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Water Servicing

Definition

Water servicing refers to potable (drinking) water. Regional water servicing focuses on water treatment and major water pumping and transmission systems.

Overview

Potable water is supplied to 12 of the 13 EMRB municipalities by EPCOR Water Services (EPCOR). EPCOR treats water from the North Saskatchewan River at its E.L. Smith and Rossdale Water Treatment Plants (WTP) and pumps treated water to its customers in the City of Edmonton and to its regional customers. The regional customers include the Capital Region Southwest Water Services Commission (CRSWSC), the Capital Region Parkland Water Services Commission (CRPWSC), the Capital Region Northeast Water Services Commission (CRNWSC), Strathcona County, the City of St. Albert, Sturgeon County, and the Town of Morinville. The regional customers are collectively known as the Regional Water Customers Group (RWCG). The relationship between EPCOR and the RWCG is regulated by the Alberta Utilities Commission.

The RWCG members convey treated water to the downstream EMRB and non-EMRB municipalities and other water commissions in north-central Alberta. Approximately 60 municipalities receive their potable water from the RWCG. Each municipality is responsible for its own water storage reservoir and operating the water distribution system. The RWCG meets monthly as a technical committee to review regional issues including management of the transmission systems. In addition, another sub-committee that includes representatives of the customer groups and EPCOR, meets quarterly to deal with issues such as the need for additional pumping capacity, how the transmission system will work with individual reservoirs, management of water during peak demand periods, and coordinated planning between EPCOR/commissions/municipalities.

Devon is the only EMRB municipality (apart from Edmonton) that owns and operates its own water treatment plant. The Devon WTP currently services only the Town of Devon.

Existing Water Infrastructure

Water Treatment Plants: There are three water treatment plants in the Region, EPCOR’s E.L. Smith and Rossdale WTPs, and the Devon WTP. The existing plants can provide the treated water needed in the Region. Water conservation measures are implemented across the Region to minimize the peak water treatment demands, thereby deferring WTP capacity upgrades.

Pumping and Transmission: Water is pumped from the E.L. Smith and Rossdale WTP to the EPCOR transmission main which connect to EPCOR’s reservoirs and the regional transmission systems. The regional customers (water commissions and municipalities) then re-pump the water through commission/municipal transmission mains to regional reservoirs. The capacities of these pumping and transmission systems are adequate for the current demands, and they can be increased by adding pumps and/or twinning the transmission mains to meet future demands.

Reservoirs: There are 37 treated water reservoirs that service the primary residential and industrial developments in the Region (excluding smaller reservoirs servicing small hamlets and country residential areas).

Water Consumption: The average annual per capita water for the Region is 285 Litres per capita per day (L/c/d). This includes both residential and non-residential water use. The average annual residential water use is estimated to be approximately 200 L/c/d. Water conservation, and specifically the use of low flow plumbing fixtures, has reduced the residential water use significantly over the past 20 years.

Current Service Costs

Water is measured on a cubic metre basis, with unit costs including the cost for treatment, transmission, and (typically) storage and distribution. When water is sold from one utility or municipality to another it is on a wholesale basis and excludes storage and distribution system costs. The costs for additional transmission is added when water is re-sold, such as when water commissions sell water to individual EMRB municipalities.

Each municipality sets its own water rates, which typically include both fixed and variable costs based on its cost of service. It is not practical to provide a meaningful comparison of the water rates due to the range in accounting inputs used by the various municipalities.
Summary Observations

- The overall potable water treatment and transmission system is performing well and there doesn’t appear to be any significant constraints to growth within the Region.
- Several entities (EPCOR, the various water commissions and municipalities) are planning and/or constructing new infrastructure capacity to meet forecast growth in their service area.
- There is good sharing of regional water infrastructure (e.g. pumping and transmission mains within water commissions).
- Potable water reservoirs tend to be municipally owned and used to supply local distribution systems; it is therefore not effective to share reservoir capacity on a regional basis.
- There are numerous agreements between the various utility/commissions and EMRB members and non-members; it is understood that these agreements have been created over time when potable water was extended to municipalities and developments based on business cases and/or available grant funding.
- Based on discussions with RWCG representatives, the current administrative level cooperation between the RWCG members and with downstream municipalities and commissions is well grounded but there may be opportunities for improved efficiencies. As the RWCG now supplies water to about 60 municipalities across north-central Alberta, trying to bring all parties together under a new governance structure will be challenging.

For Discussion

The potential for EMRB to work with the RWCG to identify ways to improve operating efficiencies at the administrative level. This could include working with the ACRWC in procurement of materials and services, and reviewing long-term carrying capacity.
Wastewater Servicing

Definition

Wastewater servicing in this study refers to wastewater generated from residential, industrial, commercial and institutional developments. The study focuses on major wastewater transmission and treatment facilities.

Overview

Wastewater servicing in the Region comprises the local collection system, with gravity sewers and local pump (lift) stations, and the large diameter transmission system connection to wastewater treatment plants (WWTP). The local collection systems are operated by the municipality or the municipally owned wastewater utility.

