



## City of Bend Bridge Program Annual Report 2012

### Overall Condition of City Bridges

The bridges in the City of Bend are in good condition, with sufficiency ratings ranging from 50.1 to 98, with an average of 82. Of the 32 bridges, 2 are rated structurally deficient and 5 are rated functionally obsolete.

Sufficiency ratings are on a percentage scale of 0 to 100 with 0 being a completely insufficient bridge, and 100 being a completely sufficient bridge. The percentage given is based on a possible 55% in structural adequacy and safety, 30% possible in serviceability and functional obsolescence, and 15% possible in essentiality for public use. Bridges scoring a rating of 50-80 are eligible for federal rehabilitation funding, and bridges scoring under 50 are eligible for federal replacement funding.

Bridges receive both an operating load and inventory load when they are load rated. The Operating load is the maximum permissible live load to which the bridge may be subjected. The inventory load is the live load which can safely utilize the bridge for an indefinite period of time.

## BRIDGE PROGRAM ANNUAL REPORT

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BRIDGE ID	BRIDGE_NAM	Suff. Rating	Load Rating (Operating)	Load Rating (Inventory)
01134A	Central Oregon Canal, Hwy 4 Spur	70.70	86.00 ton	52.00 ton
09409	North Unit Main Canal, Boyd Acres Rd	72.80	89.00 ton	34.00 ton
09410	Pilot Butte Canal North, Boyd Acres Rd	71.30	87.00 ton	32.00 ton
09815	COI Canal, 27th St SE	91.30	83.00 ton	50.00 ton
09C47A	COI Canal, Ferguson Rd	84.20	54.00 ton	24.00 ton
09C60	COI Main Canal, Blakely Rd	92.10	91.00 ton	55.00 ton
09C74A	North Unit Canal, Deschutes Market Rd	94.90	98.00 ton	64.00 ton
15453A	COI Main Canal, Brosterhaus Rd	85.30	97.00 ton	58.00 ton
16372	Dirmain COI Canal, 15th St	96.40	70.00 ton	39.00 ton
16852	Deschutes River, Colorado Ave	94.30	81.00 ton	49.00 ton
16853	Colorado Ave over Shelvin Hixon Dr.	94.30	72.00 ton	43.00 ton
17B001	North Unit Main Canal, Division St	50.10	25.00 ton	29.00 ton
17B002	Pilot Butte Canal, Division St	60.80	25.00 ton	32.00 ton
17B003	Deschutes River, Portland Ave	76.00	74.00 ton	45.00 ton
17B005	Deschutes River, Galveston Ave	75.80	34.00 ton	21.00 ton
17C040	Deschutes River, Archie Briggs Rd	57.20	44.00 ton	36.00 ton
17C05	Deschutes River, Archie Briggs Rd	64.80	46.00 ton	28.00 ton
17C29	North Unit Main Canal, Yeoman Rd	79.10	60.00 ton	36.00 ton
17C38	Main COI, American Lane Rd	62.00	92.00 ton	55.00 ton
17C52	Arnold Canal, China Hat Rd	96.40	78.00 ton	41.00 ton
17C59	Empire Ave over BNRR	61.70	50.00 ton	14.00 ton
18374	Pilot Butte Canal, Empire Blvd	98.00	80.00 ton	48.00 ton
18718	Pilot Butte Canal, Brinson Blvd	96.50	60.00 ton	36.00 ton
18719	North Unit Main Canal, Brinson Blvd	96.50	60.00 ton	36.00 ton
19642	COI Main Canal, Brookwood Blvd	96.40	92.00 ton	55.00 ton
20613	Deschutes River, Newport Ave	77.50	24.80 ton	19.10 ton
20669	Deschutes Southern River Crossing, Reed Market Rd	93.00	75.00 ton	45.00 ton
21153	Mt. Washington Dr., Deschutes River	97.00	75.00 ton	33.00 ton
3168-01	Arnold Canal, Knott Rd	74.20	23.60 ton	23.60 ton
3197-01	Arnold Canal, Benham Rd	95.00	25.50 ton	18.60 ton
3199-01	COI Canal, Pettigrew Rd	73.80	30.30 ton	22.50 ton
3205-02	COI Canal, Bear Creek Rd #2	96.90	25.00 ton	23.60 ton

