“STRUCTURAL CURED IN PLACE PIPE LINING FOR WATER MAIN HELPS USHER IN A ‘RIVERFRONT RENAISSANCE’”

2014 DOWNTOWN AREA WATERMAIN LINING

CEAM 2015

Nick Egger, P.E.
January 28
History & Background

- Original Water System – 1906
- Cast Iron Pipe
- Highest Water Pressure in town (90+ PSI)
- Installed in the same trench as the sanitary sewer, about 18” above
History & Background
So, why did you pick CIPP lining over other methods?

- Minimizes disruption to store fronts vs. open cut
- Easier to maintain traffic and parking
- Concrete pavement is only 30 years old and in decent shape
- ROCK!
- MDH would have required 10 feet of horizontal separation for traditional replacement
- Overall cost is less than open cut
- Extends life of pipe 75+ years!
  - After “host pipe” is completely rotted away
- More environmentally friendly
  - Industry information suggests up to 84% less CO2 emission per mile of pipe rehabilitated
Some other really BIG reasons too!

New Hastings Bridge
Just a few things to work around

Saturday Cruise-Ins Every 2 weeks

Rivertown Days & Parade
Mid-July
December 2013 – Open House with Downtown Business Owners
## Rehabilitation Schedule

<table>
<thead>
<tr>
<th>Task Name</th>
<th>Start Date</th>
<th>End Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>City Standard Estimate Worksheet Available</td>
<td>January 20</td>
<td></td>
</tr>
<tr>
<td>Submit 2 Estimates to the City</td>
<td>January 21</td>
<td>January 31</td>
</tr>
<tr>
<td>City Informs You of Result of Estimate Review</td>
<td>February 1</td>
<td>February 14</td>
</tr>
<tr>
<td>Possible Discrepancies Resolved</td>
<td>February 15</td>
<td>February 21</td>
</tr>
<tr>
<td>Final Authorizations Executed</td>
<td>February 22</td>
<td>March 3</td>
</tr>
<tr>
<td>Plumbers Complete Preparation Work</td>
<td>March 4</td>
<td>April 11</td>
</tr>
<tr>
<td>City Removes Water Meter</td>
<td>Mid-May</td>
<td></td>
</tr>
</tbody>
</table>
## Rehabilitation Schedule Continued

<table>
<thead>
<tr>
<th>Task Name</th>
<th>Start Date</th>
<th>End Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>City’s Lining Contractor Starts Work</td>
<td></td>
<td>May</td>
</tr>
<tr>
<td>Plumber Receives Partial Payment from City</td>
<td></td>
<td>June</td>
</tr>
<tr>
<td>City’s Lining Contractor Completes Work</td>
<td></td>
<td>July</td>
</tr>
<tr>
<td>City Reinstalls Water Meters</td>
<td></td>
<td>Mid-July</td>
</tr>
<tr>
<td>Plumber Removes Preparation Work / Restores Hole in Wall</td>
<td></td>
<td>Early-August</td>
</tr>
<tr>
<td>Plumber Receives Partial Payment from City</td>
<td></td>
<td>September</td>
</tr>
</tbody>
</table>
How did you supply water to the buildings during construction???

- Temporary water system similar to neighborhood watermain replacements
- HOWEVER, there were no existing spigots on the outsides of the buildings
- Solution — plumb some temporary connections into the buildings (over 50 of them), and get it done before the lining contractor arrives
Touring Plumbing Systems
Ideas
Touring Plumbing Systems
100-year old plumbing is scary stuff!
100-year old plumbing is scary stuff!
Ideas – Temporary Water Network
Keeping Everyone on Track

IMPORTANT - Temporary Water Service Connection Program
Nick Egger
Waterman Living LtrServe
01/10/2014 10:31 AM
Hide Details
From: Nick Egger <N.Egger@ci.hastings.mn.us>
To: Waterman Living LtrServe <2014WaterMainPipeRehabilitation@ci.hastings.mn.us>,

2 Attachments

-Water Main Pipe Rehabilitation - FINAL - Oct 16 Pipe Package.pdf

Good Morning,

Please see the attached file. We are now rolling out the temporary water service connection program, and you will need to participate in the program to make sure your building is prepared to receive a connection from the temporary water network beginning this spring. A hard copy of these same documents was placed in yesterday’s mail, and you should be receiving it by this weekend.

