

CAPACITY, MANAGEMENT, OPERATION, AND MAINTENANCE ALTERNATIVES ANALYSIS

Project Scoping Report 2021 CMOM Package 1

PREPARED FOR: San Antonio Water System

PREPARED BY: Camille Constantine/Steven Anthes

DATE: July 30, 2021

Revision	Date	Revision Description	Approved By
0	07/01/21	Draft Submittal	Camille Constantine/Steven Anthes
1	07/13/21	Revised Draft Submittal	Camille Constantine/Steven Anthes
2	07/27/21	Final Draft QC	Project Controls/Ann Peche/ Rachel Hoffmeyer
3	07/30/31	Final Submittal	Rachel Hoffmeyer

This report is released for the purpose of defining the scope of this project and providing recommendations to be verified during the design phase. This report is not to be used for construction, bidding, or permitting purposes.



Rachel Hoffmeyer, P.E.

1.0 Executive Summary

San Antonio Water System (SAWS) entered into a Consent Decree (CD) with the United States Environmental Protection Agency (EPA) on July 23, 2013. As part of the ongoing Capacity, Management, Operations, and Maintenance (CMOM) component of the CD, SAWS is required to perform alternative analysis on targeted and urgent mains identified as high risk.

This report presents the results of the CMOM alternative analysis for approximately 633.0 linear feet of selected gravity sewer lines. **Table-1.1** summarizes the proposed constructions methods and their estimated costs. The recommendations in this report may be further modified during subsequent design and construction phases, as appropriate, based on additional data and findings.

Table-1.1: Proposed Construction Method and Estimated Costs

Type of Work	Length (ft)	Line Size Range (in)	Estimated Construction Cost
Jack Bore and Tunnel	463.6	8 - 21	\$ 971,100.00
PIPEBURST	169.4	21 - 21	\$ 69,600.00
Total	633.0		\$ 1,040,700.00

2.0 Evaluation

Pipe segments chosen to be rehabilitated on this package have contributed to previous SSOs, and/or are likely to cause or significantly contribute to the future of occurrence of SSOs.

3.0 Coordination

Street Projects

The City of San Antonio (CoSA) provides an ArcGIS layer of street projects throughout the City. No street projects have been identified in the scope of this project at this time. It is recommended that SAWS coordinate with CoSA to determine the timing of the street projects during design. Please note that pipes may be required to have the construction expedited where street projects are forthcoming.

High and Medium Pavement Condition Index (PCI) Roads

CoSA provides an ArcGIS layer that has the estimated PCI of roads in the city. All mains on this package will be within TxDOT ROW or in a CoSA park but may have an impact on high and medium PCI roads.

Other Considerations

Pipes that are located in sensitive areas that may require additional permits have been listed below in **Table-3.3**.

Table-3.3: Pipes that need additional coordination

Compkey	Reason
1013724	TxDOT (near 1604 expansion project)
969391	Railroad & CoSA Park (Golf Course) & 100 Year Floodplain
969786	Railroad & CoSA Park (Golf Course) & 100 Year Floodplain
990880	TxDOT

4.0 Planning Budget

The planning budget provided below is based on historical data from similar bids between 2016 and 2020. The data in **Table-4.1** and **Table-4.2** provides cost estimating metrics for the different methods of sewer pipeline rehabilitation and replacement (CIPP, pipe bursting, pipe replacement) for the typical sewer pipe sizes. The unit pricing was calculated based on: pipe size, rehabilitation method, number of estimated point repairs, internal repairs, lateral reconnections, and the pavement condition index of all impacted roads. A 30% contingency is incorporated into the Estimated Cost Calculation because of the project's current stage of planning. The planning budget should be revised by the Project Design Consultant during design based on AACE International standards.

Table-4.1: Estimated Jack Bore and Tunnel Cost

Description	Quantity	Unit	Unit Price	Total*
8 – inch Jack Bore and Tunnel	164.0	LF	\$ 920.73	\$ 151,000.00
15 – inch Jack Bore and Tunnel	184.4	LF	\$1,724.51	\$ 318,000.00
21 – inch Jack Bore and Tunnel	115.2	LF	\$2,413.19	\$ 278,000.00
Sub Total				\$ 747,000.00
Contingency (30%)				\$ 224,100.00
Total				\$ 971,100.00

Table-4.2: Estimated PIPEBURST Cost

Description	Quantity	Unit	Unit Price	Total*
21 – inch PIPEBURST	169.4	LF	\$ 342.38	\$ 58,000.00
Sub Total				\$ 58,000.00
Contingency (30%)				\$ 11,600.00
Total				\$ 69,600.00

*Total amounts have been rounded to nearest \$1000.

