

CAPITAL PROFILE REPORT

| | | | |
|-----------------|---|-----------------------|----------------------------|
| PROFILE NAME: | STRUCTURES REHABILITATION | PROFILE STAGE: | L1 - Finance Review |
| PROFILE NUMBER: | CM-31-9503 | PROFILE TYPE: | Composite |
| DEPARTMENT: | Financial Services & Utilities - Utilities | PROFILE MANAGER: | Chris Ward |
| BRANCH: | Stormwater Utility | LEAD BRANCH MANAGER: | |
| LEAD BRANCH: | | ESTIMATED START DATE: | January, 2015 |
| PROGRAM NAME: | | ESTIMATED COMPLETION: | December, 2024 |
| BUDGET CYCLE: | 2015-2018 | | |

| | | | |
|--------------------------|------------------|------------------------------|--------------|
| Service Category: | Utilities | Major Initiative: | |
| GROWTH | RENEWAL | PREVIOUSLY APPROVED: | - |
| | 100 | BUDGET REQUEST: | 8,693 |
| | | TOTAL PROFILE BUDGET: | 8,693 |

PROFILE DESCRIPTION

The Structures Rehabilitation Program ensures an acceptable level of service is maintained in various components of drainage infrastructure. Structures such as outfalls, pump stations, drill drop manholes and trunk sewers deteriorate over time. This program involves the investigation, design and rehabilitation of these existing structures. Projects are located throughout the city. Structures requiring repair or rehabilitation are identified and prioritized based on condition ratings and inspections completed by Drainage Operations.

PROFILE BACKGROUND

Due to aging and deterioration of drainage infrastructure, the City may be vulnerable to unexpected failures that disrupt sewer service to homeowners, and can have a negative impact on the environment. Proactive rehabilitation of outfalls, pump stations, drill drop manholes and trunk sewers reduces costly emergency failures. Structures Rehabilitation has been ongoing on for many years and are rehabilitated on a location by location basis, based on condition inspections or problems identified by Drainage Operations.

PROFILE JUSTIFICATION

The Structures Rehabilitation Program maintains an acceptable level of service for citizens through the rehabilitation of drainage infrastructure. It protects persons and property from injury and damage due to roadway subsidence, sewer collapse or raw sewerage spill to the river. Timely repairs are needed to maintain the integrity of the infrastructure and to prevent claims against the City for property damage, public health concerns and possible environmental infractions as well as to protect pedestrian and vehicular traffic from potential roadway collapse and flooding damages. Further deterioration of structures could lead to emergency situations requiring immediate attention at a higher cost.

STRATEGIC ALIGNMENT

This program aligns with the "The Way We Live" as it allows Drainage Services to continue to provide a high level of service to the residents by reducing the possibility of flooded basements, loss of service or unnecessary spills to the environment.

ALTERNATIVES CONSIDERED

One alternative is to do nothing. If nothing is done, drainage infrastructure will be at higher risk of eventual failure, potentially causing flooding or environmental infractions, as well as more costly emergency repairs.

COST BENEFITS

The long term impact of this project on the operating budget will be positive because the overall condition of the infrastructures will be improved. This will lessen the efforts required to operate, and maintain the infrastructure. There will be a reduction in unpredictable emergency repairs required as a result of the proactive rehabilitation.

KEY RISKS & MITIGATING STRATEGY

Non-availability of the required funding will result in further deterioration of pump stations, trunk sewers, outfalls and drill drop manholes. This could potentially cause flooding, property damage and other emergency situations.

RESOURCES

No new internal resources will be required by these projects. However many of the projects will require external resources for both the design and/or construction phases.

CONCLUSIONS AND RECOMMENDATIONS

Drainage infrastructure is aging and many assets are past their useful service life. This program was initiated to extend the life of trunk sewers, outfalls, pump stations and drill drop manholes as they age, on a location by location basis.

CONTINGENCY OF APPROVAL

CAPITAL PROFILE REPORT

PROFILE NAME: Structures Rehabilitation
 PROFILE NUMBER: CM-31-9503

PROFILE TYPE: Composite
 BRANCH: Stormwater Utility

CAPITAL BUDGET AND FUNDING SOURCES (000's)

| APPROVED BUDGET | | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|-----------------|--------------------------|-------------|------|------|------|------|------|------|------|------|------|------|-------|
| | Approved Budget | | | | | | | | | | | | |
| | Original Budget Approved | - | - | - | - | - | - | - | - | - | - | - | - |
| | Current Approved Budget | - | - | - | - | - | - | - | - | - | - | - | - |

| | | | | | | | | | | | | | |
|----------------|---------------------------------------|---|---|-------|-------|-------|-------|---|---|---|---|---|-------|
| BUDGET REQUEST | Budget Request | - | - | 1,801 | 2,015 | 2,403 | 2,475 | - | - | - | - | - | 8,693 |
| | Revised Funding Sources (if approved) | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 905 | 1,092 | 1,452 | 1,496 | - | - | - | - | - | 4,945 |
| | Self-Liquid. Debent.-Land Drg | - | - | 895 | 923 | 951 | 979 | - | - | - | - | - | 3,748 |
| | Requested Funding Source | - | - | 1,801 | 2,015 | 2,403 | 2,475 | - | - | - | - | - | 8,693 |

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|------------------------------|-------------------------------|---|---|-------|-------|-------|-------|---|---|---|---|---|-------|
| REVISED BUDGET (IF APPROVED) | Revised Budget (if Approved) | - | - | 1,801 | 2,015 | 2,403 | 2,475 | - | - | - | - | - | 8,693 |
| | Requested Funding Source | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 905 | 1,092 | 1,452 | 1,496 | - | - | - | - | - | 4,945 |
| | Self-Liquid. Debent.-Land Drg | - | - | 895 | 923 | 951 | 979 | - | - | - | - | - | 3,748 |
| | Requested Funding Source | - | - | 1,801 | 2,015 | 2,403 | 2,475 | - | - | - | - | - | 8,693 |

REVISED BUDGET BY ACTIVITY TYPE (000's)

| REVISED BUDGET BY ACTIVITY TYPE | Activity Type | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|---------------------------------|---------------|--------------|------|-------|-------|-------|-------|-------|------|------|------|------|-------|
| | | Construction | - | - | 1,621 | 1,813 | 2,163 | 2,227 | - | - | - | - | - |
| | Design | - | - | 180 | 201 | 240 | 247 | - | - | - | - | - | 869 |
| | Total | - | - | 1,801 | 2,015 | 2,403 | 2,475 | - | - | - | - | - | 8,693 |

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 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

CAPITAL PROFILE REPORT

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|-----------------|--|-----------------------|---------------------|
| PROFILE NAME: | SEWER REHABILITATION | PROFILE STAGE: | L1 - Finance Review |
| PROFILE NUMBER: | CM-31-9504 | PROFILE TYPE: | Composite |
| DEPARTMENT: | Financial Services & Utilities - Utilities | PROFILE MANAGER: | Chris Ward |
| BRANCH: | Stormwater Utility | LEAD BRANCH MANAGER: | |
| LEAD BRANCH: | | ESTIMATED START DATE: | January, 2015 |
| PROGRAM NAME: | | ESTIMATED COMPLETION: | December, 2024 |
| BUDGET CYCLE: | 2015-2018 | | |

| | | | |
|------------------------------------|----------------|------------------------------|--------|
| Service Category: Utilities | | Major Initiative: | |
| GROWTH | RENEWAL | PREVIOUSLY APPROVED: | - |
| | 100 | BUDGET REQUEST: | 14,478 |
| | | TOTAL PROFILE BUDGET: | 14,478 |

PROFILE DESCRIPTION

This initiative is comprised of two sub programs, the Local Sewer Rehabilitation program and the Arterial and Collector Roadway Renewal program. The programs rehabilitate drainage system infrastructure as it ages on a location by location basis. Sewers requiring renewal are determined based on condition ratings, inspections completed by Drainage Operations, and in coordination with arterial or collector roadway reconstruction.

Currently, the renewal is for mainline sewers and includes some manhole's if they are required. Locations are limited to local sewers or sewers in locations of arterial or collector roadway reconstruction work. The drainage renewal work is completed through both relining and open cut. Locations identified as requiring renewal are investigated through CCTV to determine scope of work for each project.

PROFILE BACKGROUND

The City of Edmonton owns and operates over 5,600 km of sanitary, storm and combined sewers. The average age of the pipes is 43 years, with around 30% of them over 50 years old. Due to aging and deterioration of drainage infrastructure, the City may be vulnerable to unexpected failures that disrupt not only sewer service to homeowners but above-ground activities as well. Given the enormous cost of replacement of this infrastructure, proactive renewal needs to occur in the drainage system.

This is a recurring program that has been going on for many years. Currently, two sub programs are ongoing to renew existing infrastructure. Local Sewer Rehabilitation renews local sewers on a location by location basis, depending on condition ratings and issues determined by Drainage Operations. Arterial and Collector Roadways Renewal renews sewers in coordination with locations where arterial or collector reconstruction will be completed.

PROFILE JUSTIFICATION

This program maintains existing levels of service for citizens through the upkeep of the sewer infrastructure by rehabilitation and renewal. It protects persons and property from injury and damage due to roadway subsidence or sewer collapse. Timely corrective action prevents further deterioration of sewers which could lead to an emergency situation requiring immediate attention at a higher cost. Sewer rehabilitation in areas of roadway reconstruction provides a timely and cost effective opportunity for sewer rehabilitation and renewal and complies with the City's 3 year no cut policy.

STRATEGIC ALIGNMENT

This aligns with the The Way We Live as it reduces the possibility of sewer back-ups due to sewer failure and minimizes disruptions to the public through orderly execution of construction works. It provides a high level of service to residents.

ALTERNATIVES CONSIDERED

One alternative is to do nothing. If nothing is done, drainage infrastructure will be at risk of eventual failure, resulting in costly emergency repairs.

COST BENEFITS

The long term impact of this program on the operating budget will be positive because the overall condition of the infrastructures will be improved. This will lessen the efforts required to operate, maintain and repair the aging infrastructure. There will be a reduction in unpredictable emergency repairs required as a result of the renewal. Each sub program within Sewer Rehabilitation requires approx. \$2.4M/year to complete the required renewals.

KEY RISKS & MITIGATING STRATEGY

Non-availability of the required funding will result in further deterioration of sewers, leading to more costly and disruptive emergency repairs. It will also lead to the inability to co-ordinate with roadway reconstruction projects.

RESOURCES

No new internal resources will be required by this program. However many of the projects will require external resources for both the design and/or construction phases.

CONCLUSIONS AND RECOMMENDATIONS

Drainage infrastructure is aging and many assets are past their useful service life. This program was initiated to rehabilitate the drainage infrastructure as it ages on a location by location basis, or in coordination with reconstruction projects.

CONTINGENCY OF APPROVAL

CAPITAL PROFILE REPORT

PROFILE NAME: Sewer Rehabilitation
 PROFILE NUMBER: CM-31-9504

PROFILE TYPE: Composite
 BRANCH: Stormwater Utility

CAPITAL BUDGET AND FUNDING SOURCES (000's)

| APPROVED BUDGET | | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|-----------------|--------------------------|-------------|------|------|------|------|------|------|------|------|------|------|-------|
| | Approved Budget | | | | | | | | | | | | |
| | Original Budget Approved | - | - | - | - | - | - | - | - | - | - | - | - |
| | Current Approved Budget | - | - | - | - | - | - | - | - | - | - | - | - |

| | | | | | | | | | | | | | |
|----------------|---------------------------------------|---|---|-------|-------|-------|-------|---|---|---|---|---|--------|
| BUDGET REQUEST | Budget Request | - | - | 3,461 | 3,565 | 3,671 | 3,782 | - | - | - | - | - | 14,478 |
| | Revised Funding Sources (if approved) | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 1,384 | 1,426 | 1,469 | 1,513 | - | - | - | - | - | 5,791 |
| | Self-Liquid. Debent.-Land Drg | - | - | 2,076 | 2,139 | 2,202 | 2,269 | - | - | - | - | - | 8,687 |
| | Requested Funding Source | - | - | 3,461 | 3,565 | 3,671 | 3,782 | - | - | - | - | - | 14,478 |

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|------------------------------|-------------------------------|---|---|-------|-------|-------|-------|---|---|---|---|---|--------|
| REVISED BUDGET (IF APPROVED) | Revised Budget (if Approved) | - | - | 3,461 | 3,565 | 3,671 | 3,782 | - | - | - | - | - | 14,478 |
| | Requested Funding Source | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 1,384 | 1,426 | 1,469 | 1,513 | - | - | - | - | - | 5,791 |
| | Self-Liquid. Debent.-Land Drg | - | - | 2,076 | 2,139 | 2,202 | 2,269 | - | - | - | - | - | 8,687 |
| | Requested Funding Source | - | - | 3,461 | 3,565 | 3,671 | 3,782 | - | - | - | - | - | 14,478 |

REVISED BUDGET BY ACTIVITY TYPE (000's)

| REVISED BUDGET BY ACTIVITY TYPE | Activity Type | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|---------------------------------|---------------|--------------|------|-------|-------|-------|-------|-------|------|------|------|------|--------|
| | | Construction | - | - | 3,115 | 3,208 | 3,304 | 3,404 | - | - | - | - | - |
| | Design | - | - | 346 | 356 | 367 | 378 | - | - | - | - | - | 1,448 |
| | Total | - | - | 3,461 | 3,565 | 3,671 | 3,782 | - | - | - | - | - | 14,478 |

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 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

CAPITAL PROFILE REPORT

| | | | |
|-----------------|--|-----------------------|---------------------|
| PROFILE NAME: | SERVICE CONNECTION RENEWAL | PROFILE STAGE: | L1 - Finance Review |
| PROFILE NUMBER: | CM-31-9512 | PROFILE TYPE: | Composite |
| DEPARTMENT: | Financial Services & Utilities - Utilities | PROFILE MANAGER: | Chris Ward |
| BRANCH: | Stormwater Utility | LEAD BRANCH MANAGER: | |
| LEAD BRANCH: | | ESTIMATED START DATE: | January, 2015 |
| PROGRAM NAME: | | ESTIMATED COMPLETION: | December, 2024 |
| BUDGET CYCLE: | 2015-2018 | | |

| | | | |
|-------------------|-----------|-------------------|--|
| Service Category: | Utilities | Major Initiative: | |
|-------------------|-----------|-------------------|--|

| | | | |
|---------------|----------------|-----------------------|-------|
| GROWTH | RENEWAL | PREVIOUSLY APPROVED: | - |
| | 100 | BUDGET REQUEST: | 2,542 |
| | | TOTAL PROFILE BUDGET: | 2,542 |

PROFILE DESCRIPTION

The Service Connection Renewal Program will be focused on the renewal and replacement of service connection laterals. The primary objective of this program is to maintain an acceptable level of service and to minimize the number of high cost reactive replacements by proactively identifying problematic locations and attending to them before they become emergency issues. The program could eventually be coordinated with the Drainage Neighbourhood Renewal Program or other programs to maximize efficiencies.

PROFILE BACKGROUND

The City of Edmonton operates and maintains over 350,000 service connections. Due to aging and deteriorating infrastructure, Drainage Services receives an average of 10,000 service calls each year related to service connection issues. These calls are to report backups due to collapsed services, root intrusions, or other structural related problems. These issues result in a high frequency of reactive maintenance and an average of 260 service replacements each year. A Service Connection Renewal Program would minimize the number of high cost reactive replacements by proactively identifying problems and addressing them before they become an emergency replacement. In the City of Edmonton, private property owners are responsible for their service connection from the home to the property line. The City is then responsible for the portion from the property line to the connection at the mainline sewer.

PROFILE JUSTIFICATION

Many service connections in the mature neighbourhoods of the city are deteriorating, which results in over 10,000 annual service calls to Drainage Services. A long term sustainable Service Connection Renewal Program would be focused on the renewal and replacement of service connection laterals. This program would provide continuous service for residents through the upkeep of the service lateral infrastructure as well as protect persons and property from injury and damage due to service lateral collapse. Timely corrective action prevents further deterioration of services which could lead to an emergency situation requiring immediate attention at a higher cost. Rehabilitation is needed to maintain the integrity of the services to prevent the claims against the City for property damage, public health concerns and possible environmental infractions.

STRATEGIC ALIGNMENT

This program aligns with the "The Way We Live" because it allows Drainage Services to continue to provide a high level of service to the residents by reducing the possibility of sewer back-ups due to service sewer blockages.

ALTERNATIVES CONSIDERED

One alternative to this program is to do nothing. If nothing proactive is done, service connections will continue to deteriorate and will be at risk of eventual failure. More costly repairs will result from the emergency situations.

COST BENEFITS

The program will have a positive impact on the operating budget due to the reduction in unpredictable emergency repairs required. There will be a reduction of maintenance activities for a period of time once the infrastructure is renewed.

KEY RISKS & MITIGATING STRATEGY

The program could be limited by requiring access into private properties to access cleanouts to complete the work. Contractors with the ability to reline from the mainline are being looked at as part of the strategy development.

RESOURCES

No new internal resources required by this program at this stage, however some new FTE's may be required once the full program is established. External resources will be required for both the design and construction phases.

CONCLUSIONS AND RECOMMENDATIONS

Due to aging and deterioration of service laterals, the City may be vulnerable to unexpected failures that disrupt sewer service to homeowners. This long term sustainable program would systematically renew and replace aging service connections.

CONTINGENCY OF APPROVAL

CAPITAL PROFILE REPORT

PROFILE NAME: **Service Connection Renewal**

PROFILE TYPE: **Composite**

PROFILE NUMBER: **CM-31-9512**

BRANCH: **Stormwater Utility**

CAPITAL BUDGET AND FUNDING SOURCES (000's)

| APPROVED BUDGET | | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|-----------------|--------------------------|-------------|------|------|------|------|------|------|------|------|------|------|-------|
| | Approved Budget | | | | | | | | | | | | |
| | Original Budget Approved | - | - | - | - | - | - | - | - | - | - | - | - |
| | Current Approved Budget | - | - | - | - | - | - | - | - | - | - | - | - |

| | | | | | | | | | | | | | |
|----------------|---------------------------------------|---|---|-----|-----|-----|-----|---|---|---|---|---|-------|
| BUDGET REQUEST | Budget Request | - | - | 345 | 711 | 732 | 754 | - | - | - | - | - | 2,542 |
| | Revised Funding Sources (if approved) | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 138 | 284 | 293 | 302 | - | - | - | - | - | 1,017 |
| | Self-Liquid. Debent.-Land Drg | - | - | 207 | 426 | 439 | 452 | - | - | - | - | - | 1,525 |
| | Requested Funding Source | - | - | 345 | 711 | 732 | 754 | - | - | - | - | - | 2,542 |

| | | | | | | | | | | | | | |
|------------------------------|-------------------------------|---|---|-----|-----|-----|-----|---|---|---|---|---|-------|
| REVISED BUDGET (IF APPROVED) | Revised Budget (if Approved) | - | - | 345 | 711 | 732 | 754 | - | - | - | - | - | 2,542 |
| | Requested Funding Source | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 138 | 284 | 293 | 302 | - | - | - | - | - | 1,017 |
| | Self-Liquid. Debent.-Land Drg | - | - | 207 | 426 | 439 | 452 | - | - | - | - | - | 1,525 |
| | Requested Funding Source | - | - | 345 | 711 | 732 | 754 | - | - | - | - | - | 2,542 |

REVISED BUDGET BY ACTIVITY TYPE (000's)

| REVISED BUDGET BY ACTIVITY TYPE | Activity Type | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|---------------------------------|---------------|--------------|------|------|------|------|------|------|------|------|------|------|-------|
| | | Construction | - | - | 311 | 640 | 659 | 679 | - | - | - | - | - |
| | Design | - | - | 35 | 71 | 73 | 75 | - | - | - | - | - | 254 |
| | Total | - | - | 345 | 711 | 732 | 754 | - | - | - | - | - | 2,542 |

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 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

CAPITAL PROFILE REPORT

| | | | |
|-----------------|--|-----------------------|---------------------|
| PROFILE NAME: | SEWER SYSTEM UPGRADING | PROFILE STAGE: | L1 - Finance Review |
| PROFILE NUMBER: | CM-31-9703 | PROFILE TYPE: | Composite |
| DEPARTMENT: | Financial Services & Utilities - Utilities | PROFILE MANAGER: | Chris Ward |
| BRANCH: | Stormwater Utility | LEAD BRANCH MANAGER: | |
| LEAD BRANCH: | | ESTIMATED START DATE: | January, 2015 |
| PROGRAM NAME: | | ESTIMATED COMPLETION: | December, 2024 |
| BUDGET CYCLE: | 2015-2018 | | |

| | | | |
|-------------------|-----------|-------------------|--|
| Service Category: | Utilities | Major Initiative: | |
|-------------------|-----------|-------------------|--|

| | | | |
|---------------|----------------|-----------------------|--------|
| GROWTH | RENEWAL | PREVIOUSLY APPROVED: | - |
| | 100 | BUDGET REQUEST: | 13,655 |
| | | TOTAL PROFILE BUDGET: | 13,655 |

PROFILE DESCRIPTION

This program will increase the capacity of the City's sewer systems and minimize capacity constraints. It aims to improve the level of service by reducing the impacts of large rainfall events, minimizing the risk of sewer backup and surface flooding in all the 255 mature neighbourhoods built prior to 1989. Project works include the design and construction of hydraulic upgrades in 2 - 4 neighbourhoods every year. The Sewer Upgrading Strategy comprises both proactive and reactive projects to address sewer capacity deficiencies. Proactive upgrades under the Sewer Upgrading Strategy may be implemented along with the Drainage Neighbourhood Renewal Program (DNRP) or the Flood Prevention Program which could reduce costs associated with excavation, repaving, mobilization/demobilization, etc. However, reactive upgrades will be implemented in neighborhoods that experience significant basement flooding following a severe rainfall event.

PROFILE BACKGROUND

The Sewer Upgrading Strategy is needed to address pipe capacity issues by upgrading the pipes from their current size to a larger size to increase the sanitary, storm and combined sewer level of service. The strategy aims to improve drainage sewer systems in all 255 neighbourhoods that were built prior to 1989, which were designed with no minor system. Flooding report data indicate on average 350 basement flooding incidents occur per year in pre-1989 neighborhoods. So far, 107 of these neighbourhoods have been assessed and 138 remaining neighbourhoods will need to be evaluated in the upcoming years.

The Sewer Upgrading Strategy will be complimentary to local upgrades the City undertakes in response to extreme flood events under the Flood Prevention Program, and may work in coordination with Drainage Neighbourhood Renewal. It will focus toward addressing sewer and drainage system deficiencies before flooding occurs, reducing the impacts of large rainfall events when they occur.

PROFILE JUSTIFICATION

Upgrading the capacity of existing facilities can help to ensure that an acceptable level of service is provided to drainage customers. Upgrades will reduce the occurrences of basement and street flooding which cause property damage and can be very costly and disturbing to residents. Upgrades will also improve the water quality to North Saskatchewan River. Stormwater quality has been identified as a significant source of some of the contaminants to the North Saskatchewan River. Control of these contaminants is a partial fulfillment of obligations to Alberta Environment.

STRATEGIC ALIGNMENT

The Sewer Upgrading Strategy aligns with "The Way We Live" as it reduces basement and surface flooding due to sewer capacity deficiencies. It will increase the level of service and reduce impact on environment and public health.

ALTERNATIVES CONSIDERED

An alternative is to do nothing. This will cause public dissatisfaction due to basement flooding, street flooding and property damage.

COST BENEFITS

The Strategy will have a positive impact on the operating budget due to the reduction in flooding occurrences. There will also be a reduction of maintenance activities for a period of time for the new sewer. The estimated average cost to upgrade each neighborhood is approximately \$5.3 million.

KEY RISKS & MITIGATING STRATEGY

The implementation of this strategy will increase sewer level of service and will reduce the risk of injury or damage to persons and property due to basement flooding, street flooding, or roadway subsidence.

RESOURCES

No new internal resources will be required by this program. However the Sewer Upgrading Strategy projects will require external resources for both the design and construction phases.

CONCLUSIONS AND RECOMMENDATIONS

The Sewer Upgrading Strategy is needed to address sewer capacity issues causing basement or surface flooding. In neighbourhoods built prior to 1989, sewer level of service is considered below current standards and therefore requires sewer upgrades.

CONTINGENCY OF APPROVAL

CAPITAL PROFILE REPORT

PROFILE NAME: Sewer System Upgrading
 PROFILE NUMBER: CM-31-9703

PROFILE TYPE: Composite
 BRANCH: Stormwater Utility

CAPITAL BUDGET AND FUNDING SOURCES (000's)

| APPROVED BUDGET | | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|-----------------|--------------------------|-----------------|------|------|------|------|------|------|------|------|------|------|-------|
| | | Approved Budget | | | | | | | | | | | |
| | Original Budget Approved | - | - | - | - | - | - | - | - | - | - | - | - |
| | Current Approved Budget | - | - | - | - | - | - | - | - | - | - | - | - |

| | | | | | | | | | | | | | |
|----------------|---------------------------------------|---|---|-----|-------|-------|-------|---|---|---|---|---|--------|
| BUDGET REQUEST | Budget Request | - | - | 128 | 1,326 | 6,010 | 6,190 | - | - | - | - | - | 13,655 |
| | Revised Funding Sources (if approved) | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 52 | 530 | 2,404 | 2,476 | - | - | - | - | - | 5,462 |
| | Self-Liquid. Debent.-Land Drg | - | - | 77 | 796 | 3,606 | 3,714 | - | - | - | - | - | 8,193 |
| | Requested Funding Source | - | - | 128 | 1,326 | 6,010 | 6,190 | - | - | - | - | - | 13,655 |

| | | | | | | | | | | | | | |
|------------------------------|-------------------------------|---|---|-----|-------|-------|-------|---|---|---|---|---|--------|
| REVISED BUDGET (IF APPROVED) | Revised Budget (if Approved) | - | - | 128 | 1,326 | 6,010 | 6,190 | - | - | - | - | - | 13,655 |
| | Requested Funding Source | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 52 | 530 | 2,404 | 2,476 | - | - | - | - | - | 5,462 |
| | Self-Liquid. Debent.-Land Drg | - | - | 77 | 796 | 3,606 | 3,714 | - | - | - | - | - | 8,193 |
| | Requested Funding Source | - | - | 128 | 1,326 | 6,010 | 6,190 | - | - | - | - | - | 13,655 |

REVISED BUDGET BY ACTIVITY TYPE (000's)

| REVISED BUDGET BY ACTIVITY TYPE | Activity Type | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|---------------------------------|---------------|-------------|------|------|-------|-------|-------|-------|------|------|------|------|--------|
| | | Design | - | - | 128 | 1,326 | 6,010 | 6,190 | - | - | - | - | - |
| | Total | - | - | 128 | 1,326 | 6,010 | 6,190 | - | - | - | - | - | 13,655 |

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 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

CAPITAL PROFILE REPORT

| | | |
|-----------------|--|---|
| PROFILE NAME: | MILL CREEK END OF PIPE TREAT. FACILITY | FUNDED |
| PROFILE NUMBER: | 13-31-9617 | PROFILE STAGE: Approved |
| DEPARTMENT: | Financial Services & Utilities - Utilities | PROFILE TYPE: Standalone |
| BRANCH: | Stormwater Utility | PROFILE MANAGER: Ward C. |
| LEAD BRANCH: | | LEAD BRANCH MANAGER: |
| PROGRAM NAME: | | ESTIMATED START DATE: January, 2013 |
| BUDGET CYCLE: | 2011 | ESTIMATED COMPLETION: December, 2014 |

| | | |
|--------------------------|------------------|--------------------------|
| Service Category: | Utilities | Major Initiative: |
|--------------------------|------------------|--------------------------|

| | | | |
|---------------|----------------|------------------------------|---------------|
| GROWTH | RENEWAL | PREVIOUSLY APPROVED: | 841 |
| | 100 | BUDGET REQUEST: | 10,959 |
| | | TOTAL PROFILE BUDGET: | 11,800 |

PROFILE DESCRIPTION

This project provides concept development, design and construction of an end of pipe facility to improve the quality of stormwater in Mill Creek. The end of pipe facility is expected to significantly reduce the total suspended sediment loadings to the North Saskatchewan River (NSR). Due to the complexity of the sources of pollutants and the Creek's environmental and biological sensitivity, a sustainable stormwater management approach has to be implemented for Mill Creek loading reduction. First, a feasibility study is planned for 2013 and 2014 to analyze the characteristics of the stormwater in the creek and its impact to the creek and NSR, identify sources of pollutants, and develop various control options. The preliminary design and detailed design will start in 2015 and construction to start in 2016. This project will have no operating cost impact.

PROFILE JUSTIFICATION

Drainage Services developed the Stormwater Quality Control Strategy and Action Plan as required by the Alberta Environment through the City of Edmonton wastewater approval #639-02-07. This project, along with other specific projects meets Alberta Environment's requirement to protect the North Saskatchewan River. The project also supports directly the Way We Green. This project will also be part of the commitment of the City of Edmonton to restore biodiversity and increase ecological health of the watershed (as per Mayor Mandel's letter to the Government of Alberta on June 28, 2011).

CAPITAL PROFILE REPORT

FUNDED

PROFILE NAME: Mill Creek End of Pipe Treat. Facility
 PROFILE NUMBER: 13-31-9617

PROFILE TYPE: Standalone
 BRANCH: Stormwater Utility

CAPITAL BUDGET AND FUNDING SOURCES (000's)

| | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|----------------------------------|----------------------------|------|------|------|------|------|------|------|------|------|------|-------|
| | | | | | | | | | | | | |
| APPROVED BUDGET | Approved Budget | | | | | | | | | | | |
| | Original Budget Approved | 385 | 456 | - | - | - | - | - | - | - | - | 841 |
| | 2013 Carry Forward | -385 | - | - | - | - | - | - | - | - | - | -385 |
| | 2014 Carry Forward | - | 385 | - | - | - | - | - | - | - | - | 385 |
| | Current Approved Budget | - | 841 | - | - | - | - | - | - | - | - | 841 |
| | Approved Funding Sources | | | | | | | | | | | |
| | Drainage Retained Earnings | - | 841 | - | - | - | - | - | - | - | - | - |
| Current Approved Funding Sources | - | 841 | - | - | - | - | - | - | - | - | - | 841 |

| | | | | | | | | | | | | | |
|--------------------------|---------------------------------------|---|-------|-------|-------|-------|-------|---|---|---|---|--------|--------|
| BUDGET REQUEST | Budget Request | - | - | 2,296 | 2,633 | 3,696 | 2,334 | - | - | - | - | - | 10,959 |
| | Revised Funding Sources (if approved) | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 918 | 1,053 | 1,478 | 934 | - | - | - | - | - | 4,383 |
| | Self-Liquid. Debent.-Land Drg | - | - | 1,378 | 1,580 | 2,218 | 1,400 | - | - | - | - | - | 6,576 |
| Requested Funding Source | - | - | 2,296 | 2,633 | 3,696 | 2,334 | - | - | - | - | - | 10,959 | |

| | | | | | | | | | | | | | |
|------------------------------|-------------------------------|-----|-------|-------|-------|-------|-------|---|---|---|---|--------|--------|
| REVISED BUDGET (IF APPROVED) | Revised Budget (if Approved) | - | 841 | 2,296 | 2,633 | 3,696 | 2,334 | - | - | - | - | - | 11,800 |
| | Requested Funding Source | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | 841 | 918 | 1,053 | 1,478 | 934 | - | - | - | - | - | 5,224 |
| | Self-Liquid. Debent.-Land Drg | - | - | 1,378 | 1,580 | 2,218 | 1,400 | - | - | - | - | - | 6,576 |
| Requested Funding Source | - | 841 | 2,296 | 2,633 | 3,696 | 2,334 | - | - | - | - | - | 11,800 | |

REVISED BUDGET BY ACTIVITY TYPE (000's)

| | Activity Type | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|---------------------------------|---------------|-------------|------|-------|-------|-------|-------|------|------|------|------|------|--------|
| | | | | | | | | | | | | | |
| REVISED BUDGET BY ACTIVITY TYPE | Construction | -385 | 385 | 2,296 | 2,633 | 3,696 | 2,334 | - | - | - | - | - | 10,959 |
| | Other Costs | 385 | 456 | - | - | - | - | - | - | - | - | - | 841 |
| | Total | - | 841 | 2,296 | 2,633 | 3,696 | 2,334 | - | - | - | - | - | 11,800 |

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 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

CAPITAL PROFILE REPORT

| | | | |
|-----------------|---|-----------------------|----------------------------|
| PROFILE NAME: | SEWER LATERALS TO SUPPORT DOWNTOWN INTENSIFICATION | PROFILE STAGE: | L1 - Finance Review |
| PROFILE NUMBER: | 15-31-9415 | PROFILE TYPE: | Standalone |
| DEPARTMENT: | Financial Services & Utilities - Utilities | PROFILE MANAGER: | Chris Ward |
| BRANCH: | Stormwater Utility | LEAD BRANCH MANAGER: | |
| LEAD BRANCH: | | ESTIMATED START DATE: | January, 2015 |
| PROGRAM NAME: | | ESTIMATED COMPLETION: | December, 2018 |
| BUDGET CYCLE: | 2015-2018 | | |

| | | | |
|--------------------------|------------------|--------------------------|--------------------------------|
| Service Category: | Utilities | Major Initiative: | Downtown Arena District |
|--------------------------|------------------|--------------------------|--------------------------------|

| | | | |
|---------------|----------------|------------------------------|---------------|
| GROWTH | RENEWAL | PREVIOUSLY APPROVED: | - |
| 100 | | BUDGET REQUEST: | 17,601 |
| | | TOTAL PROFILE BUDGET: | 17,601 |

PROFILE DESCRIPTION

This initiative is for sewer upgrading projects recommended to be implemented in stages to allow the City's Downtown and North Edge areas to intensify, in line with Capital City Downtown Plan (CCDP) and Catalyst projects. Sewer improvements selected as priority include projects along 105 Ave, 100 Ave, 102 Ave and 108 Ave. These laterals will feed into the backbone deep tunnel along 105/107 (CRL project) and will contribute toward the overall improvements of sewer level of service to accommodate growth and intensification. The 105 Ave storm sewer improvement proposed is prioritized due to coordination with the upcoming 105 Ave Streetscaping project. The proposed 102 Ave and 100 Ave storm trunks were identified in Phase II of the Community Revitalization Levy (CRL) and will be recommended for implementation in future years. The 108 Ave storm trunk is delayed for implementation until there is greater demand in the North Edge area.

PROFILE BACKGROUND

The Capital City Downtown Plan (CCDP) is a corporate initiative to revitalize and intensify growth in Downtown Edmonton. This redevelopment plan proposes significant infill including high-rise commercial and office space, high density residential and a proposed Sports and Entertainment District. The redevelopment will result in a significant increase in wastewater flows and some increase of storm water runoff, resulting in the need for upgraded sanitary and storm servicing in the downtown area.

A deep tunnel along 105/107 street, the backbone of the drainage improvements required for the implementation of CCDP, will be funded by the CRL and Drainage Services (\$46M). Other key lateral trunks are required to accommodate future development and will flow into the new deep tunnel. These include storm trunks along 105 Ave, 100 Ave, 102 Ave and 108 Ave. The 105 Ave storm sewer improvement project is a priority due to the upcoming 105 Ave Streetscaping project.

PROFILE JUSTIFICATION

These sewer upgrading projects are critical improvements to allow the City's Downtown and North Edge areas to intensify and grow, in line with the CCDP and catalyst projects. Densification will increase the sewage flows in the existing system and redevelopment will potentially impact stormwater runoff due to changes in the land's perviousness. The main objective is to improve the level of service of the Downtown and North Edge sewer systems to a 5-year level of service for flood protection while allowing for future growth and densification. Another benefit is that these projects will allow opportunities for partial sewer separation in these areas. The projects must coordinate with other projects in the area such as the 105/107 Street deep tunnel project, Transportation Services' Neighbourhood Renewal Program beginning in Central McDougall in 2018, and the 105 Ave Streetscaping project proposed to begin in 2015, as well as the future SE LRT line.

STRATEGIC ALIGNMENT

This project aligns with The Way We Grow by supporting infill development and downtown intensification. It also aligns with The Way We Live because it allows Drainage Services to continue to provide a high level of service to the residents.

ALTERNATIVES CONSIDERED

Doing no improvements to accommodate the growth is an alternative. However this would likely lead to basement and street flooding, property damage, safety concerns, environmental issues and low levels of service for residents.

COST BENEFITS

New sewer infrastructure will provide a high level of service to the Downtown and North Edge areas. Development will be able to progress in these areas once this infrastructure is in place. The priority lateral improvement is the 105 Ave storm trunk with a cost estimate of \$16M, which includes a shaft connection to the deep tunnel backbone trunk.

KEY RISKS & MITIGATING STRATEGY

The risk of not completing this project is that the drainage system will not be able to keep up with the continued development in the downtown and north edge areas. If the project is delayed, coordination with other City projects will be unlikely.

RESOURCES

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

CONCLUSIONS AND RECOMMENDATIONS

This initiative is needed to support the Capital City Downtown Plan. It is recommended to go ahead with the 105 Ave storm trunk and other future laterals to accommodate additional sanitary flow and stormwater runoff resulting from future development.

