

UNION DEPOT ENVIRONMENTAL ASSESSMENT	
Capital Costs - Preliminary Estimate	
Option 1: LRT Costs Included	
February 26, 2009	
	Total
1. Civil Construction	\$8,678,700
2. Utilities Allowance	\$3,400,000
3. Trackwork	\$8,002,500
4. Structures	\$6,943,000
5. Structure Rehabilitation	\$10,661,100
6. Station	\$61,639,000
7. Fare Collection	\$260,000
8. Systems and Traction Power	\$7,495,500
9. Mobilization	\$5,000,000
10. Professional Services (Engineering & Admin.) Breakdown	\$35,866,000
11. Contingency	\$33,624,000
Total	\$181,569,800

URS Corporation

Exclusions from this Preliminary Estimate

This estimate does not include design and construction costs for the following items:

- 1- Head House renovations previously estimated by LTK at \$47,000,000.
- 2- Commuter Rail tracks, systems and platforms previously estimated by LTK at \$37,500,000.
- 3- Midwest High Speed Rail tracks, systems and platforms previously estimated by LTK at \$35,000,000.
- 4- Track modifications to the wye previously estimated by LTK at \$96,000,000.

UNION DEPOT ENVIRONMENTAL ASSESSMENT

Capital Costs - Preliminary Estimate

Option 1: LRT Costs Included

Line No.	Base	Code	Description	Quantity	Unit	Unit Cost	Item Cost Extension	E&A %	E&A Extension	Contingency %	Unallocated Contingency	Detail Total
1. Civil Construction												
1		40.01	Unclassified Excavation	5,000	CY	\$10	\$50,000	32%	\$16,000	30%	\$15,000	\$81,000
2		40.01	Asphalt Pavement Removal - west of Broadway	395,000	SF	\$0.25	\$98,750	32%	\$31,600	30%	\$29,625	\$159,975
3		40.01	Asphalt Pavement Removal - east of Broadway	355,000	SF	\$0.25	\$88,750	32%	\$28,400	30%	\$26,625	\$143,775
4		40.01	Building Demolition- 1978 USPS Annex & Skyway	1	LS	\$750,000	\$750,000	32%	\$240,000	30%	\$225,000	\$1,215,000
5		40.01	Existing Parking Deck Column Removal	58	EA	\$1,500	\$87,000	32%	\$27,840	30%	\$26,100	\$140,940
6		40.01	Existing Parking Deck Footing Removal	58	EA	\$2,000	\$116,000	32%	\$37,120	30%	\$34,800	\$187,920
7		40.01	Existing Parking Deck Removal	29,000	SF	\$10	\$290,000	32%	\$92,800	30%	\$87,000	\$469,800
8		40.03	Haul & Dispose of Contaminated Material (Upper Deck)	52,000	CY	\$50	\$2,600,000	32%	\$832,000	30%	\$780,000	\$4,212,000
9		40.06	Landscaping/Furnishings Allowance	1	LS	\$250,000	\$250,000	32%	\$80,000	30%	\$75,000	\$405,000
10		40.06	LRT - Landscaping/Furnishings Allowance	1	LS	\$50,000	\$50,000	32%	\$16,000	30%	\$15,000	\$81,000
11		40.06	Ornamental Rail	1,900	LF	\$300	\$570,000	32%	\$182,400	30%	\$171,000	\$923,400
12		40.06	Bicycle Facility	7,000	SF	\$100	\$700,000	32%	\$224,000	30%	\$210,000	\$1,134,000
13		40.06	4" Sidewalk Construction on Kellogg - west of Broadway	100,000	SF	\$5	\$500,000	32%	\$160,000	30%	\$150,000	\$810,000
14		40.06	4" Sidewalk Construction on Kellogg - east of Broadway	5,100	SF	\$5	\$25,500	32%	\$8,160	30%	\$7,650	\$41,310
15		40.06	LRT - Sidewalk Construction on Broadway	3,500	SF	\$5	\$17,500	32%	\$5,600	30%	\$5,250	\$28,350
16		40.06	Sibley ADA Ramp and Stair	1	LS	\$50,000	\$50,000	32%	\$16,000	30%	\$15,000	\$81,000
17		40.07	Curb & Gutter on Kellogg - west of Broadway	6,000	LF	\$35	\$210,000	32%	\$67,200	30%	\$63,000	\$340,200
18		40.07	Curb & Gutter on Kellogg - east of Broadway	5,000	LF	\$35	\$175,000	32%	\$56,000	30%	\$52,500	\$283,500
19		40.07	LRT - Curb & Gutter	560	LF	\$35	\$19,600	32%	\$6,272	30%	\$5,880	\$31,752
20		40.07	Rebuild Commercial Driveway	1	EA	\$15,000	\$15,000	32%	\$4,800	30%	\$4,500	\$24,300
21		40.07	LRT - Rebuild Commercial Driveway	1	EA	\$15,000	\$15,000	32%	\$4,800	30%	\$4,500	\$24,300
22		40.07	Sidestreet Rebuild - Kellogg (360')	23,400	SF	\$8	\$187,200	32%	\$59,904	30%	\$56,160	\$303,264
23		40.07	LRT - Intersection Rebuild - Broadway & Kellogg	7,800	SF	\$8	\$62,400	32%	\$19,968	30%	\$18,720	\$101,088
24		40.07	LRT- Intersection Partial Rebuild - 4th & Broadway	3,000	SF	\$8	\$24,000	32%	\$7,680	30%	\$7,200	\$38,880
25		40.07	LRT - Roadway Construction Bituminous (Broadway)	13,000	SF	\$8	\$104,000	32%	\$33,280	30%	\$31,200	\$168,480
26		40.07	Site Entrance Drive Construction	3,600	SF	\$5	\$18,000	32%	\$5,760	30%	\$5,400	\$29,160
