



Memo

TO: Public Works Committee
FROM: Ed Andrews, Public Works Director
DATE: June 1, 2018
SUBJECT: Lawndale Ave Engineering

The following memorandum was presented and discussed with the Public Works Committee (PWC) on 6-4-18. It was the consensus of the PWC to advance this discussion to the Committee of the Whole.

The engineering design and start of a portion of the reconstruction of Lawndale Ave from Walnut Street to Knollcrest Drive was requested to be revisited for this year as a representative project / template for reconstruction for portions of the east end of town.

This project is unique in that it will be one of the first City projects to address full pavement reconstruction and the renewal of underground utilities such as the 4" water main and sanitary sewer. This project would also serve as the template for addressing aging water services and sanitary laterals.

It is also planned to upgrade portions of the storm sewer to include sump collection lines so that any sump pump connections to the sanitary sewer could be redirected appropriately.

Staff has requested that Mohr & Kerr Engineering prepare a proposal for discussion based on similar projects they have performed for the Village of Morton and Dunlap.

Consideration of advancing this proposal to a formal contract is being brought before Committee of the Whole for review and discussion.

cc: File



Mohr & Kerr Engineering & Land Surveying, P.C
Man Hour Estimate
City of Washington - Lawndale Ave Reconstruction
 8/4/2017

Scope Item	Professional Engineer			Professional Land Surveyor			Senior Design Engineer			Engineering Technician			1 Man Survey Crew			Senior Construction Inspector			
	Hours	Rate	Total	Hours	Rate	Total	Hours	Rate	Total	Hours	Rate	Total	Hours	Rate	Total	Hours	Rate	Total	
2.5 Post Office Coordination	6	\$112.00	\$672.00		\$112.00	\$0.00		\$101.00	\$0.00			\$0.00		\$118.00	\$0.00			\$76.00	\$672.00
2.6 Permits	12	\$112.00	\$1,344.00		\$112.00	\$0.00	4	\$101.00	\$404.00			\$0.00		\$118.00	\$0.00			\$76.00	\$1,748.00
2.7 Survey	4	\$112.00	\$448.00	40	\$112.00	\$4,480.00		\$101.00	\$0.00			\$0.00	60	\$118.00	\$7,080.00			\$76.00	\$11,560.00
2.8 Project Schedule	4	\$112.00	\$448.00		\$112.00	\$0.00		\$101.00	\$0.00			\$0.00		\$118.00	\$0.00			\$76.00	\$448.00
2.9 Submittals	4	\$112.00	\$448.00		\$112.00	\$0.00		\$101.00	\$0.00	6	\$69.00	\$414.00		\$118.00	\$0.00			\$76.00	\$862.00
3.1 Project Development Report	40	\$112.00	\$4,480.00		\$112.00	\$0.00	20	\$101.00	\$2,020.00			\$0.00		\$118.00	\$0.00			\$76.00	\$6,500.00
3.2 Specifications Preparation	24	\$112.00	\$2,688.00		\$112.00	\$0.00	4	\$101.00	\$404.00			\$0.00		\$118.00	\$0.00			\$76.00	\$3,092.00
3.3 Electronic Delivery	2	\$112.00	\$224.00		\$112.00	\$0.00	4	\$101.00	\$404.00			\$0.00		\$118.00	\$0.00			\$76.00	\$404.00
4.1 Cover Sheet	16	\$112.00	\$1,792.00		\$112.00	\$0.00	4	\$101.00	\$404.00			\$0.00		\$118.00	\$0.00			\$76.00	\$2,268.00
4.2 Schedule of Quantities	2	\$112.00	\$224.00		\$112.00	\$0.00	24	\$101.00	\$2,424.00			\$0.00		\$118.00	\$0.00			\$76.00	\$2,628.00
4.3 Typical Sections	4	\$112.00	\$448.00		\$112.00	\$0.00	8	\$101.00	\$808.00			\$0.00		\$118.00	\$0.00			\$76.00	\$1,212.00
4.4 General Notes	4	\$112.00	\$448.00		\$112.00	\$0.00	4	\$101.00	\$404.00			\$0.00		\$118.00	\$0.00			\$76.00	\$828.00
4.5 Summary of Quantities	16	\$112.00	\$1,792.00		\$112.00	\$0.00	54	\$101.00	\$5,454.00			\$0.00	12	\$69.00	\$828.00			\$76.00	\$6,346.00
4.6 Plan & Profiles	8	\$112.00	\$896.00		\$112.00	\$0.00	16	\$101.00	\$1,616.00			\$0.00	20	\$69.00	\$1,380.00			\$76.00	\$1,680.00
4.7 Intersection Ramp Layouts	4	\$112.00	\$448.00		\$112.00	\$0.00	12	\$101.00	\$1,212.00			\$0.00	8	\$69.00	\$552.00			\$76.00	\$1,864.00
4.8 Misc Details	2	\$112.00	\$224.00		\$112.00	\$0.00	6	\$101.00	\$606.00			\$0.00	6	\$69.00	\$414.00			\$76.00	\$1,030.00
4.9 Highway Standards	16	\$112.00	\$1,792.00		\$112.00	\$0.00	32	\$101.00	\$3,232.00			\$0.00	6	\$69.00	\$414.00			\$76.00	\$3,064.00
4.11 Traffic Control Plans	6	\$112.00	\$672.00		\$112.00	\$0.00	12	\$101.00	\$1,212.00			\$0.00	12	\$69.00	\$828.00			\$76.00	\$1,660.00
4.12 Utility Adjustment Plans	4	\$112.00	\$448.00		\$112.00	\$0.00	4	\$101.00	\$404.00			\$0.00	4	\$69.00	\$276.00			\$76.00	\$548.00
4.13 Erosion Control Plan/SWPPP	4	\$112.00	\$448.00		\$112.00	\$0.00	12	\$101.00	\$1,212.00			\$0.00	12	\$69.00	\$828.00			\$76.00	\$1,660.00
5.1 Drainage Analysis	4	\$112.00	\$448.00		\$112.00	\$0.00	24	\$101.00	\$2,424.00			\$0.00	24	\$69.00	\$1,656.00			\$76.00	\$2,872.00
6 Utility Coordination	16	\$112.00	\$1,792.00		\$112.00	\$0.00		\$101.00	\$0.00			\$0.00		\$118.00	\$0.00			\$76.00	\$1,792.00
TOTAL			\$21,728.00			\$4,480.00			\$24,442.00			\$4,830.00			\$7,080.00				\$62,560.00