CONTINGENCY OF APPROVAL

CAPITAL PROFILE REPORT

PROFILE NAME: Sewer Laterals to Support Downtown Intensification

PROFILE TYPE: Standalone

PROFILE NUMBER: 15-31-9415

BRANCH: Stormwater Utility

CAPITAL BUDGET AND FUNDING SOURCES (000's)

| APPROVED BUDGET | | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|-----------------|--------------------------|-------------|------|------|------|------|------|------|------|------|------|------|-------|
| | Approved Budget | | | | | | | | | | | | |
| | Original Budget Approved | - | - | - | - | - | - | - | - | - | - | - | - |
| | Current Approved Budget | - | - | - | - | - | - | - | - | - | - | - | - |

| | | | | | | | | | | | | | |
|----------------|---------------------------------------|---|---|-----|-------|-------|-------|---|---|---|---|---|--------|
| BUDGET REQUEST | Budget Request | - | - | 515 | 1,061 | 9,835 | 6,190 | - | - | - | - | - | 17,601 |
| | Revised Funding Sources (if approved) | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 206 | 424 | 3,934 | 2,476 | - | - | - | - | - | 7,040 |
| | Self-Liquid. Debent.-Land Drg | - | - | 309 | 637 | 5,901 | 3,714 | - | - | - | - | - | 10,560 |
| | Requested Funding Source | - | - | 515 | 1,061 | 9,835 | 6,190 | - | - | - | - | - | 17,601 |

| | | | | | | | | | | | | | |
|------------------------------|-------------------------------|---|---|-----|-------|-------|-------|---|---|---|---|---|--------|
| REVISED BUDGET (IF APPROVED) | Revised Budget (if Approved) | - | - | 515 | 1,061 | 9,835 | 6,190 | - | - | - | - | - | 17,601 |
| | Requested Funding Source | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 206 | 424 | 3,934 | 2,476 | - | - | - | - | - | 7,040 |
| | Self-Liquid. Debent.-Land Drg | - | - | 309 | 637 | 5,901 | 3,714 | - | - | - | - | - | 10,560 |
| | Requested Funding Source | - | - | 515 | 1,061 | 9,835 | 6,190 | - | - | - | - | - | 17,601 |

REVISED BUDGET BY ACTIVITY TYPE (000's)

| REVISED BUDGET BY ACTIVITY TYPE | Activity Type | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|---------------------------------|---------------|--------------|------|------|-------|-------|-------|-------|------|------|------|------|--------|
| | | Construction | - | - | - | - | 9,835 | 6,190 | - | - | - | - | - |
| | Design | - | - | 515 | 1,061 | - | - | - | - | - | - | - | 1,576 |
| | Total | - | - | 515 | 1,061 | 9,835 | 6,190 | - | - | - | - | - | 17,601 |

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 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

CAPITAL PROFILE REPORT

| | | | |
|-----------------|--|-----------------------|---------------------|
| PROFILE NAME: | GROAT ROAD TRUNK SEWER REHABILITATION | PROFILE STAGE: | L1 - Finance Review |
| PROFILE NUMBER: | 15-31-9515 | PROFILE TYPE: | Standalone |
| DEPARTMENT: | Financial Services & Utilities - Utilities | PROFILE MANAGER: | Chris Ward |
| BRANCH: | Stormwater Utility | LEAD BRANCH MANAGER: | |
| LEAD BRANCH: | | ESTIMATED START DATE: | January, 2015 |
| PROGRAM NAME: | | ESTIMATED COMPLETION: | December, 2017 |
| BUDGET CYCLE: | 2015-2018 | | |

| | | | |
|------------------------------------|----------------|------------------------------|--------|
| Service Category: Utilities | | Major Initiative: | |
| GROWTH | RENEWAL | PREVIOUSLY APPROVED: | - |
| | 100 | BUDGET REQUEST: | 19,289 |
| | | TOTAL PROFILE BUDGET: | 19,289 |

PROFILE DESCRIPTION

A 2km section of corrugated liner plate storm sewer on Groat Road from 118 to 107 Avenue and a 1.7km section along 118 Avenue from 129 to 142 Street and south of 121A Avenue require prompt rehabilitation. There is a risk that sinkholes and possibly even collapse of the sewer could occur as soil around the sewers is washed away. The trunks have holes nearly throughout the entire lengths so require prompt rehabilitation to reinstate their structural integrity and to prevent leakage. Further investigation and analysis is required to develop a concept plan and design. The conceptual design process may begin in 2014 through the Structures Rehabilitation program (12-23-9503). The design process will take a minimum of 12 months, possibly longer. The rehabilitation construction work must be undertaken during the fall and winter season (September to February) when flows are at a minimum. With the magnitude of the work, it would need to be staged over at least two or more construction seasons.

PROFILE BACKGROUND

Man entry visual inspections, 3.9 km long, of the large diameter corrugated liner plate storm trunk sewers along Groat Road from 118 Ave to 107 Ave (2337mm/92") and along 118 Ave from 129 Street to 142 Street (1727mm/68") undertaken in June 2012 by Drainage Operations identified concerns about the structural condition of these sewers. There appears to have holes in the invert along nearly the entire length and requires prompt rehabilitation to reinstate its structural integrity and to prevent leakage.

PROFILE JUSTIFICATION

Through man entry visual inspections, it has been determined that these sections of pipe require prompt rehabilitation to reinstate their structural integrity. An assessment of the trunks was conducted and it was determined that if they are left in their current condition, there is a risk that sinkholes and possibly even collapse of the sewer could occur if they are not rehabilitated to reinstate their structural integrity and to prevent leakage. The sections have reached 60 years so they have surpassed their expected service life.

STRATEGIC ALIGNMENT

This project aligns with "The Way We Live" strategic goal by ensuring that Drainage Services 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 to do nothing. If the rehabilitation does not go ahead, there is risk of sinkholes in the roadway or a collapsed sewer which is a safety concern. This would also cause a loss of service, and would require a costly emergency repair.

COST BENEFITS

High level costs estimates at this time are approximately \$18M if CIPP lining can be used, but costs will be significantly higher if open cut replacement is required. These estimates will be evaluated and refined through conceptual design.

The impacts of failure in this sewer infrastructure, such as flooding or roadway collapse, can be minimized through rehabilitation. This project maintains an acceptable level of service for residents.

KEY RISKS & MITIGATING STRATEGY

There is risk with not going forward with the rehabilitation of this sewer. Sinkholes and possibly even collapse of the sewer and roadway could occur as soil around the pipe is washed away.

RESOURCES

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

CONCLUSIONS AND RECOMMENDATIONS

It is recommended to go ahead with this project to prevent sinkholes and possible collapse of the sewer. Structural integrity needs to be restored in the sewer promptly. Conceptual design will determine type of rehabilitation and cost estimates.

CONTINGENCY OF APPROVAL

CAPITAL PROFILE REPORT

PROFILE NAME: Groat Road Trunk Sewer Rehabilitation

PROFILE TYPE: Standalone

PROFILE NUMBER: 15-31-9515

BRANCH: Stormwater Utility

CAPITAL BUDGET AND FUNDING SOURCES (000's)

| APPROVED BUDGET | | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|-----------------|--------------------------|-----------------|------|------|------|------|------|------|------|------|------|------|-------|
| | | Approved Budget | | | | | | | | | | | |
| | Original Budget Approved | - | - | - | - | - | - | - | - | - | - | - | - |
| | Current Approved Budget | - | - | - | - | - | - | - | - | - | - | - | - |

| | | | | | | | | | | | | | |
|----------------|---------------------------------------|---|---|-------|-------|-------|---|---|---|---|---|---|--------|
| BUDGET REQUEST | Budget Request | - | - | 2,060 | 8,487 | 8,742 | - | - | - | - | - | - | 19,289 |
| | Revised Funding Sources (if approved) | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 824 | 3,395 | 3,497 | - | - | - | - | - | - | 7,716 |
| | Self-Liquid. Debent.-Land Drg | - | - | 1,236 | 5,092 | 5,245 | - | - | - | - | - | - | 11,573 |
| | Requested Funding Source | - | - | 2,060 | 8,487 | 8,742 | - | - | - | - | - | - | 19,289 |

| | | | | | | | | | | | | | |
|------------------------------|-------------------------------|---|---|-------|-------|-------|---|---|---|---|---|---|--------|
| REVISED BUDGET (IF APPROVED) | Revised Budget (if Approved) | - | - | 2,060 | 8,487 | 8,742 | - | - | - | - | - | - | 19,289 |
| | Requested Funding Source | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 824 | 3,395 | 3,497 | - | - | - | - | - | - | 7,716 |
| | Self-Liquid. Debent.-Land Drg | - | - | 1,236 | 5,092 | 5,245 | - | - | - | - | - | - | 11,573 |
| | Requested Funding Source | - | - | 2,060 | 8,487 | 8,742 | - | - | - | - | - | - | 19,289 |

REVISED BUDGET BY ACTIVITY TYPE (000's)

| REVISED BUDGET BY ACTIVITY TYPE | Activity Type | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|---------------------------------|---------------|-------------|------|-------|-------|-------|-------|------|------|------|------|------|--------|
| | | Design | - | - | 2,060 | 8,487 | 8,742 | - | - | - | - | - | - |
| | Total | - | - | 2,060 | 8,487 | 8,742 | - | - | - | - | - | - | 19,289 |

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 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

CAPITAL PROFILE REPORT

PROFILE NAME: **KENNEDALE ACCOMMODATION UPGRADE**
 PROFILE NUMBER: **15-31-6142**
 DEPARTMENT: **Financial Services & Utilities - Utilities**
 BRANCH: **Stormwater Utility**
 LEAD BRANCH:
 PROGRAM NAME:
 BUDGET CYCLE: **2015-2018**

| | |
|-----------------------|----------------------------|
| PROFILE STAGE: | L1 - Finance Review |
| PROFILE TYPE: | Standalone |
| PROFILE MANAGER: | Chris Ward |
| LEAD BRANCH MANAGER: | |
| ESTIMATED START DATE: | January, 2015 |
| ESTIMATED COMPLETION: | December, 2016 |

| | | | |
|------------------------------------|----------------|------------------------------|--------------|
| Service Category: Utilities | | Major Initiative: | |
| GROWTH | RENEWAL | PREVIOUSLY APPROVED: | - |
| | 100 | BUDGET REQUEST: | 5,227 |
| | | TOTAL PROFILE BUDGET: | 5,227 |

PROFILE DESCRIPTION

The involves adding 1,570 square meters to the equipment Garage at the rear of the complex. The vehicle and equipment stored in the main building can then be stored in the equipment garage. This garage space in the main building can be converted into office space without changing the footprint of the main building. The additional office space would accommodate future space requirements for the next 5 years. This will add about 10,000 sq ft of office space and about 14,000 sq ft of shop space. Construction in the conceptual design phase is estimated at about \$11.5 Million of which \$1 Million is estimated for detailed design cost. Construction is anticipated to require 2 years to complete and would be phased with the expansion to the Equipment Garage first, followed by construction within the vacated garage space in the main building and ultimately the renovation of remaining office spaces.

PROFILE BACKGROUND

Drainage Operations anticipates adding staff and equipment in 2015 but has reached office and shop space capacity. The proposal adds onto an existing heated outbuilding and substantial renovation turning shop space in offices in the main building. Many renovations have occurred over the years to provide additional space for the Kennedale Drainage Operations Complex. All office space is now occupied and additional staff and equipment is anticipated in the 2015 budget. A consultant was engaged to develop and accommodation plan that minimizes cost and maximizes efficiency. In 2015 about 10 FTE and 7 vehicles have been requested. The current space will not accommodate storage of the equipment in the required heated environment and the staff can only be provided temporary accommodation in a boardroom.

PROFILE JUSTIFICATION

Additional office and shop space will allow for growth of staff and equipment levels. As the City grows, so does the drainage network. In order to maintain a reliable system to preserve public health and the environment, additional staff and equipment is required. Kennedale Drainage Operations is at capacity and additional space is required immediately. The anticipated outcomes include increased morale due to more welcoming and environmentally sustainable office space, increased connectivity between staff due to an open office conceptual plan, and preservation of City assets due to the appropriate storage of expensive vehicles and equipment in a heated storage environment. The measures of success will be that this proposal is accepted and funded in the 2015-2018 Capital program.

STRATEGIC ALIGNMENT

This project aligns with THE WAY WE GROW, THE WAY WE GREEN, AND THE WAY WE LIVE as a result of interrelationships between our operations and the preservation of public health and the environment while allowing the City to expend through development.

ALTERNATIVES CONSIDERED

A do nothing alternative would result in a decrease in service level and an increase in service interruptions. Outsourcing has been investigated but competition causes availability and pricing to fluctuate.

COST BENEFITS

The tangible benefits include foregoing spending and estimated \$50 million to build new rather than renovate. The intangible benefits of this proposal include reducing the City's environmental footprint through the use of LEEDS Silver standards and the reduction of office space per person as a result of applying the new City office standards. Morale would be increased as noise, lighting and heating issues existing in the building.

KEY RISKS & MITIGATING STRATEGY

The risk of not proceeding with this project is that the required staff and equipment are not hired while the City continues to grow.

RESOURCES

This project does not directly require an increase in staff resources.

CONCLUSIONS AND RECOMMENDATIONS

The recommendation is to approve the request to fund the renovation of existing space at a cost of about \$11.7 Million.

CONTINGENCY OF APPROVAL

CAPITAL PROFILE REPORT

PROFILE NAME: **Kennedale Accommodation Upgrade**
 PROFILE NUMBER: **15-31-6142**

PROFILE TYPE: **Standalone**
 BRANCH: **Stormwater Utility**

CAPITAL BUDGET AND FUNDING SOURCES (000's)

| APPROVED BUDGET | | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|-----------------|-------------------------|--------------------------|------|------|------|------|------|------|------|------|------|------|-------|
| | Approved Budget | Original Budget Approved | - | - | - | - | - | - | - | - | - | - | - |
| | Current Approved Budget | - | - | - | - | - | - | - | - | - | - | - | - |

| | | | | | | | | | | | | | |
|----------------|---------------------------------------|---|---|-------|-------|---|---|---|---|---|---|---|-------|
| BUDGET REQUEST | Budget Request | - | - | 2,575 | 2,652 | - | - | - | - | - | - | - | 5,227 |
| | Revised Funding Sources (if approved) | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 1,030 | 1,061 | - | - | - | - | - | - | - | 2,091 |
| | Self-Liquid. Debent.-Land Drg | - | - | 1,545 | 1,591 | - | - | - | - | - | - | - | 3,136 |
| | Requested Funding Source | - | - | 2,575 | 2,652 | - | - | - | - | - | - | - | 5,227 |

| | | | | | | | | | | | | | |
|------------------------------|-------------------------------|---|---|-------|-------|---|---|---|---|---|---|---|-------|
| REVISED BUDGET (IF APPROVED) | Revised Budget (if Approved) | - | - | 2,575 | 2,652 | - | - | - | - | - | - | - | 5,227 |
| | Requested Funding Source | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 1,030 | 1,061 | - | - | - | - | - | - | - | 2,091 |
| | Self-Liquid. Debent.-Land Drg | - | - | 1,545 | 1,591 | - | - | - | - | - | - | - | 3,136 |
| | Requested Funding Source | - | - | 2,575 | 2,652 | - | - | - | - | - | - | - | 5,227 |

REVISED BUDGET BY ACTIVITY TYPE (000's)

| REVISED BUDGET BY ACTIVITY TYPE | Activity Type | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|---------------------------------|---------------|-------------|------|-------|-------|------|------|------|------|------|------|------|-------|
| | Construction | - | - | 2,318 | 2,387 | - | - | - | - | - | - | - | - |
| Design | - | - | 257 | 265 | - | - | - | - | - | - | - | - | 523 |
| | Total | - | - | 2,575 | 2,652 | - | - | - | - | - | - | - | 5,227 |

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 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

CAPITAL PROFILE REPORT

| | | | |
|-----------------|--|-----------------------|---------------------|
| PROFILE NAME: | OPTIMIZATION OF 30 AVENUE STORM TRUNK OVERFLOW | | |
| PROFILE NUMBER: | 15-31-9525 | PROFILE STAGE: | L1 - Finance Review |
| DEPARTMENT: | Financial Services & Utilities - Utilities | PROFILE TYPE: | Standalone |
| BRANCH: | Stormwater Utility | PROFILE MANAGER: | Chris Ward |
| LEAD BRANCH: | | LEAD BRANCH MANAGER: | |
| PROGRAM NAME: | | ESTIMATED START DATE: | January, 2015 |
| BUDGET CYCLE: | 2015-2018 | ESTIMATED COMPLETION: | December, 2017 |

| | | | |
|-------------------|-----------|-------------------|--|
| Service Category: | Utilities | Major Initiative: | |
|-------------------|-----------|-------------------|--|

| | | | |
|---------------|----------------|-----------------------|-------|
| GROWTH | RENEWAL | PREVIOUSLY APPROVED: | - |
| 25 | 75 | BUDGET REQUEST: | 7,741 |
| | | TOTAL PROFILE BUDGET: | 7,741 |

PROFILE DESCRIPTION

The proposed initiative will involve the design and construction of a new, 2900mm tunnel beneath Whitemud Creek, connecting the 5100mm pipe on the east side of the creek with the 5100mm pipe on the west side of the creek in addition to the existing two 1950mm pipes currently carrying flow. After several trials, it was determined that a tunnel constructed with a 0.1% slope could handle 1:100 year design storms, including additional conveyance due to the Mill Woods Double Barrel upgrade, without causing overflow. The work components for the project include:

- Environmental site assessment study and geotechnical investigation
- Preparing the preliminary design for the tunnel and verifying the findings of the concept
- Detailed design and preparation of tender documents
- Construction of tunnel

PROFILE BACKGROUND

The 30th Avenue storm system services a large area in south Edmonton, including the Mill Woods neighborhood and South Edmonton Common. The system experiences a bottleneck and flow instability when a 5100mm trunk reaches the Whitemud Creek, where the flow moves into two 1950mm pipes. In the July 2004 and July 2012 storms, there were severe overflows at the east bank of Whitemud Creek, which damaged the existing infrastructure and led to the creek embankment scouring. Repairs were performed following these storm events, while a more permanent solution was investigated.

PROFILE JUSTIFICATION

The 30th Avenue storm system experiences a bottleneck at its crossing at Whitemud Creek. This bottleneck has already led to severe overflow geysers during 2004 and 2012 storm events. Upon completion of the Mill Woods Double Barrel upgrade in 2015, the flows in the system will increase, putting additional pressure on the bottleneck location. The past overflow incidents resulted in significant damage to the bank from the manhole to the creek itself, scoured the abutment of the pedestrian bridge, and eroded the Whitemud Creek. The possibility of increased overflow also implies a heightened safety risk: the overflow during 2004 resulted in a 10 meter geyser, which blew off the 20 tonne manhole covering the shaft. The geyser was observed by a passing pedestrian. In addition to these dangers, the ongoing pressure that the location puts upon the overall system represents an inefficiency that will impede the success of the rest of the system to meet its design objectives.

STRATEGIC ALIGNMENT

This project complements the City's overall goals for environmental protection as articulated in The Way Ahead, and it contributes to achieving the City's strategic vision as follows: The Way We Live, The Way We Green, and The Way We Finance

ALTERNATIVES CONSIDERED

- 1) Provide full conveyance under the creek
- 2) Redesign overflow channel to protect creek
- 3) Provide partial conveyance and allow overflow
- 4) Do nothing

COST BENEFITS

The implementation of this project will improve the capacity of drainage system and eliminate overflows at the Whitemud Creek crossing for 1:100 year design storm. The Whitemud Creek bank will be protected from erosion and scouring. The project estimated cost is about \$7.2 M. This conceptual cost estimation is based on currently available information and it has a contingency of 60% including engineering fee and project management.

KEY RISKS & MITIGATING STRATEGY

The cost will depend on geotechnical conditions, site constraints, constructability issues, and recommendations of environmental review agencies.

RESOURCES

External engineering consultants will be required for: environmental assessment, geotechnical investigation, preliminary design and detailed design. For the installation of 2900 mm tunnel will need TBM machine from the City

CONCLUSIONS AND RECOMMENDATIONS

The aim of this project is to improve the hydraulic performance and implement strategies for mitigating the damaging impact of stormwater overflow in the creek. The recommendation is that regulatory discernment should be sought.

CONTINGENCY OF APPROVAL

CAPITAL PROFILE REPORT

PROFILE NAME: Optimization of 30 Avenue storm trunk overflow
 PROFILE NUMBER: 15-31-9525

PROFILE TYPE: Standalone
 BRANCH: Stormwater Utility

CAPITAL BUDGET AND FUNDING SOURCES (000's)

| APPROVED BUDGET | | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|-----------------|--------------------------|-------------|------|------|------|------|------|------|------|------|------|------|-------|
| | Approved Budget | | | | | | | | | | | | |
| | Original Budget Approved | - | - | - | - | - | - | - | - | - | - | - | - |
| | Current Approved Budget | - | - | - | - | - | - | - | - | - | - | - | - |

| | | | | | | | | | | | | | |
|----------------|---------------------------------------|---|---|-----|-------|-------|---|---|---|---|---|---|-------|
| BUDGET REQUEST | Budget Request | - | - | 309 | 2,122 | 5,311 | - | - | - | - | - | - | 7,741 |
| | Revised Funding Sources (if approved) | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 124 | 849 | 2,124 | - | - | - | - | - | - | 3,097 |
| | Self-Liquid. Debent.-Land Drg | - | - | 185 | 1,273 | 3,186 | - | - | - | - | - | - | 4,645 |
| | Requested Funding Source | - | - | 309 | 2,122 | 5,311 | - | - | - | - | - | - | 7,741 |

| | | | | | | | | | | | | | |
|------------------------------|-------------------------------|---|---|-----|-------|-------|---|---|---|---|---|---|-------|
| REVISED BUDGET (IF APPROVED) | Revised Budget (if Approved) | - | - | 309 | 2,122 | 5,311 | - | - | - | - | - | - | 7,741 |
| | Requested Funding Source | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 124 | 849 | 2,124 | - | - | - | - | - | - | 3,097 |
| | Self-Liquid. Debent.-Land Drg | - | - | 185 | 1,273 | 3,186 | - | - | - | - | - | - | 4,645 |
| | Requested Funding Source | - | - | 309 | 2,122 | 5,311 | - | - | - | - | - | - | 7,741 |

REVISED BUDGET BY ACTIVITY TYPE (000's)

| REVISED BUDGET BY ACTIVITY TYPE | Activity Type | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|---------------------------------|---------------|-------------|------|------|-------|-------|-------|------|------|------|------|------|-------|
| | | Design | - | - | 309 | 2,122 | 5,311 | - | - | - | - | - | - |
| | Total | - | - | 309 | 2,122 | 5,311 | - | - | - | - | - | - | 7,741 |

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 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

CAPITAL PROFILE REPORT

| | | | |
|-----------------|--|-----------------------|---------------------|
| PROFILE NAME: | OPPORTUNISTIC FLOOD PREVENTION | PROFILE STAGE: | L1 - Finance Review |
| PROFILE NUMBER: | CM-31-9612 | PROFILE TYPE: | Composite |
| DEPARTMENT: | Financial Services & Utilities - Utilities | PROFILE MANAGER: | Chris Ward |
| BRANCH: | Stormwater Utility | LEAD BRANCH MANAGER: | |
| LEAD BRANCH: | | ESTIMATED START DATE: | January, 2015 |
| PROGRAM NAME: | | ESTIMATED COMPLETION: | December, 2021 |
| BUDGET CYCLE: | 2015-2018 | | |

| | | | |
|-------------------|-----------|-------------------|--|
| Service Category: | Utilities | Major Initiative: | |
|-------------------|-----------|-------------------|--|

| | | | |
|---------------|----------------|-----------------------|-------|
| GROWTH | RENEWAL | PREVIOUSLY APPROVED: | - |
| | 100 | BUDGET REQUEST: | 5,356 |
| | | TOTAL PROFILE BUDGET: | 5,356 |

PROFILE DESCRIPTION

Land acquisition and construction of dry ponds as the opportunities present themselves. This program consists of land acquisitions of surplus school sites, design and construction of stormwater management dry ponds for the purpose of flood prevention. This is a proactive program established with the objective of improving the level of service to today's servicing standards and ensuring that a properly designed major system is in place to safely store flows in excess of minor system.

PROFILE BACKGROUND

The projects identified in this program originated from feasibility studies completed in 2010, which evaluated strategic locations for implementing flood mitigation measures at a number of surplus school sites. Sites at Newton, Queen Mary Park, Bellevue, Dovercourt, McQueen and Prince Rupert neighbourhoods were recommended for the development of stormwater management facilities to improve the level of service to today's servicing standards and to ensure that properly designed major system is in place to safely store flows in excess of the minor system. This proactive program is therefore based on the availability of suitable surplus school sites. These neighbourhoods have no defined major drainage system as they were constructed prior to the implementation of the dual storm drainage system requirement for both major (surface) and minor (piped) drainage system, which was introduced in the late 1980's.

PROFILE JUSTIFICATION

The combined sewers carry both sanitary and storm flows in the same sewer pipe and typically were designed to a lower level of service than the separated sanitary and storm sewer serviced neighbourhoods. A significant portion of the combined sewers has a less than 1 in 5 year service levels. These neighbourhoods also have several low trapped/sag areas with no outlet for the surface water to drain away. The surface flooding in these trapped low areas can inundate the sanitary sewer systems and cause sanitary sewer lines to be filled beyond capacity. These areas therefore have higher risk of basement flooding and private property damage in the event of major storms. It is expected that in the event of an unusual storm flows exceeding the capacity of the sewer pipes, the engineered ponds will store the excess flows. If these projects are not implemented, the city will miss the opportunity to retrofit ponds for drainage relief and provide partial sewer separation in these neighbourhoods.

STRATEGIC ALIGNMENT

The Way we Live, The Way we Green, and The Way we Finance

ALTERNATIVES CONSIDERED

1. Smaller dry pond with storage tunnel
2. Large storage tunnel
3. Underground storage tank
4. Small and shallow dry pond 3 with storage tank

COST BENEFITS

The proposed facilities will improve the drainage system in each neighbourhood. It will also ensure that an acceptable level of service is provided to Drainage Services customers, and the City's resources are spent in an effective manner and optimized for flood protection purpose.

KEY RISKS & MITIGATING STRATEGY

- The key risks and constraints of not proceeding with the study are:
- Neighbourhoods will be at- risk of flooding during similar storm events;
 - The City will not fulfill the promise to address flooding in at- risk neighbourhoods

RESOURCES

External engineering consultants and contractors will be required for engineering and construction of the facilities. To build a successful long-term flood prevention program, there is a need for FTEs to handle the program.

CONCLUSIONS AND RECOMMENDATIONS

It is recommended that the proposed flood prevention works be funded. These facilities will provide the areas with flood protection that may result from sewer back-up and street flooding during severe rain events.

CONTINGENCY OF APPROVAL

CAPITAL PROFILE REPORT

PROFILE NAME: **Opportunistic Flood Prevention**
 PROFILE NUMBER: **CM-31-9612**

PROFILE TYPE: **Composite**
 BRANCH: **Stormwater Utility**

CAPITAL BUDGET AND FUNDING SOURCES (000's)

| APPROVED BUDGET | | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|--------------------------|-----------------|-------------|------|------|------|------|------|------|------|------|------|------|-------|
| | Approved Budget | | | | | | | | | | | | |
| Original Budget Approved | | - | - | - | - | - | - | - | - | - | - | - | - |
| Current Approved Budget | | - | - | - | - | - | - | - | - | - | - | - | - |

| | | | | | | | | | | | | | |
|--------------------------|---------------------------------------|---|---|-------|---|---|---|---|---|---|---|---|-------|
| BUDGET REQUEST | Budget Request | - | - | 5,356 | - | - | - | - | - | - | - | - | 5,356 |
| | Revised Funding Sources (if approved) | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 2,142 | - | - | - | - | - | - | - | - | 2,142 |
| | Self-Liquid. Debent.-Land Drg | - | - | 3,214 | - | - | - | - | - | - | - | - | 3,214 |
| Requested Funding Source | | - | - | 5,356 | - | - | - | - | - | - | - | - | 5,356 |

| | | | | | | | | | | | | | |
|------------------------------|-------------------------------|---|---|-------|---|---|---|---|---|---|---|---|-------|
| REVISED BUDGET (IF APPROVED) | Revised Budget (if Approved) | - | - | 5,356 | - | - | - | - | - | - | - | - | 5,356 |
| | Requested Funding Source | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 2,142 | - | - | - | - | - | - | - | - | 2,142 |
| | Self-Liquid. Debent.-Land Drg | - | - | 3,214 | - | - | - | - | - | - | - | - | 3,214 |
| Requested Funding Source | | - | - | 5,356 | - | - | - | - | - | - | - | - | 5,356 |

REVISED BUDGET BY ACTIVITY TYPE (000's)

| REVISED BUDGET BY ACTIVITY TYPE | Activity Type | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|---------------------------------|---------------|-------------|------|-------|-------|------|------|------|------|------|------|------|-------|
| | Construction | | - | - | 5,356 | - | - | - | - | - | - | - | - |
| Total | | - | - | 5,356 | - | - | - | - | - | - | - | - | 5,356 |

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 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

CAPITAL PROFILE REPORT

PROFILE NAME: INTERCONNECTION CONTROL PROGRAM
PROFILE NUMBER: CM-31-9435
DEPARTMENT: Financial Services & Utilities - Utilities
BRANCH: Stormwater Utility
LEAD BRANCH:
PROGRAM NAME:
BUDGET CYCLE: 2015-2018

| | |
|------------------------------|---------------------|
| PROFILE STAGE: | L1 - Finance Review |
| PROFILE TYPE: | Composite |
| PROFILE MANAGER: | Chris Ward |
| LEAD BRANCH MANAGER: | |
| ESTIMATED START DATE: | January, 2015 |
| ESTIMATED COMPLETION: | December, 2024 |

| | | | |
|------------------------------------|----------------|------------------------------|-------|
| Service Category: Utilities | | Major Initiative: | |
| GROWTH | RENEWAL | PREVIOUSLY APPROVED: | - |
| | 100 | BUDGET REQUEST: | 2,155 |
| | | TOTAL PROFILE BUDGET: | 2,155 |

PROFILE DESCRIPTION

Many of the projects identified under this strategy consist of new sewer capacity to relieve the combined sewer system in areas with interconnections present. Catchbasin re-connection to a storm sewer system is also a common type of project. This will keep water out of the combined sewer where it can create the flooding and overflow issues we are working to prevent. All projects under this program will keep combined sewage from overflowing in to the storm system where it flows directly to the North Saskatchewan River untreated.

PROFILE BACKGROUND

In response to a requirement in the 1995 Approval to Operate (No. 95-MUN-117), the City of Edmonton prepared an Interconnection Control Strategy. Through this Strategy, the City embarked on its mitigation and monitoring program in the context of "perpetual monitoring and assessment". An interconnection is designed to allow sanitary or combined sewage to overflow into the storm system, in order to relieve the sewer system under high flow conditions. Since 1998, a program has been in place to minimize the contamination of stormwater with sanitary sewage by monitoring, assessing and eliminating or mitigating all interconnections between the two systems. This will reduce the total loading of contaminants to the North Saskatchewan River.

PROFILE JUSTIFICATION

In order to prevent basement flooding, overflow points were designed and built where the sanitary or combined sewer line could overflow into a storm sewer. The storm sewer would flow directly to the North Saskatchewan River. In the '90s as our understanding of our impact to the River increased, the Interconnection control program was initiated. Sites were identified and monitors were installed. In the 1995 approval to operate issued by Alberta Environment, there was a clause to have an interconnection control program; many sites were not in danger of overflowing and were closed. In the early 2000's, rectification studies were carried out for the remainder to identify the infrastructure required to mitigate flood risk. Since the conclusion of those studies, extra capacity has been built in areas with interconnections and other overflow sites have been closed. We have not completed the work identified in the rectification report; work to be done to close the remaining sites.

STRATEGIC ALIGNMENT

This program aligns with The Way We Green and Drainage Services' water quality strategy, River for Life. The objective is to prevent pollution from entering our water courses.

ALTERNATIVES CONSIDERED

The alternative is to do nothing, leave the system as it is. Overflows will continue to occur and there will be untreated wastewater flowing in to our water courses.

COST BENEFITS

Projects identified under this profile consist of catchbasin disconnection and new sewer construction. The goal of this program is to reduce the impact from discharges in to the North Saskatchewan River. There will be the one-time capital construction costs of installing new utility infrastructure and the long term regular maintenance costs associated with sewers.

KEY RISKS & MITIGATING STRATEGY

Cost will be a risk with water quality improvement programs and projects. Concept design completed with the rectification studies do not take all conflicts in to consideration.

RESOURCES

Construction work will be carried out by Design and Construction and external contractors. Ongoing project management by DDC and Drainage Planning to track project status as well as to track the success of the projects in the context of the strategy

CONCLUSIONS AND RECOMMENDATIONS

Work identified in the rectification studies will continue to eliminate the interconnections from the existing inventory. Our creeks and river are important natural resources and this work will reduce the contaminant loading to those water courses.

CONTINGENCY OF APPROVAL

CAPITAL PROFILE REPORT

PROFILE NAME: Interconnection Control Program

PROFILE TYPE: Composite

PROFILE NUMBER: CM-31-9435

BRANCH: Stormwater Utility

CAPITAL BUDGET AND FUNDING SOURCES (000's)

| APPROVED BUDGET | | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|-----------------|--------------------------|-------------|------|------|------|------|------|------|------|------|------|------|-------|
| | Approved Budget | | | | | | | | | | | | |
| | Original Budget Approved | - | - | - | - | - | - | - | - | - | - | - | - |
| | Current Approved Budget | - | - | - | - | - | - | - | - | - | - | - | - |

| | | | | | | | | | | | | | |
|----------------|---------------------------------------|---|---|-----|-----|-----|-----|---|---|---|---|---|-------|
| BUDGET REQUEST | Budget Request | - | - | 515 | 530 | 546 | 563 | - | - | - | - | - | 2,155 |
| | Revised Funding Sources (if approved) | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 206 | 212 | 219 | 225 | - | - | - | - | - | 862 |
| | Self-Liquid. Debent.-Land Drg | - | - | 309 | 318 | 328 | 338 | - | - | - | - | - | 1,293 |
| | Requested Funding Source | - | - | 515 | 530 | 546 | 563 | - | - | - | - | - | 2,155 |

| | | | | | | | | | | | | | |
|------------------------------|-------------------------------|---|---|-----|-----|-----|-----|---|---|---|---|---|-------|
| REVISED BUDGET (IF APPROVED) | Revised Budget (if Approved) | - | - | 515 | 530 | 546 | 563 | - | - | - | - | - | 2,155 |
| | Requested Funding Source | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 206 | 212 | 219 | 225 | - | - | - | - | - | 862 |
| | Self-Liquid. Debent.-Land Drg | - | - | 309 | 318 | 328 | 338 | - | - | - | - | - | 1,293 |
| | Requested Funding Source | - | - | 515 | 530 | 546 | 563 | - | - | - | - | - | 2,155 |

REVISED BUDGET BY ACTIVITY TYPE (000's)

| REVISED BUDGET BY ACTIVITY TYPE | Activity Type | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|---------------------------------|---------------|--------------|------|------|------|------|------|------|------|------|------|------|-------|
| | | Construction | - | - | 515 | 530 | 546 | 563 | - | - | - | - | - |
| | Total | - | - | 515 | 530 | 546 | 563 | - | - | - | - | - | 2,155 |

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 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

CAPITAL PROFILE REPORT

| | | | |
|-----------------|--|-----------------------|---------------------|
| PROFILE NAME: | REVIEW/INSPECT DEVELOPER BUILT SEWER | PROFILE STAGE: | L1 - Finance Review |
| PROFILE NUMBER: | CM-31-9470 | PROFILE TYPE: | Composite |
| DEPARTMENT: | Financial Services & Utilities - Utilities | PROFILE MANAGER: | Chris Ward |
| BRANCH: | Stormwater Utility | LEAD BRANCH MANAGER: | |
| LEAD BRANCH: | | ESTIMATED START DATE: | January, 2015 |
| PROGRAM NAME: | | ESTIMATED COMPLETION: | December, 2024 |
| BUDGET CYCLE: | 2015-2018 | | |

| | | | |
|-------------------|-----------|-------------------|--|
| Service Category: | Utilities | Major Initiative: | |
|-------------------|-----------|-------------------|--|

| | | | |
|---------------|----------------|-----------------------|-------|
| GROWTH | RENEWAL | PREVIOUSLY APPROVED: | - |
| 100 | | BUDGET REQUEST: | 3,705 |
| | | TOTAL PROFILE BUDGET: | 3,705 |

PROFILE DESCRIPTION

This initiative within the Growth and Land Development Subsection of Drainage Planning more specifically involves the review and approval of subdivision engineering drawings, processing of Utility Right-of-Way documents, provides engineering and cost assessment input into the Servicing Agreements being prepared by the Development Coordination Subsection of Sustainable Development, provides site inspections during construction, as-built recording and Construction Completion Certificate (CCC) and Final Acceptance Certificate (FAC) inspections and document reviews. Timelines for engineering drawing reviews are three weeks for a first submission and two weeks for subsequent submission. Timelines for URW documents are two weeks. Timelines for Development Cost Assessments (DCA) for input into the Servicing Agreements are two weeks. Site inspections are ongoing daily inspections during construction and the timelines for review of CCC and FAC applications including inspections are 30 days.

PROFILE BACKGROUND

This project provides resources to review and accept the drainage facilities required to service new lots in private developments. The City has a responsibility to supply utility connections to meet customer demands and requests as required under the Municipal Government Act. Work will be completed as requested during the year or dependent on owner petitions. Private Developers will turn over the drainage facilities to the City as assets upon individual project completion in accordance with the Servicing Agreement.

PROFILE JUSTIFICATION

The City has a responsibility to supply utility connections to meet customer demands and requests as required under the Municipal Government Act. In support of planned growth, the City is required to review and accept the drainage facilities needed to service new lots. Drainage Services, under the terms of the Servicing Agreement, ensures that applicable obligations and Standards are met prior to the City accepting the drainage facilities for long-term operations and maintenance.

