

Super Expedited Wastewater Emergency Rehabilitation of Sewers (SEWERS) Contract Development & Implementation

Salem Garawi
Wastewater Conveyance Construction
Division

Bureau of Engineering
January 31, 2017

SEWER REPAIR

Sewer maintenance is a Bureau of Sanitation (LASAN) task. Design & construction are Bureau of Engineering (BOE) tasks.

- Large Sewers Group (16" and larger in diameter)
- Secondary Sewer Renewal Program (SSRP) Group (15" and smaller in diameter)
- Sewer Repair (Emergency & urgent necessity)

[No Bid & Award]

- Emergency Sewer Repair (ESR) Group
- SEWERS Group (urgent necessity)

SEWERS GROUP TEAM

- Design/Construction Engineers:

Felix Madariaga	Chinh Dinh	Jeanie Lam
David Ventura	Chris Tomes	Naajia Jami

(Richard Louie is former Group Manager)

- Contractors:

- Matthew And Stewart Company, Inc.
- Tomovich & Associates

HISTORY of SEWERS CONTRACTS

- First SEWERS contract was initiated around 2003 to provide an alternate method for sewer repair
- Early contracts: SEWERS 1, 2, 3 and 4 (with contract duration of 3 years each)
- Currently operating under SEWERS 5 contract. Advantages:
 - Consolidated number of bid items
 - 3 on-call contractors awarded (2 currently working)

SEWERS5 INFORMATION

- Unit price contract
- The contract is intended for the urgent repair/rehabilitation of sewer facilities
- Each contractor submitted unit prices for 783 bid items as a part of the statement of qualifications

SEWERS5 INFORMATION

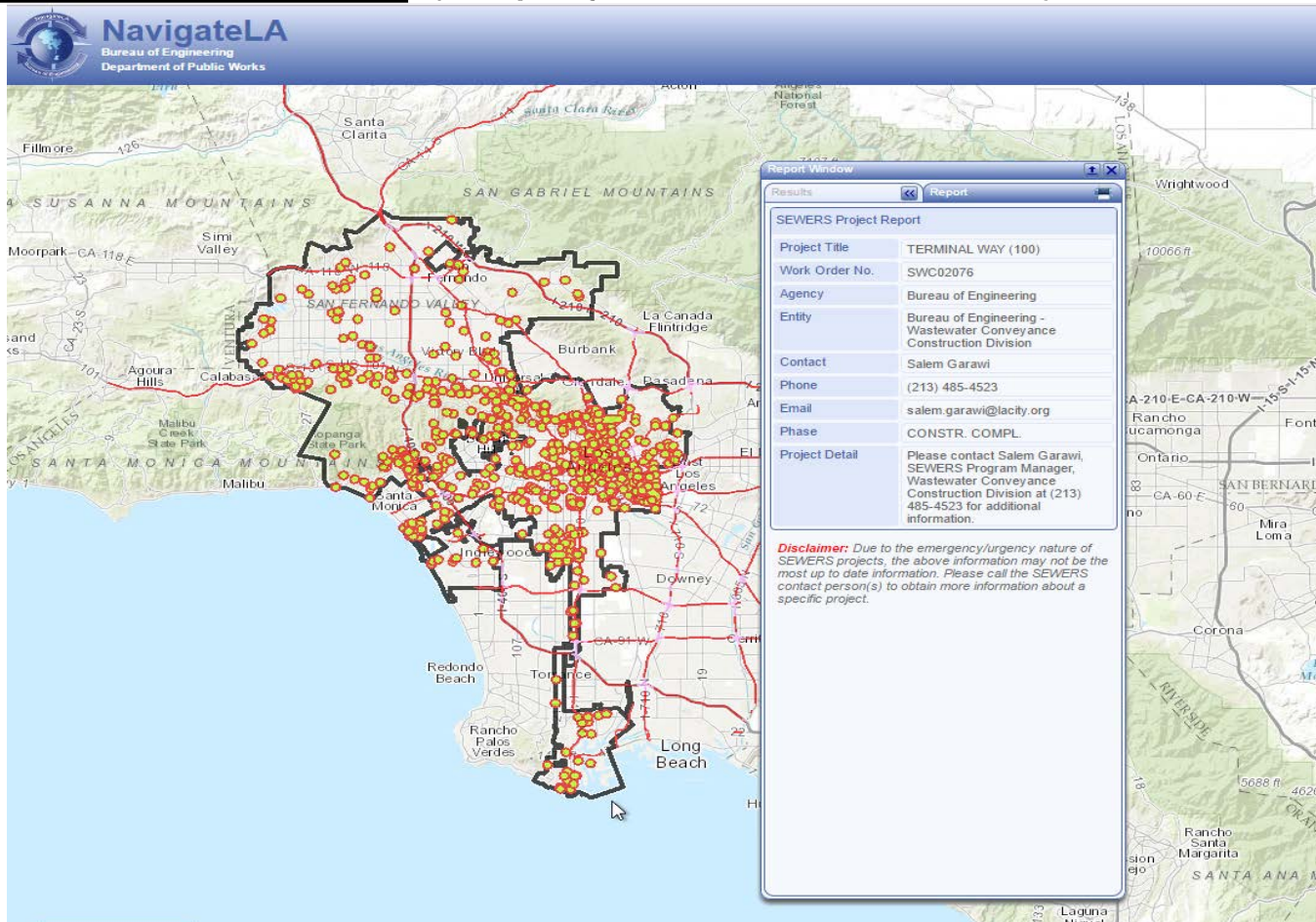
- Work is issued, through a series of Construction Orders, to the contractor with the lowest quantity take off (QTO) estimate using applicable bid item unit prices and respective bid item quantities.
- If the contractor with the lowest QTO has 4 or more active Construction Orders, the Engineer may issue the next Construction Order to the contractor with the subsequent lowest QTO.