27		40.07	East Site Parking Lot/Deck Reconstruction	197,000	SF	\$5	\$985,000	32%	\$315,200	30%	\$295,500	\$1,595,700
28		40.07	Signing and Striping	1	LS	\$10,000	\$10,000	32%	\$3,200	30%	\$3,000	\$16,200
29		40.07	LRT - Signing and Striping	1	LS	\$10,000	\$10,000	32%	\$3,200	30%	\$3,000	\$16,200
30		40.08	Traffic Control Allowance for Kellogg & Sibley	1	LS	\$50,000	\$50,000	32%	\$16,000	30%	\$15,000	\$81,000
31		40.08	LRT - Traffic Control Allowance- Broadway	1	LS	\$50,000	\$50,000	32%	\$16,000	30%	\$15,000	\$81,000
32		50.02	Traffic Signal - Broadway & Kellogg (4 lanes)	1	EA	\$250,000	\$250,000	32%	\$80,000	30%	\$75,000	\$405,000
33		50.02	LRT - Traffic Signal - 4th & Broadway (4 lanes)	1	EA	\$250,000	\$250,000	32%	\$80,000	30%	\$75,000	\$405,000
2. Utilities Allowance												
34		40.02	Storm Sewer Replacement (7' dia. concrete pipe)	500	LF	\$500	\$250,000	32%	\$80,000	30%	\$75,000	\$405,000
35		40.02	Storm Water Treatment/Rain Collection	1	LS	\$2,500,000	\$2,500,000	32%	\$800,000	30%	\$750,000	\$4,050,000
36		40.02	Utility Allowance - Kellogg	1	LS	\$50,000	\$50,000	32%	\$16,000	30%	\$15,000	\$81,000
37		40.02	Drainage & Utility Allowance - Parking Deck	1	LS	\$500,000	\$500,000	32%	\$160,000	30%	\$150,000	\$810,000
38		40.02	LRT - Utility Allowance (Broadway)	1	LS	\$100,000	\$100,000	32%	\$32,000	30%	\$30,000	\$162,000
3. Trackwork												
39		10.02	Civil: Ballasted Track Demolition	300	TF	\$35	\$10,500	32%	\$3,360	30%	\$3,150	\$17,010
40		10.02	Civil: Ballasted Track Excavation	8,400	CY	\$35	\$294,000	32%	\$94,080	30%	\$88,200	\$476,280
41		10.02	Civil: Ballasted Track Infill	300	TF	\$50	\$15,000	32%	\$4,800	30%	\$4,500	\$24,300
42		10.02	LRT - Systems Civil: OCS Pole Foundations	1,300	RF	\$60	\$78,000	32%	\$24,960	30%	\$23,400	\$126,360
43		10.02	LRT - Systems Civil: TES Conduit	1,300	RF	\$40	\$52,000	32%	\$16,640	30%	\$15,600	\$84,240
44		10.02	LRT - Systems Civil: Sig/Com Ductbank	1,300	RF	\$140	\$182,000	32%	\$58,240	30%	\$54,600	\$294,840
45		10.09	Track: Direct Fixation - Install	6,500	TF	\$425	\$2,762,500	32%	\$884,000	30%	\$828,750	\$4,475,250
46		10.09	Track: Direct Fixation - Procure	6,500	TF	\$75	\$487,500	32%	\$156,000	30%	\$146,250	\$789,750
47		10.10	LRT - Track: Embedded (115 RE Rail) - Install	2,300	TF	\$425	\$977,500	32%	\$312,800	30%	\$293,250	\$1,583,550
48		10.10	LRT - Track: Embedded (115 RE Rail) - Procure	2,300	TF	\$75	\$172,500	32%	\$55,200	30%	\$51,750	\$279,450
49		10.11	Track: Ballasted (136 RE Rail+Concrete Ties) - Install	3,600	TF	\$200	\$720,000	32%	\$230,400	30%	\$216,000	\$1,166,400
50		10.11	Track: Ballasted (136 RE Rail+Concrete Ties) - Procure	3,600	TF	\$125	\$450,000	32%	\$144,000	30%	\$135,000	\$729,000
51		10.12	Track: Special - Turnout (No. 8 TO) - Install	7	EA	\$30,000	\$210,000	32%	\$67,200	30%	\$63,000	\$340,200
52		10.12	Track: Special - Turnout (No. 8 TO) - Procure	7	EA	\$88,000	\$616,000	32%	\$197,120	30%	\$184,800	\$997,920
53		10.12	LRT - Track: Special - Embedded Xover (2-No. 8 TO) - Install	1	EA	\$200,000	\$200,000	32%	\$64,000	30%	\$60,000	\$324,000
54		10.12	LRT - Track: Special - Embedded Xover (2-No. 8 TO) - Procure	1	EA	\$200,000	\$200,000	32%	\$64,000	30%	\$60,000	\$324,000

55	10.12	LRT - Track: Special - Embedded Turnout (No. 8) - Install	2	EA	\$100,000	\$200,000	32%	\$64,000	30%	\$60,000	\$324,000
56	10.12	LRT - Track: Special - Embedded Turnout (No. 8) - Procure	2	EA	\$100,000	\$200,000	32%	\$64,000	30%	\$60,000	\$324,000
57	10.12	LRT - Track: Special - T-Rail Diamond Crossing - Install	1	EA	\$75,000	\$75,000	32%	\$24,000	30%	\$22,500	\$121,500
58	10.12	LRT - Track: Special - T-Rail Diamond Crossing - Procure	1	EA	\$100,000	\$100,000	32%	\$32,000	30%	\$30,000	\$162,000
4. Structures											
59	20.06	Ramp Structure	26,000	SF	\$200	\$5,200,000	32%	\$1,664,000	30%	\$1,560,000	\$8,424,000
60	40.05	Retaining Walls 14' - Adjacent to ramp structure	900	LF	\$1,750	\$1,575,000	32%	\$504,000	30%	\$472,500	\$2,551,500
61	40.05	Retaining Walls 5' - Adjacent to Kellogg	140	LF	\$1,200	\$168,000	32%	\$53,760	30%	\$50,400	\$272,160