The transmission and treatment infrastructure is generally operated by either EPCOR Drainage Services (City of Edmonton) or the Alberta Capital Region Wastewater Commission (ACRWC). Wastewater from Beaumont, Leduc County and the City of Leduc is conveyed through ACRWC trunks to the EPCOR transmission system in south Edmonton and is treated at the Gold Bar WWTP. Wastewater from the other EMRB/ACRWC municipalities (Parkland, Spruce Grove, Stony Plain, St. Albert, Sturgeon, Morinville, Fort Saskatchewan, and Strathcona) plus two non-EMRB municipalities (Gibbons, Bon Accord) utilize the ACRWC transmission to convey flows to the ACRWC WWTP.

Almost all of the City of Edmonton’s wastewater is conveyed to the Gold Bar WWTP for treatment. A small part of northeast Edmonton is conveyed to the ACRWC WWTP. The only local wastewater trunk servicing more than one municipality is the 34 Street Trunk which services Strathcona County and Edmonton.

Devon utilizes its own WWTP for treating its wastewater. It is currently upgrading its WWTP to accommodate growth including adjacent developments in Leduc County. Devon did investigate the potential for connecting to the ACRWC system, but it was determined to be more cost effective to upgrade its WWTP.

Existing Wastewater Infrastructure and Current Service Capacity

There are three wastewater treatment plants in the Region: EPCOR’s Gold Bar, ACRWC, and Devon.

The ACRWC WWTP has a large footprint that will allow the plant to be expanded to several times its current capacity. The Gold Bar WWTP has a limited footprint to expand outward but, with new wastewater treatment technologies, its capacity can be increased significantly. In a recent joint planning study for the City of Edmonton and ACRWC, the was a decision to utilize the Gold Bar WWTP to accommodate future growth in south Edmonton and the ACRWC south municipalities.

The central part of the City of Edmonton utilizes a combined sewer system (wastewater and stormwater in same pipe) that was constructed prior to the 1950’s. This results in diluted wastewater being discharged to the North Saskatchewan River during larger rainfall events (combined sewer overflows or CSOs). The City (now EPCOR Drainage) has been working to reduce the environmental impacts of CSOs since the 1990’s by increasing the conveyance capacity to the Gold Bar WWTP and increasing the plant’s wet weather treatment capacity. In spite of the Gold Bar WWTP experiencing peak inflows above its wet weather flow treatment capacity, the plant as a whole does have capacity to accept additional wastewater flows and accommodate growth.

Pumping and Transmission

The ACRWC has four wastewater pump stations servicing EMRB municipalities: Parkland County, St. Albert, Morinville and Fort Saskatchewan Pump Stations. A new St. Albert Pump Station was constructed about 5 years ago with capacity for over 30 years of growth. The Fort Saskatchewan Pump Station capacity was recently increased with the twinning of its forcemain. The Morinville Pump Station was recently modified to divert wet weather flows to a storage facility. A similar wet weather flow diversion is planned for upstream of the Parkland Pump Station to accommodate growth in Spruce Grove and Stony Plain.

The ACRWC transmission system includes four trunk systems, the Parkland Trunk, St. Albert Regional Trunk (START), Northeast Regional Trunk (NERTS) and the Southeast Regional Trunk (SERTS)(North and South). Design information and current flows in these trunks are listed in Table 4.3. The ACRWC is in the process of upgrading the Parkland Trunk and START in stages to accommodate growth and address high wet weather flow conditions.
There are four wastewater trunks within the City of Edmonton that convey regional flows:

- SERTS (currently owned by ACRWC) which conveys Beaumont, Leduc County and City of Leduc flows;
- 99 Street Trunk which accepts SERTS flows and conveys them to the Gold Bar WWTP;
- 34 Street Trunk, which is shared by Strathcona County and the City of Edmonton; and,
- Clareview Sanitary Trunk (CST) and Pilot Sound Trunk (PST) which convey wastewater flows from northeast Edmonton to the ACRWC WWTP.

**Existing Service Level**

As noted in the Wastewater Exchange Agreement description above, the City of Edmonton and the ACRWC have established a Level of Service to dictate the maximum allowable flows points of wastewater exchange. The Level of Service is calculated based on upstream population, residential and non-residential areas, and accepted standards for wastewater flow generation and inflow/infiltration rates. If the City of Edmonton, the ACRWC and/or the ACRWC member municipalities are discharging wastewater at a rate higher than the allowable Level of Service, they would be required to reduce flows by temporarily storing peak flows or reduce the inflow/infiltration at the source. The ACRWC has asked its member municipalities to assess its peak wet weather flows and take corrective action if necessary. It is understood that the City of Edmonton and ACRWC flows are currently below the Level of Service at the exchange locations.

**Current Service Costs**

Similar to water, wastewater is measured on a cubic metre basis, with unit costs including the cost for collection, transmission and treatment. As the ACRWC provides both transmission and treatment services, these costs are consistent for the 11 EMRB municipalities that are members of the ACRWC. The ACRWC uses a “postage stamp” rate for transmission and treatment services regardless of the length of transmission services utilized.

ACRWC municipalities add the cost of local wastewater collection to the ACRWC transmission and treatment costs to determine the retail cost for wastewater servicing. Retail customers (residential and non-residential) also incur the billing and other costs as fixed price on their utility bills.

