MULTNOMAH COUNTY  
OREGON**

*Prepared by*

**CH2M HILL**

Kittelson & Associates, Inc.  
Browning • Shono Architects

AUGUST 1994



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Broadway:	Summary of Existing Access Problems, Possible Solutions and Engineering Issues; Evaluation Matrix; Final Evaluation Matrix; Cost Estimates
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Morrison:	Summary of Existing Access Problems, Possible Solutions and Engineering Issues; Evaluation Matrix; Final Evaluation Matrix; Cost Estimates
Hawthorne:	Summary of Existing Access Problems, Possible Solutions and Engineering Issues; Evaluation Matrix; Final Evaluation Matrix; Cost Estimates
Ross Island:	Summary of Existing Access Problems, Possible Solutions and Engineering Issues; Evaluation Matrix; Final Evaluation Matrix; Cost Estimates
Sellwood:	Summary of Existing Access Problems, Possible Solutions and Engineering Issues; Evaluation Matrix; Final Evaluation Matrix; Cost Estimates



## **Introduction**

Seven non-interstate bridges span the Willamette River in downtown Portland, providing vital transportation connections for the region. Five of the bridges are the property of Multnomah County; the others are owned and operated by the Oregon Department of Transportation. Although crossing the bridges is critical for many bicycle and pedestrian trips into the central part of the city, the bridges present significant barriers for bicyclists, pedestrians, and disabled travelers. Currently, none of the bridges provide adequate accessibility for wheelchair users, and few offer complete accessibility to bicyclists and pedestrians. For several years the community has expressed concerns about poor access to the bridges for people using alternative modes of travel. In response to these concerns, Multnomah County developed the Willamette River Bridges Accessibility Project (WRBAP).

WRBAP involved the public in a detailed identification and discussion of access problems and potential improvements. Multnomah County staff worked with a citizen advisory committee (CAC) and technical advisory committee (TAC) to develop a comprehensive analysis of multimodal access to and across the bridges and to rank the importance of different access projects.

As part of the WRBAP study, alternative mode access to each bridge was carefully analyzed and possible improvements were identified. The resulting project Accessibility Plans show 38 projects to improve access to and across the seven Willamette River bridges owned by Multnomah County and the State of Oregon.

Recommended projects include installation of more than 3 miles of bicycle lanes, 3,500 linear feet of sidewalks, more than 20 crosswalks, and almost 30 curb ramps. The total cost of the 38 projects is \$7.63 million. When the projects are completed, four county bridges will be fully accessible to disabled persons, bicyclists, and pedestrians, and major multimodal improvements will have been installed on the remaining three bridges.

## **Report Organization**

This report is divided into eight sections. This introductory section discusses the WRBAP's study goals and objectives; committee involvement; the project identification, evaluation, and selection process; and the implementation plan. At the end of this section, bridge Accessibility Plans are presented.

The remaining seven sections contain the analysis results for the seven bridges, respectively: St. Johns, Broadway, Burnside, Morrison, Hawthorne, Ross Island, and Sellwood. Each section contains, for that bridge, a summary of existing access problems, possible solutions, and engineering issues; a project evaluation matrix; a final evaluation matrix; and cost estimates.

## Project Goals

The CAC and TAC established four primary objectives for the WRBAP study:

- Identify opportunities to improve access to and across the bridges and create ramps for bicycles, pedestrians, and disabled persons
- Identify ways to improve safety for all bridge users
- Integrate improvements for bridges and ramps with existing and planned surface street systems
- Develop an action plan for capital improvements and maintenance, on the basis of project criteria and priorities for adoption by the responsible policy bodies (the City of Portland, Multnomah County, and the Oregon Department of Transportation)

## User Objectives and Criteria

The CAC worked closely with Multnomah County staff to develop objectives and criteria relating to bridge users. These objectives can serve as long-term goals for accessible facilities, particularly in the case of new bridge construction. The objectives and criteria for bicycles, pedestrians, and disabled persons are presented below.

Bicycles
<b>Objective:</b> To provide safe, direct, and convenient bicycle access to and across the Willamette River with minimal conflicts with motor vehicles.
<b>Criteria</b> Separate rights-of-way for bicycles should be provided on the bridges' main spans and ramps, wherever practicable. Planned bikeways should offer direct connection to bridge ramps. Bikeway facilities should be appropriate to the functional classification of the bikeway street. Bikeways should have minimal uncontrolled conflicts with motor vehicles. Direct and convenient routing is vital to bicyclists; access routes to the Willamette River bridges should be planned so that they are as direct and convenient as practicable, with sufficient signage. There will continue to be bikeways shared with pedestrians in the foreseeable future; on shared facilities, travelways and protocol among users should be indicated with clear signage. Bikeway design should accommodate use by motorized wheelchairs.

### **Pedestrians**

**Objective:** To provide safe, direct, and convenient pedestrian access to and across the Willamette River with minimal conflicts with motor vehicles.

#### **Criteria**

Sidewalks should be of adequate width to accommodate anticipated pedestrian and wheelchair traffic. Sidewalks should be a minimum of 72 inches wide, where practicable.

Pedestrian underpasses should be replaced with at-grade pedestrian crossings, where practicable.

To ensure pedestrian safety, at-grade crossings should provide measures to control traffic.

To ensure the continuity of the pedestrian system, pedestrian rights-of-way at bridgeheads should be delineated. (The bridgehead is the transition area between the bridge ramp and the surface streets.)

To reduce conflict between bicyclists and pedestrians, travelways should be separated, where practicable.

If separated travelways are not possible, shared bicycle and pedestrian two-way travelways should be a minimum of 12 feet wide, per American Association of State Highway and Transportation Officials (AASHTO) standards, where practicable.

Safe pedestrian routes to and across the river should be indicated by directional signage.

Safe pedestrian routes to popular destinations should be indicated by informational signs.

To increase personal safety, all pedestrian facilities should be well lighted.

### **Disabled Persons**

**Objective:** To provide safe, direct, and convenient access for disabled persons to and across the Willamette River with minimal conflicts with motor vehicles.

#### **Criteria**

New construction planned by the WRBAP must comply with the Americans with Disabilities Act.

To improve accessibility for the physically disabled, ramps with stairs should be included on pedestrian ways, wherever practicable.

To reduce obstacles to the physically disabled, curb ramps should be placed appropriately in the project area.

Signage should indicate safe and convenient routes for the physically disabled to cross the river.

To increase safety, visually impaired persons should be alerted to hazards by means of textured sidewalks.

To increase the safety of hearing-impaired persons, there should be pedestrian-activated signals and other appropriate traffic controls in the project area to provide visual cues.

## **Project Process**

WRBAP has three phases:

- Phase One: Project Identification
- Phase Two: Project Refinement and Implementation
- Phase Three: Major Project Implementation

This report summarizes the work of Phase One, the locally funded project study. Phases Two and Three will be funded by the federal Congestion Mitigation/Air Quality program, with local matching funds from the implementing jurisdictions.

### **Advisory Committees**

Project staff received advice and direction from both citizen and technical advisory committees. The CAC and TAC each met monthly for more than a year to examine each bridge in detail, develop evaluation criteria, and review consultant and county work. The CAC included representatives from the following organizations:

- Willamette Pedestrian Coalition
- Bicycle Transportation Alliance
- Portland Bicycle Advisory Committee
- Access Oregon
- Automobile Association of Oregon
- Portland Wheelmen Touring Club
- Neighbors Northwest
- Inner Northeast Coalition of Neighborhoods
- Southeast Uplift
- Association for Portland Progress
- Central Eastside Industrial Council

The TAC included representatives from the following jurisdictions:

- City of Portland Bureau of Traffic Management
- City of Portland Pedestrian Program
- Metropolitan Service District
- Tri-Met
- Oregon Department of Environmental Quality
- Oregon Department of Transportation
- Metropolitan Human Rights Commission

The TAC and CAC process focused on identifying problems and developing solutions. The advisory committees used several methods to develop projects. They examined each bridge in detail using aerial photographs and schematic drawings, toured the bridges to examine

access problems firsthand, held four forums for public commentary, and developed project ideas for evaluation by the consultant.

## **Public Involvement**

In addition to the CAC, WRBAP provided several opportunities for citizen involvement. Four public workshops, comment forms, and tours with several user groups generated more than 200 comments from the public that identified access problems and suggested solutions.

## **Project Selection Process**

At the conclusion of the project identification process, the CAC and TAC had developed 80 potential projects and project alternatives. To narrow the list of projects, the committees devised a two-tiered evaluation process. Tier-one criteria tabled projects that did not meet minimal design standards or comply with existing policy guidelines, as shown below (table criteria provided by Multnomah County).

### **Table Criteria**

**(Project is tabled if it fails to meet these criteria)**

#### **Beyond Project Scope**

Analysis of the project is not feasible given project scope.

#### **Air Quality Performance**

A goal of the WRBAP is to reduce air pollution, by offering alternatives to single occupancy vehicles. The project must not lead to a decrease in air quality which could affect the region's effort to comply with the Clean Air Act of 1991. Projects which reduce vehicle capacity could cause minor air quality impacts, if the impact is mitigated by reduced automobile trips. Initial projects will probably be funded by the Congestion Mitigation/Air Quality program, CM/AQ projects must show significant potential to reduce SOV trips and improve air quality.

#### **Conformance**

New projects must provide facilities that substantially meet AASHTO (American Association of State Highway and Transportation Officials) standards for bicycle and pedestrian facilities. New projects must comply with the Americans with Disabilities Act.

#### **Compatibility**

The project must be compatible with applicable land use regulations, including Willamette Greenway, City of Portland design standards, the Transportation Element of the Portland Comprehensive Plan, the Multnomah County Bicycle Master Plan, the Transportation Planning Rule, the Oregon Transportation Plan, the Oregon Bicycle Plan, the Oregon Highway Plan and the Regional Transportation Plan.

Tier-two criteria scored projects according to the following mutually agreed-upon principles (provided by Multnomah County).

### **Project Performance Criteria**

#### **A. Mode Benefit**

The proposed project provides significant benefit to at least one project mode (i.e., bicycles, pedestrians and disabled persons). The alternative should not deteriorate conditions for other project modes. Projects that provide benefit to more than one mode will receive additional points.

- Provides significant\* benefit to more than one mode. 4 Points
- Provides significant benefit to one mode and marginal\* benefit to one or more other modes. 3 Points
- Provides marginal benefit to more than one mode, or significant benefit to one mode. 2 Points
- Provides marginal benefit to one mode. 1 Point
- Provides no benefit. 0 Points
- Limits accessibility for one or more modes. -3 Points

\*Significant: Provides direct access from street system or recreational amenity, or provides increased accessibility across the main span. Provides increased safety and user comfort.

\*Marginal: Provides improved access but does not eliminate all conflicts and problems. Does not necessarily increase user comfort but does increase safety.

#### **B. Removes Barriers**

The goal of the project should be to plan for increased access on Willamette River Bridges. The Project should assure that access to the bridges does not represent a barrier to project modes travel.

- Project removes or circumvents a significant barrier to alternative modes travel across a particular bridge (i.e., a barrier which precludes or severely limits access on an otherwise accessible bridge). 4 Points
- Project removes or circumvents a significant barrier, however other minor barriers still exist. 3 Points
- Project removes or circumvents one of a number of barriers, however a significant barrier still exists. 2 Points
- Project removes or circumvents a barrier, however several significant barriers still exist. 1 Point
- Project does not remove or circumvent a barrier. 0 Points

#### **C. Facilitates Connections**

The project should provide a necessary addition to existing bike and pedestrian systems. The project should not be isolated from other systems or other proposed projects.

- Provides critical system additions\* for more than one mode. 4 Points
- Provides critical system additions for one mode. 3 Points
- Provides minor system addition\* for more than one mode. 2 Points
- Provides minor system additions for one mode. 1 Point
- Does not provide a system addition. 0 Points

\*Critical System Addition: Addition to system that connects to a developed circulation system for the benefited mode, project provides a vital connection.

\*Minor System Addition: Addition that does not necessarily connect with a well developed circulation system.



#### **D. Traffic System Performance**

Some decrease in traffic system performance may result from the project, however increases in traffic congestion that will negatively affect goods movement and transit service are not acceptable.

- Project will not degrade traffic system performance. 0 Points
- Project will cause minor degradation to traffic system performance. -1 Point
- Project will cause significant degradation to traffic system performance. -2 Points
- Project will cause capacity decrease which could lead to failure of traffic system links or intersections on streets important to goods movement. -3 Points
- Project will cause capacity decrease which could lead to failure of traffic system links or intersections on streets heavily used by transit. -4 Points

#### **E. Potential Users**

Relative number of users of a project

High Use: 5 Points

Moderate Use: 3 Points

Low Use: 1 Point

#### **F. Cost Benefit Analysis**

Project score divided by project cost.

Lowest 20% cost per point. 4 Points

Next lowest 20% cost per point. 3 Points

Middle 20% cost per point. 2 Points

High 20% cost per point. 1 Point

Highest 20% cost per point. 0 Points

### **Engineering Evaluation Process**

Multnomah County retained CH2M HILL to conduct a conceptual evaluation and detailed traffic analysis of proposed improvements. A team from CH2M HILL, Kittelson & Associates, Inc., and Browning Shono Architects reviewed the initial recommended projects, suggested additional projects and modifications, and evaluated the projects. The evaluation process examined the technical feasibility of project proposals by reviewing the following issues:

- Engineering feasibility of proposed and modified designs
- Compliance with controlling county and state standards
- Potential impacts to the traffic system, including intersection and roadway operations
- Potential structural impacts to the bridges
- Conceptual design for proposed structures
- Preliminary cost estimates

## **Implementation Plan**

After applying the evaluation criteria to the 80 preliminary projects and alternatives, the CAC and TAC selected 38 multimodal projects for implementation; these are shown on the bridge Accessibility Plans presented at the end of this section. The total cost of the 38 projects is estimated at \$7.63 million.

WRBAP will receive \$1 million from the Congestion Mitigation/Air Quality program (administered by the Federal Highway Administration) in 1996. The \$1 million grant plus additional local funding will be directed toward construction of 25 of the 38 projects. The Phase One projects consist of improvements costing from \$5,000 to \$200,000. The first table that appears at the end of this section shows these Phase One projects.

Future phase projects are shown on the second table. Thirteen future phase projects are anticipated to be included in the regional transportation plan, transportation improvement plans, and local jurisdiction capital improvement plans. If Phase One project costs are lower than estimated, some Phase Two projects may be shifted to Phase One.

## **Funding Sources**

There are several possible sources of additional funding, both local and federal, as described below.

### **Local Funds**

The Oregon Department of Transportation, City of Portland, and Multnomah County all have funds set aside for constructing pedestrian, bicycle, and disabled access projects. All three jurisdictions will consider constructing projects before 1996. County funds used to maintain the Willamette River bridges must go to continued maintenance of bridge facilities.

### **Federal Funds**

Most grant funds from the 1991 Intermodal Surface Transportation Efficiency Act (ISTEA) Implementation Strategy have already been allocated; however, Congress is expected to begin consideration of a new ISTEA in the next year. The new legislation should include programs for alternative modes of transportation. Completion of WRBAP will position the involved jurisdictions to compete for available funds.

# Willamette River Bridges Accessibility Project

## Phase I-Project Implementation

### St. John's

- Syracuse/Philadelphia Intersection (1) \$ 25K
- St. Helens/Bridge Avenue Intersection (8) \$ 5K

### Broadway

- Broadway/Flint/Wheeler Intersection (1B) \$ 40K
- Lift Span Sidewalks (3) \$ 50K
- Pedestrian Xing at Lovejoy/Broadway (4) \$100K
- Broadway Viaduct Bikelanes (5B) \$ 15K
- Broadway/Hoyt Intersection (6) \$ 35K
- 10th Avenue Viaduct Bikelanes (7) \$ 10K
- Pedestrian Xing at Lovejoy/10th Ave. (8) \$ 40K
- Lovejoy Viaduct Bikelanes (10A) \$ 70K

### Burnside

- Bikelanes from MLK to 6th Avenue (2B) \$ 25K
- Burnside/MLK Intersection (4) \$ 20K
- Westbound Bikelane West of MLK (6) \$ 5K
- Eastbound Bikelane East of 2nd Avenue (7B) \$ 10K
- Burnside/2nd Avenue Intersection (8) \$ 20K

### Morrison

- Water Avenue/Yamhill Intersection (3B) \$ 5K
- Front Avenue Ramp Sidewalk (5B) \$200K
- 2nd Avenue Crosswalks (6B) \$ 40K

### Hawthorne

- Hawthorne Viaduct (1D) \$ 25K
- Clay Ramp Sidewalk (2) \$ 10K
- Westside Improvements (7) \$ 70K
- Madison Viaduct Sidewalk (8) \$200K

### Ross Island

- Kelly Ramp Modification (6) \$ 70K
- Pedestrian Xing at Front Ave. Ramp (8B) \$ 20K

### Sellwood

- Greenway Trail Crossing (5B) \$ 30K  
\$1,140K

### **WRBAP Project Implementation**

- WRBAP will receive \$1 million in federal CM/AQ funds (including local match) in 1996.
- The City of Portland and ODOT are considering implementing several of the low cost projects in the next two years.
- Multnomah County has received \$80,000 in CM/AQ funds for immediate engineering work and implementation of low cost projects.
- Second phase projects will be implemented according to rank and cost.



MULTNOMAH  
COUNTY

Multnomah County Transportation Division

## Willamette River Bridges Accessibility Project Future Phase Project Implementation

### St. Johns

	<u>Cost</u>	<u>Score</u>
• Willamette Bicycle Route (2B)	\$ 5K	7
• Bridge Avenue Trail (4)	\$ 250K	10
• Bridge Avenue Intersection (6)	\$ 40K	8
• St. Helens/Bridge Avenue Intersection (7)	\$ 40K	9

### Broadway

• Lovejoy Sidewalk (9)	\$ 490K	18
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### Burnside

• Esplanade Ramp (5)	\$1,070K	11
• Waterfront Ramp (5)	\$1,070K	11

### Morrison

• Morrison Bicycle Pathway (4A)	\$1,270K	11
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### Hawthorne

	<u>Cost</u>	<u>Score</u>
• Hawthorne Bridge Sidewalks (5)	\$1,300K	16

### Ross Island

• Corbett/Kelly/Porter Intersection (5A)	\$ 475K	13
• Eighth Avenue Ramp (9)	\$ 40K	11

### Sellwood

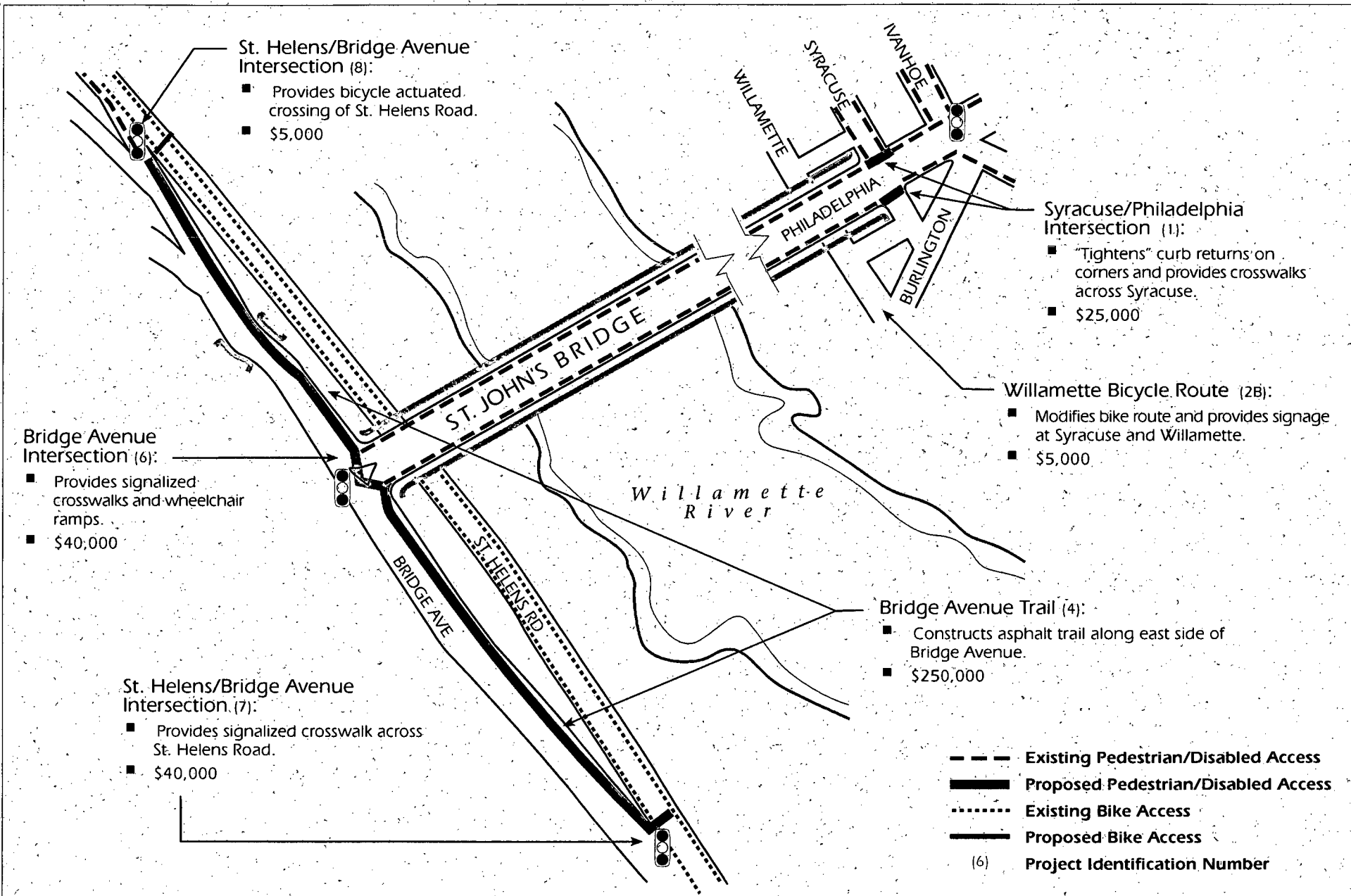
• Eastside Undercrossing (1B)	\$ 160K	11
• Light Pole Relocation (2)	\$ 280K	7

### **Future Project Implementation**

- Projects shown will be implemented according to cost, score or by responsible jurisdiction.
- Project funding will be through the RTP, TIPs or local jurisdiction CIPs.
- 1996 CM/AQ funds may contribute to some of these projects if a portion of Phase 1 projects are implemented by the responsible agencies and/or if some Phase 1 project costs are lower than estimated.



Multnomah County Transportation Division



### Lovejoy Viaduct (10A):

- Replaces a westbound travel lane between NW 14th Avenue and Broadway with bike lanes on both sides.
- Adds signalized crosswalk across eastern leg of NW 14th Avenue intersection.
- Prohibits peak-hour left turns to N.W. 10th Avenue viaduct.
- \$70,000

### Lovejoy Undercrossings (4 and 8):

- Removes stairs and undercrossing and replaces with signalized crosswalk and wheelchair ramps.
- Makes north side of bridge and NW 10th Avenue viaduct wheelchair accessible.
- \$100,000 (4) and \$40,000 (8)

### Broadway/Flint/Wheeler Intersection (1B):

- Channelizes intersection with raised islands to improve eastbound bicycle connection to Flint Street.
- Provides crosswalks and wheelchair ramps.
- \$40,000

### Oregon Arena Improvements:

- Provides bike lanes on Broadway between bridge and Wheeler.
- Signalizes Benton and Flint intersections.

### Lovejoy Sidewalk (9):

- "Cantilevers" extended sidewalk from existing stairway to NW 14th Avenue.
- Makes viaduct wheelchair accessible.
- \$490,000

### Tenth Avenue Viaduct (7):

- Replaces outside travel lanes with bike lanes on both sides.
- \$10,000

### Broadway Viaduct (5B):

- Replaces a northbound travel lane with bike lanes on both sides.
- \$15,000

### Broadway/Hoyt Intersection (6):

- "Tightens" curb return on northeast corner and provides signalized crosswalk across northern leg of intersection.
- \$35,000

### Lift Span Sidewalks (3):

- Replaces slick (when wet) wooden plank sidewalks with non-slip surface.
- \$50,000

- Existing Pedestrian/Disabled Access
- Proposed Pedestrian/Disabled Access
- ..... Existing Bike Access
- Proposed Bike Access
- (6) Project Identification Number



MULTNOMAH COUNTY OREGON



## Broadway Bridge ACCESSIBILITY PLAN

WILLAMETTE RIVER BRIDGES ACCESSIBILITY PROJECT



NORTH

CH2M HILL

#### Eastside Bicycle Lanes (2B and 6):

- Replaces a westbound travel lane (between MLK and 6th Avenue) with bike lanes on both sides.
- Extends westbound bike lane to existing bike lane on north side of bridge.
- Provides special signing and striping delineation for eastbound bike lane from bridgehead to MLK.
- Relocates westbound bus stop from east side to west side of MLK intersection.
- \$25,000 (2B) and \$5,000 (6)

#### Burnside/Second Avenue Intersection (8):

- Adds signalized crosswalk across eastern leg of intersection.
- \$20,000

Willamette River

BURNSIDE BRIDGE

Existing Stairway

#### Westside Bicycle Lanes (7B):

- Replaces short eastbound travel lane with bike lane.
- \$10,000

#### Waterfront Ramp (5):

- Provides multi-modal ramp to north and/or south side of Waterfront Park.
- \$1.07 million

#### Esplanade Ramp (5):

- Provides multi-modal ramp to future Eastside Esplanade pier.
- \$1.07 million

#### Burnside/MLK Intersection (4):

- Adds signalized crosswalk across western leg of intersection.
- Provides wheelchair ramps at three corners currently without ramps.
- \$20,000

- Existing Pedestrian/Disabled Access
- Proposed Pedestrian/Disabled Access
- ..... Existing Bike Access
- Proposed Bike Access
- (6) Project Identification Number