STRATEGIC ALIGNMENT

The Way we Grow and The Way we Live

ALTERNATIVES CONSIDERED

External resources or in-house staff

COST BENEFITS

The City has a responsibility to supply utility connections to meet customer demands and requests as required under the Municipal Government Act. Work will be completed as requested during the year or dependent on owner petitions. Private Developers will turn over the drainage facilities to the City as assets upon individual project completion in accordance with the Servicing Agreement.

KEY RISKS & MITIGATING STRATEGY

The amount of activity/time charged to this project is driven by the volume of development being brought forward for approval by the development industry.

RESOURCES

Resourcing: The current staff resources involved in this initiative are as follows: Design Review, Cost Assessment, Inspection, As-built Recording

CONCLUSIONS AND RECOMMENDATIONS

Continue on with the current Review and Approve Developer built Sewers initiative.

CONTINGENCY OF APPROVAL

CAPITAL PROFILE REPORT

PROFILE NAME: Review/inspect developer built sewer

PROFILE TYPE: Composite

PROFILE NUMBER: CM-31-9470

BRANCH: Stormwater Utility

CAPITAL BUDGET AND FUNDING SOURCES (000's)

| APPROVED BUDGET | | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|-----------------|--------------------------|-------------|------|------|------|------|------|------|------|------|------|------|-------|
| | Approved Budget | | | | | | | | | | | | |
| | Original Budget Approved | - | - | - | - | - | - | - | - | - | - | - | - |
| | Current Approved Budget | - | - | - | - | - | - | - | - | - | - | - | - |

| | | | | | | | | | | | | | |
|----------------|---------------------------------------|---|---|-----|-----|-----|-------|---|---|---|---|---|-------|
| BUDGET REQUEST | Budget Request | - | - | 833 | 892 | 955 | 1,024 | - | - | - | - | - | 3,705 |
| | Revised Funding Sources (if approved) | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 333 | 356 | 382 | 410 | - | - | - | - | - | 1,482 |
| | Self-Liquid. Debent.-Land Drg | - | - | 500 | 536 | 573 | 615 | - | - | - | - | - | 2,223 |
| | Requested Funding Source | - | - | 833 | 892 | 955 | 1,024 | - | - | - | - | - | 3,705 |

| | | | | | | | | | | | | | |
|------------------------------|-------------------------------|---|---|-----|-----|-----|-------|---|---|---|---|---|-------|
| REVISED BUDGET (IF APPROVED) | Revised Budget (if Approved) | - | - | 833 | 892 | 955 | 1,024 | - | - | - | - | - | 3,705 |
| | Requested Funding Source | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 333 | 356 | 382 | 410 | - | - | - | - | - | 1,482 |
| | Self-Liquid. Debent.-Land Drg | - | - | 500 | 536 | 573 | 615 | - | - | - | - | - | 2,223 |
| | Requested Funding Source | - | - | 833 | 892 | 955 | 1,024 | - | - | - | - | - | 3,705 |

REVISED BUDGET BY ACTIVITY TYPE (000's)

| REVISED BUDGET BY ACTIVITY TYPE | Activity Type | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|---------------------------------|---------------|-------------|------|------|------|------|-------|-------|------|------|------|------|-------|
| | | Other Costs | - | - | 833 | 892 | 955 | 1,024 | - | - | - | - | - |
| | Total | - | - | 833 | 892 | 955 | 1,024 | - | - | - | - | - | 3,705 |

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 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

CAPITAL PROFILE REPORT

PROFILE NAME: DRAINAGE NEIGHBOURHOOD RENEWAL
 PROFILE NUMBER: CM-31-9510
 DEPARTMENT: Financial Services & Utilities - Utilities
 BRANCH: Stormwater Utility
 LEAD BRANCH:
 PROGRAM NAME:
 BUDGET CYCLE: 2015-2018

| | |
|-----------------------|---------------------|
| PROFILE STAGE: | L1 - Finance Review |
| PROFILE TYPE: | Composite |
| PROFILE MANAGER: | Chris Ward |
| LEAD BRANCH MANAGER: | |
| ESTIMATED START DATE: | |
| ESTIMATED COMPLETION: | |

| | | | |
|-------------------|-----------|-------------------|----------------------|
| Service Category: | Utilities | Major Initiative: | Great Neighbourhoods |
|-------------------|-----------|-------------------|----------------------|

| | |
|--------|---------|
| GROWTH | RENEWAL |
| | 100 |

| | |
|-----------------------|--------|
| PREVIOUSLY APPROVED: | - |
| BUDGET REQUEST: | 35,861 |
| TOTAL PROFILE BUDGET: | 35,861 |

PROFILE DESCRIPTION

The Drainage Neighbourhood Renewal Program is focused on the renewal and replacement of existing sanitary and storm sewers on a neighbourhood by neighbourhood basis. Neighbourhoods are chosen based on current condition, as well as in coordination with Neighbourhood Renewal roadway reconstruction neighbourhoods. Each neighbourhood takes 3-4 years, year 1 is for CCTV and design, year 2 and 3 are for open cut and relining, and year 4 may be required to complete the relining work. About 70% of the work is completed through relining (trenchless renewal) which requires little disruption to the pavement. The program runs in coordination with Transportation Services' Neighbourhood Renewal Program and the Great Neighbourhoods Capital Program through the Building Great Neighbourhoods Initiative.

PROFILE BACKGROUND

The City of Edmonton owns and operates over 5,600 km of sanitary, storm and combined sewers. The average age of the pipes is 43 years, with around 30% of them over 50 years old. Due to aging and deterioration of drainage infrastructure, the City may be vulnerable to unexpected failures that disrupt not only sewer service to homeowners but above-ground activities as well. Given the enormous cost of replacement of this infrastructure, proactive renewal needs to occur in the drainage system. The Drainage Neighbourhood Renewal Program is an ongoing long term strategy to address the needs of our drainage infrastructure on a systematic neighbourhood by neighbourhood basis. The program is coordinated with Transportation Services Neighbourhood Renewal Program through the Building Great Neighbourhoods Initiative. Underground drainage infrastructure work is completed ahead of roadway surface work for efficiency and to avoid disturbance of new roads (3 year no cut policy).

PROFILE JUSTIFICATION

This project is to meet City Council's direction for mature neighbourhood rehabilitation in conjunction with the roadway Neighbourhood Renewal Program undertaken by Transportation Services. Many sewers in the mature areas of Edmonton are past their expected service life and have deteriorated significantly. Due to this, the City may be vulnerable to unexpected failures that disrupt not only sewer service to homeowners but above-ground activities as well. Sewer rehabilitation in neighbourhoods coordinated with roadway renewal projects avoids disruption to newly reconstructed pavement and minimizes inconvenience to citizens.

STRATEGIC ALIGNMENT

This program aligns with the "The Way We Live" as it allows the City to provide a high level of service to the residents by reducing the possibility of sewer failure and by minimizing disruptions through orderly execution of construction works.

ALTERNATIVES CONSIDERED

One alternative is to do nothing. If nothing is done, drainage infrastructure will be at risk of failure. More costly repairs will result from emergency situations and will require more exemptions from the 3 year no cut policy.

COST BENEFITS

The program will have a positive impact on the operating budget due to the reduction in unpredictable emergency repairs required as a result of the renewal. There may also be a reduction of maintenance activities for a period of time once the infrastructure is renewed. Each neighbourhood costs on average \$4.5M to complete. These costs include CCTV, design and construction.

KEY RISKS & MITIGATING STRATEGY

To comply with the 3 year no-cut policy for newly re-constructed pavement, Drainage Services strives to match the number of neighbourhoods scheduled for reconstruction each year by Transportation, which is on average six neighbourhoods per year.

RESOURCES

No new internal resources will be required by this program. However many of the neighbourhood projects require external resources for possibly both the design and construction phases.

CONCLUSIONS AND RECOMMENDATIONS

This program renews and replaces aging sewer infrastructure on a neighbourhood by neighbourhood basis, in coordination with Transportation Services' Neighbourhood Renewal Program. It is recommended to continue approving funds for this program.

CONTINGENCY OF APPROVAL

CAPITAL PROFILE REPORT

PROFILE NAME: **Drainage Neighbourhood Renewal**
 PROFILE NUMBER: **CM-31-9510**

PROFILE TYPE: **Composite**
 BRANCH: **Stormwater Utility**

CAPITAL BUDGET AND FUNDING SOURCES (000's)

| APPROVED BUDGET | | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|-----------------|--------------------------|-------------|------|------|------|------|------|------|------|------|------|------|-------|
| | Approved Budget | | | | | | | | | | | | |
| | Original Budget Approved | - | - | - | - | - | - | - | - | - | - | - | - |
| | Current Approved Budget | - | - | - | - | - | - | - | - | - | - | - | - |

| | | | | | | | | | | | | | |
|----------------|---------------------------------------|---|---|-------|-------|-------|-------|---|---|---|---|---|--------|
| BUDGET REQUEST | Budget Request | - | - | 9,524 | 9,622 | 9,299 | 7,415 | - | - | - | - | - | 35,861 |
| | Revised Funding Sources (if approved) | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 3,810 | 3,849 | 3,740 | 2,921 | - | - | - | - | - | 14,320 |
| | Self-Liquid. Debent.-Land Drg | - | - | 5,714 | 5,773 | 5,559 | 4,494 | - | - | - | - | - | 21,540 |
| | Requested Funding Source | - | - | 9,524 | 9,622 | 9,299 | 7,415 | - | - | - | - | - | 35,861 |

| | | | | | | | | | | | | | |
|------------------------------|-------------------------------|---|---|-------|-------|-------|-------|---|---|---|---|---|--------|
| REVISED BUDGET (IF APPROVED) | Revised Budget (if Approved) | - | - | 9,524 | 9,622 | 9,299 | 7,415 | - | - | - | - | - | 35,861 |
| | Requested Funding Source | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 3,810 | 3,849 | 3,740 | 2,921 | - | - | - | - | - | 14,320 |
| | Self-Liquid. Debent.-Land Drg | - | - | 5,714 | 5,773 | 5,559 | 4,494 | - | - | - | - | - | 21,540 |
| | Requested Funding Source | - | - | 9,524 | 9,622 | 9,299 | 7,415 | - | - | - | - | - | 35,861 |

REVISED BUDGET BY ACTIVITY TYPE (000's)

| REVISED BUDGET BY ACTIVITY TYPE | Activity Type | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|---------------------------------|---------------|-------------|-------|-------|-------|-------|-------|------|------|------|------|------|--------|
| | Construction | - | - | 8,168 | 6,003 | 6,186 | 5,750 | - | - | - | - | - | - |
| Design | - | - | 1,357 | 3,619 | 3,113 | 1,665 | - | - | - | - | - | - | 9,753 |
| | Total | - | - | 9,524 | 9,622 | 9,299 | 7,415 | - | - | - | - | - | 35,861 |

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 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

CAPITAL PROFILE REPORT

PROFILE NAME: BIOSOLIDS FACILITIES RENEWAL
 PROFILE NUMBER: CM-31-9623
 DEPARTMENT: Financial Services & Utilities - Utilities
 BRANCH: Stormwater Utility
 LEAD BRANCH:
 PROGRAM NAME:
 BUDGET CYCLE: 2015-2018

| | |
|-----------------------|---------------------|
| PROFILE STAGE: | L1 - Finance Review |
| PROFILE TYPE: | Composite |
| PROFILE MANAGER: | Chris Ward |
| LEAD BRANCH MANAGER: | |
| ESTIMATED START DATE: | January, 2015 |
| ESTIMATED COMPLETION: | December, 2024 |

| | | | |
|-------------------|-----------|-------------------|--|
| Service Category: | Utilities | Major Initiative: | |
|-------------------|-----------|-------------------|--|

| | |
|---------------|----------------|
| GROWTH | RENEWAL |
| 24 | 76 |

| | |
|-----------------------|-----|
| PREVIOUSLY APPROVED: | - |
| BUDGET REQUEST: | 318 |
| TOTAL PROFILE BUDGET: | 318 |

PROFILE DESCRIPTION

1-installing two more eNoses at the lagoons, this project is to increase locations to measure and monitor the odours that are generated in the Waste Management Services and lagoons. The scope of the work is to install 2 more eNoses at the Clover bar Lagoons. Drainage Services is proposing to install the two extra eNoses in 2015 and 2016 with a total estimated cost of \$100,000. Waste Management Services through Odotech will install and monitor the work. 2-removing the existing fence and installing a new one around the Bremner lagoons. 3-renew the current assets at the Clover Bar lagoons. 4-Geotextile dewatering bags are used for large scale dewatering of biosolids. This is a low tech, low cost alternative to using mechanical dewatering using geo-textile to filter the liquid from solids at the Clover Bar lagoons. The potential use of geobags for biosolids dewatering will be assessed in a pilot study and economical analysis.

PROFILE BACKGROUND

The Clover Bar and Bremner lagoons are facilities meant to manage biosolids. This business case contains 4 projects that will support the ongoing biosolids management program. 1-The Enoses will help manage odour issues at the Clover Bar lagoons. 2- The fence renewal at Bremner will increase site security. 3- The Clover Bar rehabilitation will ensure the storage lagoon remains a usable asset. 4- The geotextiles dewatering project will address the large historical solids inventory. The 4 projects total an estimated \$11,150,000.

PROFILE JUSTIFICATION

1-Due to the large number of odour complaints Odotech Inc. was retained. The OdoWatch continuous odour measurement and monitoring system uses strategically located eNoses enabling designated City staff to quantify and monitor odour emissions from the facilities at the Waste Management Centre. 2-Repeated incidents with the current fencing has led Drainage Services to propose replacing the existing fence with a more durable type to improve site security. 3- There are existing assets in the lagoons such as; pipelines, valves, chambers, decant structures and etc. that need to be renewed in order to function more efficiently. 4- this project has the potential to significantly remove the solids content in cell #5. The geobags has been extensively used for wastewater treatment for dewatering purposes. This is a low tech, low cost alternative to using mechanical dewatering using geo-textile to filter the liquid from solids at the Clover Bar lagoons.

STRATEGIC ALIGNMENT

The Way Ahead and The Way we Green

ALTERNATIVES CONSIDERED

Do nothing, ongoing repair, asset replacement

COST BENEFITS

1. The estimated cost is \$100,000 for the range of two years window 2015 and 2016. 2- The estimated cost is \$550,000 for the 2016. 3-The estimated cost is \$2,000,000 over two years 2015 and 2016. 4-The status quo costs nothing, but will not reduce cell #5 inventory. Alternative 1-is estimated at \$8,500,000 over a 3 year period, including \$1M for cell #1 preparations. Alternative 2-Third party Alternative 3- Using existing dewatering,

KEY RISKS & MITIGATING STRATEGY

1-Locating the eNoses correctly on site is critical to the success of the project. 2-No risks identified. 3-erosion of the berms due to excavating and work around the lagoons. 4- bench scale and field testing of the geotextile concept.

RESOURCES

1-The funds should be from the sanitary budget. 2-The funds should be from the sanitary budget. 3-The funds should be from the sanitary budget. 4-The funds would come from existing biosolids program or require additional resources

CONCLUSIONS AND RECOMMENDATIONS

1-2 more eNoses at the Clover Bar Lagoons. 2-to remove the existing fence and install a one to enhance the safety at the Bremner Lagoons. 3 - to replace/rehabilitate the existing assets 4-proceeding on the basis that the testing confirms viability.

CONTINGENCY OF APPROVAL

CAPITAL PROFILE REPORT

PROFILE NAME: **Biosolids Facilities Renewal**
 PROFILE NUMBER: **CM-31-9623**

PROFILE TYPE: **Composite**
 BRANCH: **Stormwater Utility**

CAPITAL BUDGET AND FUNDING SOURCES (000's)

| APPROVED BUDGET | | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|-----------------|--------------------------|-------------|------|------|------|------|------|------|------|------|------|------|-------|
| | Approved Budget | | | | | | | | | | | | |
| | Original Budget Approved | - | - | - | - | - | - | - | - | - | - | - | - |
| | Current Approved Budget | - | - | - | - | - | - | - | - | - | - | - | - |

| | | | | | | | | | | | | | |
|----------------|---------------------------------------|---|---|-----|-----|-----|---|---|---|---|---|---|-----|
| BUDGET REQUEST | Budget Request | - | - | 103 | 106 | 109 | - | - | - | - | - | - | 318 |
| | Revised Funding Sources (if approved) | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 41 | 42 | 44 | - | - | - | - | - | - | 127 |
| | Self-Liquid. Debent.-Land Drg | - | - | 62 | 64 | 66 | - | - | - | - | - | - | 191 |
| | Requested Funding Source | - | - | 103 | 106 | 109 | - | - | - | - | - | - | 318 |

| | | | | | | | | | | | | | |
|------------------------------|-------------------------------|---|---|-----|-----|-----|---|---|---|---|---|---|-----|
| REVISED BUDGET (IF APPROVED) | Revised Budget (if Approved) | - | - | 103 | 106 | 109 | - | - | - | - | - | - | 318 |
| | Requested Funding Source | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 41 | 42 | 44 | - | - | - | - | - | - | 127 |
| | Self-Liquid. Debent.-Land Drg | - | - | 62 | 64 | 66 | - | - | - | - | - | - | 191 |
| | Requested Funding Source | - | - | 103 | 106 | 109 | - | - | - | - | - | - | 318 |

REVISED BUDGET BY ACTIVITY TYPE (000's)

| REVISED BUDGET BY ACTIVITY TYPE | Activity Type | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|---------------------------------|---------------|--------------|------|------|------|------|------|------|------|------|------|------|-------|
| | | Construction | - | - | 54 | 66 | 56 | - | - | - | - | - | - |
| | Design | - | - | 49 | 40 | 54 | - | - | - | - | - | - | 143 |
| | Total | - | - | 103 | 106 | 109 | - | - | - | - | - | - | 318 |

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 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

CAPITAL PROFILE REPORT

PROFILE NAME: COMBINED SEWER OVERFLOW CONTROL
PROFILE NUMBER: CM-31-9702
DEPARTMENT: Financial Services & Utilities - Utilities
BRANCH: Stormwater Utility
LEAD BRANCH:
PROGRAM NAME:
BUDGET CYCLE: 2015-2018

| | |
|------------------------------|---------------------|
| PROFILE STAGE: | L1 - Finance Review |
| PROFILE TYPE: | Composite |
| PROFILE MANAGER: | Chris Ward |
| LEAD BRANCH MANAGER: | |
| ESTIMATED START DATE: | January, 2015 |
| ESTIMATED COMPLETION: | December, 2016 |

| | | | |
|------------------------------------|----------------|------------------------------|-------|
| Service Category: Utilities | | Major Initiative: | |
| GROWTH | RENEWAL | PREVIOUSLY APPROVED: | - |
| | 100 | BUDGET REQUEST: | 4,166 |
| | | TOTAL PROFILE BUDGET: | 4,166 |

PROFILE DESCRIPTION

The City is responsible for developing and implementing a plan to control combined sewer overflows (CSOs), as outlined in the City's Approval-to-Operate. CSO Control Projects are part of the CSO Control Strategy for long term control measures to reduce CSOs to the river. These projects involve modification of existing CSO control structures to retain more flows in the combined sewers, reducing both frequency and volume of CSOs and more wet weather combined flows will be transferred to the treatment plant. The performance objectives of the overall CSO Control Strategy are to increase average annual capture and treatment of wet weather flows from 56% to 86% and decrease average annual occurrences of CSOs from 89% to 46%. Modifications at 2 CSO sites have been completed and 6 CSO sites are expected to be completed in 2014. The Mill Creek CSO site will be under construction in 2015. The Rat Creek CSO site weir modification will be completed once the W12 and RTC #3 gates are in operation.

PROFILE BACKGROUND

The City has an area of approximately 4,270 ha serviced by the combined sewer system and consists of about 930 km of sewers. This combined area covers about 43 neighbourhoods that are serviced in varying degrees by the combined sewer system. Edmonton's combined sewer system overflows through 18 CSO sites which were identified to be one of the sources of bacteria that cause in-stream river levels to exceed water quality criteria for primary contact recreation.

The Combined Sewer Overflow Control Projects program is one of the major components of the Combined Sewer Overflow (CSO) Control Strategy to improve the water quality in the river by reducing and controlling the release of untreated wastewater from combined sewer overflows. The CSO Control Strategy involves projects that will provide optimization of the existing sewerage system, storage and treatment of wet weather flows, opportunistic sewer system separation, weir modification and increased system conveyance capacity.

PROFILE JUSTIFICATION

Alberta Ministry of Environment and Sustainable Resource Development expect the City of Edmonton to develop and implement a plan to control combined sewer overflows, as outlined in the City's Approval-to-Operate (No. 639-02-07) under the Environmental Protection and Enhancement Act. Combined Sewer Overflow Control Projects are part of the CSO Control Strategy for long term control measures to reduce combined sewer overflows to the North Saskatchewan River. CSO site modifications are very cost effective as compared to total separation of the combined sewer system.

STRATEGIC ALIGNMENT

The implementation of Combined Sewer Overflow Control Projects aligns with "The Way We Green" as they reduce CSO's to the river and reduce the impact of the drainage system operation on the environment.

ALTERNATIVES CONSIDERED

One alternative is total separation of the combined system. Complete separation of the City of Edmonton's combined system is very costly (~\$2 – \$3 billion) and will result in unacceptable level of public disruption.

COST BENEFITS

This initiative reduces the volume and frequency of untreated CSOs to the North Saskatchewan River (NSR) and protects water quality. It helps to fulfill the regulatory requirements that the City is expected to develop and implement a plan to control combined sewer overflows, as outlined in the City's Approval-to-Operate (No. 639-02-07) under the Environmental Protection and Enhancement Act.

KEY RISKS & MITIGATING STRATEGY

Raising weir elevations to retain more flows in trunks could result in flow backup so careful optimization is needed not to create the risk of sewer backup and flooding. Sewer odour emissions are also a risk from certain modification projects.

RESOURCES

No new internal resources will be required by this initiative. However, projects may require external resources for both the design and construction phases.

CONCLUSIONS AND RECOMMENDATIONS

More wet weather combined flow can be retained in the combined system through optimization of the existing CSO sites, which can then be treated before being discharged to the river. This initiative is cost effective and these projects are recommended.

CONTINGENCY OF APPROVAL

CAPITAL PROFILE REPORT

PROFILE NAME: Combined Sewer Overflow Control
 PROFILE NUMBER: CM-31-9702

PROFILE TYPE: Composite
 BRANCH: Stormwater Utility

CAPITAL BUDGET AND FUNDING SOURCES (000's)

| APPROVED BUDGET | | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|-----------------|-------------------------|--------------------------|------|------|------|------|------|------|------|------|------|------|-------|
| | Approved Budget | Original Budget Approved | - | - | - | - | - | - | - | - | - | - | - |
| | Current Approved Budget | - | - | - | - | - | - | - | - | - | - | - | - |

| | | | | | | | | | | | | | |
|----------------|---------------------------------------|---|---|-------|-------|---|---|---|---|---|---|---|-------|
| BUDGET REQUEST | Budget Request | - | - | 2,575 | 1,591 | - | - | - | - | - | - | - | 4,166 |
| | Revised Funding Sources (if approved) | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 1,030 | 637 | - | - | - | - | - | - | - | 1,667 |
| | Self-Liquid. Debent.-Land Drg | - | - | 1,545 | 955 | - | - | - | - | - | - | - | 2,500 |
| | Requested Funding Source | - | - | 2,575 | 1,591 | - | - | - | - | - | - | - | 4,166 |

| | | | | | | | | | | | | | |
|------------------------------|-------------------------------|---|---|-------|-------|---|---|---|---|---|---|---|-------|
| REVISED BUDGET (IF APPROVED) | Revised Budget (if Approved) | - | - | 2,575 | 1,591 | - | - | - | - | - | - | - | 4,166 |
| | Requested Funding Source | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 1,030 | 637 | - | - | - | - | - | - | - | 1,667 |
| | Self-Liquid. Debent.-Land Drg | - | - | 1,545 | 955 | - | - | - | - | - | - | - | 2,500 |
| | Requested Funding Source | - | - | 2,575 | 1,591 | - | - | - | - | - | - | - | 4,166 |

REVISED BUDGET BY ACTIVITY TYPE (000's)

| REVISED BUDGET BY ACTIVITY TYPE | Activity Type | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|---------------------------------|---------------|-------------|------|-------|-------|------|------|------|------|------|------|------|-------|
| | Construction | | - | - | 1,803 | - | - | - | - | - | - | - | - |
| Design | | - | - | 772 | 1,591 | - | - | - | - | - | - | - | 2,364 |
| Total | | - | - | 2,575 | 1,591 | - | - | - | - | - | - | - | 4,166 |

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 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

CAPITAL PROFILE REPORT

| | | | |
|-----------------|---|-----------------------|---------------------|
| PROFILE NAME: | DRAINAGE VEHICLE AND CONSTRUCTION EQUIPMENT | | |
| PROFILE NUMBER: | CM-31-6130 | PROFILE STAGE: | L1 - Finance Review |
| DEPARTMENT: | Financial Services & Utilities - Utilities | PROFILE TYPE: | Composite |
| BRANCH: | Stormwater Utility | PROFILE MANAGER: | Chris Ward |
| LEAD BRANCH: | | LEAD BRANCH MANAGER: | |
| PROGRAM NAME: | | ESTIMATED START DATE: | January, 2015 |
| BUDGET CYCLE: | 2015-2018 | ESTIMATED COMPLETION: | December, 2024 |

| | | | |
|-----------------------------|----------------|-----------------------|--------|
| Service Category: Utilities | | Major Initiative: | |
| GROWTH | RENEWAL | PREVIOUSLY APPROVED: | - |
| 50 | 50 | BUDGET REQUEST: | 10,203 |
| | | TOTAL PROFILE BUDGET: | 10,203 |

PROFILE DESCRIPTION

New equipment includes:
 (2015; 2-MTV Units(600,000), 2- Combination Units (1,100,000), Trouble Truck (140,000), Mini Mining excavator (600,000), Compressors (20,000), Forklift (100,000), Bobcat Transport Trailer (30,000), 50 ton shop press (10,000), Cable Reeler (10,000), Miscellaneous Equip. (100,000)),
 (2016; 1 Vector (\$550,000), Generators (40,000), Steel Bender (150,000), Drill Rig - Test hole (800,000), Miscellaneous Equip. (100,000)),
 (2017; Plasma cutter (200,000), Miscellaneous Equip. (100,000)),
 (2018; Sampling and Compliance Van (116,000), Micro Tunneling Machine (4,000,000), Miscellaneous Equip.(100,000)).

PROFILE BACKGROUND

Drainage Services uses specialized equipment to build, inspect, clean and maintain the sanitary and storm sewer system. As the City grows, the sewer system grows with it which requires new equipment to support construction and operation activities. Equipment purchases consist of new equipment to support growth and improve efficiency as well as replacement of existing equipment that are in poor condition. Drainage Services business plans set service level targets. In order to maintain these targets and provide a safe work environment new innovative equipment must be purchased and aging equipment must be replaced. Purchases include: sewer inspection equipment, combination units for cleaning sewers, upgrade tunnel equipment, microtunnelling machine, generators, compressor, excavation equipment, lifting equipment, communication equipment, drill rig, ground freezing equipment, trucks and vans

PROFILE JUSTIFICATION

The Replacement Equipment request is to provide budget to procure replacement equipment that has reached the end of its useful life but continues to be required. The new equipment requested is to provide equipment for new council approved employees. Drainage Operations plans to expand the CCTV inspection program to increase the amount of inventory in the video library from 30% to 50% with the ultimate goal of 80% or more. Preventative inspection will ensure infrastructure degradation is monitored and potential problems address to minimize service interruption and maintain user satisfaction. Drainage Design and Construction requires new equipment to deliver the increase flood prevention program and other council approved strategic programs for other City departments. The risk of not purchasing the proposed new equipment is increase change of flooding, service interruption, negative impact on public health the environment and the River, and impedes development and growth of the City.

STRATEGIC ALIGNMENT

The Flood Prevention Program, Drainage Master Plan, and the City's strategic plans including the Neighborhood Rehabilitation Program are impacted by the need to replace and procure new equipment.

ALTERNATIVES CONSIDERED

The alternatives include a decrease in service level, an increase in the risk of workplace injuries, and the inability to keep up with the growth of the City and the delivery of the associated Strategic Programs.

COST BENEFITS

The costs are itemized in the Profile Description above. The tangible benefits of purchasing new equipment will be an increased meterage of CCTV infrastructure inspection, increased open cut production, and the meeting of schedules related to recently increased capital programs. The intangible benefits include increased customer satisfaction, increased employee morale, and safer more efficient workplace due to new technology.

KEY RISKS & MITIGATING STRATEGY

The risks of not proceeding is that service levels will drop, interruption of service will increase, preventative maintenance planning will not have evidence to support the plan, we will be unable to keep up with demand for construction.

RESOURCES

This request for additional equipment has corresponding FTE request in the operating budget forecast. If the request for new equipment is not approved, additional FTE may separately be approved but their ability to work may be negatively impacted.

CONCLUSIONS AND RECOMMENDATIONS

It is recommended to approve the budget for replacement of existing equipment and the purchase of new equipment as per the timeline laid out in the details section above.

CONTINGENCY OF APPROVAL

CAPITAL PROFILE REPORT

PROFILE NAME: **Drainage Vehicle and Construction Equipment**
 PROFILE NUMBER: **CM-31-6130**

PROFILE TYPE: **Composite**
 BRANCH: **Stormwater Utility**

CAPITAL BUDGET AND FUNDING SOURCES (000's)

| APPROVED BUDGET | | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|-----------------|--------------------------|-------------|------|------|------|------|------|------|------|------|------|------|-------|
| | Approved Budget | | | | | | | | | | | | |
| | Original Budget Approved | - | - | - | - | - | - | - | - | - | - | - | - |
| | Current Approved Budget | - | - | - | - | - | - | - | - | - | - | - | - |

| | | | | | | | | | | | | | |
|----------------|---------------------------------------|---|---|-------|-------|-------|-------|---|---|---|---|---|--------|
| BUDGET REQUEST | Budget Request | - | - | 2,518 | 1,504 | 1,574 | 4,607 | - | - | - | - | - | 10,203 |
| | Revised Funding Sources (if approved) | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 1,950 | 1,202 | 1,410 | 4,438 | - | - | - | - | - | 8,999 |
| | Self-Liquid. Debent.-Land Drg | - | - | 569 | 302 | 164 | 169 | - | - | - | - | - | 1,204 |
| | Requested Funding Source | - | - | 2,518 | 1,504 | 1,574 | 4,607 | - | - | - | - | - | 10,203 |

| | | | | | | | | | | | | | |
|------------------------------|-------------------------------|---|---|-------|-------|-------|-------|---|---|---|---|---|--------|
| REVISED BUDGET (IF APPROVED) | Revised Budget (if Approved) | - | - | 2,518 | 1,504 | 1,574 | 4,607 | - | - | - | - | - | 10,203 |
| | Requested Funding Source | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 1,950 | 1,202 | 1,410 | 4,438 | - | - | - | - | - | 8,999 |
| | Self-Liquid. Debent.-Land Drg | - | - | 569 | 302 | 164 | 169 | - | - | - | - | - | 1,204 |
| | Requested Funding Source | - | - | 2,518 | 1,504 | 1,574 | 4,607 | - | - | - | - | - | 10,203 |

REVISED BUDGET BY ACTIVITY TYPE (000's)

| REVISED BUDGET BY ACTIVITY TYPE | Activity Type | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|---------------------------------|---------------|----------------|------|-------|-------|-------|-------|-------|------|------|------|------|--------|
| | | Equip FurnFixt | - | - | 2,518 | 1,504 | 1,574 | 4,607 | - | - | - | - | - |
| | Total | - | - | 2,518 | 1,504 | 1,574 | 4,607 | - | - | - | - | - | 10,203 |

OPERATING IMPACT OF CAPITAL

Type of Impact: Personnel

| Branch: | 2015 | | | | 2016 | | | | 2017 | | | | 2018 | | | | |
|------------------------|------|-----|-----|------|------|-----|-----|-----|------|-----|-----|-----|------|-----|-----|-----|---|
| | Rev | Exp | Net | FTE | Rev | Exp | Net | FTE | Rev | Exp | Net | FTE | Rev | Exp | Net | FTE | |
| (None) | - | - | - | 10.0 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Total Operating Impact | - | - | - | 10.0 | - | - | - | - | - | - | - | - | - | - | - | - | - |

CAPITAL PROFILE REPORT

| | | | |
|-----------------|--|-----------------------|---------------------|
| PROFILE NAME: | DRAINAGE FACILITY UPGRADING | PROFILE STAGE: | L1 - Finance Review |
| PROFILE NUMBER: | CM-31-6140 | PROFILE TYPE: | Composite |
| DEPARTMENT: | Financial Services & Utilities - Utilities | PROFILE MANAGER: | Chris Ward |
| BRANCH: | Stormwater Utility | LEAD BRANCH MANAGER: | |
| LEAD BRANCH: | | ESTIMATED START DATE: | January, 2015 |
| PROGRAM NAME: | | ESTIMATED COMPLETION: | December, 2018 |
| BUDGET CYCLE: | 2015-2018 | | |

| | | | |
|------------------------------------|----------------|------------------------------|-------|
| Service Category: Utilities | | Major Initiative: | |
| GROWTH | RENEWAL | PREVIOUSLY APPROVED: | - |
| | 100 | BUDGET REQUEST: | 5,323 |
| | | TOTAL PROFILE BUDGET: | 5,323 |

PROFILE DESCRIPTION

Drainage Services is currently at capacity for office and shop space across the various operating units. In order to meet current and anticipated growth from 2015 - 2018, additional space need to be built out and existing space will need to be densified in order to accommodate all staff. Projects and Initiatives identified as part of the Drainage Facility Upgrading include:

- Kennedale Operations Accommodation Plan
- Coronation Yard Densification & Alignment
- Coronation Yard Shop Re-purposing
- Eastgate Densification
- Poundmaker Temporary Office Accommodations

These projects and initiatives are focused around providing the necessary facilities to maintain current service levels of Drainage Services.

PROFILE BACKGROUND

Drainage services currently operates out of 3 main facilities (excluding Century Place) including Kennedale Yard, Coronation Yard & Eastgate. Although the work force including staff levels and equipment has grown significantly over the years, the amount of space available to accommodate this workforce has not kept pace. This situation has resulted in all facilities being at or over capacity with the risk of inefficiencies occurring due to the lack of space available. The Drainage Facility upgrading profile will provide Drainage Services with the necessary resources in order to expand existing facilities to house the on-coming workforce in 2015 in addition to initiating projects to densify the current space in order to create efficiencies within the space and to align with the new corporate guidelines surrounding office space.

PROFILE JUSTIFICATION

Additional office and shop space will allow for growth of staff and equipment levels. In order to maintain a reliable system to preserve public health and the environment, additional staff and equipment is required. Kennedale and Coronation Yards are over capacity and additional space is required. The current situation has resulted in questions surrounding around the capacity to hire new employees due to the lack of space to house these employees. This puts significant risk on Drainage Services' ability to meet the demands. The anticipated outcomes include increased morale due to more welcoming and environmentally sustainable office space, increased connectivity between staff due to an open office conceptual plan, room for growth associated densification of work stations, and preservation of City assets due to the appropriate storage of expensive vehicles and equipment in a heated storage environment.

STRATEGIC ALIGNMENT

1. Citizens, in terms of flood protection and uninterrupted services
2. Supporting growth in the new growth areas and infill of the existing areas
3. Aligns with Corporate Space Allocation policies
4. Collaborative team-oriented culture

ALTERNATIVES CONSIDERED

Due to current facilities being at capacity, other alternatives include acquiring additional office/shop space such as the purchase or lease of other facilities.

COST BENEFITS

Given the state of current facilities, the cost benefit of the initiative relates to the minimization of downtime associated with providing space. Additionally, expanding and retrofitting current facilities will prove to be much more cost effective in the short term as opposed to purchasing a new building to meet the current demand.

KEY RISKS & MITIGATING STRATEGY

Risk associated with the initiative is the time frame to construct new facilities. In order to mitigate this risk, proper planning and procurement of temporary space will be required in order to ensure that all construction timelines are met.

RESOURCES

This project does not directly require an increase in staff resources. Project management functions would be utilized through the City of Edmonton Project Management & Building Maintenance group.

CONCLUSIONS AND RECOMMENDATIONS

In order for Drainage Services to maintain its current level of service and allow for the anticipated future growth, it is recommended to approve the Drainage Facility Upgrade initiative.