We are sending a very similar package to local plumbing contractors by no later than Monday, January 13th to make them aware of program requirements and to give them notice that they may start receiving calls from you next week to request estimates.

In the meantime, please be sure to take another look at the Project Web Page, which will be updated by the end of today (1/5) to feature the latest project information. If you miss our December 19th informational meetings, Hastings Community TV made a recording of it and it will be available once the website has been updated. I strongly encourage you to watch the recording to help you become more familiar with the project.

Please continue to feel free to contact me with any questions as we continue moving forward on this project.

Nick Egger, P.E.
City Engineer
City of Hastings | Public Works | 1225 Progress Drive | Hastings, MN 55033 | Ph: 651-480-2370 | F: 651-437-5000

List address: 2014WaterMainPipeRehabilitation@ci.hastings.mn.us
Subcontractor: 2014WaterMainPipeRehabilitation@ci.hastings.mn.us

January 9, 2014
RE: City of Hastings 2014 Water Main Pipe Rehabilitation
Temporary Water Main Network Connection Program (Program)

Dear Property Owner:

Between late January and mid-April, you must take advantage of the announced program preparing your building to receive its water from a temporary water main network. This network will be set up to feed the buildings from the alleys.

Because it would take only one service not connected to the network from an alley to cause the need for installation of a network in front of all of the buildings (causing a lot of disruption to vehicles and pedestrian traffic), any property owner choosing not to participate in the this program will be without water for about 2 months during linings.

When installed during May 2014, the network will allow the City to rehabilitate approximately 2,000 feet of deteriorated water main pipe. The City understands that the water main pipe rehabilitation cannot significantly interface with the operation of streets or sidewalks over the pipe. Fortunately, a tool exists allowing the City to install a new pipe inside of the existing pipe. The tool is called structural casette-in-place pipe lining.

December 19 12:00 Noon Describes Lining the City Program

On December 19 the City will hold an Open House Informational Meeting at RJ’s Tavern on Main. At the meeting, we presented not just an overview of lining, but also details about the City program. HCTV recorded this 1 hour long meeting. You can watch the meeting on the City’s web page for this project. You can find our web page at this link:
http://www.ci.hastings.mn.us/PublicWorks/Projects/2014WaterPipeRehabilitation/69747

If you want to fast forward through the recorded meeting, you will find details for the program starting at time counter reading 14:23 and going to 54:17. If you could not attend the meeting, we encourage you to watch the entire recording.

Program Guidelines & Prescribed Requirements

The program includes using your own plumber to install both a network connection point to your plumbing system inside the building, and temporary piping from the connection point through the back wall of your building. Provided your plumber follows the City program’s guidelines and prescribed requirements, the City will directly reimburse your plumber for the cost of your work.

We have provided a listing of local area plumbers for your information. You may choose any plumber to do the work; even if they do not appear on this list, as long as they are licensed in the State of Minnesota.

With input from City and consultant staff, with the help of a local area plumber, and through tours of several properties in early December, we now have prepared a point of being able to reveal the program guidelines for the next 3 sections of this letter.

Estimate Worksheet, Classification, & Reimbursement Limits

We classified the types of preparation work into three different levels of difficulty. Your plumber will need to complete and submit a City standard estimate worksheet. A submitted worksheet not only gives your plumber an estimate to complete your preparation work, but also classifies your work. The City will reimburse your plumber up to the limits shown on the next page.
Project Website

Hastings Department of Public Works

CONSTRUCTION UPDATES - 2014 DOWNTOWN WATER MAIN PIPE REHABILITATION

The video below is KNTV’s recording at the City Council Meeting held in November 2013.

TEMPORARY MEDIUM SERVICE CONNECTION PROGRAM

1. No later than January 21: Property Owners in the project area must submit written applications to the City Engineer’s Department to take advantage of the City’s Temporary Medium Service Connection Program (Program). The Program enables the City to provide its customers with water from a temporary water main network. This network will be set up to serve the buildings from the area.

2. If you want to install your own temporary connections to the network from an existing line, keep in mind that the City will not be responsible for the installation. You are also responsible for any necessary permits and fees.

3. If you choose not to participate in this program, the City will continue to serve your building with water from the water main pipe loop.

DOCUMENT 19: OPEN HOUSE

On December 19, the City held an Open House at the Hastings City Hall. At this meeting, we presented not just an overview of the Project, but also details about the services and benefits. The video below shows a recording of the meeting held in the City Hall. You can watch the video by clicking on the link in the text.

