

Central Omaha Transit Alternatives Analysis (AA)  
Capital Cost Estimate (All Costs Shown in Thousands)

SCC	Item	Unit Cost (2013)	Unit	Contingency	Escalation to Construction	Alternative 2 Modified		Alternative 2 Modified		Alternative 3 Modified		Alternative 3 Modified	
						BRT Couplet		BRT Contraflow		Streetcar Couplet		Streetcar Contraflow	
						Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount
<b>10</b>	<b>GUIDEWAY &amp; TRACK ELEMENTS</b>						\$ 2,340		\$ 5,040		\$ 20,467		\$ 20,006
10.02	Guideway: At-grade semi-exclusive (BRT)	\$ 2,000	Per mile	20%	0%	0.00	\$ -	1.50	\$ 3,600	0.00	\$ -	0.00	\$ -
10.02	Guideway: At-grade semi-exclusive (Streetcar)	\$ 2,000	Per mile	20%	0%	0.00	\$ -	0.00	\$ -	0.00	\$ -	1.50	\$ 3,600
10.03	Guideway: At-grade mixed traffic (BRT)	\$ 75	Per stop	20%	0%	26	\$ 2,340	16	\$ 1,440	0	\$ -	0	\$ -
10.03	Guideway: At-grade mixed traffic (Streetcar)	\$ 2,000	Per mile	20%	0%	0.00	\$ -	0.00	\$ -	6.44	\$ 15,456	4.78	\$ 11,472
10.10	Track: Embedded	\$ 400	Per mile	20%	0%	0	\$ -	0	\$ -	6.44	\$ 3,091	6.28	\$ 3,014
10.12	Track: Special (switches, turnouts)	\$ 200	Per switch, turnout	20%	0%	0	\$ -	0	\$ -	8	\$ 1,920	8	\$ 1,920
<b>20</b>	<b>STATIONS, STOPS, TERMINALS, INTERMODAL</b>						\$ 11,640		\$ 11,640		\$ 10,920		\$ 10,920
20.01	At-grade stop: Large	\$ 400	Per stop	20%	0%	18	\$ 8,640	18	\$ 8,640	14	\$ 6,720	14	\$ 6,720
20.01	At-grade stop: Small	\$ 250	Per stop	20%	0%	10	\$ 3,000	10	\$ 3,000	14	\$ 4,200	14	\$ 4,200
<b>30</b>	<b>SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS</b>						\$ -		\$ -		\$ 10,800		\$ 10,800
30.02	Light maintenance facility and yard track	\$ 1,500	Per streetcar	20%	0%	0	\$ -	0	\$ -	5	\$ 9,000	5	\$ 9,000
30.02	Share of existing maintenance facility	\$ 200	Per bus	10%	0%	0	\$ -	0	\$ -	0	\$ -	0	\$ -
30.05	Lead track	\$ 1,500	Lump sum	20%	0%	0	\$ -	0	\$ -	1	\$ 1,800	1	\$ 1,800
<b>40</b>	<b>SITWORK &amp; SPECIAL CONDITIONS</b>						\$ 439		\$ 430		\$ 10,481		\$ 10,221
40.01	Demolition, clearing, earthwork	\$ 250	Per mile	20%	0%	0	\$ -	0	\$ -	6.44	\$ 1,932	6.28	\$ 1,884
40.02	Site utilities, utility relocation	\$ 1,000	Per mile	30%	0%	0	\$ -	0	\$ -	6.44	\$ 8,372	6.28	\$ 8,164
40.06	Pedestrian/bike access and accommodation, landscaping	\$ 25	Per mile	10%	0%	15.96	\$ 439	15.64	\$ 430	6.44	\$ 177	6.28	\$ 173
<b>50</b>	<b>SYSTEMS</b>						\$ 2,683		\$ 3,292		\$ 19,896		\$ 20,188
50.01	Train control and signals	\$ 150	Per mile	20%	0%	0	\$ -	0	\$ -	6.44	\$ 1,159	6.28	\$ 1,130
50.01	Automatic train protection at freight railroad spur line crossing	\$ 2,000	Lump sum	30%	0%	0	\$ -	0	\$ -	0	\$ -	0	\$ -