CONTINGENCY OF APPROVAL

CAPITAL PROFILE REPORT

PROFILE NAME: **Drainage Facility Upgrading**
 PROFILE NUMBER: **CM-31-6140**

PROFILE TYPE: **Composite**
 BRANCH: **Stormwater Utility**

CAPITAL BUDGET AND FUNDING SOURCES (000's)

| APPROVED BUDGET | | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|--------------------------|-----------------|-------------|------|------|------|------|------|------|------|------|------|------|-------|
| | Approved Budget | | | | | | | | | | | | |
| Original Budget Approved | | - | - | - | - | - | - | - | - | - | - | - | - |
| Current Approved Budget | | - | - | - | - | - | - | - | - | - | - | - | - |

| | | | | | | | | | | | | | |
|--------------------------|---------------------------------------|---|---|-------|-------|-----|-----|---|---|---|---|---|-------|
| BUDGET REQUEST | Budget Request | - | - | 1,802 | 1,857 | 820 | 844 | - | - | - | - | - | 5,323 |
| | Revised Funding Sources (if approved) | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 721 | 743 | 328 | 338 | - | - | - | - | - | 2,129 |
| | Self-Liquid. Debent.-Land Drg | - | - | 1,081 | 1,114 | 492 | 506 | - | - | - | - | - | 3,194 |
| Requested Funding Source | | | | | | | | | | | | | |

| | | | | | | | | | | | | | |
|------------------------------|-------------------------------|---|---|-------|-------|-----|-----|---|---|---|---|---|-------|
| REVISED BUDGET (IF APPROVED) | Revised Budget (if Approved) | - | - | 1,802 | 1,857 | 820 | 844 | - | - | - | - | - | 5,323 |
| | Requested Funding Source | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 721 | 743 | 328 | 338 | - | - | - | - | - | 2,129 |
| | Self-Liquid. Debent.-Land Drg | - | - | 1,081 | 1,114 | 492 | 506 | - | - | - | - | - | 3,194 |
| Requested Funding Source | | | | | | | | | | | | | |

REVISED BUDGET BY ACTIVITY TYPE (000's)

| REVISED BUDGET BY ACTIVITY TYPE | Activity Type | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|---------------------------------|---------------|-------------|------|-------|-------|-------|------|------|------|------|------|------|-------|
| | Construction | | - | - | 1,622 | 1,671 | 738 | 760 | - | - | - | - | - |
| Design | | - | - | 180 | 186 | 82 | 84 | - | - | - | - | - | 532 |
| Total | | - | - | 1,802 | 1,857 | 820 | 844 | - | - | - | - | - | 5,323 |

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 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

CAPITAL PROFILE REPORT

| | | | |
|-----------------|--|-----------------------|---------------------|
| PROFILE NAME: | DRAINAGE IT ASSETS | PROFILE STAGE: | L1 - Finance Review |
| PROFILE NUMBER: | CM-31-6200 | PROFILE TYPE: | Composite |
| DEPARTMENT: | Financial Services & Utilities - Utilities | PROFILE MANAGER: | Chris Ward |
| BRANCH: | Stormwater Utility | LEAD BRANCH MANAGER: | |
| LEAD BRANCH: | | ESTIMATED START DATE: | January, 2015 |
| PROGRAM NAME: | | ESTIMATED COMPLETION: | December, 2018 |
| BUDGET CYCLE: | 2015-2018 | | |

| | | | |
|-----------------------------|----------------|-----------------------|-------|
| Service Category: Utilities | | Major Initiative: | |
| GROWTH | RENEWAL | PREVIOUSLY APPROVED: | - |
| | 100 | BUDGET REQUEST: | 5,575 |
| | | TOTAL PROFILE BUDGET: | 5,575 |

PROFILE DESCRIPTION

Drainage IT Applications is a composite project that comprises of a number of IT related applications. The project is divided into three main categories

- 1) Maintenance: includes licensing of Bentley software and other maintenance requirements that are required as part of the day to day activities for certain software
- 2) Upgrades - Changes and updates to existing applications in compliance with Corporate and standards; The IT Strategy plays a significant role in determining and spearheading some of these upgrades.
- 3) Growth - Based on a continual improvement model; this also includes changes that are needed as a result of process changes across the business. The IT Strategy plays a significant role in determining and spearheading some of these growth projects.

PROFILE BACKGROUND

In order to support the growing demands of the business, Drainage Services and IT Branch collaborated to identify business needs and challenges critical in establishing the appropriate initiatives that would support the strategic goals of both branches. The Drainage IT Applications program allows Drainage Services to practice continuous improvement and realize efficiencies through the use of technology. This also aligns with Council's initiative of 2% saving through innovation. Drainage Services continuously relies on technology. The partnership between the IT branch and Drainage Services has made it possible to support the ongoing maintenance, improvement and expansion of the current system in place. Continuous Improvement is a high priority for Drainage Services. In previous years, Drainage Services has identified several priority IT initiatives through the 2013-2015 Drainage IT Strategy.

PROFILE JUSTIFICATION

Sustainable technology solutions are essential tools to optimize business operational efficiencies. Implementing advanced technologies will help support productivity, meet increased workloads and achieve productivity gains. In order to successfully maintain business service levels it is necessary to continuously enhance the current technology we have in place, to support the corporate outcome that The City has sustainable assets and services. The implementation of the Drainage IT Application program will sustain and support all the IT initiatives identified based on the collaboration between Drainage Services and IT branch.

RESULTS

- Improved operational efficiency
- Maintained service levels of Drainage Services Branch
- Effective implementation of IT initiatives
- Effective transitions to process changes

STRATEGIC ALIGNMENT

Aligns with The Way We Finance, by ensuring that Drainage Services is fully equipped with up to date IT solutions to efficiently support the programs and services which citizens require. This program also aligns with The Way We Grow strategic goal

ALTERNATIVES CONSIDERED

Do nothing - Not moving forward on these initiatives will prevent Drainage Services from realizing additional efficiencies.

COST BENEFITS

- Continuous Improvement
- Innovation
- Operational Efficiencies
- Improves customer satisfaction through higher confidence in data accuracy.

KEY RISKS & MITIGATING STRATEGY

Lack of support for existing IT systems limits productivity and lowers service levels to citizens. Change in long terms plans of the business is also considered a key risk as it impacts the overall scope of the Drainage IT applications program.

RESOURCES

No new FTEs will be required for the planning and implementation of this program.

CONCLUSIONS AND RECOMMENDATIONS

The implementation of the Drainage IT Application program will ensure that Drainage Services will successfully maintain and improve the service levels of the branch to meet the expectation of citizens.

CONTINGENCY OF APPROVAL

CAPITAL PROFILE REPORT

PROFILE NAME: **Drainage IT Assets**
 PROFILE NUMBER: **CM-31-6200**

PROFILE TYPE: **Composite**
 BRANCH: **Stormwater Utility**

CAPITAL BUDGET AND FUNDING SOURCES (000's)

| APPROVED BUDGET | | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|--------------------------|-----------------|-------------|------|------|------|------|------|------|------|------|------|------|-------|
| | Approved Budget | | | | | | | | | | | | |
| Original Budget Approved | | - | - | - | - | - | - | - | - | - | - | - | - |
| Current Approved Budget | | - | - | - | - | - | - | - | - | - | - | - | - |

| | | | | | | | | | | | | | |
|--------------------------|---------------------------------------|---|-------|-------|-------|-------|-------|---|---|---|---|-------|-------|
| BUDGET REQUEST | Budget Request | - | - | 1,476 | 1,326 | 1,366 | 1,407 | - | - | - | - | - | 5,575 |
| | Revised Funding Sources (if approved) | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 590 | 530 | 546 | 563 | - | - | - | - | - | 2,230 |
| | Self-Liquid. Debent.-Land Drg | - | - | 886 | 796 | 820 | 844 | - | - | - | - | - | 3,345 |
| Requested Funding Source | | | 1,476 | 1,326 | 1,366 | 1,407 | - | - | - | - | - | 5,575 | |

| | | | | | | | | | | | | | |
|------------------------------|-------------------------------|---|-------|-------|-------|-------|-------|---|---|---|---|-------|-------|
| REVISED BUDGET (IF APPROVED) | Revised Budget (if Approved) | - | - | 1,476 | 1,326 | 1,366 | 1,407 | - | - | - | - | - | 5,575 |
| | Requested Funding Source | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 590 | 530 | 546 | 563 | - | - | - | - | - | 2,230 |
| | Self-Liquid. Debent.-Land Drg | - | - | 886 | 796 | 820 | 844 | - | - | - | - | - | 3,345 |
| Requested Funding Source | | | 1,476 | 1,326 | 1,366 | 1,407 | - | - | - | - | - | 5,575 | |

REVISED BUDGET BY ACTIVITY TYPE (000's)

| REVISED BUDGET BY ACTIVITY TYPE | Activity Type | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|---------------------------------|---------------|-------------|------|-------|-------|-------|-------|-------|------|------|------|------|-------|
| | Technology | | - | - | 1,476 | 1,326 | 1,366 | 1,407 | - | - | - | - | - |
| Total | | - | - | 1,476 | 1,326 | 1,366 | 1,407 | - | - | - | - | - | 5,575 |

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 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

CAPITAL PROFILE REPORT

PROFILE NAME: NEIGHBOURHOOD FLOOD PREVENTION
 PROFILE NUMBER: CM-31-9511
 DEPARTMENT: Financial Services & Utilities - Utilities
 BRANCH: Stormwater Utility
 LEAD BRANCH:
 PROGRAM NAME:
 BUDGET CYCLE: 2015-2018

| | |
|-----------------------|---------------------|
| PROFILE STAGE: | L1 - Finance Review |
| PROFILE TYPE: | Composite |
| PROFILE MANAGER: | Chris Ward |
| LEAD BRANCH MANAGER: | |
| ESTIMATED START DATE: | January, 2015 |
| ESTIMATED COMPLETION: | December, 2019 |

| | | | |
|-------------------|-----------|-------------------|--|
| Service Category: | Utilities | Major Initiative: | |
|-------------------|-----------|-------------------|--|

| | |
|---------------|----------------|
| GROWTH | RENEWAL |
| 41 | 59 |

| | |
|-----------------------|--------|
| PREVIOUSLY APPROVED: | - |
| BUDGET REQUEST: | 21,828 |
| TOTAL PROFILE BUDGET: | 21,828 |

PROFILE DESCRIPTION

This program installs flood prevention measures including stormwater management ponds and diversion sewers to protect the city from future flood events. The Neighbourhood Flood Prevention Projects (9511) was developed in response to the heavy rains which caused flooding and sewer back-ups in more than 4,000 homes in 2004. This program installs flood prevention works to the City's sewer system. The program includes the design and construction of the various flood prevention works, including stormwater management ponds and diversion sewers.

PROFILE BACKGROUND

In response to flooding, a Flood Prevention Program was developed for 31 at-risk neighbourhoods following an extensive engineering studies. The resulting Flood Prevention Program was presented to Council in April 2006. A \$146 million capital investment program was outlined to increase the level of service in these neighbourhoods. Since the inception of the program, flood prevention works in 13 neighbourhoods have been constructed with the remaining 18 planned or under way. In addition to the above projects, a stormwater management wet pond project in Hurstwood Estates subdivision in Maple Ridge industrial area has been added to this program. This subdivision is partially developed without a stormwater management facility. The Maple Ridge Area Master Plan (AMP), undertaken by Drainage Services in 2009, identified a need for a stormwater management facility for the purpose of flood protection and water quality improvement in the area.

PROFILE JUSTIFICATION

Council direction to extend the flood prevention program to ensure an acceptable level of services is provided to Edmonton neighbourhoods. This program is to meet the City Council's direction for flood prevention. Implementation of the extended flood prevention program will ensure that an acceptable level of service is provided to Drainage Services customers. These neighbourhoods experienced moderate to extensive surface flooding and sanitary backups, and significant public and private property damage during intense rainfall events. This program will provide an improved level of flood protection for neighbourhoods. The purpose of these improvements are to reduce the risk of flooding from storm sewers (surface flooding) and sanitary sewers (sanitary backups) up to a 100 year level of flood protection.

STRATEGIC ALIGNMENT

The Way we Finance, The Way we Live, The Way we Green

ALTERNATIVES CONSIDERED

Large storage tunnel or Underground storage tank

COST BENEFITS

It will ensure that an acceptable level of service is provided to Drainage Services customers, and the City's resources are spent in an effective manner and optimized for flood protection purpose. The implementation of this program will continue to strengthen the City's role as a leading watershed steward when it comes to flood control, improving water quality, and environmental health of the watershed.

KEY RISKS & MITIGATING STRATEGY

- The key risks and constraints of not proceeding with the study are:
- Neighbourhoods will be at- risk of flooding during similar storm events;
 - The City will not fulfill the promise to address flooding in at- risk neighbourhoods

RESOURCES

External engineering consultants and contractors will be required for engineering and construction of the facilities. To build a successful long-term flood prevention program, there is a need for FTEs to handle the program.

CONCLUSIONS AND RECOMMENDATIONS

It is recommended that the flood prevention works in this program be funded as they will provide flood protection against future severe rain events

CONTINGENCY OF APPROVAL

CAPITAL PROFILE REPORT

PROFILE NAME: Neighbourhood Flood Prevention
 PROFILE NUMBER: CM-31-9511

PROFILE TYPE: Composite
 BRANCH: Stormwater Utility

CAPITAL BUDGET AND FUNDING SOURCES (000's)

| APPROVED BUDGET | | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|-----------------|--------------------------|-------------|------|------|------|------|------|------|------|------|------|------|-------|
| | Approved Budget | | | | | | | | | | | | |
| | Original Budget Approved | - | - | - | - | - | - | - | - | - | - | - | - |
| | Current Approved Budget | - | - | - | - | - | - | - | - | - | - | - | - |

| | | | | | | | | | | | | | |
|----------------|---------------------------------------|---|---|-------|-------|-------|-------|---|---|---|---|---|--------|
| BUDGET REQUEST | Budget Request | - | - | 4,851 | 6,966 | 5,255 | 4,756 | - | - | - | - | - | 21,828 |
| | Revised Funding Sources (if approved) | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 1,795 | 2,577 | 1,945 | 1,759 | - | - | - | - | - | 8,076 |
| | Self-Liquid. Debent.-Land Drg | - | - | 3,056 | 4,389 | 3,310 | 2,997 | - | - | - | - | - | 13,752 |
| | Requested Funding Source | - | - | 4,851 | 6,966 | 5,255 | 4,756 | - | - | - | - | - | 21,828 |

| | | | | | | | | | | | | | |
|------------------------------|-------------------------------|---|---|-------|-------|-------|-------|---|---|---|---|---|--------|
| REVISED BUDGET (IF APPROVED) | Revised Budget (if Approved) | - | - | 4,851 | 6,966 | 5,255 | 4,756 | - | - | - | - | - | 21,828 |
| | Requested Funding Source | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 1,795 | 2,577 | 1,945 | 1,759 | - | - | - | - | - | 8,076 |
| | Self-Liquid. Debent.-Land Drg | - | - | 3,056 | 4,389 | 3,310 | 2,997 | - | - | - | - | - | 13,752 |
| | Requested Funding Source | - | - | 4,851 | 6,966 | 5,255 | 4,756 | - | - | - | - | - | 21,828 |

REVISED BUDGET BY ACTIVITY TYPE (000's)

| REVISED BUDGET BY ACTIVITY TYPE | Activity Type | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|---------------------------------|---------------|-------------|------|-------|-------|-------|-------|-------|------|------|------|------|--------|
| | Construction | | - | - | 3,888 | 530 | 3,273 | 3,656 | - | - | - | - | - |
| Design | | - | - | 963 | 5,905 | 1,517 | 1,100 | - | - | - | - | - | 9,486 |
| Land | | - | - | - | 530 | 464 | - | - | - | - | - | - | 995 |
| | Total | - | - | 4,851 | 6,966 | 5,255 | 4,756 | - | - | - | - | - | 21,828 |

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 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

CAPITAL PROFILE REPORT

| | | | |
|-----------------|--|-----------------------|---------------------|
| PROFILE NAME: | HIGH PRIORITY REPAIR | PROFILE STAGE: | L1 - Finance Review |
| PROFILE NUMBER: | CM-31-9520 | PROFILE TYPE: | Composite |
| DEPARTMENT: | Financial Services & Utilities - Utilities | PROFILE MANAGER: | Chris Ward |
| BRANCH: | Stormwater Utility | LEAD BRANCH MANAGER: | |
| LEAD BRANCH: | | ESTIMATED START DATE: | January, 2015 |
| PROGRAM NAME: | | ESTIMATED COMPLETION: | December, 2024 |
| BUDGET CYCLE: | 2015-2018 | | |

| | | | |
|------------------------------------|----------------|------------------------------|--------|
| Service Category: Utilities | | Major Initiative: | |
| GROWTH | RENEWAL | PREVIOUSLY APPROVED: | - |
| | 100 | BUDGET REQUEST: | 19,822 |
| | | TOTAL PROFILE BUDGET: | 19,822 |

PROFILE DESCRIPTION

This program addresses high priority emergency repairs from Drainage Operations. Emergencies are identified through 311 calls of blockages, flooding, etc. which are then investigated by Drainage Operations. Repairs include sewer laterals (service connections), CB leads, sewers, pumpstations, outfalls, manholes and other drainage infrastructure assets. This initiative is to ensure timely repair of emergency drainage infrastructure situations. These are repairs that need to be undertaken immediately to restore service or to rectify safety and/or environmental issues.

PROFILE BACKGROUND

The City of Edmonton owns and operates over 5,600 km of sanitary, storm and combined sewers and over 350,000 sanitary service connections. The average age of the pipes is 43 years, with around 30% of them over 50 years old. Due to aging and deterioration of drainage infrastructure, the City may be vulnerable to unexpected failures that disrupt not only sewer service to homeowners but above-ground activities as well. These failures lead to emergency repairs that are required immediately to restore service to residents of Edmonton.

Each year, emergency situations arise within the drainage infrastructure. This can range from sewer collapse, service connection collapse, outfall safety issues, pumpstation breakdowns, etc. These need to be dealt with on a timely basis in order to restore service to residents, or to rectify urgent safety or environmental concerns.

PROFILE JUSTIFICATION

These repairs are emergencies and must be completed to continue to provide service to residents. They may also include emergency repairs due to safety or environmental concerns.

STRATEGIC ALIGNMENT

This program aligns with the "The Way We Live" as it allows the City to provide a high level of service to the residents by restoring service in a timely fashion, and by eliminating safety and environmental concerns as quickly as possible.

ALTERNATIVES CONSIDERED

As these are emergency situations, alternatives are explored on site just prior to the repair being completed.

COST BENEFITS

This program requires funds to carry out emergency repairs to the sewer system. Most of the emergency repairs are undertaken using the open-cut repair method. Since open-cut construction methods generally have higher costs than trenchless rehabilitation methods, the high percentage of open-cut repairs in emergency repairs will result in higher cost for the program. To continue emergency repairs, the program requires approximately \$11.5M per year.

KEY RISKS & MITIGATING STRATEGY

Funding is required since failing to respond to emergency repairs is a risk. It could cause flooded basements, collapsed roadways, blocked outfalls, etc.

RESOURCES

No new internal resources will be required by this program. However some of the projects may require external resources for both the design and/or construction phases.

CONCLUSIONS AND RECOMMENDATIONS

Drainage infrastructure is aging and many assets are past their useful service life. Emergency repairs are needed to restore service after a failure, or to rectify safety or environmental concerns.

CONTINGENCY OF APPROVAL

CAPITAL PROFILE REPORT

PROFILE NAME: High Priority Repair
 PROFILE NUMBER: CM-31-9520

PROFILE TYPE: Composite
 BRANCH: Stormwater Utility

CAPITAL BUDGET AND FUNDING SOURCES (000's)

| APPROVED BUDGET | | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|--------------------------|-----------------|-------------|------|------|------|------|------|------|------|------|------|------|-------|
| | Approved Budget | | | | | | | | | | | | |
| Original Budget Approved | | - | - | - | - | - | - | - | - | - | - | - | - |
| Current Approved Budget | | - | - | - | - | - | - | - | - | - | - | - | - |

| | | | | | | | | | | | | | |
|--------------------------|---------------------------------------|---|-------|-------|-------|-------|-------|---|---|---|---|---|--------|
| BUDGET REQUEST | Budget Request | - | - | 4,738 | 4,880 | 5,027 | 5,177 | - | - | - | - | - | 19,822 |
| | Revised Funding Sources (if approved) | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 1,895 | 1,952 | 2,011 | 2,071 | - | - | - | - | - | 7,929 |
| | Self-Liquid. Debent.-Land Drg | - | - | 2,843 | 2,928 | 3,016 | 3,106 | - | - | - | - | - | 11,893 |
| Requested Funding Source | | | 4,738 | 4,880 | 5,027 | 5,177 | - | - | - | - | - | - | 19,822 |

| | | | | | | | | | | | | | |
|------------------------------|-------------------------------|---|-------|-------|-------|-------|-------|---|---|---|---|---|--------|
| REVISED BUDGET (IF APPROVED) | Revised Budget (if Approved) | - | - | 4,738 | 4,880 | 5,027 | 5,177 | - | - | - | - | - | 19,822 |
| | Requested Funding Source | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 1,895 | 1,952 | 2,011 | 2,071 | - | - | - | - | - | 7,929 |
| | Self-Liquid. Debent.-Land Drg | - | - | 2,843 | 2,928 | 3,016 | 3,106 | - | - | - | - | - | 11,893 |
| Requested Funding Source | | | 4,738 | 4,880 | 5,027 | 5,177 | - | - | - | - | - | - | 19,822 |

REVISED BUDGET BY ACTIVITY TYPE (000's)

| REVISED BUDGET BY ACTIVITY TYPE | Activity Type | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|---------------------------------|---------------|-------------|------|-------|-------|-------|-------|-------|------|------|------|------|--------|
| | Construction | | - | - | 4,738 | 4,880 | 5,027 | 5,177 | - | - | - | - | - |
| Total | | - | - | 4,738 | 4,880 | 5,027 | 5,177 | - | - | - | - | - | 19,822 |

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 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

CAPITAL PROFILE REPORT

| | | | |
|-----------------|--|-----------------------|---------------------|
| PROFILE NAME: | CREEK EROSION PROTECTION | PROFILE STAGE: | L1 - Finance Review |
| PROFILE NUMBER: | CM-31-9604 | PROFILE TYPE: | Composite |
| DEPARTMENT: | Financial Services & Utilities - Utilities | PROFILE MANAGER: | Chris Ward |
| BRANCH: | Stormwater Utility | LEAD BRANCH MANAGER: | |
| LEAD BRANCH: | | ESTIMATED START DATE: | January, 2015 |
| PROGRAM NAME: | | ESTIMATED COMPLETION: | December, 2024 |
| BUDGET CYCLE: | 2015-2018 | | |

| | | | |
|-------------------|-----------|-------------------|--|
| Service Category: | Utilities | Major Initiative: | |
|-------------------|-----------|-------------------|--|

| | | | |
|---------------|----------------|-----------------------|--------|
| GROWTH | RENEWAL | PREVIOUSLY APPROVED: | - |
| | 100 | BUDGET REQUEST: | 13,802 |
| | | TOTAL PROFILE BUDGET: | 13,802 |

PROFILE DESCRIPTION

Implement appropriate creek erosion protection due to increased runoff from urban development. Local remediation and investigation of drainage problems caused by overland flows, ensure that the existing system is functioning as intended. This project seeks to implement appropriate creek erosion protection works due to increased runoff originated from urban development and address overland drainage problems throughout the city as they arise. This is a composite program to implement erosion protection works at a number of locations along the Whitemud/Blackmud Creeks, Mill Creek, Fulton Creek, Gold Bar Creek, Wedgewood Creek and Horsehills Creek.

PROFILE BACKGROUND

The Creek Erosion Protection Program has been established to solve overland drainage issues and implement creek erosion protection works throughout the City. The program will investigate, evaluate and carry out overland drainage remedial works and implement creek protection works due to increased runoff originating from urban development. It is proposed to implement creek erosion protection projects at a number of locations along the Whitemud/Blackmud Creeks, Mill Creek, Fulton Creek, Gold Bar Creek, Wedgewood Creek and Horsehills Creek. Any additional increased runoff volume will exacerbate the current conditions and can impact the uses of the natural areas abutting the creeks and also contribute to total loading of solids to the North Saskatchewan River.

PROFILE JUSTIFICATION

The proposed projects will reduce hazards due to erosion, prevent costly emergency repairs, reduce total loading to the North Saskatchewan River and serve to protect, enhance and improve the City's natural environment. Implementation of the erosion protection works will also fulfill the requirements of collecting Storm Permanent Area Contribution (PAC) from the development industry. Usually the City receives 35-40 complaints every year regarding flooding issues and unsafe conditions resulting from overland flows. Citizens' complaints of surface flooding and erosion caused by rainfall and snowmelt have to be investigated, prioritized and addressed. Flooding and erosion hazards to the public include direct flooding, traffic problems due to street inundation and route blockage, and potential structural damage.

STRATEGIC ALIGNMENT

The program is consistent with and complements the City's overall goal of environmental protection as articulated in The Way Ahead, The Way We Live, The Way We Green, The Way We Finance

ALTERNATIVES CONSIDERED

- 1) Do nothing
- 2) Review potential projects and implement according to highest priority (proposed).
- 3) Install flow monitors, but defer projects.

COST BENEFITS

This program will provide flood protection and correct unsafe conditions resulting from overland flows, thus providing a safer and cleaner environment. The program will fulfill the goals to protect, enhance, and improve the City's natural environment. Moreover, the program will ensure that an acceptable overland drainage is provided to citizens.

KEY RISKS & MITIGATING STRATEGY

The key risks of not proceeding are: increased sediment transport to the river, more frequent expensive emergency repairs, reduced structural integrity of roadways and property, recreational use of the creek valley system will be affected.

RESOURCES

Internal resources will be used to investigate and implement overland drainage projects. For creek erosion projects, external engineering consultants and contractors are required for design and construction.

CONCLUSIONS AND RECOMMENDATIONS

The Creek Erosion Protection program will investigate, evaluate and carry out overland drainage remedial work to address complaints from citizens and implement creek protection works due to increased runoff originating from urban development.

CONTINGENCY OF APPROVAL

CAPITAL PROFILE REPORT

PROFILE NAME: Creek Erosion Protection
 PROFILE NUMBER: CM-31-9604

PROFILE TYPE: Composite
 BRANCH: Stormwater Utility

CAPITAL BUDGET AND FUNDING SOURCES (000's)

| APPROVED BUDGET | | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|-----------------|--------------------------|-------------|------|------|------|------|------|------|------|------|------|------|-------|
| | Approved Budget | | | | | | | | | | | | |
| | Original Budget Approved | - | - | - | - | - | - | - | - | - | - | - | - |
| | Current Approved Budget | - | - | - | - | - | - | - | - | - | - | - | - |

| | | | | | | | | | | | | | |
|----------------|---------------------------------------|---|---|-------|-------|-------|-------|---|---|---|---|---|--------|
| BUDGET REQUEST | Budget Request | - | - | 3,193 | 3,289 | 3,606 | 3,714 | - | - | - | - | - | 13,802 |
| | Revised Funding Sources (if approved) | | | | | | | | | | | | |
| | Developer Financing | - | - | 1,030 | 1,061 | 1,093 | 1,126 | - | - | - | - | - | 4,309 |
| | Drainage Retained Earnings | - | - | 865 | 891 | 1,005 | 1,035 | - | - | - | - | - | 3,797 |
| | Self-Liquid. Debent.-Land Drg | - | - | 1,298 | 1,337 | 1,508 | 1,553 | - | - | - | - | - | 5,696 |
| | Requested Funding Source | - | - | 3,193 | 3,289 | 3,606 | 3,714 | - | - | - | - | - | 13,802 |

| | | | | | | | | | | | | | |
|------------------------------|-------------------------------|---|---|-------|-------|-------|-------|---|---|---|---|---|--------|
| REVISED BUDGET (IF APPROVED) | Revised Budget (if Approved) | - | - | 3,193 | 3,289 | 3,606 | 3,714 | - | - | - | - | - | 13,802 |
| | Requested Funding Source | | | | | | | | | | | | |
| | Developer Financing | - | - | 1,030 | 1,061 | 1,093 | 1,126 | - | - | - | - | - | 4,309 |
| | Drainage Retained Earnings | - | - | 865 | 891 | 1,005 | 1,035 | - | - | - | - | - | 3,797 |
| | Self-Liquid. Debent.-Land Drg | - | - | 1,298 | 1,337 | 1,508 | 1,553 | - | - | - | - | - | 5,696 |
| | Requested Funding Source | - | - | 3,193 | 3,289 | 3,606 | 3,714 | - | - | - | - | - | 13,802 |

REVISED BUDGET BY ACTIVITY TYPE (000's)

| REVISED BUDGET BY ACTIVITY TYPE | Activity Type | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|---------------------------------|---------------|-------------|------|-------|-------|-------|-------|-------|------|------|------|------|--------|
| | Construction | | - | - | 1,947 | 2,005 | 2,262 | 2,330 | - | - | - | - | - |
| Design | | - | - | 216 | 223 | 251 | 259 | - | - | - | - | - | 949 |
| Land | | - | - | 1,030 | 1,061 | 1,093 | 1,126 | - | - | - | - | - | 4,309 |
| | Total | - | - | 3,193 | 3,289 | 3,606 | 3,714 | - | - | - | - | - | 13,802 |

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 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

CAPITAL PROFILE REPORT

| | | | |
|-----------------|--|-----------------------|---------------------|
| PROFILE NAME: | EXPANDED NEIGHBOURHOOD FLOOD MITIGATION | PROFILE STAGE: | L1 - Finance Review |
| PROFILE NUMBER: | CM-31-9611 | PROFILE TYPE: | Composite |
| DEPARTMENT: | Financial Services & Utilities - Utilities | PROFILE MANAGER: | Chris Ward |
| BRANCH: | Stormwater Utility | LEAD BRANCH MANAGER: | |
| LEAD BRANCH: | | ESTIMATED START DATE: | January, 2015 |
| PROGRAM NAME: | | ESTIMATED COMPLETION: | December, 2024 |
| BUDGET CYCLE: | 2015-2018 | | |

| | | | |
|-------------------|-----------|-------------------|--|
| Service Category: | Utilities | Major Initiative: | |
|-------------------|-----------|-------------------|--|

| | | | |
|---------------|----------------|-----------------------|--------|
| GROWTH | RENEWAL | PREVIOUSLY APPROVED: | - |
| 50 | 50 | BUDGET REQUEST: | 60,090 |
| | | TOTAL PROFILE BUDGET: | 60,090 |

PROFILE DESCRIPTION

Program developed to address flooding issues in south Edmonton, upgrading of storm and sanitary pipes and SWMF ponds, new storage sewers and sealing of manholes improving overland drainage routes. The Expanded Neighbourhood Flood Mitigation Program was developed in response to the heavy rains which caused flooding and sewer back-ups in Mill Woods, Southwest Edmonton and Millbourne in 2012. To reduce the risk of future flooding in these areas, a number of improvement projects including upgrading existing storm and sanitary sewer pipes and stormwater management ponds, building new storage sewers, sealing a number of manholes in trapped low areas, improving overland drainage routes, and constructing new stormwater management dry ponds are proposed.

PROFILE BACKGROUND

Heavy rains caused flooding and sewer backup in more than 1,200 homes city-wide. Neighbourhoods in Mill Woods and southwest Edmonton were heavily impacted. Many of these neighbourhoods also experienced severe flooding in 2004. Since 2006, a number of projects have been completed in southwest Edmonton and Mill Woods to reduce the risk of flooding. However, these neighbourhoods are still at risk of flooding. Some of the neighbourhoods do not have defined major drainage systems as they were constructed prior to the implementation of the dual storm drainage system requirement for both major (surface) and minor (piped) drainage system, which was introduced in the late 1980's. In addition, the sanitary systems have limited capacities.

PROFILE JUSTIFICATION

Council directed flood prevention to protect citizens and property from further flood events. This program is to meet the City Council's direction for flood prevention. Implementation of the extended flood prevention program will ensure that an acceptable level of service is provided to Drainage Services customers.

STRATEGIC ALIGNMENT

This program is consistent with and complements the City's overall goals for environmental protection as articulated in The Way Ahead, and contributes to The Way we Live, The Way we Green, The Way we Finance

ALTERNATIVES CONSIDERED

Large storage tunnel or underground storage tank

COST BENEFITS

The drainage improvements will benefit 24 neighbourhoods. It will also ensure that an acceptable level of service is provided to Drainage Services customers, and the City's resources are spent in an effective manner and optimized for flood protection purpose.

KEY RISKS & MITIGATING STRATEGY

- Neighbourhoods will be at-risk of flooding during similar storm events;
- The City will not fulfill the promise to address flooding in at-risk neighbourhoods

RESOURCES

External engineering consultants and contractors will be required for engineering and construction of the facilities. Administration will assess and look at developing in-house construction team.

CONCLUSIONS AND RECOMMENDATIONS

It is recommended that the flood prevention works in this program be funded as they will provide flood protection against future severe rain events.

CONTINGENCY OF APPROVAL

CAPITAL PROFILE REPORT

PROFILE NAME: **Expanded Neighbourhood Flood Mitigation**
 PROFILE NUMBER: **CM-31-9611**

PROFILE TYPE: **Composite**
 BRANCH: **Stormwater Utility**

CAPITAL BUDGET AND FUNDING SOURCES (000's)

| APPROVED BUDGET | | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|-----------------|--------------------------|-------------|------|------|------|------|------|------|------|------|------|------|-------|
| | Approved Budget | | | | | | | | | | | | |
| | Original Budget Approved | - | - | - | - | - | - | - | - | - | - | - | - |
| | Current Approved Budget | - | - | - | - | - | - | - | - | - | - | - | - |

| | | | | | | | | | | | | | |
|----------------|---------------------------------------|---|---|--------|--------|--------|--------|---|---|---|---|---|--------|
| BUDGET REQUEST | Budget Request | - | - | 11,311 | 13,454 | 14,970 | 20,354 | - | - | - | - | - | 60,090 |
| | Revised Funding Sources (if approved) | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 4,185 | 4,978 | 5,539 | 7,531 | - | - | - | - | - | 22,232 |
| | Self-Liquid. Debent.-Land Drg | - | - | 7,127 | 8,477 | 9,431 | 12,823 | - | - | - | - | - | 37,857 |
| | Requested Funding Source | - | - | 11,311 | 13,454 | 14,970 | 20,354 | - | - | - | - | - | 60,090 |

| | | | | | | | | | | | | | |
|------------------------------|-------------------------------|---|---|--------|--------|--------|--------|---|---|---|---|---|--------|
| REVISED BUDGET (IF APPROVED) | Revised Budget (if Approved) | - | - | 11,311 | 13,454 | 14,970 | 20,354 | - | - | - | - | - | 60,090 |
| | Requested Funding Source | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 4,185 | 4,978 | 5,539 | 7,531 | - | - | - | - | - | 22,232 |
| | Self-Liquid. Debent.-Land Drg | - | - | 7,127 | 8,477 | 9,431 | 12,823 | - | - | - | - | - | 37,857 |
| | Requested Funding Source | - | - | 11,311 | 13,454 | 14,970 | 20,354 | - | - | - | - | - | 60,090 |

REVISED BUDGET BY ACTIVITY TYPE (000's)

| REVISED BUDGET BY ACTIVITY TYPE | Activity Type | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|---------------------------------|---------------|--------------|------|--------|--------|--------|--------|--------|------|------|------|------|--------|
| | | Construction | - | - | 10,752 | 13,078 | 11,933 | 17,087 | - | - | - | - | - |
| | Design | - | - | 559 | 377 | 3,038 | 3,266 | - | - | - | - | - | 7,240 |
| | Total | - | - | 11,311 | 13,454 | 14,970 | 20,354 | - | - | - | - | - | 60,090 |

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 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

CAPITAL PROFILE REPORT

| | | | |
|-----------------|--|-----------------------|---------------------|
| PROFILE NAME: | RIVER FOR LIFE | PROFILE STAGE: | L1 - Finance Review |
| PROFILE NUMBER: | CM-31-9640 | PROFILE TYPE: | Composite |
| DEPARTMENT: | Financial Services & Utilities - Utilities | PROFILE MANAGER: | Chris Ward |
| BRANCH: | Stormwater Utility | LEAD BRANCH MANAGER: | |
| LEAD BRANCH: | | ESTIMATED START DATE: | January, 2017 |
| PROGRAM NAME: | | ESTIMATED COMPLETION: | December, 2024 |
| BUDGET CYCLE: | 2015-2018 | | |

| | | | |
|------------------------------------|----------------|------------------------------|-------|
| Service Category: Utilities | | Major Initiative: | |
| GROWTH | RENEWAL | PREVIOUSLY APPROVED: | - |
| 50 | 50 | BUDGET REQUEST: | 3,039 |
| | | TOTAL PROFILE BUDGET: | 3,039 |

PROFILE DESCRIPTION

This strategy will lay the groundwork for water quality improvement projects on the 30-year horizon. Led by Drainage Services, a strategic framework was created followed by implementation plans. The implementation plans includes four processes and five programs that lay the groundwork for how River for Life will be implemented after the strategy is completed. In 2014, an adaptive management process, triple bottom line process, and funding strategy will be developed in order to ensure that the strategy is sustainable in the long term. Projects that may develop out of this strategy include grey infrastructure and green infrastructure as well as upgrades to the Gold Bar wastewater treatment plant. City operations may also be analyzed for any possible water quality improvement. Partnerships with other organizations that share the same goals as River for Life strategy will also be developed and reinforced to broaden the target audience.

PROFILE BACKGROUND

River for Life is the City's 30-year water quality strategy to reduce pollutant discharge in the wastewater, stormwater and combined sewer systems. A focus of the last approval to operate issued by Alberta Environment and Sustainable Resource Development was on long term pollution reduction strategies. The next operating approval will be issued in 2015. As with the last approval, pollutant loading and continuous improvement will be a theme throughout. As we are transitioning to a maximum allowable load (MAL) regulatory regime, the City can be expected to move forward on a 'maintain or improve' philosophy as it relates to our discharges. If work does not proceed on the River for Life strategy, and no improvements made, we could expect more pressure from the regulator to improve on our discharges when the MAL regulations come out, there will be a larger gap to close between where the City will be and where the City has to go.

PROFILE JUSTIFICATION

River for Life is the City's 30-year water quality strategy to reduce pollutant discharge in the wastewater, stormwater and combined sewer systems, pollutant loading and continuous improvement will be a theme throughout. As we are transitioning to a maximum allowable load (MAL) regulatory regime, the City can be expected to move forward on a 'maintain or improve' philosophy as it relates to discharges. If work does not proceed on the River for Life strategy, and no improvements made, we could expect pressure from the regulator to improve on our discharges when the MAL regulation come out. River for Life is also a strategy that demonstrates the City of Edmonton is an environmental leader when it comes to one of our City's greatest resources, the North Saskatchewan River. Long term measures that will show the results of projects built include our volume of CSO discharged as well as the contaminant loading to the river.