5.0 Planning Recommendation

Table-5.1 provides detailed information, the preliminary remediation method, as well as the reason behind each method chosen for each pipe segment included in this package.

Table-5.1: Recommendation Summary

Map No.	PipeID	Actions	Diameter	Length	Material	Install Year	Comments
8	1013724	Jack Bore and Tunnel	8	164	PVC	1997	DS CCTV from 2017 includes 46ft of segment length and stops due to heavy encrustation. No US CCTV available. Propose Jack Bore and Tunnel due to heavy encrustation. Segment appears to cross a 16" AC water main and a gas main. TxDOT 1604 Expansion Project is near this Project Area.
9	969394	Jack Bore and Tunnel	21	115.2	CP	1949	DS CCTV from 2020 includes 6ft of segment length and stops due to heavy encrustation. US CCTV from 2020 includes 22ft of segment length and stops due to deposit attached encrustation. Segment is located in Olmos Basin Golf Course and crosses RR tracks. There are a couple of segments upstream of this main that are part of Multiple Sewershed Package 15 (Railroad) project. Propose Jack Bore and Tunnel due to heavy encrustation and RR crossing.
9	969786	PIPEBURST	21	169.4	CP	1949	DS CCTV from 2020 includes entire segment length. Segment has a small fracture at pipe invert and is a candidate for CIPP. Propose Pipe Burst because US targeted segment is proposed for Jack Bore and Tunnel and the segment has sufficient depth. Segment appears to cross a 12" DI recycled water main.
10	990880	Jack Bore and Tunnel	15	184.4	VCP	1957	Segment appears to be CAS, not VCP. US CCTV from 2019 includes 9ft of segment length and stops due to heavy encrustation. USMH is under highway. No CCTV available of main upstream of this segment. Propose Jack Bore and Tunnel due to heavy encrustation and location of USMH. The main upstream of this segment crosses a storm drain.

