Facility Plan Summary

Montrose, SD | #668111 & #668130 | April 9, 2019

GENERAL INFORMATION

- Projected 2039 Population: 548 (0.5% increase)
- Average Water Purchased per Person per Day: 73 gallons (81 typical)
- Number of Customers: 214 (172 residential)

WATER SYSTEM

1. Water Source & Treatment

a. City purchases 100% of water from Kingbrook III Rural Water

2. Water Storage

a. Alternative #1 – No Action
b. Alternative #2 – Kingbrook On Demand
    i. City would not have water storage for fire protection
c. **Alternative #3 – 60' Standpipe**
    i. Same size as existing standpipe (70,000 gallons)
    ii. Sufficient storage capacity based on water usage data analysis
    iii. Water pressure & fire flows would remain the same
    iv. Cost: ~$340,000
d. Alternative #4 – 80' Standpipe
    i. Increased storage (90,000 gallons)
        1. Beneficial for fire suppression & higher than expected water use
    ii. Improved water pressure & fire flows
    iii. Cost: ~$370,000
e. Alternative #5 – Elevated Tank
    i. 120' tall, 75,000 gallons
    ii. Much better water pressure & fire flows
        1. Could eliminate variable pumps for pressure boosted zone
    iii. Cost: ~$975,000

3. Water Distribution

a. Alternative #1 – No Action
b. **Alternative #2 – Replace Remaining CIP**
    i. About 800' of cast iron pipe remaining in the system
        1. 1st Ave from Dakota St to Montrose St
    ii. Better fire flows & reduced water loss with new PVC water main
    iii. Cost: ~$300,000
        1. Includes half the width of the road
c. Alternative #3 – Looping
    i. Looping the system improves fire flows & helps prevent stagnant water
    ii. Consider additional looping during future projects
d. Alternative #4 – Booster Zone Reconfiguration
    i. Adjust pressure boosted zone to eliminate low pressure areas north of storage tank
    ii. Adjust position of existing valves & install new valves & water main
    iii. Worse fire flows on pressure boosted system
    iv. Cost: ~$80,000

WASTEWATER SYSTEM

1. Wastewater Collection

a. Alternative #1 – No Action
b. **Alternative #2 – Televise Collection System**
    i. Clean & televise entire system to determine condition
    ii. Information would be used to develop a scope for future repair/replacement projects
    iii. Cost: ~$75,000
c. Alternative #3 – Replace Collection System
    i. Original PVC mains were installed in 1969
    ii. New manholes & PVC mains would reduce inflow & infiltration (I&I)
    iii. Televise data will help determine if & where cured-in-place-pipe (CIPP) can be used & where full replacement is necessary
    iv. Cost: ~$6M
        1. Includes full road replacement & no CIPP
    v. Consider a phased approach
d. **Alternative #4 – Lift Station Improvements**
    i. Build up the lift station to reduce impact of flooding
    ii. Also includes waterproofing, electrical/controls upgrades, new pumps, & a standby generator
    iii. Cost: ~$250,000

2. Wastewater Treatment

a. Alternative #1 – No Action
b. **Alternative #2 – River Bank Stabilization**
    i. River bank is eroding adjacent to the treatment ponds
    ii. Use riprap to stabilize 500’ of river bank
    iii. Cost: ~$75,000
c. **Alternative #3 – Pond Access Road**
    i. Township road used to access treatment ponds experiences flooding
    ii. Build road up 2’-3’ & add culvert(s)
    iii. Cost: ~$200,000
d. Alternative #4 – Pond Expansion Options
    i. Would need additional 6.5 acres of treatment pond for total retention