STRATEGIC ALIGNMENT

The River for Life strategy is an implementation plan under The Way We Green and maintains that Edmonton is an environmental leader on the world stage.

ALTERNATIVES CONSIDERED

This project covers all of the water quality improvement projects. By covering the entire spectrum of projects, the only alternative to this profile will be the do nothing alternative. With regulatory requirements, this will not be an option.

COST BENEFITS

The goal of the River for Life strategy will be to reduce the impact from discharges in to the North Saskatchewan River. The river is a very important natural resource for the City, Province, and Country. Projects that will be identified through the strategy will have the potential to positively impact a number of other city strategies.

KEY RISKS & MITIGATING STRATEGY

Cost will be a risk with water quality improvement programs and projects. Mitigating factors would be to get the projects in the budget early and to educate decision makers on the strategy.

RESOURCES

Construction work will most likely be conducted by contractors. There will be an ongoing project management role by Drainage Planning to track project status as well as to track the success of the projects in the context of the strategy.

CONCLUSIONS AND RECOMMENDATIONS

Projects that will be identified have the potential to positively impact a number of other city strategies. Green infrastructure can help provide habitat and increase biodiversity as well as reduce the heat island effect caused by cities.

CONTINGENCY OF APPROVAL

CAPITAL PROFILE REPORT

PROFILE NAME: River for Life
 PROFILE NUMBER: CM-31-9640

PROFILE TYPE: Composite
 BRANCH: Stormwater Utility

CAPITAL BUDGET AND FUNDING SOURCES (000's)

| APPROVED BUDGET | | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|-----------------|--------------------------|-------------|------|------|------|------|------|------|------|------|------|------|-------|
| | Approved Budget | | | | | | | | | | | | |
| | Original Budget Approved | - | - | - | - | - | - | - | - | - | - | - | - |
| | Current Approved Budget | - | - | - | - | - | - | - | - | - | - | - | - |

| | | | | | | | | | | | | | |
|----------------|---------------------------------------|---|---|---|---|-------|-------|---|---|---|---|---|-------|
| BUDGET REQUEST | Budget Request | - | - | - | - | 1,322 | 1,716 | - | - | - | - | - | 3,039 |
| | Revised Funding Sources (if approved) | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | - | - | 529 | 687 | - | - | - | - | - | 1,215 |
| | Self-Liquid. Debent.-Land Drg | - | - | - | - | 793 | 1,030 | - | - | - | - | - | 1,823 |
| | Requested Funding Source | - | - | - | - | 1,322 | 1,716 | - | - | - | - | - | 3,039 |

| | | | | | | | | | | | | | |
|------------------------------|-------------------------------|---|---|---|---|-------|-------|---|---|---|---|---|-------|
| REVISED BUDGET (IF APPROVED) | Revised Budget (if Approved) | - | - | - | - | 1,322 | 1,716 | - | - | - | - | - | 3,039 |
| | Requested Funding Source | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | - | - | 529 | 687 | - | - | - | - | - | 1,215 |
| | Self-Liquid. Debent.-Land Drg | - | - | - | - | 793 | 1,030 | - | - | - | - | - | 1,823 |
| | Requested Funding Source | - | - | - | - | 1,322 | 1,716 | - | - | - | - | - | 3,039 |

REVISED BUDGET BY ACTIVITY TYPE (000's)

| REVISED BUDGET BY ACTIVITY TYPE | Activity Type | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|---------------------------------|---------------|--------------|------|------|------|-------|-------|-------|------|------|------|------|-------|
| | | Construction | - | - | - | - | 1,190 | 1,545 | - | - | - | - | - |
| | Design | - | - | - | - | 132 | 172 | - | - | - | - | - | 304 |
| | Total | - | - | - | - | 1,322 | 1,716 | - | - | - | - | - | 3,039 |

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 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

CAPITAL PROFILE REPORT

PROFILE NAME: OPPORTUNISTIC SEWER SEPARATION
 PROFILE NUMBER: CM-31-2160
 DEPARTMENT: Financial Services & Utilities - Utilities
 BRANCH: Stormwater Utility
 LEAD BRANCH:
 PROGRAM NAME:
 BUDGET CYCLE: 2015-2018

| | |
|-----------------------|---------------------|
| PROFILE STAGE: | L1 - Finance Review |
| PROFILE TYPE: | Composite |
| PROFILE MANAGER: | Chris Ward |
| LEAD BRANCH MANAGER: | |
| ESTIMATED START DATE: | January, 2015 |
| ESTIMATED COMPLETION: | December, 2020 |

| | | | |
|-----------------------------|---------|---|-------|
| Service Category: Utilities | | Major Initiative: Downtown Arena District | |
| GROWTH | RENEWAL | PREVIOUSLY APPROVED: | - |
| | 100 | BUDGET REQUEST: | 4,975 |
| | | TOTAL PROFILE BUDGET: | 4,975 |

PROFILE DESCRIPTION

Opportunistic Sewer Separation (OSS) is one of several components of the Combined Sewer Overflow (CSO) Control Strategy for long term control measures to reduce CSO's to the North Saskatchewan River (NSR). Working towards the long-term goal of sewer separation or its environmental equivalent to protect the NSR water quality is one of the requirements for the City's Approval to Operate (No. 639-02-07).

OSS involves converting combined sewer systems into separate sanitary and storm sewers in an opportunistic and cost effective manner. In addition to protecting the NSR water quality, sewer separation will increase sewer system level of service to reduce potential basement flooding in combined sewer areas and also reduce pressure on downstream combined trunks. Opportunities arise when the cost of separation could be optimized as the result of synergy with other projects such as the Drainage Neighbourhood Renewal Program, the Sewer Upgrading Strategy, or the Flood Prevention Program.

PROFILE BACKGROUND

The City has an area of approximately 4,270 ha currently serviced by the combined sewer system and consists of about 930 km of combined sewers. Opportunistic Sewer Separation (OSS) converts combined sewer systems into separate sanitary and storm sewers in an opportunistic and cost effective manner. Opportunities arise when the cost of separation could be optimized as the result of synergy with other projects such as Drainage Neighbourhood Renewal, the Sewer Upgrading Strategy, or the Flood Prevention Program.

The City's 18 Combined Sewer Overflow (CSO) sites were identified to be one of the sources of bacteria that cause in-stream river levels to exceed water quality criteria for primary contact recreation. The OSS program will contribute to the reduction of bacteria in untreated CSO discharges. Since the start of the program in 2005, five out of the nine identified projects have been completed resulting in 75 hectares of the combined sewer area being separated.

PROFILE JUSTIFICATION

As a result of the OSS projects, more combined areas will be separated and both quantity and frequency of CSO's to the NSR will be reduced. Sewer separation will increase sewer system level of service to reduce potential basement flooding in combined sewer areas and will also reduce pressure on downstream combined trunks. The net benefits of other programs or strategies can be maximized and overall cost savings can be achieved as a result of the OSS program.

Working towards the long-term goal of sewer separation or its environmental equivalent to protect the NSR water quality is one of the requirements for the City's Approval to Operate (No. 639-02-07) by Alberta Ministry of Environment and Sustainable Resource Development (ESRD).

STRATEGIC ALIGNMENT

This program aligns with "The Way We Green" and "The Way We Live" as it protects the river water quality, reduces potential basement flooding in combined sewer areas and reduces the impact on the environment and public health.

ALTERNATIVES CONSIDERED

Total separation of the combined system, which is very costly and disruptive.
 No sewer separation, which would make it difficult to reach long term goals for river water quality and to maintain the City's Approval to Operate.

COST BENEFITS

The volume and frequency of CSOs to the North Saskatchewan River will be reduced, which protects water quality. Level of service will be increased and will reduce the potential for basement flooding in combined sewer areas, and will reduce flows in downstream combined trunks. It is one of the regulatory requirements as outlined in the City's Approval to Operate under the Environmental Projection and Enhancement Act.

KEY RISKS & MITIGATING STRATEGY

Risk of not doing this project includes flooding and hazard to the environment. Close coordination with other City projects is essential for this program.

RESOURCES

No new internal resources will be required by this program. However, OSS projects may require external resources for both the design and construction phases.

CONCLUSIONS AND RECOMMENDATIONS

Previous studies indicated that sewer separation is generally costly and total separation will be unrealistic based on both cost and time for implementation. Separation of the combined sewer systems has to be where it is cost effective to do so.

CONTINGENCY OF APPROVAL

CAPITAL PROFILE REPORT

PROFILE NAME: **Opportunistic Sewer Separation**
 PROFILE NUMBER: **CM-31-2160**

PROFILE TYPE: **Composite**
 BRANCH: **Stormwater Utility**

CAPITAL BUDGET AND FUNDING SOURCES (000's)

| APPROVED BUDGET | | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|--------------------------|-----------------|-------------|------|------|------|------|------|------|------|------|------|------|-------|
| | Approved Budget | | | | | | | | | | | | |
| Original Budget Approved | | - | - | - | - | - | - | - | - | - | - | - | - |
| Current Approved Budget | | - | - | - | - | - | - | - | - | - | - | - | - |

| | | | | | | | | | | | | | |
|--------------------------|---------------------------------------|---|---|---|-----|-------|-------|---|---|---|---|---|-------|
| BUDGET REQUEST | Budget Request | - | - | - | 265 | 2,459 | 2,251 | - | - | - | - | - | 4,975 |
| | Revised Funding Sources (if approved) | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | - | 106 | 983 | 900 | - | - | - | - | - | 1,990 |
| | Self-Liquid. Debent.-Land Drg | - | - | - | 159 | 1,475 | 1,351 | - | - | - | - | - | 2,985 |
| Requested Funding Source | | - | - | - | 265 | 2,459 | 2,251 | - | - | - | - | - | 4,975 |

| | | | | | | | | | | | | | |
|------------------------------|-------------------------------|---|---|---|-----|-------|-------|---|---|---|---|---|-------|
| REVISED BUDGET (IF APPROVED) | Revised Budget (if Approved) | - | - | - | 265 | 2,459 | 2,251 | - | - | - | - | - | 4,975 |
| | Requested Funding Source | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | - | 106 | 983 | 900 | - | - | - | - | - | 1,990 |
| | Self-Liquid. Debent.-Land Drg | - | - | - | 159 | 1,475 | 1,351 | - | - | - | - | - | 2,985 |
| Requested Funding Source | | - | - | - | 265 | 2,459 | 2,251 | - | - | - | - | - | 4,975 |

REVISED BUDGET BY ACTIVITY TYPE (000's)

| REVISED BUDGET BY ACTIVITY TYPE | Activity Type | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|---------------------------------|---------------|-------------|------|------|------|-------|-------|-------|------|------|------|------|-------|
| | Construction | | - | - | - | 265 | 2,459 | 2,251 | - | - | - | - | - |
| Total | | - | - | - | 265 | 2,459 | 2,251 | - | - | - | - | - | 4,975 |

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 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

CAPITAL PROFILE REPORT

PROFILE NAME: LID CAPITAL DEMONSTRATION PROJECTS
 PROFILE NUMBER: CM-31-9616
 DEPARTMENT: Financial Services & Utilities - Utilities
 BRANCH: Stormwater Utility
 LEAD BRANCH:
 PROGRAM NAME:
 BUDGET CYCLE: 2015-2018

| | |
|-----------------------|---------------------|
| PROFILE STAGE: | L1 - Finance Review |
| PROFILE TYPE: | Composite |
| PROFILE MANAGER: | Chris Ward |
| LEAD BRANCH MANAGER: | |
| ESTIMATED START DATE: | January, 2015 |
| ESTIMATED COMPLETION: | December, 2024 |

| | | | |
|-------------------|-----------|-------------------|--|
| Service Category: | Utilities | Major Initiative: | |
|-------------------|-----------|-------------------|--|

| | |
|---------------|----------------|
| GROWTH | RENEWAL |
| 100 | |

| | |
|-----------------------|-----|
| PREVIOUSLY APPROVED: | - |
| BUDGET REQUEST: | 810 |
| TOTAL PROFILE BUDGET: | 810 |

PROFILE DESCRIPTION

This LID demonstration will develop various LID BMPs projects in different land use types on City owned properties and public right-of-way to demonstrate that LID works if designed, constructed, and maintained properly in Edmonton. The trend of LID implementation in Edmonton is that it started at lot scale and is currently moving toward community scale. As LID practices on private properties will be a significant amount at community-scale application, this LID demonstration also expects to collaborate with external stakeholders to develop a project on a private property. A few of the demonstration projects may be monitored for a long-term over ten years. It is anticipated to develop minimum one demonstration project yearly from 2016 to 2018.

PROFILE BACKGROUND

Low Impact Development (LID) is a land development and stormwater management approach that simulates natural hydrologic cycle to manage stormwater close to its sources. The main stormwater objectives of LID applications include water quality improvement, volume reduction, and flow rate attenuation. The community and watershed scale application of LID contribute to biodiversity, improved air quality, and reduced urban heat island impact. Through slowing down storm runoff and soaking it into ground, LID compensates for conventional stormwater management systems to manage water quality and protect aquatic health. LID is an integral component of integrated stormwater management system for managing the full spectrum of all rainfall events.

PROFILE JUSTIFICATION

LID is an identified initiative by the City's Stormwater Quality Strategy to improve stormwater management. Implementation of LID is committed to Alberta Environment and Sustainable Resources Development under the Total Loadings Plan required by the City's Approval to Operate No. 639-02-07. LID implementation aligns with Drainage Services' River for Life. More specifically, the Green Infrastructure Program of River for Life recommended undertaking demonstration projects over ten years. It is also an approach to manage combined sewer discharge (Combined Sewer Discharge Strategy, 2012). LID supports directly The Way We Green and The Way We Grow.

STRATEGIC ALIGNMENT

LID is an identified initiative by the City's Stormwater Quality Strategy to improve stormwater management. This project directly supports The Way We Green and the Way we Grow

ALTERNATIVES CONSIDERED

a) projects from other municipalities of similar climate conditions as case studies to help resolve the challenges that we are facing (b) implement citywide LID implementation without doing LID demonstration projects. The are not viable alternatives

COST BENEFITS

The water quality of storm runoff that filters through LID facilities is improved.
 The storm runoff volume from the contributing catchment area is reduced.
 Portable water consumption is reduced if storm water is used instead for irrigation.

KEY RISKS & MITIGATING STRATEGY

Lack of primary stakeholder engagement-engage at planning stage
 Lack of knowledge and experience designing, constructing, and maintaining LID-Planning to provide support
 Insufficient internal resources - use external resources as needed

RESOURCES

The resourcing options include internal design and/or consultant design & construction. Use of consulting services will follow City's PSA process

CONCLUSIONS AND RECOMMENDATIONS

To adapt LID into Edmonton's climate and stormwater management system, LID demonstration projects are strongly needed to understand and resolve the challenges and issues we are facing

CONTINGENCY OF APPROVAL

CAPITAL PROFILE REPORT

PROFILE NAME: LID Capital Demonstration Projects

PROFILE TYPE: Composite

PROFILE NUMBER: CM-31-9616

BRANCH: Stormwater Utility

CAPITAL BUDGET AND FUNDING SOURCES (000's)

| APPROVED BUDGET | | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|-----------------|--------------------------|-------------|------|------|------|------|------|------|------|------|------|------|-------|
| | Approved Budget | | | | | | | | | | | | |
| | Original Budget Approved | - | - | - | - | - | - | - | - | - | - | - | - |
| | Current Approved Budget | - | - | - | - | - | - | - | - | - | - | - | - |

| | | | | | | | | | | | | | |
|----------------|---------------------------------------|---|---|-----|-----|-----|-----|---|---|---|---|---|-----|
| BUDGET REQUEST | Budget Request | - | - | 155 | 212 | 219 | 225 | - | - | - | - | - | 810 |
| | Revised Funding Sources (if approved) | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 62 | 85 | 87 | 90 | - | - | - | - | - | 324 |
| | Self-Liquid. Debent.-Land Drg | - | - | 93 | 127 | 131 | 135 | - | - | - | - | - | 486 |
| | Requested Funding Source | - | - | 155 | 212 | 219 | 225 | - | - | - | - | - | 810 |

| | | | | | | | | | | | | | |
|------------------------------|-------------------------------|---|---|-----|-----|-----|-----|---|---|---|---|---|-----|
| REVISED BUDGET (IF APPROVED) | Revised Budget (if Approved) | - | - | 155 | 212 | 219 | 225 | - | - | - | - | - | 810 |
| | Requested Funding Source | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 62 | 85 | 87 | 90 | - | - | - | - | - | 324 |
| | Self-Liquid. Debent.-Land Drg | - | - | 93 | 127 | 131 | 135 | - | - | - | - | - | 486 |
| | Requested Funding Source | - | - | 155 | 212 | 219 | 225 | - | - | - | - | - | 810 |

REVISED BUDGET BY ACTIVITY TYPE (000's)

| REVISED BUDGET BY ACTIVITY TYPE | Activity Type | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|---------------------------------|---------------|--------------|------|------|------|------|------|------|------|------|------|------|-------|
| | | Construction | - | - | 108 | 149 | 153 | 158 | - | - | - | - | - |
| | Design | - | - | 31 | 42 | 44 | 45 | - | - | - | - | - | 162 |
| | Other Costs | - | - | 15 | 21 | 22 | 23 | - | - | - | - | - | 81 |
| | Total | - | - | 155 | 212 | 219 | 225 | - | - | - | - | - | 810 |

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 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

CAPITAL PROFILE REPORT

| | | | |
|-----------------|--|-----------------------|---------------------|
| PROFILE NAME: | ENVIRONMENTAL & COLLECTION SYSTEM MONITORING | PROFILE STAGE: | L1 - Finance Review |
| PROFILE NUMBER: | CM-31-9620 | PROFILE TYPE: | Composite |
| DEPARTMENT: | Financial Services & Utilities - Utilities | PROFILE MANAGER: | Chris Ward |
| BRANCH: | Stormwater Utility | LEAD BRANCH MANAGER: | |
| LEAD BRANCH: | | ESTIMATED START DATE: | January, 2015 |
| PROGRAM NAME: | | ESTIMATED COMPLETION: | December, 2018 |
| BUDGET CYCLE: | 2015-2018 | | |

| | | | |
|-------------------|-----------|-------------------|--|
| Service Category: | Utilities | Major Initiative: | |
|-------------------|-----------|-------------------|--|

| | | | |
|---------------|----------------|-----------------------|-----|
| GROWTH | RENEWAL | PREVIOUSLY APPROVED: | - |
| 55 | 45 | BUDGET REQUEST: | 850 |
| | | TOTAL PROFILE BUDGET: | 850 |

PROFILE DESCRIPTION

Purchase of equipment and infrastructure to support sewer flow, level, water quality and rainfall monitoring including new technology and replacement of equipment as needed. Maintenance, repair, and life cycle replacement of existing equipment
 Incorporation of new monitoring technology
 Design and Construction charges for new monitoring infrastructure
 Out of Scope: software (database), labour, communication charges (phone)

PROFILE BACKGROUND

Edmonton is a growing, developing city yet also with aging sewer infrastructure. There are numerous projects both ongoing and forthcoming related to this, necessitating informed and more accurate and cost-effective decisions and designs regarding Edmonton's sewerage infrastructure design and rehabilitation. Stringency of Federal and Provincial mandated environmental reporting and ISO14001 continuous improvement are also creating an increasing demand and need for data and better quality data. The current monitoring program is limited by existing, old technology and unable to meet demand without efficiencies created by capital improvements or, alternatively, increased staffing, and much equipment is due for replacement. This capital budget is also essential for current operation of the System Monitoring group's mandate.

PROFILE JUSTIFICATION

Improved efficiencies created by capital improvements to the monitoring network will allow for increased capacity to meet growing demand and better data quality. More frequent, automated collection allows for quicker detection and repair of problems, and quicker supply of higher quality data to stakeholders. New methods of monitoring such as rainfall radar will better address flooding assessments and modelling, and in a more timely manner. Stringency of Federal and Provincial mandated environmental reporting and ISO14001 continuous improvement are also creating an increasing demand and need for data and better quality data. The current monitoring program is limited by existing, old technology and unable to meet demand without efficiencies created by capital improvements or, alternatively, increased staffing, and much equipment is due for replacement. This capital budget is essential for current operation of the System Monitoring group's mandate.

STRATEGIC ALIGNMENT

The Way we Green, The Way we Grow and the Way we Finance

ALTERNATIVES CONSIDERED

Internal labour crews or external contractors

COST BENEFITS

operation of the monitoring program
 better quality and availability of data on sewerage system
 ability to meet regulatory reporting requirements

KEY RISKS & MITIGATING STRATEGY

Risks are associated with maintaining the status quo: inability to meet growing demand for monitoring locations and data quality, need to increase staffing levels, less accuracy and cost-effectiveness in supported projects

RESOURCES

Purchasing will be done within the standards set out by Materials Management. Design and Construction follow standards regarding hiring contractors.

CONCLUSIONS AND RECOMMENDATIONS

Benefits are improved cost-effectiveness and function of these sewerage system improvements, which has potentially very high return on this investment, and ability to maintain staffing at current level and improve their safety.

CONTINGENCY OF APPROVAL

CAPITAL PROFILE REPORT

PROFILE NAME: Environmental & Collection System Monitoring
 PROFILE NUMBER: CM-31-9620

PROFILE TYPE: Composite
 BRANCH: Stormwater Utility

CAPITAL BUDGET AND FUNDING SOURCES (000's)

| APPROVED BUDGET | | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|-----------------|--------------------------|-------------|------|------|------|------|------|------|------|------|------|------|-------|
| | Approved Budget | | | | | | | | | | | | |
| | Original Budget Approved | - | - | - | - | - | - | - | - | - | - | - | - |
| | Current Approved Budget | - | - | - | - | - | - | - | - | - | - | - | - |

| | | | | | | | | | | | | | |
|----------------|---------------------------------------|---|---|-----|-----|-----|-----|---|---|---|---|---|-----|
| BUDGET REQUEST | Budget Request | - | - | 219 | 226 | 200 | 205 | - | - | - | - | - | 850 |
| | Revised Funding Sources (if approved) | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 88 | 90 | 80 | 82 | - | - | - | - | - | 340 |
| | Self-Liquid. Debent.-Land Drg | - | - | 131 | 136 | 120 | 123 | - | - | - | - | - | 510 |
| | Requested Funding Source | - | - | 219 | 226 | 200 | 205 | - | - | - | - | - | 850 |

| | | | | | | | | | | | | | |
|------------------------------|-------------------------------|---|---|-----|-----|-----|-----|---|---|---|---|---|-----|
| REVISED BUDGET (IF APPROVED) | Revised Budget (if Approved) | - | - | 219 | 226 | 200 | 205 | - | - | - | - | - | 850 |
| | Requested Funding Source | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 88 | 90 | 80 | 82 | - | - | - | - | - | 340 |
| | Self-Liquid. Debent.-Land Drg | - | - | 131 | 136 | 120 | 123 | - | - | - | - | - | 510 |
| | Requested Funding Source | - | - | 219 | 226 | 200 | 205 | - | - | - | - | - | 850 |

REVISED BUDGET BY ACTIVITY TYPE (000's)

| REVISED BUDGET BY ACTIVITY TYPE | Activity Type | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|---------------------------------|----------------|--------------|------|------|------|------|------|------|------|------|------|------|-------|
| | | Construction | - | - | 49 | 51 | 45 | 46 | - | - | - | - | - |
| | Design | - | - | 6 | 6 | 5 | 5 | - | - | - | - | - | 22 |
| | Equip FurnFixt | - | - | 164 | 169 | 150 | 153 | - | - | - | - | - | 636 |
| | Total | - | - | 219 | 226 | 200 | 205 | - | - | - | - | - | 850 |

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 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

CAPITAL PROFILE REPORT

| | | | |
|-----------------|--|-----------------------|---------------------|
| PROFILE NAME: | STRUCTURES REHABILITATION | PROFILE STAGE: | L1 - Finance Review |
| PROFILE NUMBER: | CM-23-9503 | PROFILE TYPE: | Composite |
| DEPARTMENT: | Financial Services & Utilities - Utilities | PROFILE MANAGER: | Chris Ward |
| BRANCH: | Sanitary Utility | LEAD BRANCH MANAGER: | |
| LEAD BRANCH: | | ESTIMATED START DATE: | January, 2015 |
| PROGRAM NAME: | | ESTIMATED COMPLETION: | December, 2024 |
| BUDGET CYCLE: | 2015-2018 | | |

| | | | |
|------------------------------------|----------------|------------------------------|--------|
| Service Category: Utilities | | Major Initiative: | |
| GROWTH | RENEWAL | PREVIOUSLY APPROVED: | - |
| | 100 | BUDGET REQUEST: | 17,623 |
| | | TOTAL PROFILE BUDGET: | 17,623 |

PROFILE DESCRIPTION

The Structures Rehabilitation Program ensures an acceptable level of service is maintained in various components of drainage infrastructure. Structures such as outfalls, pump stations, drill drop manholes and trunk sewers deteriorate over time. This program involves the investigation, design and rehabilitation of these existing structures. Projects are located throughout the city. Structures requiring repair or rehabilitation are identified and prioritized based on condition ratings and inspections completed by Drainage Operations.

PROFILE BACKGROUND

Due to aging and deterioration of drainage infrastructure, the City may be vulnerable to unexpected failures that disrupt sewer service to homeowners, and can have a negative impact on the environment. Proactive rehabilitation of outfalls, pump stations, drill drop manholes and trunk sewers reduces costly emergency failures. Structures Rehabilitation has been ongoing on for many years and are rehabilitated on a location by location basis, based on condition inspections or problems identified by Drainage Operations.

PROFILE JUSTIFICATION

The Structures Rehabilitation Program maintains an acceptable level of service for citizens through the rehabilitation of drainage infrastructure. It protects persons and property from injury and damage due to roadway subsidence, sewer collapse or raw sewerage spill to the river. Timely repairs are needed to maintain the integrity of the infrastructure and to prevent claims against the City for property damage, public health concerns and possible environmental infractions as well as to protect pedestrian and vehicular traffic from potential roadway collapse and flooding damages. Further deterioration of structures could lead to emergency situations requiring immediate attention at a higher cost.

STRATEGIC ALIGNMENT

This program aligns with the "The Way We Live" as it allows Drainage Services to continue to provide a high level of service to the residents by reducing the possibility of flooded basements, loss of service or unnecessary spills to the environment.

ALTERNATIVES CONSIDERED

One alternative is to do nothing. If nothing is done, drainage infrastructure will be at higher risk of eventual failure, potentially causing flooding or environmental infractions, as well as more costly emergency repairs.

COST BENEFITS

The long term impact of this project on the operating budget will be positive because the overall condition of the infrastructures will be improved. This will lessen the efforts required to operate, and maintain the infrastructure. There will be a reduction in unpredictable emergency repairs required as a result of the proactive rehabilitation.

KEY RISKS & MITIGATING STRATEGY

Non-availability of the required funding will result in further deterioration of pump stations, trunk sewers, outfalls and drill drop manholes. This could potentially cause flooding, property damage and other emergency situations.

RESOURCES

No new internal resources will be required by these projects. However many of the projects will require external resources for both the design and/or construction phases.

CONCLUSIONS AND RECOMMENDATIONS

Drainage infrastructure is aging and many assets are past their useful service life. This program was initiated to extend the life of trunk sewers, outfalls, pump stations and drill drop manholes as they age, on a location by location basis.

CONTINGENCY OF APPROVAL

CAPITAL PROFILE REPORT

PROFILE NAME: Structures Rehabilitation
 PROFILE NUMBER: CM-23-9503

PROFILE TYPE: Composite
 BRANCH: Sanitary Utility

CAPITAL BUDGET AND FUNDING SOURCES (000's)

| APPROVED BUDGET | | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|-----------------|-------------------------|--------------------------|------|------|------|------|------|------|------|------|------|------|-------|
| | Approved Budget | Original Budget Approved | - | - | - | - | - | - | - | - | - | - | - |
| | Current Approved Budget | - | - | - | - | - | - | - | - | - | - | - | - |

| | | | | | | | | | | | | | |
|----------------|---------------------------------------|---|---|-------|-------|-------|-------|---|---|---|---|---|--------|
| BUDGET REQUEST | Budget Request | - | - | 3,567 | 4,045 | 4,931 | 5,079 | - | - | - | - | - | 17,623 |
| | Revised Funding Sources (if approved) | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 1,427 | 1,618 | 1,972 | 2,032 | - | - | - | - | - | 7,048 |
| | Self-Liquid. Debent.-Sanitary | - | - | 2,140 | 2,427 | 2,959 | 3,048 | - | - | - | - | - | 10,575 |
| | Requested Funding Source | - | - | 3,567 | 4,045 | 4,931 | 5,079 | - | - | - | - | - | 17,623 |

| | | | | | | | | | | | | | |
|------------------------------|-------------------------------|---|---|-------|-------|-------|-------|---|---|---|---|---|--------|
| REVISED BUDGET (IF APPROVED) | Revised Budget (if Approved) | - | - | 3,567 | 4,045 | 4,931 | 5,079 | - | - | - | - | - | 17,623 |
| | Requested Funding Source | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 1,427 | 1,618 | 1,972 | 2,032 | - | - | - | - | - | 7,048 |
| | Self-Liquid. Debent.-Sanitary | - | - | 2,140 | 2,427 | 2,959 | 3,048 | - | - | - | - | - | 10,575 |
| | Requested Funding Source | - | - | 3,567 | 4,045 | 4,931 | 5,079 | - | - | - | - | - | 17,623 |

REVISED BUDGET BY ACTIVITY TYPE (000's)

| REVISED BUDGET BY ACTIVITY TYPE | Activity Type | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|---------------------------------|---------------|-------------|------|-------|-------|-------|-------|------|------|------|------|------|--------|
| | Construction | - | - | 3,210 | 3,641 | 4,438 | 4,571 | - | - | - | - | - | - |
| Design | - | - | 357 | 405 | 493 | 508 | - | - | - | - | - | - | 1,762 |
| | Total | - | - | 3,567 | 4,045 | 4,931 | 5,079 | - | - | - | - | - | 17,623 |

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 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

CAPITAL PROFILE REPORT

| | | | |
|-----------------|--|-----------------------|---------------------|
| PROFILE NAME: | SEWER REHABILITATION | PROFILE STAGE: | L1 - Finance Review |
| PROFILE NUMBER: | CM-23-9504 | PROFILE TYPE: | Composite |
| DEPARTMENT: | Financial Services & Utilities - Utilities | PROFILE MANAGER: | Chris Ward |
| BRANCH: | Sanitary Utility | LEAD BRANCH MANAGER: | |
| LEAD BRANCH: | | ESTIMATED START DATE: | January, 2015 |
| PROGRAM NAME: | | ESTIMATED COMPLETION: | December, 2024 |
| BUDGET CYCLE: | 2015-2018 | | |

| | | | |
|------------------------------------|----------------|------------------------------|-------|
| Service Category: Utilities | | Major Initiative: | |
| GROWTH | RENEWAL | PREVIOUSLY APPROVED: | - |
| | 100 | BUDGET REQUEST: | 6,205 |
| | | TOTAL PROFILE BUDGET: | 6,205 |

PROFILE DESCRIPTION

This initiative is comprised of two sub programs, the Local Sewer Rehabilitation program and the Arterial and Collector Roadway Renewal program. The programs rehabilitate drainage system infrastructure as it ages on a location by location basis. Sewers requiring renewal are determined based on condition ratings, inspections completed by Drainage Operations, and in coordination with arterial or collector roadway reconstruction.

Currently, the renewal is for mainline sewers and includes some manhole's if they are required. Locations are limited to local sewers or sewers in locations of arterial or collector roadway reconstruction work. The drainage renewal work is completed through both relining and open cut. Locations identified as requiring renewal are investigated through CCTV to determine scope of work for each project.

PROFILE BACKGROUND

The City of Edmonton owns and operates over 5,600 km of sanitary, storm and combined sewers. The average age of the pipes is 43 years, with around 30% of them over 50 years old. Due to aging and deterioration of drainage infrastructure, the City may be vulnerable to unexpected failures that disrupt not only sewer service to homeowners but above-ground activities as well. Given the enormous cost of replacement of this infrastructure, proactive renewal needs to occur in the drainage system.

This is a recurring program that has been going on for many years. Currently, two sub programs are ongoing to renew existing infrastructure. Local Sewer Rehabilitation renews local sewers on a location by location basis, depending on condition ratings and issues determined by Drainage Operations. Arterial and Collector Roadways Renewal renews sewers in coordination with locations where arterial or collector reconstruction will be completed.

PROFILE JUSTIFICATION

This program maintains existing levels of service for citizens through the upkeep of the sewer infrastructure by rehabilitation and renewal. It protects persons and property from injury and damage due to roadway subsidence or sewer collapse. Timely corrective action prevents further deterioration of sewers which could lead to an emergency situation requiring immediate attention at a higher cost. Sewer rehabilitation in areas of roadway reconstruction provides a timely and cost effective opportunity for sewer rehabilitation and renewal and complies with the City's 3 year no cut policy.

STRATEGIC ALIGNMENT

This aligns with the The Way We Live as it reduces the possibility of sewer back-ups due to sewer failure and minimizes disruptions to the public through orderly execution of construction works. It provides a high level of service to residents.

ALTERNATIVES CONSIDERED

One alternative is to do nothing. If nothing is done, drainage infrastructure will be at risk of eventual failure, resulting in costly emergency repairs.

COST BENEFITS

The long term impact of this program on the operating budget will be positive because the overall condition of the infrastructures will be improved. This will lessen the efforts required to operate, maintain and repair the aging infrastructure. There will be a reduction in unpredictable emergency repairs required as a result of the renewal. Each sub program within Sewer Rehabilitation requires approx. \$2.4M/year to complete the required renewals.

KEY RISKS & MITIGATING STRATEGY

Non-availability of the required funding will result in further deterioration of sewers, leading to more costly and disruptive emergency repairs. It will also lead to the inability to co-ordinate with roadway reconstruction projects.

RESOURCES

No new internal resources will be required by this program. However many of the projects will require external resources for both the design and/or construction phases.

CONCLUSIONS AND RECOMMENDATIONS

Drainage infrastructure is aging and many assets are past their useful service life. This program was initiated to rehabilitate the drainage infrastructure as it ages on a location by location basis, or in coordination with reconstruction projects.

CONTINGENCY OF APPROVAL

CAPITAL PROFILE REPORT

PROFILE NAME: **Sewer Rehabilitation**
 PROFILE NUMBER: **CM-23-9504**

PROFILE TYPE: **Composite**
 BRANCH: **Sanitary Utility**

CAPITAL BUDGET AND FUNDING SOURCES (000's)

| APPROVED BUDGET | | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|-----------------|-------------------------|--------------------------|------|------|------|------|------|------|------|------|------|------|-------|
| | Approved Budget | Original Budget Approved | - | - | - | - | - | - | - | - | - | - | - |
| | Current Approved Budget | - | - | - | - | - | - | - | - | - | - | - | - |

| | | | | | | | | | | | | | |
|----------------|---------------------------------------|---|---|-------|-------|-------|-------|---|---|---|---|---|-------|
| BUDGET REQUEST | Budget Request | - | - | 1,483 | 1,528 | 1,574 | 1,621 | - | - | - | - | - | 6,205 |
| | Revised Funding Sources (if approved) | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 593 | 611 | 629 | 648 | - | - | - | - | - | 2,482 |
| | Self-Liquid. Debent.-Sanitary | - | - | 890 | 917 | 944 | 972 | - | - | - | - | - | 3,723 |
| | Requested Funding Source | - | - | 1,483 | 1,528 | 1,574 | 1,621 | - | - | - | - | - | 6,205 |

| | | | | | | | | | | | | | |
|------------------------------|-------------------------------|---|---|-------|-------|-------|-------|---|---|---|---|---|-------|
| REVISED BUDGET (IF APPROVED) | Revised Budget (if Approved) | - | - | 1,483 | 1,528 | 1,574 | 1,621 | - | - | - | - | - | 6,205 |
| | Requested Funding Source | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 593 | 611 | 629 | 648 | - | - | - | - | - | 2,482 |
| | Self-Liquid. Debent.-Sanitary | - | - | 890 | 917 | 944 | 972 | - | - | - | - | - | 3,723 |
| | Requested Funding Source | - | - | 1,483 | 1,528 | 1,574 | 1,621 | - | - | - | - | - | 6,205 |

REVISED BUDGET BY ACTIVITY TYPE (000's)

| REVISED BUDGET BY ACTIVITY TYPE | Activity Type | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|---------------------------------|---------------|-------------|------|-------|-------|-------|-------|------|------|------|------|------|-------|
| | Construction | - | - | 1,335 | 1,375 | 1,416 | 1,459 | - | - | - | - | - | - |
| Design | - | - | 148 | 153 | 157 | 162 | - | - | - | - | - | - | 621 |
| | Total | - | - | 1,483 | 1,528 | 1,574 | 1,621 | - | - | - | - | - | 6,205 |

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 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

CAPITAL PROFILE REPORT

| | | | |
|-----------------|--|-----------------------|---------------------|
| PROFILE NAME: | SERVICE CONNECTION RENEWAL | PROFILE STAGE: | L1 - Finance Review |
| PROFILE NUMBER: | CM-23-9512 | PROFILE TYPE: | Composite |
| DEPARTMENT: | Financial Services & Utilities - Utilities | PROFILE MANAGER: | Chris Ward |
| BRANCH: | Sanitary Utility | LEAD BRANCH MANAGER: | |
| LEAD BRANCH: | | ESTIMATED START DATE: | January, 2015 |
| PROGRAM NAME: | | ESTIMATED COMPLETION: | December, 2024 |
| BUDGET CYCLE: | 2015-2018 | | |

| | | | |
|------------------------------------|----------------|------------------------------|-------|
| Service Category: Utilities | | Major Initiative: | |
| GROWTH | RENEWAL | PREVIOUSLY APPROVED: | - |
| | 100 | BUDGET REQUEST: | 1,252 |
| | | TOTAL PROFILE BUDGET: | 1,252 |

PROFILE DESCRIPTION

The Service Connection Renewal Program will be focused on the renewal and replacement of service connection laterals. The primary objective of this program is to maintain an acceptable level of service and to minimize the number of high cost reactive replacements by proactively identifying problematic locations and attending to them before they become emergency issues. The program could eventually be coordinated with the Drainage Neighbourhood Renewal Program or other programs to maximize efficiencies.