Each municipality sets its own wastewater rates, which typically include both fixed and variable costs based on its cost of service. It is not practical to provide a meaningful comparison of the water rates due to the range in accounting inputs used by the various municipalities.
The Regional Wastewater Exchange Agreement between the City of Edmonton and the ACRWC is servicing the Region well.

The ACRWC’s mandate is to provide service to its members as required, thus they do not use infrastructure capacity to regulate growth.

The ACRWC is upgrading its transmission system to accommodate growth in its member municipalities (most are EMRB members). This upgrading is being staged based on upgrading priorities and ACRWC financial constraints.

The ACRWC is requiring its members to manage the wet weather flows reaching the ACRWC transmission system through inflow/infiltration reduction and/or wastewater storage. This will result reserve capacity in the ACRWC transmission system and treatment plant to accommodate additional growth.

The recent decision to connect the South Edmonton Sanitary Sewer to the Gold Bar WWTP will result in lower overall servicing costs by eliminating over $100M in planned capital expenditures. This will also provide predictable wastewater system flows to both the Gold Bar and ACRWC WWTPs.

For Discussion

The wastewater systems in the Region appear to be working well, with very good collaboration between EPCOR and the ACRWC. Continued collaboration, including regular joint planning meetings, will be important moving forward.
Stormwater Servicing

Definition

Stormwater servicing refers to the collection, conveyance, storage and discharge of stormwater runoff. The study focuses on regional stormwater servicing.

Overview

Stormwater servicing in the Region comprises a combination of local storm sewers, trunks and ditches connecting to a stormwater management facility (SWMF), which discharges to a receiving water body (lake, creek, or river) via storm trunk or major ditch. Areas developed prior to the 1980’s would typically not have a SWMF based on the design standards at that time. SWMF store peak flows from rainfall or snowmelt events and release them at pre-development rates to mitigate the impacts of development on the downstream receiving water bodies.

Overland flow paths to the SWMF or receiving water body, were incorporated into design standards in the 1980s. The overland or major drainage system manages the depth of ponding in urban areas to minimize flooding risks.

As stormwater runoff from development is generally discharged to the same receiving water body as under pre-development conditions, stormwater servicing tends to be localized. As a result, there is a relatively limited amount of stormwater infrastructure that could be considered regional in nature.

The key issue for stormwater servicing in the Region is the cumulative effect of development on the existing creeks and on the Sturgeon River. The North Saskatchewan River has a large assimilative capacity and thus can accept large volumes of stormwater runoff (controlled to pre-development rates). However, cumulative effects of development on the creeks and Sturgeon River is an increase in erosion, even with SWMF controlling discharges to pre-development rates. This is due to the increase in annual runoff volume with urban development. The increase in erosion is exacerbated by the development that occurred in the Region prior to the 1980’s, where stormwater was discharged uncontrolled to the creeks, which resulted in much higher peak flows. The downstream reaches of Whitemud/Blackmud, Mill, Fulton, and Gold Bar Creeks have well documented erosion issues.

Stormwater quality is another area of concern across the Region. Stormwater runoff is known to have a number of contaminants that affect the aquatic habitat of receiving water bodies, including total suspended solids (TSS). If properly designed, SWMF (wet ponds and constructed wetlands) provide most of the stormwater treatment needed. Current provincial design guidelines require new developments to manage stormwater quality to protect downstream receiving water bodies. Several municipalities are proactively upgrading their stormwater drainage systems to minimize the stormwater quality impacts from previous developments.

Alberta Environment and Parks (AEP) is the regulator for stormwater discharges to receiving water bodies. This includes working with municipalities to establish pre-development discharge rates from SWMF and management of stormwater quality. Municipalities work towards compliance with this regulation.

The only area of federal jurisdiction for stormwater is near existing airports where stormwater management facilities need to be designed so as to not attract birds. This is a significant constraint within the Edmonton Energy and Technology Park which is adjacent to CFB Edmonton. This presumably will be an issue as development occurs in the vicinity of the Edmonton International Airport.

Existing Stormwater Infrastructure

There are no regional SWMF that service multiple municipalities in the Region. This is due to the local nature of stormwater drainage systems.

There are no regional stormwater trunks servicing multiple municipalities in the Region. The Fulton and Mill Creek Tunnels within the City of Edmonton do convey flows from Strathcona County to the North Saskatchewan River, but these trunks were not installed to provide stormwater servicing for the County.

There are a few drainage ditches that service multiple municipalities, but none of them can be considered to be regional in nature servicing new developments from multiple municipalities.
Lakes, Creeks, and Rivers

While lakes, creeks, and rivers are not necessarily considered to be stormwater infrastructure, they are critical components of the overall stormwater drainage system. The key lakes, creeks and rivers that impact regional stormwater servicing include:

- The North Saskatchewan River;
- The Sturgeon River drainage system, including Big Lake, Atim Creek, and Carrot Creek; and,
- The Whitemud Creek drainage system, including Blackmud Creek, Irvine Creek, LeBlanc Canal, and Deer Creek.

The downstream reaches of the Whitemud, Blackmud, Mill, and Gold Bar Creeks currently have erosion issues, due to uncontrolled stormwater discharges from development prior to the 1980’s and increased annual runoff volumes from lands developed since the 1980’s. A number of creeks in the Region are prone to flooding during large storm events, again due to the combination of uncontrolled discharges and an increase in the runoff volumes.