If you want to watch the entire recording of the meeting, we encourage you to watch the entire recording.

Program Guidelines & Permitted Requirements - For the Property Owner

The video below shows the long term and its benefits. The City will not require the property owner to install the temporary connections to the network. The City will provide its customers with water from a temporary water main network. This network will be set up to serve the buildings in the area.

You can watch the video by clicking on the link in the text.

Information about the project and details are available at the City Hall or by calling the City’s Customer Service Center at 1-800-654-3500.

The City is offering an opportunity to save on the installation costs by installing the temporary connections to the network. This will help reduce the cost for the property owner and the City. The temporary connections will be installed at the property owner’s expense.

The video below shows the long term and its benefits. The City will continue to serve your building with water from the water main pipe loop.
Plumbers Estimates

City of Hastings
Project 2014-4, Downtown District Watermain Lining
Temporary Water Service Plumbing Estimation Form

Plumbing Contractor

Contact Information

Building Owner

Building Owner Contact Information

Location

Building Address

Building/Property Name

Date of Estimate

Name & Phone

Email

Name & Phone

Email

Layout Configuration Sketch: Accurately show location of interior connection points, depiction, and length of temporary interior lines and valves, and location of exterior connection point, and all temporary piping segment measurements. Accurately depict locations relative to district interior and exterior building features. Use reverse side if more drawing space is needed. Actual installation may vary, however this sketch will be the basis for the estimate. Attach photos if necessary for clarification.

Minimum Plumbing Component Requirements:

1. NFPA-1 and Minnesota Plumbing Code approved PEX flexible plumbing tubing for interior plumbing runs.
2. Exterior connection shall be lead-free brass, with minimum 3/4” pipe fitting/thread. Size of connection determined by interior main fixed to water.
3. Interior temporary pluming shall be 3/4” minimum size for domestic service, up to the size of the inside line feeding into water meter. Where this suppression systems exist, please indicate any specially stuffing to sustain system leak.
4. All systems shall be lead-free hot and cold, minimum size of 1/2”

Other Special Notes:

Estimate cost includes costs for City of Hastings Plumbing Permit, $25 for Commercial Plumbing Permit.
Publicly Tracking Progress

Construction Updates

UPDATE - TEMPORARY WATER SERVICE CONNECTION PROGRAM

Today is the deadline to submit at least 2 estimates to participate in the City’s Temporary Water Service Connection Program. We cannot extend the deadline further to accommodate the plumbers who will not have enough time to complete their work before the City’s watermain rehabilitation project begins.

As of this last week, 16 of the 25 affected properties submitted the required two (2) plumbing estimates to the City for the temporary connection work. The list below shows the status of estimated submissions. Properties with green bars have submitted the required two estimates, while properties shown with yellow squares have submitted only one estimate, and the properties with red triangles will have to submit an additional estimate. A yellow square with a red triangle, today you must furnish estimates to the City.

The video below describes the timing, tool and its benefits. The City’s project will necessitate the amount of traffic control shown in the video. Traffic control will only be present near the jobs. You will this temporary water main through streets in the alley and front yards. We will use the properties, as it is in the alley.

http://www.ci.hastings.mn.us/PublicWorks/ProjectUpdates/2014/PWENGCurrentProjects2... 2/25/2014
# Plumbing Estimate Tracking