PROFILE BACKGROUND

The City of Edmonton operates and maintains over 350,000 service connections. Due to aging and deteriorating infrastructure, Drainage Services receives an average of 10,000 service calls each year related to service connection issues. These calls are to report backups due to collapsed services, root intrusions, or other structural related problems. These issues result in a high frequency of reactive maintenance and an average of 260 service replacements each year. A Service Connection Renewal Program would minimize the number of high cost reactive replacements by proactively identifying problems and addressing them before they become an emergency replacement. In the City of Edmonton, private property owners are responsible for their service connection from the home to the property line. The City is then responsible for the portion from the property line to the connection at the mainline sewer.

PROFILE JUSTIFICATION

Many service connections in the mature neighbourhoods of the city are deteriorating, which results in over 10,000 annual service calls to Drainage Services. A long term sustainable Service Connection Renewal Program would be focused on the renewal and replacement of service connection laterals. This program would provide continuous service for residents through the upkeep of the service lateral infrastructure as well as protect persons and property from injury and damage due to service lateral collapse. Timely corrective action prevents further deterioration of services which could lead to an emergency situation requiring immediate attention at a higher cost. Rehabilitation is needed to maintain the integrity of the services to prevent the claims against the City for property damage, public health concerns and possible environmental infractions.

STRATEGIC ALIGNMENT

This program aligns with the "The Way We Live" because it allows Drainage Services to continue to provide a high level of service to the residents by reducing the possibility of sewer back-ups due to service sewer blockages.

ALTERNATIVES CONSIDERED

One alternative to this program is to do nothing. If nothing proactive is done, service connections will continue to deteriorate and will be at risk of eventual failure. More costly repairs will result from the emergency situations.

COST BENEFITS

The program will have a positive impact on the operating budget due to the reduction in unpredictable emergency repairs required. There will be a reduction of maintenance activities for a period of time once the infrastructure is renewed.

KEY RISKS & MITIGATING STRATEGY

The program could be limited by requiring access into private properties to access cleanouts to complete the work. Contractors with the ability to reline from the mainline are being looked at as part of the strategy development.

RESOURCES

No new internal resources required by this program at this stage, however some new FTE's may be required once the full program is established. External resources will be required for both the design and construction phases.

CONCLUSIONS AND RECOMMENDATIONS

Due to aging and deterioration of service laterals, the City may be vulnerable to unexpected failures that disrupt sewer service to homeowners. This long term sustainable program would systematically renew and replace aging service connections.

CONTINGENCY OF APPROVAL

CAPITAL PROFILE REPORT

PROFILE NAME: Service Connection Renewal
 PROFILE NUMBER: CM-23-9512

PROFILE TYPE: Composite
 BRANCH: Sanitary Utility

CAPITAL BUDGET AND FUNDING SOURCES (000's)

| APPROVED BUDGET | | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|-----------------|--------------------------|-------------|------|------|------|------|------|------|------|------|------|------|-------|
| | Approved Budget | | | | | | | | | | | | |
| | Original Budget Approved | - | - | - | - | - | - | - | - | - | - | - | - |
| | Current Approved Budget | - | - | - | - | - | - | - | - | - | - | - | - |

| | | | | | | | | | | | | | |
|----------------|---------------------------------------|---|---|-----|-----|-----|-----|---|---|---|---|---|-------|
| BUDGET REQUEST | Budget Request | - | - | 170 | 350 | 360 | 372 | - | - | - | - | - | 1,252 |
| | Revised Funding Sources (if approved) | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 68 | 140 | 144 | 149 | - | - | - | - | - | 501 |
| | Self-Liquid. Debent.-Sanitary | - | - | 102 | 210 | 216 | 223 | - | - | - | - | - | 751 |
| | Requested Funding Source | - | - | 170 | 350 | 360 | 372 | - | - | - | - | - | 1,252 |

| | | | | | | | | | | | | | |
|------------------------------|-------------------------------|---|---|-----|-----|-----|-----|---|---|---|---|---|-------|
| REVISED BUDGET (IF APPROVED) | Revised Budget (if Approved) | - | - | 170 | 350 | 360 | 372 | - | - | - | - | - | 1,252 |
| | Requested Funding Source | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 68 | 140 | 144 | 149 | - | - | - | - | - | 501 |
| | Self-Liquid. Debent.-Sanitary | - | - | 102 | 210 | 216 | 223 | - | - | - | - | - | 751 |
| | Requested Funding Source | - | - | 170 | 350 | 360 | 372 | - | - | - | - | - | 1,252 |

REVISED BUDGET BY ACTIVITY TYPE (000's)

| REVISED BUDGET BY ACTIVITY TYPE | Activity Type | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|---------------------------------|---------------|--------------|------|------|------|------|------|------|------|------|------|------|-------|
| | | Construction | - | - | 170 | 350 | 360 | 372 | - | - | - | - | - |
| | Total | - | - | 170 | 350 | 360 | 372 | - | - | - | - | - | 1,252 |

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 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

CAPITAL PROFILE REPORT

| | | | |
|-----------------|--|-----------------------|---------------------|
| PROFILE NAME: | SEWER SYSTEM UPGRADING | PROFILE STAGE: | L1 - Finance Review |
| PROFILE NUMBER: | CM-23-9703 | PROFILE TYPE: | Composite |
| DEPARTMENT: | Financial Services & Utilities - Utilities | PROFILE MANAGER: | Chris Ward |
| BRANCH: | Sanitary Utility | LEAD BRANCH MANAGER: | |
| LEAD BRANCH: | | ESTIMATED START DATE: | January, 2015 |
| PROGRAM NAME: | | ESTIMATED COMPLETION: | December, 2024 |
| BUDGET CYCLE: | 2015-2018 | | |

| | | | |
|------------------------------------|----------------|------------------------------|--------|
| Service Category: Utilities | | Major Initiative: | |
| GROWTH | RENEWAL | PREVIOUSLY APPROVED: | - |
| | 100 | BUDGET REQUEST: | 13,655 |
| | | TOTAL PROFILE BUDGET: | 13,655 |

PROFILE DESCRIPTION

This program will increase the capacity of the City's sewer systems and minimize capacity constraints. It aims to improve the level of service by reducing the impacts of large rainfall events, minimizing the risk of sewer backup and surface flooding in all the 255 mature neighbourhoods built prior to 1989. Project works include the design and construction of hydraulic upgrades in 2 - 4 neighbourhoods every year. The Sewer Upgrading Strategy comprises both proactive and reactive projects to address sewer capacity deficiencies. Proactive upgrades under the Sewer Upgrading Strategy may be implemented along with the Drainage Neighbourhood Renewal Program (DNRP) or the Flood Prevention Program which could reduce costs associated with excavation, repaving, mobilization/demobilization, etc. However, reactive upgrades will be implemented in neighborhoods that experience significant basement flooding following a severe rainfall event.

PROFILE BACKGROUND

The Sewer Upgrading Strategy is needed to address pipe capacity issues by upgrading the pipes from their current size to a larger size to increase the sanitary, storm and combined sewer level of service. The strategy aims to improve drainage sewer systems in all 255 neighbourhoods that were built prior to 1989, which were designed with no minor system. Flooding report data indicate on average 350 basement flooding incidents occur per year in pre-1989 neighborhoods. So far, 107 of these neighbourhoods have been assessed and 138 remaining neighbourhoods will need to be evaluated in the upcoming years.

The Sewer Upgrading Strategy will be complimentary to local upgrades the City undertakes in response to extreme flood events under the Flood Prevention Program, and may work in coordination with Drainage Neighbourhood Renewal. It will focus toward addressing sewer and drainage system deficiencies before flooding occurs, reducing the impacts of large rainfall events when they occur.

PROFILE JUSTIFICATION

Upgrading the capacity of existing facilities can help to ensure that an acceptable level of service is provided to drainage customers. Upgrades will reduce the occurrences of basement and street flooding which cause property damage and can be very costly and disturbing to residents. Upgrades will also improve the water quality to North Saskatchewan River. Stormwater quality has been identified as a significant source of some of the contaminants to the North Saskatchewan River. Control of these contaminants is a partial fulfillment of obligations to Alberta Environment.

STRATEGIC ALIGNMENT

The Sewer Upgrading Strategy aligns with "The Way We Live" as it reduces basement and surface flooding due to sewer capacity deficiencies. It will increase the level of service and reduce impact on environment and public health.

ALTERNATIVES CONSIDERED

An alternative is to do nothing. This will cause public dissatisfaction due to basement flooding, street flooding and property damage.

COST BENEFITS

The Strategy will have a positive impact on the operating budget due to the reduction in flooding occurrences. There will also be a reduction of maintenance activities for a period of time for the new sewer. The estimated average cost to upgrade each neighborhood is approximately \$5.3 million.

KEY RISKS & MITIGATING STRATEGY

The implementation of this strategy will increase sewer level of service and will reduce the risk of injury or damage to persons and property due to basement flooding, street flooding, or roadway subsidence.

RESOURCES

No new internal resources will be required by this program. However the Sewer Upgrading Strategy projects will require external resources for both the design and construction phases.

CONCLUSIONS AND RECOMMENDATIONS

The Sewer Upgrading Strategy is needed to address sewer capacity issues causing basement or surface flooding. In neighbourhoods built prior to 1989, sewer level of service is considered below current standards and therefore requires sewer upgrades.

CONTINGENCY OF APPROVAL

CAPITAL PROFILE REPORT

PROFILE NAME: Sewer System Upgrading
 PROFILE NUMBER: CM-23-9703

PROFILE TYPE: Composite
 BRANCH: Sanitary Utility

CAPITAL BUDGET AND FUNDING SOURCES (000's)

| APPROVED BUDGET | | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|-----------------|-------------------------|--------------------------|------|------|------|------|------|------|------|------|------|------|-------|
| | Approved Budget | Original Budget Approved | - | - | - | - | - | - | - | - | - | - | - |
| | Current Approved Budget | - | - | - | - | - | - | - | - | - | - | - | - |

| | | | | | | | | | | | | | |
|----------------|---------------------------------------|---|---|-----|-------|-------|-------|---|---|---|---|---|--------|
| BUDGET REQUEST | Budget Request | - | - | 129 | 1,326 | 6,010 | 6,190 | - | - | - | - | - | 13,655 |
| | Revised Funding Sources (if approved) | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 52 | 530 | 2,404 | 2,476 | - | - | - | - | - | 5,462 |
| | Self-Liquid. Debent.-Sanitary | - | - | 77 | 796 | 3,606 | 3,714 | - | - | - | - | - | 8,193 |
| | Requested Funding Source | - | - | 129 | 1,326 | 6,010 | 6,190 | - | - | - | - | - | 13,655 |

| | | | | | | | | | | | | | |
|------------------------------|-------------------------------|---|---|-----|-------|-------|-------|---|---|---|---|---|--------|
| REVISED BUDGET (IF APPROVED) | Revised Budget (if Approved) | - | - | 129 | 1,326 | 6,010 | 6,190 | - | - | - | - | - | 13,655 |
| | Requested Funding Source | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 52 | 530 | 2,404 | 2,476 | - | - | - | - | - | 5,462 |
| | Self-Liquid. Debent.-Sanitary | - | - | 77 | 796 | 3,606 | 3,714 | - | - | - | - | - | 8,193 |
| | Requested Funding Source | - | - | 129 | 1,326 | 6,010 | 6,190 | - | - | - | - | - | 13,655 |

REVISED BUDGET BY ACTIVITY TYPE (000's)

| REVISED BUDGET BY ACTIVITY TYPE | Activity Type | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|---------------------------------|---------------|-------------|------|------|-------|-------|-------|-------|------|------|------|------|--------|
| | | Design | - | - | 129 | 1,326 | 6,010 | 6,190 | - | - | - | - | - |
| | Total | - | - | 129 | 1,326 | 6,010 | 6,190 | - | - | - | - | - | 13,655 |

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 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

CAPITAL PROFILE REPORT

| | | | |
|-----------------|--|-----------------------|---------------------|
| PROFILE NAME: | KENNEDALE ACCOMMODATION UPGRADE | PROFILE STAGE: | L1 - Finance Review |
| PROFILE NUMBER: | 15-23-6142 | PROFILE TYPE: | Standalone |
| DEPARTMENT: | Financial Services & Utilities - Utilities | PROFILE MANAGER: | Chris Ward |
| BRANCH: | Sanitary Utility | LEAD BRANCH MANAGER: | |
| LEAD BRANCH: | | ESTIMATED START DATE: | January, 2015 |
| PROGRAM NAME: | | ESTIMATED COMPLETION: | December, 2016 |
| BUDGET CYCLE: | 2015-2018 | | |

| | | | |
|------------------------------------|----------------|------------------------------|-------|
| Service Category: Utilities | | Major Initiative: | |
| GROWTH | RENEWAL | PREVIOUSLY APPROVED: | - |
| | 100 | BUDGET REQUEST: | 5,227 |
| | | TOTAL PROFILE BUDGET: | 5,227 |

PROFILE DESCRIPTION

The involves adding 1,570 square meters to the equipment Garage at the rear of the complex. The vehicle and equipment stored in the main building can then be stored in the equipment garage. This garage space in the main building can be converted into office space without changing the footprint of the main building. The additional office space would accommodate future space requirements for the next 5 years. This will add about 10,000 sq ft of office space and about 14,000 sq ft of shop space. Construction in the conceptual design phase is estimated at about \$11.5 Million of which \$1 Million is estimated for detailed design cost. Construction is anticipated to require 2 years to complete and would be phased with the expansion to the Equipment Garage first, followed by construction within the vacated garage space in the main building and ultimately the renovation of remaining office spaces.

PROFILE BACKGROUND

Drainage Operations anticipates adding staff and equipment in 2015 but has reached office and shop space capacity. The proposal adds onto an existing heated outbuilding and substantial renovation turning shop space in offices in the main building. Many renovations have occurred over the years to provide additional space for the Kennedale Drainage Operations Complex. All office space is now occupied and additional staff and equipment is anticipated in the 2015 budget. A consultant was engaged to develop and accommodation plan that minimizes cost and maximizes efficiency. In 2015 about 10 FTE and 7 vehicles have been requested. The current space will not accommodate storage of the equipment in the required heated environment and the staff can only be provided temporary accommodation in a boardroom.

PROFILE JUSTIFICATION

Additional office and shop space will allow for growth of staff and equipment levels. As the City grows, so does the drainage network. In order to maintain a reliable system to preserve public health and the environment, additional staff and equipment is required. Kennedale Drainage Operations is at capacity and additional space is required immediately. The anticipated outcomes include increased morale due to more welcoming and environmentally sustainable office space, increased connectivity between staff due to an open office conceptual plan, and preservation of City assets due to the appropriate storage of expensive vehicles and equipment in a heated storage environment. The measures of success will be that this proposal is accepted and funded in the 2015-2018 Capital program.

STRATEGIC ALIGNMENT

This project aligns with THE WAY WE GROW, THE WAY WE GREEN, AND THE WAY WE LIVE as a result of interrelationships between our operations and the preservation of public health and the environment while allowing the City to expend through development.

ALTERNATIVES CONSIDERED

A do nothing alternative would result in a decrease in service level and an increase in service interruptions. Outsourcing has been investigated but competition causes availability and pricing to fluctuate.

COST BENEFITS

The tangible benefits include foregoing spending and estimated \$50 million to build new rather than renovate. The intangible benefits of this proposal include reducing the City's environmental footprint through the use of LEEDS Silver standards and the reduction of office space per person as a result of applying the new City office standards. Morale would be increased as noise, lighting and heating issues existing in the building.

KEY RISKS & MITIGATING STRATEGY

The risk of not proceeding with this project is that the required staff and equipment are not hired while the City continues to grow.

RESOURCES

This project does not directly require an increase in staff resources.

CONCLUSIONS AND RECOMMENDATIONS

The recommendation is to approve the request to fund the renovation of existing space at a cost of about \$11.7 Million.

CONTINGENCY OF APPROVAL

CAPITAL PROFILE REPORT

PROFILE NAME: **Kennedale Accommodation Upgrade**
 PROFILE NUMBER: **15-23-6142**

PROFILE TYPE: **Standalone**
 BRANCH: **Sanitary Utility**

CAPITAL BUDGET AND FUNDING SOURCES (000's)

| APPROVED BUDGET | | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|-----------------|--------------------------|-------------|------|------|------|------|------|------|------|------|------|------|-------|
| | Approved Budget | | | | | | | | | | | | |
| | Original Budget Approved | - | - | - | - | - | - | - | - | - | - | - | - |
| | Current Approved Budget | - | - | - | - | - | - | - | - | - | - | - | - |

| | | | | | | | | | | | | | |
|----------------|---------------------------------------|---|---|-------|-------|---|---|---|---|---|---|---|-------|
| BUDGET REQUEST | Budget Request | - | - | 2,575 | 2,652 | - | - | - | - | - | - | - | 5,227 |
| | Revised Funding Sources (if approved) | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 1,030 | 1,061 | - | - | - | - | - | - | - | 2,091 |
| | Self-Liquid. Debent.-Sanitary | - | - | 1,545 | 1,591 | - | - | - | - | - | - | - | 3,136 |
| | Requested Funding Source | - | - | 2,575 | 2,652 | - | - | - | - | - | - | - | 5,227 |

| | | | | | | | | | | | | | |
|------------------------------|-------------------------------|---|---|-------|-------|---|---|---|---|---|---|---|-------|
| REVISED BUDGET (IF APPROVED) | Revised Budget (if Approved) | - | - | 2,575 | 2,652 | - | - | - | - | - | - | - | 5,227 |
| | Requested Funding Source | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 1,030 | 1,061 | - | - | - | - | - | - | - | 2,091 |
| | Self-Liquid. Debent.-Sanitary | - | - | 1,545 | 1,591 | - | - | - | - | - | - | - | 3,136 |
| | Requested Funding Source | - | - | 2,575 | 2,652 | - | - | - | - | - | - | - | 5,227 |

REVISED BUDGET BY ACTIVITY TYPE (000's)

| REVISED BUDGET BY ACTIVITY TYPE | Activity Type | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|---------------------------------|---------------|--------------|------|-------|-------|-------|------|------|------|------|------|------|-------|
| | | Construction | - | - | 2,318 | 2,387 | - | - | - | - | - | - | - |
| | Design | - | - | 257 | 265 | - | - | - | - | - | - | - | 523 |
| | Total | - | - | 2,575 | 2,652 | - | - | - | - | - | - | - | 5,227 |

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 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

CAPITAL PROFILE REPORT

PROFILE NAME: SERVICE CONNECTION EXPANSION
 PROFILE NUMBER: CM-23-9430
 DEPARTMENT: Financial Services & Utilities - Utilities
 BRANCH: Sanitary Utility
 LEAD BRANCH:
 PROGRAM NAME:
 BUDGET CYCLE: 2015-2018

| | |
|-----------------------|---------------------|
| PROFILE STAGE: | L1 - Finance Review |
| PROFILE TYPE: | Composite |
| PROFILE MANAGER: | Chris Ward |
| LEAD BRANCH MANAGER: | |
| ESTIMATED START DATE: | January, 2015 |
| ESTIMATED COMPLETION: | December, 2024 |

| | | | |
|-------------------|-----------|-------------------|--|
| Service Category: | Utilities | Major Initiative: | |
|-------------------|-----------|-------------------|--|

| | |
|---------------|----------------|
| GROWTH | RENEWAL |
| 100 | |

| | |
|-----------------------|--------|
| PREVIOUSLY APPROVED: | - |
| BUDGET REQUEST: | 13,789 |
| TOTAL PROFILE BUDGET: | 13,789 |

PROFILE DESCRIPTION

Service connection construction is to be provided for developing properties where new service connections are requested. Properties require new or additional water and sewer services to accommodate their development. Mechanical site plans for commercial and multi-family developments are approved for servicing requirements and cost estimates given out. Also, for single family / duplex development walk in requests for servicing and payments over the counter. Work orders are sent out to Design & Construction to schedule and install the servicing requests

PROFILE BACKGROUND

Properties require new or additional water and sewer services to accommodate their development. Mechanical site plans for commercial and multi-family developments are approved for servicing requirements and cost estimates given out. Also, single family / duplex development walk in requests for servicing and payments over the counter. Work orders are sent out to Design & Construction to schedule and install the servicing requests.

PROFILE JUSTIFICATION

The City is obligated to provide adequate water and sewer service connections to developing properties when a property owner or Developer requests the servicing. The City is obligated to provide adequate water and sewer service connections to developing properties when a developer / property owner requests the servicing. Cost for services are based on a fee schedule or an estimated cost. Once payment is received a work order is sent to Design and Construction to schedule and install the services requested. Construction of services to be completed by Design and Construction within four weeks of receiving work order. Services need to be available to meet developers construction schedules.

STRATEGIC ALIGNMENT

This project aligns with "The Way We Grow" and "The Way We Live" strategic goals to facilitate the development requests to the City. This initiative will contribute to Improve Edmonton's Livability 10 - year goal by ensuring a safe and clean city

ALTERNATIVES CONSIDERED

The City is obligated to provide adequate water and sewer service connections to developing properties when a developer / property owner requests the servicing. This ensures all servicing is constructed as per City's standards and bylaw

COST BENEFITS

Tangible Benefits
 Ensure all requests for water and sewer services are handled in a consistent manner within City's standards, bylaw, fee schedule and estimates provided.

Intangible Benefits
 To ensure water and sewer services are constructed within City's standards and bylaw.

Assumptions
 All water and sewer services are provided within City's standards and bylaw and handled in a consistent manner.

KEY RISKS & MITIGATING STRATEGY

The managing and installation of water and sewer servicing requests by Drainage Services ensures the developers / property owner requests for servicing is in compliance with City's standards and bylaw.

RESOURCES

This alternative will require operating resources for both Drainage Design & Construction and Drainage Public Services Section to process and install water and sewer services requested by developers / property owner.

CONCLUSIONS AND RECOMMENDATIONS

Drainage Public Services Section to ensure all water and sewer servicing requests are processed in a timely manner to meet developers / property owner requests.

CONTINGENCY OF APPROVAL

CAPITAL PROFILE REPORT

PROFILE NAME: **Service Connection Expansion**
 PROFILE NUMBER: **CM-23-9430**

PROFILE TYPE: **Composite**
 BRANCH: **Sanitary Utility**

CAPITAL BUDGET AND FUNDING SOURCES (000's)

| APPROVED BUDGET | | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|--------------------------|-----------------|-------------|------|------|------|------|------|------|------|------|------|------|-------|
| | Approved Budget | | | | | | | | | | | | |
| Original Budget Approved | | - | - | - | - | - | - | - | - | - | - | - | - |
| Current Approved Budget | | - | - | - | - | - | - | - | - | - | - | - | - |

| | | | | | | | | | | | | | |
|--------------------------|---------------------------------------|---|---|-------|-------|-------|-------|---|---|---|---|---|--------|
| BUDGET REQUEST | Budget Request | - | - | 3,296 | 3,395 | 3,497 | 3,602 | - | - | - | - | - | 13,789 |
| | Revised Funding Sources (if approved) | | | | | | | | | | | | |
| | Developer Financing | - | - | 2,868 | 2,954 | 3,042 | 3,133 | - | - | - | - | - | 11,997 |
| | Drainage Retained Earnings | - | - | 171 | 176 | 181 | 187 | - | - | - | - | - | 715 |
| | Self-Liquid. Debent.-Sanitary | - | - | 257 | 265 | 273 | 281 | - | - | - | - | - | 1,077 |
| Requested Funding Source | | - | - | 3,296 | 3,395 | 3,497 | 3,602 | - | - | - | - | - | 13,789 |

| | | | | | | | | | | | | | |
|------------------------------|-------------------------------|---|---|-------|-------|-------|-------|---|---|---|---|---|--------|
| REVISED BUDGET (IF APPROVED) | Revised Budget (if Approved) | - | - | 3,296 | 3,395 | 3,497 | 3,602 | - | - | - | - | - | 13,789 |
| | Requested Funding Source | | | | | | | | | | | | |
| | Developer Financing | - | - | 2,868 | 2,954 | 3,042 | 3,133 | - | - | - | - | - | 11,997 |
| | Drainage Retained Earnings | - | - | 171 | 176 | 181 | 187 | - | - | - | - | - | 715 |
| | Self-Liquid. Debent.-Sanitary | - | - | 257 | 265 | 273 | 281 | - | - | - | - | - | 1,077 |
| Requested Funding Source | | - | - | 3,296 | 3,395 | 3,497 | 3,602 | - | - | - | - | - | 13,789 |

REVISED BUDGET BY ACTIVITY TYPE (000's)

| REVISED BUDGET BY ACTIVITY TYPE | Activity Type | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|---------------------------------|---------------|-------------|------|-------|-------|-------|-------|-------|------|------|------|------|--------|
| | Construction | | - | - | 2,966 | 3,055 | 3,147 | 3,241 | - | - | - | - | - |
| Design | | - | - | 330 | 339 | 350 | 360 | - | - | - | - | - | 1,379 |
| Total | | - | - | 3,296 | 3,395 | 3,497 | 3,602 | - | - | - | - | - | 13,789 |

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 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

CAPITAL PROFILE REPORT

| | | | |
|-----------------|--|-----------------------|---------------------|
| PROFILE NAME: | INTERCONNECTION CONTROL PROGRAM | PROFILE STAGE: | L1 - Finance Review |
| PROFILE NUMBER: | CM-23-9435 | PROFILE TYPE: | Composite |
| DEPARTMENT: | Financial Services & Utilities - Utilities | PROFILE MANAGER: | Chris Ward |
| BRANCH: | Sanitary Utility | LEAD BRANCH MANAGER: | |
| LEAD BRANCH: | | ESTIMATED START DATE: | January, 2015 |
| PROGRAM NAME: | | ESTIMATED COMPLETION: | December, 2024 |
| BUDGET CYCLE: | 2015-2018 | | |

| | | | |
|-----------------------------|---------|-----------------------|-------|
| Service Category: Utilities | | Major Initiative: | |
| GROWTH | RENEWAL | PREVIOUSLY APPROVED: | - |
| | 100 | BUDGET REQUEST: | 2,155 |
| | | TOTAL PROFILE BUDGET: | 2,155 |

PROFILE DESCRIPTION

Many of the projects identified under this strategy consist of new sewer capacity to relieve the combined sewer system in areas with interconnections present. Catchbasin re-connection to a storm sewer system is also a common type of project. This will keep water out of the combined sewer where it can create the flooding and overflow issues we are working to prevent. All projects under this program will keep combined sewage from overflowing in to the storm system where it flows directly to the North Saskatchewan River untreated.

PROFILE BACKGROUND

In response to a requirement in the 1995 Approval to Operate (No. 95-MUN-117), the City of Edmonton prepared an Interconnection Control Strategy. Through this Strategy, the City embarked on its mitigation and monitoring program in the context of "perpetual monitoring and assessment". An interconnection is designed to allow sanitary or combined sewage to overflow into the storm system, in order to relieve the sewer system under high flow conditions. Since 1998, a program has been in place to minimize the contamination of stormwater with sanitary sewage by monitoring, assessing and eliminating or mitigating all interconnections between the two systems. This will reduce the total loading of contaminants to the North Saskatchewan River.

PROFILE JUSTIFICATION

In order to prevent basement flooding, overflow points were designed and built where the sanitary or combined sewer line could overflow into a storm sewer. The storm sewer would flow directly to the North Saskatchewan River. In the '90s as our understanding of our impact to the River increased, the Interconnection control program was initiated. Sites were identified and monitors were installed. In the 1995 approval to operate issued by Alberta Environment, there was a clause to have an interconnection control program; many sites were not in danger of overflowing and were closed. In the early 2000's, rectification studies were carried out for the remainder to identify the infrastructure required to mitigate flood risk. Since the conclusion of those studies, extra capacity has been built in areas with interconnections and other overflow sites have been closed. We have not completed the work identified in the rectification report; work to be done to close the remaining sites.

STRATEGIC ALIGNMENT

This program aligns with The Way We Green and Drainage Services' water quality strategy, River for Life. The objective is to prevent pollution from entering our water courses.

ALTERNATIVES CONSIDERED

The alternative is to do nothing, leave the system as it is. Overflows will continue to occur and there will be untreated wastewater flowing in to our water courses.

COST BENEFITS

Projects identified under this profile consist of catchbasin disconnection and new sewer construction. The goal of this program is to reduce the impact from discharges in to the North Saskatchewan River. There will be the one-time capital construction costs of installing new utility infrastructure and the long term regular maintenance costs associated with sewers.

KEY RISKS & MITIGATING STRATEGY

Cost will be a risk with water quality improvement programs and projects. Concept design completed with the rectification studies do not take all conflicts in to consideration.

RESOURCES

Construction work will be carried out by Design and Construction and external contractors. Ongoing project management by DDC and Drainage Planning to track project status as well as to track the success of the projects in the context of the strategy

CONCLUSIONS AND RECOMMENDATIONS

Work identified in the rectification studies will continue to eliminate the interconnections from the existing inventory. Our creeks and river are important natural resources and this work will reduce the contaminant loading to those water courses.

CONTINGENCY OF APPROVAL

CAPITAL PROFILE REPORT

PROFILE NAME: **Interconnection Control Program**
 PROFILE NUMBER: **CM-23-9435**

PROFILE TYPE: **Composite**
 BRANCH: **Sanitary Utility**

CAPITAL BUDGET AND FUNDING SOURCES (000's)

| APPROVED BUDGET | | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|-----------------|-------------------------|--------------------------|------|------|------|------|------|------|------|------|------|------|-------|
| | Approved Budget | Original Budget Approved | - | - | - | - | - | - | - | - | - | - | - |
| | Current Approved Budget | - | - | - | - | - | - | - | - | - | - | - | - |

| | | | | | | | | | | | | | |
|----------------|---------------------------------------|---|---|-----|-----|-----|-----|---|---|---|---|---|-------|
| BUDGET REQUEST | Budget Request | - | - | 515 | 530 | 546 | 563 | - | - | - | - | - | 2,155 |
| | Revised Funding Sources (if approved) | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 206 | 212 | 219 | 225 | - | - | - | - | - | 862 |
| | Self-Liquid. Debent.-Sanitary | - | - | 309 | 318 | 328 | 338 | - | - | - | - | - | 1,293 |
| | Requested Funding Source | - | - | 515 | 530 | 546 | 563 | - | - | - | - | - | 2,155 |

| | | | | | | | | | | | | | |
|------------------------------|-------------------------------|---|---|-----|-----|-----|-----|---|---|---|---|---|-------|
| REVISED BUDGET (IF APPROVED) | Revised Budget (if Approved) | - | - | 515 | 530 | 546 | 563 | - | - | - | - | - | 2,155 |
| | Requested Funding Source | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 206 | 212 | 219 | 225 | - | - | - | - | - | 862 |
| | Self-Liquid. Debent.-Sanitary | - | - | 309 | 318 | 328 | 338 | - | - | - | - | - | 1,293 |
| | Requested Funding Source | - | - | 515 | 530 | 546 | 563 | - | - | - | - | - | 2,155 |

REVISED BUDGET BY ACTIVITY TYPE (000's)

| REVISED BUDGET BY ACTIVITY TYPE | Activity Type | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|---------------------------------|---------------|--------------|------|------|------|------|------|------|------|------|------|------|-------|
| | | Construction | - | - | 515 | 530 | 546 | 563 | - | - | - | - | - |
| | Total | - | - | 515 | 530 | 546 | 563 | - | - | - | - | - | 2,155 |

OPERATING IMPACT OF CAPITAL

Type of Impact:

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

CAPITAL PROFILE REPORT

| | | | |
|-----------------|--|-----------------------|---------------------|
| PROFILE NAME: | REVIEW/INSPECT DEVELOPER BUILT SEWER | PROFILE STAGE: | L1 - Finance Review |
| PROFILE NUMBER: | CM-23-9470 | PROFILE TYPE: | Composite |
| DEPARTMENT: | Financial Services & Utilities - Utilities | PROFILE MANAGER: | Chris Ward |
| BRANCH: | Sanitary Utility | LEAD BRANCH MANAGER: | |
| LEAD BRANCH: | | ESTIMATED START DATE: | January, 2015 |
| PROGRAM NAME: | | ESTIMATED COMPLETION: | December, 2024 |
| BUDGET CYCLE: | 2015-2018 | | |

| | | | |
|------------------------------------|----------------|------------------------------|-------|
| Service Category: Utilities | | Major Initiative: | |
| GROWTH | RENEWAL | PREVIOUSLY APPROVED: | - |
| 100 | | BUDGET REQUEST: | 3,706 |
| | | TOTAL PROFILE BUDGET: | 3,706 |

PROFILE DESCRIPTION

This initiative within the Growth and Land Development Subsection of Drainage Planning more specifically involves the review and approval of subdivision engineering drawings, processing of Utility Right-of-Way documents, provides engineering and cost assessment input into the Servicing Agreements being prepared by the Development Coordination Subsection of Sustainable Development, provides site inspections during construction, as-built recording and Construction Completion Certificate (CCC) and Final Acceptance Certificate (FAC) inspections and document reviews. Timelines for engineering drawing reviews are three weeks for a first submission and two weeks for subsequent submission. Timelines for URW documents are two weeks. Timelines for Development Cost Assessments (DCA) for input into the Servicing Agreements are two weeks. Site inspections are ongoing daily inspections during construction and the timelines for review of CCC and FAC applications including inspections are 30 days.

PROFILE BACKGROUND

This project provides resources to review and accept the drainage facilities required to service new lots in private developments. The City has a responsibility to supply utility connections to meet customer demands and requests as required under the Municipal Government Act. Work will be completed as requested during the year or dependent on owner petitions. Private Developers will turn over the drainage facilities to the City as assets upon individual project completion in accordance with the Servicing Agreement.

PROFILE JUSTIFICATION

The City has a responsibility to supply utility connections to meet customer demands and requests as required under the Municipal Government Act. In support of planned growth, the City is required to review and accept the drainage facilities needed to service new lots. Drainage Services, under the terms of the Servicing Agreement, ensures that applicable obligations and Standards are met prior to the City accepting the drainage facilities for long-term operations and maintenance.

STRATEGIC ALIGNMENT

The Way we Grow and The Way we Live

ALTERNATIVES CONSIDERED

External resources or in-house staff

COST BENEFITS

The City has a responsibility to supply utility connections to meet customer demands and requests as required under the Municipal Government Act. Work will be completed as requested during the year or dependent on owner petitions. Private Developers will turn over the drainage facilities to the City as assets upon individual project completion in accordance with the Servicing Agreement.

KEY RISKS & MITIGATING STRATEGY

The amount of activity/time charged to this project is driven by the volume of development being brought forward for approval by the development industry.

RESOURCES

Resourcing: The current staff resources involved in this initiative are as follows: Design Review, Cost Assessment, Inspection, As-built Recording

CONCLUSIONS AND RECOMMENDATIONS

Continue on with the current Review and Approve Developer built Sewers initiative.