Current Service Costs

As stormwater is not a commodity that is used or generated by customers, it is not measured on a cubic metre basis. Stormwater runoff volumes and discharge rates are proportionate to the annual precipitation (rainfall and snowmelt), the surface area being drained and the imperviousness of the area (percent that runs off versus infiltrates). As the amount of precipitation is not controllable, stormwater costs can be measured based on the drainage area and percent imperviousness.

The majority of funding for stormwater infrastructure in the Region is from private development, either with the developer front-ending construction costs or through an off-site levy or similar system. This includes the local storm sewers, SWMF, stormwater trunks and outfalls. Larger stormwater projects are occasionally constructed by the municipality or stormwater utility, with costs recovered from development through off-site levies, and other mechanisms.

The City of Edmonton, City of St. Albert, and Strathcona County have stormwater utilities that use utility revenue to operate, maintain, and upgrade their stormwater drainage systems. Other municipalities use general revenue.

Regional Map
Summary Observations

- There are no stormwater drainage facilities (SWMF, trunks, and major ditches) within the Region that can be considered to be regional in nature.
- The key aspect for regional stormwater servicing are the natural drainage systems, including Big Lake, the Sturgeon and North Saskatchewan Rivers, and approximately 10 to 15 key creeks that drain to them.
- There does not appear to be a strong need for developing regional stormwater infrastructure to facilitate development. The only exception to this would be portions of the Whitemud/Blackmud Creek system where existing creeks (e.g. Irvine and Deer Creeks) are very shallow and prone to extensive overbank flooding which could severely impact the developable lands.
- Stormwater system planning in the Region has historically been done on an ad hoc basis, typically focusing on a specific development area or individual creek watershed. As a result, the various municipalities have developed a range of stormwater design criteria (e.g. SWMF release rates) and service levels.
- Intermunicipal cooperation for stormwater system planning has improved in recent years, and there are a number of examples where joint planning studies have developed consistent design criteria across municipal boundaries. This includes the Big Lake watershed (Parkland County, Stony Plain, Spruce Grove, Edmonton, St. Albert and Sturgeon County) and the Whitemud/Blackmud Creek watershed (Edmonton, Leduc City/County, Beaumont and Strathcona County), and the Mill, Fulton, Gold Bar, Clover Bar and Aurum Creek watersheds (Edmonton and Strathcona County).
- Several creeks in the Region have erosion issues due uncontrolled stormwater discharges from development and an increase in the annual runoff volume. This may include considerations for climate resiliency and risk mitigation.
- Stormwater runoff tends to deteriorate water quality in the receiving water bodies. Some monitoring of water quality in the creeks has been carried out, primarily by the City of Edmonton (now EPCOR Drainage). Properly designed SWMF can provide effective treatment for stormwater runoff.

For Discussion

Potential discussion for water servicing within the context of the MRSP are listed below.

- Stormwater drainage planning should consider SWMF release rates and other design criteria, erosion and sedimentation, flooding, protection of riparian areas, establishing environmental reserves, and stormwater quality monitoring.
- Coordinated drainage system planning across the entire Region should be considered (limited to lake, river and creeks where watershed boundaries cover multiple municipalities).
- Joint stormwater drainage planning across municipal boundaries should become standard practice across the Region at a watershed level.
Transportation Servicing

Definition

This study focuses on regionally significant roadways as identified in the Integrated Regional Transportation Master Plan (IRTMP), completed by the EMRB in 2011. The EMRB’s IRTMP identifies regionally significant roads as linking municipalities, major destination centres, and employment centres as well as providing access to air and rail. Roadway concerns outside of the IRTMP are not considered. The following key observations relate to roadway classifications, air transportation, rail transportation, goods movements and existing transportation concerns. A map of regionally significant roadways is provided below.

Overview

The EMRB 2018 Regional Transportation Priorities was approved on June 14, 2018 by the EMRB and identified the following: Projects Ready for Construction, Ready for Design, and Functional Planning or Study.

The 2018 Transportation Priorities Report represents the fifth year that priorities have been established. It is important to recognize and celebrate the success of the collaborative effort in attaining funding and completing projects. It has been demonstrated that the Priority Lists are being used by the members and the Province in planning and building future regional transportation infrastructure. Accordingly, some of the regional successes are listed below:

- Campbell Regional Park and Ride;
- Commencement of construction of the SE-LRT (City Centre - Mill Woods);
- Highway 37/825/15 Intersection Improvements to commence;
- Commencement of functional plan for new Northeast River Crossing;
- Twinning of east and west ends Highway 19 commenced;
- Highway 15 bridge twinning over North Saskatchewan River commenced;
- Heritage Valley Park and Ride;
- Fort Saskatchewan Park and Ride; and,
- QEII Highway widening on southbound lanes to Highway 19.

Regional Map
Summary Observations

Roadway Classifications
- Arterial roadways vary across the Region; setting a single regional design standard for arterials across the Region is contradictory to their intention.
- The EMRB roadway classifications system can be challenging to implement where there is provincial jurisdiction as the province uses different classification systems for the same roads, with different access management requirements.