**BRIDGE PROGRAM ANNUAL REPORT**

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**Bridge Maintenance**

Bridge ID	Bridge Name	MAINTENANCE REC. Priority	Element	Notes	Rec. Date	In House Maintenance Costs (50% contingency added)
17B003	Deschutes River, Portland Ave	Routine/Schedule	(325) Traffic Impact Cond	REPAIR APPROACH PAVEMENT	3/23/2005	\$ (2)
17B003	Deschutes River, Portland Ave	Routine/Schedule	(326) Deck Wearing Surface	RECCOMEND CHIP SEAL COAT TO PROTECT DECK FROM FURTHER DETERIORATION-CLEAN DECK DRAINS	3/23/2005	\$ (2)
17C38	Main COI, American Lane Rd	Urgent	(325) Traffic Impact Cond	REPAIR APPROACH PAVEMENT	3/23/2005	\$ (2)
01134A	Central Oregon Canal, Hwy 4 Spur	Routine/Schedule	(104) P/S Conc Box Girder	CLEAN DEBRIS OFF TOP OF EXT. SLABS	3/15/2004	\$ -
17B001	COI North Canal, Division St	Monitor	(110) R/Conc Open Girder	MONITOR ALL CONCRETE GIRDERS FOR STRUCTURAL CRACKS	12/3/2004	\$ -
17B001	COI North Canal, Division St	Urgent	(110) R/Conc Open Girder	RECOMMEND EPOXY INJECTION OF ALL CONCRETE CRACKS GREATER THAN 0.013 INCHES	3/23/2005	\$ -
17B003	Deschutes River, Portland Ave	Monitor	(205) R/Conc Column	MONITOR FOR SCOUR AT INTERIOR BENTS	3/23/2005	\$ -
17B003	Deschutes River, Portland Ave	Routine/Schedule	(215) R/Conc Abutment	MONITOR SCOUR	12/3/2004	\$ -
17B005	Deschutes River, Galveston Ave	Monitor	(234) R/Conc Cap	MONITOR INTERIOR CAPS FOR DELAMINATION	12/3/2004	\$ -
17C040	Deschutes River, Archie Briggs Rd	Routine/Schedule	(215) R/Conc Abutment	ODOT HYDROLOGIST TO REVIEW ITEM 113	2/18/2011	\$ -
17C05	Deschutes River, Archie Briggs Rd	Routine/Schedule	(215) R/Conc Abutment	ODOT HYDROLOGIST TO REVIEW ITEM 113	2/18/2011	\$ -
17B003	Deschutes River, Portland Ave	Routine/Schedule	(13) Unp Conc Deck/AC Ovl	CLEAN DEBRIS FROM DRAINS	12/3/2004	\$ 300
17C38	Main COI, American Lane Rd	Routine/Schedule	(32) Timber Deck/AC Ovly	SEAL AC CRACKS	12/3/2004	\$ 600
17C29	North Unit Main Canal, Yeoman Rd	Routine/Schedule	(104) P/S Conc Box Girder	PATCH SPALLS UNDERSIDE OF PS SLABS	3/9/2006	\$ 750
17C38	Main COI, American Lane Rd	Routine/Schedule	(107) Paint Stl Opn Girder	CLEAN DEBRIS FROM GIRDERS AND CAPS. MONITOR FATIGUE PRONE WELDS UNTIL BRIDGE IS REPLACED	12/3/2004	\$ 750
18374	COI Canal, Empire Blvd	Routine/Schedule	(334) Metal Rail Coated	REPAIR BROKEN RAIL POST	2/24/2009	\$ 750
09C60	COI Main Canal, Blakely Rd	Routine/Schedule	(104) P/S Conc Box Girder	REPAIR EXT. SLAB ENDS	12/3/2004	\$ 1,200
17C52	Arnold Canal, China Hat Rd	Routine/Schedule	(215) R/Conc Abutment	PATCH SPALLS	3/9/2006	\$ 1,500
18374	COI Canal, Empire Blvd	Routine/Schedule	(325) Traffic Impact Cond	REPAIR APPROACH SETTLEMENT AT BENT 1	12/3/2004	\$ 1,500
20669	Deschutes Southern River Crossing, Reed Market Rd	Urgent	(314) Pot OR Disk Bearing	Replace missing anchor nuts, and remove steel bracket on bearings 1 & 2 at bent 1.	7/31/2008	\$ 1,500
21153	Mt. Washington Dr., Deschutes River	Routine/Schedule	(326) Deck Wearing Surface	Repair SW at SE	7/28/2009	\$ 1,500
09C60	COI Main Canal, Blakely Rd	Routine/Schedule	(210) R/Conc Pier Wall	PATCH SPALLS AT DRIFT PINS	12/3/2004	\$ 1,800
09C60	COI Main Canal, Blakely Rd	Routine/Schedule	(104) P/S Conc Box Girder	REPAIR EXTERIOR SLAB ENDS	3/23/2005	\$ 2,250
16372	Dirmain COI Canal, 15th St	Routine/Schedule	(215) R/Conc Abutment	PATCH SPALLS	3/9/2006	\$ 2,250
16372	Dirmain COI Canal, 15th St	Routine/Schedule	(325) Traffic Impact Cond	REPAIR APPROACH AC	3/9/2006	\$ 2,250
16852	Colorado Ave, Deschutes River	Routine/Schedule	(309) Other Joint	SEAL JOINTS OVER BENTS	2/18/2011	\$ 2,250
17C52	Arnold Canal, China Hat Rd	Routine/Schedule	(325) Traffic Impact Cond	REPAIR APPROACH TRANSITIONS	3/9/2006	\$ 2,250
09C60	COI Main Canal, Blakely Rd	Routine/Schedule	(210) R/Conc Pier Wall	PATCH SPALLS AT DRIFT PINS	3/23/2005	\$ 3,000
09C74A	North Unit Canal, Deschutes Market Rd	Routine/Schedule	(210) R/Conc Pier Wall	PATCH SPALLS	3/9/2006	\$ 3,000
17C52	Arnold Canal, China Hat Rd	Routine/Schedule	(326) Deck Wearing Surface	REPAIR WEARING SURFACE	3/9/2006	\$ 3,000
01134A	Central Oregon Canal, Hwy 4 Spur	Routine/Schedule	(210) R/Conc Pier Wall	SEAL SETTLEMENT CRACKS	3/6/2007	\$ 3,750