5. Structure Rehabilitation											
62	20.06	Scarify Deck	370,000	SF	\$1.25	\$462,500	32%	\$148,000	30%	\$138,750	\$749,250
63	20.06	Concrete - Deck Overlay	370,000	SF	\$5	\$1,850,000	32%	\$592,000	30%	\$555,000	\$2,997,000
64	20.06	Concrete Lot/Lower Deck Concrete Removal & Replacement	252,000	SF	\$15	\$3,780,000	32%	\$1,209,600	30%	\$1,134,000	\$6,123,600
65	20.06	Clean and Paint Lower Deck Ceiling and Walls	266,000	SF	\$1	\$266,000	32%	\$85,120	30%	\$79,800	\$430,920
66	20.06	Reconstruct Expansion Joint	600	LF	\$200	\$120,000	32%	\$38,400	30%	\$36,000	\$194,400
67	20.06	Reconstruct Construction Joint	9,000	LF	\$60	\$540,000	32%	\$172,800	30%	\$162,000	\$874,800
68	20.06	Crack Repair	600	LF	\$60	\$36,000	32%	\$11,520	30%	\$10,800	\$58,320
69	20.06	Repair Column	4,000	SF	\$30	\$120,000	32%	\$38,400	30%	\$36,000	\$194,400
70	20.06	Repair Column Cap	23,000	SF	\$30	\$690,000	32%	\$220,800	30%	\$207,000	\$1,117,800
71	20.06	Surface Finish Column	182,000	SF	\$1	\$236,600	32%	\$75,712	30%	\$70,980	\$383,292
72	20.06	Deck over Ramp	11,400	SF	\$200	\$2,280,000	32%	\$729,600	30%	\$684,000	\$3,693,600
73	20.06	Lintel Repair	1	LS	\$5,000	\$5,000	32%	\$1,600	30%	\$1,500	\$8,100
74	20.06	Brick Wall Removal	1	LS	\$5,000	\$5,000	32%	\$1,600	30%	\$1,500	\$8,100
75	20.06	Tunnel/Removal	6	LS	\$10,000	\$60,000	32%	\$19,200	30%	\$18,000	\$97,200
76	20.06	Replace Steel Column	3	LS	\$12,000	\$36,000	32%	\$11,520	30%	\$10,800	\$58,320
77	20.06	Clean & Paint Steel Column	69	LS	\$2,000	\$138,000	32%	\$44,160	30%	\$41,400	\$223,560
78	20.06	Straighten Column	18	LS	\$2,000	\$36,000	32%	\$11,520	30%	\$10,800	\$58,320
6. Station											
79	20.01	Train Platform Station- Center Loading (800')	1	EA	\$8,000,000	\$8,000,000	32%	\$2,560,000	30%	\$2,400,000	\$12,960,000
80	20.01	Train Platform Station- Center Loading (1275')	1	EA	\$5,000,000	\$5,000,000	32%	\$1,600,000	30%	\$1,500,000	\$8,100,000
81	20.01	Bus Platform Station- Center Loading (300')	1	EA	\$3,000,000	\$3,000,000	32%	\$960,000	30%	\$900,000	\$4,860,000
82	20.01	LRT - Platform Station- Center Loading (300')	1	EA	\$2,000,000	\$2,000,000	32%	\$640,000	30%	\$600,000	\$3,240,000
83	20.01	Train and Bus Platform Electrical Allowance	3	EA	\$250,000	\$750,000	32%	\$240,000	30%	\$225,000	\$1,215,000
84	20.01	LRT - Platform Electrical Allowance	1	EA	\$250,000	\$250,000	32%	\$80,000	30%	\$75,000	\$405,000
84	20.01	Platform Message Boards	2	EA	\$250,000	\$500,000	32%	\$160,000	30%	\$150,000	\$810,000
86	20.01	LRT - Platform Message Boards	1	EA	\$250,000	\$250,000	32%	\$80,000	30%	\$75,000	\$405,000
87	20.01	Concourse - Asbestos Abatement	37,000	SF	\$28	\$1,036,000	32%	\$331,520	30%	\$310,800	\$1,678,320
88	20.01	Concourse- Structural Repair	37,000	SF	\$40	\$1,480,000	32%	\$473,600	30%	\$444,000	\$2,397,600
89	20.01	Concourse- Exterior Shell	37,000	SF	\$110	\$4,070,000	32%	\$1,302,400	30%	\$1,221,000	\$6,593,400
90	20.01	Concourse- Exterior Windows	80	EA	\$4,500	\$360,000	32%	\$115,200	30%	\$108,000	\$583,200
91	20.01	Concourse - Clerestory Windows	5,800	SF	\$135	\$783,000	32%	\$250,560	30%	\$234,900	\$1,268,460
92	20.01	Concourse - Clerestory Glazing	10,800	SF	\$75	\$810,000	32%	\$259,200	30%	\$243,000	\$1,312,200
93	20.01	Concourse - Roofing	37,000	SF	\$45	\$1,665,000	32%	\$532,800	30%	\$499,500	\$2,697,300
94	20.01	Concourse-Bridge/Office Fit-out	8,500	SF	\$220	\$1,870,000	32%	\$598,400	30%	\$561,000	\$3,029,400
95	20.01	Concourse- Waiting Area Fit-out	28,500	SF	\$140	\$3,990,000	32%	\$1,276,800	30%	\$1,197,000	\$6,463,800
96	20.01	Lower Parking Deck Ventilation Unit	5	EA	\$155,000	\$775,000	32%	\$248,000	30%	\$232,500	\$1,255,500
97	20.07	25' Rise - Escalator	5	EA	\$700,000	\$3,500,000	32%	\$1,120,000	30%	\$1,050,000	\$5,670,000
98	20.07	LRT - 25' Rise - Escalator	1	EA	\$700,000	\$700,000	32%	\$224,000	30%	\$210,000	\$1,134,000
99	20.07	50' Rise - Freight Elevator	3	EA	\$300,000	\$900,000	32%	\$288,000	30%	\$270,000	\$1,458,000
100	20.07	50' Rise - Elevator	1	EA	\$300,000	\$300,000	32%	\$96,000	30%	\$90,000	\$486,000
101	20.07	25' Rise - Elevator	2	EA	\$250,000	\$500,000	32%	\$160,000	30%	\$150,000	\$810,000
102	20.07	LRT - 25' Rise - Elevator	1	EA	\$250,000	\$250,000	32%	\$80,000	30%	\$75,000	\$405,000
103	20.07	25' Rise - Stair	5	EA	\$150,000	\$750,000	32%	\$240,000	30%	\$225,000	\$1,215,000
104	20.07	LRT - 25' Rise - Stair	1	EA	\$150,000	\$150,000	32%	\$48,000	30%	\$45,000	\$243,000
105	20.07	Stair, Escalator and Elevator Enclosure	5	EA	\$3,000,000	\$15,000,000	32%	\$4,800,000	30%	\$4,500,000	\$24,300,000
106	20.07	LRT - Stair, Escalator and Elevator Enclosure	1	EA	\$3,000,000	\$3,000,000	32%	\$960,000	30%	\$900,000	\$4,860,000
7. Fare Collection											
107	50.06	LRT - Fare Collection (2 per Station)	2	EA	\$130,000	\$260,000	32%	\$83,200	30%	\$78,000	\$421,200
8. Systems and Traction Power											
108	50.01	Mainline connection signal system & interlocking	2	EA	\$1,500,000	\$3,000,000	32%	\$960,000	30%	\$900,000	\$4,860,000
109	50.01	Amtrak Turnouts - Fully signalized	7	EA	\$400,000	\$2,800,000	32%	\$896,000	30%	\$840,000	\$4,536,000
110	50.01	LRT - Signal System	1,300	RF	\$75	\$97,500	32%	\$31,200	30%	\$29,250	\$157,950
111	50.01	LRT - Signal System: Crossover	1	RF	\$550,000	\$550,000	32%	\$176,000	30%	\$165,000	\$891,000
112	50.01	LRT - Signal System: TWC	4	EA	\$13,000	\$52,000	32%	\$16,640	30%	\$15,600	\$84,240
113	50.02	Lighting	10,100	TF	\$8	\$80,800	32%	\$25,856	30%	\$24,240	\$130,896
114	50.02	LRT - Lighting	1,300	RF	\$20	\$26,000	32%	\$8,320	30%	\$7,800	\$42,120
115	50.03	LRT - Traction Power: Supply	1,300	RF	\$320	\$416,000	32%	\$133,120	30%	\$124,800	\$673,920
116	50.04	LRT - Traction Power: Distribution (OCS)	1,300	RF	\$244	\$317,200	32%	\$101,504	30%	\$95,160	\$513,864
117	50.05	LRT - Communications: Systemwide	1,300	RF	\$120	\$156,000	32%	\$49,920	30%	\$46,800	\$252,720