6.0 Proposed Project Schedule

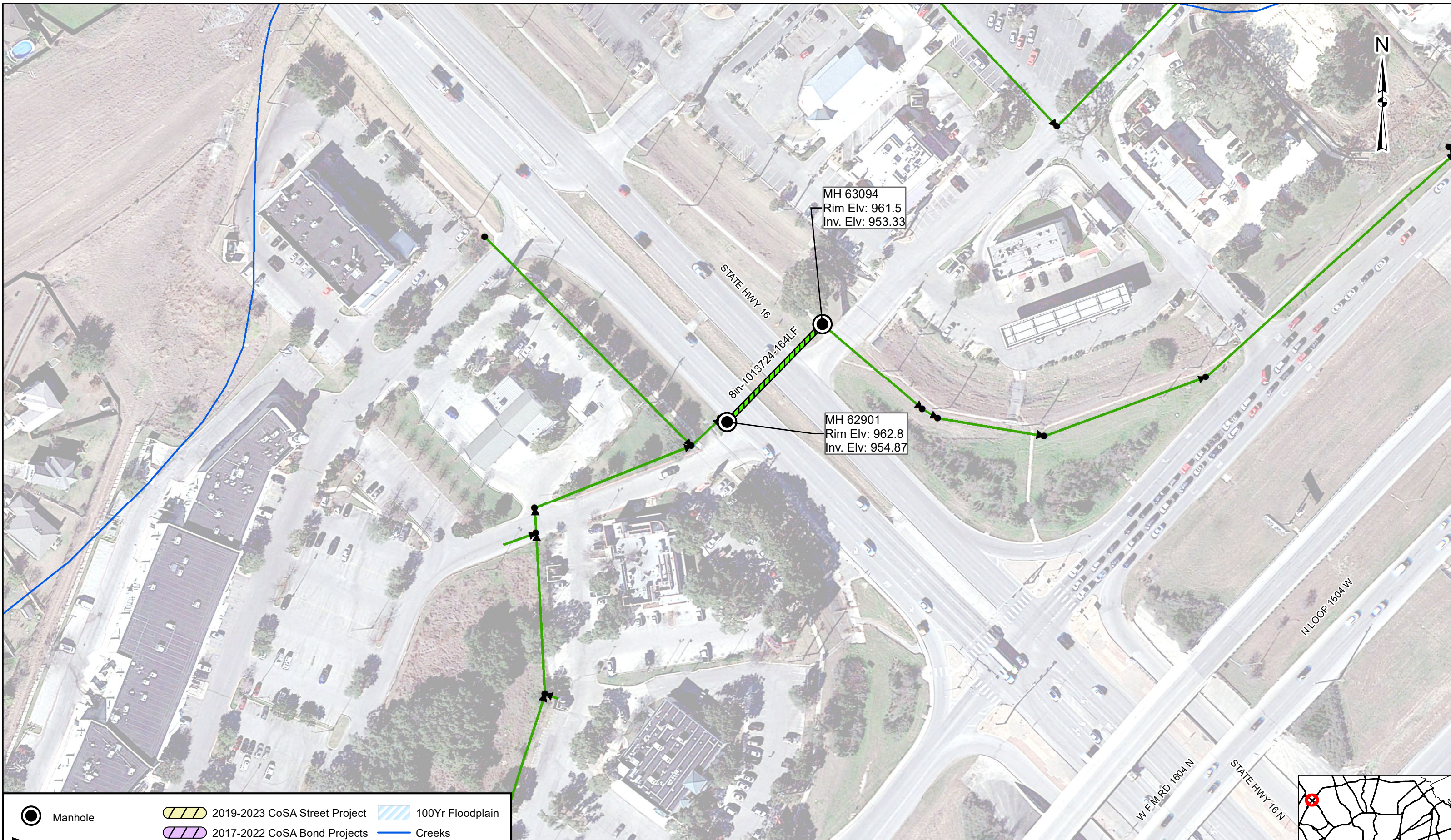
Table-6.1 provides a proposed project schedule which includes a timeframe for engineering design (plans, permits, right-of-entry, etc.), bidding, and construction phases based CIP board funding and previous schedules from similar projects. These should be reviewed and revised by the consultant during the contract negotiation.

7.0 Detailed Maps

In the detailed maps attached are the CoSA street projects, the estimated PCI for all CoSA roads, and relevant sensitive areas.

Table 6.1 - Proposed Project Schedule

ID	Task Name	Calendar Days	Start	Finish	Quarter	4th Quarter			1st Quarter			2nd Quarter			3rd Quarter			4th Quarter			1st Quarter			2nd Quarter			3rd Quarter			4th Quarter			1st Quarter			2nd Quarter		
					Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
1	CMOM 2021 Package 1	988	Wed 9/1/21	Wed 5/15/24	[Gantt bar spanning from 9/1/21 to 5/15/24]																																	
2	Contract Execution	154	Wed 9/1/21	Tue 2/1/22	[Gantt bar spanning from 9/1/21 to 2/1/22]																																	
3	RFQ	35	Wed 9/1/21	Tue 10/5/21	[Task bar from 9/1/21 to 10/5/21]																																	
4	Selection	56	Wed 10/6/21	Tue 11/30/21	[Task bar from 10/6/21 to 11/30/21]																																	
5	Execute Contract	63	Wed 12/1/21	Tue 2/1/22	[Task bar from 12/1/21 to 2/1/22]																																	
6	Design	388	Wed 2/2/22	Fri 2/24/23	[Gantt bar spanning from 2/2/22 to 2/24/23]																																	
7	Kickoff Meeting	10	Wed 2/2/22	Fri 2/11/22	[Task bar from 2/2/22 to 2/11/22]																																	
8	Validation TM	40	Mon 2/14/22	Fri 3/25/22	[Task bar from 2/14/22 to 3/25/22]																																	
9	Validation TM Review	19	Mon 3/28/22	Fri 4/15/22	[Task bar from 3/28/22 to 4/15/22]																																	
