

Curb and Gutter Replacement Project Phase I



Prepared for:



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EXECUTIVE SUMMARY

Cheyenne Downtown Development Authority / Main Street Curb and Gutter Replacement Project, Phase I

August 2014



Background

Phase I of the Downtown Development Authority / Main Street (DDA) Curb and Gutter Replacement Project included a visual analysis of the existing curb and gutter and sidewalks in a portion of the Downtown Cheyenne area from Carey Avenue to Warren Avenue and 16th Street (Lincolnway) to 20th Street along both sides of the streets. The DDA is concerned with the condition of these infrastructure items at many locations; although it should be noted that per City of Cheyenne ordinances, the adjacent property owner is responsible for the replacement of these items when in a state of disrepair.

In an attempt to encourage property owners to complete the necessary repairs to the curb and gutter and sidewalks within this project area, the DDA hired BenchMark Engineers, PC to complete an investigation, prepare cost estimates and determine anticipated cost saving to property owners for participating in Phase II (construction) of the recommended improvements. This report summarizes the field investigation, proposed recommendations and cost estimates for the work included within the scope of this phase of this project.

Evaluation

BenchMark completed the visual investigation of the curb and gutter, sidewalks and noted other items within the areas between the building fronts and gutter within the project area to determine the extent of suggested improvements in June 2014. BenchMark staff met with staff from the City of Cheyenne Engineer's Office to determine the extent of damage that typically warrants replacement. Engineering judgments were made throughout the project area to determine if facilities function properly, if pedestrian pathways are accessible, etc. Items and quantities may change from the time of this evaluation to the time of construction document preparation based on improvements made and/or the continual deterioration of facilities, etc.

The roadways in the project area are asphalt or concrete with curb and gutter and parking typically along the sides of the street as parallel parking or 45° angle parking. The street classification varies throughout the project area. Concrete sidewalks are typically present between buildings and the curb. Trees have been planted at many locations between the pedestrian area of the sidewalk and the curb. Pavers and/or stamped and colored concrete has been installed at many locations in the project area behind the curb. Bump-outs are located at many intersections to provide better visibility for pedestrians and vehicles and safer crossings for pedestrians at the intersections. High levels of pedestrian traffic are present within the project area due to the nature of the various uses and availability of parking within the project area.

The general project area is comprised of buildings, streets and sidewalks making for a relatively impervious surface area. Therefore, proper conveyance of storm water is important. Curb and gutter are utilized to provide conveyance of flows from the roadways, and other impermeable surfaces, to the storm sewer network. Damaged, heaved, settled and/or missing curb and gutter do not provide optimum conveyance of storm water flows, especially nuisance flows. Damaged curb and gutter also do not allow for the anticipated transition between the roadway (typically parking area) and sidewalk areas. Sidewalks in the project area are typically close the building front, and steeper or non-pedestrian areas may be located between the "official" sidewalk and curb.

The DDA has a streetscape program in place for new construction and other rehabilitative work within the DDA boundaries. This program includes, but is not limited to, bump-outs at intersections with pavers, pavers behind the bump-outs and curb, and planting trees. Changes to this program include a shift from clay pavers to stamped and colored concrete.

The scope of this project is to identify replacement of curb and gutter and sidewalks to match existing facilities, i.e. not implement the full DDA streetscape plan. Therefore, if the existing curb and gutter is 30 inches wide, it will be replaced with a 30-inch combined curb and gutter section, rather than the standard 24-inch section, which would require additional work in the roadway.

No landscaping improvements are included with this project, however at locations where issues with tree grates were found, those are noted in the summary for the respective parcel. Overall, it is recommended that the property owner discuss issues with trees with an arborist, landscape architect or other professional who is qualified to recommend appropriate measures.



Old coal vaults, which have long since been out of use, may exist within the boundaries of the project limits, however, BenchMark did not investigate the potential location of any of possible vaults. The discovery of vaults during construction of the recommended improvements may incur addition costs and require additional investigations and designs to properly address the vault.

Property boundaries, site addresses and property owner information included in this report are from information available from the online Laramie County GIS data as of June 17, 2014. The aerial shown on the layouts is for reference only, and not be assumed as the property boundary or existing conditions. Parcels with apparent common ownership that are within close proximity to each other were evaluated as one site, and one cost estimate for the combined parcels was prepared.