9. Mobilization											
118	60.01	Mobilization	1	LS	\$5,000,000	\$5,000,000	32%	\$1,600,000	30%	\$1,500,000	\$8,100,000
TOTALS (Rounded)						\$112,080,000		\$35,866,000		\$33,624,000	\$181,569,000

10. Professional Services (Engineering & Admin.) Breakdown											
119	80.01	Preliminary Engineering		4%	\$4,483,250						
120	80.02	Final Design		6%	\$6,724,875						
121	80.03	Project management for Design Construction		5%	\$5,604,063						
122	80.04	Construction Administration & Management		8%	\$8,966,500						
123	80.05	Insurance		2%	\$2,241,625						
124	80.06	Legal: Permits: Review Fees by other agencies, cities etc.		3%	\$3,362,438						
125	80.07	Survey, Testing, Investigation, Inspection		3%	\$3,362,438						
126	80.08	Start-up Cost & Agency Force Account Work		1%	\$1,120,813						
				32%	\$35,866,000						
11. Contingency											
127	90.01	Unallocated contingency		30%	\$33,624,000						

February 2009

Item Cost
Total

\$8,678,700

\$3,400,000

\$8,002,500
\$6,943,000

\$10,661,100
\$61,639,000
\$260,000
\$7,495,500

	\$5,000,000
	\$ 112,080,000

UNION DEPOT ENVIRONMENTAL ASSESSMENT

Capital Costs - Preliminary Estimate

Option 1: LRT Costs Included

Miscellaneous Assumptions

Union Depot Structure is anticipated to be structurally sound. If structure is found to be deficient then cost estimate is inapplicable.

All costs are in 2009 dollars.

Assumed 30% contingency includes both allocated and unallocated amounts.

Concourse costs exclude demolition.

Concourse costs exclude elevator, escalator and stairways, as well as structures to hold these elements.

Concourse costs exclude all ground/site work, paving, utilities, etc.

Concourse costs exclude major structural beam or column replacement.

Ramp construction requires road closure on Broadway south of Kellogg.

New ramp structure required for grade transition between Broadway and Union Depot structure.

Track will require direct fixation on all structures and ballasted track off the structure.

Removal of material in parking lot east of Broadway not included in this estimate. Assumed that existing bituminous can be reused as base course.

LRT - Corner at Broadway and 4th requires LRT tracks to be placed on North and East sides of streets to maintain a minimum radius.

LRT - Broadway from 4th to Kellogg receives a full width reconstruction.

LRT - LRT track will be embedded track throughout the entire alignment.

LRT - Sharp corner on structure is undesirable and will need special design attention.