50.02	Traffic signals: Full replacement	\$ 150	Per intersection	20%	0%	0	\$ -	2	\$ 360	1	\$ 180	3	\$ 540
50.02	Traffic signals: Major modifications	\$ 50	Per intersection	20%	0%	2	\$ 120	10	\$ 600	1	\$ 60	9	\$ 540
50.02	Traffic signals: Minor modifications	\$ 15	Per intersection	20%	0%	4	\$ 72	4	\$ 72	4	\$ 72	4	\$ 72
50.02	Traffic signal priority	\$ 30	Per intersection	10%	0%	23	\$ 759	16	\$ 528	21	\$ 693	14	\$ 462
50.03	Traction power supply: Substations	\$ 900	Per substation	20%	0%	0	\$ -	0	\$ -	4	\$ 4,320	4	\$ 4,320
50.04	Traction power distribution: Poles and catenary	\$ 1,500	Per mile	20%	0%	0	\$ -	0	\$ -	6.44	\$ 11,592	6.28	\$ 11,304
50.05	Communications	\$ 50	Lump sum	20%	0%	1	\$ 60	1	\$ 60	1	\$ 60	1	\$ 60
50.06	Fare collection system and equipment	\$ 40	Per unit	10%	0%	38	\$ 1,672	38	\$ 1,672	40	\$ 1,760	40	\$ 1,760
<b>CONSTRUCTION SUBTOTAL (10-50)</b>							\$ 17,102		\$ 20,402		\$ 72,565		\$ 72,136
<b>60</b>	<b>RIGHT-OF-WAY, LAND, EXISTING IMPROVEMENTS</b>						\$ 300		\$ 300		\$ 900		\$ 900
60.01	Purchase or lease of real estate: Curb cuts and substations	\$ 50	Each	20%	0%	5	\$ 300	5	\$ 300	15	\$ 900	15	\$ 900
<b>70</b>	<b>VEHICLES</b>						\$ 8,800		\$ 8,800		\$ 27,000		\$ 27,000
70.04	Bus (Articulated)	\$ 1,000	Per bus	10%	0%	8	\$ 8,800	8	\$ 8,800	0	\$ -	0	\$ -
70.05	Streetcar (Modern)	\$ 4,500	Per streetcar	20%	0%	0	\$ -	0	\$ -	5	\$ 27,000	5	\$ 27,000
<b>80</b>	<b>PROFESSIONAL SERVICES</b>	<b>30%</b>					\$ 5,131		\$ 6,121		\$ 21,769		\$ 21,641
80.01	Preliminary engineering	3%	Lump sum				\$ 513		\$ 612		\$ 2,177		\$ 2,164
80.02	Final design	8%	Lump sum				\$ 1,368		\$ 1,632		\$ 5,805		\$ 5,771
80.03	Program management for design and construction	6%	Lump sum				\$ 1,026		\$ 1,224		\$ 4,354		\$ 4,328
80.04	Construction administration and management	6%	Lump sum				\$ 1,026		\$ 1,224		\$ 4,354		\$ 4,328
80.05	Professional liability	3%	Lump sum				\$ 513		\$ 612		\$ 2,177		\$ 2,164
80.06	Legal, permits, review fees	1%	Lump sum				\$ 171		\$ 204		\$ 726		\$ 721
80.07	Survey, testing, investigation, inspection	1%	Lump sum				\$ 171		\$ 204		\$ 726		\$ 721
80.08	Start up	2%	Lump sum				\$ 342		\$ 408		\$ 1,451		\$ 1,443
<b>SUBTOTAL (10-80)</b>							\$ 31,332		\$ 35,623		\$ 122,234		\$ 121,676
<b>90</b>	<b>PROJECT RESERVE (UNALLOCATED CONTINGENCY)</b>	<b>10%</b>					\$ 3,133		\$ 3,562		\$ 12,223		\$ 12,168
<b>SUBTOTAL (10-90)</b>							\$ 34,466		\$ 39,185		\$ 134,457		\$ 133,844
<b>100</b>	<b>FINANCE CHARGES</b>												
<b>TOTAL (10-100)</b>							\$ 34,466		\$ 39,185		\$ 134,457		\$ 133,844
<b>COST PER MILE</b>						7.98	\$ 4,319	7.82	\$ 5,011	3.22	\$ 41,757	3.06	\$ 43,740

