Council Work Session #4
Utilities and Transportation
September 21, 2017 7:00pm

Agenda

1. Discussion of Utilities
   a. Sewer
   b. Water

2. Discussion of Transportation

3. Next Steps (5 min)
   a. Meeting in a Box is Available for Use
   b. Council Land Use Work Session – October 26, 2017

4. Adjourn
To: Brad Martens, City Administrator

From: Kent Torve, P.E.,

Date: September 13, 2017

Subject: Utility and Transportation Items for Workshop #4

0.0 Utilities
Overall the trunk utility system remains fairly consistent with the 2030 Trunk Utility plans. The typical process is as developments are proposed and move towards construction, the trunk system is reviewed and revised as necessary to facilitate current and future development.

Maps are attached for your review.

1.0 Sewer

**SE District**-- The developments of Lennar, Downtown, and currently Bass Lake Crossings are served by the main trunk system installed in 2012 and 2014. MCES will construct the regional Lift Station in 2018 thereby completing the permanent wastewater system for the SE District.

The SE trunk system was modified to construct a “temporary” Lift Station along CR 10 to service Downtown connections, and the developable acreage south of CR 50.

**NE District** – MCES has constructed the permanent connection near the “four corners” of Maple Grove, Dayton, Rogers and Corcoran along CSAH 101 which has generated interest in extending sewer south towards CR 30.

**SW District** – This area of Corcoran remains rural, with the recent Park Place expansion utilizing on site water supply and fire protection and septic. A future connection to Medina may be changed towards Maple Plain sewershed, since MCES will connect to Loretto by 2020. The MCES cost is significant for Corcoran, a summary is given in the Attachments.

Funding for the trunk system is via Trunk Line Area Charge, and is adjusted to represent recent construction costs and remaining buildout needs. Each District will have an individual TLAC, and should the NE District move forward this charge will be established to convey to developers.
2.0 Water

SE District—The water system has made significant progress with service from Maple Grove to Lennar and Downtown. A significant benchmark for the SE District will be to “loop” along CR 116, which greatly increases fire flow and provides redundancy for maintenance.

Water pressure modeling was performed in 2016 and fire flow / storage analysis reviewed to estimate the timing for the first water tower. Moving forward the model will be updated with actual usage from billing records, however it appears the SE District will construct storage at around 1,500 homes or the equivalent residential/commercial blended land use.

NE District— A second connection to Maple Grove will occur near CR 30 for the NE District. Long term, the SE District will also connect to NE, and allow the sharing of storage and provide redundancy with the Maple Grove system.

SW District --
Water to supply the SW District may involve a joint powers system with Medina for development near HWY 55 and CR 19. If this is a a Corcoran only system, or joint powers is not possible at the time sewer is available, it is possible for development to move forward with individual wells and fire suppression storage for each property.

3.0 Transportation

The 2030 Transportation Plan is attached for review. An update on the realignment in the CR 10 / Larkin alignment will be discussed at the Workshop.
Sewer System Figures
Future Connection to Elm Creek Interceptor

MCES connection constructed here
2030 Comprehensive Plan

Trunk Sanitary Sewer
SW Area

Figure 27

- Sewer Node
- Forcemain
- Gravity Sewer
- MCES Interceptor
- Sewer Subdistricts
- City Limit
- Parcel Base Map

Connection with Medina

i:\504\50408143\gis\sw sanitary map.mxd

Bonestroo
April 2009
Facility Plan

Maple Plain Interceptor 8352 and Service Area System Improvements

Prepared for

Metropolitan Council Environmental Services

April 1, 2015 Draft
Revised March 11, 2016
Table 6-1: Recommended Interim Project Cost

<table>
<thead>
<tr>
<th>Alternative</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1A- 6-inch Force Main with New Loretto LS</td>
<td>$830,000</td>
</tr>
<tr>
<td>Interim - 16-inch Gravity Sewer (MH-29 to MH-23)</td>
<td>$700,000</td>
</tr>
<tr>
<td>Interim - Install Billing Meters at the Loretto LS and PS-5</td>
<td>$400,000</td>
</tr>
<tr>
<td>5A- Increase Impeller Diameter at L63</td>
<td>$60,000</td>
</tr>
<tr>
<td>6C- L63 Storage</td>
<td>$870,000</td>
</tr>
<tr>
<td><strong>Total Cost</strong></td>
<td><strong>$2,860,000</strong></td>
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</table>