Line Item Assumptions

- 5 Seven columns removed along Kellogg & 51 columns removed at ramp structure. Assume we cannot reuse columns for ramp structure.
- 6 Seven footings removed along Kellogg & 51 footings removed at ramp structure. Assume we cannot reuse footings for ramp structure.
- 7 Includes ramp structure and deck section along bike trail on Kellogg.
- 8 Assume 3.5' average depth of fill on the upper deck that requires landfill disposal.
- 11 Includes rail along upper deck including west edge (partial), north edge, east edge, south edge (partial) & 300' on east deck.
- 13 Includes bike trail on Kellogg.
- 14 Includes parking deck & parking lot. Includes bike trail on Kellogg.
- 15 LRT - Includes both sides of street and does not include intersections.
- 16 Assumes 5' stair height.
- 22 Limits of intersection extend to adjacent curb radius at next street. Includes demo, bit and road rise.
- 23 LRT - Assume additional 1' intersection rise to prevent flooding of LRT track. Includes demo, bit, curb, sidewalk & utility adjustments.
- 24 LRT - Includes south half of intersection. Limits extend to curb radius. Includes demo, bit, adjacent sidewalk and utility adjustments.
- 25 LRT - Includes class 5 base/raise road 1'.
- 26 Includes bituminous only Broadway south of Kellogg.
- 27 Includes bituminous parking deck & parking lot. Reuse of existing bituminous for aggregate base.
- 28 Assumes medium level of signing and striping.
- 29 LRT - Assumes medium level of signing and striping
- 34 Assume pipe replacement required due to ramp construction.
- 35 Assumed to be located in east parking lot area.
- 36 Includes additional storm sewer due required to road rise.
- 37 Includes removal and replacement of storm sewer.
- 39 Includes 150' for each mainline turnout.
- 49 Includes track grading.
- 53 LRT - Crossover at 4th & Broadway assumed not included in Central Corridor cost.
- 54 LRT - Crossover at 4th & Broadway assumed not included in Central Corridor cost.
- 60 Retaining Wall average height is 14'. Includes walls on both sides of site entrance ramp. Does not include retaining wall improvements along Shepard Road.
- 61 Retaining Wall average height is 5'. Located adjacent to Kellogg Street, along bike trail where deck will be removed.
- 62 Assume Deck area = 389,636 - 18,000 (for ramp structure) = 371,636 or approx. 370,000.
- 63 Assume Deck area = 389,636 - 18,000 (for ramp structure) = 371,636 or approx. 370,000.
- 64 Lower deck/lot assumed to have 252,000SF of surface area.
- 65 Assume that entire ceiling and east, west and south walls will be cleaned and painted.
- 69 Assume 400 Columns with 10 Sq. Ft. of patching. Assume Column 20' X 10' or 200 Sq.Ft area per column X 683 Columns = 136,600.
- 70 Assume 700 Column Caps with 32 Sq.Ft of patching. Assume Column 20' X 10' or 200 Sq.Ft area per column X 683 Columns = 136,600.
- 76 Three columns on the track level deck need to be replaced due to their condition.
- 77 Fourteen steel columns on the Kellogg Street level and 55 steel columns on the Track level need to be blast cleaned and painted.
- 78 Eighteen steel columns on the Track level need to be repaired by heat straightening due to bent flanges.
- 79 Includes canopies, shelters, benches, trash bins, public art, decorative pavers, information kiosks, base concrete and ADA requirements
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- 81 Includes canopies, shelters, benches, trash bins, public art, decorative pavers, information kiosks and ADA requirements
- 82 LRT - Includes canopies, shelters, benches, trash bins, public art, decorative pavers, information kiosks, base concrete and ADA requirements
- 89 Brickwork repair and tuckpointing, re-skin underside, painting.
- 91 Aluminum frame mimic historic look with insulated glazing.
- 92 Historic restoration/replacement glazing on interior.
- 93 Built-up with 4' ISO insulation and new decking.
- 94 Assume ductwork is internal.
- 95 Assume ductwork is internal.
- 96 Assume each unit includes demolition, MEP, electrical switch gear, ductwork and fans.
- 97 Includes two stacked escalators.
- 98 LRT - Includes two stacked escalators.
- 107 LRT - Fare collection counter for regional buses & Amtrak assumed to be located inside Union Depot. Metro Transit fare collections occurs on bus & platform.
- 108 Assumed to be a Control Point.
- 111 LRT - Crossover located at 4th.
- 118 Estimated at 5% of total cost.

UNION DEPOT ENVIRONMENTAL ASSESSMENT	
Capital Costs - Preliminary Estimate	
Option 2: LRT Costs not Included	
February 26, 2009	
	Total
1. Civil Construction	\$8,076,200
2. Utilities Allowance	\$3,300,000
3. Trackwork	\$5,565,500
4. Structures	\$6,943,000
5. Structure Rehabilitation	\$10,661,100
6. Stations	\$55,039,000
7. Systems and Traction Power	\$5,880,800
8. Mobilization	\$4,750,000
9. Professional Services (Engineering & Admin.) Breakdown	\$32,069,000
10. Contingency	\$30,065,000
Total	\$162,349,600

URS Corporation

Exclusions from this Preliminary Estimate

This estimate does not include design and construction costs for the following items:

- 1- Head House renovations previously estimated by LTK at \$47,000,000.
- 2- Commuter Rail tracks, systems and platforms previously estimated by LTK at \$37,500,000.
- 3- Midwest High Speed Rail tracks, systems and platforms previously estimated by LTK at \$35,000,000.
- 4- Track modifications to the wye previously estimated by LTK at \$96,000,000.