10	60% Design	82	Mon 4/18/22	Fri 7/8/22	[Task bar from 4/18/22 to 7/8/22]																																	
11	60% Design Review	19	Mon 7/11/22	Fri 7/29/22	[Task bar from 7/11/22 to 7/29/22]																																	
12	Plan in Hand Walk Through	12	Mon 8/1/22	Fri 8/12/22	[Task bar from 8/1/22 to 8/12/22]																																	
13	90% Design	82	Mon 8/15/22	Fri 11/4/22	[Task bar from 8/15/22 to 11/4/22]																																	
14	ROE Acquisition	89	Mon 8/1/22	Fri 10/28/22	[Task bar from 8/1/22 to 10/28/22]																																	
15	90% Design Review	19	Mon 11/7/22	Fri 11/25/22	[Task bar from 11/7/22 to 11/25/22]																																	
16	UPRR Permit	89	Mon 11/28/22	Fri 2/24/23	[Task bar from 11/28/22 to 2/24/23]																																	
17	100% Design	26	Mon 11/28/22	Fri 12/23/22	[Task bar from 11/28/22 to 12/23/22]																																	
18	100% Design Review	12	Mon 12/26/22	Fri 1/6/23	[Task bar from 12/26/22 to 1/6/23]																																	
19	Solicitation	128	Mon 1/9/23	Tue 5/16/23	[Gantt bar spanning from 1/9/23 to 5/16/23]																																	
20	100% Deisgn - Contracting Review	19	Mon 1/9/23	Fri 1/27/23	[Task bar from 1/9/23 to 1/27/23]																																	
21	Advertisement	26	Mon 1/30/23	Fri 2/24/23	[Task bar from 1/30/23 to 2/24/23]																																	
22	Board Prep	64	Mon 2/27/23	Mon 5/1/23	[Task bar from 2/27/23 to 5/1/23]																																	
23	Board Date	1	Tue 5/2/23	Tue 5/2/23	[Task bar from 5/2/23 to 5/2/23]																																	
24	Execute Contract	14	Wed 5/3/23	Tue 5/16/23	[Task bar from 5/3/23 to 5/16/23]																																	
25	Construction	365	Wed 5/17/23	Wed 5/15/24	[Task bar from 5/17/23 to 5/15/24]																																	