6.1.2 Long-Term Phase

The recommended Long-Term Project:

- Alternative 2 – Independence Beach/Medina replacement in Trail Alignment
- Alternative 1A – Loretto 16-inch Force Main + Upgraded Loretto LS
- Alternative 3 – New LS-1 in new location
- Alternative 4B – 8352 Additional 16-inch Force Main
- Alternative 4D – 8352 Gravity Upgrade
- Alternative 5B – L63 Upgrade

The recommended plan for the long term is to stop attenuating peak flows and implement Alternative 1A to handle Ultimate peak flows. This alternative includes upgrading the Loretto LS in addition to upgrading the interceptor capacity. Alternative 1A is the shorter route and doesn’t require cutting through farm fields like Alternative 1B, making it more difficult to maintain. Alternative 1A sets SP-1 at MH6A. From SP-1, Alternative 2 would be implemented along the Lake independence regional trail to Co Rd 24 and then continues along the existing alignment. This alternative allows for sections of the existing interceptor to be in service during construction compared to upgrading the entire interceptor using the existing alignment which would require temporary conveyance of the wastewater. LS-1 would be upgraded following Alternative 3 and would be located to the east side of Co. Rd. 19. MCES will own and operate the new Interceptor and from SP-1 to L63 as it provides regional service to Independence, Greenfield, Loretto, Medina and Corcoran.

In the long term, the capacity of L63 and the 8352 Interceptor must be increased to accommodate the 2030 and Ultimate peak flows. This will require the construction of a new lift station L63 with larger capacity pumps, a dual force main system, and increasing the gravity interceptor capacity as described in alternatives 5B and 6C. It is further recommended that the force main be upgraded to a dual force main per Alternative 4B or 4C using 16-inch HDPE pipe. HDPE will provide a larger increase in total force main capacity and HDPE provides the option of being constructed via open-cut or directionally drilled methods. The decision to construct a single HDPE force main or dual HDPE force mains should depend on an assessment of the remaining useful life of the existing 12-inch DIP force main sections. Improvements to the gravity sections of Interceptor 8352 could be made according to alternative 4E, but to be conservative for costing and overall capacity, alternative 4D is recommended.

2020 Project to connect Loretto and fix existing I and I

Revised 3/11/2016
It is imperative to note that capacity increases to L63 must be evaluated in the context of improvements to and the capacity of the downstream lift station L60. Improvements to L60 should be completed prior to the construction of the new L63.

Estimated costs for the recommended Long-Term Project are summarized in Table 6-2.

**Table 6-2: Recommended Long-Term Project Cost**

<table>
<thead>
<tr>
<th>Alternative</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1A – Loretto 16-inch Force Main + Upgraded Loretto Lift Station</td>
<td>$1,890,000</td>
</tr>
<tr>
<td>2 – Trail Alignment Independence B/M</td>
<td>$29,090,000</td>
</tr>
<tr>
<td>3 – New LS-1 in new location</td>
<td></td>
</tr>
<tr>
<td>4B – 8352 Additional 16-inch Force Main</td>
<td>$5,740,000</td>
</tr>
<tr>
<td>4D – 8352 Gravity Upgrade</td>
<td></td>
</tr>
<tr>
<td>5B – L63 Upgrade</td>
<td>$9,820,000</td>
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<tr>
<td><strong>Total Cost</strong></td>
<td><strong>$ 46,540,000</strong></td>
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</table>
Water System Figures
Figure 28

Draft Trunk Water System

2030 Comprehensive Plan

A second connection is shown here, no discussions have been held with Maple Grove

Water is currently connected to MG Here.
Transportation
Figure 23

2030 Roadway Functional Classification
2030 Comprehensive Plan

2030 Roadway Functional Classification:
- Principal Arterial
- A Minor Reliever
- A Minor Expander
- Proposed A Minor Expander
- A Minor Connector
- Proposed A Minor Connector
- Major Collector
- Proposed Major Collector
- Minor Collector
- Proposed Minor Collector
- Local Street
- City Limit
- Open Water

Proposed as Part of NW Hennepin Study

October 7, 2009