SEWERS5 INFORMATION

- Cost Ceiling is \$25 Million
- Contract duration is 5 years
- Contract Start Date: May 2, 2013
- Contract End Date: May 2, 2018
- Over 220 Construction Orders are issued per year

SEWERS5 INFORMATION

- Projects Locations** (All projects are Geocoded)

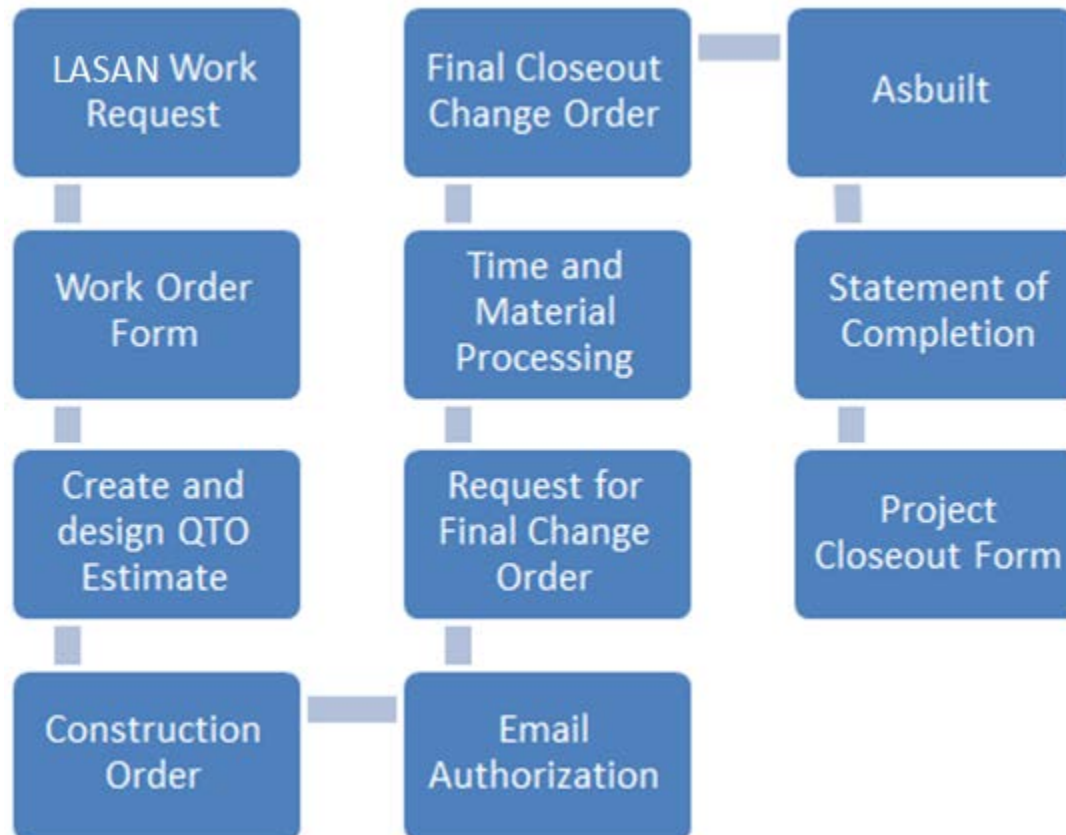


PROGRAM CHALLENGES

- Most projects may not have extensive challenges but maintaining a program with over 220 Construction Orders issued per year is challenging
- Paperwork linked to each project
- Reporting status of each project
- Keeping track of total budget
- Different design & construction engineers
- 2 Contractors