Air, Rail, and Goods Movement
- The majority of air transportation in the Region includes airports operated by the Edmonton Regional Airports Authority, which operates two airports, the Edmonton International Airport (EIA) and the Villeneuve Airport.
- The Villeneuve Airport has seen growth, since 2011, potentially absorbing some of the air transportation demand with the closure of the City Centre Airport.
- The EIA, City of Edmonton, City of Leduc and Leduc County are jointly pursuing opportunities for Airport City, recently completing a viability study and identifying four priority areas to consider.
- The EIA is expecting to grow from 8 to 13 Million Annual Passengers, by 2035. To support growth, the airport plans significant expansion of passenger terminals, cargo facilities, business aviation facilities, additional parking and ground transportation services and a third runway. The EIA’s future success in sustaining its growth requires coordination of their plans and aspirations with regional transportation initiatives.
- Heavy loads travelling between the north and south EMRB areas require an approximate 400 km detour as the closest North Saskatchewan River Bridge able to accommodate heavy loads is located 200 km east, near Two Hills, Alberta. The Northeast River Crossing, planned between Highway 21 and Highway 15, north of Edmonton, would have provided a much closer connection, but was recently cancelled.

The EMRB has recently signed a Memorandum of Understanding to collaborate with Alberta Transportation within the Region. In addition, there may be some shared maintenance partnerships for adjoining roadways between adjacent municipalities. Overall, Alberta Transportation owns and operates most highways that are outside of cities within the Region. Through cities, the relevant municipality owns and operates the highway.

For Discussion
- EMRB needs to resolve access management issues between their roadway classification and Alberta Transportation’s roadway classifications. Planning roadway access to new growth is challenging with two different jurisdictional definitions of where access is allowed to regional highways.
- EMRB requires a substantial improvement to the high/heavy loads routes to allow north/south movement across the Region. The lack of a direct route affects collaboration between industrial, manufacturing and commercial areas north and south of the North Saskatchewan River.
- EMRB should collaborate with the regional partners as there are shared interests with the future development of Airport City.
- EMRB should consider addressing transportation improvements that provide a regional benefit or where improvements benefit several of its members. This may include a discussion of a northeast river crossing for heavy load transport.
Transit Servicing

Definition

The focus of this study is intermunicipal transit services offered between EMRB members. As such, local routes are not considered, although intermunicipal routes with connections to local routes are noted. The following key observations relate to intermunicipal services, their service levels, park and ride utilization and accessible transit. Existing intermunicipal transit routes are provided in the regional map below.

Regional Map

Summary Observations

Existing Transit Network

Seven of the thirteen EMRB members operate intermunicipal transit routes.

The most common destinations of the intermunicipal services are the Northern Alberta Institute of Technology (NAIT), Century Park Transit Centre, MacEwan University, Downtown Edmonton, University of Alberta (U of A), Government Centre, and Edmonton International Airport (EIA).

All members offering transit connect to at least one City of Edmonton Transit Centre. Spruce Grove is the only member providing a transit connection to an area outside of Edmonton (Acheson).

Transit Service Costs

Costs for intermunicipal transit vary from $3.25 to $9.50, depending on the origin. The costs of transit is generally consistent with the trip length, but there are some inconsistencies.
Of the seven members offering intermunicipal transit, St. Albert and Strathcona County are the only ones that include the costs of Edmonton Transit Service (ETS) fares in their pricing. Not requiring additional ETS fares makes transit more convenient, but adding it into the pricing is potentially more expensive depending on the transit user.

The Universal Transit Pass (U-Pass) provides unlimited travel on all regular Edmonton, St. Albert, Strathcona County, Fort Saskatchewan, Spruce Grove, and Leduc Transit Service.

The U-Pass applies to students at participating institutions, including the U of A, MacEwan University, NAIT, and NorQuest College.

**Service Levels**

EMRB members provide transit services as an affordable and accessible transportation option for their citizens. The measures of success of a transit system vary greatly between members as each has differing goals and resources.

Scheduling service level is based on the total hours a transit route is in service. Frequency service level is based on peak hour bus headway (minutes between service).

The majority of transit services operate between 4 and 12 hours daily. Transit that operates for more hours of the day is more convenient for passengers, allowing more flexibility in their daily schedules and provides a level of comfort that transit will be available in emergencies.

Frequency service levels for all intermunicipal routes range 15 – 60 minutes between stops. The average frequency service level is 21 – 30 minutes between transit services.

Higher utilization is on intermunicipal routes that stop at the University of Alberta, MacEwan University, and NAIT, likely due to high student ridership and the success of the U-Pass.

Higher utilization was also observed on intermunicipal routes that stopped in Downtown Edmonton, likely because it is a dense employment area with local transit connections, parking costs and/or traffic congestion.

Intermunicipal routes that operate less than 8 hours per day generally have low utilization.

Ridership is generally higher during the AM peak.

**Park and Ride Facilities**

Park and Ride facilities are an essential part of an integrated multi-modal transportation system as they offer commuters in low-occupancy automobiles a convenient connection to local and intermunicipal transit thus increasing the transit mode share.