MULTNOMAH COUNTY OREGON

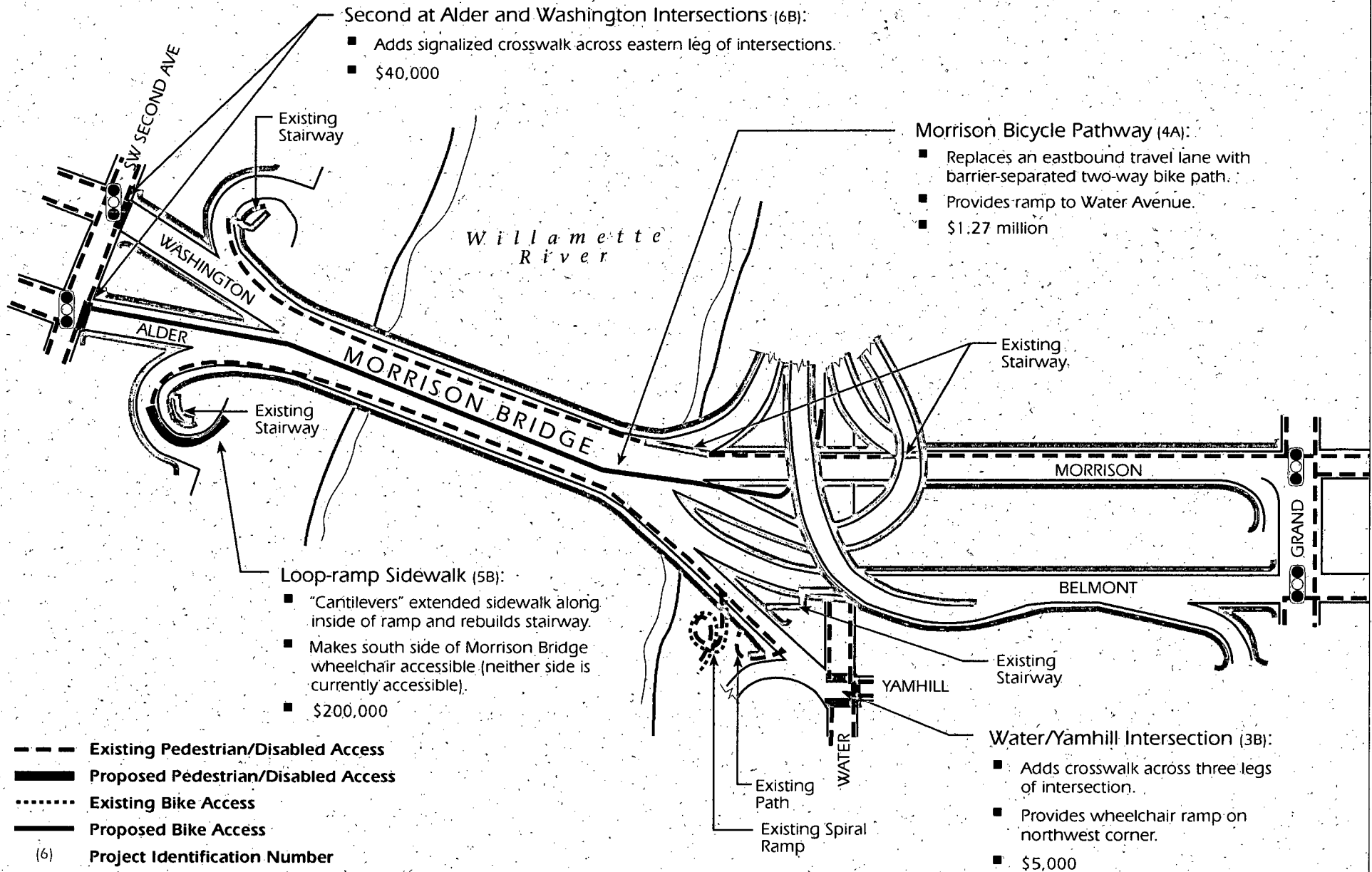


## Burnside Bridge ACCESSIBILITY PLAN

WILLAMETTE RIVER BRIDGES ACCESSIBILITY PROJECT, CH2M HILL



NORTH



MULTNOMAH COUNTY OREGON



## Morrison Bridge ACCESSIBILITY PLAN

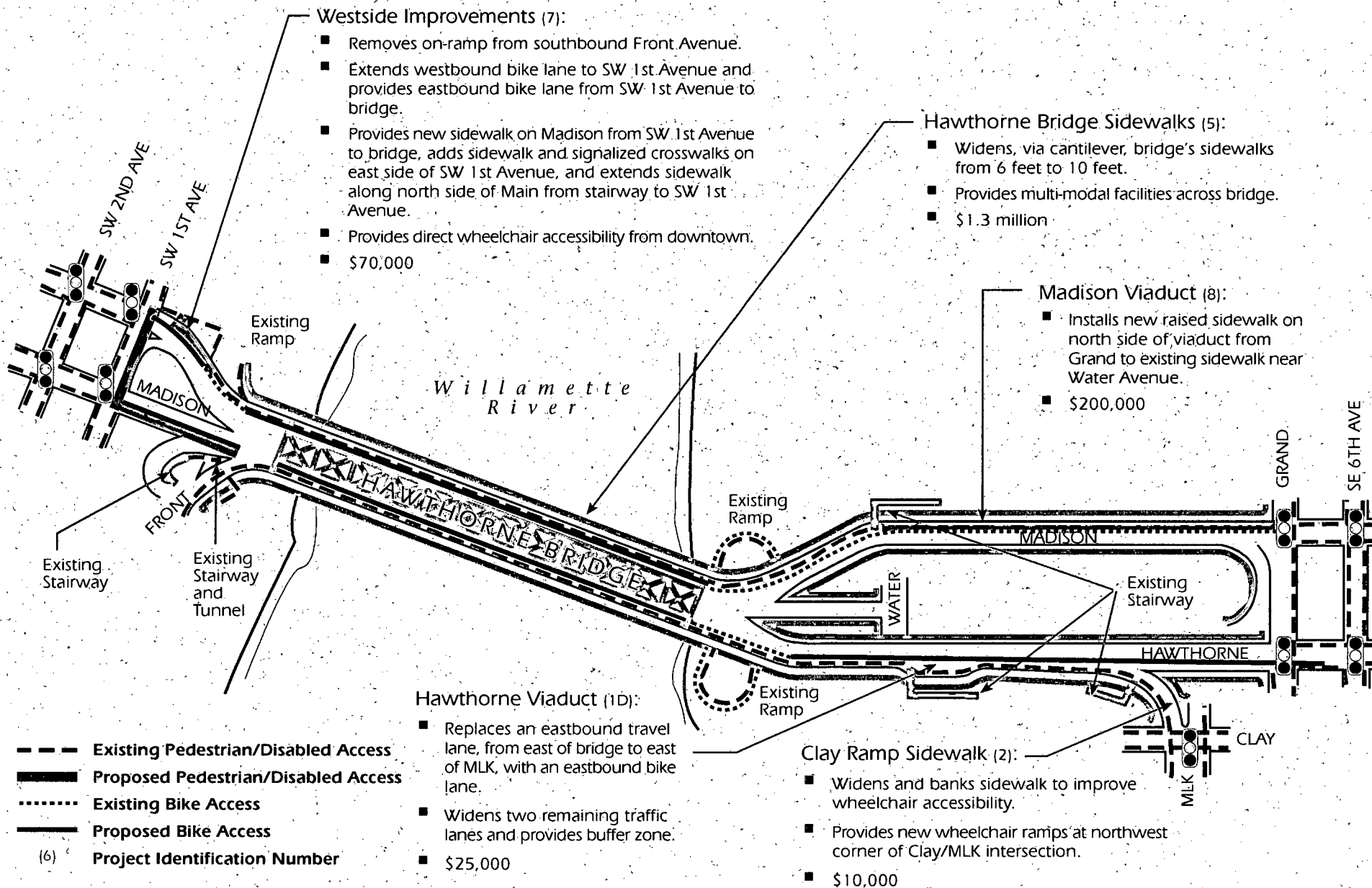
WILLAMETTE RIVER BRIDGES ACCESSIBILITY PROJECT



NORTH

CHM HILL





MULTNOMAH COUNTY OREGON



## Hawthorne Bridge

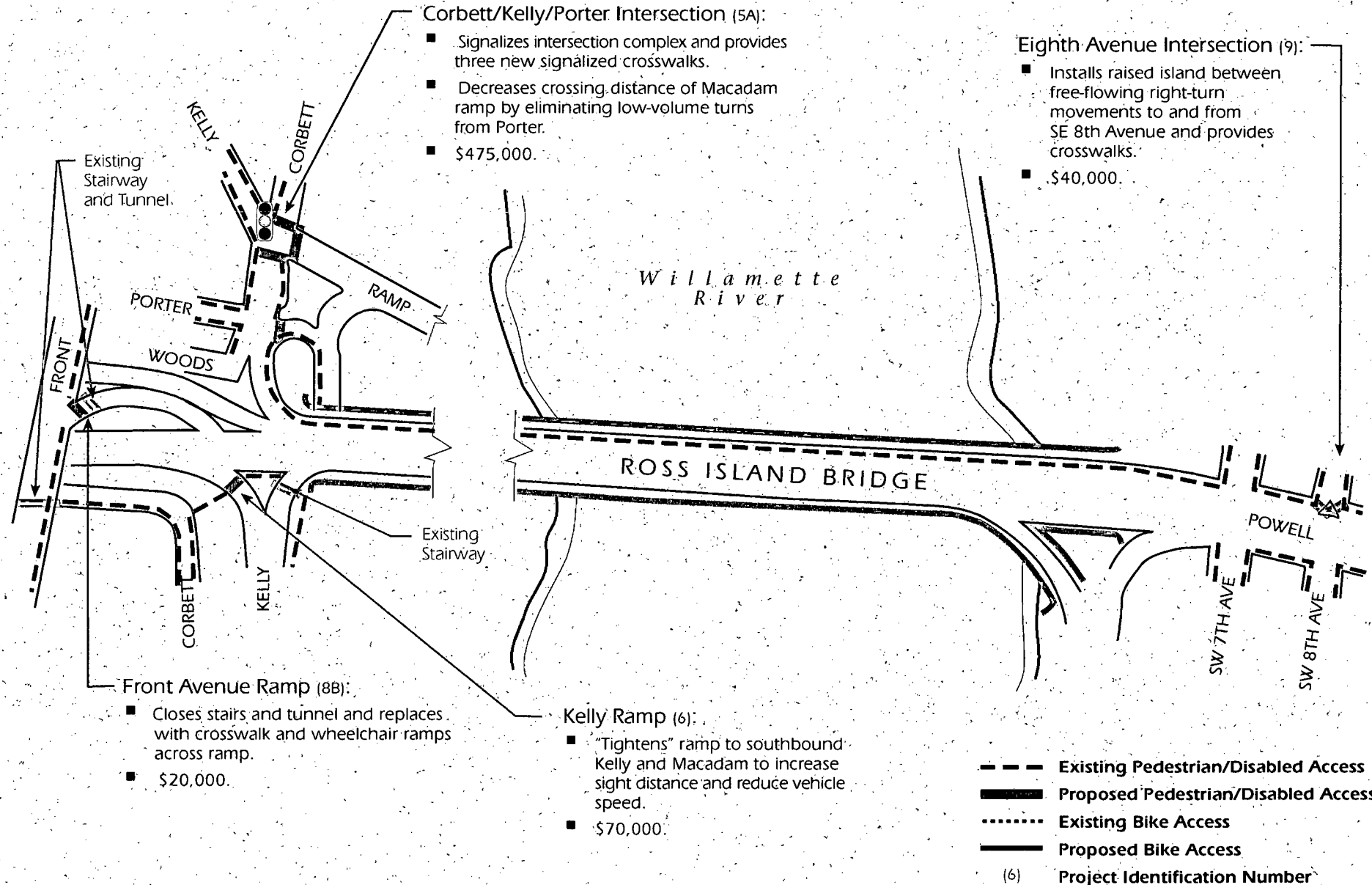
ACCESSIBILITY PLAN

WILLAMETTE RIVER BRIDGES ACCESSIBILITY PROJECT



NORTH

CH2M HILL



MULTNOMAH COUNTY OREGON



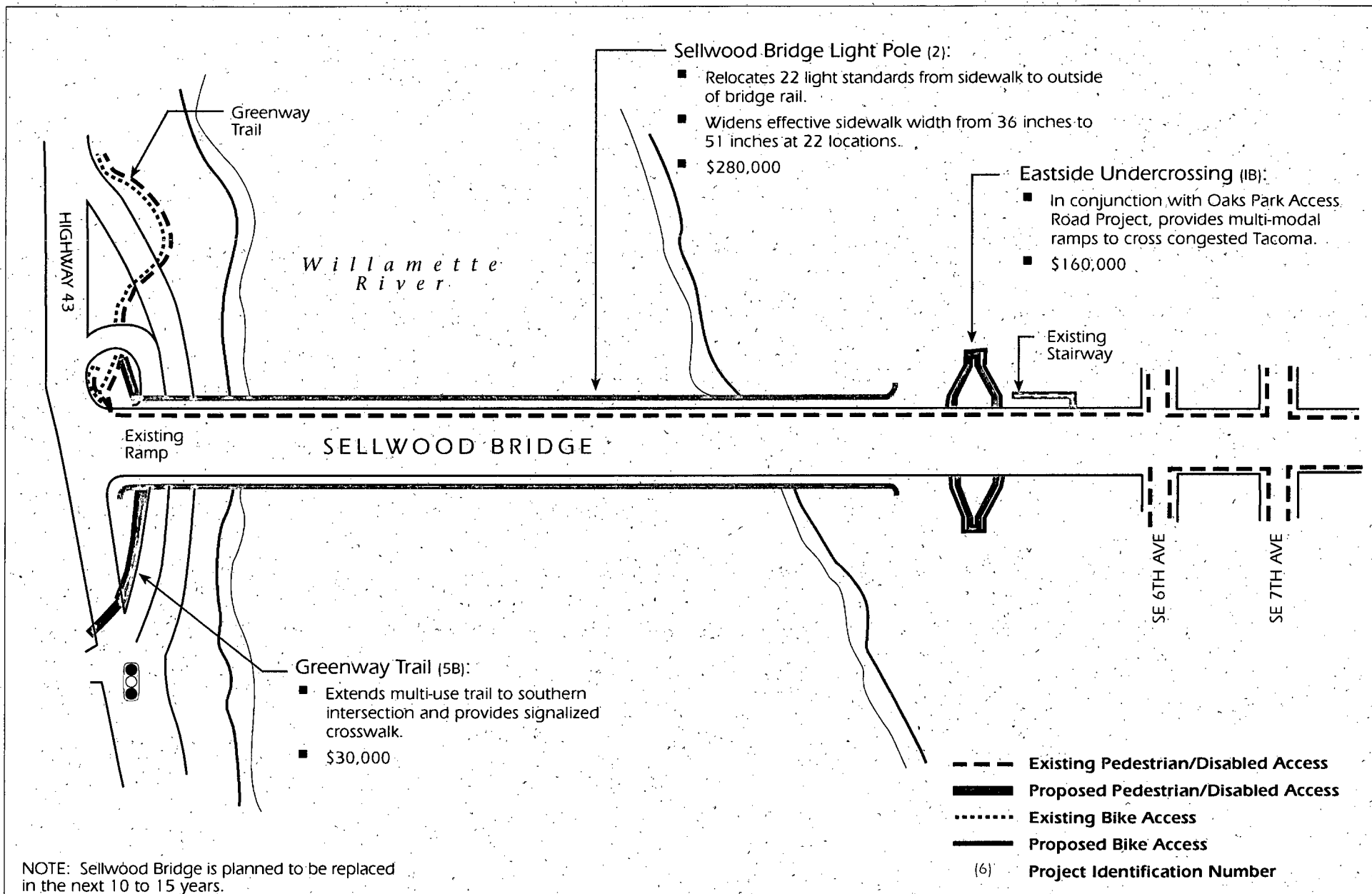
# Ross Island Bridge ACCESSIBILITY PLAN

WILLAMETTE RIVER BRIDGES ACCESSIBILITY PROJECT



NORTH

CHM HILL



MULTNOMAH COUNTY OREGON



## Sellwood Bridge ACCESSIBILITY PLAN

WILLAMETTE RIVER BRIDGES ACCESSIBILITY PROJECT



NORTH

CH2M HILL



**Summary of Existing Access Problems, Possible  
Solutions, and Engineering Issues  
May 24, 1994**

# Summary of Existing Access Problems, Possible Solutions and Engineering Issues

May 24, 1994

This working paper compiles multi-modal access and circulation issues the CAC, TAC, and CH2M HILL team have identified over the past year. All previously identified problems and possible solutions are identified. Engineering issues (associated with designing a solution) the consultant will evaluate in working paper #2 are discussed.

Aerial pull-outs, schematically showing study areas, are provided at the end of this section. The letter identifying each issue corresponds to a problem and solution area on the pull-outs.

## East Approach

### A. Bicycle, Disabled, and Pedestrian Access to Bridgehead

**Problem:** Access to and from bridgehead requires making a crossing of Syracuse Street. Large radius curb returns make this crossing longer with high conflict potential when combined with the significant traffic in this area. Steep and poorly aligned sidewalk ramps on the bridge sidewalk approaches are difficult for bicyclists and disabled persons to use.

**Proposed Solution:** Construct smaller radius curb returns to shorten crossing distance for users. Reconstruct sidewalk ramps with reduced slopes. Stripe crosswalks across Syracuse on both the north and south side of Philadelphia Avenue to delineate crossing zone.

**Engineering Issue(s):** Assess minimum radius required to safely facilitate truck movements on Syracuse.

### B. Bicycle Access from Willamette Boulevard

**Problem:** Existing bicycle route connecting bridge with Willamette Boulevard is indirect, routing bicyclists through the St. John's business district.

**Proposed Solution:** Convert the narrow streets directly adjacent to the bridge approach structure (between Willamette and Syracuse) to multiuse (non-auto) facilities.





*View of north side of bridge approach at Syracuse Street.*

#### Engineering

Issue(s): Assess potential traffic impacts and property access issues associated with closing streets to auto traffic.

#### Main Span

##### C. Bicycle Access Across Bridge

Problem: Narrow travel lanes, combined with significant auto and truck volumes, intimidate bicyclists into using 5-foot sidewalks to cross the bridge. Sidewalks around bridge towers are difficult for bicyclists to ride around, often requiring users to dismount to negotiate the four sharp turns around each tower.

#### Proposed

Solution: Remove one traffic lane and restripe main span with bicycle lanes in each direction. Consider using reversible lanes to accommodate peak-hour capacity.

#### Engineering

Issue(s): Assess traffic impacts of removing a traffic lane.





*Bridge Avenue looking south.*

#### D. Disabled Access Across Bridge

**Problem:** Uneven sidewalk surfacing and abrupt edges of plates over expansion joints on sidewalk provide difficult obstacles for wheelchair users to negotiate.

**Proposed Solution:** Repair uneven surfacing and bevel edges of covers to improve ability of wheelchairs to travel over them. Note: ODOT has scheduled the replacement of the sidewalks.

**Engineering Issues:** None.

#### **West Approach**

#### E. Bicycle, Disabled, and Pedestrian Access to Bridgehead

**Problem:** There are no facilities provided on the west approach to the bridge (Bridge Avenue) for bicycle, disabled, or pedestrian access.

**Proposed Solution(s):** 1. Construct sidewalks and sidewalk ramps along Bridge Avenue from St. Helens Road to the bridgehead.







*North intersection of Bridge Avenue and St. Helens Road.*

2. Stripe bicycle lane(s) on Bridge Avenue.
3. Provide signal modifications to improve and/or provide a crossing of St. Helens Road at the intersections of Bridge Avenue.

Engineering  
Issue(s):

Assess design requirements and constraints related to constructing sidewalks. Analyze potential impacts to traffic operations with striping bicycle lanes on Bridge Avenue and providing crosswalks on St. Helens Road.







St. Johns

Edison

Willamette

Syracuse

Burlington

**St. Johns Bridge** Figure ST-1  
East Approach

WILLAMETTE RIVER BRIDGES ACCESSIBILITY PROJECT



**CHM HILL**





**St Johns Bridge** Figure ST-2  
West Approach



WILLAMETTE RIVER BRIDGES ACCESSIBILITY PROJECT



**CH2M HILL**



# **Project Evaluation Matrix**

# **Willamette River Bridges Accessibility Project Project Evaluation Matrix**

6/30/94

Page 1 of 2

St. Johns Bridge Project	Mode Benefit	Removes Barriers	Facilitates Connections	Traffic System Performance	Potential Users	Sub-total Pts	Cost Benefit Analysis	Total Pts
	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts		Benefits/Impacts	
<b>1. Install intersection "bulb-outs" and crosswalks across Syracuse at bridge head (A)</b>	Would provide significant benefit to all modes by decreasing the intersection crossing distance, providing a delineated crosswalk and improving the grades of the sidewalk ramps.  4 points.	Project would replace nonstandard wheelchair ramps with improved ramps, however, other significant barriers would still exist, for example, narrow sidewalks on the bridge span.  2 points.	Would provide minor system additions by improving wheelchair ramps and shortening crossing distance.  2 points.	Would not degrade traffic system performance. Bulb-outs would prohibit trucks from using Syracuse Street.  Zero points.	Moderate number of users would benefit with project.  3 points.	11	Estimated cost is \$25,000 for new curb, sidewalks, sidewalk ramps, and striping crosswalk.  11/25 = 0.440.  3 points.	<b>14</b>
<b>2.A. Convert one-way parallel streets directly adjacent to northern bridgehead approach to multi-use facilities (B)</b>	Provides marginal benefit to bicyclists by creating direct access to the Willamette Boulevard bicycle route.  1 point.	Project would not remove or circumvent a barrier. Traffic volumes are low on the existing street.  Zero points.	Would not provide a new system addition.  Zero points.	Would not degrade traffic system performance. However, street closure would require eliminating a driveway to an apartment complex. This would impact the parking lot circulation, requiring tenants to use the remaining driveway for access.  Zero points.	Low number of users would benefit with project.  1 point.	2	Estimated cost is \$5,000 for signage and barriers.  2/5 = 0.400.  3 points.	<b>5</b>
<b>2.B. Modify bike route and provide signing at Syracuse and Willamette (B)</b>	Would designate and sign route for bicyclists off bridge to Syracuse-Burlington-Willamette, and to-bridge route Willamette-Philadelphia (west of bridge)-Syracuse. Would provide marginal benefit to bicyclists only.  1 point.	Project would not remove or circumvent a barrier.  Zero points.	Would provide minor system addition for bicycle routing to/from north end of bridge.  1 point.	Would not degrade traffic system performance.  Zero points.	A low number of users would benefit with project.  1 point.	3	Estimated cost is less than \$5,000 for signage.  3/5 = 0.600.  4 points.	<b>7</b>
<b>3. Remove one travel lane and install bicycle lanes on the main span (C)</b>	Project does not meet Table Criteria. This bridge is classified by ODOT as having "Statewide" LOI (level of importance). As such, the facilities minimum operating service level is LOS D per the Oregon Highway Plan. However, only having one vehicle lane in either direction would cause LOS E/F conditions, severely affecting goods movement.							
<b>4. Construct asphalt trail along east side of Bridge Avenue (E)</b>	Would provide significant benefit to all users (no sidewalks or bike lanes currently exist along Bridge Avenue).  4 points.	Project would remove the barriers of providing disabled access and convenient pedestrian access to the bridge. However, a significant barrier still exists with the lack of disabled facilities and sidewalks along St. Helens Road.  2 points.	Would provide minor system additions for all users.  2 points.	Would not degrade traffic system performance.  Zero points.	A low number of users would benefit with project.  1 point.	9	Estimated cost is \$250,000 to construct a 5-foot-wide pathway on Bridge Avenue between both St. Helens Road intersections. Estimate does not include utility pole relocation.  9/250 = 0.036.  1 point.	<b>10</b>
<b>5.A. Install bicycle lanes on north approach of Bridge Avenue (E)</b>	Project does not meet Table Criteria. The existing roadway width along this section of Bridge Avenue is inadequate to accommodate the existing two travel lanes and one (uphill only) or two new bicycle lane(s). Critical, or controlling, segments are 29 feet wide and additional widening would require expensive slope treatments and/or excavations—not considered in this study. Existing travel lane widths should be maintained to accommodate significant truck volumes using this roadway and provide shoulders.							

6/30/94

## Willamette River Bridges Accessibility Project Project Evaluation Matrix

Page 2 of 2

St. Johns Bridge Project	Mode Benefit	Removes Barriers	Facilitates Connections	Traffic System Performance	Potential Users	Sub-total Pts	Cost Benefit Analysis	Total Pts
	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts		Benefits/Impacts	
<b>5.B. Remove one westbound travel lane and install bicycle lanes on south approach of Bridge Avenue (E)</b>	Would provide a significant benefit to bicyclists. 2 points.	Project would remove a barrier to bicycle travel, however, significant barriers would still exist (no bike lanes on bridge, sidewalk around bridge towers, etc.). 2 points.	Would provide a minor system addition for bicyclists, as well as other modes, which would benefit with bike travel removal from existing gravel pathway. 2 points.	Project would require removal of second northbound lane due to limited 29.5-foot width at constrained locations. However, due to heavy a.m. and p.m. peak hour truck volumes on the 2,500-foot-long continuous grade roadway, traffic speed would be reduced to about 10 mph. Severe congestion would result, affecting St. Helens intersection and affecting goods movement. -3 points.	A low number of bicycle users would benefit with this improvement. 1 points.	4	Estimated cost is \$25,000, including signage and striping. $4/25 = 0.160$ . 2 points.	6
<b>6. Install pedestrian and disabled crossings at west bridge head intersection (E)</b>	Would provide benefits to pedestrians and disabled persons, however, route circuitry would still exist. 2 points.	As a stand-alone project, a barrier would be removed, however, several significant barriers would still exist (lack of sidewalks on Bridge Avenue and St. Helens Road). 1 point.	Would provide a minor system addition for pedestrians and disabled persons. 2 points.	Project would require new signal phase stopping southbound right-turning vehicles. With pedestrian actuated signal, traffic-related impacts would be minimal. Zero points.	A low number of users would benefit with project. 1 point.	6	Estimated cost is \$40,000, including signal modifications, striping, and sidewalk ramps. $6/40 = 0.150$ . 2 points.	8
<b>7. Install pedestrian crossing of St. Helens Road at south end of Bridge Avenue (E)</b>	Provides significant benefit to pedestrians and marginal benefit to other users. 3 points.	As a stand-alone project, a barrier would be removed; however, several significant barriers would still exist (lack of sidewalks on Bridge Avenue and St. Helens Road). 1 point.	Provides a minor system addition for pedestrian and disabled modes. 2 points.	Project would require additional signal phase at intersection. Westbound St. Helens Road traffic would be stopped for pedestrian actuated phase. However, actuations would be infrequent and affected traffic volumes would be low. Zero points.	A low number of users would benefit with project pedestrians and bicyclists. 1 point.	7	Estimated cost is \$40,000, including signal modifications, striping, and 50 linear feet of sidewalk construction on the Bridge Avenue approach to the crossing. $7/40 = 0.175$ . 2 points.	9
<b>8. Provide bicycle actuation at St. Helens Road/Bridge Avenue north end Intersection (E)</b>	Would provide a significant benefit to bicyclists by eliminating conflict with St. Helens traffic. 3 points.	Would remove one of a number of barriers for access from bridge to St. Helens. However bridge accessibility across span still a problem. 1 point.	Would provide a minor system addition for bicyclists only. 1 point.	Project would require northbound St. Helens traffic to stop during phase E, as currently occurs during pedestrian actuation. No additional detriment to traffic would occur. Zero points.	A low number of users would benefit with project. 1 point.	6	Estimated cost is less than \$5,000 for bicycle actuation button and pole. $6/5 = 1.2$ . 4 points.	10

# **Final Evaluation Matrix**

(Project shown in bold were selected for the Accessibility Plan)

## St. Johns Bridge Projects---Final Evaluation

Project		Mode Benefit	Removes Barriers	Facilitates Connection	Traffic Performance	Potential Users	Cost Benefit	TOTAL POINTS	ESTIMATED COST
1	<b>Install intersection "bulb-outs" and crosswalks across Syracuse at bridgehead</b>	4	2	2	0	3	3	14	25,000
2A	Convert one-way parallel streets directly adjacent to northern bridgehead approach to multi-use facilities	1	0	0	0	1	3	5	5,000
2B	<b>Modify bike route and provide signing at Syracuse and Willamette</b>	1	0	1	0	1	4	7	5,000
3	Remove one travel lane and install bicycle lanes on the main span	T	A	B	L	E	D		
4	<b>Construct asphalt trail along north side of Bridge Avenue</b>	4	2	2	0	1	1	10	250,000
5A	Install bicycle lanes on north approach of Bridge Avenue	T	A	B	L	E	D		
5B	Remove one westbound travel lane and install bicycle lanes on south approach of Bridge Avenue	2	2	2	-3	1	2	6	25,000
6	<b>Install pedestrian and disabled crossings at west bridgehead intersection</b>	2	1	2	0	1	2	8	40,000
7	<b>Install pedestrian crossing of St. Helens Road at south end of Bridge Avenue</b>	3	1	2	0	1	2	9	40,000
8	<b>Provide bicycle actuation at St. Helens Road/Bridge Avenue north end intersection</b>	3	1	1	0	1	4	10	5,000



## St. Johns Bridge Projects---Final Evaluation

Project		Mode Benefit	Removes Barriers	Facilitates Connection:	Traffic Performance	Potential Users	Cost Benefit	TOTAL POINTS	ESTIMATED COST
1	Install intersection "bulb-outs" and crosswalks across Syracuse at bridgehead	4	2	2	0	3	3	14	25,000
2B	Modify bike route and provide signing at Syracuse and Willamette	1	0	1	0	1	4	7	5,000
2A	Convert one-way parallel streets directly adjacent to northern bridgehead approach to multi-use facilities	1	0	0	0	1	3	5	5,000
3	Remove one travel lane and install bicycle lanes on the main span	T	A	B	L	E	D		
4	Construct asphalt trail along north side of Bridge Avenue	4	2	2	0	1	1	10	250,000
5A	Install bicycle lanes on north approach of Bridge Avenue	T	A	B	L	E	D		
5B	Remove one westbound travel lane and install bicycle lanes on south approach of Bridge Avenue	2	2	2	-3	1	2	6	25,000
6	Install pedestrian and disabled crossings at west bridgehead intersection	2	1	2	0	1	2	8	40,000
7	Install pedestrian crossing of St. Helens Road at south end of Bridge Avenue	3	1	2	0	1	2	9	40,000
8	Provide bicycle actuation at St. Helens Road/Bridge Avenue north end intersection	3	1	1	0	1	4	10	5,000

## Cost Estimate

Item	St. Johns Bridge					
	Project Number					
	1	2B	4	6	7	8
Demolish Pedestrian Undercrossing						
Demolish Pedestrian Stairway						
Demolish Asphalt Roadway						
Demolish Curbing						
Excavation						
Concrete Curbing	3705		16900		780	
Concrete Sidewalk at Grade	6000				1200	
Concrete Sidewalk on Bridge Deck						
Wheelchair Ramps at Grade	3200			3200	800	
Wheelchair Ramps Above Grade						
Asphalt Concrete Path w/ Aggr. Base			37625			
Asphalt Concrete Pavement						
Aggregate Base						
Relocate Inlet	2000				1000	
Barriers and Guardrails						
Replace Sidewalk Decking on Lift Span						
Bridge Deck Grating Cover						
Six-Foot Wide Cantilever Sidewalk						
Six-Foot Wide Sidewalk Above Grade						
Twelve-Foot Wide Ramp Structure						
Ten-Foot-Wide Cantilever Sidewalks						
Construct Stairway						
Pedestrian Undercrossing						
Relocate Light Standards						
Retaining Wall			98800			
Signal Mod. (minor) - add phase/head						3000
Signal Mod. (moderate) - above + controller				20000	20000	
Signal Mod. (major) - above + pole						
Install New Traffic Signal						
Striping	1080			1080		
Striping Removal						
Subtotal	15985	0	153325	24280	23780	3000
10% Mobilization	1599	0	15333	2428	2378	300
5% Temporary Traffic Control	799	0	7666	1214	1189	150
Subtotal	18383	0	176324	27922	27347	3450
15% Engineering	2757	0	26449	4188	4102	518
25% Contingency	4596	0	44081	6981	6837	863
Estimated Total Cost	25,736	5,000	246,853	39,091	38,286	4,830
Estimated Total Cost (Rounded)	25,000	5,000	250,000	40,000	40,000	5,000



**Summary of Existing Access Problems, Possible  
Solutions, and Engineering Issues  
May 24, 1994**

# Summary of Existing Access Problems, Possible Solutions and Engineering Issues

May 24, 1994

This working paper compiles multi-modal access and circulation issues the CAC, TAC, and CH2M HILL team have identified over the past year. All previously identified problems and possible solutions are identified. Engineering issues (associated with designing a solution) the consultant will evaluate in working paper #2 are discussed.

Aerial pull-outs, schematically showing study areas, are provided at the end of this section. The letter identifying each issue corresponds to a problem and solution area on the pull-outs.

## East Approach

### A. Eastbound bicycle, disabled and pedestrian access to Flint Street

**Problem:** Bicyclists travelling eastbound on Broadway Street to the Flint Street bike route must make either an unprotected crossing of Broadway or use the pedestrian crossing at Larrabee Avenue. Crossing Broadway unprotected is difficult due to heavy traffic volumes and the limited sight distance afforded westbound motorists and eastbound users between Flint and Ross Street. The use of the Larrabee pedestrian crossings by bicyclists creates circuitous routing and creates conflicts with pedestrians on the northern sidewalk. In addition, motorists approaching Broadway from Wheeler or Flint often do not anticipate users crossing.

#### Proposed

**Solution:** A partial solution involves providing a connection between Wheeler and Flint (just north of the building shown on Figure BR-1A) to allow bicycles to bypass the three-way intersection of Wheeler, Flint, and Broadway. Right-of-way or easements would be required. The City has examined preliminary options for this connection.

Bike lanes (from Larrabee to Flint) and a new signalized crossings at Benton Avenue (see Figure BR-1B) are planned for Broadway Street as part of the Oregon Arena Project. These should provide additional route options traveling eastbound and improve pedestrian/disabled access in the vicinity.





*Eastbound bicyclist on Broadway Street preparing to make unprotected crossing of westbound traffic to access Flint Street bike route.*

#### Engineering

**Issue(s):** The remaining problem is bicycle access from eastbound Broadway to Flint. A review of design constraints will be made to provide a pathway between Flint and Wheeler (north of the school building shown on Figure BR-1A).

#### B. Westbound bicycle access to bridge

**Problem:** Potential conflict with automobile right turn lane from Broadway Street to Larrabee Avenue and the right turn lane from Larrabee Avenue onto the bridge. In both cases, motorists do not often see users and/or yield the right-of-way to users.

**Proposed Solution:** Carry bike lane on westbound Broadway to the left of the exclusive Larrabee right turn lane. Rebuild the north side of the Larrabee Avenue intersection to eliminate the sweeping, but signalized, right turn lane to the bridge. Bike lanes planned as part of the Oregon Arena Project will accomplish the first part of this solution (see Figure BR-1B). The City has reviewed rebuilding the north side of the Larrabee Avenue intersection, but has no plan underway to improve the intersection.





*Existing right turn lane for westbound traffic on Broadway Street, with no space designated for bike lanes. Bike lanes will be provided as part of the Oregon Arena Project.*

#### Engineering

Issue(s): Traffic impacts of reconfiguring the Broadway/Larrabee northern leg to eliminate the sweeping right turn need to be reviewed to assess any loss in traffic efficiency.

#### C. Disabled and pedestrian access along Broadway Street

Problem: Disabled people and pedestrians have difficulty crossing Broadway Street. There are no signalized crossings between Larrabee Avenue and Williams Avenue and wheelchair ramps are nonstandard. Unsignalized crossings are difficult due to heavy traffic volumes and limited sight distance of westbound traffic on Broadway.

Proposed Solution: Install disabled and pedestrian activated signal to replace existing pedestrian crossing. A planned improvement on Broadway (as part of the Oregon Arena Project) will include new signalized crossings of Broadway Street at Benton Avenue.

Engineering Issue(s): Assess Oregon Arena Project proposal for suitability.





## **Main Span**

### **D. Lift span sidewalk**

**Problem:** Boards become a hazard for all modes when slick.

**Proposed Solution:** Replace boards with a non-slick material. Multnomah County has programmed this sidewalk replacement in their Capital Improvement Plan.

**Engineering Issue(s):** None.

## **Broadway Ramp**

### **E. Disabled/pedestrian access**

**Problem:** Pedestrians most use undercrossing with stairs on the west side of Broadway Avenue at the intersection of Lovejoy Street viaduct, precluding disabled access.

**Proposed Solution:** Remove undercrossing and install at-grade crossing with curb cuts, sidewalk ramps.

**Engineering Issue(s):** Assess traffic impacts of rephasing intersection to provide a signalized crosswalk.

### **F. Bicycle access**

**Problem:** There are no bicycle lanes provided on the Broadway Avenue ramp.

**Proposed Solution:** Narrow the existing traffic lanes to install bicycle lanes.

**Engineering Issue(s):** Assess traffic impacts of narrowing lanes.

### **G. Disabled/pedestrian access at Hoyt Street**

**Problem:** There is no crosswalk on the north side of the intersection of Broadway and Hoyt.



**Proposed**

**Solution:** Reduce the curb return radii on the northeast corner and add a crosswalk on the north side of the intersection.

**Engineering**

**Issue(s):** Assess traffic impacts of reducing curb radii and adding signalized crosswalk.

**10th Avenue Ramp**

H. Viaduct Roadway

**Problem:** Inadequate roadway space for bicycles due to narrow traffic lanes.



*10th Avenue ramp showing narrow sidewalk and traffic lanes.*

**Proposed**

**Solution:** Remove one or two travel lanes and stripe bike lanes. The City has reviewed this proposal and upon preliminary review suggests that a southbound lane could be removed with minor impacts to traffic capacity.

**Engineering**

**Issue(s):** Traffic analysis needs to be performed to evaluate the impacts of removing one or two travel lanes to add bike lanes on the 10th Avenue ramp. Traffic capacities will be evaluated at the upstream and downstream intersections.



## I. Disabled and pedestrian access

**Problem:** Disabled people and pedestrians must use staired underpass to cross the Lovejoy Street ramp to reach the sidewalk on the north. Wheelchair access is not possible. Sidewalks do not exist on the south side of the Lovejoy viaduct.



*Entrance to underpass at southeast corner of Lovejoy Street and 10th Avenue.*

**Proposed Solution:** Install at-grade pedestrian crossing at 10th Avenue and Lovejoy Street, with wheelchair ramps. Initial City review has determined that this proposal could be accomplished with acceptable capacity impacts.

**Engineering Issue(s):** Analysis needs to be performed to evaluate impacts to traffic capacity by providing a signalized crossing phase at the intersection of Lovejoy Street and 10th Avenue.

### **Lovejoy Street Viaduct**

## J. Access to and from NW 14th Avenue

**Problem:** Access to the Lovejoy Street viaduct requires traveling along an unmarked, unlighted path to a steep stairway. Bicyclists must use roadway (with no bike



lanes or shoulders, narrow traffic lanes, and heavy traffic volume) or use the stairway. Disabled access does not exist. Westbound bicyclists using the sidewalk on the north side of the viaduct encounter an open stairway where the sidewalk abruptly ends.



*View looking west on the Lovejoy Street viaduct at sidewalk terminating at a stairwell.*

#### Proposed

##### Solutions:

1. Remove stairs and replace with ramp to 14th Avenue.
2. Extend the sidewalk, building out from the existing structure.
3. Remove one lane and construct sidewalk(s) or bike lanes.

#### Engineering

##### Issue(s):

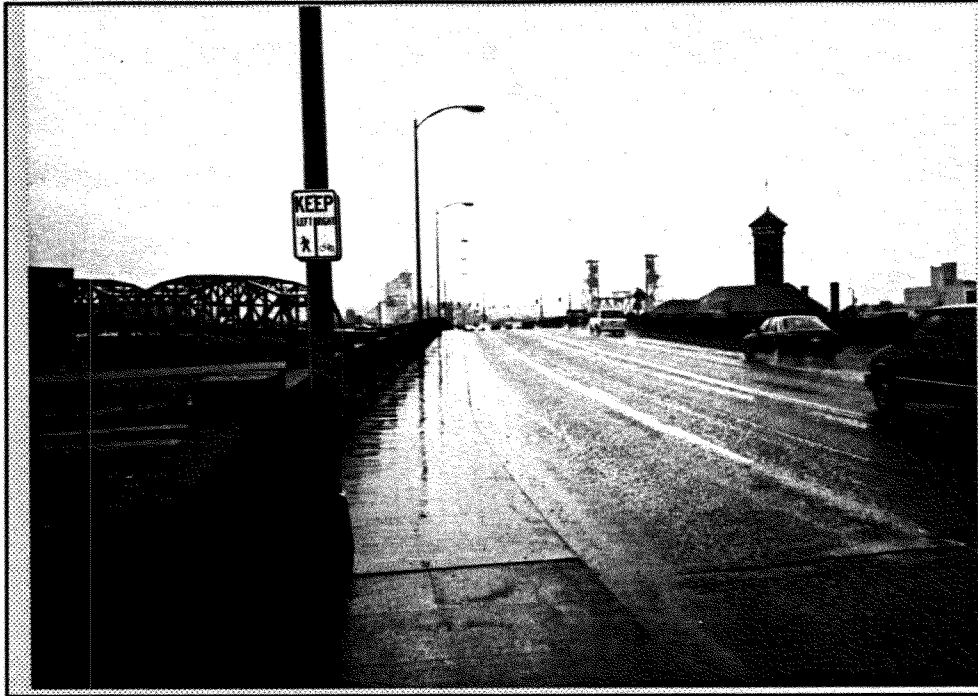
Structural engineering analysis needs to be undertaken to evaluate the three proposals. A traffic engineering assessment will be undertaken to evaluate capacity impacts under the third proposed solution.