Definitions and Descriptions

ADA Ramp: Americans With Disabilities Act, also known as a handicap ramp. The *City of Cheyenne and Board of Public Utilities Construction Specifications and Standard Drawings*, current edition, includes standard details for three types of ADA ramps at intersections.



Various existing ramps representative of ramps within project area.

Curb and Gutter, Type A: This is a specific type of combined curb and gutter as defined and detailed within the *City of Cheyenne and Board of Public Utilities Construction Specifications and Standard Drawings*, current edition. This curb and gutter section is designed to provide conveyance of stormwater and prevent vehicles from driving over the curb.



Type A Curb and Gutter

Double Gutter: This is a combined curb and gutter section where the gutter typically extends throughout the width of the parallel parking area adjacent to the travel lane of the roadway. (Example at right.)



Double Gutter

Scaling: The disintegration and loss of concrete wearing surface, is a progressive process. This is typically caused by surface reaction from deicing materials, repetitive freezing and thawing cycles or weakened surface caused by over-finishing.



Scaling

Spalling: A breakdown or disintegration of concrete slab edges at joints or cracks, usually resulting in the removal of sound concrete. This is typically caused by a breakdown of pavement joint edges from traffic action and progressive destruction of the surface adjacent to the damage; possibly weakening of the surface caused by over-finishing of the concrete slab at the joint.



Spalling

Exclusions

19th Street and around ADA ramps at intersections with 19th Street were not included within the project due to a project currently in the planning phase by the City Engineer's Office. It is anticipated this project will be a major rehabilitation or reconstruction of 19th Street, including the area between Carey Avenue and Warren Avenue and will address issues with curb and gutter, sidewalks, ADA ramps, and many other infrastructure items. Additionally, the Wyoming Department of Transportation (WYDOT) has a project planned for 16th Street from west of the intersection at Capitol to west of the intersection of Warren. This project will address the roadway, curb and gutter and ADA ramps, but not sidewalks.

The two properties southwest of the intersection of Central Avenue and 19th Street (33 and 34) were excluded from the site investigations and cost estimate since significant renovations are taking place at the facilities. Work included with the renovation includes site improvements, as needed, to the curb and gutter and sidewalks. Additionally, at the time of this report the extent of improvements or schedule for completion of improvements / repair work is not known for three properties on Central Avenue between 19th and 20th streets (13, 14 and 16). Therefore, the areas within the scope of this project were inspected, recommendations are provided and a cost estimate was prepared.

Jurisdiction

Improvements within the project area will require approval from the City Engineer's Office for the entire area. Improvements in Warren Avenue, Central Avenue and Lincolnway will require approval from WYDOT.

Notes Regarding Replacement Work

Any work within City Rights-of-Way will require approval and a permit for the work. These improvements will be required to follow the *City of Cheyenne and Board of Public Utilities Construction Specifications, and Standard Drawings*, current edition. Staff from the Engineering Office do not want curb and gutter to be saw cut for removal and replacement. Therefore, curb and gutter replacement measurements were taken at existing joints, however saw cutting may be required at fillets. Most sidewalk measurements were taken at joints, however a few removal and replacement quantities are based on saw cutting an existing portion, rather than the entire slab. Expansion joints will be required per City Standards. Replacement of curb and gutter will require dowels or keyways. It will not be required that sidewalks be doweled.

Currently, it is the practice of the City Engineer's Office to eliminate or otherwise remove double gutters when road reconstruction / rehabilitation projects are undertaken. However, there are locations where the double gutters are in a state of extreme disrepair and the DDA requested a potential option to address these items. Therefore, the removal and replacement of the double gutter under this project includes the removal of the curb and portion of the gutter with the replacement being an outfall curb. This would be similar to what is located on the west side of Carey Avenue between 19th and 20th Streets. The remaining portion of double gutter (from the new edge of gutter to the edge of the roadway) is not addressed with this project, as it is located within the roadway. If areas with double gutters are included in a future phase of this project, additional discussions with the City Engineer's Office may be needed to determine if the proposed improvements are best suited for the specific area and conditions.

It is not known how any historical features may be impacted by the proposed improvements. Additional discussions may be needed prior to the removal or adjustment of any historical features.