Park and Ride utilization varies greatly within the Edmonton Metropolitan Region. The majority of Edmonton’s Park and Ride facilities are approaching capacity. Strathcona County’s and St. Albert’s Park and Ride facilities are at or above capacity.

**Accessible Transit**

The following EMRB members: Edmonton, Fort Saskatchewan, Leduc, Spruce Grove, St. Albert, Stony Plain, and Strathcona County offer accessible transit.

Accessible transit services includes trips to local and regional destinations.

The costs of an accessible transit trip to a regional destination varies, dependant on the destination, however the logical range in costs appears to be inconsistent with the trip length, in some cases.

Most accessible transit services require some form of pre-registration to be eligible to book a service. Booking a ride varies by municipality and is either by phone and/or email and/or online.

Accessible transit service providers apply different age thresholds for providing their service, ranging from 16 years old and up to 65 years and up.

ETS Disabled Adult Transit Service (DATS) provides all trip administration services for both St. Albert and Leduc (registration, bookings, complaints, scheduling, and dispatch).
Regional Transit Services Commission

Transit is a changing landscape that is building collaboration in the Region. In October 2018, all 13 members agreed to enter the Regional Transit Services Commission and signed a Memorandum of Understanding, which aims to help the Region by increasing connectivity between communities that ensures the efficient movement of people across the Region. The inaugural Regional Transit Service Commission (RTSC) meeting will be held on January 17, 2019.

For Discussion

The following may apply to the EMRB, but could be offered to the Regional Transit Services Commission for their consideration.

- EMRB should define regional servicing standards for operating transit in collaboration with key stakeholders, transit users and transit operators. Higher servicing standards, with more route frequency and longer operating hours, help make transit a first choice for more users, reducing demands on roadways and supporting growth in the Region.
- EMRB should support service standards with transit priority measures as needed.
- EMRB should also define a standard of service for accessible transit that ensures a consistent approach to booking services, costs and availability for users.
- EMRB should consider implementing a transit fare system allowing transit users to pay for rides more consistently, depending on their origin and destination.
- Park and Ride facilities are at or over capacity for certain EMRB members, which is considered positive from an operator's perspective but can discourage existing or potential users from using transit. EMRB members should collaborate to provide additional Park and Ride capacity where needed.
Solid Waste

Definition

Solid Waste Management describes the collection, transfer and disposal of all solid waste material, including garbage, recyclables, and organics materials.

Regional Map

Summary Observations

The waste management industry continues to evolve. In order to continue to meet the solid waste needs of the Region, service delivery must be delivered in a way that it remains agile, and can change to meet regulatory changes and market constraints.

- Municipalities have moved towards curbside cart collection for garbage and organics, and typically curbside collection of blue bags for recycling.
- The number of contracted service providers operating in the Region has shrunk significantly since 2013, and the majority of services are now provided by GFL Environmental.
- The majority of municipalities continue to operate either transfer stations or recycling depots as part of the municipal service delivery.
- Recycling infrastructure, in particular Material Recovery Facilities, are typically owned and operated privately, with the exception of the City of Edmonton facility.
- Organics processing facilities are typically privately owned and operated, with some exceptions including the Edmonton, Morinville, Leduc, and Fort Saskatchewan facilities.
- Landfills are owned and operated by a Waste Commission or Authority, or are privately owned and operated.
- Recycling collection typically occurs weekly, while organics collection occurs weekly in the summer and bi-weekly in the winter. This collection is mainly contracted to GFL Environmental.
- Garbage collection varies between weekly and bi-weekly collection and primarily contracted to GFL Environmental. Select municipalities are offering depot-style garbage drop-off.
Several municipalities have current solid waste management plans in place.

The Leduc and District Regional Waste Management Authority (Authority) represents Leduc County, City of Leduc, Town of Beaumont, Town of Devon, and Town of Calmar. The Roseridge Regional Waste Services Commission (Roseridge) members are Sturgeon County, Town of Redwater, Town of Morinville, Town of Legal, Town of Gibbons, and Town of Bon Accord. These are the only two bodies currently providing services within the Region.

There are several metrics commonly used in solid waste management systems:

- Percent diversion, also known as diversion rate, is calculated as the weight of materials diverted from landfills divided by the total weight of all waste materials generated. Commonly, percent diversion is determined annually as the total weight of the recycling and organics streams divided by the total weights collected (recycling, organics, and garbage streams). In this study, the data is collected in different ways in each community and so the diversion rates are not considered to be comparable.

- The total expenditure per household serviced ranged from $30 to $420. These expenditures vary significantly due to the municipality size, service levels, internal municipal funding mechanisms, and surrounding infrastructure. There is also no common way of accounting for costs related to solid waste services. This is because each municipality has a different approach to accounting for its total expenditure (e.g. cost sharing between internal departments), different funding mechanisms (e.g. utility vs. pay-as-you-throw fees) and varying solid waste management systems (e.g. owning and operating a processing facility). Care should be taken in comparing cost data between municipalities.

- The regional solid waste capacity is difficult to determine, as a significant part of the solid waste management delivery system is privately owned and operated, and is not under the control of the Region. The development or closure of new disposal or processing facilities is determined by the private companies’ own business plan, and not coordinated according to regional desires.