#### K. Bicycle use

##### Problem:

The viaduct has four narrow automobile lanes and a narrow discontinuous sidewalk. Bicyclists must share the outside narrow lane with motorists or use the sidewalk. Either option has potential conflicts.





*View looking eastbound on the Lovejoy Street viaduct showing the narrow traffic lanes and sidewalk.*

**Proposed  
Solution:**

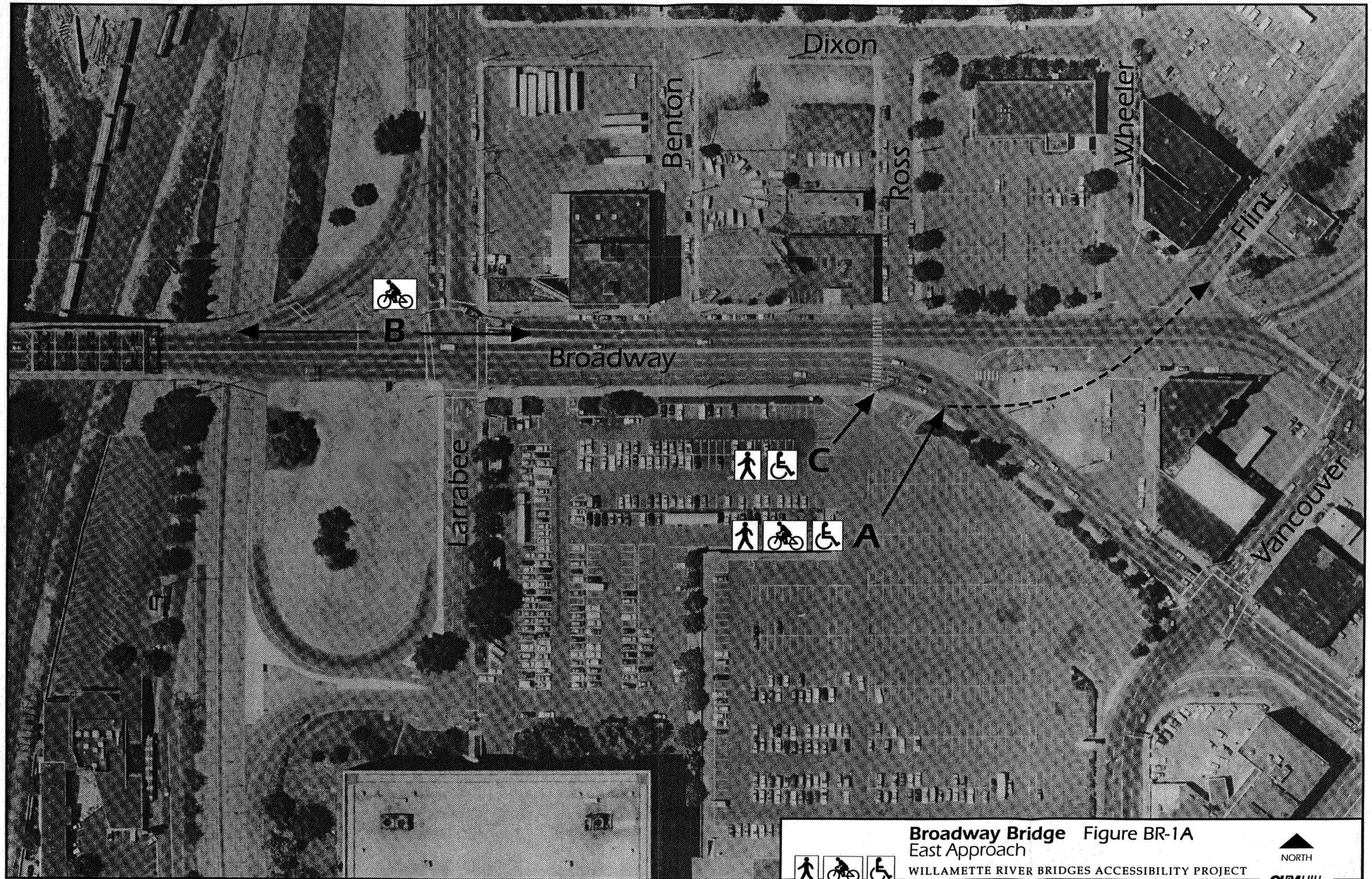
Remove one westbound lane and construct bike lanes. Initial City review suggests that an eastbound and westbound lane could be removed with minor traffic capacity impacts.

**Engineering  
Issue(s):**

Removal of traffic lanes needs further analysis to determine impacts to traffic capacity. Upstream and downstream intersection impacts will be evaluated.







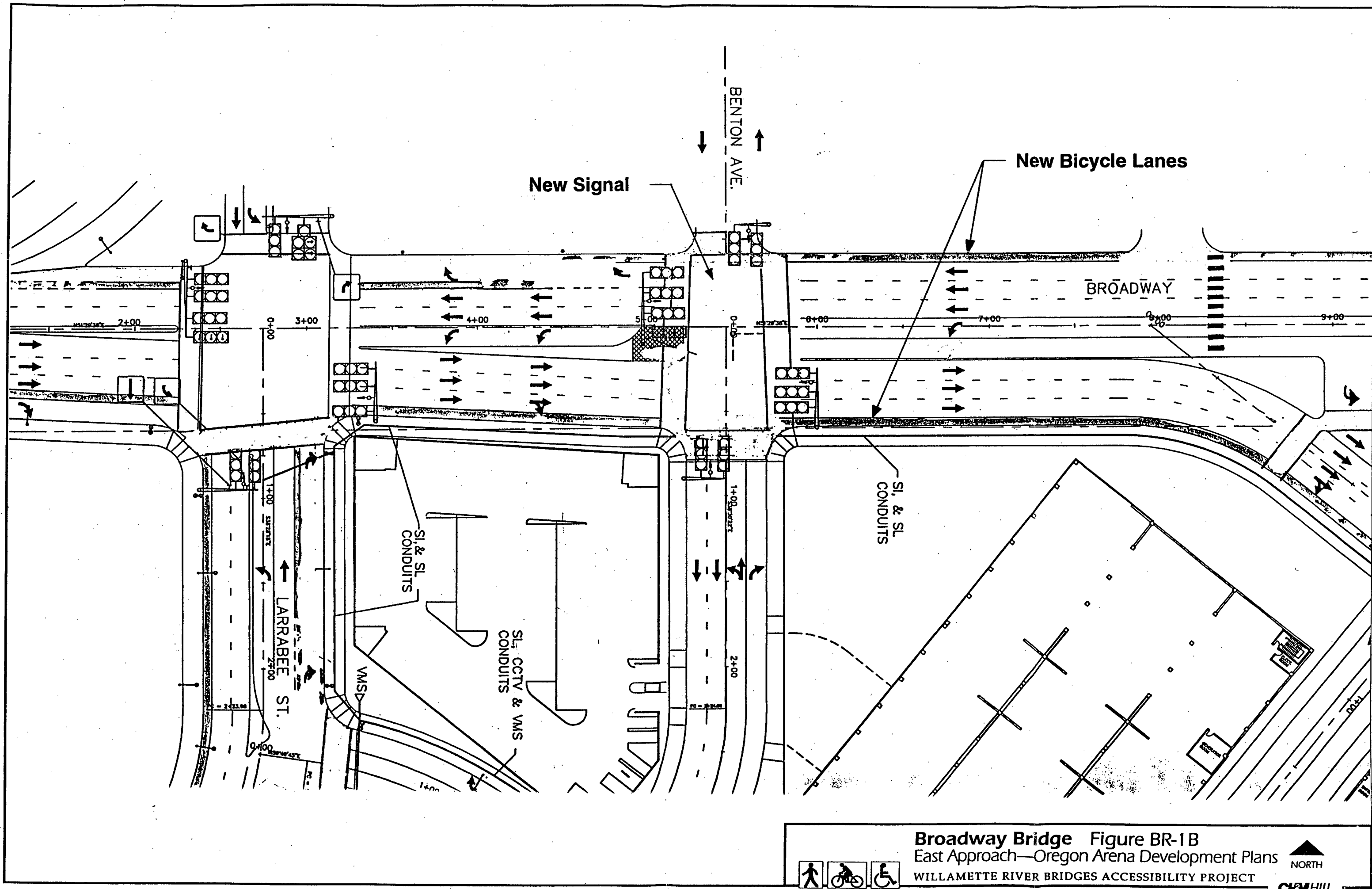
**Broadway Bridge** Figure BR-1A  
East Approach

WILLAMETTE RIVER BRIDGES ACCESSIBILITY PROJECT

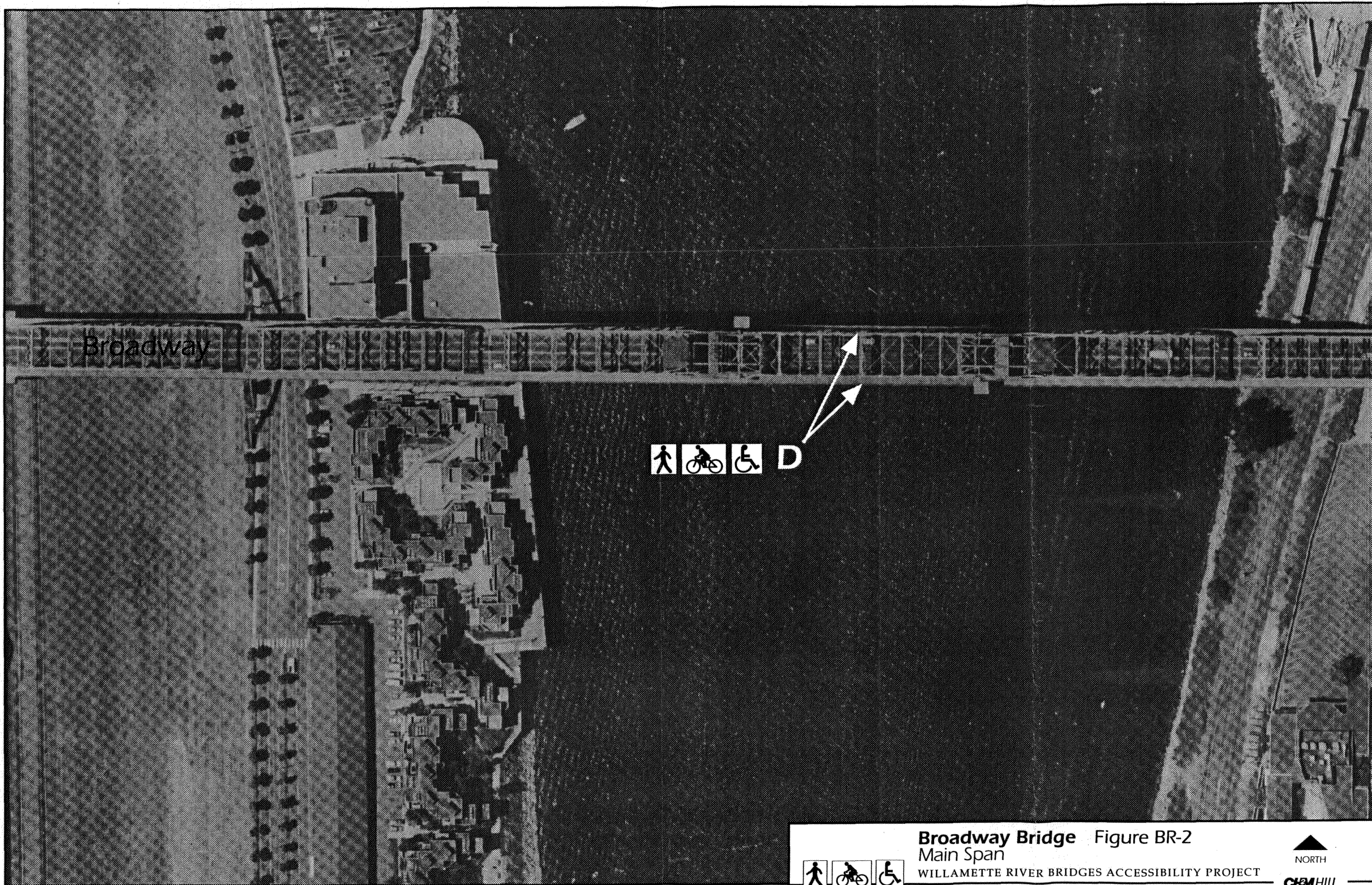


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Broadway



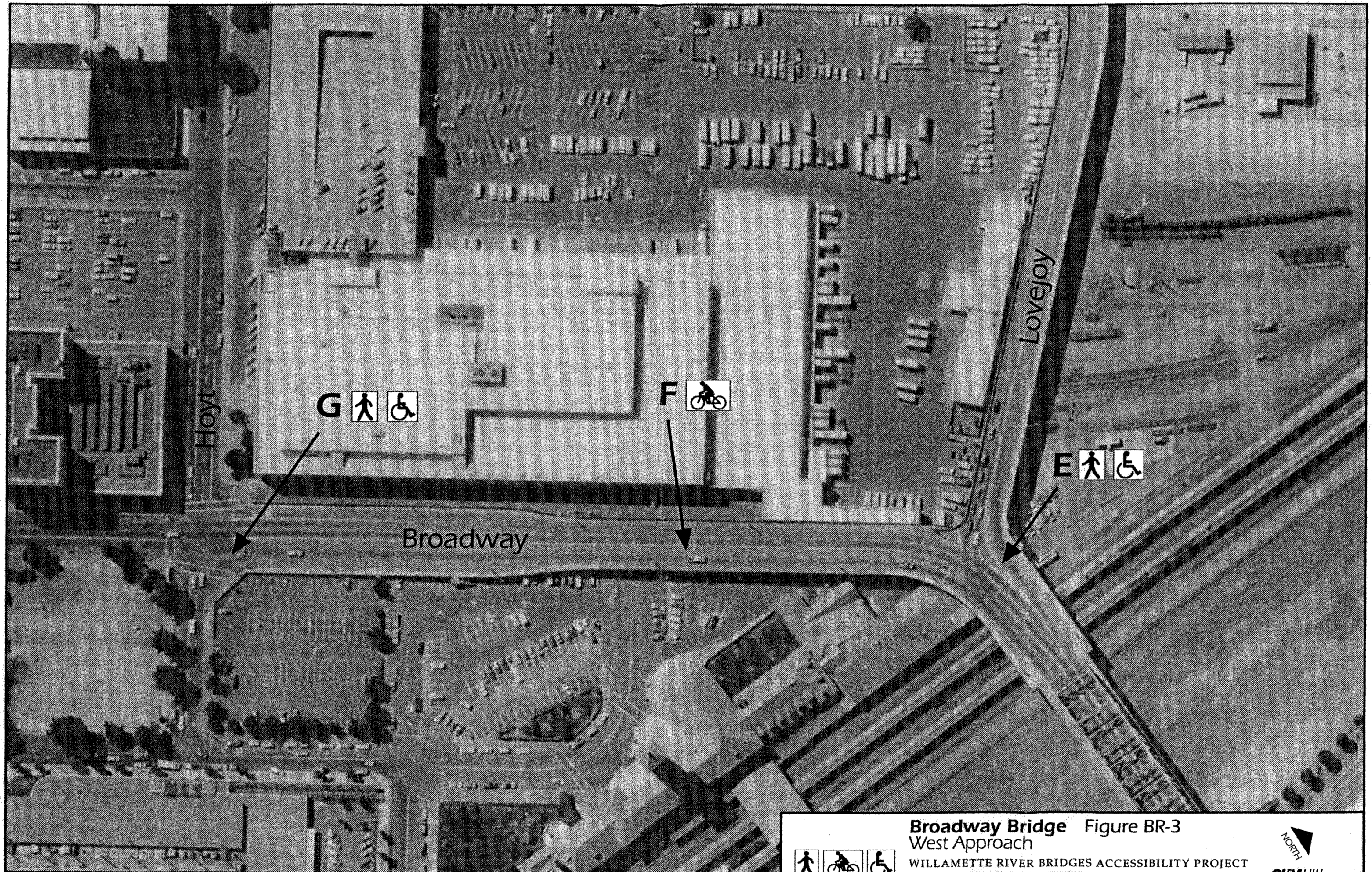
**Broadway Bridge** Figure BR-2  
Main Span

WILLAMETTE RIVER BRIDGES ACCESSIBILITY PROJECT



**CHM HILL**





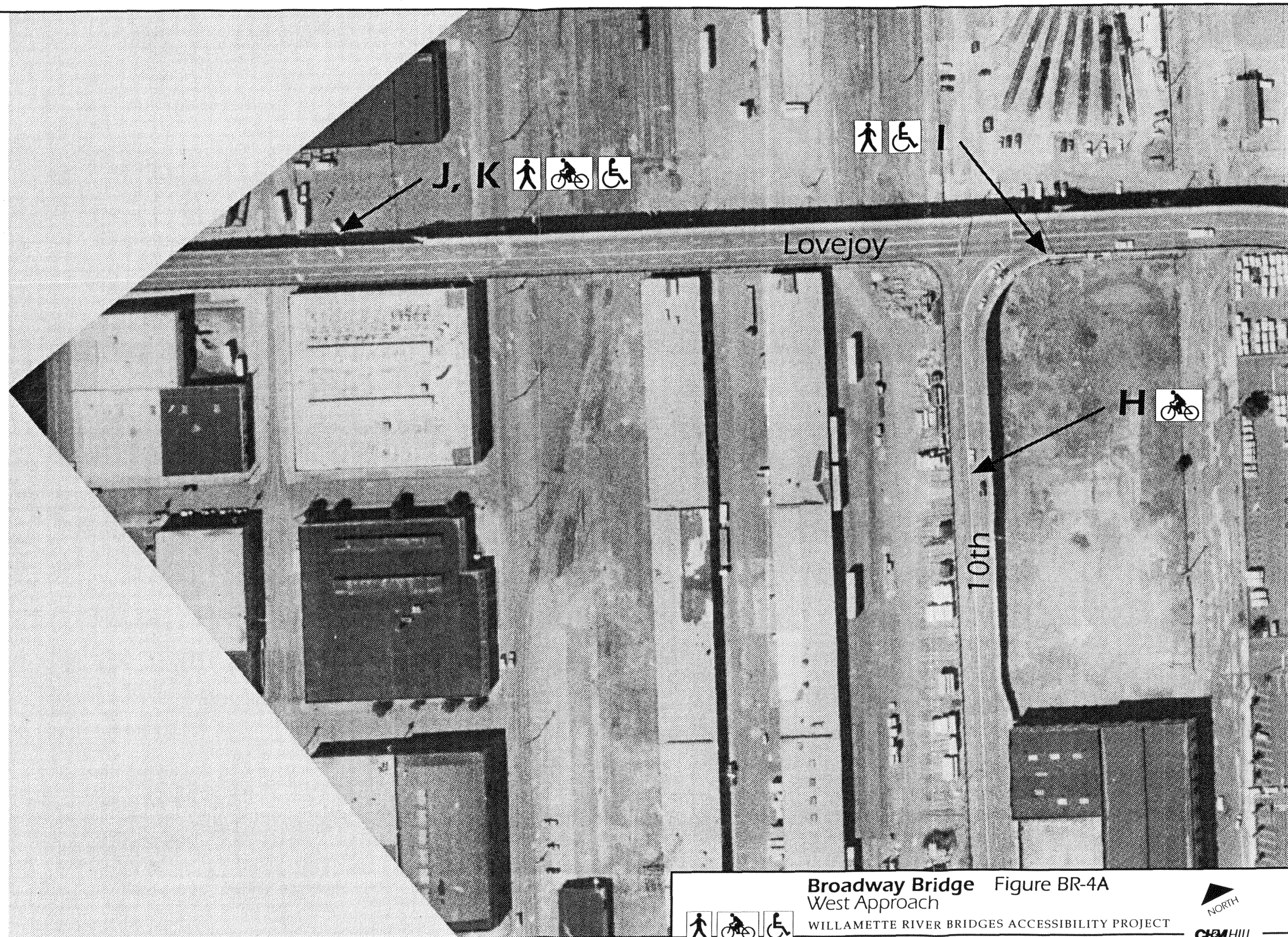
**Broadway Bridge** Figure BR-3  
West Approach

WILLAMETTE RIVER BRIDGES ACCESSIBILITY PROJECT



**CH2M HILL**





**Broadway Bridge** Figure BR-4A  
West Approach

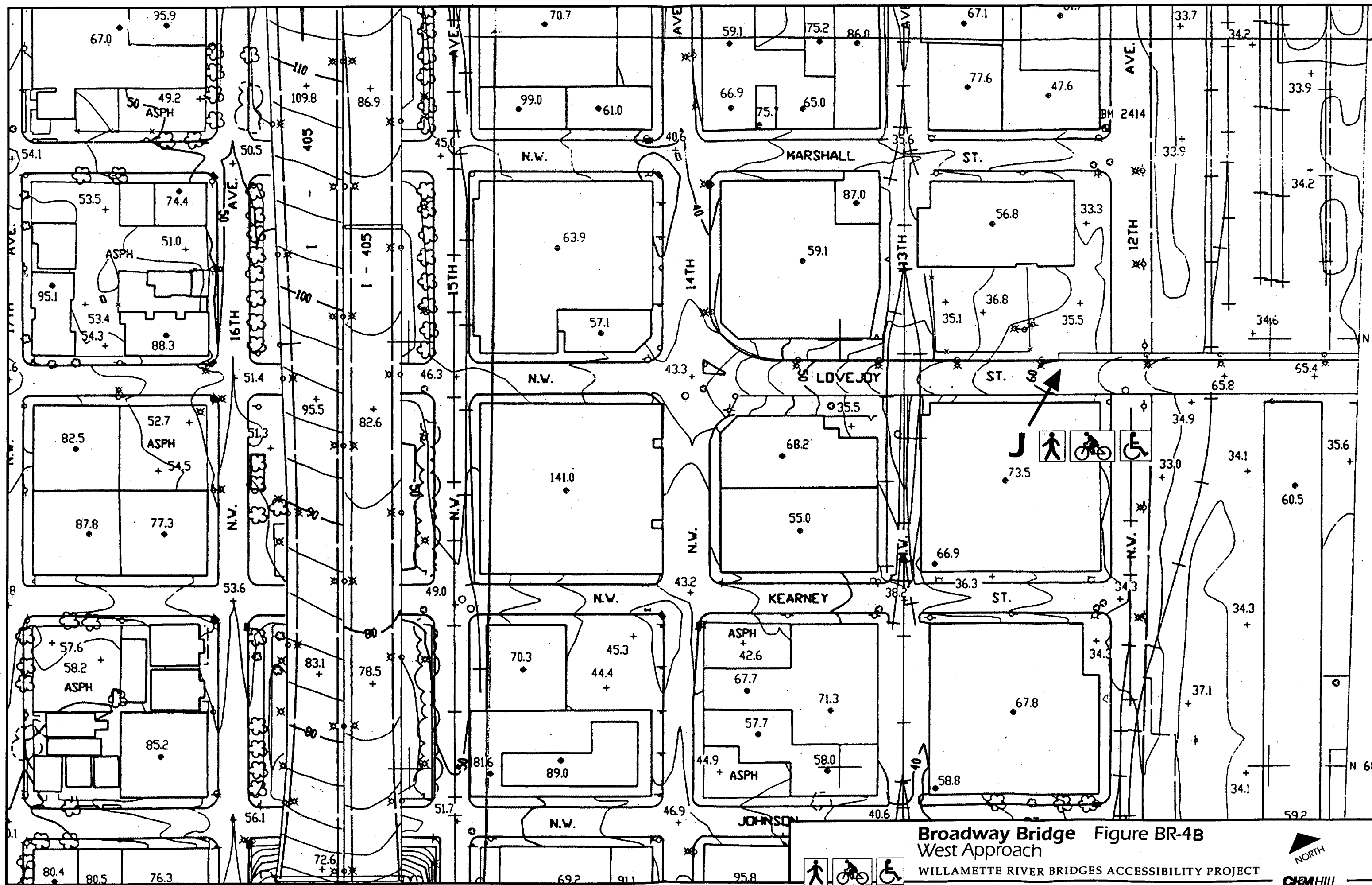


WILLAMETTE RIVER BRIDGES ACCESSIBILITY PROJECT



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**Broadway Bridge Figure BR-4B**  
West Approach  
WILLAMETTE RIVER BRIDGES ACCESSIBILITY PROJECT  
NORTH  
CH2M HILL

## **Project Evaluation Matrix**

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## Willamette River Bridges Accessibility Project Project Evaluation Matrix

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Broadway Bridge Project	Mode Benefit	Removes Barriers	Facilitates Connections	Traffic System Performance	Potential Users	Sub-total Pts	Cost Benefit Analysis	Total Pts
	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts		Benefits/Impacts	
<b>1.A. Broadway/Flint/Wheeler bicycle connection-Easement and Hancock options (A)</b>	Provides significant benefit to bicyclists travelling eastbound on Broadway to Flint bike route by avoiding potential conflicts at Broadway/Flint/Wheeler intersection.  Potential safety concerns for all modes due to secluded location and narrow easement/right-of-way.  2 points.	Would remove significant bicycle route barrier, but minor other barriers would still exist, e.g., potential conflict at Flint outlet.  2 points.	Project would add a minor system addition for the bicyclists by connecting Flint and Broadway Bridge bicycle routes. Would also provide minor connection benefits for pedestrians and disabled users.  2 points.	Would not degrade traffic system performance.  Under "Easement" option, up to 6 school district parking spaces would be removed and 2 on-street (Flint) parking spaces would be removed.  Zero points.	Potential use by a moderate number of bicyclists.  3 points.	9	"Easement" option estimated cost is \$75,000, excluding easement/right-of-way costs and possible parking space compensation.  Hancock option estimated cost is \$115,000, excluding easement/right-of-way costs.  $9/95 = 0.095$ .  2 points.	<b>11</b>
<b>1.B. Broadway/Flint/Wheeler bicycle connection-channelization option (A)</b>	Provides significant benefit for bicyclists both travelling eastbound on Broadway to Flint bike route, and vice-versa, through raised channelization-reduces conflict potential with autos.  Provides marginal benefit for pedestrians and disabled with decreased intersection crossing distances and raised refuge islands.  3 points.	Would remove significant bicycle route barrier, however, out-of-direction travel would still be required.  3 points.	Would provide minor system addition for bicyclists, pedestrians, and disabled.  2 points.	Would not degrade traffic system performance.  The existing turning movement from southbound Wheeler to northeast-bound Flint would be removed. However this movement is currently unsafe, with unclear delineation and potential conflict with other turning movements.  Project could improve overall delineation for all modes, including autos.  Zero points.	High use by all modes, particularly during Oregon Arena event.  5 points.	13	Estimated cost is \$40,000.  $13/40 = 0.325$ .  3 points.	<b>16</b>
<b>2. Broadway/Larrabee intersection-consolidate dual right-turn lanes with intersection (B)</b>	Westbound bicyclists would not have to cross merge lanes, however, signal coordination between Broadway/Larrabee and Broadway/Larrabee right-turn intersections protects most bicyclists.  Although for pedestrians and disabled the improvement would consolidate two signalized crosswalks into one, the new longer crosswalk would be about 24' longer than existing.  1 point.	Project would not remove or circumvent a barrier.  Zero points.	Would not provide a new system addition.  Zero points.	Project would reduce right-turning radius, slowing truck turns and slightly increasing delay.  Project would increase southbound Larrabee vehicle weaving distance by approximately 200 feet.  Zero points.	Continued moderate use by all modes.  3 points.	4	Estimated cost is \$100,000, including traffic signal improvements.  $4/100 = 0.040$ .  1 point.	<b>5</b>

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## Willamette River Bridges Accessibility Project Project Evaluation Matrix

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Broadway Bridge Project	Mode Benefit	Removes Barriers	Facilitates Connections	Traffic System Performance	Potential Users	Sub-total Pts	Cost Benefit Analysis	Total Pts
	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts		Benefits/Impacts	
3. <b>Slippery liftspan sidewalk—install textured coating or plastic decking options (D)</b>	Project would provide marginal benefit for bicyclists, disabled, and pedestrian users by reducing potential for slipping on wet pathway.  2 points.	Project would remove a barrier to user travel during wet conditions, however, minor barriers would still exist, e.g., access at bridge terminals.  2 points.	Would not provide a new system addition.  Zero points.	Would not degrade traffic system performance.  Zero points.	Continued high use by all modes.  5 points.	9	Estimated cost for textured coating is \$50,000, which includes reapplications during a 10-year period.  Estimated cost for one time installation (10 year life) for plastic decking is \$50,000.  $9/50 = 0.180$ .  2 points.	11
4. <b>Removal pedestrian undercrossing at Broadway/Lovejoy Intersection and replace with crosswalk (E)</b>	Would provide significant benefit to persons in wheelchairs and other disabled people with increased accessibility, safety and user comfort.  Provides significant benefit to pedestrians by eliminating understreet passageway and providing more direct connection.  4 points.	Removes a significant barrier (stairs and undercrossing).  4 points.	Would provide critical system addition for persons in wheelchairs by creating northside bridge circulation.  Would provide minor system addition for pedestrians and other disabled users.  3 points.	Would cause minimal intersection degradation during a.m. peak hour. (From existing LOS B, average delay = 9 sec/veh, v/c = 0.75 to same LOS and delay, v/c = 0.77.)  Would cause minimal intersection degradation during p.m. peak hour. (From existing LOS B, average delay = 12 sec/veh, v/c = 0.74 to LOS B, average delay = 15 sec/veh, v/c = 0.79.)  Zero points.	Moderate number of users (pedestrian and disabled) would benefit from improvement.  3 points.	14	Estimated cost is \$100,000, which includes pedestrian signal, sidewalk extension to intersection, removal of undercrossing, and installation of sidewalk ramps.  $13/100 = 0.130$ .  2 points.	16
5.A. <b>Widen outside/uphill travel lane on Broadway Viaduct from Hoyt to Lovejoy (F)</b>	Project would consist of restriping viaduct to widen uphill travel lane to 14' and installing/improving ramp transition to bridge sidewalk. Existing four traffic lanes on constrained portion of viaduct are each about 11' wide.  Would provide marginal benefits to all users by removing uphill bicycles from 8-foot wide sidewalk.  2 points.	Project would not remove or circumvent a barrier.  Zero points.	Would not provide additional system connection.  Zero points.	Project could cause minor degradation to traffic on viaduct as three travel lanes would be narrowed to 10' each.  -1 point.	Moderate number of users would benefit with project.  3 points.	4	Estimated cost is \$15,000, which includes viaduct restriping and installation of bike ramp at Lovejoy.  $4/15 = 0.267$ .  3 points.	7
5.B. <b>Remove one travel lane on Broadway Viaduct and install bicycle lanes (F)</b>	Would provide marginal benefits to all users by separating bicyclists from sidewalk.  2 points.	Project would not remove or circumvent a barrier.  Zero points.	Would provide a minor system addition for bicyclists.  1 point.	As stand-alone project, removal of one northbound lane will not affect a.m. and p.m. peak hour intersection operations. Maximum of 440 vph make right-turn maneuver. Not a critical movement. No change to intersection LOS.  Zero points.	Moderate number of users would benefit with project.  3 points.	6	Estimated cost is \$15,000, which includes viaduct restriping and installation of bike ramp at Lovejoy.  $6/15 = 0.400$ .  3 points.	9

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## Willamette River Bridges Accessibility Project Project Evaluation Matrix

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Broadway Bridge Project	Mode Benefit	Removes Barriers	Facilitates Connections	Traffic System Performance	Potential Users	Sub-total Pts	Cost Benefit Analysis	Total Pts
	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts		Benefits/Impacts	
6. Provide smaller radii curb returns and install crosswalk across northern leg at Broadway/Hoyt (G)	Would provide significant benefit to pedestrian and disabled modes by removing out-of-direction travel and some potential intersection conflicts.  3 points.	Project would not remove or circumvent a barrier.  Zero points.	Provides minor system addition by maintaining sidewalk continuity.  1 point.	As stand-alone project, traffic operations would not degrade by either eliminating southbound right-turn (consolidate with through lane and provide "bulb out") or modifying signal timing.  Zero points.	Expected use is moderate.  3 points.	7	Estimated cost is \$35,000, including curb and traffic signal modifications.  $7/35 = 0.200$ .  3 points.	10
7. Install bicycle lanes and remove two travel lanes on 10th Avenue Viaduct (H)	Provides marginal benefit for all modes by providing separate facility for bicycles.  2 points.	Project would not remove or circumvent a barrier.  Zero points.	Provides minor system addition for bicycles.  1 point.	As stand alone, project would have insignificant effect on peak hour operations. Existing a.m. peak is LOS A (average delay = 4 sec/veh, v/c = 0.31; with project would be same LOS (and delay, v/c = 0.36). Existing p.m. is LOS A (average delay = 4 sec/veh, v/c = 0.43); with project would be LOS B (average delay = 6 sec/veh, v/c = 0.53).  Zero points.	Moderate number of users (bicycles) would benefit from project.  3 points.	6	Estimated cost is \$10,000 for pavement striping.  $6/10 = 0.600$ .  4 points.	10
8. Remove pedestrian undercrossing at 10th/ Lovejoy intersection and replace with crosswalk (I)	Provides significant benefit to disabled persons by allowing direct access on the bridge from 10th.  Provides marginal benefit to pedestrians by achieving at-grade crossing which alleviates use of understreet passageway.  3 points.	Would remove a significant barrier for disabled access, however, other minor barriers would still exist, e.g., 6-foot wide shared-use sidewalk on northern side of Lovejoy Viaduct.  3 points.	Would provide critical system addition for persons in wheelchairs by creating new access.  Would provide minor system addition for pedestrians and other disabled users.  3 points.	Scenario with crosswalk across eastern leg most feasible due to preferred circulation and existing facilities. Project would require "all pedestrian" (scramble) phase. Would result in a.m. peak hour LOS B (delay = 5 sec/veh, v/c = 0.62) and p.m. peak hour LOS B (delay = 8 sec/veh, v/c = 0.59), assuming existing lane geometrics.  Zero points.	Low number of users would benefit with project.  1 point.	10	Estimated cost is \$40,000, including crosswalk striping, removal of undercrossing, traffic signal modifications, and installation of wheelchair ramps.  $10/40 = 0.250$ .  3 points.	13
9. Extend Lovejoy Viaduct's northern sidewalk to 14th Avenue (J)	Would provide significant benefit to pedestrians and disabled by extending sidewalk, thereby eliminating staircase and existing route under/near viaduct.  As stand alone project, would benefit bicyclists for same reasons.  4 points.	Would remove a barrier for pedestrian and disabled access across Lovejoy Viaduct (would make viaduct accessible for persons in wheelchairs).  4 points.	Sidewalk extension would provide critical system addition for pedestrians and disabled.  4 points.	Would not degrade traffic system performance.  Zero points.	High level of users, all modes, expected with project.  5 points.	17	Estimated cost for 8-foot wide cantilevered sidewalk is \$490,000.  $17/490 = 0.035$ .  1 point.	18