Assumptions (by line item)

Farnam contraflow BRT guideway 31st-10th St  
Farnam contraflow Streetcar guideway 31st-10th St  
Concrete pad at BRT stops  
Streetcar guideway cost does not include track  
Does not specify rail type  
2 end of line, 2 MSF, 4 misc

See stop hierarchy tab  
See stop hierarchy tab

All inclusive within MSF site  
Share of existing Metro facility  
MSF site location TBD

Does not include in-kind contributions

See traffic signal tab  
See traffic signal tab  
See traffic signal tab  
See traffic signal priority tab  
Minimum 1 substation per mile

See Fare Collection tab

Assumes no ROW needed for MSF

Articulated bus  
Modern streetcar

General Assumptions

Distances do not distinguish between route mile and track mile  
Distances used are the same as the O&M cost estimate  
Assumes cost for two-way conversion of Farnam St between 42nd and 36th St is paid for by others  
Assumes maintenance and storage facility location to be determined in Phase 2

## Stop Hierarchy

Stop	Alt 2 Mod	Alt 3 Mod
	BRT	Streetcar
Westroads TC	n/a	n/a
90th/Dodge	L	n/a
84th/Dodge	L	n/a
72nd/Dodge	L	n/a
62nd/Dodge	L	n/a
50th/Dodge	S	n/a
42nd/Farnam	L	L
40th/Farnam	n/a	S
36th/Farnam	S	S
33rd/Farnam	L	L
31st/Farnam	L	L
26th/Farnam/Harney	n/a	S
24th/Farnam/Harney	S	S
20th/Farnam/Harney	S	S
16th/Farnam/Harney	L	L
13th/Farnam/Harney	L	L
11th/Farnam/Harney	S	S
Capitol/10th	n/a	S
Cass/10th	n/a	L
12th Fahey	n/a	L
16th Fahey	n/a	n/a
<b>Total</b>		
L = Large	16	14
S = Small	10	14

## Traffic Signals

Intersection	Alt 2 Mod	Alt 2 Mod	Alt 3 Mod	Alt 3 Mod
	BRT	BRT CF	Streetcar	Streetcar CF
90th/Dodge				
84th/Dodge				
72nd/Dodge	L	L		
62nd/Dodge				
Farnam/Happy Hollow/Dodge				
50th/Dodge				
42nd/Farnam	L	L	F	F
33rd/Farnam				
31st	S	S	S	S
Freeway #1	S	S	S	S
Freeway #2	S	S	S	S
24th Ave/Farnam/Harney		F		F
24th St/Farnam/Harney		F		F
20th/Farnam		L		L
19th/Farnam		L		L
18th/Farnam		L		L
17th/Farnam		L		L
16th/Farnam		L		L
15th/Farnam		L		L
14th/Farnam		L		L
13th/Farnam		L		L
10th/Farnam/Harney	S	S	S	S
Douglas/10th				
Dodge/10th				
Capitol/10th				
Cass/10th				
Fahey/10th			L	L
<b>Total</b>				
F = Full Replacement	0	2	1	3
L = Major modification	2	10	1	9
S = Minor modification	4	4	4	4

### Traffic Signal Priority

Intersection	Alt 2 Mod	Alt 2 Mod	Alt 3 Mod	Alt 3 Mod
	BRT	BRT CF	Streetcar	Streetcar CF
90th/Dodge	T	T	n/a	n/a
84th/Dodge	T	T	n/a	n/a
72nd/Dodge	T, Q	T, Q	n/a	n/a
62nd/Dodge	T	T	n/a	n/a
Farnam/Happy Hollow/Dodge	T	T	n/a	n/a
50th/Dodge	T	T	n/a	n/a
42nd/Farnam	T, Q	T, Q	T	T
33rd/Farnam	T	T	T	T
31st/Farnam	T	T	T	T
Freeway #1	T, T	T	T, T	T
Freeway #2	T, T	T	T, T	T
24th/Farnam/Harney	T, T	T	T, T	T
20th/Farnam/Harney	T, T	T	T, T	T
16th/Farnam/Harney	T, T	T	T, T	T
13th/Farnam/Harney	T, T	T	T, T	T
10th/Farnam/Harney	T, T	T	T, T	T
Douglas/10th	n/a	n/a	T	T
Dodge/10th	n/a	n/a	T	T
Capitol/10th	n/a	n/a	T	T
Fahey/10th	n/a	n/a	T	T
<b>Total</b>				
T = Traffic Signal Priority	23	16	21	14
Q = Queue Jump	2	2	0	0

**Fare Collection**

	<b>Alt 2 Mod</b>	<b>Alt 3 Mod</b>
<b>Stop</b>	<b>BRT</b>	<b>Streetcar</b>
Westroads TC	2	n/a
90th/Dodge	2	n/a
84th/Dodge	2	n/a
72nd/Dodge	2	n/a
62nd/Dodge	2	n/a
50th/Dodge	2	n/a
42nd/Farnam	2	2
40th/Farnam	n/a	2
36th/Farnam	2	2
33rd/Farnam	4	4
31st/Farnam	4	4
26th/Farnam/Harney	n/a	2
24th/Farnam/Harney	2	2
20th/Farnam/Harney	2	2
16th/Farnam/Harney	4	4
13th/Farnam/Harney	4	4
11th/Farnam/Harney	2	2
Capitol/10th	n/a	2
Cass/10th	n/a	4
12th Fahey	n/a	4
16th Fahey	n/a	n/a
<b>Total</b>	<b>38</b>	<b>40</b>