PROGRAM CHALLENGES

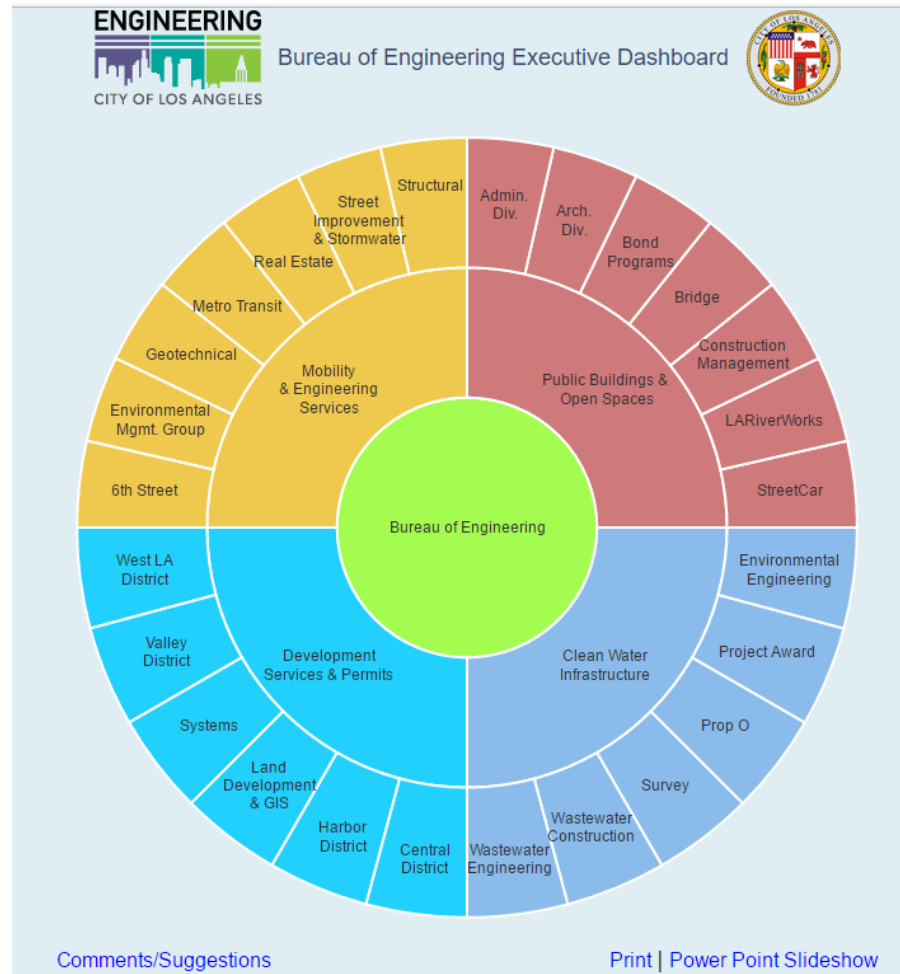
SEWERS5 Project Delivery



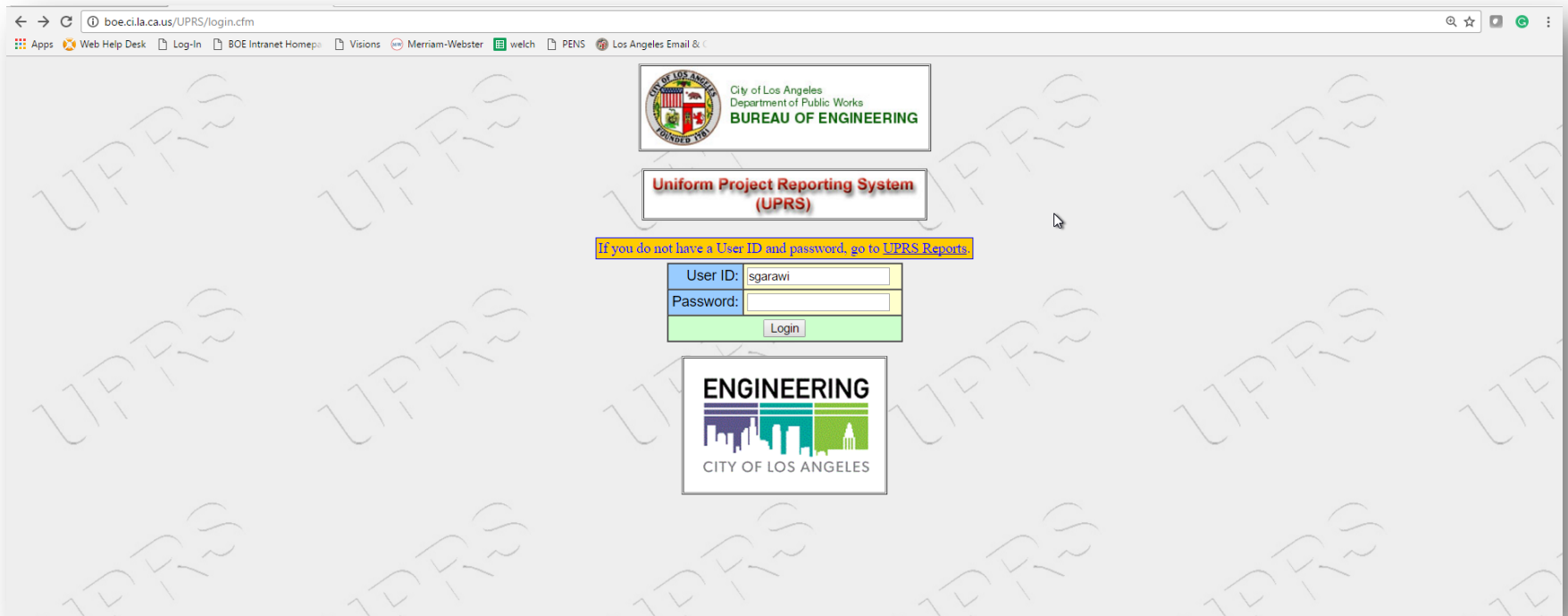
PROGRAM CHALLENGES

- Data entry will effect weekly, monthly and quarterly reports
- Reporting systems that we have to continuously update: Uniform Project Reporting System, Dashboard
- 118 fields for each project

PROGRAM CHALLENGES




PROGRAM CHALLENGES



boe.ci.la.ca.us/UPRS/login.cfm

Apps Web Help Desk Log-In BOE Intranet Home Visions Merriam-Webster welch PENS Los Angeles Email & C

 City of Los Angeles
Department of Public Works
BUREAU OF ENGINEERING

**Uniform Project Reporting System
(UPRS)**

[If you do not have a User ID and password, go to UPRS Reports.](#)

User ID:

Password:

Login

ENGINEERING
CITY OF LOS ANGELES



THE Event For The Utility Infrastructure Industry

Underground Construction Technology
International Conference & Exhibition



Home SEWERS Project Reports Search Constr. Order Add Constr. Order SEWERS Project List Maintenance

Project List Repair Info Construction Info Change Order / As-Built UPRS Association

Save Update

PROJECT LIST

Previous Record Next Record

High Priority: Difficult Access Reach: Contract:

PENS No. Request Number: Contract No.

Work Order Number: Date W.O. Opened: WO Closing Date:

Project Title: Council District: Project Phase:

Project Address: Thomas Guide: Request Received Date:

Project Engineer: Design Start Date (mm/dd/yyyy): Request Received From:

Design Finish Date (mm/dd/yyyy):

RC No.	U MH:	D MH:	Length:	size:	Mat:	Block:	Street:	WYE MAP:	UP Station:	DN Station:	Plan:	Year Built:
1.00	46811112	46811121	300.80	8	VCP	2400	RIVERSIDE DR	5009-2	7+72.78	4+71.96		1928

RC No	U MH	D MH	Defect(s)	Repair Type
1.00	46811112	46811121	IDENTIFIED WITH A BROKEN JOINT AT 294' D/S OF THE U/S MH. ALSO, THE D/S MH CHANNEL IS BROKEN.	1. SPOT REPAIR BROKEN JOINT FROM 289' D/S OF THE U/S MH TO THE D/S MH. 2. REMODEL D/S MH CHANNEL.

ID: GIS DN: TRAP MH: TOTAL PIPE REPAIR LENGTH (ft): With Program Manager For Final Review: ☐

PIPE ID: Pipe Condition: Date Transferred (mm/dd/yyyy):

Monthly Report Construction Comments

Save Update



THE Event For The Utility Infrastructure Industry

Underground Construction Technology
International Conference & Exhibition



Home SEWERS Project Reports Search Constr. Order Add Constr. Order SEWERS Project List Maintenance

Project List Repair Info Construction Info Change Order / As-Built UPRS Association

Save Update

PROJECT LIST

Previous Record Next Record

High Priority: Difficult Access Reach: Contract:

PENS No. Request Number: Contract No.