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## Willamette River Bridges Accessibility Project Project Evaluation Matrix

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Broadway Bridge Project	Mode Benefit	Removes Barriers	Facilitates Connections	Traffic System Performance	Potential Users	Sub-total Pts	Cost Benefit Analysis	Total Pts
	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts		Benefits/Impacts	
<b>10. Remove one travel lane on Lovejoy Viaduct and add bicycle lanes from Broadway to 14th (K)</b>  <b>A. Bike lanes within existing curbs.</b>	<p>Would provide significant benefit to bicyclists by removing them from existing northern sidewalk and narrow traffic lanes.</p> <p>Would provide significant benefit to pedestrians and disabled by separating limited number of sidewalk bicycle users.</p> <p>4 points.</p>	<p>Would remove significant barrier to bicycle travel along Lovejoy Viaduct.</p> <p>Would enable bicyclists to be removed from narrow (9.5-foot) shared travel lanes, one multiuse sidewalk and stairway.</p> <p>4 points.</p>	<p>Continuous bicycle lanes from Broadway to 14th would provide a critical bicycle system addition for the bridge.</p> <p>3 points.</p>	<p>Project would consist of restriping viaduct from 4-9.5' travel lanes to 3-9.5' lanes and 2-4.75' bike lanes from Broadway intersection to 14th intersection.</p> <p>Elimination of a westbound lane on the viaduct east of 14th would slightly impact a.m. peak-hour operations at Lovejoy/14th in intersection (from existing LOS B, average delay = 8 sec/veh, v/c = 0.47 to LOS B, average delay = 10 sec/veh, v/c = 0.76).</p> <p>Elimination of either one westbound or one eastbound lane on the viaduct at 10th, while still allowing westbound left-turns to 10th and pedestrian crossing (see Project #8), would cause severe over-capacity conditions at the intersection. Existing LOS A during both peak periods. Elimination of a westbound lane would result in a.m. LOS F (theoretical v/c = 1.05). Elimination of one eastbound lane would maintain a.m. LOS A, but would result in p.m. LOS F, theoretical v/c = 1.05).</p> <p>Prohibiting peak hour westbound left turns to 10th Viaduct would provide acceptable operations at Lovejoy/10th, but would degrade p.m. peak operations at Broadway/Lovejoy (LOS B, delay 14 sec, v/c = 0.82), causing minor degradation at this intersection. Morning peak operations would also experience minor degradation (LOS B, delay 10 sec, v/c = 0.76).</p> <p>-1 point.</p>	<p>A moderate amount of Lovejoy Viaduct bicycle users would benefit from the project.</p> <p>3 points.</p>	13	<p>Estimated cost is \$70,000, which includes restriping and minor traffic signal adjustments.</p> <p><math>13/70 = 0.186</math>.</p> <p>2 points.</p>	15



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# Willamette River Bridges Accessibility Project Project Evaluation Matrix

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Broadway Bridge Project	Mode Benefit	Removes Barriers	Facilitates Connections	Traffic System Performance	Potential Users	Sub-total Pts	Cost Benefit Analysis	Total Pts
	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts		Benefits/Impacts	
B. Segment of eastbound bicycle lane on widened viaduct--westbound left turns to 10th Avenue Viaduct permitted.	See #10.A. 4 points.	See #10.A. 4 points	See #10.A. 3 points.	<p>Under this option, the southern side of the viaduct would be widened from 14th about 220 feet easterly to provide four traffic lanes and an uphill (eastbound) bike lane east of the intersection. East of the widening, to Broadway, the viaduct would consist of 3-9.5' travel lanes and 2-4.75' bike lanes.</p> <p>While existing traffic conditions would remain at Lovejoy/14th, the Lovejoy/10th intersection would experience significant traffic degradation for the reasons explained under the previous option--v/c &gt;1.10 for both peak periods.</p> <p>Option would reduce effective lane width on one-way roadway segment north of Lovejoy between 13th and 14th from 20' to 15'.</p> <p>-2 points.</p>	See #10.A. 3 points.	12	<p>Estimated cost is \$300,000, which includes 220-foot long "cantilever" structure (for bike lane), restriping and minor traffic signal adjustments.</p> <p><math>12/300 = 0.040</math>.</p> <p>1 point.</p>	13
C. Segment of eastbound bicycle lane on widened viaduct--westbound left turns to 10th Avenue Viaduct prohibited	See #10.A. 4 points.	See #10.A. 4 points.	See #10.A. 3 points.	<p>This option is similar to project #10.B, except westbound left turns to 10th would be prohibited to achieve acceptable conditions at, and bike lanes through, the Lovejoy/10th intersection.</p> <p>Prohibiting peak hour westbound left turns to 10th Viaduct would provide acceptable operations at Lovejoy/10th, but would degrade p.m. peak operations at Broadway/Lovejoy (LOS B, delay 14 sec, v/c = 0.82), causing minor degradation at this intersection. Morning peak operations would also experience minor degradation (LOS B, delay 10 sec, v/c = 0.76).</p> <p>Option would reduce effective lane width on one-way roadway segment north of Lovejoy between 13th and 14th from 20' to 15'.</p> <p>-1 point.</p>	See #10.A. 3 points.	13	<p>Estimated cost is \$300,000, which includes 220-foot long "cantilever" structure (for bike lane), restriping and minor traffic signal adjustments.</p> <p><math>13/300 = 0.043</math>.</p> <p>1 point.</p>	14

# Final Evaluation Matrix

(Project shown in bold were selected for the Accessibility Plan)

## Broadway Bridge Projects---Final Evaluation

Project		Mode Benefit	Removes Barriers	Facilitates Connection	Traffic Performance	Potential Users	Cost Benefit	TOTAL POINTS	ESTIMATED COST
1A	Broadway/Flint/Wheeler bicycle connection---Easement and Hancock options	2	2	2	0	3	2	11	95,000
1B	<i>Broadway/Flint/Wheeler bicycle connection---channelization option</i>	3	3	2	0	5	3	16	40,000
2	Broadway/Larrabee intersection---consolidate dual right-turns with intersection	1	0	0	0	3	1	5	100,000
3	<i>Slippery liftspan sidewalk---install textured coating or plastic decking</i>	2	2	0	0	5	2	11	50,000
4	<i>Replace pedestrian undercrossing at Broadway/Lovejoy intersection with a crosswalk</i>	4	4	3	0	3	2	16	100,000
5A	Widen uphill travel lane on Broadway Viaduct from Hoyt to Lovejoy	2	0	0	-1	3	3	7	15,000
5B	<i>Install bicycle lanes on Broadway Viaduct from Hoyt to Lovejoy</i>	2	0	1	0	3	3	9	15,000
6	<i>Provide smaller radii curb returns and install crosswalk across northern leg at Broadway/Hoyt</i>	3	0	1	0	3	3	10	35,000
7	<i>Install bicycle lanes and remove two travel lanes on 10th Avenue Viaduct</i>	2	0	1	0	3	4	10	10,000
8	<i>Replace pedestrian undercrossing at 10th/Lovejoy intersection and replace with a crosswalk</i>	3	3	3	0	1	3	13	40,000
9	<i>Extend Lovejoy Viaduct's northern sidewalk to 14th Avenue</i>	4	4	4	0	5	1	18	490,000
10A	<i>Remove one travel lane on Lovejoy Viaduct and add bicycle lanes from Broadway to 14th</i>	4	4	3	-1	3	2	15	70,000
10B	Segment of eastbound bicycle lane on widened Viaduct---westbound left turns to 10th Avenue permitted	4	4	3	-2	3	1	13	300,000
10C	Segment of eastbound bicycle lane on widened Viaduct---westbound left turns to 10th Avenue prohibited	4	4	3	-1	3	1	14	300,000

## Broadway Bridge Projects---Final Evaluation

Project		Mode Benefit	Removes Barriers	Facilitates Connection	Traffic Performance	Potential Users	Cost Benefit	TOTAL POINTS	ESTIMATED COST
1B	<i>Broadway/Flint/Wheeler bicycle connection---channelization option</i>	3	3	2	0	5	3	16	40,000
1A	Broadway/Flint/Wheeler bicycle connection---Easement and Hancock options	2	2	2	0	3	2	11	95,000
2	Broadway/Larrabee intersection---consolidate dual right-turns with intersection	1	0	0	0	3	1	5	100,000
3	<i>Slippery liftspan sidewalk---install textured coating or plastic decking</i>	2	2	0	0	5	2	11	50,000
4	<i>Replace pedestrian undercrossing at Broadway/Lovejoy intersection with a crosswalk</i>	4	4	3	0	3	2	16	100,000
5B	<i>Install bicycle lanes on Broadway Viaduct from Hoyt to Lovejoy</i>	2	0	1	0	3	3	9	15,000
5A	Widen uphill travel lane on Broadway Viaduct from Hoyt to Lovejoy	2	0	0	-1	3	3	7	15,000
6	<i>Provide smaller radii curb returns and install crosswalk across northern leg at Broadway/Hoyt</i>	3	0	1	0	3	3	10	35,000
7	<i>Install bicycle lanes and remove two travel lanes on 10th Avenue Viaduct</i>	2	0	1	0	3	4	10	10,000
8	<i>Replace pedestrian undercrossing at 10th/Lovejoy intersection and replace with a crosswalk</i>	3	3	3	0	1	3	13	40,000
9	<i>Extend Lovejoy Viaduct's northern sidewalk to 14th Avenue</i>	4	4	4	0	5	1	18	490,000
10A	<i>Remove one travel lane on Lovejoy Viaduct and add bicycle lanes from Broadway to 14th</i>	4	4	3	-1	3	2	15	70,000
10C	Segment of eastbound bicycle lane on widened Viaduct--westbound left turns to 10th Avenue prohibited	4	4	3	-1	3	1	14	300,000
10B	Segment of eastbound bicycle lane on widened Viaduct--westbound left turns to 10th Avenue permitted	4	4	3	-2	3	1	13	300,000

## Cost Estimate

Item	Broadway Bridge								
	Project Number								
	1B	3	4	5B	6	7	8	9	10A
Demolish Pedestrian Undercrossing			5000				5000		
Demolish Pedestrian Stairway								2000	
Demolish Asphalt Roadway									
Demolish Curbing									
Excavation									
Concrete Curbing	5200				2080				1040
Concrete Sidewalk at Grade	15200				5600				1000
Concrete Sidewalk on Bridge Deck									
Wheelchair Ramps at Grade	2400			800	1600				1600
Wheelchair Ramps Above Grade			6000				6000		
Asphalt Concrete Path w/ Aggr. Base									
Asphalt Concrete Pavement									
Aggregate Base									
Relocate Inlet									
Barriers and Guardrails			2400				2400		
Replace Sidewalk Decking on Lift Span		30000							
Bridge Deck Grating Cover									
Six-Foot Wide Cantilever Sidewalk			37500					300000	
Six-Foot Wide Sidewalk Above Grade									
Twelve-Foot Wide Ramp Structure									
Ten-Foot-Wide Cantilever Sidewalks									
Construct Stairway									
Pedestrian Undercrossing									
Relocate Light Standards									
Retaining Wall									
Signal Mod. (minor) - add phase/head			10000		10000		10000		
Signal Mod. (moderate) - above + controller									20000
Signal Mod. (major) - above + pole									
Install New Traffic Signal									
Striping	1200		750	6800	1200	4200	500		15600
Striping Removal				2550		2100			6000
Subtotal	24000	30000	61650	10150	20480	6300	23900	302000	45240
10% Mobilization	2400	3000	6165	1015	2048	630	2390	30200	4524
5% Temporary Traffic Control	1200	1500	3083	508	1024	315	1195	15100	2262
Subtotal	27600	34500	70898	11673	23552	7245	27485	347300	52026
15% Engineering	4140	5175	10635	1751	3533	1087	4123	52095	7804
25% Contingency	6900	8625	17724	2918	5888	1811	6871	86825	13007
Estimated Total Cost	38,640	48,300	99,257	16,342	32,973	10,143	38,479	486,220	72,836
Estimated Total Cost (Rounded)	40,000	50,000	100,000	15,000	35,000	10,000	40,000	490,000	70,000

BURNSIDE

**Summary of Existing Access Problems, Possible  
Solutions, and Engineering Issues  
May 24, 1994**



# Summary of Existing Access Problems, Possible Solutions and Engineering Issues

May 24, 1994

This working paper compiles multi-modal access and circulation issues the CAC, TAC, and CH2M HILL team have identified over the past year. All previously identified problems and possible solutions are identified. Engineering issues (associated with designing a solution) the consultant will evaluate in working paper #2 are discussed.

Aerial pull-outs, schematically showing study areas, are provided at the end of this section. The letter identifying each issue corresponds to a problem and solution area on the pull-outs.

## East Approach

### A. Eastbound bicycle access to Ankeny Street bike route

**Problem:** Access to eastbound Ankeny Street from eastbound Burnside Street requires an unprotected crossing of four travel lanes on Martin Luther King (MLK) Boulevard. Heavy traffic volume combined with limited sight distance makes this a difficult maneuver for bicyclists to complete in one block.



*View looking south on Martin Luther King Jr. Boulevard at bicyclist preparing to cross four lanes of traffic to access the Ankeny Street bike route.*



**Proposed  
Solutions:**

1. Extend bike lanes to the east on Burnside (to 6th Avenue or to 9th Avenue). This would provide a route which crosses MLK and Grand Avenues to lower traffic volume side streets where it would be easier to access Ankeny. However, initial City review indicates that impacts to traffic capacity rule out this proposal as a feasible solution.
2. Provide signalized bike/pedestrian crossing on MLK Boulevard at Ankeny.
3. Route eastbound bicycles clockwise around the block to 3rd Avenue to reach Couch Street. The City has defined both Couch Street and Ankeny Street as bicycle streets in the Central City Transportation Management Policy (CCTMP).

**Engineering  
Issue(s):**

A review of traffic data is needed to support the City's findings for the first proposed solution. Examine traffic capacity issues associated with installing a traffic signal MLK Boulevard and Ankeny Street. Access signing/stripping needs for the Couch Street access proposal.

**B. Disabled and pedestrian access**

**Problem:** There is no disabled/pedestrian crossing of Burnside Street on the west side of MLK Boulevard, requiring three crossings to detour. Three corners of the intersection do not have wheelchair ramps.

**Proposed  
Solution:** Provide a crosswalk on the west side of MLK Boulevard. Provide wheelchair ramps at all corners.

**Engineering  
Issue(s):** Traffic analysis is needed to evaluate intersection capacity effects and pedestrian/disabled safety. Discussions with City needed to address pedestrian compliance.





*Intersection of Burnside Street and Martin Luther King Jr. Boulevard showing lack of crosswalk.*

#### C. Future eastside access

**Problem:** There is no current bicycle, disabled or pedestrian access to the planned east side waterfront park and trail from the Burnside Bridge.

**Proposed Solution:** Provide ramp(s) to future east side waterfront from the bridge.

**Engineering Issue(s):** Conceptual review of ramp geometry is required to determine if a feasible ramp design is possible.

#### **West Approach**

#### D. Bicycle access

**Problem:** No bike lanes are provided along Burnside Street for eastbound or westbound bicyclists from the main span to 2nd Avenue. Bicyclists must compete with motorists in the narrow traffic lanes or use the sidewalks which have significant pedestrian traffic.



**Proposed**

**Solution:** Continue bike lane striping to 2nd Avenue. Initial City review of this proposal suggests significant traffic impacts associated with removing travel lanes and providing bike lanes in this area.

**Engineering**

**Issue(s):** Further traffic analysis is needed to evaluate impacts to traffic capacity and circulation by removing travel lanes.

**E. Disabled and pedestrian access**

**Problem:** There is no disabled/pedestrian crossing of Burnside Street on the east side of the intersection with 2nd Avenue. This requires people to detour by making three crossings instead of one to cross Burnside at this location.

**Proposed**

**Solution:** Provide a crosswalk at this location. Initial City review raised safety concerns based on a significant number of vehicles that run red lights at this intersection.

**Engineering**

**Issue(s):** Further analysis of safety concerns is needed to evaluate this proposal. Discussions with City regarding compliance necessary.

**F. Future westside access**

**Problem:** There is no current bicycle, disabled or pedestrian access directly from the bridge to Waterfront Park and trail. Access to the park requires using steep stairways to the west of Front Avenue or detouring several blocks.

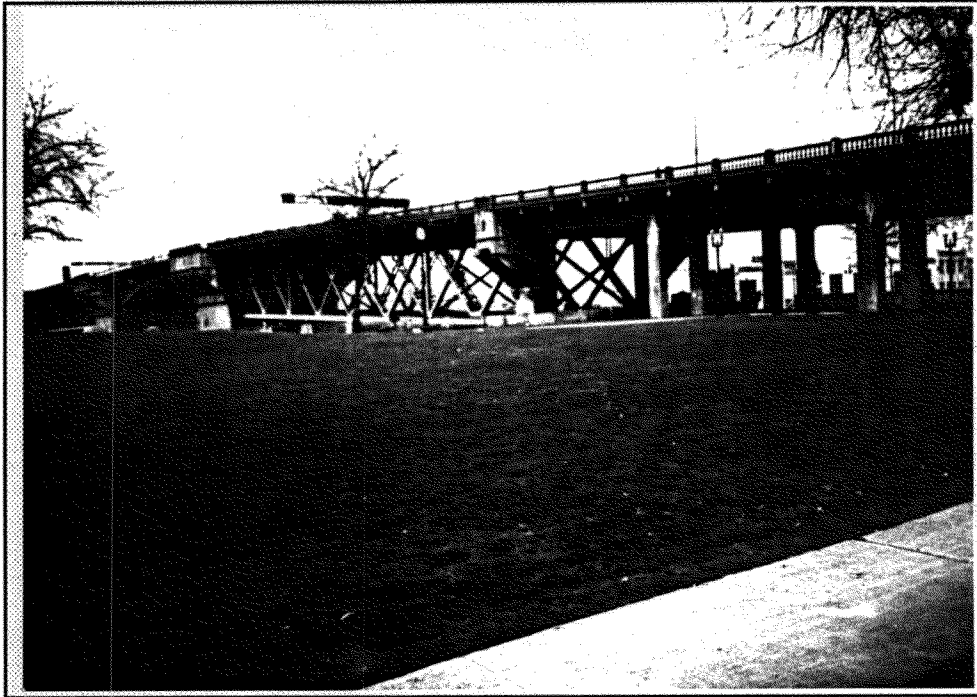
**Proposed**

**Solution:** Provide ramp to park from the bridge.

**Engineering**

**Issue(s):** Conceptual review of ramp geometry is required to assess feasibility.

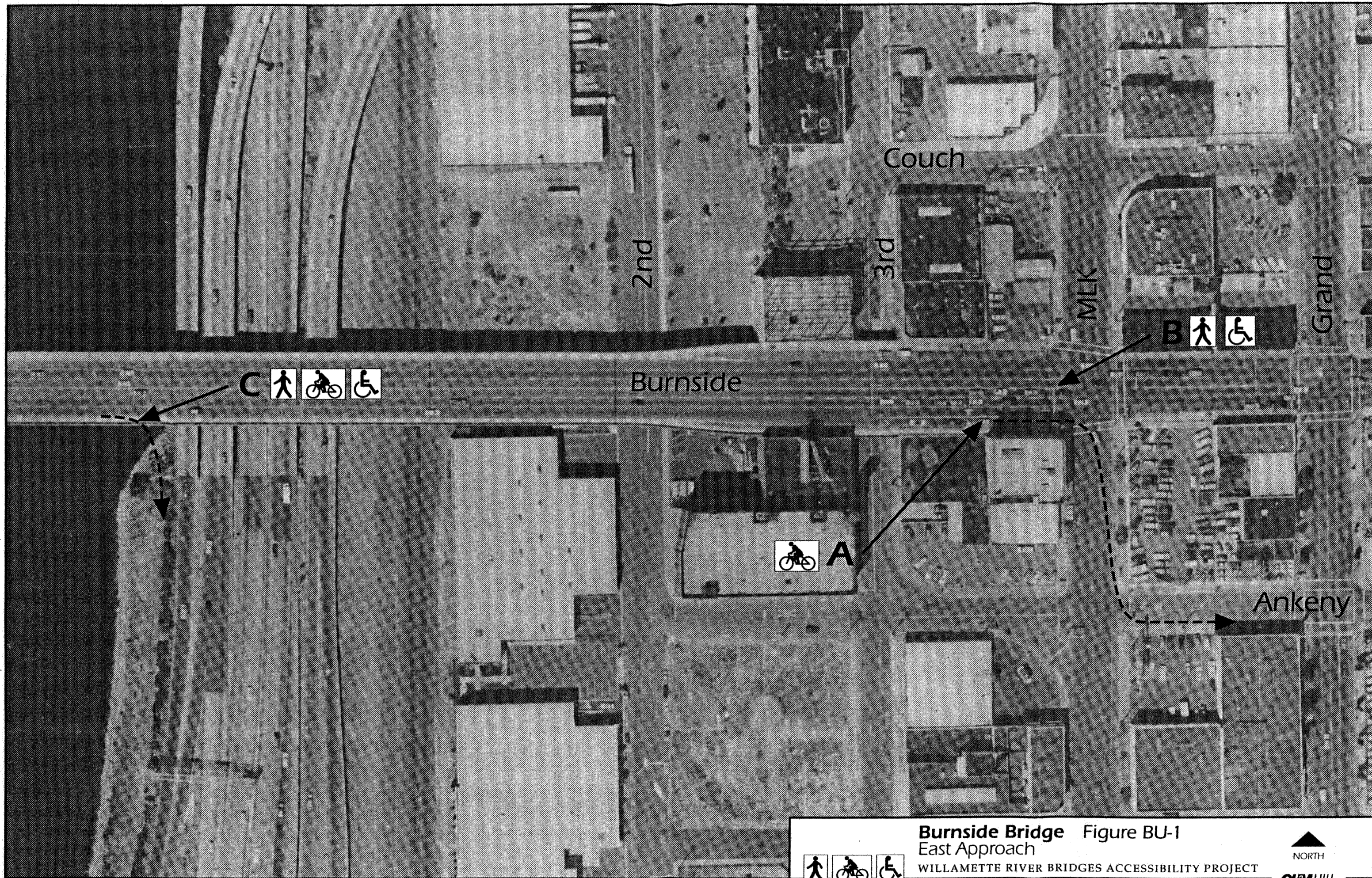




*View of Burnside Bridge from Waterfront Park.*







**Burnside Bridge** Figure BU-1  
East Approach

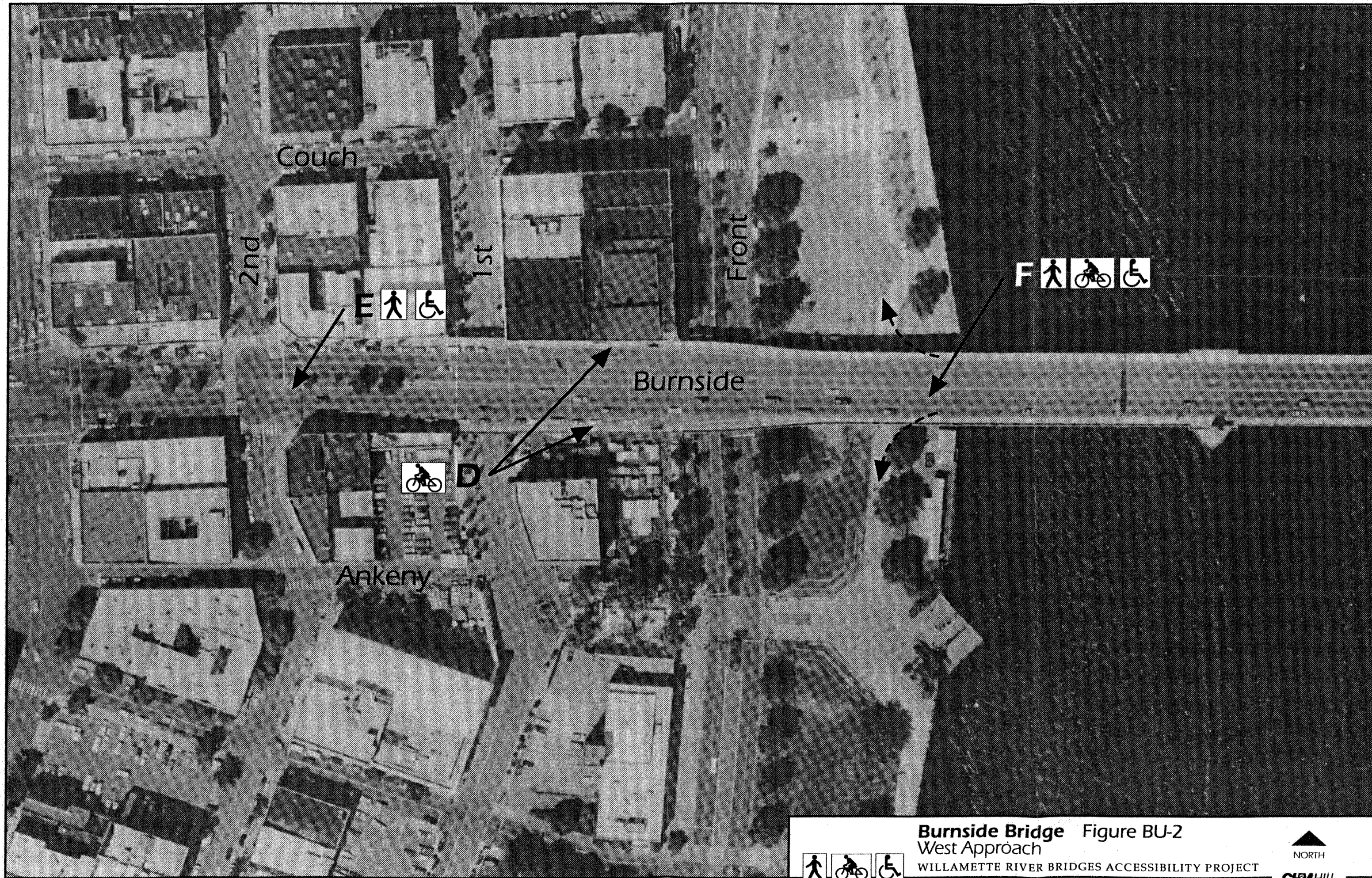
WILLAMETTE RIVER BRIDGES ACCESSIBILITY PROJECT



NORTH

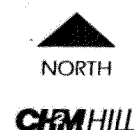
CH2M HILL





**Burnside Bridge** Figure BU-2  
West Approach

WILLAMETTE RIVER BRIDGES ACCESSIBILITY PROJECT





## **Project Evaluation Matrix**



# Willamette River Bridges Accessibility Project

## Project Evaluation Matrix

6/30/94

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Burnside Bridge Project	Mode Benefit	Removes Barriers	Facilitates Connections	Traffic System Performance	Potential Users	Subtotal Pts	Cost Benefit Analysis	Total Pts
	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts		Benefits/Impacts	
<b>1.A. Install traffic signal at MLK/Ankeny Intersection (A)</b>	Would provide marginal benefit for bicyclists. 1 point.	Project would remove a barrier for pedestrians and disabled users. 1 point.	Would not provide a new system addition. Zero points.	Project would cause significant degradation to traffic system performance. Because of impacts on progression along MLK (platoons arriving from southbound MLK and right-turn from eastbound Burnside).  Would not meet any of 11 conditions warranting installation of traffic signal because of low pedestrian and bicycle volumes. -2 points.	Potential moderate use by all modes. 3 points.	3	Estimated cost is \$100,000.  $4/100 = 0.040$ . 1 point.	4
<b>1.B. Install eastbound bicycle ramp from bridge head to Ankeny, with signal at MLK (A)</b>	Would provide marginal benefit for bicyclists. 1 point.	Project would remove a significant barrier to bicyclists; however, minor barriers would exist (e.g., merge on sidewalk, 7 percent grade, Ankeny crossing). 3 points.	3 points.	See #1.A. -2 points.	Potential moderate use (traffic signal at Ankeny) by all modes. Ramp by eastbound bicyclists only. 3 points.	8	Estimated cost is \$350,000; \$250,000 for ramp and \$100,000 for signal.  $8/350 = 0.023$ . Zero points.	8
<b>2.A. Stripe eastbound bicycle lane on Burnside from east bridge head through MLK Intersection (A)</b>	Project does not meet Table Criteria. AASHTO standards do not allow striping a bicycle lane up to an intersection (to near-side intersection stop line) where a through/right-turn traffic lane is provided. Modifying the through/right-turn lane to a through-only lane would degrade the intersection p.m. peak performance from LOS D (average delay = 36 sec/veh, v/c = 0.84) to LOS F (theoretical v/c = 1.23) (see Project #2.B.).							