MH 63094
Rim Elv: 961.5
Inv. Elv: 953.33

MH 62901
Rim Elv: 962.8
Inv. Elv: 954.87

STATE HWY 16
8in-1013724-164LF

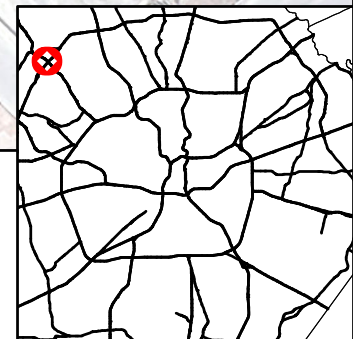
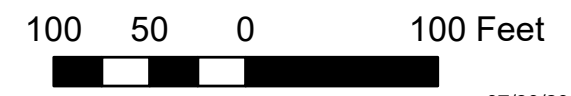
N LOOP 1604 W

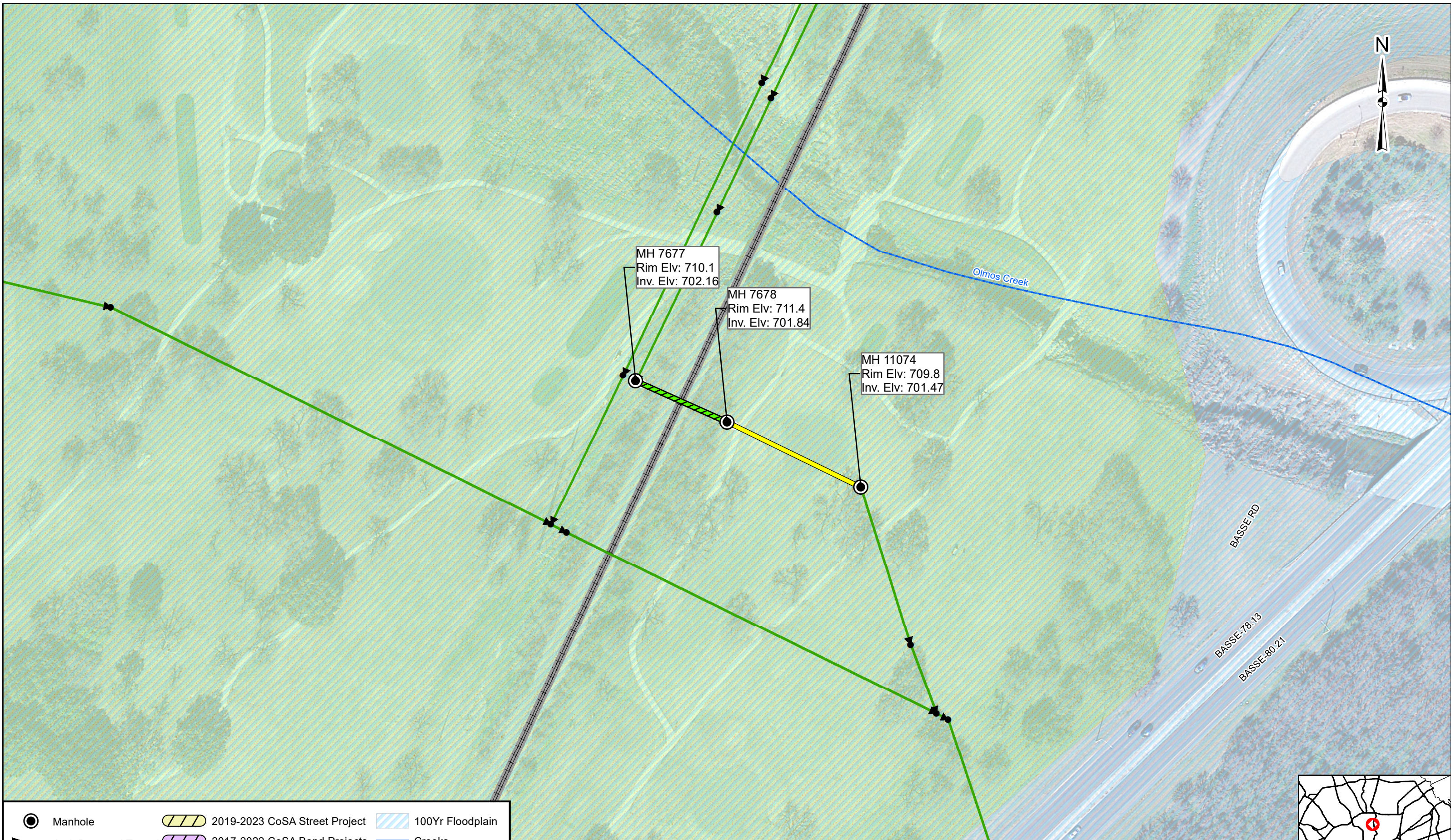
W FM RD 1604 N

STATE HWY 16 N

	Manhole		2019-2023 CoSA Street Project		100Yr Floodplain
	Jack Bore and Tunnel		2017-2022 CoSA Bond Projects		Creeks
	PIPEBURST		Railroad		CoSA Park
	Existing Manholes		Edwards Recharge Zones		Karst Zone
	Existing SWR				

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MH 7677
Rim Elv: 710.1
Inv. Elv: 702.16

MH 7678
Rim Elv: 711.4
Inv. Elv: 701.84

MH 11074
Rim Elv: 709.8
Inv. Elv: 701.47

Olmos Creek

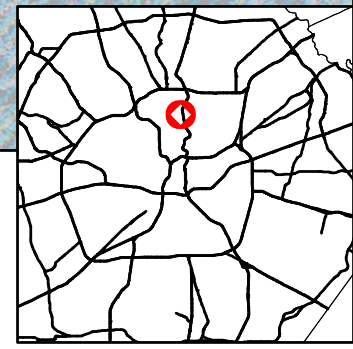
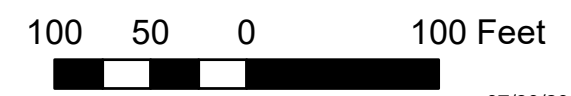
BASSE RD

BASSE-78.13

BASSE-80.21

Manhole	2019-2023 CoSA Street Project	100Yr Floodplain
Jack Bore and Tunnel	2017-2022 CoSA Bond Projects	Creeks
PIPEBURST	Railroad	CoSA Park
Existing Manholes	Edwards Recharge Zones	Karst Zone
Existing SWR		

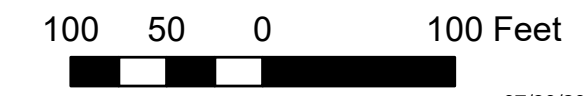
2021 CMOM Package 1





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	PIPEBURST		Railroad		CoSA Park
	Existing Manholes		Edwards Recharge Zones		Karst Zone
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07/30/2021