Work Order Number: Date W.O. Opened: WO Closing Date:

Project Title: Council District: Project Phase:

Project Address: Thomas Guide:

Project Engineer: Design Start Date (mm/dd/yyyy): Request Received Date (mm/dd/yyyy):

Design Finish Date (mm/dd/yyyy): Request Received From:

RC No.	U MH:	D MH:	Length:	size:	Mat:	Block:	Street:	WYE MAP:	UP Station:	DN Station:	Plan:	Year Built:
1.00	51511130	51511144	350.00	8	VCP	100	CONCORD STREET ALLE	26A225-D	11+78	8+26		1914
	0	0										0
RC No	U MH	D MH	Defect(s)							Repair Type		
1.00	51511130	51511144	BASED ON RECENT CCTV INSPECTION, THE ABOVE MENTIONED SEWER REACH HAS TWO BROKEN WYES AT 323' AND 341' U/S OF THE D/S MH. ALSO, THE U/S TERMINAL MH NEEDS TO BE REMODELED INTO A STANDARD MH TO ALLOW ACCESSIBILITY FOR MAINTENANCE.							1. SPOT REPAIR BROKEN WYES AT 323' AND 341' U/S OF THE D/S MH. 2. REMODEL TERMINAL U/S MH INTO A STANDARD MH.		
ID:	GIS DN:	0		TRAP MH:	Select One ▾	TOTAL PIPE REPAIR LENGTH (ft):			0.00	With Program Manager For Final Review: <input type="checkbox"/>		
PIPE ID:	5151113051511144/		Pipe Condition:				Date Transferred (mm/dd/yyyy):					

Monthly Report Construction Comments

Save Update



THE Event For The Utility Infrastructure Industry

Underground Construction Technology
International Conference & Exhibition



Home SEWERS Project Reports Search Constr. Order Add Constr. Order SEWERS Project List Maintenance

Project List Repair Info Construction Info Change Order / As-Built UPRS Association

Save Update

PROJECT LIST

Previous Record Next Record

High Priority: ☐ No ☐ Difficult Access Reach: ☐ No ☐ Contract:

PENS No. Request Number: Contract No.

Work Order Number: Date W.O. Opened: WO Closing Date:

Project Title: Council District: Project Phase:

Project Address: Thomas Guide: Request Received Date:

Project Engineer: Design Start Date (mm/dd/yyyy): Request Received From:

Design Finish Date (mm/dd/yyyy):

RC No.	U MH:	D MH:	Length:	size:	Mat:	Block:	Street:	WYE MAP:	UP Station:	DN Station:	Plan:	Year Built:
1.00	44111099	44111094	97.00	8	VCP	3000	SHERVIEW DRIVE	1020-I	9+36.66	8+39.66		1959
	0	0										0
RC No	U MH	D MH	Defect(s)							Repair Type		
1.00	44111099	44111094	D/S MH ISLAND NEEDS REPAIR.							1. REPAIR ISLAND AT D/S MH. 2. PE TO ASSESS AND REPAIR AS NECESSARY.		
ID:	GIS DN:		0		TRAP MH:	Select One ▾	TOTAL PIPE REPAIR LENGTH (ft):		0.00	With Program Manager For Final Review: <input type="checkbox"/>		
PIPE ID:	4411109944111094/		Pipe Condition:				Date Transferred (mm/dd/yyyy):					

Monthly Report Construction Comments

Save Update



THE Event For The Utility Infrastructure Industry

Underground Construction Technology
International Conference & Exhibition



Home SEWERS Project Reports Search Constr. Order Add Constr. Order SEWERS Project List Maintenance

Project List Repair Info Construction Info Change Order / As-Built UPRS Association

Save Update

PROJECT LIST

Previous Record Next Record

High Priority: Difficult Access Reach: Contract:

PENS No. Request Number: Contract No.

Work Order Number: Date W.O. Opened: WO Closing Date:

Project Title: Council District: Project Phase:

Project Address: Thomas Guide:

Project Engineer: Design Start Date (mm/dd/yyyy): Request Received Date: (mm/dd/yyyy)

Design Finish Date (mm/dd/yyyy): Request Received From:

RC No.	U MH:	D MH:	Length:	size:	Mat:	Block:	Street:	WYE MAP:	UP Station:	DN Station:	Plan:	Year Built:
1.00	49509022	49509031	353.00	8	VCP	800	AMADOR ST	4928-7	7+13	3+80		1910
	0	0										0
RC No	U MH	D MH	Defect(s)					Repair Type				
1.00	49509022	49509031	IDENTIFIED WITH A BROKEN PIPE AT 333' D/S OF THE U/S MH. ALSO, THE U/S MH CHANNEL IS BROKEN.					1. SPOT REPAIR BROKEN PIPE 331' TO 337' D/S OF THE U/S MH. 2. REMODEL U/S MH CHANNEL.				
ID:	GIS DN:	0	TRAP MH:	Select One	TOTAL PIPE REPAIR LENGTH (ft):			With Program Manager For Final Review: <input type="checkbox"/>				
PIPE ID:	4950902249509031		Pipe Condition:		Date Transferred (mm/dd/yyyy):							

Monthly Report Construction Comments

Save Update



THE Event For The Utility Infrastructure Industry

Underground Construction Technology
International Conference & Exhibition



[Home](#) [SEWERS Project Reports](#) [Search Constr. Order](#) [Add Constr. Order](#) [SEWERS Project List](#) [Maintenance](#)

[Project List](#) [Repair Info](#) [Construction Info](#) [Change Order / As-Built](#) [UPRS Association](#)

Project Name: EUCLID AVE (1000)
Work Order Number: SWC02992

Save Update

CONTRACTOR INFORMATION

Name: Business Address:
City: State: Zip:
Phone Number: Fax Number: Contact Name:

CONSTRUCTION DATE AND COST

Construction Engineer:
Date Construction Order To Map:
Construction Start Date: Construction Finish Date:
Revised Issuance Date (Revision 1) (mm/dd/yyyy): Revised Issuance Date (Revised 2) (mm/dd/yyyy):
Estimated Cost (\$) Actual Cost
Final Acceptance Date

Monthly Report Construction Comments

Save Update



THE Event For The Utility Infrastructure Industry

Underground Construction Technology
International Conference & Exhibition



Home SEWERS Project Reports Search Constr. Order Add Constr. Order SEWERS Project List Maintenance

Project List Repair Info Construction Info Change Order / As-Built UPRS Association

Save Update

PROJECT LIST

Previous Record Next Record

High Priority: Difficult Access Reach: Contract:

PENS No. Request Number: Contract No.

Work Order Number: Date W.O. Opened: WO Closing Date:
Project Title: Council District: Project Phase:
Project Address: Thomas Guide:
Project Engineer: Design Start Date (mm/dd/yyyy): Request Received Date (mm/dd/yyyy):
Design Finish Date (mm/dd/yyyy): Request Received From:

RC No.	U MH:	D MH:	Length:	size:	Mat:	Block:	Street:	WYE MAP:	UP Station:	DN Station:	Plan:	Year Built:
1	62009105	62009106	240.30	8	VCP	200	1ST STREET	Y18-201SW	5+00.52	2+80.26	12595	1913
	0	0										0
RC No	U MH	D MH	Defect(s)					Repair Type				
1	62009105	62009106	Numerous structural defects and mineral infiltration throughout the reach					Remove and replace the entire reach. *Note Request 051202 was sent out but not completed.				
ID:	GIS DN:	0	TRAP MH:	Select One	TOTAL PIPE REPAIR LENGTH (ft):			With Program Manager For Final Review: <input type="checkbox"/>				
PIPE ID:	6200910562009106		Pipe Condition:		Date Transferred (mm/dd/yyyy):							

