

# CAPITAL PROFILE REPORT

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PROFILE NAME: **WEST JASPER PLACE TRUNK SEWER REHABILITATION**  
 PROFILE: **17-23-9806**  
 DEPARTMENT: **Financial Services & Utilities - Utilities**  
 BRANCH: **Sanitary Utility**  
 PROGRAM:  
 LEAD BRANCH:  
 BUDGET CYCLE: **2015-2018**

**UNFUNDED**

PROFILE STAGE: **Entry - Create Profile**  
 PROFILE TYPE: **Standalone**  
 PROFILE MANAGER:  
 LEAD BRANCH MANAGER:  
 ESTIMATED START:  
 ESTIMATED COMPLETION:

**Service Category:****Major Initiative:****GROWTH****RENEWAL****100****PREVIOUSLY APPROVED:****-****BUDGET REQUEST:****24,000****TOTAL PROFILE BUDGET:****24,000**

## PROFILE DESCRIPTION

This project includes: rehabilitation of the connection of WESS W13; rehabilitation of all of the 1500 mm on 151 Street from 99 Avenue to north of 100 Avenue; rehabilitation of the drop connection to the 1500 mm trunk on 99 Avenue; replacement of the first 20 m of 1500 mm trunk on 99 Avenue to the wye chamber connecting the 1200 mm trunk on 151 St., south of 99 Avenue; rehabilitation of the wye chamber and a high priority rehabilitation on the 1950 mm trunk along 100 Avenue, west of the connection to the 1500 mm on 151 Street; bypass tunnels on 100 Avenue and 151 Street and the associated construction/access shafts and flow control devices to enable the diversion of the flow to reline in dry conditions, and inspection and testing to the 1500 mm trunk on 99 Avenue east of the wye chamber and the 1200mm trunk on 151 St., south of the wye chamber.

## PROFILE BACKGROUND

"The West Jasper Place (WJP) project began when the WESS W13 project needed to tie into the 1200 mm trunk on 99 Avenue in the WJP neighbourhood. The structural condition of the 1200 mm trunk was found to be very poor due to corrosion and required high priority rehabilitation. Inspections of the trunk sewer downstream on 99 Ave. as well as the upstream trunks on 151 St. and 100 Ave. that connect to the same structure as WESS W13 showed that the structural deterioration was far beyond the initial high priority repair location. These inspections resulted in discovery of the required high priority repairs in the 1950 mm trunk on 100 Ave. included in this profile.

The process for rehabilitation of the 1500 mm trunk will be part relining and part replacement of existing drainage infrastructure in dry conditions. It was determined that there were many disadvantages to wet relining, such as high risk of H2S exposure, odour issues, noise issues, schedule delays, disruption to traffic and businesses and long term sustainability of the drainage infrastructure. It was determined that the best option would be to build bypass tunnels on 100 Ave. and 151 St. to allow work in dry conditions."

## PROFILE JUSTIFICATION

"Through several inspections, it has been determined that these sections of pipe require prompt rehabilitation to reinstate their structural integrity and maintain sanitary service to about 110,000 people in west Edmonton. If left in their current condition, there is a high risk of leakage, sinkholes, and possibly even collapse of the sewer. The rehabilitation of the 1500 mm trunk along 151 Street, the 1200 mm/1500 mm on 99 Avenue and the 1950 mm trunk along 100 Avenue will extend the life of the sewer and will allow the City to continue to provide a high level of service to its customers. It will eliminate risks that are associated with this deteriorated pipe such as flooding, loss of service, roadway collapse or property damage.

## STRATEGIC ALIGNMENT

This project aligns with "The Way We Live" strategic goal by ensuring that the City can provide a high level of service to its customers and by preventing emergency situations such as roadway collapse or property damage.

## ALTERNATIVES CONSIDERED

One alternative is do nothing. If the rehabilitation doesn't go ahead, there is risk of sinkholes or collapsed sewer which is a safety concern. This would also cause a loss of service to 110,000 residents in West Edmonton. Alternatives were looked at for how to deal with flow during rehabilitation. An interim pump station was to be used to bypass flows during low flows or dry weather conditions, which would only occur for short periods of time each day. During wet weather, flow would exceed the capacity of the pump and no rehabilitation work could be done. An alternative was to reline with flow in the sewer, which would require large open pits and complete road closures for long periods. Other impacts include the release of very large quantities of odorous H2S, high construction risks and reduced level of service. The alternative is to build a bypass tunnel which will not only allow rehabilitation of the trunk, but it will also provide additional capacity for future wet weather flows.