\$ 36,146

**BRIDGE PROGRAM ANNUAL REPORT**

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Bridge ID	Bridge Name	MAINTENANCE REC. Priority	Element	Notes	Rec. Date	Other Maintenance Costs (50% contingency added)
9409	North Unit Main Canal, Boyd Acres Rd	Routine/Schedule	(331) Conc Bridge Railing	REHAB CONCRETE RAIL	3/6/2006	\$ 7,500
9410	Pilot Butte Canal North	Routine/Schedule	(331) Conc Bridge Railing	REPAIR BRIDGE RAIL AND PARAPETS	3/17/2004	\$ 7,500
15453A	COI Main Canal, Brosterhaus Rd	Routine/Schedule	(234) R/Conc Cap	REPAIR LEAKING DECK JOINTS. consider installing an asphaltic plug joint	3/9/2006	\$ 7,500
15453A	COI Main Canal, Brosterhaus Rd	Routine/Schedule	(234) R/Conc Cap	Repair Concrete Spalls & Delaminations	3/17/2004	\$ 7,500
17B002	North Unit Main Canal, Division St	Routine/Schedule	(39) Unp Conc Slab/AC Ovl	REPAIR EXTERIOR OF DECK/SLAB REPAIR TOPS OF WING WALLS	12/3/2004	\$ 7,500
17B005	Deschutes River, Galveston Ave	Routine/Schedule	(325) Traffic Impact Cond	repair approach and deck pavement	2/8/2011	\$ 7,500
17C29	North Unit Main Canal, Yeoman Rd	Routine/Schedule	(326) Deck Wearing Surface	consider grinding of some of the ac to reduce the dead load and help the rail height	3/15/2012	\$ 7,500
17B003	Deschutes River, Portland Ave	Routine/Schedule	(13) Unp Conc Deck/AC Ovl	REBUILD ALL SIDEWALK APPROACHES, DOWEL INTO DECK AND OLD SIDEWALK TO PREVENT SETTLING	12/3/2004	\$ 9,000
17B003	Deschutes River, Portland Ave	Routine/Schedule	(13) Unp Conc Deck/AC Ovl	REPAIR SETTLED SIDEWALKS	3/23/2005	\$ 9,000
20669	Deschutes Southern River Crossing, Reed Market Rd	Routine/Schedule	(26) Conc Deck/Coatd Bars	Seal deck cracks. See ODOT approved products list for suitable products. Recommend a flexible polymer (percol)	7/31/2008	\$ 15,000
20613	Deschutes River, Newport Ave	Routine/Schedule	(26) Conc Deck/Coatd Bars	consider a seal coat/protective wearing system to extend deck life	2/8/2011	\$ 22,500
17C38	Main COI, American Lane Rd	Urgent	(326) Deck Wearing Surface	REPAIR DECK WEARING SURFACE	3/23/2005	\$ 30,000
17B003	Deschutes River, Portland Ave	Routine/Schedule	(13) Unp Conc Deck/AC Ovl	CONSIDER A THIN OVERLAY TO SEAL AND PROTECT DECK FROM FURTHER WEAR AND DETERIORATION	12/3/2004	\$ 45,000
17C59	Empire Ave over BNRR	Routine/Schedule	(326) Deck Wearing Surface	CONSIDER GRIND, MEMBRANE, AND OVERLAY	2/24/2009	\$ 52,500
						<b>\$ 235,500</b>