Monthly Report Construction Comments

Save Update



THE Event For The Utility Infrastructure Industry

Underground Construction Technology
International Conference & Exhibition

REPAIR INFORMATION	
Rehab Tracking Report- Reach Length (LF):	(ie. Spot Repair, MH-MH, Lining, R&R Drop)
Non-Rehab Tracking Report- Reach Length (LF): 332.00	(ie. Only Remodel MH Base, Only Install MH, Only CCTV, Abandon Reach)
Maximum Pipe Depth (FT):	
New Pipe Size (IN):	
New Pipe Material: SELECT ONE	
Lining Type: SELECT ONE	
Initial Repair Description (Check all that apply)	
MH to MH Replacement: <input type="checkbox"/>	
Lining: <input type="checkbox"/>	
Spot Repair: <input type="checkbox"/>	
Installing new standard MH: <input type="checkbox"/>	
Installing new Trap MH: <input type="checkbox"/>	
R&R Drop: <input type="checkbox"/>	
Remodel MH Base: <input checked="" type="checkbox"/>	
Adjust MH to Grade: <input type="checkbox"/>	
Abandon Reach: <input type="checkbox"/>	
Other: <input type="checkbox"/>	
Estimated Repair	
Type of R&R Repair: SELECT ONE	Type of R&R Repair: SELECT ONE
Pipe & Trench (LF):	Pipe & Trench (LF):
Sever Abandonment (LF):	Sever Abandonment (LF):
Boring Method: SELECT ONE	Boring Method: SELECT ONE
Backfill Method: SELECT ONE	Backfill Method: SELECT ONE
Install Standard MH (EA):	Install Standard MH (EA):
Install Trap MH (EA):	Install Trap MH (EA):
Abandon MH (EA):	Abandon MH (EA):
Install Manhole Chimney (EA):	Install Manhole Chimney (EA):
R&R Drop (EA):	R&R Drop (EA):
Potholing (EA): 0	Potholing (EA): 0
No. of Soil Boring (EA):	No. of Soil Boring (EA):
No. of Shoring Designs (EA):	No. of Shoring Designs (EA):
Type of Traffic Control: Local St. SELECT ONE	Type of Traffic Control: Local St. SELECT ONE
LF of Temporary Payment (LF):	LF of Temporary Payment (LF):
CMS Thickness (IN): SELECT ONE	CMS Thickness (IN): SELECT ONE
Pavement Type: SELECT ONE	Pavement Type: SELECT ONE
Pavement Thickness (IN): SELECT ONE	Pavement Thickness (IN): SELECT ONE
Sawcut, Remove, & Haul Away (LF):	Sawcut, Remove, & Haul Away (LF):
Bypass: 250 GPM SELECT ONE	Bypass: 250 GPM SELECT ONE
Install Blind WYE (EA):	Install Blind WYE (EA):
Reconnect HC (EA):	Reconnect HC (EA):
Remodel Trap MH (EA):	Remodel Trap MH (EA):
Remodel MH Base (EA): 1	Remodel MH Base (EA): 1
Adjust MH F&C To Grade (EA):	Adjust MH F&C To Grade (EA):
Install HC Trap (EA):	Install HC Trap (EA):
Install HC Chimney (EA):	Install HC Chimney (EA):
CCTV (LF):	CCTV (LF):
Clean Sewer (LF):	Clean Sewer (LF):
R&R Curb & Gutter (LF):	R&R Curb & Gutter (LF):
R&R Sidewalk (DF):	R&R Sidewalk (DF):
R&R SD Connector Pipe (EA):	R&R SD Connector Pipe (EA):
R&R Concrete Encased SD Connector Pipe (EA):	R&R Concrete Encased SD Connector Pipe (EA):
Restore Traffic Loop (EA):	Restore Traffic Loop (EA):
Stripping (EA):	Stripping (EA):
Mobilization For R&R (EA): 1	Mobilization For R&R (EA): 1
Slope Greater Than 15% Pay Factor Applied: SELECT ONE	Slope Greater Than 15% Pay Factor Applied: SELECT ONE
Work By Hand Pay Factor Applied: SELECT ONE	Work By Hand Pay Factor Applied: SELECT ONE
Type C Factor Applied: SELECT ONE	Type C Factor Applied: SELECT ONE
Work At Night Pay Factor Applied: SELECT ONE	Work At Night Pay Factor Applied: SELECT ONE
Length of Lining (LF):	Length of Lining (LF):
No. of Restore Service Connections (EA):	No. of Restore Service Connections (EA):
No. of Install Top Hat (EA):	No. of Install Top Hat (EA):
Type of Traffic Control: SELECT ONE	Type of Traffic Control: SELECT ONE
Work By Hand Pay Factor Applied: SELECT ONE	Work By Hand Pay Factor Applied: SELECT ONE
Work At Night Factor Applied: SELECT ONE	Work At Night Factor Applied: SELECT ONE
No. of Mobilization For Lining (EA):	No. of Mobilization For Lining (EA):
LEGEND	
US - Upstream	EA - Each
DS - Downstream	IN - Inch
R&R - Remove And Replace	SF - Square Feet
MH - Manhole	F&C - Frame & Cover
LF - Linear Footage	SD - Storm Drain



THE Event For The Utility Infrastructure Industry

Underground Construction Technology
International Conference & Exhibition



Home SEWERS Project Reports Search Constr. Order Add Constr. Order SEWERS Project List Maintenance

Project List Repair Info Construction Info **Change Order / As-Built** UPRS Association

Project Name: FLOWER STREET (700)
Work Order Number: SWC02288

Save Update

CHANGE ORDERS

Total Change Order Cost: \$12,872.34

Change Order Cost Percentage :65.63%

Change Order Comments :

Change Order No. 1: <input checked="" type="checkbox"/> Final Closeout Change Order: <input type="checkbox"/> Bid Item Adjustment (\$): 0.00 T & M (\$): 18687.34 Agreed Lump Sum (\$): 0.00 Cost No. 1: \$18,687.34 Date Request Received: 09/18/2015 Status: Completed Prepared By: C. Dinh Date Prepared: 09/23/2015 Date Signed By CM: 10/14/2015 Date Signed By Contractor: 10/22/2015 Date Signed By Senior CM: 11/08/2015	Change Order No. 2: <input checked="" type="checkbox"/> Final Closeout Change Order: <input checked="" type="checkbox"/> Bid Item Adjustment (\$): -5815.00 T & M (\$): 0.00 Agreed Lump Sum (\$): 0.00 Cost No. 2: (\$5,815.00) Date Request Received: 10/12/2016 Status: In-Progress Prepared By: C. Tomes Date Prepared: 10/24/2016 Date Signed By CM: Date Signed By Contractor: Date Signed By Senior CM:
Change Order No. 3: <input type="checkbox"/> Final Closeout Change Order: <input type="checkbox"/> Bid Item Adjustment (\$): 0.00 T & M (\$): 0.00 Agreed Lump Sum (\$): 0.00 Cost No. 3: \$0.00 Date Request Received: Status: Select One Prepared By: Select One Date Prepared: Date Signed By CM: Date Signed By Contractor: Date Signed By Senior CM:	Change Order No. 4: <input type="checkbox"/> Final Closeout Change Order: <input type="checkbox"/> Bid Item Adjustment (\$): 0.00 T & M (\$): 0.00 Agreed Lump Sum (\$): 0.00 Change Order Cost No. 4: \$0.00 Date Request Received: Status: Select One Prepared By: Select One Date Prepared: Date Signed By CM: Date Signed By Contractor: Date Signed By Senior CM:

AS BUILT

Type: ☒ O & M ☐ CAP ☐ NO FOOTAGE REPAIR
As-Built Received Date: 10/12/2016 Status: Drafting - O & M Prepared By: CHRISTOPHER TOMES
Date As-Built: 10/24/2016 Date As-Built To Vault: Index No: Index No*:
Monthly Report Construction Comments:

CHALLENGE RESOLUTION

- ▶ Created Project Delivery Procedures
- Maintains uniformity in work across many different tasks
- Has step by step descriptions of all the types of job functions in SEWERS database
- Uniform naming convention for files
- Constantly updated

CHALLENGE RESOLUTION

- Roles clearly defined
- Organization of electronic files
- Uniformity of processes
- Interchangeable employees roles through training

CHALLENGE RESOLUTION

Example Language

4) POST-CONSTRUCTION

(A) Process "As-Built"

- i) The Contractor's "marked up" as-built records are delivered to the PE by the Inspector in the same package as the Request for Change Order, and consists of a copy of the construction order data sheet with changes noted. When the marked up as-built record is received, the PE scans and saves a copy to the electronic project folder on the Q-drive.
- ii) The PE records the following information into the SEWERS Online Application:

REPAIR INFORMATION

Total Reach Length (LF): Lateral Repair Included:

Reach Length (Non-LF Repairs): New Pipe Size (in): New Pipe Material:

Estimated Lining (ft): Actual Lining (ft): New Lining Material:

Estimated Repair Length	Estimated Remodel MH	Estimated Install New MH	Estimated Install Trap MH	Estimated Adjust MH Grade	Estimated Aband Reach	Estimated Repair Length	Actual Repair Length	Actual Remodel MH	Actual Install New MH	Actual Install Trap MH	Actual Adjust MH Grade	Actual Abandoned Reach
330.00	0	0	0	0	0	0	0	0	0	0	0	0
Final Repair Station DS (1)	Final Repair Station US (1)	Final Repair Station DS (2)	Final Repair Station US (2)	Final Repair Station DS (3)	Final Repair Station US (3)	Final Repair Station DS (4)	Final Repair Station US (4)	Final Repair Station DS (5)	Final Repair Station US (5)	Final Repair Station DS (6)	Final Repair Station US (6)	

Input

CHALLENGE RESOLUTION

- ▶ Created Template files for:
As Builts, Change Orders, Construction Order Letters, Pre-Lining CCTV Emails, Right of Entry Letters, Extra Work Authorization Emails

SUMMARY / LESSONS LEARNED

- SEWERS Group handles approximately 220 projects annually
- SEWERS Project Delivery Procedures helps to maintain consistency in the delivery, record keeping, and tracking of projects
- Our weekly, monthly, quarterly and Sewer Rehab Tracking Report help us keep our projects on schedule and on budget

QUESTIONS?