# **Willamette River Bridges Accessibility Project** **Project Evaluation Matrix**

6/30/94

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Burnside Bridge Project	Mode Benefit	Removes Barriers	Facilitates Connections	Traffic System Performance	Potential Users	Subtotal Pts	Cost Benefit Analysis	Total Pts
	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts		Benefits/Impacts	
<b>2.B. Remove westbound traffic lane between 6th and east bridge head and install eastbound and westbound bicycle lanes (A)</b>	Project would provide significant benefits to bicyclists by extending Burnside bike lanes from existing lanes to 6th. By removing bikes from sidewalks, would benefit other modes.  3 points.	Would remove the significant barrier to bike travel across the bridge.  4 points.	Would provide critical system addition for bicyclists.  3 points.	Would cause slight degradation to a.m. peak hour operations for westbound vehicles. Existing third lane, which is used only by 6 percent of westbound autos, would be eliminated. Buses would stop in bus zones and would merge with traffic. Westbound approach would degrade from existing $v/c = 0.84$ to $v/c = 0.89$ .  If bus zones cannot be provided and buses will have to block traffic, then the westbound approach will degrade to theoretical $v/c = 1.11$ , which will directly impact traffic flow on Grand Avenue.  -1 point.	Potential high use by bicyclists.  5 points.	14	Estimated cost for striping is \$25,000 (cost does not include possible parking mitigation).  $14/25 = 0.560$ .  4 points.	18
<b>3. Provide "loop route" to Couch Street for eastbound bicyclists via MLK, Ankeny, and 3rd (A)</b>	Would provide marginal benefit to eastbound bicyclists by avoiding "weaving" with cars on MLK; however, route would be circuitous, particularly for cyclists traveling to the southeast portion of town from the Burnside Bridge.  Potential personal safety issue on segment under the Burnside Bridge.  1 point.	Project would circumvent a barrier for bicyclists; however, several barriers would still exist (e.g., direct access to and from the Ankeny Street bicycle route).  1 point.	Would provide a minor system addition for bicyclists, delineating access to the Couch Street bicycle route.  1 point.	Would not degrade traffic system performance.  Route would be delineated by signage only.  Zero points.	Moderate use by northeast-bound bicyclists.  3 points.	6	Estimated cost is less than \$5,000 for signage.  $6/5 = 1.2$ .  4 points.	10
<b>4. Install crosswalk on Burnside along west leg of MLK/Burnside intersection and install sidewalk ramps at corners of the intersection (B)</b>	Project would provide significant benefits to disabled and pedestrian users.  Would allow direct access for users on west side of MLK along Burnside, reducing roadway crossings by two.  Existing crosswalks would become accessible for disabled users with installation of sidewalk ramps.  4 points.	Project would remove a significant barrier for disabled users (only remaining barrier).  4 points.	Would provide a critical system addition for disabled users.  3 points.	Would cause minor degradation to traffic performance by requiring that right turns on red from Burnside onto MLK be prohibited for pedestrian safety (increase of approach $v/c$ from 1.02 to 1.07).  -1 point.	Moderate use by all modes.  3 points.	13	Estimated cost is \$20,000, including signing, striping, signal heads, and three sidewalk ramps.  $13/20 = 0.650$ .  4 points.	17

# Willamette River Bridges Accessibility Project Project Evaluation Matrix

6/30/94

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Burnside Bridge Project	Mode Benefit	Removes Barriers	Facilitates Connections	Traffic System Performance	Potential Users	Subtotal Pts	Cost Benefit Analysis	Total Pts
	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts		Benefits/Impacts	
<b>5. Provide multimodal ramps from bridge for access to Waterfront Park and future Eastside Esplanade (C, F)</b>	Would provide significant benefits to pedestrians, disabled, and bicycle users.  Project would be a benefit only if the Eastside Esplanade is completed.  4 points.	Project would remove a number of barriers; however, a significant barrier would still exist. Assuming a ramp was built on only one side, access would not be possible for users on the sidewalk opposite the ramp.  2 points.	Would provide a minor system addition; access to the esplanade is proposed at the Steel and Morrison bridges. Access to Waterfront Park is possible by traveling off the bridge span and using surface streets to the park.  2 points.	Would not degrade traffic system performance.  Zero points.	Moderate use by all modes, primarily for recreation.  Potential heavy use if Esplanade in place.  3 points.	11	Estimated cost is approximately \$1,070,000 per ramp, depending on configuration and construction methods.  $11/1070 = 0.010$ .  Zero points.	11
<b>6. Stripe westbound bicycle lane from MLK to east bridge head (A)</b>	Would provide marginal benefit for bicyclists by extending bicycle lane 300 feet.  1 point.	Project would not remove a barrier for bicyclists; access is currently provided by a 14-foot-wide shared lane with automobiles.  Zero points.	Would provide minor system addition for bicyclists.  1 point.	Would not degrade traffic system performance. As stand-alone, project would require removal of approximately four parking spaces and a truck loading zone (see Project #2.B.).  Zero points.	Potential high use by bicyclists.  5 points.	7	Estimated cost for striping is \$5,000; cost does not include possible parking mitigation (see Project #2.B.).  $7/5 = 1.400$ .  4 points.	11
<b>7.A. Stripe westbound bicycle lane from bridge head through N.W. 2nd intersection (D)</b>	Project does not meet Table Criteria. AASHTO standards do not allow striping a bicycle lane up to an intersection (to near-side intersection stop line) where a through/right-turn traffic lane is provided. Westbound bicycle lane does not exist west of 2nd Avenue.							
<b>7.B. Stripe eastbound bicycle lane from S.W. 2nd to west bridge head (D)</b>	Would provide significant benefit for bicyclists using a delineated bicycle lane with increased safety and user comfort.  2 points.	Project would remove a minor barrier for bicyclists by avoiding conflicts associated with shared lanes. Significant barriers still exist for eastbound bicyclists at the Burnside/MLK intersection.  2 points.	Would provide a minor system addition for bicyclists, with bicycle lanes connecting 2nd with the bridge main span bicycle lanes.  1 point.	For eastbound bicyclists, a traffic lane would be removed to stripe a bicycle lane from 2nd Avenue to the bridge head. Preliminary calculations suggest that this would not significantly degrade traffic system performance from the existing LOS B conditions; however, the city has suggested that removing an eastbound traffic lane could potentially impact intersection performance because of significant use of the curbside lane by eastbound buses. Buses use this fourth lane to accelerate up the bridge approach to merge with traffic.  -1 point.	Potential high use by bicyclists.  5 points.	9	Estimated cost for striping is \$10,000. Cost does not include possible parking mitigation.  $9/10 = 0.900$ .  4 points.	13

# **Willamette River Bridges Accessibility Project** **Project Evaluation Matrix**

6/30/94

Page 4 of 4

Burnside Bridge Project	Mode Benefit	Removes Barriers	Facilitates Connections	Traffic System Performance	Potential Users	Subtotal Pts	Cost Benefit Analysis	Total Pts
	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts		Benefits/Impacts	
<b>8. Install crosswalk on Burnside across east leg of the Burnside/S.W./N.W. 2nd Intersection (E)</b>	Would provide marginal benefit to pedestrian and disabled users for continuous circulation along the east side of 2nd.  2 points.	Project would remove a significant barrier for pedestrian and disabled users (only remaining barrier).  4 points.	Would provide a minor system addition for disabled and pedestrian users; access is possible by using the existing crossings at the intersection.  2 points.	Would not degrade traffic system performance; existing signal timing/phasing could accommodate crossing with little or no effect to traffic operations.  Zero points.	Project would encourage moderate use by disabled and pedestrian users.  3 points.	11	Estimated cost is \$20,000 for signal heads and crosswalk striping.  $11/20 = 0.550$ .  4 points.	<b>15</b>

# **Final Evaluation Matrix**

(Project shown in bold were selected for the Accessibility Plan)

## Burnside Bridge Projects---Final Evaluation

Project		Mode Benefit	Removes Barriers	Facilitates Connection:	Traffic Performance	Potential Users	Cost Benefit	TOTAL POINTS	ESTIMATED COST
1A	Install traffic signal at MLK/Ankeny intersection	1	1	0	-2	3	1	4	100,000
1B	Install eastbound bicycle ramp from bridge head to Ankeny, with signal at MLK	1	3	3	-2	3	0	8	350,000
2A	Stripe eastbound bike lane on Burnside through MLK intersection	T	A	B	L	E	D		
2B	<b>Remove westbound traffic lane between 6th and east bridge head and install eastbound and westbound bicycle lanes</b>	3	4	3	-1	5	4	18	25,000
3	Provide "loop route" to Couch Street for eastbound bicyclists via MLK, Ankeny, and 3rd	1	1	1	0	3	4	10	5,000
4	<b>Install crosswalk along west leg of MLK/Burnside intersection and sidewalk ramps at corners of the intersection</b>	4	4	3	-1	3	4	17	20,000
5	<b>Provide multimodal ramps from bridge for access to Waterfront Park and future Eastside Esplanade</b>	4	2	2	0	3	0	11	1,070,000
6	<b>Stripe westbound bicycle lane from MLK to east bridge head</b>	1	0	1	0	5	4	11	5,000
7A	Stripe westbound bicycle lane from west bridge head through 2nd intersection	T	A	B	L	E	D		
7B	<b>Stripe eastbound bicycle lane from 2nd to west bridge head</b>	2	2	1	-1	5	4	13	10,000
8	<b>Install crosswalk on Burnside across east leg of the Burnside/2nd intersection</b>	2	4	2	0	3	4	15	20,000

## Burnside Bridge Projects---Final Evaluation

Project	Mode Benefit	Removes Barriers	Facilitates Connection	Traffic Performance	Potential Users	Cost Benefit	TOTAL POINTS	ESTIMATED COST
2B Remove westbound traffic lane between 6th and east bridge head and install eastbound and westbound bicycle lanes	3	4	3	-1	5	4	18	25,000
3 Provide "loop route" to Couch Street for eastbound bicyclists via MLK, Ankeny, and 3rd	1	1	1	0	3	4	10	5,000
1B Install eastbound bicycle ramp from bridge head to Ankeny, with signal at MLK	1	3	3	-2	3	0	8	350,000
1A Install traffic signal at MLK/Ankeny intersection	1	1	0	-2	3	1	4	100,000
2A Stripe eastbound bike lane on Burnside through MLK intersection	T	A	B	L	E	D		
4 Install crosswalk along west leg of MLK/Burnside intersection and sidewalk ramps at corners of the intersection	4	4	3	-1	3	4	17	20,000
5 Provide multimodal ramps from bridge for access to Waterfront Park and future Eastside Esplanade	4	2	2	0	3	0	11	1,070,000
6 Stripe westbound bicycle lane from MLK to east bridge head	1	0	1	0	5	4	11	5,000
7A Stripe westbound bicycle lane from west bridge head through 2nd intersection	T	A	B	L	E	D		
7B Stripe eastbound bicycle lane from 2nd to west bridge head	2	2	1	-1	5	4	13	10,000
8 Install crosswalk on Burnside across east leg of the Burnside/2nd intersection	2	4	2	0	3	4	15	20,000



## Cost Estimate

Item	Burnside Bridge					
	Project Number					
	2B	4	5	6	7B	8
Demolish Pedestrian Undercrossing						
Demolish Pedestrian Stairway						
Demolish Asphalt Roadway						
Demolish Curbing						
Excavation						
Concrete Curbing						
Concrete Sidewalk at Grade						
Concrete Sidewalk on Bridge Deck						
Wheelchair Ramps at Grade		2400				
Wheelchair Ramps Above Grade						
Asphalt Concrete Path w/ Aggr. Base						
Asphalt Concrete Pavement						
Aggregate Base						
Relocate Inlet						
Barriers and Guardrails						
Replace Sidewalk Decking on Lift Span						
Bridge Deck Grating Cover						
Six-Foot Wide Cantilever Sidewalk						
Six-Foot Wide Sidewalk Above Grade						
Twelve-Foot Wide Ramp Structure			1335000			
Ten-Foot-Wide Cantilever Sidewalks						
Construct Stairway						
Pedestrian Undercrossing						
Relocate Light Standards						
Retaining Wall						
Signal Mod. (minor) - add phase/head		10000				10000
Signal Mod. (moderate) - above + controller						
Signal Mod. (major) - above + pole						
Install New Traffic Signal						
Striping	12000	1100		3000	3000	1200
Striping Removal	5000				1500	
Subtotal	17000	13500	1335000	3000	4500	11200
10% Mobilization	1700	1350	133500	300	450	1120
5% Temporary Traffic Control	850	675	66750	150	225	560
Subtotal	19550	15525	1535250	3450	5175	12880
15% Engineering	2933	2329	230288	518	776	1932
25% Contingency	4888	3881	383813	863	1294	3220
Estimated Total Cost	27,370	21,735	2,149,350	4,830	7,245	18,032
Estimated Total Cost (Rounded)	25,000	20,000	2,140,000	5,000	10,000	20,000



**Summary of Existing Access Problems, Possible  
Solutions, and Engineering Issues  
May 24, 1994**

# Summary of Existing Access Problems, Possible Solutions and Engineering Issues

May 9, 1994

This working paper compiles multi-modal access and circulation issues the CAC, TAC, and CH2M HILL team have identified over the past year. All previously identified problems and possible solutions are identified. Engineering issues (associated with designing a solution) the consultant will evaluate in working paper #2 are discussed.

Aerial pull-outs, schematically showing study areas, are provided at the end of this section. The letter identifying each issue corresponds to a problem area on the pull-outs.

## East Approach

### A. Viaduct access

**Problem:** All modes must use undercrossings with stairs, precluding wheelchair access, limiting bicycle access, and creating circuitous routes for all modes. Free flowing ramps create significant potential for conflict between motorists and other modes attempting to share the facility.



*Stairway on east approach to the Morrison Bridge.*



**Proposed  
Solutions:**

1. Rebuild the Grand Avenue complex to provide direct pedestrian access.
2. Stripe bike lanes on the inside lane of the Belmont Street and Morrison Street ramps.
3. Eliminate the pedestrian undercrossings.
4. Provide pedestrian crossing at end of Water Avenue offramp.

**Engineering  
Issue(s):**

Review structural engineering issues associated with rebuilding the Grand Avenue approaches. Evaluate traffic capacity circulation/safety impacts of latter three options.

**B. Disabled and pedestrian access along Grand Avenue**

**Problem:** There is no disabled or pedestrian access (i.e., no crosswalks or sidewalks) along the west side of Grand Avenue from the south side of Belmont Street to the north side of Morrison Street. This requires people to make up to four additional street crossings to detour this area.

**Proposed  
Solution:**

Provide crosswalks at Belmont Street and Morrison Street and construct a sidewalk between the two streets.

**Engineering  
Issue(s):**

Review right-of-way and traffic engineering issues, with removing left turn lane on Grand Avenue.

**Main Span**

**C. Sidewalk use**

**Problem:** Bicycles, disabled people and pedestrians share 5-foot sidewalks. Potential for conflict occurs due to difficulty in passing other users on narrow sidewalk.

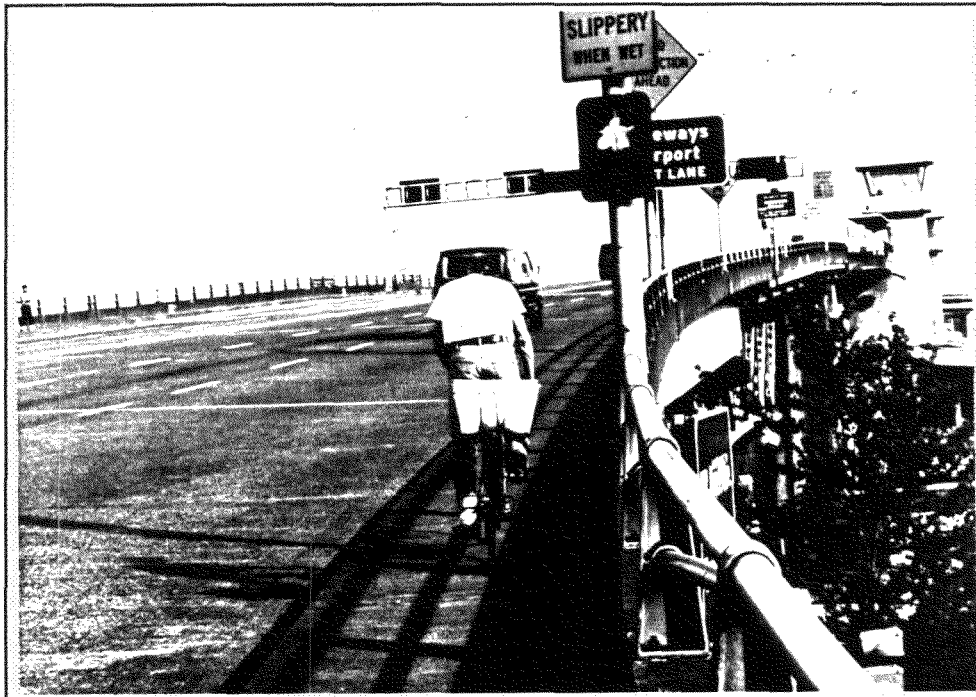
**Proposed  
Solution:**

Remove one travel lane and provide bike or bike/pedestrian facility in the middle of the bridge.

**Engineering  
Issue(s):**

Review traffic capacity impacts with removing a travel lane and potential terminal conflicts with this proposal.





*Bicyclist uses narrow sidewalk on the Morrison Bridge.*

## West Approach

### D. Bridge access

**Problem:** Non-motorized modes must use undercrossings with stairs, precluding wheelchair access and limiting bicycle access.

**Proposed Solutions:** 1. Rebuild the 2nd Avenue bridgehead to provide direct bicycle, disabled and pedestrian access.

**Engineering Issue(s):** Review traffic capacity impacts to accommodate sidewalks on the existing structure. Examine options for restriping existing facility for bike lanes.

### E. Disabled and Pedestrian Access Along 2nd Avenue

**Problem:** There are no crossings of the Alder and Washington Street ramps on the east side of 2nd Avenue, disrupting disabled/pedestrian circulation along 2nd Avenue.

**Proposed Solution:** Construct sidewalks with curb cuts across the existing Washington and Alder ramps.





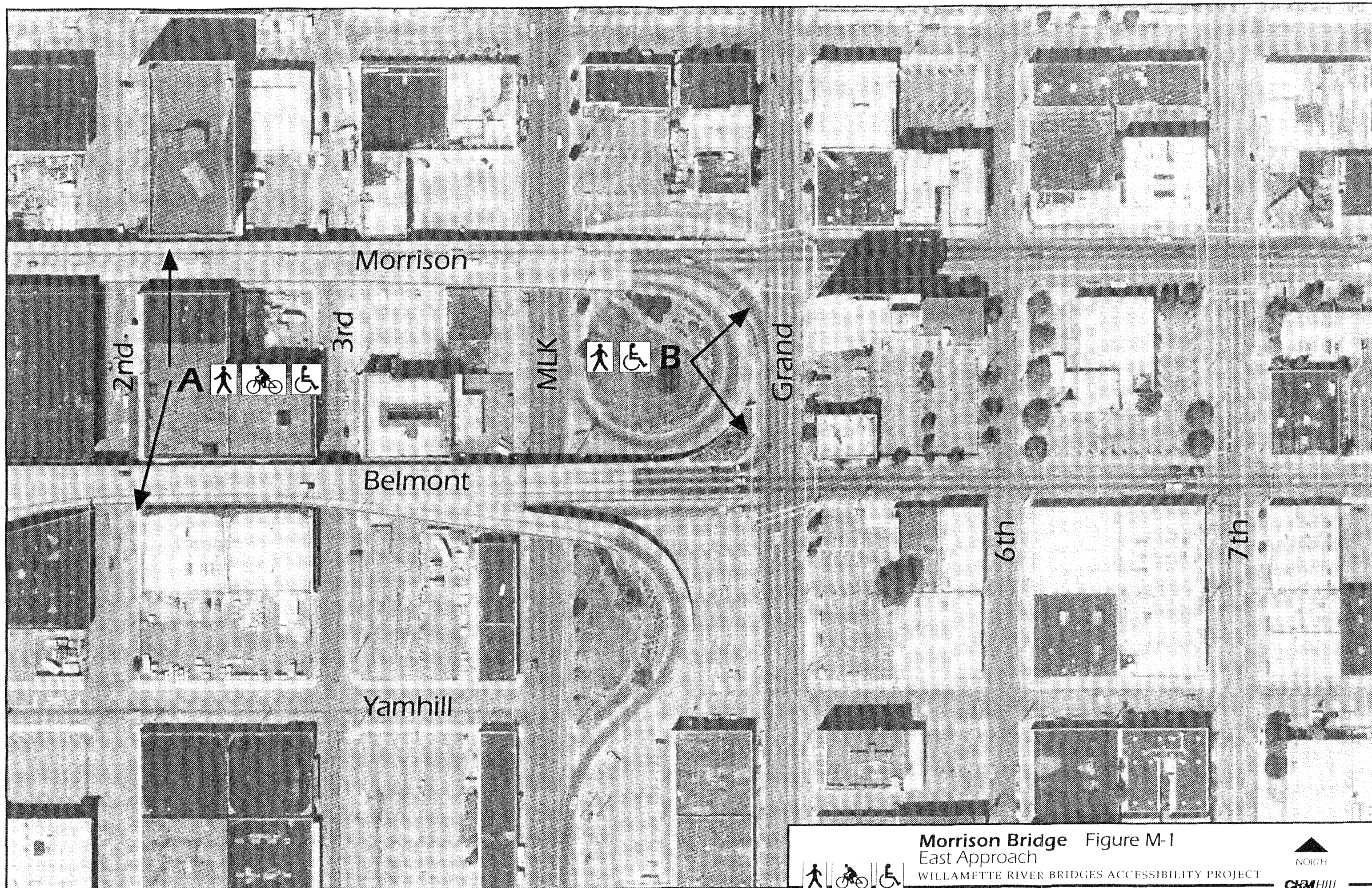
Engineering  
Issue(s):

Review traffic capacity and safety issues to add crosswalks.

PDX14D5A.WP5







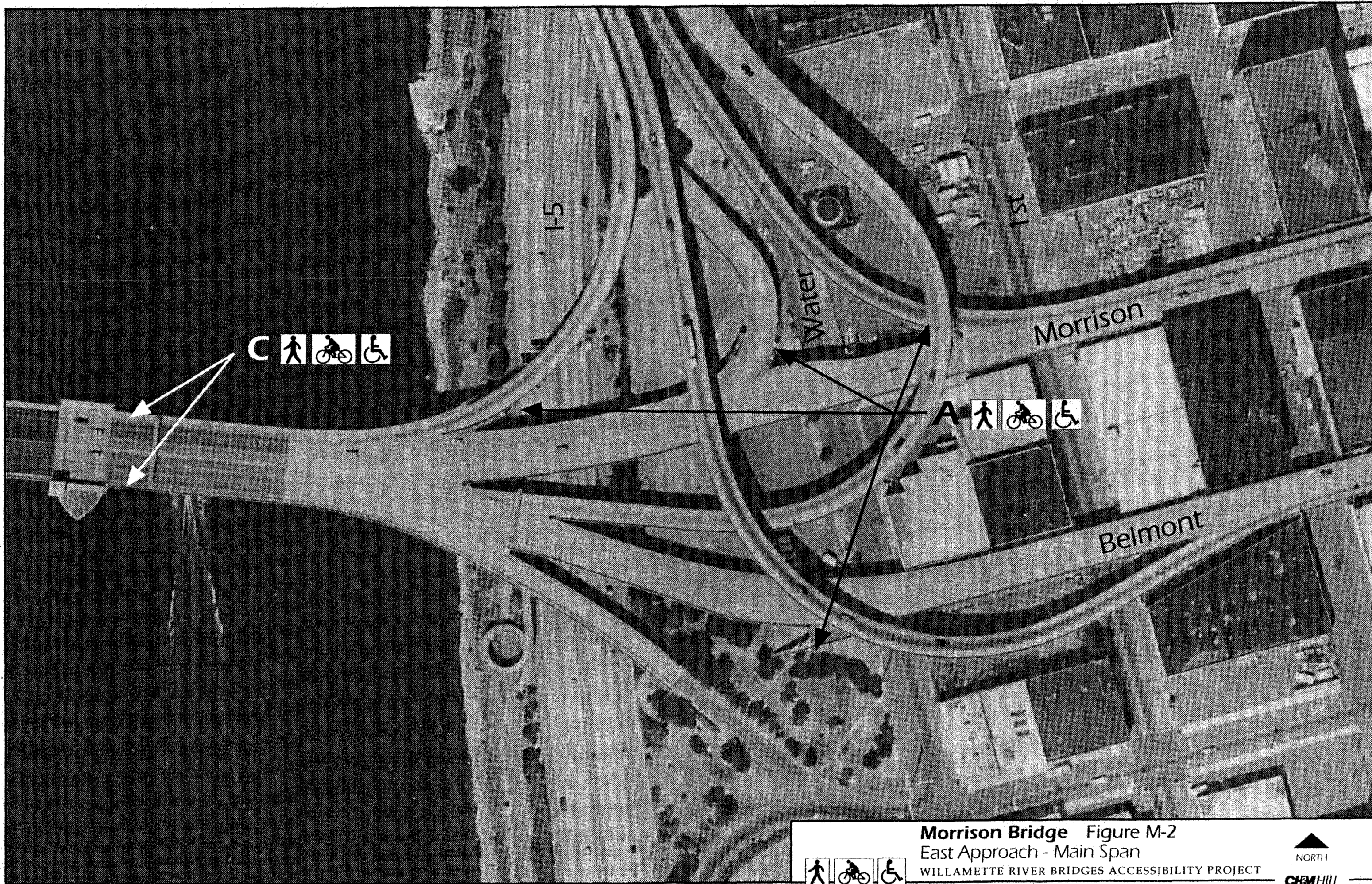
**Morrison Bridge** Figure M-1  
East Approach

WILLAMETTE RIVER BRIDGES ACCESSIBILITY PROJECT



**CHM HILL**





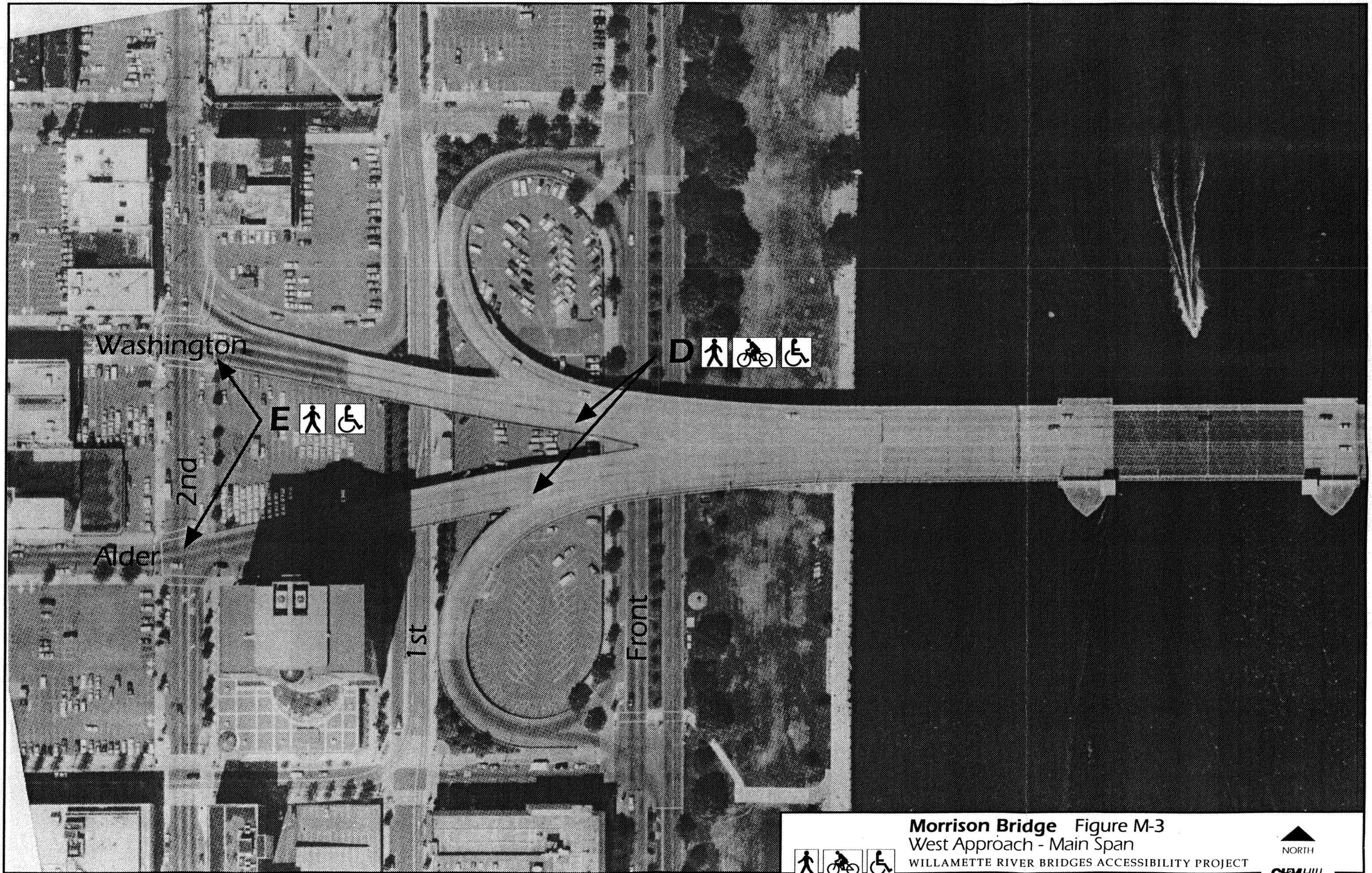
**Morrison Bridge** Figure M-2  
East Approach - Main Span

WILLAMETTE RIVER BRIDGES ACCESSIBILITY PROJECT



CHM HILL





**Morrison Bridge** Figure M-3  
West Approach - Main Span  
WILLAMETTE RIVER BRIDGES ACCESSIBILITY PROJECT





## **Project Evaluation Matrix**

# Willamette River Bridges Accessibility Project Project Evaluation Matrix

6/30/94

Page 1 of 4

Morrison Bridge Project	Mode Benefit	Removes Barriers	Facilitates Connections	Traffic System Performance	Potential Users	Subtotal Pts	Cost Benefit Analysis	Total Pts
	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts		Benefits/Impacts	
1. Provide bicycle lanes on the Belmont Viaduct and/or Morrison Viaduct (east end terminus at Grand) (A)	Projects do not meet Table Criteria. With inclusions of safe bikeway across bridge span and west side connection (see No. 4), bicycle lanes on viaducts, if possible, could provide significant benefits to bicyclists only; however, project alternatives are not feasible because of significant safety concerns related to conflicts with high-volume freeway ramps and high-volume ramps to/from Grand and MLK.  1. Bike lanes on outside lanes of viaducts. Under this alternative, the westbound bicycle lane would conflict with one high-speed vehicular diverge and one merge to/from I-5 and I-84. The eastbound bicycle lane would conflict with two high-speed vehicular diverges and one merge.  2. Bike lanes on inside lanes of viaducts. The westbound bicycle lane would conflict with the loop onramp from southbound MLK and the left-turn ramp from northbound Grand. Driver sight distance is minimal for the former ramp. The eastbound bicycle lane would conflict with the high-speed vehicular diverge to I-5 and I-84.  3. Bicycle path (two-way) on north side of Belmont Viaduct. The path would sever high-volume and automobile diverge movement to I-5 and I-84.  4. Bicycle path (two-way) on south side of Morrison Viaduct. The path would conflict with loop onramp from southbound MLK and left-turn ramp from northbound Grand. Driver sight distance is minimal for the former ramp (see Project #4.B.).							
2. Install sidewalk and crosswalks on west side of Grand (B)	Would marginally benefit pedestrian and disabled modes by eliminating circuitous routing.  2 points.	Would remove a barrier (existing indirect route); however, several significant barriers would still exist (e.g., pedestrian undercrossings on viaducts at merge/diverge points).  1 point.	Would provide minor system additions for pedestrian and disabled circulation.  2 points.	To physically install sidewalk, the existing inside left-turn lane from northbound Grand to westbound Morrison would need to be removed or the loop onramp from southbound MLK would have to be "tightened up."  The former option would require conversion of an existing northbound through lane to a left-turn lane, because at least two left-turn lanes would need to be maintained to accommodate the a.m. peak-hour turning volume of more than 1,400 vehicles. Removing the existing left-turn lane would create LOS F conditions theoretical v/c >1.40). Northbound vehicle queues would create gridlock conditions upstream.  "Tightening up" onramp to westbound Morrison from southbound MLK would further reduce the loop's substandard radius of 95 feet. This would require cars and trucks entering the loop from MLK to decelerate rapidly, increasing the likelihood for accidents and/or causing traffic to queue on MLK.	Low number of users (pedestrians and disabled would benefit).  1 point.	2	Estimated cost is \$100,000 to \$125,000, including traffic signal modifications.  2/112.5 = 0.018.  Zero points.	2

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## Willamette River Bridges Accessibility Project Project Evaluation Matrix

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Morrison Bridge Project	Mode Benefit	Removes Barriers	Facilitates Connections	Traffic System Performance	Potential Users	Subtotal Pts	Cost Benefit Analysis	Total Pts
	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts		Benefits/Impacts	
<b>2. (continued)</b>				AASHTO guidelines recommend a minimum radius of 127 feet for a design speed of 20 mph.  -4 points.				
<b>3.A. Install crosswalk across Morrison off-ramp to Water Avenue (A)</b>	<p>Would enable users to directly access Water from the southern sidewalk of the bridge, thereby avoiding existing "loop and under" routing.</p> <p>Would reduce route by 150 to 200 feet.</p> <p>Could decrease safety for users because of the potential conflict with automobiles across stop-sign-controlled crosswalk (see "Traffic System Performance").</p> <p>1 point.</p>	<p>Project would not remove or circumvent a barrier.</p> <p>Zero points.</p>	<p>System connections currently exist, avoiding potential conflicts, with 150- to 200-foot-longer route.</p> <p>Zero points.</p>	<p>Crosswalk location would be on the Water off-ramp, immediately before the ramp's merge with the I-5 off-ramp. Installation of a crosswalk at this location would mandate provision of a traffic device to control (stop) Water ramp traffic. A traffic signal would impact I-5 offramp operations, creating vehicle spillbacks onto the freeway. A stop sign, for Water offramp traffic only, would shorten the existing queue storage length by about 150 feet. With minimal amount of crosswalk users, the stop sign would additional induce unnecessary delay to all motorists.</p> <p>-1 point.</p>	<p>Low number of users would benefit.</p> <p>1 point.</p>	1	<p>Estimated cost is \$5,000 for signing and striping.</p> <p><math>1/5 = 0.200</math>.</p> <p>3 points.</p>	<b>4</b>
<b>3.B. Install crosswalk across Water Avenue at off-ramp intersection (A)</b>	<p>Project would provide marginal benefits to all modes.</p> <p>2 points.</p>	<p>Would remove one of a number of barriers; however, several significant barriers would still exist (i.e., west end access, main span crossing conflicts).</p> <p>1 point.</p>	<p>Would provide a minor system addition for pedestrians and disabled users.</p> <p>2 points.</p>	<p>Would not degrade traffic system performance.</p> <p>Zero points.</p>	<p>A moderate number of users would benefit from crosswalk.</p> <p>3 points.</p>	8	<p>Estimated cost is less than \$5,000 for striping.</p> <p><math>8/5 = 1.600</math>.</p> <p>4 points.</p>	<b>12</b>



# **Willamette River Bridges Accessibility Project Project Evaluation Matrix**

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Morrison Bridge Project	Mode Benefit	Removes Barriers	Facilitates Connections	Traffic System Performance	Potential Users	Subtotal Pts	Cost Benefit Analysis	Total Pts
	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts		Benefits/Impacts	
<b>4.A. Exclusive two-way bicycle pathway in middle of bridge span—from S.W. 2nd to Water Avenue (C)</b>	<p>Would significantly benefit bicyclists by providing exclusive 2,400-foot pathway from 2nd Avenue (downtown) to Water Avenue (eastside). Would provide marginal benefit to other modes by removing bicyclists from sidewalks.</p> <p>3 points.</p>	<p>Project would remove the bridge's significant barriers to bicyclists; however, minor barriers would still exist (e.g., surface street access to east of Water Avenue).</p> <p>3 points.</p>	<p>Would provide improved system connections for bicycle mode.</p> <p>3 points.</p>	<p>Separated pathway would require removal of one of six travel lanes on bridge span. Tuesday, September 15, 1992, 24-hour traffic count shows highest directional peak-hour flows of 3,050 vph westbound (p.m.). Existing lane capacity is over 1,000 vph, so separated pathway would replace existing northernmost eastbound lane with possibly minor degradation to traffic system performance (probable lower speed through movements and merge/diverge maneuvers).</p> <p>Project would create 10' wide barrier-separated bicycle path on lift span, 12' path upstream and downstream of span.</p> <p>Would not degrade traffic operations at 2nd Avenue intersections.</p> <p>Further detailed analysis is recommended in future.</p> <p>-1 point.</p>	<p>Relatively moderate number of new bicycle users could benefit from project.</p> <p>3 points.</p>	11	<p>Estimated cost is \$1,270,000, including 620-foot ramp to Water Avenue, barrier separation, and lift span grating cover. East end ramp would be placed above and on County property.</p> <p><math>11/1270 = 0.009</math>.</p> <p>Zero points.</p>	11
<b>4.B. Exclusive two-way bicycle pathway in middle of bridge span—from S.W. 2nd to S.E. 3rd (C)</b>	<p>See #4.A. Would extend barrier-separated bikeway along Morrison or Belmont Viaduct to S.E. 3rd. Ramp to S.E. 3rd would be provided as part of project.</p> <p>3 points.</p>	<p>Project would extend #4.A. bikeway easterly; however, bikeway would terminate at S.E. 3rd.</p> <p>3 points.</p>	<p>Would provide improved system connection for bicyclists.</p> <p>3 points.</p>	<p>See #4.A.</p> <p>Project would cause additional minor degradation to traffic performance on S.E. 3rd.</p> <p>-1 point.</p>	<p>See #4.A.</p> <p>3 points.</p>	11	<p>Estimated cost is \$1.35 million. Includes #4.A. improvements (except ramp to Water Avenue), plus 470' ramp to S.E. 3rd, barrier along viaduct, and signing/stripping. Does not include mitigations to parking and loading activities on S.E. 3rd.</p> <p><math>11/1350 = 0.008</math>.</p> <p>Zero points.</p>	11