UNION DEPOT ENVIRONMENTAL ASSESSMENT

Capital Costs - Preliminary Estimate

Option 2: LRT Costs not Included

Line No.	Base	Code	Description	Quantity	Unit	Unit Cost	Item Cost Extension	E&A %	E&A Extension	Contingency %
1. Civil Construction										
1		40.01	Unclassified Excavation	5,000	CY	\$10	\$50,000	32%	\$16,000	30%
2		40.01	Asphalt Pavement Removal - west of Broadway	395,000	SF	\$0.25	\$98,750	32%	\$31,600	30%
3		40.01	Asphalt Pavement Removal - east of Broadway	355,000	SF	\$0.25	\$88,750	32%	\$28,400	30%
4		40.01	Building Demolition- 1978 USPS Annex & Skyway	1	LS	\$750,000	\$750,000	32%	\$240,000	30%
5		40.01	Existing Parking Deck Column Removal	58	EA	\$1,500	\$87,000	32%	\$27,840	30%
6		40.01	Existing Parking Deck Footing Removal	58	EA	\$2,000	\$116,000	32%	\$37,120	30%
7		40.01	Existing Parking Deck Removal	29,000	SF	\$10	\$290,000	32%	\$92,800	30%
8		40.03	Haul & Dispose of Contaminated Material (Upper Deck)	52,000	CY	\$50	\$2,600,000	32%	\$832,000	30%
9		40.06	Landscaping/Furnishings Allowance	1	LS	\$250,000	\$250,000	32%	\$80,000	30%
10		40.06	Ornamental Rail	1,900	LF	\$300	\$570,000	32%	\$182,400	30%
11		40.06	Bicycle Facility	7,000	SF	\$100	\$700,000	32%	\$224,000	30%
12		40.06	4" Sidewalk Construction on Kellogg - west of Broadway	100,000	SF	\$5	\$500,000	32%	\$160,000	30%
13		40.06	4" Sidewalk Construction on Kellogg - east of Broadway	5,100	SF	\$5	\$25,500	32%	\$8,160	30%
14		40.06	Sibley ADA Ramp and Stair	1	LS	\$50,000	\$50,000	32%	\$16,000	30%
15		40.07	Curb & Gutter on Kellogg - west of Broadway	6,000	LF	\$35	\$210,000	32%	\$67,200	30%
16		40.07	Curb & Gutter on Kellogg - east of Broadway	5,000	LF	\$35	\$175,000	32%	\$56,000	30%
17		40.07	Rebuild Commercial Driveway	1	EA	\$15,000	\$15,000	32%	\$4,800	30%
18		40.07	Sidestreet Rebuild - Kellogg (360')	23,400	SF	\$8	\$187,200	32%	\$59,904	30%
19		40.07	Site Entrance Drive Construction	3,600	SF	\$5	\$18,000	32%	\$5,760	30%
20		40.07	East Site Parking Lot/Deck Reconstruction	197,000	SF	\$5	\$985,000	32%	\$315,200	30%
21		40.07	Signing and Striping	1	LS	\$10,000	\$10,000	32%	\$3,200	30%
22		40.08	Traffic Control Allowance for Kellogg & Sibley	1	LS	\$50,000	\$50,000	32%	\$16,000	30%
23		50.02	Traffic Signal - Broadway & Kellogg (4 lanes)	1	EA	\$250,000	\$250,000	32%	\$80,000	30%
2. Utilities Allowance										
24		40.02	Storm Sewer Replacement (7' dia. concrete pipe)	500	LF	\$500	\$250,000	32%	\$80,000	30%
25		40.02	Storm Water Treatment/Rain Collection	1	LS	\$2,500,000	\$2,500,000	32%	\$800,000	30%
26		40.02	Utility Allowance - Kellogg	1	LS	\$50,000	\$50,000	32%	\$16,000	30%
27		40.02	Drainage & Utility Allowance - Parking Deck	1	LS	\$500,000	\$500,000	32%	\$160,000	30%
3. Trackwork										
28		10.02	Civil: Ballasted Track Demolition	300	TF	\$35	\$10,500	32%	\$3,360	30%
29		10.02	Civil: Ballasted Track Excavation	8,400	CY	\$35	\$294,000	32%	\$94,080	30%
30		10.02	Civil: Ballasted Track Infill	300	TF	\$50	\$15,000	32%	\$4,800	30%
31		10.09	Track: Direct Fixation - Install	6,500	TF	\$425	\$2,762,500	32%	\$884,000	30%
32		10.09	Track: Direct Fixation - Procure	6,500	TF	\$75	\$487,500	32%	\$156,000	30%
33		10.11	Track: Ballasted (136 RE Rail+Concrete Ties) - Install	3,600	TF	\$200	\$720,000	32%	\$230,400	30%
34		10.11	Track: Ballasted (136 RE Rail+Concrete Ties) - Procure	3,600	TF	\$125	\$450,000	32%	\$144,000	30%
35		10.12	Track: Special - Turnout (No. 8 TO) - Install	7	EA	\$30,000	\$210,000	32%	\$67,200	30%
36		10.12	Track: Special - Turnout (No. 8 TO) - Procure	7	EA	\$88,000	\$616,000	32%	\$197,120	30%
4. Structures										
37		20.06	Ramp Structure	26,000	SF	\$200	\$5,200,000	32%	\$1,664,000	30%
38		40.05	Retaining Walls 14' - Adjacent to ramp structure	900	LF	\$1,750	\$1,575,000	32%	\$504,000	30%
39		40.05	Retaining Walls 5' - Adjacent to Kellogg	140	LF	\$1,200	\$168,000	32%	\$53,760	30%

5. Structure Rehabilitation

40	20.06	Scarify Deck	370,000	SF	\$1.25	\$462,500	32%	\$148,000	30%
41	20.06	Concrete - Deck Overlay	370,000	SF	\$5	\$1,850,000	32%	\$592,000	30%
42	20.06	Concrete Lot/Lower Deck Concrete Removal & Replacement	252,000	SF	\$15	\$3,780,000	32%	\$1,209,600	30%
43	20.06	Clean and Paint Lower Deck Ceiling and Walls	266,000	SF	\$1	\$266,000	32%	\$85,120	30%
44	20.06	Reconstruct Expansion Joint	600	LF	\$200	\$120,000	32%	\$38,400	30%
45	20.06	Reconstruct Construction Joint	9,000	LF	\$60	\$540,000	32%	\$172,800	30%
46	20.06	Crack Repair	600	LF	\$60	\$36,000	32%	\$11,520	30%
47	20.06	Repair Column	4,000	SF	\$30	\$120,000	32%	\$38,400	30%
48	20.06	Repair Column Cap	23,000	SF	\$30	\$690,000	32%	\$220,800	30%
49	20.06	Surface Finish Column	182,000	SF	\$1	\$236,600	32%	\$75,712	30%
50	20.06	Deck over Ramp	11,400	SF	\$200	\$2,280,000	32%	\$729,600	30%
51	20.06	Lintel Repair	1	LS	\$5,000	\$5,000	32%	\$1,600	30%
52	20.06	Brick Wall Removal	1	LS	\$5,000	\$5,000	32%	\$1,600	30%
53	20.06	Tunnel/Removal	6	LS	\$10,000	\$60,000	32%	\$19,200	30%
54	20.06	Replace Steel Column	3	LS	\$12,000	\$36,000	32%	\$11,520	30%
55	20.06	Clean & Paint Steel Column	69	LS	\$2,000	\$138,000	32%	\$44,160	30%
56	20.06	Straighten Column	18	LS	\$2,000	\$36,000	32%	\$11,520	30%