7 Construction	66	\$112.00	\$7,392.00		\$112.00	\$0.00		\$101.00	\$0.00			\$0.00		\$118.00	\$0.00			\$76.00	\$50,160.00
Assume 22 week Construction Schedule @ 75% Utilization																			
TOTAL			\$29,120.00			\$4,480.00			\$24,442.00			\$4,830.00			\$7,080.00				\$67,552.00

**City of Washington
Lawndale Concept Estimate of Cost
Mohr & Kerr Engineer & Land Surveying, PC
8/1/2017**

Item	Unit	Quan.	Engineer's Estimate	
			Unit Price	Total
Earth Excavation	Cu. Yd.	1,562	\$33.00	\$51,546.00
Undercutting Subbase	Cu. Yd.	118	\$34.10	\$4,023.80
Aggregate Base Course CA-6 for Subbase Repair	Ton	242	\$29.70	\$7,187.40
Geotechnical Fabric for Base Repair	Sq. Yd.	236	\$2.75	\$649.00
Furnishing & Placing Top Soil, 4"	Sq. Yd.	2,400	\$8.25	\$19,800.00
Seeding, Cl. 1A	Acre	0.50	\$11,000.00	\$5,500.00
Storm Sewer Structure Protection	Each	22	\$286.00	\$6,292.00
Inlet Protection / Beaver Dams	Each	3	\$236.50	\$709.50
Stone RipRap, RR-4	Sq. Yd.	40	\$110.00	\$4,400.00
Geotechnical Fabric for Ground Stabilization	Sq. Yd.	4,735	\$2.75	\$13,021.25
Aggregate Base Course, Ty. B, 9"	Sq. Yd.	4,735	\$16.50	\$78,127.50
Bituminous Materials (Prime Coat)	Gallon	1,657	\$4.95	\$8,202.15
Poly. Bituminous Materials (Prime Coat)	Gallon	237	\$6.60	\$1,564.20
Hot-Mix Asphalt Bind. Cse., IL-19.0, N50	Ton	398	\$126.50	\$50,347.00
Poly. Hot-Mix Asphalt Surf. Cse., Mix D, N50	Ton	398	\$132.00	\$52,536.00
P.C.C. Sidewalk, 4"	Sq. Yd.	710	\$71.50	\$50,765.00
P.C.C. Driveway Pavement, 6"	Sq. Yd.	562	\$77.00	\$43,274.00
Comb. Conc. Curb & Gutter, Type M-6.12	Feet	3,014	\$35.20	\$106,092.80
Driveway Pavement Removal	Sq. Yd.	562	\$16.50	\$9,273.00
Combination Curb & Gutter Removal	Feet	3,014	\$10.45	\$31,496.30
Connect to Existing Water Main	Each	5	\$700.00	\$3,500.00
8" Ductile Iron, Water Main (Fittings Incidental)	Feet	1,718	\$40.00	\$68,720.00
Fire Hydrant w/ 6" Gate Valve and Valve Box	Each	3	\$5,000.00	\$15,000.00
Fire Hydrant Removal	Each	3	\$600.00	\$1,800.00
Gate Valve and Valve Box	Each	6	\$1,000.00	\$6,000.00
Corporation Stop, 1 1/2" and Box	Each	31	\$125.00	\$3,875.00
Water Service, 1 1/2"	Feet	823	\$12.00	\$9,876.00
Trench Backfill (Storm)	Cu. Yd.	1,200	\$55.00	\$66,000.00
Storm Sewer Removal	Feet	1,146	\$49.50	\$56,727.00
Storm Sewers, Cl. A, Type 2, RCP, 12"	Feet	645	\$88.00	\$56,760.00
Storm Sewers, Cl. A, Type 2, RCP, 18"	Feet	1,000	\$100.00	\$100,000.00
Inlet Manhole, 4' Dia., Type G-1	Each	4	\$4,180.00	\$16,720.00
MH to be Adjusted w/ New Ty. 1 Fr. & Gr., C.L.	Each	3	\$1,650.00	\$4,950.00
Inlet, Type G-1	Each	18	\$3,960.00	\$71,280.00
P.R.C.F.E.S., 18"	Each	1	\$880.00	\$880.00
Removing End Sections	Each	2	\$400.00	\$800.00
Removing Inlets	Each	9	\$495.00	\$4,455.00
Removing Manholes	Each	9	\$1,210.00	\$10,890.00
Sump Drains, PVC, SDR 26	Feet	822	\$15.00	\$12,330.00
Trench Backfill (Sanitary)	Cu. Yd.	0	\$66.00	\$0.00
San. Manholes, 4' Dia., Ty. 1 Fr., C.L.	Each	7	\$4,125.00	\$28,875.00
Sanitary Sewer, PVC, SDR 26, 6"	Feet	748	\$99.00	\$74,052.00
Sanitary Sewer, PVC, SDR 26, 8"	Feet	979	\$95.70	\$93,690.30
Sanitary Sewer Tees, 8" x 8" x 6"	Each	31	\$275.00	\$8,525.00
Sanitary Sewer Cleanouts	Each	31	\$682.00	\$21,142.00
Traffic Control & Protection	L. Sum	1	\$10,000.00	\$10,000.00
Subtotal				\$1,291,654.20
5% Design Contingency				\$64,582.71
Total				\$1,356,236.91