**BRIDGE PROGRAM ANNUAL REPORT**

**December 20, 2012**

Bridge ID	Bridge Name	MAINTENANCE REC. Priority	Element	Notes	Rec. Date	Capital Costs (50% contingency added)	Possible Rehab Federal Funded projects	Possible Replace Federal Funded projects
01134A	Central Oregon Canal, Hwy 4 Spur	Routine/Schedule	(104) P/S Conc Box Girder	CLEAN DEBRIS OFF TOP OF EXT. SLABS	3/15/2004	N/A	\$ -	N/A
01134A	Central Oregon Canal, Hwy 4 Spur	Routine/Schedule	(210) R/Conc Pier Wall	SEAL SETTLEMENT CRACKS	3/6/2007	N/A	N/A	N/A
9409	North Unit Main Canal, Boyd Acres Rd	Routine/Schedule	(331) Conc Bridge Railing	REHAB CONCRETE RAIL	3/6/2006	N/A	\$ 7,500	N/A
9410	Pilot Butte Canal North	Routine/Schedule	(331) Conc Bridge Railing	REPAIR BRIDGE RAIL AND PARAPETS	3/17/2004	N/A	\$ 7,500	N/A
17B002	North Unit Main Canal, Division St	Routine/Schedule	(39) Unp Conc Slab/AC Ovl	REPAIR EXTERIOR OF DECK/SLAB REPAIR TOPS OF WING WALLS	12/3/2004	N/A	\$ 7,500	N/A
17B003	Deschutes River, Portland Ave	Routine/Schedule	(13) Unp Conc Deck/AC Ovl	CONSIDER A THIN OVERLAY TO SEAL AND PROTECT DECK FROM FURTHER WEAR AND DETERIORATION	12/3/2004	N/A	\$ 45,000	N/A
17B003	Deschutes River, Portland Ave	Routine/Schedule	(13) Unp Conc Deck/AC Ovl	REBUILD ALL SIDEWALK APPROACHES, DOWEL INTO DECK AND OLD SIDEWALK TO PREVENT SETTLING	12/3/2004	N/A	\$ 9,000	N/A
17B003	Deschutes River, Portland Ave	Routine/Schedule	(13) Unp Conc Deck/AC Ovl	CLEAN DEBRIS FROM DRAINS	12/3/2004	N/A	N/A	N/A
17B003	Deschutes River, Portland Ave	Routine/Schedule	(13) Unp Conc Deck/AC Ovl	REPAIR SETTLED SIDEWALKS	3/23/2005	N/A	\$ 9,000	N/A
17B003	Deschutes River, Portland Ave	Monitor	(205) R/Conc Column	MONITOR FOR SCOUR AT INTERIOR BENTS	3/23/2005	N/A	\$ -	N/A
17B003	Deschutes River, Portland Ave	Routine/Schedule	(215) R/Conc Abutment	MONITOR SCOUR	12/3/2004	N/A	\$ -	N/A
17B003	Deschutes River, Portland Ave	Routine/Schedule	(325) Traffic Impact Cond	REPAIR APPROACH PAVEMENT	3/23/2005	N/A	\$ (2)	N/A
17B003	Deschutes River, Portland Ave	Routine/Schedule	(326) Deck Wearing Surface	RECCOMEND CHIP SEAL COAT TO PROTECT DECK FROM FURTHER DETERIORATION-CLEAN DECK DRAINS	3/23/2005	N/A	\$ (2)	N/A
17B005	Deschutes River, Galveston Ave	Monitor	(204) P/S Conc Column	REPAIR INTERIOR PILES. CONSIDER WRAPPING PILES.	3/23/2005	\$ 12,000	\$ 12,000	N/A
17B005	Deschutes River, Galveston Ave	Monitor	(234) R/Conc Cap	MONITOR INTERIOR CAPS FOR DELAMINATION	12/3/2004	N/A	\$ -	N/A
17B005	Deschutes River, Galveston Ave	Routine/Schedule	(325) Traffic Impact Cond	repair approach and deck pavement	2/8/2011	N/A	\$ 7,500	N/A
17C29	North Unit Main Canal, Yeoman Rd	Routine/Schedule	(104) P/S Conc Box Girder	PATCH SPALLS UNDERSIDE OF PS SLABS	3/9/2006	N/A	N/A	N/A
17C29	North Unit Main Canal, Yeoman Rd	Routine/Schedule	(326) Deck Wearing Surface	consider grinding of some of the ac to reduce the dead load and help the rail height	3/15/2012	N/A	\$ 7,500	N/A
17C59	Empire Ave over BNRR	Routine/Schedule	(326) Deck Wearing Surface	CONSIDER GRIND, MEMBRANE, AND OVERLAY	2/24/2009	N/A	\$ 52,500	N/A
20613	Deschutes River, Newport Ave	Routine/Schedule	(26) Conc Deck/Coatd Bars	consider a seal coat/protective wearing system to extend deck life	2/8/2011	N/A	\$ 22,500	N/A
17B001	COI North Canal, Division St	Monitor	(110) R/Conc Open Girder	MONITOR ALL CONCRETE GIRDERS FOR STRUCTURAL CRACKS	12/3/2004	N/A	N/A	\$ -
17B001	COI North Canal, Division St	Urgent	(110) R/Conc Open Girder	RECOMMEND EPOXY INJECTION OF ALL CONCRETE CRACKS GREATER THAN 0.013 INCHES	3/23/2005	N/A	N/A	\$ -
17C38	Main COI, American Lane Rd	Urgent	()	Consider Bridge Replacement	3/10/2010	\$ 3,000,000	N/A	\$ 3,000,000
17C38	Main COI, American Lane Rd	Routine/Schedule	(32) Timber Deck/AC Ovly	SEAL AC CRACKS	12/3/2004	N/A	N/A	N/A
17C38	Main COI, American Lane Rd	Routine/Schedule	(107) Paint Stl Opn Girder	CLEAN DEBRIS FROM GIRDERS AND CAPS. MONITOR FATIGUE PRONE WELDS UNTIL BRIDGE IS REPLACED	12/3/2004	N/A	N/A	N/A
17C38	Main COI, American Lane Rd	Urgent	(325) Traffic Impact Cond	REPAIR APPROACH PAVEMENT	3/23/2005	N/A	N/A	\$ (2)
17C38	Main COI, American Lane Rd	Urgent	(326) Deck Wearing Surface	REPAIR DECK WEARING SURFACE	3/23/2005	N/A	N/A	\$ 30,000

\$ 3,012,000      \$ 187,497      \$ 3,029,999