6. Stations									
57	20.01	Train Platform Station- Center Loading (800')	1	EA	\$8,000,000	\$8,000,000	32%	\$2,560,000	30%
58	20.01	Train Platform Station- Center Loading (1275')	1	EA	\$5,000,000	\$5,000,000	32%	\$1,600,000	30%
59	20.01	Bus Platform Station- Center Loading (300')	1	EA	\$3,000,000	\$3,000,000	32%	\$960,000	30%
60	20.01	Train and Bus Platform Electrical Allowance	3	EA	\$250,000	\$750,000	32%	\$240,000	30%
61	20.01	Platform Message Boards	2	EA	\$250,000	\$500,000	32%	\$160,000	30%
62	20.01	Concourse - Asbestos Abatement	37,000	SF	\$28	\$1,036,000	32%	\$331,520	30%
63	20.01	Concourse- Structural Repair	37,000	SF	\$40	\$1,480,000	32%	\$473,600	30%
64	20.01	Concourse- Exterior Shell	37,000	SF	\$110	\$4,070,000	32%	\$1,302,400	30%
65	20.01	Concourse- Exterior Windows	80	EA	\$4,500	\$360,000	32%	\$115,200	30%
66	20.01	Concourse - Clerestory Windows	5,800	SF	\$135	\$783,000	32%	\$250,560	30%
67	20.01	Concourse - Clerestory Glazing	10,800	SF	\$75	\$810,000	32%	\$259,200	30%
68	20.01	Concourse - Roofing	37,000	SF	\$45	\$1,665,000	32%	\$532,800	30%
69	20.01	Concourse-Bridge/Office Fit-out	8,500	SF	\$220	\$1,870,000	32%	\$598,400	30%
70	20.01	Concourse- Waiting Area Fit-out	28,500	SF	\$140	\$3,990,000	32%	\$1,276,800	30%
71	20.01	Lower Parking Deck Ventilation Unit	5	EA	\$155,000	\$775,000	32%	\$248,000	30%
72	20.07	25' Rise - Escalator	5	EA	\$700,000	\$3,500,000	32%	\$1,120,000	30%
73	20.07	50' Rise - Freight Elevator	3	EA	\$300,000	\$900,000	32%	\$288,000	30%
74	20.07	50' Rise - Elevator	1	EA	\$300,000	\$300,000	32%	\$96,000	30%
75	20.07	25' Rise - Elevator	2	EA	\$250,000	\$500,000	32%	\$160,000	30%
76	20.07	25' Rise - Stair	5	EA	\$150,000	\$750,000	32%	\$240,000	30%
77	20.07	Stair, Escalator and Elevator Enclosure	5	EA	\$3,000,000	\$15,000,000	32%	\$4,800,000	30%

7. Systems and Traction Power									
78	50.01	Mainline connection signal system & interlocking	2	EA	\$1,500,000	\$3,000,000	32%	\$960,000	30%
79	50.01	Amtrak Turnouts - Fully signalized	7	EA	\$400,000	\$2,800,000	32%	\$896,000	30%
80	50.02	Lighting	10,100	TF	\$8	\$80,800	32%	\$25,856	30%

8. Mobilization									
81	60.01	Mobilization	1	LS	\$4,750,000	\$4,750,000	32%	\$1,520,000	30%

Totals (Rounded) \$100,216,000 \$32,069,000

9. Professional Services (Engineering & Admin.) Breakdown									
82	80.01	Preliminary Engineering		4%	\$4,008,625				
83	80.02	Final Design		6%	\$6,012,938				
84	80.03	Project management for Design Construction		5%	\$5,010,781				
85	80.04	Construction Administration & Management		8%	\$8,017,250				
86	80.05	Insurance		2%	\$2,004,313				
87	80.06	Legal: Permits: Review Fees by other agencies, cities etc.		3%	\$3,006,469				
88	80.07	Survey, Testing, Investigation, Inspection		3%	\$3,006,469				
89	80.08	Start-up Cost & Agency Force Account Work		1%	\$1,002,156				
				32%	\$32,069,000				

10. Contingency									
90	90.01	Unallocated contingency		30%	\$30,065,000				

February 2009

Unallocated Contingency	Detail Total	Item Cost Total
\$15,000	\$81,000	
\$29,625	\$159,975	
\$26,625	\$143,775	
\$225,000	\$1,215,000	
\$26,100	\$140,940	
\$34,800	\$187,920	
\$87,000	\$469,800	
\$780,000	\$4,212,000	
\$75,000	\$405,000	
\$171,000	\$923,400	
\$210,000	\$1,134,000	
\$150,000	\$810,000	
\$7,650	\$41,310	
\$15,000	\$81,000	
\$63,000	\$340,200	
\$52,500	\$283,500	
\$4,500	\$24,300	
\$56,160	\$303,264	
\$5,400	\$29,160	
\$295,500	\$1,595,700	
\$3,000	\$16,200	
\$15,000	\$81,000	
\$75,000	\$405,000	
		\$8,076,200
\$75,000	\$405,000	
\$750,000	\$4,050,000	
\$15,000	\$81,000	
\$150,000	\$810,000	
		\$3,300,000
\$3,150	\$17,010	
\$88,200	\$476,280	
\$4,500	\$24,300	
\$828,750	\$4,475,250	
\$146,250	\$789,750	
\$216,000	\$1,166,400	
\$135,000	\$729,000	
\$63,000	\$340,200	
\$184,800	\$997,920	
		\$5,565,500
\$1,560,000	\$8,424,000	
\$472,500	\$2,551,500	
\$50,400	\$272,160	