CONTINGENCY OF APPROVAL

CAPITAL PROFILE REPORT

PROFILE NAME: Review/inspect developer built sewer

PROFILE TYPE: Composite

PROFILE NUMBER: CM-23-9470

BRANCH: Sanitary Utility

CAPITAL BUDGET AND FUNDING SOURCES (000's)

| APPROVED BUDGET | | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|-----------------|--------------------------|-------------|------|------|------|------|------|------|------|------|------|------|-------|
| | Approved Budget | | | | | | | | | | | | |
| | Original Budget Approved | - | - | - | - | - | - | - | - | - | - | - | - |
| | Current Approved Budget | - | - | - | - | - | - | - | - | - | - | - | - |

| | | | | | | | | | | | | | |
|----------------|---------------------------------------|---|---|-----|-----|-----|-------|---|---|---|---|---|-------|
| BUDGET REQUEST | Budget Request | - | - | 833 | 892 | 956 | 1,024 | - | - | - | - | - | 3,706 |
| | Revised Funding Sources (if approved) | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 333 | 356 | 382 | 410 | - | - | - | - | - | 1,482 |
| | Self-Liquid. Debent.-Sanitary | - | - | 500 | 536 | 574 | 615 | - | - | - | - | - | 2,224 |
| | Requested Funding Source | - | - | 833 | 892 | 956 | 1,024 | - | - | - | - | - | 3,706 |

| | | | | | | | | | | | | | |
|------------------------------|-------------------------------|---|---|-----|-----|-----|-------|---|---|---|---|---|-------|
| REVISED BUDGET (IF APPROVED) | Revised Budget (if Approved) | - | - | 833 | 892 | 956 | 1,024 | - | - | - | - | - | 3,706 |
| | Requested Funding Source | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 333 | 356 | 382 | 410 | - | - | - | - | - | 1,482 |
| | Self-Liquid. Debent.-Sanitary | - | - | 500 | 536 | 574 | 615 | - | - | - | - | - | 2,224 |
| | Requested Funding Source | - | - | 833 | 892 | 956 | 1,024 | - | - | - | - | - | 3,706 |

REVISED BUDGET BY ACTIVITY TYPE (000's)

| REVISED BUDGET BY ACTIVITY TYPE | Activity Type | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|---------------------------------|---------------|-------------|------|------|------|------|-------|-------|------|------|------|------|-------|
| | | Other Costs | - | - | 833 | 892 | 956 | 1,024 | - | - | - | - | - |
| | Total | - | - | 833 | 892 | 956 | 1,024 | - | - | - | - | - | 3,706 |

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 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

CAPITAL PROFILE REPORT

| | | | |
|-----------------|--|-----------------------|---------------------|
| PROFILE NAME: | DRAINAGE NEIGHBOURHOOD RENEWAL | PROFILE STAGE: | L1 - Finance Review |
| PROFILE NUMBER: | CM-23-9510 | PROFILE TYPE: | Composite |
| DEPARTMENT: | Financial Services & Utilities - Utilities | PROFILE MANAGER: | Chris Ward |
| BRANCH: | Sanitary Utility | LEAD BRANCH MANAGER: | |
| LEAD BRANCH: | | ESTIMATED START DATE: | January, 2015 |
| PROGRAM NAME: | | ESTIMATED COMPLETION: | December, 2024 |
| BUDGET CYCLE: | 2015-2018 | | |

| | | | |
|-----------------------------|---------|--|--------|
| Service Category: Utilities | | Major Initiative: Great Neighbourhoods | |
| GROWTH | RENEWAL | PREVIOUSLY APPROVED: | - |
| | 100 | BUDGET REQUEST: | 72,809 |
| | | TOTAL PROFILE BUDGET: | 72,809 |

PROFILE DESCRIPTION

The Drainage Neighbourhood Renewal Program is focused on the renewal and replacement of existing sanitary and storm sewers on a neighbourhood by neighbourhood basis. Neighbourhoods are chosen based on current condition, as well as in coordination with Neighbourhood Renewal roadway reconstruction neighbourhoods. Each neighbourhood takes 3-4 years, year 1 is for CCTV and design, year 2 and 3 are for open cut and relining, and year 4 may be required to complete the relining work. About 70% of the work is completed through relining (trenchless renewal) which requires little disruption to the pavement. The program runs in coordination with Transportation Services' Neighbourhood Renewal Program and the Great Neighbourhoods Capital Program through the Building Great Neighbourhoods Initiative.

PROFILE BACKGROUND

The City of Edmonton owns and operates over 5,600 km of sanitary, storm and combined sewers. The average age of the pipes is 43 years, with around 30% of them over 50 years old. Due to aging and deterioration of drainage infrastructure, the City may be vulnerable to unexpected failures that disrupt not only sewer service to homeowners but above-ground activities as well. Given the enormous cost of replacement of this infrastructure, proactive renewal needs to occur in the drainage system. The Drainage Neighbourhood Renewal Program is an ongoing long term strategy to address the needs of our drainage infrastructure on a systematic neighbourhood by neighbourhood basis. The program is coordinated with Transportation Services Neighbourhood Renewal Program through the Building Great Neighbourhoods Initiative. Underground drainage infrastructure work is completed ahead of roadway surface work for efficiency and to avoid disturbance of new roads (3 year no cut policy).

PROFILE JUSTIFICATION

This project is to meet City Council's direction for mature neighbourhood rehabilitation in conjunction with the roadway Neighbourhood Renewal Program undertaken by Transportation Services. Many sewers in the mature areas of Edmonton are past their expected service life and have deteriorated significantly. Due to this, the City may be vulnerable to unexpected failures that disrupt not only sewer service to homeowners but above-ground activities as well. Sewer rehabilitation in neighbourhoods coordinated with roadway renewal projects avoids disruption to newly reconstructed pavement and minimizes inconvenience to citizens.

STRATEGIC ALIGNMENT

This program aligns with the "The Way We Live" as it allows the City to provide a high level of service to the residents by reducing the possibility of sewer failure and by minimizing disruptions through orderly execution of construction works.

ALTERNATIVES CONSIDERED

One alternative is to do nothing. If nothing is done, drainage infrastructure will be at risk of failure. More costly repairs will result from emergency situations and will require more exemptions from the 3 year no cut policy.

COST BENEFITS

The program will have a positive impact on the operating budget due to the reduction in unpredictable emergency repairs required as a result of the renewal. There may also be a reduction of maintenance activities for a period of time once the infrastructure is renewed. Each neighbourhood costs on average \$4.5M to complete. These costs include CCTV, design and construction.

KEY RISKS & MITIGATING STRATEGY

To comply with the 3 year no-cut policy for newly re-constructed pavement, Drainage Services strives to match the number of neighbourhoods scheduled for reconstruction each year by Transportation, which is on average six neighbourhoods per year.

RESOURCES

No new internal resources will be required by this program. However many of the neighbourhood projects require external resources for possibly both the design and construction phases.

CONCLUSIONS AND RECOMMENDATIONS

This program renews and replaces aging sewer infrastructure on a neighbourhood by neighbourhood basis, in coordination with Transportation Services' Neighbourhood Renewal Program. It is recommended to continue approving funds for this program.

CONTINGENCY OF APPROVAL

CAPITAL PROFILE REPORT

PROFILE NAME: **Drainage Neighbourhood Renewal**
 PROFILE NUMBER: **CM-23-9510**

PROFILE TYPE: **Composite**
 BRANCH: **Sanitary Utility**

CAPITAL BUDGET AND FUNDING SOURCES (000's)

| APPROVED BUDGET | | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|--------------------------|-----------------|-------------|------|------|------|------|------|------|------|------|------|------|-------|
| | Approved Budget | | | | | | | | | | | | |
| Original Budget Approved | | - | - | - | - | - | - | - | - | - | - | - | - |
| Current Approved Budget | | - | - | - | - | - | - | - | - | - | - | - | - |

| | | | | | | | | | | | | | |
|--------------------------|---------------------------------------|---|--------|--------|--------|--------|--------|---|---|---|---|--------|--------|
| BUDGET REQUEST | Budget Request | - | - | 19,337 | 19,536 | 18,880 | 15,055 | - | - | - | - | - | 72,809 |
| | Revised Funding Sources (if approved) | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 7,735 | 7,815 | 7,552 | 6,021 | - | - | - | - | - | 29,123 |
| | Self-Liquid. Debent.-Sanitary | - | - | 11,602 | 11,722 | 11,328 | 9,033 | - | - | - | - | - | 43,685 |
| Requested Funding Source | | | 19,337 | 19,536 | 18,880 | 15,055 | - | - | - | - | - | 72,809 | |

| | | | | | | | | | | | | | |
|------------------------------|-------------------------------|---|--------|--------|--------|--------|--------|---|---|---|---|--------|--------|
| REVISED BUDGET (IF APPROVED) | Revised Budget (if Approved) | - | - | 19,337 | 19,536 | 18,880 | 15,055 | - | - | - | - | - | 72,809 |
| | Requested Funding Source | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 7,735 | 7,815 | 7,552 | 6,021 | - | - | - | - | - | 29,123 |
| | Self-Liquid. Debent.-Sanitary | - | - | 11,602 | 11,722 | 11,328 | 9,033 | - | - | - | - | - | 43,685 |
| Requested Funding Source | | | 19,337 | 19,536 | 18,880 | 15,055 | - | - | - | - | - | 72,809 | |

REVISED BUDGET BY ACTIVITY TYPE (000's)

| REVISED BUDGET BY ACTIVITY TYPE | Activity Type | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|---------------------------------|---------------|-------------|------|--------|--------|--------|--------|--------|------|------|------|------|--------|
| | Construction | | - | - | 16,583 | 12,188 | 12,560 | 11,675 | - | - | - | - | - |
| Design | | - | - | 2,754 | 7,348 | 6,320 | 3,380 | - | - | - | - | - | 19,802 |
| Total | | - | - | 19,337 | 19,536 | 18,880 | 15,055 | - | - | - | - | - | 72,809 |

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 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

CAPITAL PROFILE REPORT

PROFILE NAME: BIOSOLIDS FACILITIES RENEWAL
 PROFILE NUMBER: CM-23-9623
 DEPARTMENT: Financial Services & Utilities - Utilities
 BRANCH: Sanitary Utility
 LEAD BRANCH:
 PROGRAM NAME:
 BUDGET CYCLE: 2015-2018

| | |
|-----------------------|---------------------|
| PROFILE STAGE: | L1 - Finance Review |
| PROFILE TYPE: | Composite |
| PROFILE MANAGER: | Chris Ward |
| LEAD BRANCH MANAGER: | |
| ESTIMATED START DATE: | January, 2015 |
| ESTIMATED COMPLETION: | December, 2024 |

| | | | |
|-------------------|-----------|-------------------|--|
| Service Category: | Utilities | Major Initiative: | |
|-------------------|-----------|-------------------|--|

| | |
|---------------|----------------|
| GROWTH | RENEWAL |
| 20 | 80 |

| | |
|-----------------------|-------|
| PREVIOUSLY APPROVED: | - |
| BUDGET REQUEST: | 8,035 |
| TOTAL PROFILE BUDGET: | 8,035 |

PROFILE DESCRIPTION

1-installing two more eNoses at the lagoons, this project is to increase locations to measure and monitor the odours that are generated in the Waste Management Services and lagoons. The scope of the work is to install 2 more eNoses at the Clover bar Lagoons. Drainage Services is proposing to install the two extra eNoses in 2015 and 2016 with a total estimated cost of \$100,000. Waste Management Services through Odotech will install and monitor the work. 2-removing the existing fence and installing a new one around the Bremner lagoons. 3-renew the current assets at the Clover Bar lagoons. 4-Geotextile dewatering bags are used for large scale dewatering of biosolids. This is a low tech, low cost alternative to using mechanical dewatering using geo-textile to filter the liquid from solids at the Clover Bar lagoons. The potential use of geobags for biosolids dewatering will be assessed in a pilot study and economical analysis.

PROFILE BACKGROUND

The Clover Bar and Bremner lagoons are facilities meant to manage biosolids. This business case contains 4 projects that will support the ongoing biosolids management program. 1-The Enoses will help manage odour issues at the Clover Bar lagoons. 2- The fence renewal at Bremner will increase site security. 3- The Clover Bar rehabilitation will ensure the storage lagoon remains a usable asset. 4- The geotextiles dewatering project will address the large historical solids inventory. The 4 projects total an estimated \$11,150,000.

PROFILE JUSTIFICATION

1-Due to the large number of odour complaints Odotech Inc. was retained. The OdoWatch continuous odour measurement and monitoring system uses strategically located eNoses enabling designated City staff to quantify and monitor odour emissions from the facilities at the Waste Management Centre. 2-Repeated incidents with the current fencing has led Drainage Services to propose replacing the existing fence with a more durable type to improve site security. 3- There are existing assets in the lagoons such as; pipelines, valves, chambers, decant structures and etc. that need to be renewed in order to function more efficiently. 4- this project has the potential to significantly remove the solids content in cell #5. The geobags has been extensively used for wastewater treatment for dewatering purposes. This is a low tech, low cost alternative to using mechanical dewatering using geo-textile to filter the liquid from solids at the Clover Bar lagoons.

STRATEGIC ALIGNMENT

The Way Ahead and The Way we Green

ALTERNATIVES CONSIDERED

Do nothing, ongoing repair, asset replacement

COST BENEFITS

1. The estimated cost is \$100,000 for the range of two years window 2015 and 2016. 2- The estimated cost is \$550,000 for the 2016. 3-The estimated cost is \$2,000,000 over two years 2015 and 2016. 4-The status quo costs nothing, but will not reduce cell #5 inventory. Alternative 1-is estimated at \$8,500,000 over a 3 year period, including \$1M for cell #1 preparations. Alternative 2-Third party Alternative 3- Using existing dewatering,

KEY RISKS & MITIGATING STRATEGY

1-Locating the eNoses correctly on site is critical to the success of the project. 2-No risks identified. 3-erosion of the berms due to excavating and work around the lagoons. 4- bench scale and field testing of the geotextile concept.

RESOURCES

1-The funds should be from the sanitary budget. 2-The funds should be from the sanitary budget. 3-The funds should be from the sanitary budget. 4-The funds would come from existing biosolids program or require additional resources

CONCLUSIONS AND RECOMMENDATIONS

1-2 more eNoses at the Clover Bar Lagoons. 2-to remove the existing fence and install a one to enhance the safety at the Bremner Lagoons. 3 - to replace/rehabilitate the existing assets 4-proceeding on the basis that the testing confirms viability.

CONTINGENCY OF APPROVAL

CAPITAL PROFILE REPORT

PROFILE NAME: **Biosolids Facilities Renewal**
 PROFILE NUMBER: **CM-23-9623**

PROFILE TYPE: **Composite**
 BRANCH: **Sanitary Utility**

CAPITAL BUDGET AND FUNDING SOURCES (000's)

| APPROVED BUDGET | | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|--------------------------|-----------------|-------------|------|------|------|------|------|------|------|------|------|------|-------|
| | Approved Budget | | | | | | | | | | | | |
| Original Budget Approved | | - | - | - | - | - | - | - | - | - | - | - | - |
| Current Approved Budget | | - | - | - | - | - | - | - | - | - | - | - | - |

| | | | | | | | | | | | | | |
|--------------------------|---------------------------------------|---|-------|-------|-------|-------|-------|---|---|---|---|-------|-------|
| BUDGET REQUEST | Budget Request | - | - | 2,050 | 2,695 | 2,120 | 1,171 | - | - | - | - | - | 8,035 |
| | Revised Funding Sources (if approved) | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 820 | 1,078 | 848 | 468 | - | - | - | - | - | 3,214 |
| | Self-Liquid. Debent.-Sanitary | - | - | 1,230 | 1,617 | 1,272 | 702 | - | - | - | - | - | 4,821 |
| Requested Funding Source | | | 2,050 | 2,695 | 2,120 | 1,171 | - | - | - | - | - | 8,035 | |

| | | | | | | | | | | | | | |
|------------------------------|-------------------------------|---|-------|-------|-------|-------|-------|---|---|---|---|-------|-------|
| REVISED BUDGET (IF APPROVED) | Revised Budget (if Approved) | - | - | 2,050 | 2,695 | 2,120 | 1,171 | - | - | - | - | - | 8,035 |
| | Requested Funding Source | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 820 | 1,078 | 848 | 468 | - | - | - | - | - | 3,214 |
| | Self-Liquid. Debent.-Sanitary | - | - | 1,230 | 1,617 | 1,272 | 702 | - | - | - | - | - | 4,821 |
| Requested Funding Source | | | 2,050 | 2,695 | 2,120 | 1,171 | - | - | - | - | - | 8,035 | |

REVISED BUDGET BY ACTIVITY TYPE (000's)

| REVISED BUDGET BY ACTIVITY TYPE | Activity Type | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|---------------------------------|---------------|-------------|------|-------|-------|-------|-------|-------|------|------|------|------|-------|
| | Construction | | - | - | 1,020 | 1,623 | 1,081 | 1,171 | - | - | - | - | - |
| Design | | - | - | 1,030 | 1,072 | 1,039 | - | - | - | - | - | - | 3,141 |
| Total | | - | - | 2,050 | 2,695 | 2,120 | 1,171 | - | - | - | - | - | 8,035 |

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 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

CAPITAL PROFILE REPORT

PROFILE NAME: CITY-WIDE ODOUR CONTROL PROGRAM
 PROFILE NUMBER: CM-23-9630
 DEPARTMENT: Financial Services & Utilities - Utilities
 BRANCH: Sanitary Utility
 LEAD BRANCH:
 PROGRAM NAME:
 BUDGET CYCLE: 2015-2018

| | |
|-----------------------|---------------------|
| PROFILE STAGE: | L1 - Finance Review |
| PROFILE TYPE: | Composite |
| PROFILE MANAGER: | Chris Ward |
| LEAD BRANCH MANAGER: | |
| ESTIMATED START DATE: | January, 2015 |
| ESTIMATED COMPLETION: | December, 2024 |

| | | | |
|-------------------|-----------|-------------------|--|
| Service Category: | Utilities | Major Initiative: | |
|-------------------|-----------|-------------------|--|

| | |
|--------|---------|
| GROWTH | RENEWAL |
| | 100 |

| | |
|-----------------------|-------|
| PREVIOUSLY APPROVED: | - |
| BUDGET REQUEST: | 6,014 |
| TOTAL PROFILE BUDGET: | 6,014 |

PROFILE DESCRIPTION

This project focuses on remedial work within existing drainage infrastructure to mitigate sewer odours, or in some cases on building new odour control facilities when other options are not possible. Projects are located throughout the city. Locations are identified and prioritized based on complaint calls, inspections and monitoring completed by Drainage Operations. Initially, complaints are investigated by Drainage Operations. If odours can be corrected by maintenance such as flushing, they can often reduce the problem. If the problem is systematic in nature and requires engineered solutions, Drainage Design and Construction will analyze the causes, propose solutions and put the area on a priority list. Most cases will require consulting with the community or residents to arrive at acceptable solutions.

PROFILE BACKGROUND

Sewer odours from the existing drainage system can escape through manholes or catchbasins, particularly during dry weather. Naturally occurring bacteria feed on the contents of sanitary sewers, and if enough oxygen is not provided for this bacteria in the sewers, the result may be the production of odorous gases. The older central area of the city was designed with combined sewers so there are many openings to the streets. These openings provide many passages for air movement from sewers to ground level. Edmonton's sewage system also has several hundred drop shafts ranging in drop heights of 6 to 40 meters that can be a source of odour problems. By the action of falling liquid, the drop shafts push large volumes of air into the deep tunnel system and can be released at street level catch basins in the combined sewer areas or from manhole lids. Sewer odours can lower the level of service provided to residents and there are many complaint calls made to the City regarding odours.

PROFILE JUSTIFICATION

The City receives many complaint calls regarding sewer odours throughout the year as resident expectations are to have no sewer odours noticeable in their communities. The City Wide Odour Control program helps the City to provide a high level of service for residents through the mitigation of these sewer odours. This will help improve the public perception of Drainage Services. It will also increase the level of service provided to residents and will reduce the number of complaint calls to Drainage Operations. Operating costs should be reduced with less complaint calls to respond to.

STRATEGIC ALIGNMENT

This program aligns with the "The Way We Live" strategic goal because it allows Drainage Services to continue to provide a high level of service to the residents by ensuring safe and clean environment of the City.

ALTERNATIVES CONSIDERED

One alternative is to do nothing. Odours will continue to bother residents and complaint calls to Drainage Op. will continue to increase. Public perception of Drainage Services will be negative and will result in a low level of service to residents.

COST BENEFITS

New odour control facilities may be built to reduce odours and will be operational for many years. Noticeable sewer odours around the city will be reduced or eliminated. The projected capital costs for these projects is approximately \$1M per year.

KEY RISKS & MITIGATING STRATEGY

The risk of not completing these mitigation projects is a lower level of service to residents and a poor public perception of Drainage Services.

RESOURCES

No new internal resources will be required by this program. However many of the projects will require external resources for both the design and/or construction phases.

CONCLUSIONS AND RECOMMENDATIONS

It is recommended to continue funding this program in order to provide a high level of service to residents. The program helps improve the perception of Drainage Services and will reduce the number of complaint calls to Drainage Operations.

CONTINGENCY OF APPROVAL

CAPITAL PROFILE REPORT

PROFILE NAME: City-Wide Odour Control Program
 PROFILE NUMBER: CM-23-9630

PROFILE TYPE: Composite
 BRANCH: Sanitary Utility

CAPITAL BUDGET AND FUNDING SOURCES (000's)

| APPROVED BUDGET | | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|-----------------|--------------------------|-------------|------|------|------|------|------|------|------|------|------|------|-------|
| | Approved Budget | | | | | | | | | | | | |
| | Original Budget Approved | - | - | - | - | - | - | - | - | - | - | - | - |
| | Current Approved Budget | - | - | - | - | - | - | - | - | - | - | - | - |

| | | | | | | | | | | | | | |
|----------------|---------------------------------------|---|---|-------|-------|-------|-------|---|---|---|---|---|-------|
| BUDGET REQUEST | Budget Request | - | - | 1,545 | 1,591 | 1,639 | 1,238 | - | - | - | - | - | 6,014 |
| | Revised Funding Sources (if approved) | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 618 | 637 | 656 | 495 | - | - | - | - | - | 2,405 |
| | Self-Liquid. Debent.-Sanitary | - | - | 927 | 955 | 983 | 743 | - | - | - | - | - | 3,608 |
| | Requested Funding Source | - | - | 1,545 | 1,591 | 1,639 | 1,238 | - | - | - | - | - | 6,014 |

| | | | | | | | | | | | | | |
|------------------------------|-------------------------------|---|---|-------|-------|-------|-------|---|---|---|---|---|-------|
| REVISED BUDGET (IF APPROVED) | Revised Budget (if Approved) | - | - | 1,545 | 1,591 | 1,639 | 1,238 | - | - | - | - | - | 6,014 |
| | Requested Funding Source | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 618 | 637 | 656 | 495 | - | - | - | - | - | 2,405 |
| | Self-Liquid. Debent.-Sanitary | - | - | 927 | 955 | 983 | 743 | - | - | - | - | - | 3,608 |
| | Requested Funding Source | - | - | 1,545 | 1,591 | 1,639 | 1,238 | - | - | - | - | - | 6,014 |

REVISED BUDGET BY ACTIVITY TYPE (000's)

| REVISED BUDGET BY ACTIVITY TYPE | Activity Type | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|---------------------------------|---------------|--------------|------|-------|-------|-------|-------|-------|------|------|------|------|-------|
| | | Construction | - | - | 1,391 | 1,432 | 1,475 | 1,114 | - | - | - | - | - |
| | Design | - | - | 154 | 159 | 164 | 124 | - | - | - | - | - | 601 |
| | Total | - | - | 1,545 | 1,591 | 1,639 | 1,238 | - | - | - | - | - | 6,014 |

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 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

CAPITAL PROFILE REPORT

PROFILE NAME: COMBINED SEWER OVERFLOW CONTROL
PROFILE NUMBER: CM-23-9702
DEPARTMENT: Financial Services & Utilities - Utilities
BRANCH: Sanitary Utility
LEAD BRANCH:
PROGRAM NAME:
BUDGET CYCLE: 2015-2018

| | |
|------------------------------|---------------------|
| PROFILE STAGE: | L1 - Finance Review |
| PROFILE TYPE: | Composite |
| PROFILE MANAGER: | Chris Ward |
| LEAD BRANCH MANAGER: | |
| ESTIMATED START DATE: | January, 2015 |
| ESTIMATED COMPLETION: | December, 2016 |

| | | | |
|------------------------------------|----------------|------------------------------|-------|
| Service Category: Utilities | | Major Initiative: | |
| GROWTH | RENEWAL | PREVIOUSLY APPROVED: | - |
| | 100 | BUDGET REQUEST: | 4,166 |
| | | TOTAL PROFILE BUDGET: | 4,166 |

PROFILE DESCRIPTION

The City is responsible for developing and implementing a plan to control combined sewer overflows (CSOs), as outlined in the City's Approval-to-Operate. CSO Control Projects are part of the CSO Control Strategy for long term control measures to reduce CSOs to the river. These projects involve modification of existing CSO control structures to retain more flows in the combined sewers, reducing both frequency and volume of CSOs and more wet weather combined flows will be transferred to the treatment plant. The performance objectives of the overall CSO Control Strategy are to increase average annual capture and treatment of wet weather flows from 56% to 86% and decrease average annual occurrences of CSOs from 89% to 46%. Modifications at 2 CSO sites have been completed and 6 CSO sites are expected to be completed in 2014. The Mill Creek CSO site will be under construction in 2015. The Rat Creek CSO site weir modification will be completed once the W12 and RTC #3 gates are in operation.

PROFILE BACKGROUND

The City has an area of approximately 4,270 ha serviced by the combined sewer system and consists of about 930 km of sewers. This combined area covers about 43 neighbourhoods that are serviced in varying degrees by the combined sewer system. Edmonton's combined sewer system overflows through 18 CSO sites which were identified to be one of the sources of bacteria that cause in-stream river levels to exceed water quality criteria for primary contact recreation.

The Combined Sewer Overflow Control Projects program is one of the major components of the Combined Sewer Overflow (CSO) Control Strategy to improve the water quality in the river by reducing and controlling the release of untreated wastewater from combined sewer overflows. The CSO Control Strategy involves projects that will provide optimization of the existing sewerage system, storage and treatment of wet weather flows, opportunistic sewer system separation, weir modification and increased system conveyance capacity.

PROFILE JUSTIFICATION

Alberta Ministry of Environment and Sustainable Resource Development expect the City of Edmonton to develop and implement a plan to control combined sewer overflows, as outlined in the City's Approval-to-Operate (No. 639-02-07) under the Environmental Protection and Enhancement Act. Combined Sewer Overflow Control Projects are part of the CSO Control Strategy for long term control measures to reduce combined sewer overflows to the North Saskatchewan River. CSO site modifications are very cost effective as compared to total separation of the combined sewer system.

STRATEGIC ALIGNMENT

The implementation of Combined Sewer Overflow Control Projects aligns with "The Way We Green" as they reduce CSO's to the river and reduce the impact of the drainage system operation on the environment.

ALTERNATIVES CONSIDERED

One alternative is total separation of the combined system. Complete separation of the City of Edmonton's combined system is very costly (~\$2 – \$3 billion) and will result in unacceptable level of public disruption.

COST BENEFITS

This initiative reduces the volume and frequency of untreated CSOs to the North Saskatchewan River (NSR) and protects water quality. It helps to fulfill the regulatory requirements that the City is expected to develop and implement a plan to control combined sewer overflows, as outlined in the City's Approval-to-Operate (No. 639-02-07) under the Environmental Protection and Enhancement Act.

KEY RISKS & MITIGATING STRATEGY

Raising weir elevations to retain more flows in trunks could result in flow backup so careful optimization is needed not to create the risk of sewer backup and flooding. Sewer odour emissions are also a risk from certain modification projects.

RESOURCES

No new internal resources will be required by this initiative. However, projects may require external resources for both the design and construction phases.

CONCLUSIONS AND RECOMMENDATIONS

More wet weather combined flow can be retained in the combined system through optimization of the existing CSO sites, which can then be treated before being discharged to the river. This initiative is cost effective and these projects are recommended.

CONTINGENCY OF APPROVAL

CAPITAL PROFILE REPORT

PROFILE NAME: **Combined Sewer Overflow Control**
 PROFILE NUMBER: **CM-23-9702**

PROFILE TYPE: **Composite.**
 BRANCH: **Sanitary Utility**

CAPITAL BUDGET AND FUNDING SOURCES (000's)

| APPROVED BUDGET | | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|-----------------|-------------------------|--------------------------|------|------|------|------|------|------|------|------|------|------|-------|
| | Approved Budget | Original Budget Approved | - | - | - | - | - | - | - | - | - | - | - |
| | Current Approved Budget | - | - | - | - | - | - | - | - | - | - | - | - |

| | | | | | | | | | | | | | |
|----------------|---------------------------------------|---|---|-------|-------|---|---|---|---|---|---|---|-------|
| BUDGET REQUEST | Budget Request | - | - | 2,575 | 1,591 | - | - | - | - | - | - | - | 4,166 |
| | Revised Funding Sources (if approved) | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 1,030 | 637 | - | - | - | - | - | - | - | 1,667 |
| | Self-Liquid. Debent.-Sanitary | - | - | 1,545 | 955 | - | - | - | - | - | - | - | 2,500 |
| | Requested Funding Source | - | - | 2,575 | 1,591 | - | - | - | - | - | - | - | 4,166 |

| | | | | | | | | | | | | | |
|------------------------------|-------------------------------|---|---|-------|-------|---|---|---|---|---|---|---|-------|
| REVISED BUDGET (IF APPROVED) | Revised Budget (if Approved) | - | - | 2,575 | 1,591 | - | - | - | - | - | - | - | 4,166 |
| | Requested Funding Source | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 1,030 | 637 | - | - | - | - | - | - | - | 1,667 |
| | Self-Liquid. Debent.-Sanitary | - | - | 1,545 | 955 | - | - | - | - | - | - | - | 2,500 |
| | Requested Funding Source | - | - | 2,575 | 1,591 | - | - | - | - | - | - | - | 4,166 |

REVISED BUDGET BY ACTIVITY TYPE (000's)

| REVISED BUDGET BY ACTIVITY TYPE | Activity Type | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|---------------------------------|---------------|-------------|------|-------|-------|------|------|------|------|------|------|------|-------|
| | Construction | | - | - | 1,803 | - | - | - | - | - | - | - | - |
| Design | | - | - | 772 | 1,591 | - | - | - | - | - | - | - | 2,364 |
| | Total | - | - | 2,575 | 1,591 | - | - | - | - | - | - | - | 4,166 |

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 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

CAPITAL PROFILE REPORT

| | | | |
|-----------------|---|-----------------------|---------------------|
| PROFILE NAME: | DRAINAGE VEHICLE AND CONSTRUCTION EQUIPMENT | | |
| PROFILE NUMBER: | CM-23-6130 | PROFILE STAGE: | L1 - Finance Review |
| DEPARTMENT: | Financial Services & Utilities - Utilities | PROFILE TYPE: | Composite |
| BRANCH: | Sanitary Utility | PROFILE MANAGER: | Chris Ward |
| LEAD BRANCH: | | LEAD BRANCH MANAGER: | |
| PROGRAM NAME: | | ESTIMATED START DATE: | January, 2015 |
| BUDGET CYCLE: | 2015-2018 | ESTIMATED COMPLETION: | December, 2024 |

| | | | |
|-----------------------------|----------------|-----------------------|--------|
| Service Category: Utilities | | Major Initiative: | |
| GROWTH | RENEWAL | PREVIOUSLY APPROVED: | - |
| 50 | 50 | BUDGET REQUEST: | 10,202 |
| | | TOTAL PROFILE BUDGET: | 10,202 |

PROFILE DESCRIPTION

New equipment includes:
 (2015; 2-MTV Units(600,000), 2- Combination Units (1,100,000), Trouble Truck (140,000), Mini Mining excavator (600,000), Compressors (20,000), Forklift (100,000), Bobcat Transport Trailer (30,000), 50 ton shop press (10,000), Cable Reeler (10,000), Miscellaneous Equip. (100,000)),
 (2016; 1 Vector (\$550000), Generators (40,000), Steel Bender (150,000), Drill Rig - Test hole (800,000), Miscellaneous Equip. (100,000)),
 (2017; Plasma cutter (200,000), Miscellaneous Equip. (100,000)),
 (2018; Sampling and Compliance Van (116,000), Micro Tunneling Machine (4,000,000), Miscellaneous Equip.(100,000)).

PROFILE BACKGROUND

Drainage Services uses specialized equipment to build, inspect, clean and maintain the sanitary and storm sewer system. As the City grows, the sewer system grows with it which requires new equipment to support construction and operation activities. Equipment purchases consist of new equipment to support growth and improve efficiency as well as replacement of existing equipment that are in poor condition. Drainage Services business plans set service level targets. In order to maintain these targets and provide a safe work environment new innovative equipment must be purchased and aging equipment must be replaced. Purchases include: sewer inspection equipment, combination units for cleaning sewers, upgrade tunnel equipment, microtunnelling machine, generators, compressor, excavation equipment, lifting equipment, communication equipment, drill rig, ground freezing equipment, trucks and vans

PROFILE JUSTIFICATION

The Replacement Equipment request is to provide budget to procure replacement equipment that has reached the end of its useful life but continues to be required. The new equipment requested is to provide equipment for new council approved employees. Drainage Operations plans to expand the CCTV inspection program to increase the amount of inventory in the video library from 30% to 50% with the ultimate goal of 80% or more. Preventative inspection will ensure infrastructure degradation is monitored and potential problems address to minimize service interruption and maintain user satisfaction. Drainage Design and Construction requires new equipment to deliver the increase flood prevention program and other council approved strategic programs for other City departments. The risk of not purchasing the proposed new equipment is increase change of flooding, service interruption, negative impact on public health the environment and the River, and impedes development and growth of the City.

STRATEGIC ALIGNMENT

The Flood Prevention Program, Drainage Master Plan, and the City's strategic plans including the Neighborhood Rehabilitation Program are impacted by the need to replace and procure new equipment.

ALTERNATIVES CONSIDERED

The alternatives include a decrease in service level, an increase in the risk of workplace injuries, and the inability to keep up with the growth of the City and the delivery of the associated Strategic Programs.

COST BENEFITS

The costs are itemized in the Profile Description above. The tangible benefits of purchasing new equipment will be an increased meterage of CCTV infrastructure inspection, increased open cut production, and the meeting of schedules related to recently increased capital programs. The intangible benefits include increased customer satisfaction, increased employee morale, and safer more efficient workplace due to new technology.

KEY RISKS & MITIGATING STRATEGY

The risks of not proceeding is that service levels will drop, interruption of service will increase, preventative maintenance planning will not have evidence to support the plan, we will be unable to keep up with demand for construction.

RESOURCES

This request for additional equipment has corresponding FTE request in the operating budget forecast. If the request for new equipment is not approved, additional FTE may separately be approved but their ability to work may be negatively impacted.

CONCLUSIONS AND RECOMMENDATIONS

It is recommended to approve the budget for replacement of existing equipment and the purchase of new equipment as per the timeline laid out in the details section above.

CONTINGENCY OF APPROVAL

CAPITAL PROFILE REPORT

PROFILE NAME: **Drainage Vehicle and Construction Equipment**
 PROFILE NUMBER: **CM-23-6130**

PROFILE TYPE: **Composite**
 BRANCH: **Sanitary Utility**

CAPITAL BUDGET AND FUNDING SOURCES (000's)

| APPROVED BUDGET | | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|--------------------------|-----------------|-------------|------|------|------|------|------|------|------|------|------|------|-------|
| | Approved Budget | | | | | | | | | | | | |
| Original Budget Approved | | - | - | - | - | - | - | - | - | - | - | - | - |
| Current Approved Budget | | - | - | - | - | - | - | - | - | - | - | - | - |

| | | | | | | | | | | | | | |
|--------------------------|---------------------------------------|---|-------|-------|-------|-------|-------|---|---|---|---|--------|--------|
| BUDGET REQUEST | Budget Request | - | - | 2,518 | 1,504 | 1,574 | 4,606 | - | - | - | - | - | 10,202 |
| | Revised Funding Sources (if approved) | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 1,950 | 1,202 | 1,410 | 4,438 | - | - | - | - | - | 8,999 |
| | Self-Liquid. Debent.-Sanitary | - | - | 569 | 302 | 164 | 168 | - | - | - | - | - | 1,203 |
| Requested Funding Source | | | 2,518 | 1,504 | 1,574 | 4,606 | - | - | - | - | - | 10,202 | |

| | | | | | | | | | | | | | |
|------------------------------|-------------------------------|---|-------|-------|-------|-------|-------|---|---|---|---|--------|--------|
| REVISED BUDGET (IF APPROVED) | Revised Budget (if Approved) | - | - | 2,518 | 1,504 | 1,574 | 4,606 | - | - | - | - | - | 10,202 |
| | Requested Funding Source | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 1,950 | 1,202 | 1,410 | 4,438 | - | - | - | - | - | 8,999 |
| | Self-Liquid. Debent.-Sanitary | - | - | 569 | 302 | 164 | 168 | - | - | - | - | - | 1,203 |
| Requested Funding Source | | | 2,518 | 1,504 | 1,574 | 4,606 | - | - | - | - | - | 10,202 | |

REVISED BUDGET BY ACTIVITY TYPE (000's)

| REVISED BUDGET BY ACTIVITY TYPE | Activity Type | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|---------------------------------|----------------|-------------|------|-------|-------|-------|-------|-------|------|------|------|------|--------|
| | Equip FurnFixt | | - | - | 2,518 | 1,504 | 1,574 | 4,606 | - | - | - | - | - |
| Total | | - | - | 2,518 | 1,504 | 1,574 | 4,606 | - | - | - | - | - | 10,202 |

OPERATING IMPACT OF CAPITAL

Type of Impact: Personnel

| Branch: | 2015 | | | | 2016 | | | | 2017 | | | | 2018 | | | |
|------------------------|------|-----|-----|------|------|-----|-----|-----|------|-----|-----|-----|------|-----|-----|-----|
| | Rev | Exp | Net | FTE | Rev | Exp | Net | FTE | Rev | Exp | Net | FTE | Rev | Exp | Net | FTE |
| (None) | - | - | - | 10.0 | - | - | - | - | - | - | - | - | - | - | - | - |
| Total Operating Impact | - | - | - | 10.0 | - | - | - | - | - | - | - | - | - | - | - | - |

CAPITAL PROFILE REPORT

| | | | |
|-----------------|--|-----------------------|---------------------|
| PROFILE NAME: | DRAINAGE IT ASSETS | PROFILE STAGE: | L1 - Finance Review |
| PROFILE NUMBER: | CM-23-6200 | PROFILE TYPE: | Composite |
| DEPARTMENT: | Financial Services & Utilities - Utilities | PROFILE MANAGER: | Chris Ward |
| BRANCH: | Sanitary Utility | LEAD BRANCH MANAGER: | |
| LEAD BRANCH: | | ESTIMATED START DATE: | January, 2015 |
| PROGRAM NAME: | | ESTIMATED COMPLETION: | December, 2018 |
| BUDGET CYCLE: | 2015-2018 | | |

| | | | |
|------------------------------------|----------------|------------------------------|-------|
| Service Category: Utilities | | Major Initiative: | |
| GROWTH | RENEWAL | PREVIOUSLY APPROVED: | - |
| | 100 | BUDGET REQUEST: | 5,575 |
| | | TOTAL PROFILE BUDGET: | 5,575 |

PROFILE DESCRIPTION

Drainage IT Applications is a composite project that comprises of a number of IT related applications. The project is divided into three main categories

- 1) Maintenance: includes licensing of Bentley software and other maintenance requirements that are required as part of the day to day activities for certain software
- 2) Upgrades - Changes and updates to existing applications in compliance with Corporate and standards; The IT Strategy plays a significant role in determining and spearheading some of these upgrades.
- 3) Growth - Based on a continual improvement model; this also includes changes that are needed as a result of process changes across the business. The IT Strategy plays a significant role in determining and spearheading some of these growth projects.