- There is a noted lack of landfill capacity for construction and demolition waste in the immediate Edmonton area.

- Solid waste communications strategies are different in each municipality. Messages and branding vary, making it difficult for local residents to interface with the solid waste systems from one community to the next.

For Discussion

It is recommended that the Region identify fundamental goals for solid waste management in the future. The idea of waste management success may vary drastically between municipalities, and some goals may be mutually exclusive.

Considerations for the Region include: What are the regional goals as they related to expenditures, service levels, waste diversion targets, sustainability goals, and regional control over the waste management system? Once goals are prioritized, a regional vision can be established, which will provide direction for long term regional planning.

The following steps have been identified as having the potential in the short term to support a move towards a regionalized solid waste management system:

- Establishment of a regional waste management forum where waste issues can be discussed collaboratively, and planning can be done regionally.
- The Edmonton Regional Waste Advisory Committee review and update the Alberta Capital Region Integrated Waste Management Plan completed in 2013. This plan provides a basis for developing a regional approach.
- Adoption of a common accounting method for waste collection and disposal across the Region to allow for comparison of systems and the adoption of best practices.
- Agreement on common metrics of success for the solid waste management system.
- Identification of duplication of services and effort, as they align with the regional service vision. In the long term, the goal could be the adoption of a regional approach to the delivery of services to ensure that there is no duplication of services and future waste processing facilities are planned with the Region in mind.

The following steps may be beneficial in the long term, and could be considered when establishing a regional service:

- Adoption of a common contract for waste collection services to ensure that municipalities get the best service from the private contractors. Examine opportunities for aggregating the Region’s contracts and negotiations to get best possible terms for the service.
- Collaboration with private waste operators and landfill owners as part of the regional planning process.
**Emergency Services (Fire)**

**Definition**

Emergency Services means all fire services (e.g. suppression, alarms, and rescue) and emergency medical aid or services (e.g. known by some as medical first response). For the purpose of this report, emergency management, emergency communications/dispatch and ambulance services are not specifically within the project scope.

Note that Emergency Services was included within the EMRB Regulation, and as such was one of the service area requirements for the MRSP by the Government of Alberta. Further, there is no advance presumption nor intent for a specific region-wide solution of Emergency Services. An additional context for this section is that Emergency Services in the Region vary significantly and the following data and information may not ensure the full context of any given Emergency Services and its comparison or ranking against another service.

**Overview**

**Approach to Data Collection and Data Sources**

The approach to data collection was based on the following:

- Review of publicly available information and documents about EMRB member municipalities Emergency Services;
- Preparation of a structured and consistent MS Excel data collection tool based on the project scope, direction from the MRSP Advisory Group and input from the EMRB Administration;
- Email correspondence to all EMRB members requesting submission of data; and,
- Email and telephone call validation and clarification with EMRB members based on the submissions, as required.

Some of the key challenges anticipated for the environmental scan were:

- Varying terminology about Emergency Services (fire);
- Varying service delivery models;
- Varying service levels; and,
- Varying data and information availability, details and currency.

The sources of data include the following:

- Edmonton Metropolitan Region Growth Plan (e.g. population projections);
- Alberta Municipal Affairs: Municipal Profiles (e.g. total hectares and equalized assessment); and,
- EMRB municipalities’ data submissions for this project.

This environmental scan has specifically avoided making comparisons or rankings of Emergency Services based on variance in service capacity, service capabilities or other per unit measurements.

**Summary**

Like much of Canada and Alberta, EMRB municipalities have significantly varying geographic areas, populations and development patterns that impact the delivery of Emergency Services. Service delivery is also influenced and driven by other factors including – community risk, growth, service requirements, and resources (i.e. human and financial) and/or ability to pay.

The term “services” have varying interpretations and application within Emergency Services in the Region. While “fire services” and “emergency medical services” are typical, these are rather broad phrases, and do not adequately reflect important differences in these services and certainly do not reflect differences in service levels, service capacities nor service capabilities.

The term “agreement” while relatively clear can be found in a variety of forms in Emergency Services (Fire) including fire mutual aid, emergency management mutual aid, fire service agreements (e.g. fee for service). These agreements are typically amongst municipalities, for a select group of municipalities, with the Government of Alberta and/or with other entities.

Service costs are one of the most complex and varying elements for Emergency Services (Fire) within the Region. Service costs are typically offset by some form of revenue, reserve funding and/or municipal tax levy.
The following context of each municipality provides an initial basis to understanding the Region.

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Note: Member municipalities in bold red are essentially career or full time departments.

Regional Map
The Regional Map illustrates known fire stations in the Region, including those in both EMRB member municipalities and non-member municipalities. The map includes fire stations owned and/or operated by the member municipality and thus the illustration may not reflect the specifics of service agreements for and by any member municipality. Some fire stations of industry and other entities (e.g., First Nations) have not been assessed or included within this figure. This illustration reflects the known staffing configurations based on primarily full time versus primarily paid-on-call.