		\$6,943,000
\$138,750	\$749,250	
\$555,000	\$2,997,000	
\$1,134,000	\$6,123,600	
\$79,800	\$430,920	
\$36,000	\$194,400	
\$162,000	\$874,800	
\$10,800	\$58,320	
\$36,000	\$194,400	
\$207,000	\$1,117,800	
\$70,980	\$383,292	
\$684,000	\$3,693,600	
\$1,500	\$8,100	
\$1,500	\$8,100	
\$18,000	\$97,200	
\$10,800	\$58,320	
\$41,400	\$223,560	
\$10,800	\$58,320	
		\$10,661,100

\$2,400,000	\$12,960,000	
\$1,500,000	\$8,100,000	
\$900,000	\$4,860,000	
\$225,000	\$1,215,000	
\$150,000	\$810,000	
\$310,800	\$1,678,320	
\$444,000	\$2,397,600	
\$1,221,000	\$6,593,400	
\$108,000	\$583,200	
\$234,900	\$1,268,460	
\$243,000	\$1,312,200	
\$499,500	\$2,697,300	
\$561,000	\$3,029,400	
\$1,197,000	\$6,463,800	
\$232,500	\$1,255,500	
\$1,050,000	\$5,670,000	
\$270,000	\$1,458,000	
\$90,000	\$486,000	
\$150,000	\$810,000	
\$225,000	\$1,215,000	
\$4,500,000	\$24,300,000	
		\$55,039,000
\$900,000	\$4,860,000	
\$840,000	\$4,536,000	
\$24,240	\$130,896	
		\$5,880,800
\$1,425,000	\$7,695,000	
		\$4,750,000
\$30,065,000	\$162,349,000	\$ 100,216,000

UNION DEPOT ENVIRONMENTAL ASSESSMENT

Capital Costs - Preliminary Estimate

Option 2: LRT Costs not Included

Miscellaneous Assumptions

Union Depot Structure is anticipated to be structurally sound. If structure is found to be deficient then cost estimate is inapplicable.

All costs are in 2009 dollars.

Assumed 30% contingency includes both allocated and unallocated amounts.

Concourse costs exclude demolition.

Concourse costs exclude elevator, escalator and stairways, as well as structures to hold these elements.

Concourse costs exclude all ground/site work, paving, utilities, etc.

Concourse costs exclude major structural beam or column replacement.

Ramp construction requires road closure on Broadway south of Kellogg.

New ramp structure required for grade transition between Broadway and Union Depot structure.

Track will require direct fixation on all structures and ballasted track off the structure.

Removal of material in parking lot east of Broadway not included in this estimate. Assumed that existing bituminous can be reused as base course.

Line Item Assumptions

- 5 Seven columns removed along Kellogg & 51 columns removed at ramp structure. Assume we cannot reuse columns for ramp structure.
- 6 Seven footings removed along Kellogg & 51 footings removed at ramp structure. Assume we cannot reuse footings for ramp structure.
- 7 Includes ramp structure and deck section along bike trail on Kellogg.
- 8 Assume 3.5' average depth of fill on the upper deck that requires landfill disposal.
- 10 Includes rail along upper deck including west edge (partial), north edge, east edge, south edge (partial) & 300' on east deck.
- 12 Includes bike trail on Kellogg.
- 13 Includes parking deck & parking lot. Includes bike trail on Kellogg.
- 14 Assumes 5' stair height.
- 18 Limits of intersection extend to adjacent curb radius at next street. Includes demo, bit and road rise.
- 19 Includes bituminous only Broadway south of Kellogg.
- 20 Includes bituminous parking deck & parking lot. Reuse of existing bituminous for aggregate base.
- 21 Assumes medium level of signing and striping.
- 24 Assume pipe replacement required due to ramp construction.
- 25 Assumed to be located in east parking lot area.
- 26 Includes additional storm sewer due required to road rise.
- 27 Includes removal and replacement of storm sewer.
- 28 Includes 150' for each mainline turnout.
- 33 Includes track grading.
- 38 Retaining Wall average height is 14'. Includes walls on both sides of site entrance ramp. Does not include retaining wall improvements along Shepard Road.
- 39 Retaining Wall average height is 5'. Located adjacent to Kellogg Street, along bike trail where deck will be removed.
- 40 Assume Deck area = 389,636 - 18,000 (for ramp structure) = 371,636 or approx. 370,000.
- 41 Assume Deck area = 389,636 - 18,000 (for ramp structure) = 371,636 or approx. 370,000.
- 42 Lower deck/lot assumed to have 252,000SF of surface area.
- 43 Assume that entire ceiling and east, west and south walls will be cleaned and painted.
- 47 Assume 400 Columns with 10 Sq. Ft. of patching. Assume Column 20' X 10' or 200 Sq.Ft area per column X 683 Columns = 136,600.
- 48 Assume 700 Column Caps with 32 Sq.Ft of patching. Assume Column 20' X 10' or 200 Sq.Ft area per column X 683 Columns = 136,600.
- 54 Three columns on the track level deck need to be replaced due to their condition.
- 55 Fourteen steel columns on the Kellogg Street level and 55 steel columns on the Track level need to be blast cleaned and painted.
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- 70 Assume ductwork is internal.
- 71 Assume each unit includes demolition, MEP, electrical switch gear, ductwork and fans.
- 72 Includes two stacked escalators.
- 78 Assumed to be a Control Point.
- 81 Estimated at 5% of total cost.