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## Willamette River Bridges Accessibility Project Project Evaluation Matrix

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Morrison Bridge Project	Mode Benefit	Removes Barriers	Facilitates Connections	Traffic System Performance	Potential Users	Subtotal Pts	Cost Benefit Analysis	Total Pts
	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts		Benefits/Impacts	
<b>5.A. Replace stairs inside of Front Avenue's loop ramps with sidewalk ramps (D)</b>	<p>Addition of sidewalk ramp on loop onramp to eastbound Morrison would provide a linkage for persons in wheelchairs across bridge.</p> <p>As stand-alone project, ramp would also marginally benefit bicycle access.</p> <p>Addition of sidewalk ramp on loop onramp from westbound Morrison would not assist persons in wheelchair because no wheelchair facilities exist on the east side.</p> <p>3 points.</p>	<p>Project would remove the existing significant barrier to wheelchairs; however, other minor barriers would still exist (e.g., eastside access).</p> <p>3 points.</p>	<p>Would provide a critical system addition for wheelchair circulation.</p> <p>3 points.</p>	<p>Would not degrade traffic system performance.</p> <p>Sidewalk ramp on loop onramp to Morrison would require removal of about eight County-owned parking spaces.</p> <p>Zero points.</p>	<p>Relatively low number of users would benefit from project.</p> <p>1 points.</p>	10	<p>Estimated cost is approximately \$180,000.</p> <p><math>10/225 = 0.044</math>.</p> <p>1 point.</p>	11
<b>5.B. Add sidewalk ramp to Front Avenue loop ramp and rebuild stairway (D)</b>	<p>See #5.A.</p> <p>3 points.</p>	<p>See #5.A.</p> <p>3 points.</p>	<p>See #5.A.</p> <p>3 points.</p>	<p>See #5.A.</p> <p>Zero points.</p>	<p>A moderate number of users would benefit from project.</p> <p>3 points.</p>	12	<p>Estimated cost is \$200,000.</p> <p><math>12/200 = 0.060</math>.</p> <p>1 point.</p>	13
<b>6.A. Install crosswalks on east side of S.W. 2nd from Washington to Alder—single right-turn lane at Alder (D)</b>	<p>Would marginally benefit pedestrian and disabled modes by eliminating circuitous routing.</p> <p>2 points.</p>	<p>Would remove significant pedestrian and disabled circulation barrier; however, out-of-direction travel for alternative mode bridge access would still exist.</p> <p>3 points.</p>	<p>Would provide minor system additions for pedestrian and disabled circulation.</p> <p>2 points.</p>	<p>Elimination of one of two north-bound to eastbound right-turn lanes would result in LOS F conditions (average motorist delay approaching 2 min/vch, theoretical v/c = 1.16), causing significant traffic system degradation. 745 p.m. peak hour right-turn movements.</p> <p>-3 points.</p>	<p>Moderate number of users (pedestrian and disabled) would benefit.</p> <p>3 points.</p>	7	<p>Estimated cost is \$40,000, including traffic signal modifications.</p> <p><math>7/40 = 0.175</math>.</p> <p>2 points.</p>	9
<b>6.B. Install crosswalks on east side of S.W. 2nd from Washington to Alder—dual right-turn lane at Alder (D)</b>	<p>Would marginally benefit pedestrian and disabled modes by eliminating circuitous routing.</p> <p>2 points.</p>	<p>Would remove one of a number of barriers, however, potential conflict with autos would present a significant barrier.</p> <p>2 points.</p>	<p>Would provide minor system additions for pedestrian and disabled circulation.</p> <p>2 points.</p>	<p>Would cause minor degradation to traffic system performance due to added delay associated with crosswalk. Possible safety concerns.</p> <p>-1 point.</p>	<p>Moderate number of users (pedestrian and disabled) would benefit.</p> <p>3 points.</p>	8	<p>Estimated cost is \$40,000, including traffic signal modifications.</p> <p><math>8/40 = 0.200</math>.</p> <p>3 points.</p>	11

# Final Evaluation Matrix

(Project shown in bold were selected for the Accessibility Plan)

## Morrison Bridge Projects---Final Evaluation

Project		Mode Benefit	Removes Barriers	Facilitates Connections	Traffic Performance	Potential Users	Cost Benefit	TOTAL POINTS	ESTIMATED COST
1	Provide bicycle lanes on Belmont or Morrison Viaducts, east end terminus at Grand	T	A	B	L	E	D		
2	Install sidewalk and crosswalks on west side of Grand	2	1	2	-4	1	0	2	110,000
3A	Install crosswalk across Morrison off-ramp to Water Avenue	1	0	0	-1	1	3	4	5,000
3B	<i>Install crosswalk across Water Avenue at off-ramp intersection</i>	2	1	2	0	3	4	12	5,000
4A	<i>Exclusive multi-modal (or bike only) pathway in middle of bridge span---from 2nd to Water Avenue</i>	3	3	3	-1	3	0	11	1,270,000
4B	Exclusive multi-modal (or bike only) pathway in middle of bridge span---from 2nd to west of MLK	3	3	3	-1	3	0	11	1,350,000
5A	Replace stairs inside of Front Avenue's loop ramps with sidewalk ramps	3	3	3	0	1	1	11	180,000
5B	<i>Add sidewalk ramp to Front Avenue loop ramp and rebuild stairway</i>	3	3	3	0	3	1	13	200,000
6A	Install crosswalks on east side of SW 2nd--single right-turn lane	2	3	2	-3	3	2	9	40,000
6B	<i>Install crosswalks on east side of SW 2nd--double right-turn lane</i>	2	2	2	-1	3	3	11	40,000

## Morrison Bridge Projects---Final Evaluation

Project		Mode Benefit	Removes Barriers	Facilitates Connections	Traffic Performance	Potential Users	Cost Benefit	TOTAL POINTS	ESTIMATED COST
1	Provide bicycle lanes on Belmont or Morrison Viaducts, east end terminus at Grand	T	A	B	L	E	D		
2	Install sidewalk and crosswalks on west side of Grand	2	1	2	-4	1	0	2	110,000
3A	Install crosswalk across Morrison off-ramp to Water Avenue	1	0	0	-1	1	3	4	5,000
3B	<i>Install crosswalk across Water Avenue at off-ramp intersection</i>	2	1	2	0	3	4	12	5,000
4A	<i>Exclusive multi-modal (or bike only) pathway in middle of bridge span---from 2nd to Water Avenue</i>	3	3	3	-1	3	0	11	1,270,000
4B	Exclusive multi-modal (or bike only) pathway in middle of bridge span---from 2nd to west of MLK	3	3	3	-1	3	0	11	1,350,000
5B	<i>Add sidewalk ramp to Front Avenue loop ramp and rebuild stairway</i>	3	3	3	0	3	1	13	200,000
5A	Replace stairs inside of Front Avenue's loop ramps with sidewalk ramps	3	3	3	0	1	1	11	180,000
6B	<i>Install crosswalks on east side of SW 2nd--double right-turn lane</i>	2	2	2	-1	3	3	11	40,000
6A	Install crosswalks on east side of SW 2nd--single right-turn lane	2	3	2	-3	3	2	9	40,000

## Cost Estimate

Item	Morrison Bridge			
	Project Number			
	3B	4A	5B	6B
Demolish Pedestrian Undercrossing				
Demolish Pedestrian Stairway				
Demolish Asphalt Roadway				
Demolish Curbing				
Excavation				
Concrete Curbing				
Concrete Sidewalk at Grade				
Concrete Sidewalk on Bridge Deck				
Wheelchair Ramps at Grade				2400
Wheelchair Ramps Above Grade				
Asphalt Concrete Path w/ Aggr. Base				
Asphalt Concrete Pavement				
Aggregate Base				
Relocate Inlet				
Barriers and Guardrails		153600		
Replace Sidewalk Decking on Lift Span				
Bridge Deck Grating Cover		44000		
Six-Foot Wide Cantilever Sidewalk				
Six-Foot Wide Sidewalk Above Grade			117600	
Twelve-Foot Wide Ramp Structure		562500		
Ten-Foot-Wide Cantilever Sidewalks				
Construct Stairway			5000	
Pedestrian Undercrossing				
Relocate Light Standards				
Retaining Wall				
Signal Mod. (minor) - add phase/head				20000
Signal Mod. (moderate) - above + controller				
Signal Mod. (major) - above + pole				
Install New Traffic Signal				
Striping	600	20400		1200
Striping Removal		8400		
Subtotal	600	788900	122600	23600
10% Mobilization	60	78890	12260	2360
5% Temporary Traffic Control	30	39445	6130	1180
Subtotal	690	907235	140990	27140
15% Engineering	104	136085	21149	4071
25% Contingency	173	226809	35248	6785
Estimated Total Cost	966	1,270,129	197,386	37,996
Estimated Total Cost (Rounded)	5,000	1,270,000	200,000	40,000





**Summary of Existing Access Problems, Possible  
Solutions, and Engineering Issues  
May 24, 1994**

# Summary of Existing Access Problems, Possible Solutions and Engineering Issues May 9, 1994

This working paper compiles multi-modal access and circulation issues the CAC, TAC, and CH2M HILL team have identified over the past year. All previously identified problems and possible solutions are identified. Engineering issues (associated with designing a solution) the consultant will evaluate in working paper #2 are discussed.

Aerial pull-outs, schematically showing study areas, are provided at the end of this section. The letter identifying each issue corresponds to a problem area on the pull-outs.

## East Approach

### A. Bicycle access

**Problem:** Narrow shoulders do not provide adequate space for bicycles to use the Hawthorne Street viaduct from the main span to Grand Avenue. This forces the bicyclist onto the sidewalk which is too narrow for pedestrians and bicyclists to pass safely.



*Eastbound bicyclist on the Hawthorne viaduct sidewalk.*



Proposed  
Solution: Stripe bike lanes from the main span to 11th Avenue.

Engineering  
Issue(s): Review traffic capacity impacts to accommodate bike lanes on the viaduct.

#### B. Pedestrian access

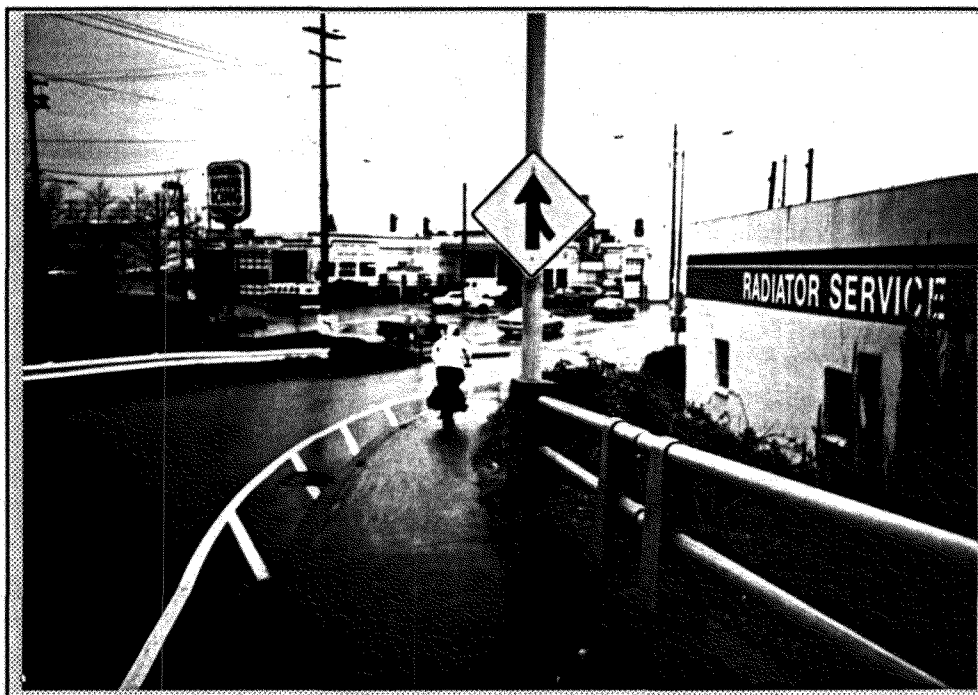
Problem: No direct access for pedestrians eastbound on Hawthorne to Grand Avenue. Westbound pedestrians must use stairwell west of Martin Luther King (MLK) Boulevard or the ramp to Clay Street.

Proposed  
Solution: Reconfigure the free flowing ramp to Clay Street.

Engineering  
Issue(s): Review traffic capacity and civil design impacts to reconfigure ramp.

#### C. Disabled access

Problem: Ramp to Clay Street provides only wheelchair access from east side. The ramp cross slope exceeds the maximum ADA standard.



*View of narrow sidewalk on Hawthorne off-ramp to Clay.*



**Proposed  
Solutions:**

1. Rebuild the curb and sidewalk at the intersection of Clay Street and MLK Boulevard.
2. Construct a new ramp from the Hawthorne Street viaduct west of the ramp to MLK Boulevard.

**Engineering  
Issue(s):**

Review existing and new ramp geometry to determine feasibility and cost of proposed improvements.

**D. Disabled and pedestrian access along Grand Avenue**

**Problem:** There is no disabled or pedestrian access (i.e., no crosswalks or sidewalks) along the west side of Grand Avenue from the south side of Hawthorne Street to the north side of Madison Street.

**Proposed  
Solution:**

Provide crosswalks at Hawthorne Street and Madison Street and construct a sidewalk between the two streets.

**Engineering  
Issue(s):**

Review right-of-way and traffic engineering issues associated with modifying the left turn lane on Grand Avenue.

**Main Span**

**E. Bicycle, disabled and pedestrian conflicts**

**Problem:** All modes share five-foot wide sidewalks, creating conflicts on the heaviest travelled bridge. The sidewalks are too narrow to allow multi-modes to safely pass.

**Proposed  
Solutions:**

1. Convert one or more lanes in each direction to bicycle use, covering metal grating. Consider the use of reversible lanes.
2. Construct a cantilever facility from the existing bridge.
3. Restrict one or more modes to the northern or southern sidewalks.

**Engineering  
Issue(s):**

Examine traffic impacts associated with removing travel lanes. Review structural and lift span requirements for cantilever structure. Review terminal operations for the last option. Coordinate engineering evaluation with possible LRT crossing proposal.





*Eastbound bicyclist on main span sidewalk.*

## West Approach

### F. Bicycle access

**Problem:** Free flowing ramps from Front Avenue create conflicts with eastbound bicyclists. Motorists often do not see and/or yield the right-of-way to bicyclists.

**Proposed Solution:** Remove the ramp from southbound Front Avenue.

**Engineering Issue(s):** Examine traffic impacts associated with removing the ramp and controlling access from the northbound Front Avenue ramp.







*Eastbound bicyclist crossing onramp from northbound Front Avenue.*

#### G. Disabled and pedestrian access

**Problem:** Pedestrian access to main span is indirect. No sidewalk exists on the Main Street and Madison Street ramps to the bridge. Pedestrians must use stairwells, precluding wheelchair access.

**Proposed Solution:** Construct sidewalks on the Main Street and Madison Street ramps and on 1st Avenue between Madison Street and Main Street approaches.

**Engineering Issue(s):** Examine design geometry requirements and feasibility of adding sidewalks.

#### H. Disabled access

**Problem:** Wheelchair access is precluded at pedestrian undercrossings of the Front Avenue ramps.

**Proposed Solution:** Replace undercrossings with ramps or at grade crossings.

**Engineering**

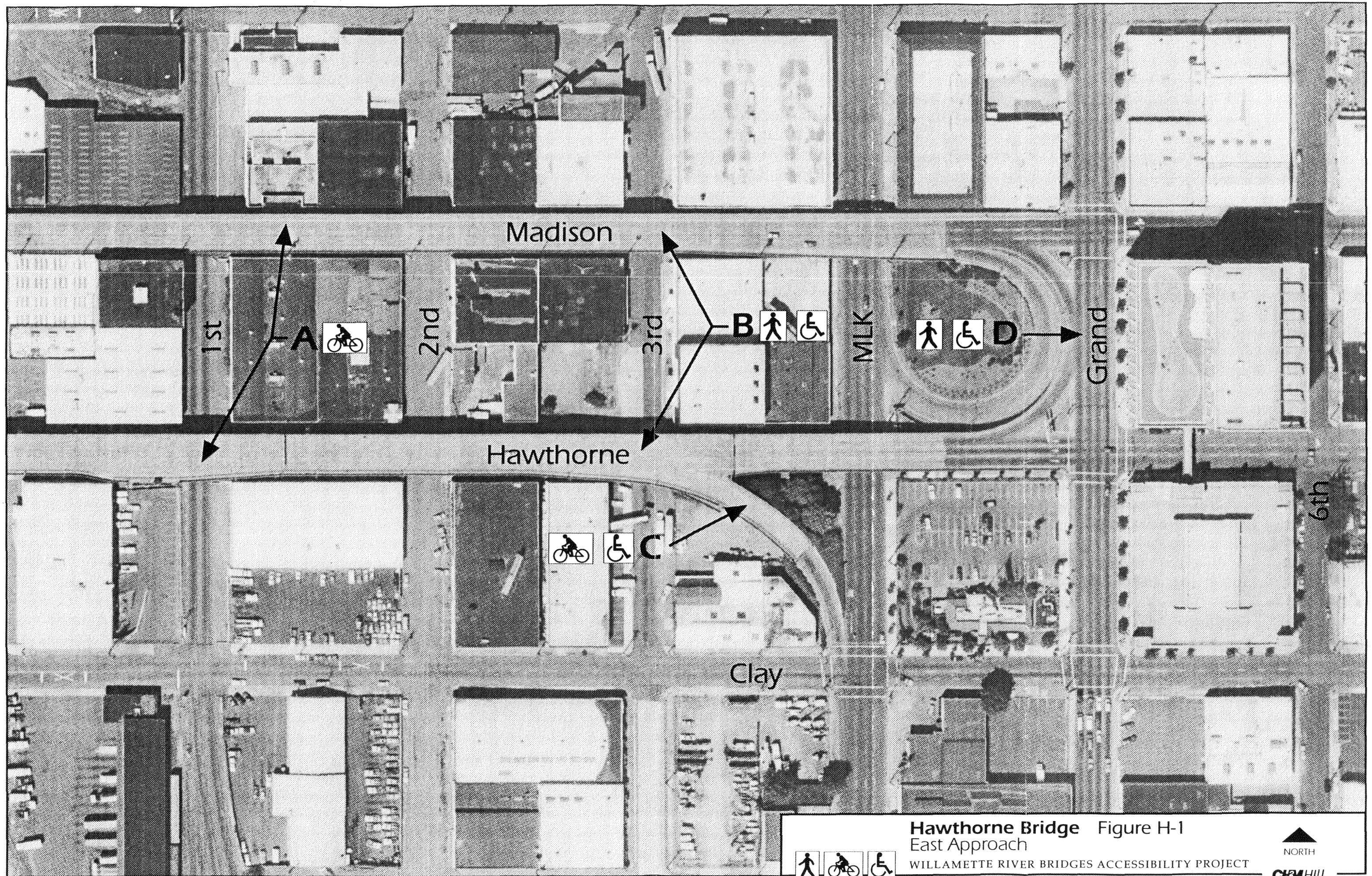


Issue(s): Examine design geometry requirements and feasibility of eliminating undercrossings.

PDX14D5C.WP5







**Hawthorne Bridge** Figure H-1  
East Approach

WILLAMETTE RIVER BRIDGES ACCESSIBILITY PROJECT



NORTH

CH2M HILL





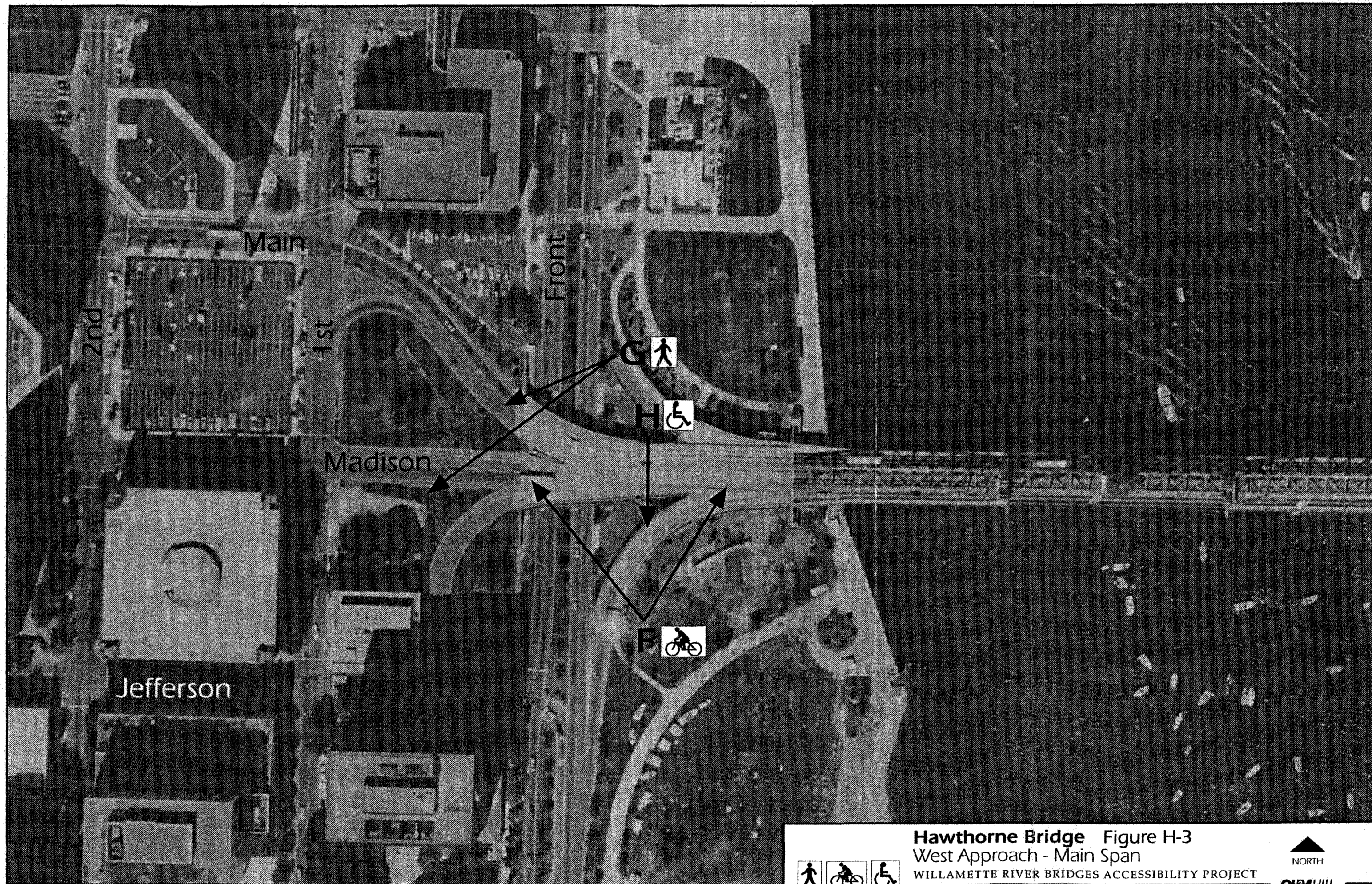
**Hawthorne Bridge** Figure H-2  
East Approach - Main Span

WILLAMETTE RIVER BRIDGES ACCESSIBILITY PROJECT



CHM HILL





**Hawthorne Bridge** Figure H-3  
West Approach - Main Span

WILLAMETTE RIVER BRIDGES ACCESSIBILITY PROJECT



NORTH

CH2M HILL



# **Project Evaluation Matrix**



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## Willamette River Bridges Accessibility Project Project Evaluation Matrix

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Hawthorne Bridge Project	Mode Benefit	Removes Barriers	Facilitates Connections	Traffic System Performance	Potential Users	Sub-total Pts	Cost Benefit Analysis	Total Pts
	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts		Benefits/Impacts	
<b>1.A. Provide bicycle lane on Hawthorne Viaduct (to Clay/MLK off-ramp)—maintain three traffic lanes (A)</b>	Removes bicycles from over 600 linear feet of 5-foot-wide sidewalk.  Would provide marginal benefit to all modes—separates bicycles from pedestrians and disabled.  Does not eliminate potential bicycle/auto conflict at offramp to Clay/MLK.  2 points.	Would remove or circumvent a barrier; however, several significant barriers would still exist, e.g., vehicle diverge to Clay/MLK, discontinuation of bike lane on Hawthorne east of Clay/MLK offramp.  1 point.	Would provide exclusive bicycle lane on segment of viaduct, consistent with CCTMP.  Would provide minor system addition for bicycles.  1 point.	Would not degrade traffic system performance (traffic lanes would be narrowed but still at least 11-feet wide each).  Zero points.	Moderate number of viaduct users (bicyclists and pedestrians) would benefit.  3 points.	7	Estimated cost is \$20,000.  $7/20 = 0.350$ .  3 points.	10
<b>1.B. Provide bicycle lane on Hawthorne Viaduct (past Grand)—maintain three traffic lanes (A)</b>	See #1.A.  Continues bicycle lane from Clay/MLK off-ramp through Grand intersection.  2 points.	Would remove significant barrier to bicycles—continuation of bike route from Clay/MLK ramp through Grand intersection.  Minor barriers would still exist, e.g. vehicle diverge to Clay/MLK.  3 points.	Would provide exclusive bicycle lane on segment of viaduct, consistent with CCTMP.  Provides a critical system addition for bicycles with bike lane through Grand intersection  3 points.	See #1.A.  Zero points.	See #1.A.  3 points.	11	Estimated cost is \$25,000 excluding potential on-street parking mitigation.  $11/25 = 0.440$ .  3 points.	14
<b>1.C. Provide bicycle lane on Hawthorne Viaduct (to Clay/MLK off-ramp)—remove traffic lane and provide buffer zone (A)</b>	Removes bicycles from over 600 linear feet of 5-foot-wide sidewalk.  Would provide marginal benefit to pedestrians and disabled (removes bicycles from sidewalk.)  Would provide significant benefit to bicyclists with: 1) buffer zone, 2) potential decreased auto/truck speeds during peak periods (reduced number of auto lanes), and 3) reduced vehicle turning radius to offramp to Clay/MLK.  3 points.	See #1.A.  1 point.	See #1.A.  1 point.	Would convert third traffic lane into bicycle lane and buffer zone (note: main bridge span carries 2 lanes).  Could decrease peak hour auto/truck speeds, but would not decrease bridge capacity.  Zero points.	See #1.A.  3 points.	8	Estimated cost is \$25,000.  $8/25 = 0.320$ .  3 points.	11

# **Willamette River Bridges Accessibility Project** **Project Evaluation Matrix**

6/30/94

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Hawthorne Bridge Project	Mode Benefit	Removes Barriers	Facilitates Connections	Traffic System Performance	Potential Users	Sub-total Pts	Cost Benefit Analysis	Total Pts
	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts		Benefits/Impacts	
<b>1.D. Provide bicycle lane on Hawthorne Viaduct (past Grand)—remove traffic lane and provide buffer zone (A)</b>	<p>Would provide marginal benefit to pedestrians and disabled (removes bicycles from sidewalk.)</p> <p>Would provide significant benefit to bicyclists with: 1) buffer zone, 2) potential decreased auto/truck speeds during peak periods (reduced number of auto lanes), 3) continuation of bicycle lane through Grand Intersection, and 4) reduced vehicle turning radius to offramp at Clay/MLK</p> <p>3 points</p>	<p>See #1.B.</p> <p>3 points.</p>	<p>See #1.B.</p> <p>3 points.</p>	<p>See #1.A.</p> <p>Zero points</p>	<p>See #1.A.</p> <p>3 points.</p>	12	<p>Estimated cost is \$25,000, excluding potential on-street parking mitigation.</p> <p><math>12/25 = 0.480</math>.</p> <p>4 points.</p>	<b>16</b>
<b>2. Improve Clay/MLK ramp sidewalk (B, C)</b>	<p>Would provide significant benefit to persons in wheelchairs and marginal benefit to pedestrians and other disabled by widening 120 linear feet of sidewalk and modifying cross-slope.</p> <p>3 points.</p>	<p>Project removes a significant barrier (existing reverse cross-slope); however, other minor barriers would still exist for wheelchairs, e.g., access on west end, 7% <math>\pm</math> grade on sidewalk.</p> <p>3 points.</p>	<p>Project would provide wheelchair ramps on northwest corner of MLK/Clay; however, sidewalk grade would continue to be 7%, exceeding ADA guidelines.</p> <p>3 points.</p>	<p>Would not degrade traffic system performance</p> <p>Zero points</p>	<p>Moderate number of users could benefit from improvement.</p> <p>3 points.</p>	12	<p>Estimated cost is \$10,000.</p> <p><math>12/10 = 1.200</math>.</p> <p>4 points.</p>	<b>16</b>
<b>3. Install sidewalk and crosswalks on west side of Grand (D)</b>	<p>Would marginally benefit pedestrian and disabled modes by eliminating circuitous routing.</p> <p>2 points.</p>	<p>Would remove a barrier (existing indirect route); however, several significant barriers would still exist (e.g., lack of sidewalks on viaducts, out-of-direction required to Clay/MLK ramp).</p> <p>1 point.</p>	<p>Would provide minor system additions for pedestrian and disabled circulation.</p> <p>2 points.</p>	<p>To physically install sidewalk, existing uncontrolled left-turn ramps from Hawthorne Viaduct and Madison Viaduct would need to be removed. Removal of northbound left-turn lane to Madison (consolidation into existing adjacent through lane) would degrade a.m. peak intersection operations from existing LOS B (average delay 11 sec/veh, Grand v/c = 0.87) to LOS F (average delay 67 sec/veh, Grand theoretical v/c = 1.16), causing system bottleneck.</p> <p>Northbound vehicle queue would create gridlock conditions upstream.</p> <p>4 points</p>	<p>Moderate number of users (pedestrians and disabled) would benefit.</p> <p>3 points.</p>	4	<p>Estimated cost is \$75,000-\$125,000, including traffic signal modifications.</p> <p><math>4/100 = 0.040</math>.</p> <p>1 point.</p>	<b>5</b>

# **Willamette River Bridges Accessibility Project** **Project Evaluation Matrix**

6/30/94

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Hawthorne Bridge Project	Mode Benefit	Removes Barriers	Facilitates Connections	Traffic System Performance	Potential Users	Sub-total Pts	Cost Benefit Analysis	Total Pts
	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts		Benefits/Impacts	
4.A. Convert an existing bridge span traffic lane to two-way bicycle lane; retain three fixed vehicle lanes (E)	<p>As stand-alone project, would create 1,400-foot-long, two-way bicycle path replacing northernmost bridge lane.</p> <p>Would separate bicycles from other modes on bridge's 6-foot-wide sidewalks.</p> <p>Would limit bicycle accessibility by circuitous bicycle connections on west and east sides.</p> <p>Eastbound bicyclists would need to cross under bridge on east end to access Hawthorne Viaduct, and vice-versa. Would conflict with other users at bridge/ramp areas.</p> <p>-3 +4 = 1 point.</p>	<p>Project would not remove or circumvent a barrier.</p> <p>Project could create new barriers for bicycles (circulation at terminals).</p> <p>Zero points.</p>	<p>As stand-alone project, provides 1,400-foot bicycle path segment on designated CCTMP route.</p> <p>Provides circuitous bicycle routing on east and west ends</p> <p>Provides minor system addition for one mode: bicycles.</p> <p>1 point.</p>	<p>Pathway would need to replace northernmost lane due to existing eastbound merging gore areas and Tri-Met bus horizontal clearance requirements.</p> <p>Bridge capacity is approximately 1,000 vph per lane. Existing peak hour volumes are 1,900 vph westbound and 900 vph eastbound during a.m. peak, and 1,000 vph westbound and 1,700 vph eastbound during p.m. peak.</p> <p>Under fixed lane operations recommended configuration is two lanes eastbound and one lane westbound to provide queue storage on Madison Viaduct instead of creating gridlock on westside surface streets. Under this alternative, severe westbound congestion would occur during the a.m. peak hour (excess demand of over 900 vph westbound) creating diversions, queuing, and delay to autos, as well as to Tri-Met buses. Single lane operation does not provide bypass for breakdowns/lane closures. Potential air quality impacts due to queuing and diversion.</p> <p>-4 points.</p>	<p>High number of users (bicyclists and pedestrians) could benefit.</p> <p>5 points.</p>	3	<p>Estimated cost is \$250,000, including barriers, striping and west side ramp.</p> <p><math>3/250 = 0.012</math>.</p> <p>Zero points.</p>	3

# **Willamette River Bridges Accessibility Project** **Project Evaluation Matrix**

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Hawthorne Bridge Project	Mode Benefit	Removes Barriers	Facilitates Connections	Traffic System Performance	Potential Users	Sub-total Pts	Cost Benefit Analysis	Total Pts
	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts		Benefits/Impacts	
4.B. Convert an existing bridge span lane to two-way bicycle lane: two fixed and one reversible vehicle lane (E)	See #4.A. 1 point.	See #4.A. Zero points.	See #4.A. 1 point.	Pathway would need to replace northernmost lane due to existing eastbound merging gore areas and Tri-Met bus horizontal clearance requirements.  Under reversible lane operations (inside southern lane), peak hour contraflow lanes on span would theoretically operate near or at capacity, potentially causing delays for Tri-Met buses. However, traffic system link failures would occur as trucks and buses forced to use 97" inner lanes would severely congest network due to slow speeds. Potential safety problems would occur. In addition, single lane operations (in non-commute direction) does not provide bypass for breakdowns/lane closures.  -4 points.	See #4.A. 5 points.	3	Capital costs are estimated to be \$400,000, including west side ramp. Daily maintenance would also be required—at least two lane configuration changes each day.  $3/400 = 0.008$ .  Zero points.	3
5. Construct cantilevered sidewalks on bridge span (E)	As stand-alone project, would create 1,400-foot-long, 10-foot-wide sidewalks on both sides of bridge span.  Would provide standard multimodal trail width, lessening conflict potential for all modes.  Would provide significant benefits for all modes.  4 points.	As stand-alone, project would remove significant friction barrier to all modes, but other minor barriers would still remain, e.g., access for all modes at east and west ends.  3 points.	Would provide bicycle lanes on bridge span, consistent with CCTMP.  Would provide critical system additions for all modes.  4 points.	Would not degrade traffic system performance.  Zero points.	High number of users could benefit.  5 points.	16	Estimated cost is \$1.3 million.  $16/1,300 = 0.012$ .  Zero points.	16
6. Restrict bicycles to one sidewalk, pedestrians and disabled to opposite sidewalk, on bridge span (E)	Project does not meet Table Criteria. Violates AASHTO standards for minimum two-way bike path width of 8 feet (recommended is 10 feet). Existing sidewalk width is 6 feet.							

# **Willamette River Bridges Accessibility Project Project Evaluation Matrix**

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Hawthorne Bridge Project	Mode Benefit	Removes Barriers	Facilitates Connections	Traffic System Performance	Potential Users	Sub-total Pts	Cost Benefit Analysis	Total Pts
	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts		Benefits/Impacts	
7. <b>Remove on-ramp from southbound Front Avenue and install sidewalk segments along Madison, Main, and 1st (F, G, H)</b>	<p>Removal of ramp would eliminate one of two major merge conflict areas between autos and other modes. Would allow striping of uninterrupted bicycle lane on Madison from 1st to southbound Front Avenue ramp merge point.</p> <p>Madison sidewalk would provide significant benefits to pedestrians and disabled by creating new link from downtown to southern bridge sidewalk.</p> <p>Main sidewalk would provide direct downtown connection from northern bridge sidewalk for disabled.</p> <p>First sidewalk would eliminate circuitous pedestrian and disabled routing.</p> <p>4 points.</p>	<p>Project would remove significant barriers to continuous multimodal travel on west end of bridge into and from downtown.</p> <p>As a stand-alone project, 6-foot-wide sidewalks on main span would still present a significant barrier.</p> <p>2 points.</p>	<p>Project would provide critical system addition for pedestrians and disabled in wheelchairs as direct connection to downtown would be provided.</p> <p>As stand-alone project, would provide a minor system connection for bicyclists.</p> <p>4 points.</p>	<p>Would re-route about 100 vehicles during p.m. peak hour through five intersections: Front/Jefferson, Jefferson/1st, Jefferson/2nd, 2nd/Madison and Madison/1st. The most critical intersection, Madison/1st, will operate at LOS B with 12 sec delay with and without the diversion, v/c will increase from 0.69 exiting to 0.73.</p> <p>-1 point.</p>	<p>High number of users could benefit.</p> <p>5 points.</p>	14	<p>As stand-alone project, excluding demolition of existing ramp or sale/lease of right-of-way under ramp, estimated cost is \$70,000 for barriers pavement striping, and traffic signal modifications.</p> <p><math>14/70 = 0.200</math>.</p> <p>3 points.</p>	17
8. <b>Install sidewalk on Madison Viaduct from Grand to Water Avenue (A)</b>	<p>Would benefit pedestrians and disabled with increased safety and user comfort.</p> <p>Would complete "missing" 1/4-mile gap for access on Madison Viaduct.</p> <p>4 points.</p>	<p>Would remove significant barriers to both pedestrian and disabled travel which is prohibited today-across Madison Viaduct.</p> <p>4 points.</p>	<p>Provides critical system additions for two modes: pedestrians and disabled.</p> <p>4 points.</p>	<p>Project would require modifying viaduct's cross-section, typically from 2' wide "sidewalk," 5' wide bicycle lane, and 3-11.5' wide travel lanes to 5' wide sidewalk, 5' wide bicycle lane, and 2-11' wide travel lanes and 1-10' wide travel lane.</p> <p>Project would cause lane offsets of 2' to 3' between east and west legs of Grand/Madison intersection, possibly causing minor degradation to traffic flow.</p> <p>-1 point.</p>	<p>High number of users, including pedestrians and disabled, would benefit with project.</p> <p>5 points.</p>	16	<p>Estimated cost is \$200,000, which includes sidewalk installation and pavement restriping.</p> <p><math>16/200 = 0.080</math></p> <p>2 points.</p>	18

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## Willamette River Bridges Accessibility Project Project Evaluation Matrix

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Hawthorne Bridge Project	Mode Benefit	Removes Barriers	Facilitates Connections	Traffic System Performance	Potential Users	Sub-total Pts	Cost Benefit Analysis	Total Pts
	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts		Benefits/Impacts	
9. Install sidewalk on Madison Viaduct from Grand to Water Avenue and convert existing bridge span traffic lane to two-way bicycle lane (see Project #4.B.) (B, E)	<p>First project would benefit pedestrians and disabled with increased safety and user comfort.</p> <p>Would complete "missing" 1/4-mile gap for access on Madison Viaduct.</p> <p>Combined project would create 3,200-foot-long, two-way bicycle path on north side of viaduct and bridge span.</p> <p>Would separate bicycles from other modes on bridge's 6-foot-wide sidewalks.</p> <p>4 points.</p>	<p>Would remove significant barriers to both pedestrian and disabled travel—which is prohibited today—across Madison Viaduct.</p> <p>2 points.</p>	<p>Provides critical system additions for two modes: pedestrians and disabled.</p> <p>Would provide 3,200-foot-long bicycle segment along designated CCTMP route.</p> <p>provides minor system addition for bicycles, but provides circuitous routing on east and west ends.</p> <p>4 points.</p>	<p>See #4.B.</p> <p>Installation of two-way bicycle lane and sidewalk on north side of Madison Viaduct would require removal of existing third (outside) traffic lane on viaduct. Thus, Madison's approach leg at Grand would need to be reconfigured with the westbound "through-right" lane converted to "right-turn only" lane. Conversion would have negligible effect on p.m. peak-hour operations (LOS B under both scenarios), and minor degradation during a.m. peak hour (from existing v/c = 0.73 to projected v/c = 0.89). Average motorist delay would increase about 2 sec/veh.</p> <p>-2 points.</p>	<p>High number of users of all modes would benefit.</p> <p>5 points.</p>	13	<p>Estimated cost is \$520,000, which includes sidewalk installation and pavement restriping on the Madison Viaduct and capital costs under the reversible lane option.</p> <p><math>13/520 = 0.025</math></p> <p>Zero points.</p>	13



# Final Evaluation Matrix

(Project shown in bold were selected for the Accessibility Plan)

## Hawthorne Bridge Projects---Final Evaluation

Project		Mode Benefit	Removes Barriers	Facilitates Connection:	Traffic Performance	Potential Users	Cost Benefit	TOTAL POINTS	ESTIMATED COST
1A	Provide bicycle lane on Hawthorne Viaduct (to Clay/MLK off-ramp)--maintain three traffic lanes	2	1	1	0	3	3	10	20,000
1B	Provide bicycle lane on Hawthorne Viaduct (past Grand)--maintain three traffic lanes	2	3	3	0	3	3	14	25,000
1C	Provide bicycle lane on Hawthorne Viaduct (to Clay/MLK off-ramp)--remove traffic lane and provide buffer zone	3	1	1	0	3	3	11	25,000
1D	<i>Provide bicycle lane on Hawthorne Viaduct (past Grand)--remove traffic lane and provide buffer zone</i>	3	3	3	0	3	4	16	25,000
2	<i>Improve Clay/MLK ramp sidewalk</i>	3	3	3	0	3	4	16	10,000
3	Install sidewalk and crosswalks on west side of Grand	2	1	2	-4	3	1	5	100,000
4A	Convert an existing bridge span traffic lane to two-way bicycle lane: retain three fixed vehicle lanes	1	0	1	-4	5	0	3	250,000
4B	Convert an existing bridge span lane to two-way bicycle lane: two fixed and one reversible vehicle lane	1	0	1	-4	5	0	3	400,000
5	<i>Construct cantilevered sidewalks on bridge span</i>	4	3	4	0	5	0	16	1,300,000
6	Restrict bicycles to one sidewalk, pedestrians & disabled to opposite sidewalk, on bridge span	T	A	B	L	E	D		
7	<i>Remove onramp from southbound Front Avenue and install sidewalk segments along Madison, Main, and First.</i>	4	2	4	-1	5	3	17	70,000
8	<i>Install sidewalk on Madison Viaduct from Grand to Water Avenue</i>	4	4	4	-1	5	2	18	200,000
9	Install sidewalk on Madison viaduct from Grand to Water Avenue and convert existing bridge span traffic lane to two-way bicycle lane	4	2	4	-2	5	0	13	520,000

## Hawthorne Bridge Projects---Final Evaluation

Project		Mode Benefit	Removes Barriers	Facilitates Connection:	Traffic Performance	Potential Users	Cost Benefit	TOTAL POINTS	ESTIMATED COST
1D	<b>Provide bicycle lane on Hawthorne Viaduct (past Grand)---remove traffic lane and provide buffer zone</b>	3	3	3	0	3	4	16	25,000
1B	Provide bicycle lane on Hawthorne Viaduct (past Grand)---maintain three traffic lanes	2	3	3	0	3	3	14	25,000
1C	Provide bicycle lane on Hawthorne Viaduct (to Clay/MLK off-ramp)---remove traffic lane and provide buffer zone	3	1	1	0	3	3	11	25,000
1A	Provide bicycle lane on Hawthorne Viaduct (to Clay/MLK off-ramp)---maintain three traffic lanes	2	1	1	0	3	3	10	20,000
2	<b>Improve Clay/MLK ramp sidewalk</b>	3	3	3	0	3	4	16	10,000
3	Install sidewalk and crosswalks on west side of Grand	2	1	2	-4	3	1	5	100,000
5	<b>Construct cantilevered sidewalks on bridge span</b>	4	3	4	0	5	0	16	1,300,000
4B	Convert an existing bridge span lane to two-way bicycle lane: two fixed and one reversible vehicle lane	1	0	1	-4	5	0	3	400,000
4A	Convert an existing bridge span traffic lane to two-way bicycle lane: retain three fixed vehicle lanes	1	0	1	-4	5	0	3	250,000
6	Restrict bicycles to one sidewalk, pedestrians & disabled to opposite sidewalk, on bridge span	T	A	B	L	E	D		
7	<b>Remove onramp from southbound Front Avenue and install sidewalk segments along Madison, Main, and First.</b>	4	2	4	-1	5	3	17	70,000
8	<b>Install sidewalk on Madison Viaduct from Grand to Water Avenue</b>	4	4	4	-1	5	2	18	200,000
9	Install sidewalk on Madison viaduct from Grand to Water Avenue and convert existing bridge span traffic lane to two-way bicycle lane	4	2	4	-2	5	0	13	520,000

## **Cost Estimate**

Item	Hawthorne Bridge				
	Project Number				
	1D	2	5	7	8
Demolish Pedestrian Undercrossing					
Demolish Pedestrian Stairway					
Demolish Asphalt Roadway					
Demolish Curbing					
Excavation					
Concrete Curbing				2990	18200
Concrete Sidewalk at Grade		2880		16000	
Concrete Sidewalk on Bridge Deck					84000
Wheelchair Ramps at Grade		800		7200	800
Wheelchair Ramps Above Grade					
Asphalt Concrete Path w/ Aggr. Base					
Asphalt Concrete Pavement					
Aggregate Base					
Relocate Inlet					10000
Barriers and Guardrails				9600	
Replace Sidewalk Decking on Lift Span					
Bridge Deck Grating Cover					
Six-Foot Wide Cantilever Sidewalk					
Six-Foot Wide Sidewalk Above Grade					
Twelve-Foot Wide Ramp Structure					
Ten-Foot-Wide Cantilever Sidewalks			810000		
Construct Stairway					
Pedestrian Undercrossing					
Relocate Light Standards					
Retaining Wall				5700	
Signal Mod. (minor) - add phase/head					
Signal Mod. (moderate) - above + controller					
Signal Mod. (major) - above + pole					
Install New Traffic Signal					
Striping	10800			1860	7200
Striping Removal	5400				3600
Subtotal	16200	3680	810000	43350	123800
10% Mobilization	1620	368	81000	4335	12380
5% Temporary Traffic Control	810	184	40500	2168	6190
Subtotal	18630	4232	931500	49853	142370
15% Engineering	2795	635	139725	7478	21356
25% Contingency	4658	1058	232875	12463	35593
Estimated Total Cost	26,082	5,925	1,304,100	69,794	199,318
Estimated Total Cost (Rounded)	25,000	10,000	1,300,000	70,000	200,000





**Summary of Existing Access Problems, Possible  
Solutions, and Engineering Issues  
May 24, 1994**

# Summary of Existing Access Problems, Possible Solutions, and Engineering Issues May 24, 1994

This working paper compiles multi-modal access and circulation issues the CAC, TAC, and CH2M HILL team have identified over the past year. All previously identified problems and possible solutions are identified. Engineering issues (associated with designing a solution) the consultant will evaluate in working paper #2 are discussed.

Aerial pull-outs, schematically showing study areas, are provided at the end of this section. The letter identifying each issue corresponds to a problem and solution area on the pull-outs.

## East Approach

### A. Pedestrian and Disabled Access

**Problem:** The only sidewalk across the main span is on the north side of the bridge. There is no protected crossing of Powell Boulevard near the bridgehead. The closest at-grade crossing is at Milwaukie Avenue, approximately five blocks east of the bridgehead. A pedestrian overcrossing is provided at 9th Street, but this facility does not meet ADA design standards.

**Proposed Solution:** Install a traffic signal with crosswalks at the intersection of Powell Boulevard and 8th Street.

**Engineering Issue(s):** Review traffic impacts of installing a signal at this location.

## Main Span

### B. Bicycle, Disabled, and Pedestrian Access

**Problem:** The 5-foot sidewalk across the bridge's span is too narrow for two-way multi-modal use.

**Proposed Solution(s):**

1. Construct a wider cantilever sidewalk
2. Dedicate one existing traffic lane to exclusive multimodal use. Consider using reversible lanes to accommodate peak-hour activity.





*Westbound bicyclist travels across main span.*

#### Engineering

Issue(s): Assess structural requirements to construct cantilever sidewalks. Review traffic impacts of removing a traffic lane for exclusive multi-modal use.

#### West Approach

##### C. Bicycle, Disabled, and Pedestrian Downtown Access

Problem: Access to downtown from bridgehead is limited due to free flowing ramps from bridge and Macadam Avenue. The lack of sidewalk ramps precludes wheelchair access.

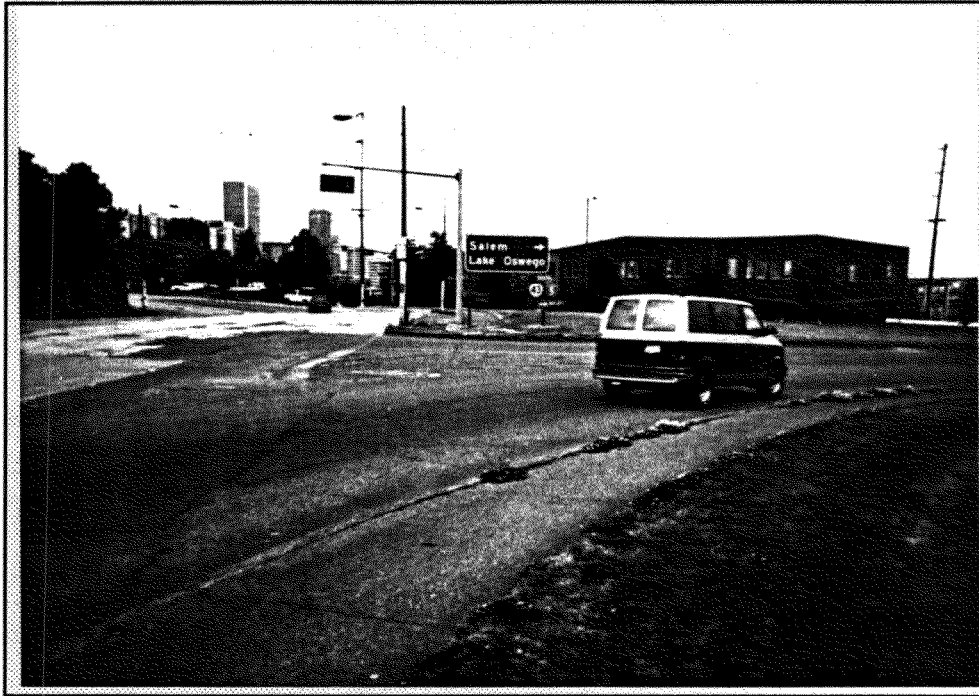
#### Proposed

- Solution(s):
1. Construct multi-modal "loop" ramp which travels underneath westbound approach structure and provides access to the west side of Corbett Avenue near Woods Street.
  2. Reconstruct off ramps and provide controlled (signalized) crossing of ramps.

#### Engineering

Issues(s): Review existing design constraints to construct a ramp. Assess traffic impacts related to providing a controlled crossing.





*View to north of free flowing ramp to I-5/Macadam.*

#### D. Bicycle, Disabled, and Pedestrian Access to/from Lair Hill

**Problem:** Wheelchair access from bridge is precluded, and other modes with destinations south of the bridge encounter circuitous routing.

**Proposed Solution:** Construct "loop" multi-modal ramp which traverses a shorter, less circuitous path than the existing sidewalk to Kelly Court. (Possible to combine with C.1. above.)

**Engineering Issues:** Review existing design constraints to construct a ramp.

#### E. Pedestrian and Disabled Access to Eastbound Bus Stop from Lair Hill

**Problem:** Inadequate sight distance, combined with significant traffic volumes and no delineated crossing, limits pedestrian access to eastbound bus stop. The lack of sidewalk ramps precludes wheelchair access.

**Proposed Solution:** Reconstruct "tighten" ramps to the south of the bridge approach (ramp to southbound Macadam and ramp to bridge) and provide protected crossing.





*Eastbound bus stop.*

#### Engineering

Issue(s): Review traffic impacts and design constraints of reconfiguring traffic ramps.

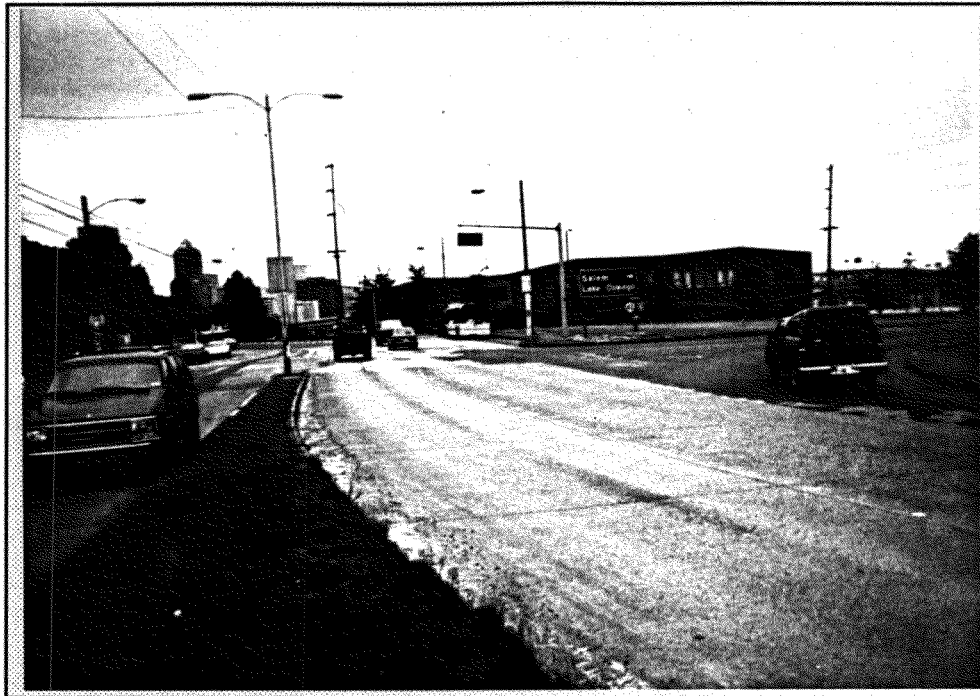
#### F. Pedestrian and Disabled Access to Westbound Bus Stop from Portland Community College

Problem: No controlled or delineated access to westbound bus stop across from Portland Community College (PCC) is provided. Pedestrians currently make an unprotected crossing of four lanes of free flowing traffic to reach the bus stop.

#### Proposed

- Solution:
1. Construct a disabled/pedestrian overpass from PCC over the roadway to the bus stop.
  2. Reconstruct traffic off ramps (see C.2.) and provide controlled crossing.

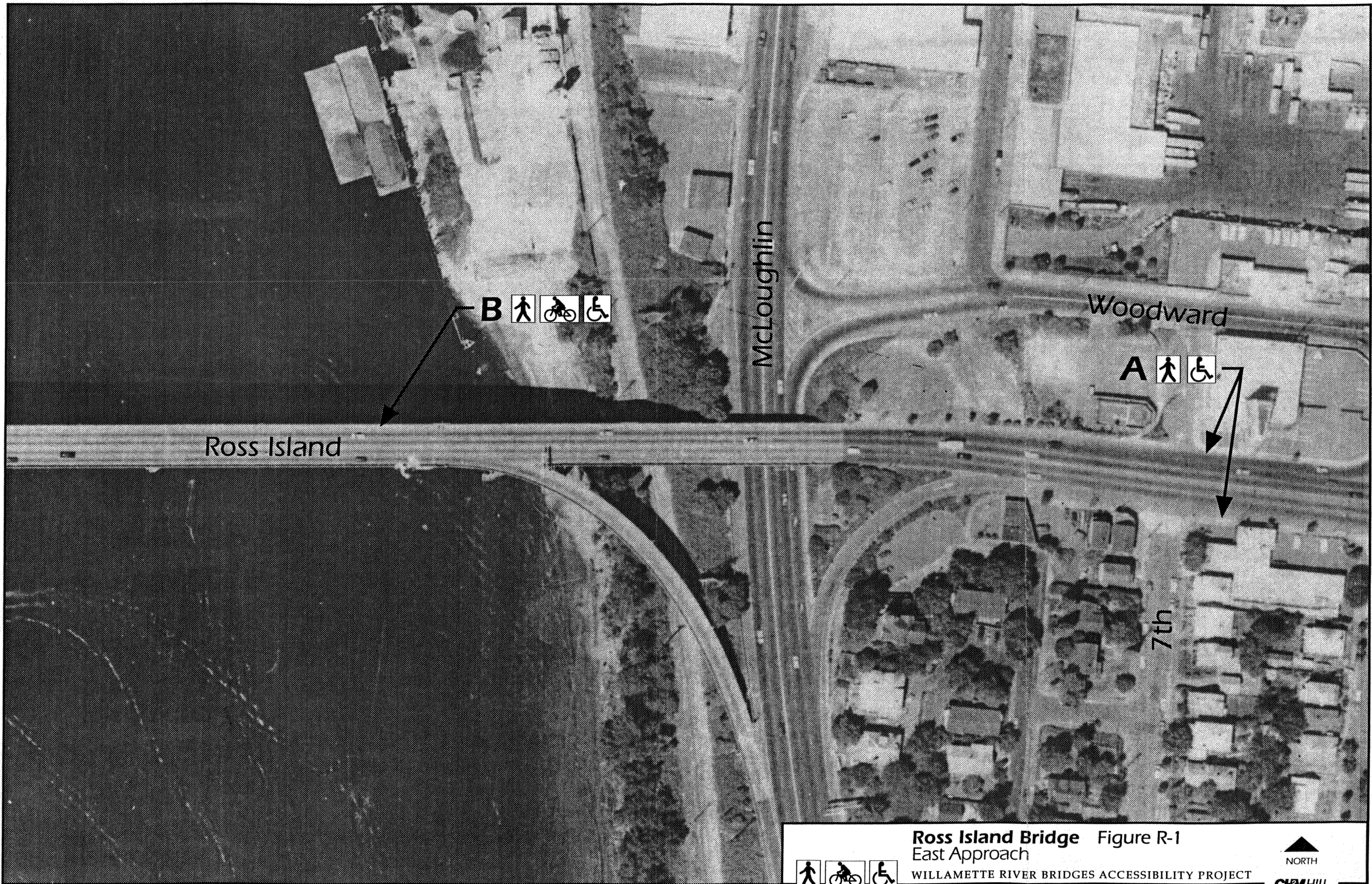




*View of current access to bus stop across from PCC.*







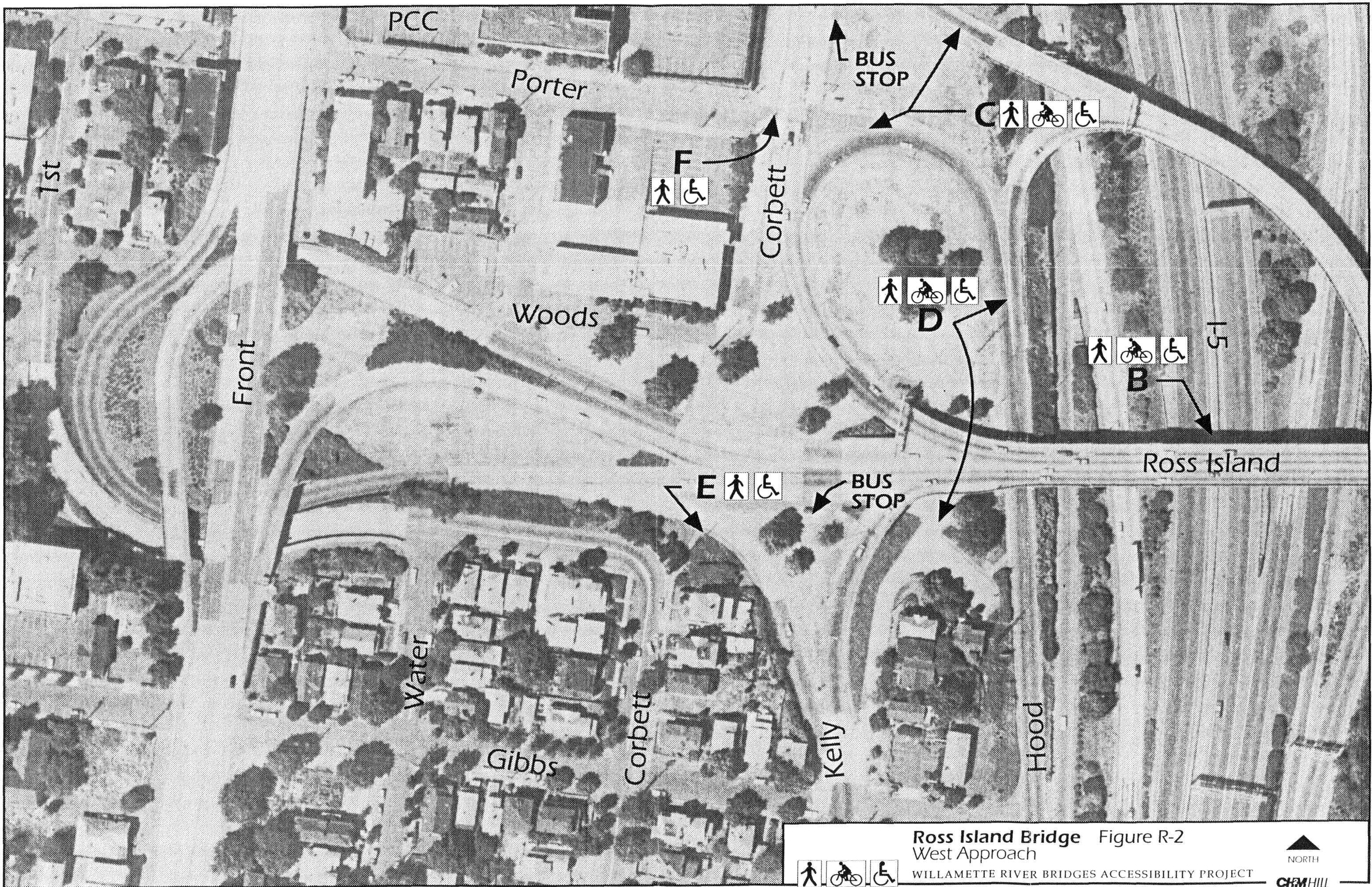
**Ross Island Bridge** Figure R-1  
East Approach

WILLAMETTE RIVER BRIDGES ACCESSIBILITY PROJECT



**CHM HILL**





**Ross Island Bridge** Figure R-2  
West Approach



WILLAMETTE RIVER BRIDGES ACCESSIBILITY PROJECT



NORTH

CHM HILL



## **Project Evaluation Matrix**

# Willamette River Bridges Accessibility Project

## Project Evaluation Matrix

6/30/94

Page 1 of 3

Ross Island Bridge Project	Mode Benefit	Removes Barriers	Facilitates Connections	Traffic System Performance	Potential Users	Sub-total Pts	Cost Benefit Analysis	Total Pts
	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts		Benefits/Impacts	
1. Install pedestrian crossing on Powell at 8th (A)	Project does not meet Table Criteria. This segment of U.S. 26 is classified by ODOT as having "Statewide" LOI (level of importance). As such, the facility's minimum operating service level is LOS D per the Oregon Highway Plan. However, installation of a traffic signal would cause the intersection to operate at LOS F during a.m. and p.m. peak hours, with theoretical v/c's of 1.46 and 1.30, respectively. Even with southbound right-turns operating freely (uncontrolled), no signal "warrants" would be satisfied for installation. Severe back-ups on Highway 26 and South Portland neighborhoods would result throughout the day.							
2. Construct cantilevered sidewalk on bridge span (B)	Would provide significant benefits to all modes. Would widen existing sidewalk from 5 feet to 10 feet wide to accommodate two-way and multi-modal use.  4 points.	Project would remove a barrier to travel across the span, however, several significant barriers (east and west approach access) would still exist.  2 points.	Would provide minor system additions for all modes since well-developed circulation systems are not provided for on east and west sides.  2 points.	Would not degrade traffic system performance.  Zero points.	A moderate number of users would benefit with the project.  3 points.	11	Estimated cost is \$3.6 million.  $11/3,600 = 0.003$ .  Zero points.	11
3.A. Remove one travel lane and install bicycle lanes on the main span-3 fixed lane option (B)	Would provide significant benefits to bicyclists and marginal benefits to other sidewalk users.  3 points.	Project would remove a barrier to bicyclist travel across the span, however, several significant barriers (east and west approach access) would still exist.  2 points.	Would provide a minor system addition for all modes.  2 points.	One direction, single-lane operations would result in severe congestion on heaviest travelled study bridge. Ross Island Bridge carries more than 60,000 vehicles daily. Back-ups on Highway 26 and South Portland neighborhoods would result throughout the day.  -4 points.	A moderate number of users would benefit with the project.  3 points.	6	Estimated cost is \$375,000, including barriers and striping.  $6/375 = 0.016$ .  Zero points.	6
3.B. Remove one travel lane and install bicycle lanes on the main span-reversible lane option (B)	See #3.A.  3 points.	See #3.A.  2 points.	See #3.A.  2 points.	See #3.A.  -4 points.	See #3.A.  3 points.	6	Estimated capital costs are \$600,000. Daily maintenance would also be required—at least two lane configuration changes each day.  $6/600 = 0.010$ .  Zero points.	6
4. Construct multi-modal "loop" ramp at westbound approach structure (C) (D)	Would provide significant benefit to wheelchair users and minor benefits to other users by creating a new route to access the main span from downtown and Lair Hill.  3 points.	Project would remove a significant barrier, providing wheelchair accessibility from downtown to the main span. However, other minor barriers would still exist (narrow main span sidewalk).  3 points.	Provides a minor system addition for wheelchair users, completing a link to downtown access; somewhat circuitous for bicyclists and pedestrians. Undeveloped systems connecting.  2 points.	Would not degrade traffic system performance.  Zero points.	A low number of users would benefit from this project.  1 point.	9	Estimated cost is \$300,000, including retaining walls, concrete ramp, and stairs.  $9/300 = 0.030$ .  1 point.	10
5.A. Reconfigure and signalize Corbett/Kelly Intersection-Option 1 (C)	Would provide significant benefit to disabled and pedestrians. Would provide marginal benefit to bicyclists. Project would provide a signalized crossing where existing free-flowing ramps exist today.  4 points.	Project would remove a significant barrier for wheelchair accessibility from downtown to the main span as well as other significant modal barriers. However, other minor barriers still exist (narrow main span sidewalk).  3 points.	Would provide a minor system addition for disabled and pedestrians, creating a direct link to downtown access. Portland Community College (PCC) users could access westbound bus stop more safely. However, other components of a well-developed circulation system are not in place.  2 points.	Would operate at LOS C during critical a.m. peak hour (average delay = 21 sec/veh, v/c = 0.88). Would not allow minor movements from Porter to Corbett or Hood; however, peak hour volumes are less than 20 vph. Overall, new signal would cause a minor degradation to existing turbulent and confusing traffic flow.  -1 point.	A moderate number of users would benefit from this project, in addition to a large number of PCC students and faculty.  5 points.	13	Estimated cost is \$475,000, including new traffic signal, curbs, roadway and ramp widening, and striping.  $13/475 = 0.027$ .  Zero points.	13