**City of Hastings**

City Project 2014-4: Downtown Water Main Lining

Plumbing Network Update

Updated 2-10-2014

<table>
<thead>
<tr>
<th>Property No.</th>
<th>Address</th>
<th>Building Name</th>
<th>Owner</th>
<th>Plumber</th>
<th>Amount</th>
<th>Notes/Status</th>
<th>Bid Contractor/Estimate</th>
<th>Other Notes/Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>56 Sibley St</td>
<td>American Legion</td>
<td>American Legion</td>
<td>Police</td>
<td>$1,450.00</td>
<td>Yes</td>
<td>Class 3</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>500 Sibley St</td>
<td>The Craftsman Grille</td>
<td>Woody Dodge Agency</td>
<td>Police</td>
<td>$2,787.00</td>
<td>Yes, may need more data</td>
<td>Class 3</td>
<td>C-64* Temp Service Needed</td>
</tr>
<tr>
<td>3</td>
<td>434 2nd St</td>
<td>Formerly Bankhead's</td>
<td>Last Known to Serine, Enterprises</td>
<td>Magnetic</td>
<td>$1,235.00</td>
<td>No, infield</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>905 2nd St</td>
<td>Brier Patch &amp; Town</td>
<td>Kraus Plumbing</td>
<td>Solder</td>
<td>$3,108.80</td>
<td>Yes</td>
<td>No</td>
<td>Work may not be necessary. Contractor notes that costs are for double-checking leaks and for removal after completion</td>
</tr>
<tr>
<td>5</td>
<td>100 2nd St</td>
<td>New Bridge Theatre</td>
<td>Judd Konrad</td>
<td>Magnetic</td>
<td>$3,459.00</td>
<td>No, infield</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note: C-64* indicates the need for temporary service.
Getting Consent from MDH
Temp Plumbing Installations
Temp Plumbing Installations
Temporary Water System
Temporary Water System
Temporary Water System
Temporary Water System
Temporary Water System
Temporary Water System
Fire Suppression Systems Too
Insert Valve Installation

05/22/2014
Intersection Impacts
Intersection Impacts
Maneuverable for Dump Trucks
Small Footprint
Cleaning the Existing Pipe
Cleaning the Existing Pipe
Pulling the Liner
Pressure Loading & Cure-out
Keeping the Information Flowing

Construction Update #5
6/20/2014

What has happened this week?
• All existing watermain pipes were cleaned and measured.
• LINER INSTALLATION Liners installed in all sections of existing watermain beginning on Tuesday and wrapping up Friday.
• Several segments of the new liner were pressure tested for water tightness.

Above (left to right): A worker prepares the pipe liner by injecting a two-part epoxy material between the layers of the double-walled liner, and the pipe is pulled down into an access pit and through the existing watermain pipe until it reaches the other end. Once the liner reaches the other end it is filled with water to expand it to conform to the interior shape of the pipe, and the epoxy material begins to harden.

What is scheduled for the week of June 23rd?
• Additional sections of the liner will be pressure tested.
• Watermain sections will be reconnected to each other at the intersection areas within the access pits.
• Testing for cleanliness of the newly lined and reconnected watermains will begin once they are reconnected to each other.
• Additional pits will be excavated to access locations where hydrant connections and larger services are located, so that these facilities are able to be reinstalled.
• Crews will work on re-routing a couple short sections of watermain out and around sanitary sewer manholes on Sibley Street north and south of 2nd Street.
• Robots will be sent into the newly lined pipe to begin drilling out the service taps from the inside to reestablish the connections to each building.

Who do I contact with a water emergency? Please call Fer-Pal’s emergency telephone number (612) 472-7106.
If the emergency involves the temporary water main system (outlet), they will fix it right away. If the emergency breaks your temporary water service connection (connection) or Internal plumbing, they will direct you to call the private plumber that built your building’s connection.

Other Questions? Due to their experience with this unusual pipe rehabilitation work, Sheet Elliot Hendrickson, Inc. (SEH) will inspect Fer-Pal’s work on this project for the City. While you can always call the City, we encourage you to first contact SEH’s on-site Inspector. His name is Joe Clement. Joe’s telephone number is (612) 759-1895.

Spread the Word & Encourage Updates! Please make sure to share this information with your neighbors and tenants, and encourage them to sign up for the e-updates if they have not yet done so! Signing up is easy – just visit http://www.hastingsmn.gov/PublicWorks/ProjectUpdates/2016/PWENGCurrentProjects/2016BTWatermain.html Click on “Sign Up” next to the “Construction Updates – 2016 Watermain Pipe Rehabilitation” link.

Offsets at Manholes
Putting Everything Back Together
Capping it off
Finishing Touches
The Show Goes On
Final Figures

- Cost: $1 Million
- Buildings Impacted: 52
- Finishing Date: August 1, 2014
- Failed Service Reinstatements: 1
Special Thanks To:

- Downtown Businesses – Fantastic Partners in this!
- SEH Staff
  - Paul Pasko, P.E.
  - Curt Wimpeé, P.E.
  - Joe Clement
- City of Hastings Public Works
  - Mark Peine – PW Superintendent
- City of Hastings Building Department
- Hastings Area Plumbers
Thank you!

Nick Egger, P.E.
(651) 480-2370
nickegger@hastingsmn.gov