Approximate Length = 1600 LF

Est. Cost per Foot = \$847.65 LF

Projected Cost per Mile = \$ 4,475,582

Holland Street Reconstruction

from Market St. to S. Main St

Approx Length = 525'

					Project Total
Sodding, Class 1A	SQ YD	585	\$20.00		\$11,700.00
Supplemental Watering	UNITS	25	\$50.00		\$1,250.00
Topsoil - Furnish & Place 4"	SQ YD	585	\$4.00		\$2,340.00
Pav't Remv'l	SQ YD	598	\$17.50		\$10,463.54
Brick Pavement Remv'l & Salvage	SQ YD	1556	\$10.00		\$15,555.56
Curb Remv'l	FOOT	1050	\$20.00		\$21,000.00
Sidewalk Remv'l	SQ FT	4200	\$2.50		\$10,500.00
Driveway Apron Remv'l	SQ YD	140	\$4.00		\$560.00
Inlet Demolition	EA	4	\$1,250.00		\$5,000.00
Agg Bse Cse - 6"	TON	598	\$35.00		\$20,927.08
HMA Bse Cse - 6"	TON	588	\$100.00		\$58,800.00
HMA Surf Cse - 1.5"	TON	147	\$110.00		\$16,170.00
Brick Paver Installation	SQ FT	5292	\$8.00		\$42,336.00
PCC Sidewalk - 4"	SQ FT	4200	\$5.50		\$23,100.00
ADA Ramps	EA	6	\$2,500.00		\$15,000.00
Comb PCC C&G B6.12 (Machine)	FOOT	1050	\$75.00		\$78,750.00
Storm Sewer - Class A, Type 1	LF	50	\$50.00		\$2,500.00
Trench Backfill	CY	47	\$20.00		\$940.00
Inlets - Type G-1	EA	4	\$5,000.00		\$20,000.00
Inlet Protection	EA	4	\$225.00		\$900.00
Sanitary Sewer - 8" (10' to 15' Deep)	LF	230	\$65.00		\$14,950.00
Sanitary Lateral	EA	9	\$5,000.00		\$45,000.00
Water Main - 6" AWWA C900	LF	525	\$50.00		\$26,250.00
Water Service - 3/4" HDPE	EA	9	\$2,500.00		\$22,500.00
Sump Drain Laterals	EA	9	\$1,500.00		\$13,500.00
Sump Drain Line - 6"	LF	800	\$25.00		\$20,000.00
					\$499,992.18

\$952.37 per LF

Projected Cost per Mile = \$ 5,028,493