## COST BENEFITS

- This project maintains an acceptable level of service for residents
- A renewed pipe with an extended service life
- The impacts of failure in this sewer infrastructure, such as flooding or roadway collapse, can be minimized through rehabilitation
- Eliminates safety concerns of structural collapse
- Customer satisfaction will be higher once project is complete
- The cost estimate for this entire project is \$22 M"

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## KEY RISKS & MITIGATING STRATEGY

There is risk with not going forward with the rehabilitation of this sewer. Sinkholes and possibly collapse of the sewer could occur, as well as loss of service to residents of west Edmonton. Opportunities for investing in the long-term sustainability of the drainage infrastructure will be missed.

## RESOURCES

No new internal resources will be required by this project. However it will require external resources for both the design and construction phases.

## CONCLUSIONS AND RECOMMENDATIONS

The large trunk sewers along 151 Street, 99 Avenue and 100 Avenue require renewal and rehabilitation to safely maintain sustainable service to our citizens. It is recommended to go ahead with this rehabilitation work, including building several bypass tunnels to facilitate dry relining. This method has significantly less risk and will allow the project to be completed quicker and with the least adverse impacts to the citizens.

## CHANGES TO APPROVED PROFILE

N/A

# CAPITAL PROFILE REPORT

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PROFILE NAME: **West Jasper Place Trunk Sewer Rehabilitation**

**UNFUNDED**

PROFILE NUMBER: **17-23-9806**

PROFILE TYPE: **Standalone**

BRANCH: **Sanitary Utility**

## CAPITAL BUDGET AND FUNDING SOURCES (000's)

| APPROVED BUDGET |                          | Prior Years | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | Beyond 2025 | Total |
|-----------------|--------------------------|-------------|------|------|------|------|------|------|------|------|------|-------------|-------|
|                 | Approved Budget          |             |      |      |      |      |      |      |      |      |      |             |       |
|                 | Original Budget Approved | -           | -    | -    | -    | -    | -    | -    | -    | -    | -    | -           | -     |
|                 | Current Approved Budget  | -           | -    | -    | -    | -    | -    | -    | -    | -    | -    | -           | -     |

| BUDGET REQUEST | Budget Request                        | - | 14,400 | 9,600 | - | - | - | - | - | - | - | - | 24,000 |
|----------------|---------------------------------------|---|--------|-------|---|---|---|---|---|---|---|---|--------|
|                | Revised Funding Sources (if approved) |   |        |       |   |   |   |   |   |   |   |   |        |
|                | Drainage Retained Earnings            | - | 5,160  | 3,840 | - | - | - | - | - | - | - | - | 9,000  |
|                | Self-Liquid. Debent.-Sanitary         | - | 9,240  | 5,760 | - | - | - | - | - | - | - | - | 15,000 |
|                | Requested Funding Source              | - | 14,400 | 9,600 | - | - | - | - | - | - | - | - | 24,000 |

| REVISED BUDGET (IF APPROVED) | Revised Budget (if Approved)  | - | 14,400 | 9,600 | - | - | - | - | - | - | - | - | 24,000 |
|------------------------------|-------------------------------|---|--------|-------|---|---|---|---|---|---|---|---|--------|
|                              | Requested Funding Source      |   |        |       |   |   |   |   |   |   |   |   |        |
|                              | Drainage Retained Earnings    | - | 5,160  | 3,840 | - | - | - | - | - | - | - | - | 9,000  |
|                              | Self-Liquid. Debent.-Sanitary | - | 9,240  | 5,760 | - | - | - | - | - | - | - | - | 15,000 |
|                              | Requested Funding Source      | - | 14,400 | 9,600 | - | - | - | - | - | - | - | - | 24,000 |

## CAPITAL BUDGET BY ACTIVITY TYPE (000's)

| REVISED BUDGET (IF APPROVED) | Activity Type | Prior Years | 2017   | 2018  | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | Beyond 2025 | Total  |
|------------------------------|---------------|-------------|--------|-------|------|------|------|------|------|------|------|-------------|--------|
|                              | Construction  | -           | 14,400 | 9,600 | -    | -    | -    | -    | -    | -    | -    | -           | 24,000 |
|                              | Total         | -           | 14,400 | 9,600 | -    | -    | -    | -    | -    | -    | -    | -           | 24,000 |

## OPERATING IMPACT OF CAPITAL

Type of Impact:

| Branch:                |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|                        | Rev | Exp | Net | FTE | Rev | Exp | Net | FTE | Rev | Exp | Net | FTE | Rev | Exp | Net | FTE |
| Total Operating Impact | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   |