# **Willamette River Bridges Accessibility Project** **Project Evaluation Matrix**

6/30/94

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Ross Island Bridge Project	Mode Benefit	Removes Barriers	Facilitates Connections	Traffic System Performance	Potential Users	Sub-total Pts	Cost Benefit Analysis	Total Pts
	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts		Benefits/Impacts	
<b>5.B. Reconfigure and signalize Corbett/Kelly Intersection-Option 2 (C)</b>	See #5.A. 4 points.	See #5.A. 3 points.	See #5.A. 2 points.	Would operate at LOS C during critical a.m. peak hour (average delay = 18 sec/veh, v/c = 0.83). Would not allow minor movements from Porter to Corbett or Hood; however, peak hour volumes are less than 20 vph. Would also reroute left turns from southbound Corbett to Hood (15 vph during a.m. peak period and 100 vph during p.m. peak period). Project would cause a minor degradation to traffic performance.  -1 point.	See #5.A. 5 points.	13	Estimated cost is \$275,000, including new traffic signal, curbs, ramp widening, and striping.  $13/275 = 0.047$ .  1 point.	14
<b>6. "Tighten" ramp to southbound Macadam and provide pedestrian crossing to eastbound bus stop (E)</b>	Would provide significant benefit to disabled and pedestrians, facilitating a safer crossing for pedestrians and creating access for wheelchair users.  4 points.	Project would remove a barrier for disabled and pedestrians; however, a number of significant barriers to circulation would still exist.  2 points.	Provides a minor system addition for disabled and pedestrians. Does not improve direct access to the bridge.  2 points.	Would not degrade traffic system performance, however, travel speeds would be lower and some queuing would result. Short crossing distance for users, combined with limited crossings, will not significantly disrupt traffic flow on this ramp. Shorter storage area for buses—only one bus could dwell.  Zero points.	A moderate number of users would benefit from this project.  3 points.	11	Estimated cost is \$70,000, including ramp relocation, signing, and restriping.  $11/70 = 0.157$ .  2 points.	13
<b>7. Construct a disabled/pedestrian overpass from PCC to the westbound bus stop on Corbett (F)</b>	Would provide significant benefit to disabled and pedestrians, facilitating a safer crossing for pedestrians and creating access for wheelchair users.  4 points.	Project would remove a barrier for disabled and pedestrians; however, a number of significant barriers to circulation still exist, e.g., access to north and south sides of neighborhood.  2 points.	Would provide a minor system addition for disabled and pedestrians. Does not improve direct access to the bridge.  2 points.	Would not degrade traffic system performance.  Zero points.	A moderate number of users would benefit from this project.  3 points.	11	Estimated cost is \$300,000, including overcrossing and ADA compatible ramp to grade.  $11/300 = 0.037$  1 point.	12
<b>8.A. Provide north-south neighborhood multi-modal connection across U.S. 26 complex (D)</b>	Would provide marginal benefit to all modes, providing improved access for north-south movements. Access to bridge main span would not be improved, and access to overcrossing would be indirect.  2 points.	Project would remove a barrier for all modes; however, a significant barrier still exists, for example, access to bridge main span.  2 points.	Would provide a critical system addition for disabled users, facilitating access to the area around the P.C.C. campus. Would not improve direct access to the bridge.  3 points.	Would not degrade traffic system performance.  Zero points.	A moderate number of users would benefit with project.  3 points.	10	Estimated cost is \$980,000, including ramps, over crossings, and sidewalk connections.  $10/980 = 0.010$ .  Zero points.	10
<b>8.B. Remove pedestrian under crossing and provide at-grade crossing of Front Avenue off-ramp (D)</b>	Would provide significant benefit to disabled and pedestrians, facilitating access for disabled users and improving the personal safety for pedestrians.  4 points.	Project would remove a barrier; however, the lack of bridge access represents a significant barrier.  2 points.	Would provide a critical system addition for disabled users, facilitating access to the area around the P.C.C. campus. Would not improve direct access to the bridge.  3 points.	Would not degrade traffic system performance.  Zero points.	A moderate number of users would benefit with project.  3 points.	12	Estimated cost is \$20,000, including sidewalks, sidewalk ramps, striping, and flashing warning sign.  $12/20 = 0.600$  4 points.	16

# **Willamette River Bridges Accessibility Project** **Project Evaluation Matrix**

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Ross Island Bridge Project	Mode Benefit	Removes Barriers	Facilitates Connections	Traffic System Performance	Potential Users	Sub-total Pts	Cost Benefit Analysis	Total Pts
	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts		Benefits/Impacts	
9. Provide crosswalk at S.E. 8th Avenue (A)	Would provide significant benefit to all modes. Pedestrian actuated signal would improve user safety and comfort while crossing 8th.  4 points.	Project would remove a barrier by controlling free-flowing movements, but several significant barriers would still exist, for example, main span and west approach access.  1 point.	Would not provide a system addition.  Zero points.	Would not degrade traffic system performance.  Zero points.	A moderate number of users would benefit with project.  3 points.	8	Estimated cost is \$40,000, including signal, concrete island, and striping.  $8/40 = 0.200$ .  3 points.	11
10. Modify curb returns on south side of Powell Boulevard at S.E. 8th, 9th, and 10th Streets (A)	Would provide marginal benefit to disabled and pedestrians, decreasing crossing distances of low traffic volume streets.  2 points.	Would not remove a barrier to bridge access.  Zero points.	Would not provide system additions.  Zero points.	Would not degrade traffic system performance.  Zero points.	Low number of users would benefit with project.  1 point.	3	Estimated cost is \$15,000 including curb, sidewalk, and inlet relocation.  $2/15 = 0.133$ .  2 points.	5



# **Final Evaluation Matrix**

(Project shown in bold were selected for the Accessibility Plan)

## Ross Island Bridge Projects---Final Evaluation

Project		Mode Benefit	Removes Barriers	Facilitates Connection	Traffic Performance	Potential Users	Cost Benefit	TOTAL POINTS	ESTIMATED COST
1	Install pedestrian crossing on Powell at 8th	T	A	B	L	E	D		
2	Construct cantilevered sidewalk on bridge span	4	2	2	0	3	0	11	3,600,000
3A	Remove one travel lane and install bicycle lanes on the main span--3 fixed lane option	3	2	2	-4	3	0	6	375,000
3B	Remove one travel lane and install bicycle lanes on the main span--reversible lane option	3	2	2	-4	3	0	6	600,000
4	Construct multi-modal "loop" ramp at westbound approach structure	3	3	2	0	1	1	10	300,000
5A	Reconfigure and signalize Corbett/Kelly intersection--Option 1	4	3	2	-1	5	0	13	475,000
5B	Reconfigure and signalize Corbett/Kelly intersection--Option 2	4	3	2	-1	5	1	14	275,000
6	<b>"Tighten" ramp to southbound Macadam and provide pedestrian crossing to eastbound bus stop</b>	4	2	2	0	3	2	13	70,000
7	Construct a disabled/pedestrian overpass from PCC to the westbound bus stop on Corbett	4	2	2	0	3	1	12	300,000
8A	Provide north-south neighborhood multi-modal connection across US 26 complex	2	2	3	0	3	0	10	980,000
8B	<b>Remove pedestrian undercrossing and provide at-grade crossing of Front Avenue off-ramp</b>	4	2	3	0	3	4	16	20,000
9	<b>Provide crosswalk at SE 8th Avenue</b>	4	1	0	0	3	3	11	40,000
10	Modify curb returns on south side of Powell Boulevard at SE 8th, 9th, and 10th Streets	2	0	0	0	1	2	5	15,000

## Ross Island Bridge Projects---Final Evaluation

Project		Mode Benefit	Removes Barriers	Facilitates Connection:	Traffic Performance	Potential Users	Cost Benefit	TOTAL POINTS	ESTIMATED COST
1	Install pedestrian crossing on Powell at 8th	T	A	B	L	E	D		
2	Construct cantilevered sidewalk on bridge span	4	2	2	0	3	0	11	3,600,000
3B	Remove one travel lane and install bicycle lanes on the main span--reversible lane option	3	2	2	-4	3	0	6	600,000
3A	Remove one travel lane and install bicycle lanes on the main span--3 fixed lane option	3	2	2	-4	3	0	6	375,000
5A	Reconfigure and signalize Corbett/Kelly intersection--Option 1	4	3	2	-1	5	0	13	475,000
5B	Reconfigure and signalize Corbett/Kelly intersection--Option 2	4	3	2	-1	5	1	14	275,000
4	Construct multi-modal "loop" ramp at westbound approach structure	3	3	2	0	1	1	10	300,000
7	Construct a disabled/pedestrian overpass from PCC to the westbound bus stop on Corbett	4	2	2	0	3	1	12	300,000
6	<b>"Tighten" ramp to southbound Macadam and provide pedestrian crossing to eastbound bus stop</b>	4	2	2	0	3	2	13	70,000
8B	<b>Remove pedestrian undercrossing and provide at-grade crossing of Front Avenue off-ramp</b>	4	2	3	0	3	4	16	20,000
8A	Provide north-south neighborhood multi-modal connection across US 26 complex	2	2	3	0	3	0	10	980,000
9	<b>Provide crosswalk at SE 8th Avenue</b>	4	1	0	0	3	3	11	40,000
10	Modify curb returns on south side of Powell Boulevard at SE 8th, 9th, and 10th Streets	2	0	0	0	1	2	5	15,000

## **Cost Estimate**

Item	Ross Island Bridge			
	Project Number			
	5A	6	8B	9
Demolish Pedestrian Undercrossing			5000	
Demolish Pedestrian Stairway				
Demolish Asphalt Roadway		5360		
Demolish Curbing		1500		
Excavation	16650			
Concrete Curbing	18850	7280		1170
Concrete Sidewalk at Grade	1600	2800	2000	1400
Concrete Sidewalk on Bridge Deck				
Wheelchair Ramps at Grade	4000		1600	
Wheelchair Ramps Above Grade				
Asphalt Concrete Path w/ Aggr. Base				
Asphalt Concrete Pavement	75420	16800		
Aggregate Base	31057	5200		
Relocate Inlet	2000	2000		
Barriers and Guardrails	15360			
Replace Sidewalk Decking on Lift Span				
Bridge Deck Grating Cover				
Six-Foot Wide Cantilever Sidewalk				
Six-Foot Wide Sidewalk Above Grade				
Twelve-Foot Wide Ramp Structure				
Ten-Foot-Wide Cantilever Sidewalks				
Construct Stairway				
Pedestrian Undercrossing				
Relocate Light Standards				
Retaining Wall				
Signal Mod. (minor) - add phase/head			2000	20000
Signal Mod. (moderate) - above + controller				
Signal Mod. (major) - above + pole				
Install New Traffic Signal	125000			
Striping	5600	1400	360	1000
Striping Removal	1500			
Subtotal	297037	42340	10960	23570
10% Mobilization	29704	4234	1096	2357
5% Temporary Traffic Control	14852	2117	548	1179
Subtotal	341593	48691	12604	27106
15% Engineering	51239	7304	1891	4066
25% Contingency	85398	12173	3151	6776
Estimated Total Cost	478,230	68,167	17,646	37,948
Estimated Total Cost (Rounded)	475,000	70,000	20,000	40,000





**Summary of Existing Access Problems, Possible  
Solutions, and Engineering Issues  
May 24, 1994**

# Summary of Existing Access Problems, Possible Solutions and Engineering Issues

May 24, 1994

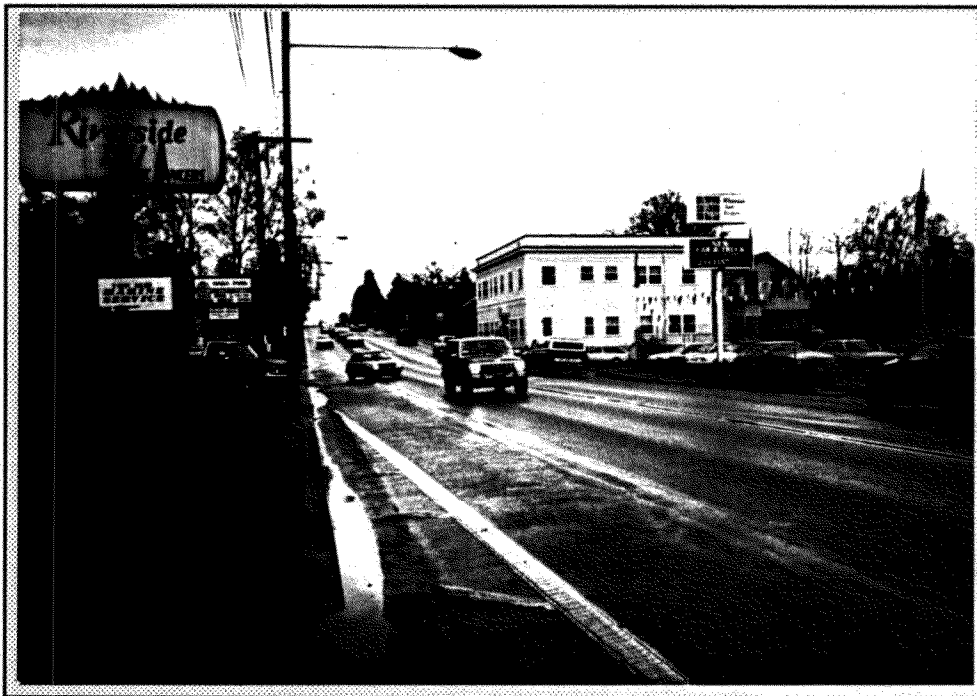
This working paper compiles multi-modal access and circulation issues the CAC, TAC, and CH2M HILL team have identified over the past year. All previously identified problems and possible solutions are identified. Engineering issues (associated with designing a solution) the consultant will evaluate in working paper #2 are discussed.

Aerial pull-outs, schematically showing study areas, are provided at the end of this section. The letter identifying each issue corresponds to a problem area on the pull-outs.

## East Approach

### A. Disabled and pedestrian access

**Problem:** No controlled crossing of Tacoma Street from bridgehead east to 11th Avenue. This creates a problem when the sidewalk on the south side of Tacoma Street ends at the bridge and no access is provided to access the sidewalk on the north side of the bridge. There is no sidewalk on the south side of the bridge.



*View looking east on Tacoma Street.*



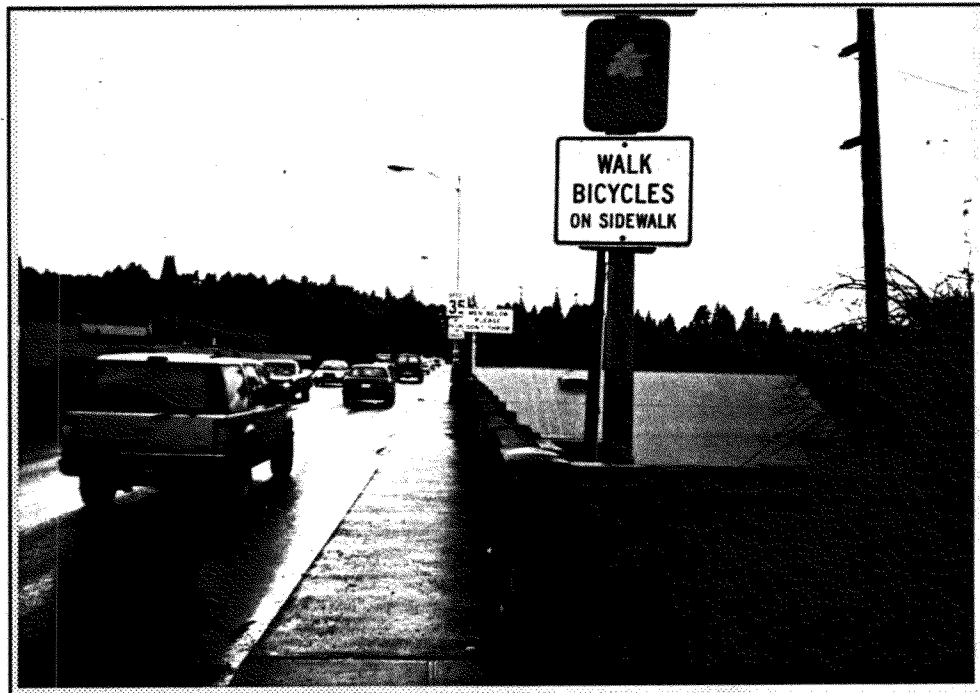
**Proposed Solution:** Install signal at bridgehead or at 7th Avenue. Initial City review suggests that this proposal would have a significant impact on traffic capacity.

**Engineering Issue(s):** Review traffic impacts.

## **Main Span**

### **B. General access**

**Problem:** Substandard (4'-3") sidewalk on north side of structure has restrictions at light pole locations which protrude 14" out into sidewalk. Remaining clear distance is insufficient for wheelchairs to pass.



*Looking west at narrow sidewalk on north side of the Sellwood Bridge.*

**Proposed Solution:** Move the light poles to the top of the bridge railing.

**Engineering Issue(s):** Evaluate structural requirements of this modification.



### C. Safety issue

**Problem:** Narrow sidewalk combined with the lack of separation and speed of the traffic create unsafe sidewalk conditions.

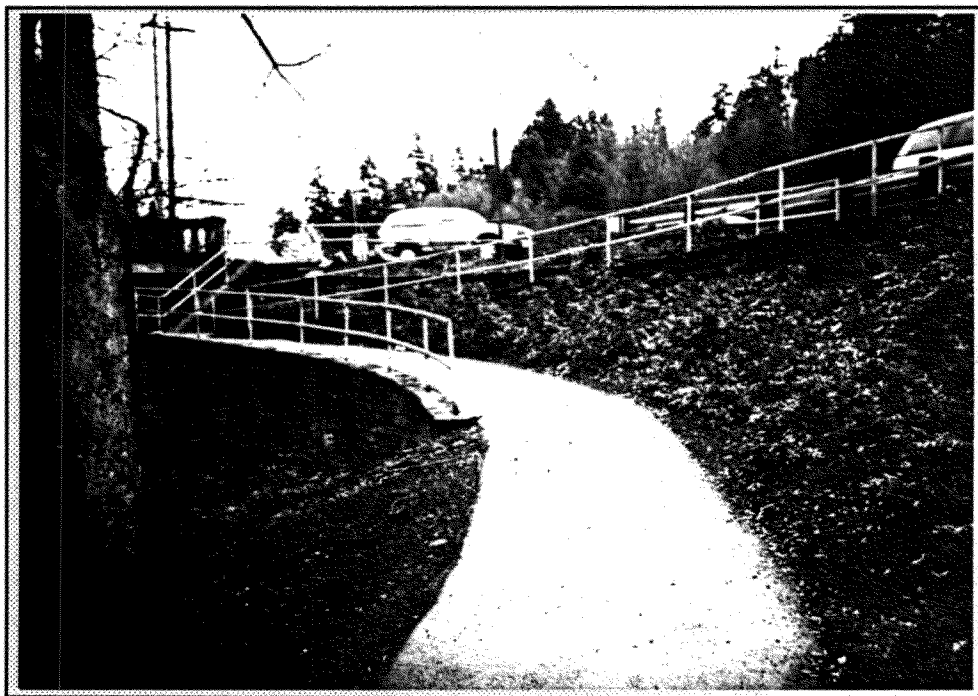
**Proposed Solution:** Reduce traffic speed to 25 MPH.

**Engineering Issue(s):** Review traffic capacity and speed zoning impacts associated with this proposal.

### **West Approach**

### D. General access

**Problem:** Greenway Trail access ramp is very steep, making it difficult for bicyclists and disabled people to use.



*View looking south at Greenway Trail.*

**Proposed Solution:** Replace the access ramp with a wider ramp with less of a gradient.

**Engineering Issue(s):** Review design geometry requirements and feasibility.



E. Bicycle access to southbound Highway 43

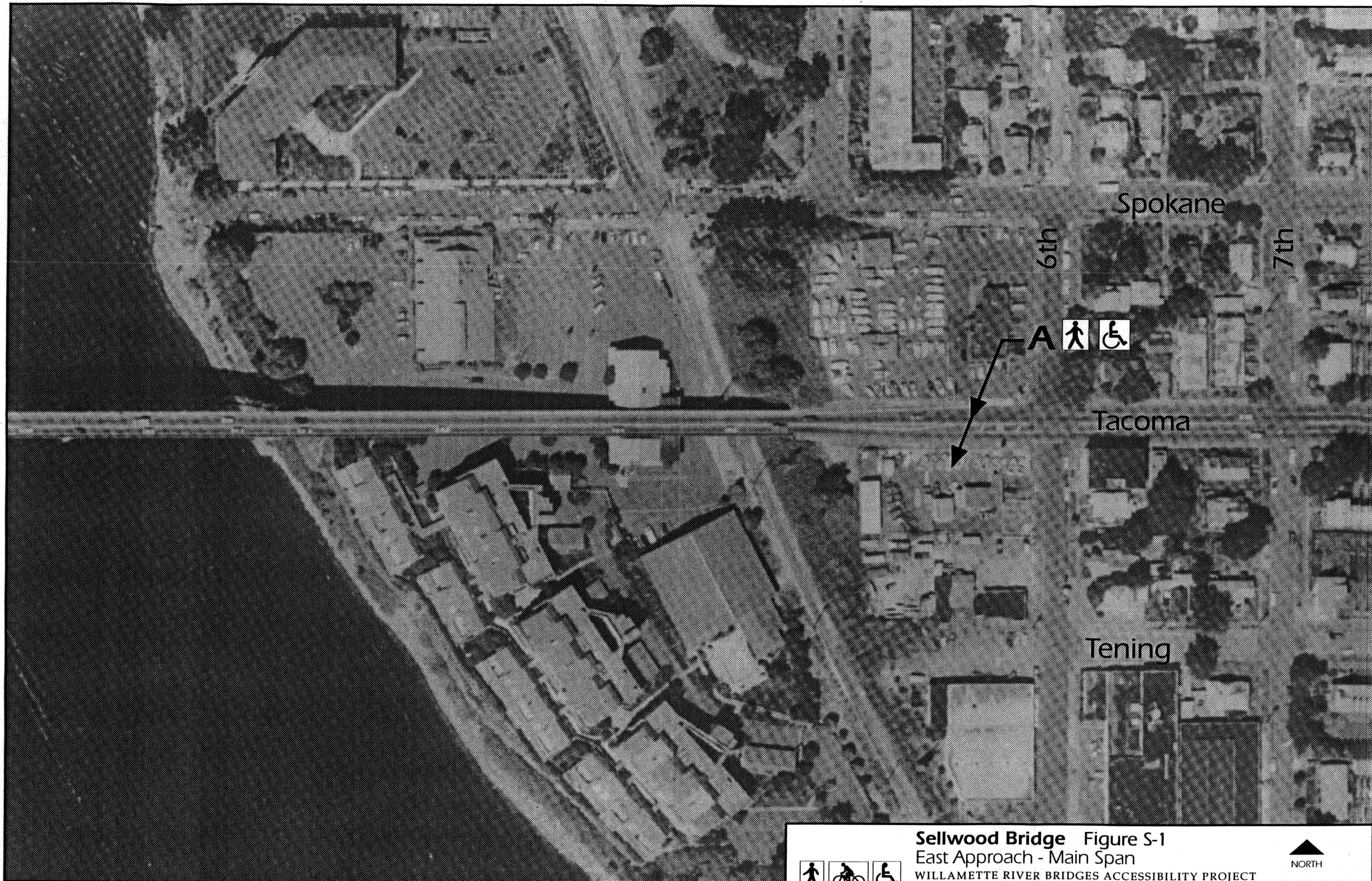
**Problem:** Access to southbound Highway 43 encounters conflict with exclusive right turn lane and heavy traffic.

**Proposed Solution:** Stripe the loop ramp to southbound Highway 43.

**Engineering Issues:** Review existing geometry and assess traffic impacts.







Spokane

6th

7th

A  

Tacoma

Tening



**Sellwood Bridge** Figure S-1  
East Approach - Main Span

WILLAMETTE RIVER BRIDGES ACCESSIBILITY PROJECT



NORTH

CHM HILL





HWY 43

E



D



BC



**Sellwood Bridge** Figure S-2  
West Approach - Main Span



WILLAMETTE RIVER BRIDGES ACCESSIBILITY PROJECT



NORTH





# **Project Evaluation Matrix**

6/30/94

## Willamette River Bridges Accessibility Project Project Evaluation Matrix

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Sellwood Bridge Project	Mode Benefit	Removes Barriers	Facilitates Connections	Traffic System Performance	Potential Users	Subtotal Pts	Cost Benefit Analysis	Total Pts
	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts		Benefits/Impacts	
<b>1.A. Provide pedestrian crossing on Tacoma at or near 7th (A)</b>	<p>Would provide significant benefit to pedestrians and disabled by facilitating controlled crossing of Tacoma (closest controlled crossing is at 13th).</p> <p>Would provide marginal benefit to bicyclists.</p> <p>4 points.</p>	<p>Removes barrier to pedestrians and disabled (heavy traffic volumes with no controlled crossing on Tacoma near bridge head exists); but other significant barriers would still exist (e.g., narrow sidewalk on bridge spans) (see #2).</p> <p>1 point.</p>	<p>Provides minor connection addition for pedestrians and disabled to cross Tacoma.</p> <p>2 points.</p>	<p>Signal would cause severe congestion, delays, and queues during and outside of peak periods. Eastbound traffic would consistently queue across bridge and onto Macadam. Westbound traffic would queue past 13th. Side streets could be blocked; traffic could cut through neighborhoods.</p> <p>Transit routes would be affected, potentially including routes on Macadam.</p> <p>-4 points.</p>	<p>Moderate volume of users would remain with improvement.</p> <p>3 points.</p>	6	<p>Estimated cost is \$100,000 for traffic signal only.</p> <p><math>6/100 = 0.060</math>.</p> <p>1 point.</p>	7
<b>1.B. Install pedestrian undercrossing at east bridge head (A)</b>	<p>Project assumed to be part of City's Oaks Park Access Road project. Assumed to consist of ADA accessible ramps and adequate lighting.</p> <p>Would provide significant benefit to all modes.</p> <p>4 points.</p>	<p>Project would remove the barrier of crossing Tacoma; however, several barriers would still exist (e.g., west side access, bridge span sidewalk width).</p> <p>1 point.</p>	<p>Would provide minor system addition for all modes.</p> <p>2 points.</p>	<p>Would not degrade traffic system performance.</p> <p>Zero points.</p>	<p>A moderate number of users would benefit with the project.</p> <p>3 points.</p>	10	<p>Cost for undercrossing is estimated to be \$160,000.</p> <p><math>10/160 = 0.062</math>.</p> <p>1 point.</p>	11
<b>2. Relocate light standards off the span's sidewalk (B)</b>	<p>Would increase span's sidewalk width from 36" to 51" at 22 locations. Extra 15" would minimally decrease mode interference.</p> <p>Would provide significant benefit to bicyclists and marginal benefit to pedestrians and disabled.</p> <p>3 points.</p>	<p>Would partially remove constriction; however, effective sidewalk width would be only 51" to serve combination of modes.</p> <p>1 point.</p>	<p>Would not provide a new system addition.</p> <p>Zero points.</p>	<p>Would not degrade traffic system performance.</p> <p>Zero points.</p>	<p>Moderate volume of users would remain with improvement.</p> <p>3 points.</p>	7	<p>Estimated cost \$280,000.</p> <p><math>7/280 = 0.025</math>.</p> <p>Zero points.</p>	7

# **Willamette River Bridges Accessibility Project Project Evaluation Matrix**

6/30/94

Page 2 of 2

Sellwood Bridge Project	Mode Benefit	Removes Barriers	Facilitates Connections	Traffic System Performance	Potential Users	Subtotal Pts	Cost Benefit Analysis	Total Pts
	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts	Benefits/Impacts		Benefits/Impacts	
<b>3. Reduce vehicle speed limit on bridge (C)</b>	If enforceable, reducing speed limit from existing 35 mph could provide marginal benefit to pedestrians, disabled, and bicyclists (does not necessarily increase user comfort, but does increase safety).  2 points.	Project would not remove or circumvent a barrier.  Zero points.	Would not provide a new system addition.  Zero points.	If enforceable, could decrease capacity across bridge during off-peak traffic periods.  Could cause severe congestion and gridlock side streets during off-peak periods.  Note: Because of existing congestion, peak-hour speeds are lower than limit. Impacts would be primarily during off-peak periods; however, because of the narrowness of the span, enforcement would be a challenge.  -1 point.	Moderate volume of users would remain with improvement.  3 points.	4	Estimated cost for signage is \$5,000.  Would require long-term enforcement with related costs.  $4/5 = 0.800$ .  4 points.	8
<b>4. Widen ramp to Greenway Trail (D)</b>	Would provide improved turning radii for bicycles and wheelchairs.  Would require removal of stairway, rerouting pedestrians to ramp.  2 points.	Project would not remove or circumvent a barrier.  Zero points.	Would provide minor system addition for bicyclists.  1 point.	Would not degrade traffic system performance.  Zero points.	Moderate volume of users would remain with improvement.  3 points.	6	Estimated cost is \$50,000 to \$70,000.  $6/60 = 0.100$ .  2 points.	8
<b>5.A. Stripe bike lane on southbound Highway 43 ramp (E)</b>	Project does not meet Table Criteria. Violates AASHTO standards for vehicle turning radius. Not feasible because of required turning radii of trucks (trucks would swing into bicycle lane).							
<b>5.B. Construct separated pathway from Greenway Trail to Highway 43 (E)</b>	Would provide direct connection to southbound Highway 43 for bicyclists, circumventing unprotected crossing at bridge approach.  Significant benefit to bicycles; marginal benefit to pedestrians and disabled.  3 points.	Would remove or circumvent one of several bicycle barriers.  2 points.	Would provide minor system addition for bicyclists, pedestrians, and disabled.  2 points.	Would not degrade traffic system performance.  Zero points.	Moderate bicycle use would be expected with improvement.  3 points.	10	Estimated cost is \$30,000.  $10/30 = 0.333$ .  3 points.	13

# **Final Evaluation Matrix**

**(Project shown in bold were selected for the Accessibility Plan)**

## Sellwood Bridge Projects---Final Evaluation

Project		Mode Benefit	Removes Barriers	Facilitates Connections	Traffic Performance	Potential Users	Cost Benefit	TOTAL POINTS	ESTIMATED COST
1A	Provide pedestrian crossing on Tacoma at or near 7th	4	1	2	-4	3	1	7	100,000
1B	<i>Install pedestrian undercrossing at east bridge head</i>	4	1	2	0	3	1	11	160,000
2	<i>Relocate light standards off the span's sidewalk</i>	3	1	0	0	3	0	7	280,000
3	Reduce vehicle speed limit on bridge	2	0	0	-1	3	4	8	5,000
4	Widen ramp to Greenway Trail	2	0	1	0	3	2	8	60,000
5A	Stripe bike lane on southbound Highway 43 ramp	T	A	B	L	E	D		
5B	<i>Construct separated pathway from Greenway Trail to Highway 43</i>	3	2	2	0	3	3	13	30,000



## Sellwood Bridge Projects---Final Evaluation

Project	Mode Benefit	Removes Barriers	Facilitates Connections	Traffic Performance	Potential Users	Cost Benefit	TOTAL POINTS	ESTIMATED COST
<b>1B</b> <i>Install pedestrian undercrossing at east bridge head</i>	4	1	2	0	3	1	11	160,000
1A Provide pedestrian crossing on Tacoma at or near 7th	4	1	2	-4	3	1	7	100,000
<b>2</b> <i>Relocate light standards off the span's sidewalk</i>	3	1	0	0	3	0	7	280,000
3 Reduce vehicle speed limit on bridge	2	0	0	-1	3	4	8	5,000
4 Widen ramp to Greenway Trail	2	0	1	0	3	2	8	60,000
<b>5B</b> <i>Construct separated pathway from Greenway Trail to Highway 43</i>	3	2	2	0	3	3	13	30,000
5A Stripe bike lane on southbound Highway 43 ramp	T	A	B	L	E	D		

## Cost Estimate

Item	Sellwood Bridge		
	Project Number		
	1B	2	5B
Demolish Pedestrian Undercrossing			
Demolish Pedestrian Stairway			
Demolish Asphalt Roadway			
Demolish Curbing			
Excavation			
Concrete Curbing			
Concrete Sidewalk at Grade			
Concrete Sidewalk on Bridge Deck			
Wheelchair Ramps at Grade			
Wheelchair Ramps Above Grade			
Asphalt Concrete Path w/ Aggr. Base			7612
Asphalt Concrete Pavement			
Aggregate Base			
Relocate Inlet			
Barriers and Guardrails			
Replace Sidewalk Decking on Lift Span			
Bridge Deck Grating Cover			
Six-Foot Wide Cantilever Sidewalk			
Six-Foot Wide Sidewalk Above Grade			
Twelve-Foot Wide Ramp Structure			
Ten-Foot-Wide Cantilever Sidewalks			
Construct Stairway			
Pedestrian Undercrossing	100000		
Relocate Light Standards		176000	
Retaining Wall			
Signal Mod. (minor) - add phase/head			10000
Signal Mod. (moderate) - above + controller			
Signal Mod. (major) - above + pole			
Install New Traffic Signal			
Striping			480
Striping Removal			
Subtotal	100000	176000	18092
10% Mobilization	10000	17600	1809
5% Temporary Traffic Control	5000	8800	905
Subtotal	115000	202400	20806
15% Engineering	17250	30360	3121
25% Contingency	28750	50600	5201
Estimated Total Cost	161,000	283,360	29,128
Estimated Total Cost (Rounded)	160,000	280,000	30,000