Cost Estimate

Cost estimates were prepared for the suggested improvements listed with each respective parcel. The following table is a summary of the suggested improvements, quantities and cost:

Item Description	Unit	Quantity (Estimate)	Unit Price (Estimate) (\$)	Total (\$)
<i>Shared Items</i>				
Mobilization, Bonds and Insurance, Traffic Control and Site Safety, and Quality Control Testing	LS	66	1305.00	86,130.00
<i>Shared Items Subtotal:</i>				86,130.00
<i>Repair Items</i>				
Asphalt Patch, 4", incl. 6" Crushed Base, Grading "W"	SF	1339	6.50	8703.50
Remove and Replace Curb and Gutter, Type A, 24", incl. 6" Crushed Base, Grading "W"	LF	400	28.50	11,400.00
Remove and Replace Curb and Gutter, Type A, 30", incl. 6" Crushed Base, Grading "W"	LF	2112.17	33.00	69,701.61
Remove and Replace Curb and Gutter, Type A, 36", incl. 6" Crushed Base, Grading "W"	LF	129	39.50	5095.50
Remove and Replace Curb and Gutter, Type A, 42", incl. 6" Crushed Base, Grading "W"	LF	48	45.00	2160.00
Remove Double Gutter, Place Curb and Gutter, Type A, 24", Outflow, incl. 6" Crushed Base, Grading "W"	LF	338	29.00	9802.00
Remove and Reset Pavers	SF	448	13.00	5824.00
Install New Pavers	SF	58.5	22.00	1287.00
Remove and Replace Concrete Sidewalk, 4", incl. 4" Crushed Base, Grading "W"	SF	5378.50	7.50	40338.75
Remove and Reset Sandstone Sidewalk	SF	470	20.00	9400.00
Remove and Reset Flagstone Sidewalk	SF	258	20.00	5160.00
Remove and Reset Sidewalk Chase	SF	10.5	100.00	1050.00
Remove and Replace Fillet, 8", incl. 6" Crushed Base, Grading "W"	SF	468	12.00	5616.00
Remove and Replace ADA Ramp, incl. Detectable Warning Plates, Fillet, 6" Crushed Base, Grading "W"	EA	7.5	2350.00	17,625.00
Remove and Reset Sign	EA	2	400.00	800.00
Remove and Reset Bench	EA	1	650.00	650.00
Remove and Reset Bike Rack	EA	1	400.00	400.00
Unforeseen Items / Contingency (10%)	%		19,343.88	19,343.88
<i>Repair Item Subtotal:</i>				214,514.74
Total Estimated Construction Cost:				300,644.74

Unit prices are based on information available from City of Cheyenne from similar projects and local contractors for the specific improvements. It is important to remember that the actual prices may vary



based on the time of year the work is to be completed, and that prices for the various items vary between contractors. Additionally, weather may impact costs; if cold-weather protection is needed for concrete, additional costs may be incurred. This cost estimate, and the cost estimates prepared for each parcel, or combination of parcels, are not guaranteed. The cost estimates prepared for this project do not include replacing pavers with stamped, colored concrete. The feasibility of this option will be based on the specific area, and if this is an appropriate option.

This cost estimate assumes that the work (or a significant portion of the work) will to be completed as one project, with one owner, i.e. the DDA, rather than each property owner. The costs associated with Mobilization, Bonds and Insurance, Traffic Control and Site Safety, and Quality Control Testing will be shared by the participating property owners. However, by participating in this project, it is anticipated that property owners will realize a cost savings, compared to if they were to solicit bids, select a contractor, and have a contractor complete the work independent of other work in the project area.

It should be expected that unit prices for the various repair items will not change significantly based on the number of participants or quantity of the respective items due to the piecemeal nature of the recommended improvements. However, it is estimated that if each property owner were to have these improvements completed independent of this project the total cost of the work would be \$351,464.74, which is \$50,820.00 more than if all property owners were to participate in the construction phase of this project. The estimated percentage of savings by participating in this project is listed in the site summaries for each respective parcel/combination of parcels.

The cost estimates included in this phase of this project may be used to provide property owners with an itemized list of items that should be addressed and an estimated cost for planning/budgetary purposes.

Conclusion

Improvements to the basic infrastructure elements of curb and gutter and sidewalks should improve the overall image within the project area while providing better conveyance of storm water and safer sidewalks for pedestrians. It is anticipated that the completion of the proposed improvements will have a positive impact for the respective property owner, and the overall project area.

Additionally, participation in this project will provide property owners an opportunity to improve problems with the existing, identified infrastructure with assistance from the DDA in the form of engineering designs, construction engineering and administration services, selection of qualified contractors and ease the permitting process by requiring the contractor to obtain the necessary permits. Participation in this project should provide a cost savings to the property owners compared to if they were to complete the improvements independent of the DDA's assistance.