Summary Observations

The following observations have been made by the consultant based on research and the input from the EMRB municipalities:

- There is no single strategy (e.g., Regional Fire Master Plan), single set of infrastructures (e.g., fire stations, apparatus) nor single processes (e.g., recruitment, standard operating procedures) for Emergency Services (Fire) in the Region.
- Emergency Services (Fire) terminology varies across the Region. One example is Emergency Medical Services (EMS) which may mean simple standard first aid (e.g., medical first response) to one municipality while to another it is advanced life support and the provision of ambulance services.
- There is a wide variance in the level of available data for services. Some municipalities have specific data details while others tend to aggregate data or in some cases simply do not gather and assess certain data and information.
- All members provide (or contract) emergency services in different municipal contexts and urban/rural environments within the Region. These contexts vary from full time (also known as career departments) to paid-on-call (also known as volunteer departments).
- Typically, Counties have large geographic areas of responsibility that by their nature have response challenges and are primarily served by paid-on-call service models.
- Generally, fire services assets (e.g., fire stations, apparatus, and equipment) and staff are locally based.
- Some members provide emergency communications/dispatch services to one or more municipalities. All municipalities play a major role in emergency management within their respective municipalities, a sub-region, and/or the Region.
- Some EMRB municipalities provide ambulance services to the Region on behalf of Alberta Health Services. Of the 13 member municipalities, 5 have primarily a true career or full time staffing configuration and of those 4 also provide ambulance services for Alberta Health Services. The provision of ambulance services has a significant impact on call volumes, response times, staffing numbers and service costs.
- Many municipalities have various fire specific mutual aid or service agreements within a sub-region or the Region. While some services are provided outside a local jurisdiction – assets, service capacity and service costing are primarily local for most municipalities. City of Edmonton Dangerous Goods are deemed as regional in intent; Services with Dispatch or Ambulance are deemed to be sub-regional in intent.
- Comparing or ranking municipal Emergency Services (Fire) (e.g., cost per call or calls per firefighter) should be cautiously approached at this point as there are no well-defined benchmarking criteria. Further, direct comparisons for urban versus rural-oriented fire services require a more extensive information collection and analysis given factors such as – ability to pay, geographic areas and distances, full time versus paid-on-call staffing configurations, service levels, and service targets.
- The topic of service costs for Emergency Services (Fire) is extremely complex and influenced by local accounting policies and practices including funding sources (e.g., municipal levy, grants, reserves, chargebacks or fee for service agreements). Further, understanding fixed assets, both in terms of current inventory and future needs or investments, will require extensive data collection and harmonization if there is any intent to establish per unit measures and comparisons.
- Typically, most members subsidize the services through municipal levies, grants, and fees for services. Generally, those members providing ambulance services tend to have a cost recovery basis for those services.

Some key observations were identified by Fire Chiefs (or designates) in an October 2, 2018 meeting to discuss the draft environmental scan. These observations are summarized following and are intended to illustrate the breadth of some of the challenges and opportunities for Emergency Services (Fire) in the Region from these Chief Officers’ perspectives:
Emergency Services (Fire) have evolved in the Region and Alberta based on changing legislation (e.g. repeal of Fire Protection Act, ambulance services falling under Alberta Health Services), regional development, risk, emphasis on fire prevention, and fiscal realities.

Regional collaboration by Emergency Services (Fire) continues to improve; however, some of this collaboration is informal and fragmented. This collaboration has included the following areas – recruitment, procurement, training, equipment sharing, and service coverage. There have been some occasions where a willingness to collaborate between services is constrained by corporate processes and policies. There is a strong interest and desire to further enhance collaboration on a regional and sub-regional basis to make the Region stronger.

There is significant diversity in services, service levels, and service targets for the municipalities within the Region.

There is consensus that there are increased fiscal pressures on municipalities specifically in the areas of facilities, apparatus and staffing.

In alignment with the Growth Plan, growth and densification will have impacts on community risk and Emergency Services (Fire) delivery.

There is an increasing need to consider the influences of labour relations and associated collective agreements on services (e.g. migration to full time or full time elements of staffing configurations) and collaboration or agreements between municipalities.

The gathering and compiling of quality data are paramount to understanding the current state and future needs including the need to spatially represent information on a regional basis to support consistent and common reporting.

Going forward, EMRB municipalities should consider opportunities to further explore service delivery models, recruitment, procurement, equipment and facility use, agreements and many other regional and sub-regional needs.

For Discussion

The following are some potential considerations for Emergency Services (Fire) within the context of the MRSP.

EMRB municipalities should determine what the future opportunity or intent of a servicing plan is for Emergency Services (Fire) prior to further data and information gathering and analysis (e.g. future needs assessment).

EMRB municipalities should embark on the development of a shared glossary so as to better define terms and acronyms for the purposes of regional collaboration for Emergency Services (Fire). Ideally, a Working Group of Fire Chiefs (or designates) is needed to ensure that the right subject matter experts can collaborate on this service area for the whole of the Region within the context of the MRSP.

EMRB municipalities should develop a shared and well-defined fire services inventory supported by a glossary for the reporting of fire services statistics (e.g. calls, response times, costs, and assets).

MRSP related regional initiatives (e.g. governance, shared services) on Emergency Services (Fire), should have a comprehensive assessment and analysis.

EMRB municipalities may consider identifying future local, sub-regional and regional major investments and Fire Master Plan priorities and then sharing those to better understand opportunities for consideration at a regional level.