PROFILE BACKGROUND

In order to support the growing demands of the business, Drainage Services and IT Branch collaborated to identify business needs and challenges critical in establishing the appropriate initiatives that would support the strategic goals of both branches. The Drainage IT Applications program allows Drainage Services to practice continuous improvement and realize efficiencies through the use of technology. This also aligns with Council's initiative of 2% saving through innovation. Drainage Services continuously relies on technology. The partnership between the IT branch and Drainage Services has made it possible to support the ongoing maintenance, improvement and expansion of the current system in place. Continuous Improvement is a high priority for Drainage Services. In previous years, Drainage Services has identified several priority IT initiatives through the 2013-2015 Drainage IT Strategy.

PROFILE JUSTIFICATION

Sustainable technology solutions are essential tools to optimize business operational efficiencies. Implementing advanced technologies will help support productivity, meet increased workloads and achieve productivity gains. In order to successfully maintain business service levels it is necessary to continuously enhance the current technology we have in place, to support the corporate outcome that The City has sustainable assets and services. The implementation of the Drainage IT Application program will sustain and support all the IT initiatives identified based on the collaboration between Drainage Services and IT branch.

RESULTS

- Improved operational efficiency
- Maintained service levels of Drainage Services Branch
- Effective implementation of IT initiatives
- Effective transitions to process changes

STRATEGIC ALIGNMENT

Aligns with The Way We Finance, by ensuring that Drainage Services is fully equipped with up to date IT solutions to efficiently support the programs and services which citizens require. This program also aligns with The Way We Grow strategic goal

ALTERNATIVES CONSIDERED

Do nothing - Not moving forward on these initiatives will prevent Drainage Services from realizing additional efficiencies.

COST BENEFITS

- Continuous Improvement
- Innovation
- Operational Efficiencies
- Improves customer satisfaction through higher confidence in data accuracy.

KEY RISKS & MITIGATING STRATEGY

Lack of support for existing IT systems limits productivity and lowers service levels to citizens. Change in long terms plans of the business is also considered a key risk as it impacts the overall scope of the Drainage IT applications program.

RESOURCES

No new FTEs will be required for the planning and implementation of this program.

CONCLUSIONS AND RECOMMENDATIONS

The implementation of the Drainage IT Application program will ensure that Drainage Services will successfully maintain and improve the service levels of the branch to meet the expectation of citizens.

CONTINGENCY OF APPROVAL

CAPITAL PROFILE REPORT

PROFILE NAME: Drainage IT Assets
 PROFILE NUMBER: CM-23-6200

PROFILE TYPE: Composite
 BRANCH: Sanitary Utility

CAPITAL BUDGET AND FUNDING SOURCES (000's)

| APPROVED BUDGET | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|--------------------------|-----------------|------|------|------|------|------|------|------|------|------|------|-------|
| | Approved Budget | | | | | | | | | | | |
| Original Budget Approved | - | - | - | - | - | - | - | - | - | - | - | - |
| Current Approved Budget | - | - | - | - | - | - | - | - | - | - | - | - |

| | | | | | | | | | | | | | |
|--------------------------|---------------------------------------|---|-------|-------|-------|-------|-------|---|---|---|---|-------|-------|
| BUDGET REQUEST | Budget Request | - | - | 1,476 | 1,326 | 1,366 | 1,407 | - | - | - | - | - | 5,575 |
| | Revised Funding Sources (if approved) | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 590 | 530 | 546 | 563 | - | - | - | - | - | 2,230 |
| | Self-Liquid. Debent.-Sanitary | - | - | 886 | 796 | 820 | 844 | - | - | - | - | - | 3,345 |
| Requested Funding Source | - | - | 1,476 | 1,326 | 1,366 | 1,407 | - | - | - | - | - | 5,575 | |

| | | | | | | | | | | | | | |
|------------------------------|-------------------------------|---|-------|-------|-------|-------|-------|---|---|---|---|-------|-------|
| REVISED BUDGET (IF APPROVED) | Revised Budget (if Approved) | - | - | 1,476 | 1,326 | 1,366 | 1,407 | - | - | - | - | - | 5,575 |
| | Requested Funding Source | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 590 | 530 | 546 | 563 | - | - | - | - | - | 2,230 |
| | Self-Liquid. Debent.-Sanitary | - | - | 886 | 796 | 820 | 844 | - | - | - | - | - | 3,345 |
| Requested Funding Source | - | - | 1,476 | 1,326 | 1,366 | 1,407 | - | - | - | - | - | 5,575 | |

REVISED BUDGET BY ACTIVITY TYPE (000's)

| REVISED BUDGET BY ACTIVITY TYPE | Activity Type | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|---------------------------------|---------------|-------------|-------|-------|-------|-------|-------|------|------|------|------|------|-------|
| | Technology | - | - | 1,476 | 1,326 | 1,366 | 1,407 | - | - | - | - | - | - |
| Total | - | - | 1,476 | 1,326 | 1,366 | 1,407 | - | - | - | - | - | - | 5,575 |

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 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

CAPITAL PROFILE REPORT

PROFILE NAME: NEIGHBOURHOOD FLOOD PREVENTION
 PROFILE NUMBER: CM-23-9511
 DEPARTMENT: Financial Services & Utilities - Utilities
 BRANCH: Sanitary Utility
 LEAD BRANCH:
 PROGRAM NAME:
 BUDGET CYCLE: 2015-2018

PROFILE STAGE: L1 - Finance Review
 PROFILE TYPE: Composite
 PROFILE MANAGER: Chris Ward
 LEAD BRANCH MANAGER:
 ESTIMATED START DATE: January, 2015
 ESTIMATED COMPLETION: December, 2019

| | | | |
|-----------------------------|----------------|-----------------------|--------|
| Service Category: Utilities | | Major Initiative: | |
| GROWTH | RENEWAL | PREVIOUSLY APPROVED: | - |
| 41 | 59 | BUDGET REQUEST: | 21,826 |
| | | TOTAL PROFILE BUDGET: | 21,826 |

PROFILE DESCRIPTION

This program installs flood prevention measures including stormwater management ponds and diversion sewers to protect the city from future flood events. The Neighbourhood Flood Prevention Projects (9511) was developed in response to the heavy rains which caused flooding and sewer back-ups in more than 4,000 homes in 2004. This program installs flood prevention works to the City's sewer system. The program includes the design and construction of the various flood prevention works, including stormwater management ponds and diversion sewers.

PROFILE BACKGROUND

In response to flooding, a Flood Prevention Program was developed for 31 at-risk neighbourhoods following an extensive engineering studies. The resulting Flood Prevention Program was presented to Council in April 2006. A \$146 million capital investment program was outlined to increase the level of service in these neighbourhoods. Since the inception of the program, flood prevention works in 13 neighbourhoods have been constructed with the remaining 18 planned or under way. In addition to the above projects, a stormwater management wet pond project in Hurstwood Estates subdivision in Maple Ridge industrial area has been added to this program. This subdivision is partially developed without a stormwater management facility. The Maple Ridge Area Master Plan (AMP), undertaken by Drainage Services in 2009, identified a need for a stormwater management facility for the purpose of flood protection and water quality improvement in the area.

PROFILE JUSTIFICATION

Council direction to extend the flood prevention program to ensure an acceptable level of services is provided to Edmonton neighbourhoods. This program is to meet the City Council's direction for flood prevention. Implementation of the extended flood prevention program will ensure that an acceptable level of service is provided to Drainage Services customers. These neighbourhoods experienced moderate to extensive surface flooding and sanitary backups, and significant public and private property damage during intense rainfall events. This program will provide an improved level of flood protection for neighbourhoods. The purpose of these improvements are to reduce the risk of flooding from storm sewers (surface flooding) and sanitary sewers (sanitary backups) up to a 100 year level of flood protection.

STRATEGIC ALIGNMENT

The Way we Finance, The Way we Live, The Way we Green

ALTERNATIVES CONSIDERED

Large storage tunnel or Underground storage tank

COST BENEFITS

It will ensure that an acceptable level of service is provided to Drainage Services customers, and the City's resources are spent in an effective manner and optimized for flood protection purpose. The implementation of this program will continue to strengthen the City's role as a leading watershed steward when it comes to flood control, improving water quality, and environmental health of the watershed.

KEY RISKS & MITIGATING STRATEGY

The key risks and constraints of not proceeding with the study are:

- Neighbourhoods will be at- risk of flooding during similar storm events;
- The City will not fulfill the promise to address flooding in at- risk neighbourhoods

RESOURCES

External engineering consultants and contractors will be required for engineering and construction of the facilities. To build a successful long-term flood prevention program, there is a need for FTEs to handle the program.

CONCLUSIONS AND RECOMMENDATIONS

It is recommended that the flood prevention works in this program be funded as they will provide flood protection against future severe rain events

CONTINGENCY OF APPROVAL

CAPITAL PROFILE REPORT

PROFILE NAME: Neighbourhood Flood Prevention
 PROFILE NUMBER: CM-23-9511

PROFILE TYPE: Composite
 BRANCH: Sanitary Utility

CAPITAL BUDGET AND FUNDING SOURCES (000's)

| APPROVED BUDGET | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|--------------------------|-----------------|------|------|------|------|------|------|------|------|------|------|-------|
| | Approved Budget | | | | | | | | | | | |
| Original Budget Approved | - | - | - | - | - | - | - | - | - | - | - | - |
| Current Approved Budget | - | - | - | - | - | - | - | - | - | - | - | - |

| | | | | | | | | | | | | | |
|--------------------------|---------------------------------------|---|-------|-------|-------|-------|-------|---|---|---|---|--------|--------|
| BUDGET REQUEST | Budget Request | - | - | 4,851 | 6,966 | 5,254 | 4,755 | - | - | - | - | - | 21,826 |
| | Revised Funding Sources (if approved) | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 1,795 | 2,577 | 1,944 | 1,759 | - | - | - | - | - | 8,075 |
| | Self-Liquid. Debent.-Sanitary | - | - | 3,055 | 4,389 | 3,310 | 2,996 | - | - | - | - | - | 13,750 |
| Requested Funding Source | - | - | 4,851 | 6,966 | 5,254 | 4,755 | - | - | - | - | - | 21,826 | |

| | | | | | | | | | | | | | |
|------------------------------|-------------------------------|---|-------|-------|-------|-------|-------|---|---|---|---|--------|--------|
| REVISED BUDGET (IF APPROVED) | Revised Budget (if Approved) | - | - | 4,851 | 6,966 | 5,254 | 4,755 | - | - | - | - | - | 21,826 |
| | Requested Funding Source | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 1,795 | 2,577 | 1,944 | 1,759 | - | - | - | - | - | 8,075 |
| | Self-Liquid. Debent.-Sanitary | - | - | 3,055 | 4,389 | 3,310 | 2,996 | - | - | - | - | - | 13,750 |
| Requested Funding Source | - | - | 4,851 | 6,966 | 5,254 | 4,755 | - | - | - | - | - | 21,826 | |

REVISED BUDGET BY ACTIVITY TYPE (000's)

| REVISED BUDGET BY ACTIVITY TYPE | Activity Type | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|---------------------------------|---------------|-------------|-------|-------|-------|-------|-------|------|------|------|------|------|--------|
| | Construction | - | - | 3,888 | 530 | 3,272 | 3,655 | - | - | - | - | - | - |
| Design | - | - | 963 | 5,905 | 1,517 | 1,100 | - | - | - | - | - | - | 9,485 |
| Land | - | - | - | 530 | 464 | - | - | - | - | - | - | - | 995 |
| Total | - | - | 4,851 | 6,966 | 5,254 | 4,755 | - | - | - | - | - | - | 21,826 |

OPERATING IMPACT OF CAPITAL

Type of Impact:

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

CAPITAL PROFILE REPORT

| | | | |
|-----------------|--|-----------------------|---------------------|
| PROFILE NAME: | HIGH PRIORITY REPAIR | PROFILE STAGE: | L1 - Finance Review |
| PROFILE NUMBER: | CM-23-9520 | PROFILE TYPE: | Composite |
| DEPARTMENT: | Financial Services & Utilities - Utilities | PROFILE MANAGER: | Chris Ward |
| BRANCH: | Sanitary Utility | LEAD BRANCH MANAGER: | |
| LEAD BRANCH: | | ESTIMATED START DATE: | January, 2015 |
| PROGRAM NAME: | | ESTIMATED COMPLETION: | December, 2024 |
| BUDGET CYCLE: | 2015-2018 | | |

| | | | |
|------------------------------------|----------------|------------------------------|--------|
| Service Category: Utilities | | Major Initiative: | |
| GROWTH | RENEWAL | PREVIOUSLY APPROVED: | - |
| | 100 | BUDGET REQUEST: | 29,733 |
| | | TOTAL PROFILE BUDGET: | 29,733 |

PROFILE DESCRIPTION

This program addresses high priority emergency repairs from Drainage Operations. Emergencies are identified through 311 calls of blockages, flooding, etc. which are then investigated by Drainage Operations. Repairs include sewer laterals (service connections), CB leads, sewers, pumpstations, outfalls, manholes and other drainage infrastructure assets. This initiative is to ensure timely repair of emergency drainage infrastructure situations. These are repairs that need to be undertaken immediately to restore service or to rectify safety and/or environmental issues.

PROFILE BACKGROUND

The City of Edmonton owns and operates over 5,600 km of sanitary, storm and combined sewers and over 350,000 sanitary service connections. The average age of the pipes is 43 years, with around 30% of them over 50 years old. Due to aging and deterioration of drainage infrastructure, the City may be vulnerable to unexpected failures that disrupt not only sewer service to homeowners but above-ground activities as well. These failures lead to emergency repairs that are required immediately to restore service to residents of Edmonton.

Each year, emergency situations arise within the drainage infrastructure. This can range from sewer collapse, service connection collapse, outfall safety issues, pumpstation breakdowns, etc. These need to be dealt with on a timely basis in order to restore service to residents, or to rectify urgent safety or environmental concerns.

PROFILE JUSTIFICATION

These repairs are emergencies and must be completed to continue to provide service to residents. They may also include emergency repairs due to safety or environmental concerns.

STRATEGIC ALIGNMENT

This program aligns with the "The Way We Live" as it allows the City to provide a high level of service to the residents by restoring service in a timely fashion, and by eliminating safety and environmental concerns as quickly as possible.

ALTERNATIVES CONSIDERED

As these are emergency situations, alternatives are explored on site just prior to the repair being completed.

COST BENEFITS

This program requires funds to carry out emergency repairs to the sewer system. Most of the emergency repairs are undertaken using the open-cut repair method. Since open-cut construction methods generally have higher costs than trenchless rehabilitation methods, the high percentage of open-cut repairs in emergency repairs will result in higher cost for the program. To continue emergency repairs, the program requires approximately \$11.5M per year.

KEY RISKS & MITIGATING STRATEGY

Funding is required since failing to respond to emergency repairs is a risk. It could cause flooded basements, collapsed roadways, blocked outfalls, etc.

RESOURCES

No new internal resources will be required by this program. However some of the projects may require external resources for both the design and/or construction phases.

CONCLUSIONS AND RECOMMENDATIONS

Drainage infrastructure is aging and many assets are past their useful service life. Emergency repairs are needed to restore service after a failure, or to rectify safety or environmental concerns.

CONTINGENCY OF APPROVAL

CAPITAL PROFILE REPORT

PROFILE NAME: High Priority Repair
 PROFILE NUMBER: CM-23-9520

PROFILE TYPE: Composite
 BRANCH: Sanitary Utility

CAPITAL BUDGET AND FUNDING SOURCES (000's)

| APPROVED BUDGET | | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|-----------------|-------------------------|--------------------------|------|------|------|------|------|------|------|------|------|------|-------|
| | Approved Budget | Original Budget Approved | - | - | - | - | - | - | - | - | - | - | - |
| | Current Approved Budget | - | - | - | - | - | - | - | - | - | - | - | - |

| | | | | | | | | | | | | | |
|----------------|---------------------------------------|---|---|-------|-------|-------|-------|---|---|---|---|---|--------|
| BUDGET REQUEST | Budget Request | - | - | 7,107 | 7,320 | 7,540 | 7,766 | - | - | - | - | - | 29,733 |
| | Revised Funding Sources (if approved) | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 2,843 | 2,928 | 3,016 | 3,106 | - | - | - | - | - | 11,893 |
| | Self-Liquid. Debent.-Sanitary | - | - | 4,264 | 4,392 | 4,524 | 4,660 | - | - | - | - | - | 17,840 |
| | Requested Funding Source | - | - | 7,107 | 7,320 | 7,540 | 7,766 | - | - | - | - | - | 29,733 |

| | | | | | | | | | | | | | |
|------------------------------|-------------------------------|---|---|-------|-------|-------|-------|---|---|---|---|---|--------|
| REVISED BUDGET (IF APPROVED) | Revised Budget (if Approved) | - | - | 7,107 | 7,320 | 7,540 | 7,766 | - | - | - | - | - | 29,733 |
| | Requested Funding Source | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 2,843 | 2,928 | 3,016 | 3,106 | - | - | - | - | - | 11,893 |
| | Self-Liquid. Debent.-Sanitary | - | - | 4,264 | 4,392 | 4,524 | 4,660 | - | - | - | - | - | 17,840 |
| | Requested Funding Source | - | - | 7,107 | 7,320 | 7,540 | 7,766 | - | - | - | - | - | 29,733 |

REVISED BUDGET BY ACTIVITY TYPE (000's)

| REVISED BUDGET BY ACTIVITY TYPE | Activity Type | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|---------------------------------|---------------|--------------|------|-------|-------|-------|-------|-------|------|------|------|------|--------|
| | | Construction | - | - | 7,107 | 7,320 | 7,540 | 7,766 | - | - | - | - | - |
| | Total | - | - | 7,107 | 7,320 | 7,540 | 7,766 | - | - | - | - | - | 29,733 |

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 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

CAPITAL PROFILE REPORT

| | | | |
|-----------------|--|-----------------------|---------------------|
| PROFILE NAME: | EXPANDED NEIGHBOURHOOD FLOOD MITIGATION | PROFILE STAGE: | L1 - Finance Review |
| PROFILE NUMBER: | CM-23-9611 | PROFILE TYPE: | Composite |
| DEPARTMENT: | Financial Services & Utilities - Utilities | PROFILE MANAGER: | Chris Ward |
| BRANCH: | Sanitary Utility | LEAD BRANCH MANAGER: | |
| LEAD BRANCH: | | ESTIMATED START DATE: | January, 2015 |
| PROGRAM NAME: | | ESTIMATED COMPLETION: | |
| BUDGET CYCLE: | 2015-2018 | | |

| | | | |
|-----------------------------|---------|-----------------------|--------|
| Service Category: Utilities | | Major Initiative: | |
| GROWTH | RENEWAL | PREVIOUSLY APPROVED: | - |
| 50 | 50 | BUDGET REQUEST: | 15,022 |
| | | TOTAL PROFILE BUDGET: | 15,022 |

PROFILE DESCRIPTION

Program developed to address flooding issues in south Edmonton, upgrading of storm and sanitary pipes and SWMF ponds, new storage sewers and sealing of manholes improving overland drainage routes. The Expanded Neighbourhood Flood Mitigation Program was developed in response to the heavy rains which caused flooding and sewer back-ups in Mill Woods, Southwest Edmonton and Millbourne in 2012. To reduce the risk of future flooding in these areas, a number of improvement projects including upgrading existing storm and sanitary sewer pipes and stormwater management ponds, building new storage sewers, sealing a number of manholes in trapped low areas, improving overland drainage routes, and constructing new stormwater management dry ponds are proposed.

PROFILE BACKGROUND

Heavy rains caused flooding and sewer backup in more than 1,200 homes city-wide. Neighbourhoods in Mill Woods and southwest Edmonton were heavily impacted. Many of these neighbourhoods also experienced severe flooding in 2004. Since 2006, a number of projects have been completed in southwest Edmonton and Mill Woods to reduce the risk of flooding. However, these neighbourhoods are still at risk of flooding. Some of the neighbourhoods do not have defined major drainage systems as they were constructed prior to the implementation of the dual storm drainage system requirement for both major (surface) and minor (piped) drainage system, which was introduced in the late 1980's. In addition, the sanitary systems have limited capacities.

PROFILE JUSTIFICATION

Council directed flood prevention to protect citizens and property from further flood events. This program is to meet the City Council's direction for flood prevention. Implementation of the extended flood prevention program will ensure that an acceptable level of service is provided to Drainage Services customers.

STRATEGIC ALIGNMENT

This program is consistent with and complements the City's overall goals for environmental protection as articulated in The Way Ahead, and contributes to The Way we Live, The Way we Green, The Way we Finance

ALTERNATIVES CONSIDERED

Large storage tunnel or underground storage tank

COST BENEFITS

The drainage improvements will benefit 24 neighbourhoods. It will also ensure that an acceptable level of service is provided to Drainage Services customers, and the City's resources are spent in an effective manner and optimized for flood protection purpose.

KEY RISKS & MITIGATING STRATEGY

- Neighbourhoods will be at-risk of flooding during similar storm events;
- The City will not fulfill the promise to address flooding in at-risk neighbourhoods

RESOURCES

External engineering consultants and contractors will be required for engineering and construction of the facilities. Administration will assess and look at developing in-house construction team.

CONCLUSIONS AND RECOMMENDATIONS

It is recommended that the flood prevention works in this program be funded as they will provide flood protection against future severe rain events.

CONTINGENCY OF APPROVAL

CAPITAL PROFILE REPORT

PROFILE NAME: **Expanded Neighbourhood Flood Mitigation**
 PROFILE NUMBER: **CM-23-9611**

PROFILE TYPE: **Composite**
 BRANCH: **Sanitary Utility**

CAPITAL BUDGET AND FUNDING SOURCES (000's)

| APPROVED BUDGET | | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|-----------------|--------------------------|-------------|------|------|------|------|------|------|------|------|------|------|-------|
| | Approved Budget | | | | | | | | | | | | |
| | Original Budget Approved | - | - | - | - | - | - | - | - | - | - | - | - |
| | Current Approved Budget | - | - | - | - | - | - | - | - | - | - | - | - |

| | | | | | | | | | | | | | |
|----------------|---------------------------------------|---|---|-------|-------|-------|-------|---|---|---|---|---|--------|
| BUDGET REQUEST | Budget Request | - | - | 2,828 | 3,363 | 3,743 | 5,088 | - | - | - | - | - | 15,022 |
| | Revised Funding Sources (if approved) | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 1,046 | 1,244 | 1,384 | 1,883 | - | - | - | - | - | 5,558 |
| | Self-Liquid. Debent.-Sanitary | - | - | 1,782 | 2,119 | 2,358 | 3,205 | - | - | - | - | - | 9,464 |
| | Requested Funding Source | - | - | 2,828 | 3,363 | 3,743 | 5,088 | - | - | - | - | - | 15,022 |

| | | | | | | | | | | | | | |
|------------------------------|-------------------------------|---|---|-------|-------|-------|-------|---|---|---|---|---|--------|
| REVISED BUDGET (IF APPROVED) | Revised Budget (if Approved) | - | - | 2,828 | 3,363 | 3,743 | 5,088 | - | - | - | - | - | 15,022 |
| | Requested Funding Source | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 1,046 | 1,244 | 1,384 | 1,883 | - | - | - | - | - | 5,558 |
| | Self-Liquid. Debent.-Sanitary | - | - | 1,782 | 2,119 | 2,358 | 3,205 | - | - | - | - | - | 9,464 |
| | Requested Funding Source | - | - | 2,828 | 3,363 | 3,743 | 5,088 | - | - | - | - | - | 15,022 |

REVISED BUDGET BY ACTIVITY TYPE (000's)

| REVISED BUDGET BY ACTIVITY TYPE | Activity Type | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|---------------------------------|---------------|--------------|------|-------|-------|-------|-------|-------|------|------|------|------|--------|
| | | Construction | - | - | 2,828 | 3,269 | 2,983 | 4,272 | - | - | - | - | - |
| | Design | - | - | - | 94 | 759 | 817 | - | - | - | - | - | 1,670 |
| | Total | - | - | 2,828 | 3,363 | 3,743 | 5,088 | - | - | - | - | - | 15,022 |

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 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

CAPITAL PROFILE REPORT

| | | | |
|-----------------|--|-----------------------|---------------------|
| PROFILE NAME: | RIVER FOR LIFE | PROFILE STAGE: | L1 - Finance Review |
| PROFILE NUMBER: | CM-23-9640 | PROFILE TYPE: | Composite |
| DEPARTMENT: | Financial Services & Utilities - Utilities | PROFILE MANAGER: | Chris Ward |
| BRANCH: | Sanitary Utility | LEAD BRANCH MANAGER: | |
| LEAD BRANCH: | | ESTIMATED START DATE: | January, 2017 |
| PROGRAM NAME: | | ESTIMATED COMPLETION: | December, 2024 |
| BUDGET CYCLE: | 2015-2018 | | |

| | | | |
|------------------------------------|----------------|------------------------------|-----|
| Service Category: Utilities | | Major Initiative: | |
| GROWTH | RENEWAL | PREVIOUSLY APPROVED: | - |
| 50 | 50 | BUDGET REQUEST: | 228 |
| | | TOTAL PROFILE BUDGET: | 228 |

PROFILE DESCRIPTION

This strategy will lay the groundwork for water quality improvement projects on the 30-year horizon. Led by Drainage Services, a strategic framework was created followed by implementation plans. The implementation plans includes four processes and five programs that lay the groundwork for how River for Life will be implemented after the strategy is completed. In 2014, an adaptive management process, triple bottom line process, and funding strategy will be developed in order to ensure that the strategy is sustainable in the long term. Projects that may develop out of this strategy include grey infrastructure and green infrastructure as well as upgrades to the Gold Bar wastewater treatment plant. City operations may also be analyzed for any possible water quality improvement. Partnerships with other organizations that share the same goals as River for Life strategy will also be developed and reinforced to broaden the target audience.

PROFILE BACKGROUND

River for Life is the City's 30-year water quality strategy to reduce pollutant discharge in the wastewater, stormwater and combined sewer systems. A focus of the last approval to operate issued by Alberta Environment and Sustainable Resource Development was on long term pollution reduction strategies. The next operating approval will be issued in 2015. As with the last approval, pollutant loading and continuous improvement will be a theme throughout. As we are transitioning to a maximum allowable load (MAL) regulatory regime, the City can be expected to move forward on a 'maintain or improve' philosophy as it relates to our discharges. If work does not proceed on the River for Life strategy, and no improvements made, we could expect more pressure from the regulator to improve on our discharges when the MAL regulations come out, there will be a larger gap to close between where the City will be and where the City has to go.

PROFILE JUSTIFICATION

River for Life is the City's 30-year water quality strategy to reduce pollutant discharge in the wastewater, stormwater and combined sewer systems, pollutant loading and continuous improvement will be a theme throughout. As we are transitioning to a maximum allowable load (MAL) regulatory regime, the City can be expected to move forward on a 'maintain or improve' philosophy as it relates to discharges. If work does not proceed on the River for Life strategy, and no improvements made, we could expect pressure from the regulator to improve on our discharges when the MAL regulation come out. River for Life is also a strategy that demonstrates the City of Edmonton is an environmental leader when it comes to one of our City's greatest resources, the North Saskatchewan River. Long term measures that will show the results of projects built include our volume of CSO discharged as well as the contaminant loading to the river.

STRATEGIC ALIGNMENT

The River for Life strategy is an implementation plan under The Way We Green and maintains that Edmonton is an environmental leader on the world stage.

ALTERNATIVES CONSIDERED

This project covers all of the water quality improvement projects. By covering the entire spectrum of projects, the only alternative to this profile will be the do nothing alternative. With regulatory requirements, this will not be an option.

COST BENEFITS

The goal of the River for Life strategy will be to reduce the impact from discharges in to the North Saskatchewan River. The river is a very important natural resource for the City, Province, and Country. Projects that will be identified through the strategy will have the potential to positively impact a number of other city strategies.

KEY RISKS & MITIGATING STRATEGY

Cost will be a risk with water quality improvement programs and projects. Mitigating factors would be to get the projects in the budget early and to educate decision makers on the strategy.

RESOURCES

Construction work will most likely be conducted by contractors. There will be an ongoing project management role by Drainage Planning to track project status as well as to track the success of the projects in the context of the strategy.

CONCLUSIONS AND RECOMMENDATIONS

Projects that will be identified have the potential to positively impact a number of other city strategies. Green infrastructure can help provide habitat and increase biodiversity as well as reduce the heat island effect caused by cities.

CONTINGENCY OF APPROVAL

CAPITAL PROFILE REPORT

PROFILE NAME: River for Life
 PROFILE NUMBER: CM-23-9640

PROFILE TYPE: Composite
 BRANCH: Sanitary Utility

CAPITAL BUDGET AND FUNDING SOURCES (000's)

| APPROVED BUDGET | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|--------------------------|-----------------|------|------|------|------|------|------|------|------|------|------|-------|
| | Approved Budget | | | | | | | | | | | |
| Original Budget Approved | - | - | - | - | - | - | - | - | - | - | - | - |
| Current Approved Budget | - | - | - | - | - | - | - | - | - | - | - | - |

| | | | | | | | | | | | | | |
|--------------------------|---------------------------------------|---|---|---|----|-----|-----|---|---|---|---|-----|-----|
| BUDGET REQUEST | Budget Request | - | - | - | - | 87 | 141 | - | - | - | - | - | 228 |
| | Revised Funding Sources (if approved) | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | - | - | 35 | 56 | - | - | - | - | - | 91 |
| | Self-Liquid. Debent.-Sanitary | - | - | - | - | 52 | 84 | - | - | - | - | - | 137 |
| Requested Funding Source | - | - | - | - | 87 | 141 | - | - | - | - | - | 228 | |

| | | | | | | | | | | | | | |
|------------------------------|-------------------------------|---|---|---|----|-----|-----|---|---|---|---|-----|-----|
| REVISED BUDGET (IF APPROVED) | Revised Budget (if Approved) | - | - | - | - | 87 | 141 | - | - | - | - | - | 228 |
| | Requested Funding Source | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | - | - | 35 | 56 | - | - | - | - | - | 91 |
| | Self-Liquid. Debent.-Sanitary | - | - | - | - | 52 | 84 | - | - | - | - | - | 137 |
| Requested Funding Source | - | - | - | - | 87 | 141 | - | - | - | - | - | 228 | |

REVISED BUDGET BY ACTIVITY TYPE (000's)

| REVISED BUDGET BY ACTIVITY TYPE | Activity Type | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|---------------------------------|---------------|-------------|------|------|------|------|------|------|------|------|------|------|-------|
| | Construction | - | - | - | - | - | 79 | 127 | - | - | - | - | - |
| Design | - | - | - | - | - | 9 | 14 | - | - | - | - | - | 23 |
| Total | - | - | - | - | - | 87 | 141 | - | - | - | - | - | 228 |

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 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

CAPITAL PROFILE REPORT

| | | | |
|-----------------|--|-----------------------|---------------------|
| PROFILE NAME: | ENVIRONMENTAL & COLLECTION SYSTEM MONITORING | PROFILE STAGE: | L1 - Finance Review |
| PROFILE NUMBER: | CM-23-9620 | PROFILE TYPE: | Composite |
| DEPARTMENT: | Financial Services & Utilities - Utilities | PROFILE MANAGER: | Chris Ward |
| BRANCH: | Sanitary Utility | LEAD BRANCH MANAGER: | |
| LEAD BRANCH: | | ESTIMATED START DATE: | January, 2015 |
| PROGRAM NAME: | | ESTIMATED COMPLETION: | December, 2018 |
| BUDGET CYCLE: | 2015-2018 | | |

| | | | |
|------------------------------------|----------------|------------------------------|-----|
| Service Category: Utilities | | Major Initiative: | |
| GROWTH | RENEWAL | PREVIOUSLY APPROVED: | - |
| 55 | 45 | BUDGET REQUEST: | 850 |
| | | TOTAL PROFILE BUDGET: | 850 |

PROFILE DESCRIPTION

Purchase of equipment and infrastructure to support sewer flow, level, water quality and rainfall monitoring including new technology and replacement of equipment as needed. Maintenance, repair, and life cycle replacement of existing equipment
 Incorporation of new monitoring technology
 Design and Construction charges for new monitoring infrastructure
 Out of Scope: software (database), labour, communication charges (phone)

PROFILE BACKGROUND

Edmonton is a growing, developing city yet also with aging sewer infrastructure. There are numerous projects both ongoing and forthcoming related to this, necessitating informed and more accurate and cost-effective decisions and designs regarding Edmonton's sewerage infrastructure design and rehabilitation. Stringency of Federal and Provincial mandated environmental reporting and ISO14001 continuous improvement are also creating an increasing demand and need for data and better quality data. The current monitoring program is limited by existing, old technology and unable to meet demand without efficiencies created by capital improvements or, alternatively, increased staffing, and much equipment is due for replacement. This capital budget is also essential for current operation of the System Monitoring group's mandate.

PROFILE JUSTIFICATION

Improved efficiencies created by capital improvements to the monitoring network will allow for increased capacity to meet growing demand and better data quality. More frequent, automated collection allows for quicker detection and repair of problems, and quicker supply of higher quality data to stakeholders. New methods of monitoring such as rainfall radar will better address flooding assessments and modelling, and in a more timely manner. Stringency of Federal and Provincial mandated environmental reporting and ISO14001 continuous improvement are also creating an increasing demand and need for data and better quality data. The current monitoring program is limited by existing, old technology and unable to meet demand without efficiencies created by capital improvements or, alternatively, increased staffing, and much equipment is due for replacement. This capital budget is essential for current operation of the System Monitoring group's mandate.

STRATEGIC ALIGNMENT

The Way we Green, The Way we Grow and the Way we Finance

ALTERNATIVES CONSIDERED

Internal labour crews or external contractors

COST BENEFITS

operation of the monitoring program
 better quality and availability of data on sewerage system
 ability to meet regulatory reporting requirements

KEY RISKS & MITIGATING STRATEGY

Risks are associated with maintaining the status quo: inability to meet growing demand for monitoring locations and data quality, need to increase staffing levels, less accuracy and cost-effectiveness in supported projects

RESOURCES

Purchasing will be done within the standards set out by Materials Management. Design and Construction follow standards regarding hiring contractors.

CONCLUSIONS AND RECOMMENDATIONS

Benefits are improved cost-effectiveness and function of these sewerage system improvements, which has potentially very high return on this investment, and ability to maintain staffing at current level and improve their safety.

CONTINGENCY OF APPROVAL

CAPITAL PROFILE REPORT

PROFILE NAME: Environmental & Collection System Monitoring
 PROFILE NUMBER: CM-23-9620

PROFILE TYPE: Composite
 BRANCH: Sanitary Utility

CAPITAL BUDGET AND FUNDING SOURCES (000's)

| APPROVED BUDGET | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|--------------------------|-----------------|------|------|------|------|------|------|------|------|------|------|-------|
| | Approved Budget | | | | | | | | | | | |
| Original Budget Approved | - | - | - | - | - | - | - | - | - | - | - | - |
| Current Approved Budget | - | - | - | - | - | - | - | - | - | - | - | - |

| | | | | | | | | | | | | | |
|--------------------------|---------------------------------------|---|-----|-----|-----|-----|-----|---|---|---|---|-----|-----|
| BUDGET REQUEST | Budget Request | - | - | 219 | 225 | 200 | 206 | - | - | - | - | - | 850 |
| | Revised Funding Sources (if approved) | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 88 | 90 | 80 | 82 | - | - | - | - | - | 339 |
| | Self-Liquid. Debent.-Sanitary | - | - | 131 | 135 | 120 | 124 | - | - | - | - | - | 511 |
| Requested Funding Source | - | - | 219 | 225 | 200 | 206 | - | - | - | - | - | 850 | |

| | | | | | | | | | | | | | |
|------------------------------|-------------------------------|---|-----|-----|-----|-----|-----|---|---|---|---|-----|-----|
| REVISED BUDGET (IF APPROVED) | Revised Budget (if Approved) | - | - | 219 | 225 | 200 | 206 | - | - | - | - | - | 850 |
| | Requested Funding Source | | | | | | | | | | | | |
| | Drainage Retained Earnings | - | - | 88 | 90 | 80 | 82 | - | - | - | - | - | 339 |
| | Self-Liquid. Debent.-Sanitary | - | - | 131 | 135 | 120 | 124 | - | - | - | - | - | 511 |
| Requested Funding Source | - | - | 219 | 225 | 200 | 206 | - | - | - | - | - | 850 | |

REVISED BUDGET BY ACTIVITY TYPE (000's)

| REVISED BUDGET BY ACTIVITY TYPE | Activity Type | PRIOR YEARS | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | TOTAL |
|---------------------------------|---------------|-------------|------|------|------|------|------|------|------|------|------|------|-------|
| | Construction | - | - | 50 | 51 | 45 | 47 | - | - | - | - | - | - |
| Design | - | - | 6 | 6 | 5 | 5 | - | - | - | - | - | - | 22 |
| Equip FumFixt | - | - | 164 | 168 | 150 | 154 | - | - | - | - | - | - | 635 |
| Total | - | - | 219 | 225 | 200 | 206 | - | - | - | - | - | - | 850 |

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 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |