

## 2018 Business Plan: Engineering Services

### 1. WHO ARE WE: DEPARTMENT OVERVIEW

#### 1.1 Engineering and Capital Construction

- Maintains and upgrades infrastructure, develops infrastructure asset management reporting structures and establishes long term sustainability initiatives for infrastructure, researches and develops strategies related to the management of new, rehabilitated, expanded or otherwise altered assets.
- Plans and delivers the County's Capital Infrastructure Program including constructing and/or upgrading roadways, bridges, water, wastewater, stormwater, overland drainage and storm pond infrastructure.
- Manages land assets for various Engineering programs including the following activities:
  - Land Acquisition/Disposal
  - Land Registration
  - Lease and Utility Agreements
  - Rights of Entry
  - Road Closures
  - Access Management
- Develops, improves and amends the County's Engineering Standards and Practices on an as needed basis including the provision of support and resources to internal business areas, such as Development Engineering, to assist with engineering based decisions.
- Oversees the Local Improvement Program and the Subdivision Preservation Program for residential subdivision surfacing.
- Administers engineering related matters such as, but not limited to, transportation impact assessments, rail crossings, water and wastewater modeling reports, storm drainage management plans, etc.
  - Includes management of both internal and external agencies (contractors, consultants) required to provide support or deliver on initiatives identified
- Implements, maintains and supports the growth of a Transit network within the County including development of regional and inter-municipal agreements. Review funding options, revenue sources, costs and expenditures of the system. Develop key performance measures for the system and establish long term targets and goals.
- Explores new methods and equipment that may assist in the delivery of services to our rate payers.

#### 1.2 Drainage, Utilities, and Aggregate

- Administers and coordinate the County's overland drainage and storm system maintenance programs, bridge replacement and maintenance, and administration of County gravel resources.
  - Maintain approximately 150 km of licensed drainage courses
  - Maintain over 2,000 km of road allowance ditch drainage
  - Maintain and replace over 12,000 road allowance culverts
  - Maintain and replace 118 bridge and bridge culvert structures
  - Remove beaver dams within County road allowances
  - Explore and develop new gravel resources
  - Manage, extract and reclaim existing gravel resources
  - Inspect and maintain storm water ponds, pipes and lift station infrastructure

- Review, approve, and inspections on third party utilities in County land.
- Provide underground storm water infrastructure locate services as part of the Alberta one-call system

## 2. RECENT ACHIEVEMENTS

### 2.1 Asphalt Overlays

- Subdivision Preservation: Eight residential subdivisions, with an approximate length of 17.5 km, were overlayed by the County's construction team in 2017. Projects that were completed were done on time and below budget. Three projects were deferred to 2018 as part of coordinated work activity with Public Works and prioritization of materials and equipment in 2017.
- Subdivision Local Improvement: Two subdivisions, with an approximate length of 2.1 km, were completed in 2017.
- Grid Road Re-surfacing: Approximately 7.2 km of County grid roads were re-surfaced by the County's construction team in 2017.

### 2.2 Road Construction

In 2017, the following road construction projects were completed:

- Acheson - Hwy 60 & Twp Rd 531A - Intersection Upgrade
- Entwistle – 50<sup>th</sup> Ave – New road construction
- Twp Rd 510 RR49 to RR 51 - Re-construction and widening
- RR 55 - Erosion Control (winter construction)
- Twp Rd 522, RR15 to RR20 - Re-construction and widening
- RR 275, Hwy 627 to Twp Rd 520A – New alignment and reconstruction
- Graminia Rd, RR 271 to RR 273 – Re-construction and widening
- Lakeshore Rd, RR 50 to RR 51 – New alignment and reconstruction
- RR 51, Twp Rd 503A to 504A - Re-construction and widening

To be extended into 2018:

- Twp Rd 532A, Hwy 60 to Morningside – New road construction
  - Additional communication and community collaboration required

### 2.3 Transit

- The Acheson Transit Service pilot project began with one route and one bus stop in Acheson Zone 1 on April 25, 2016. The second phase was rolled out nine months later on February 13, 2017 with a second route and bus stop in Zone 3. Additionally a shuttle service was added to enhance the service and expand to Zone 5.

### 2.4 Drainage and Storm

- The first stormwater lift stations in Acheson were commissioned and are being operated by the County. Successful implementation of SCADA control and monitoring system on lift stations to ensure that they perform as designed and that operators have adequate off-site control and response times to deal with any operational issues that arise 24/7.
- Implemented work request system for drainage issues to facilitate customer service both internally and externally.

- Developed detailed inventory and mapping of County owned stormwater infrastructure which will not only be a valuable tool for County internal activities but also provide the base information for underground storm system locates through the One-Call system.
- Implemented storm water quality testing program which not only established pre-Acheson storm outfall water quality conditions but long term, will monitor surface water quality as part of the County's operation and maintenance programs.

## **2.5 Water & Wastewater**

- Completion of Entwistle wastewater Cured in Place Pipe (CIPP) Project which re-lined approximately 2.3 km of poor condition wastewater mains in the hamlet.
- Acheson Zone 5 Waterloop Project design was completed in 2017 including land agreements and of some utility relocates in preparation for construction in 2018.

## **2.6 Aggregates**

- Winter crushing program completed on time and on budget to supply all County aggregate requirements for 2017.
- Inventory mapping and consolidation performed including an inventory review of existing pits and report on assessed value of all active or inactive pits. This report also outlines financial obligations to reach full closure of pits and reclamation certificates.
- All outstanding 5 year compliance reporting completed.
- Preliminary work completed for next phase of stripping and overburden removal in 2018.

## **3. OPPORTUNITIES AND CHALLENGES**

### **3.1 Long-term Infrastructure Planning and Asset Management**

- Currently developing long-term infrastructure capital & operating plans (10 year and 25 year).
- The long-term infrastructure plan is informed by two major avenues of asset planning/assessment programs:
  - Master planning (Transportation, Water, Wastewater, Storm/Drainage) provides the County with an evaluation of the current service performance identifying infrastructure improvements needed to meet today's service levels (Level of Service Program) as well as looking ahead for future infrastructure needs from a growth perspective (Growth).
  - Condition Assessment Program for all asset categories assesses the current condition state of County owned assets. This allows the County to plan the right rehabilitation at the right time to lower the risk of assets failing or not functioning as required.
- A long-term infrastructure plan ensures Parkland County provides the infrastructure necessary for its residents and businesses, balancing planned work for renewal/rehabilitation versus continuous improvement/growth, while remaining fiscally responsible and sustainable.
- Infrastructure investments are vital to strengthening the economy, creating jobs, and building strong communities in which residents enjoy a high quality of life.
- Long term planning for future years ensures large-scale projects are effectively planned and funded and allows the County to strategically time projects with any anticipated economically driven lower construction costs with timely implementation of corrective actions to maintain desired level of service.
- Already a reporting requirement of some capital grant funding sources, it is anticipated that long term capital and operating plans will not only be mandatory for most funding sources, but also be a requirement from municipalities to annually report with the new MGA updates.

- A long-term plan can support Parkland County in capturing operation and maintenance requirements, helping to identify operational human resource requirements and can assist in minimizing unexpected or deferred maintenance
- This plan can also support collaboration between Parkland County departments, neighbouring municipalities, and other stakeholders

### **3.2 Resource Challenges**

- Engineering Services is affected by numerous projects and activities across the County, with over 50% of the Department's time spent on projects and initiatives initiated by other departments
  - Additional pressure is experienced due to the County's focus on economic diversification and business development activities
  - Cross-departmental collaboration will continue to be encouraged. Engineering Services can best support decision making in cross-departmental activities through updated master plans, condition assessment programs, long-term infrastructure plans, and updated Engineering standards.

### **3.3 Master Plans**

- There are no current or relevant County wide Master Plans for any asset category.
- The County requires the creation or updating of all major infrastructure master plans for Transportation (2018), Water (2019), Wastewater (2019), Aggregate (2019), and Drainage/Storm (2020).
- Long-term planning is currently underway to ensure these plans are adequately resourced, supported, and integrated into departmental long term capital & operational programming.

### **3.4 Offsite Levies**

- The offsite levy model is supported by Engineering through updates to the transportation, water, wastewater, and storm/drainage master plans.
- These plans will outline existing and future infrastructure requirements and will include discussion on phasing and cost estimates.

### **3.5 Engineering design standards**

- Engineering design standards require updating to keep pace with industry best practices, continuously identified amendments, and desired standards.

### **3.6 Transit Program**

- The ridership is below the identified targets. The ridership is trending upwards and as awareness grows so will ridership. Additional marketing and promotion of the service is required by all departments.
- Looking forward to the future of transit service in Acheson, a decision will have to be made on whether the County wants to extend the pilot, formalize the service, or cancel the service.
  - This decision will impact the Intermunicipal Collaboration Committee (ICC) Transit sub-committee, regional transit plan, the current transit position, and Acheson bus routes.

### **3.7 Aggregate Pit Management**

- There is a need to do reclamation/compliance studies on all existing pits 0-20 years old and obtain reclamation certificates on inactive or depleted pits.

- Investigation is needed to determine what is required for opening a new pit, which may be needed within 3-5 years.
- A general overview of existing pit quantities is required.
- Stripping and grading of existing pit is required.
- Outstanding reclamation on depleted pits (Bamber, Brightwood and Berrymoor) anticipated to occur in 2018.

#### 4. LINKS TO PLANS AND STUDIES

##### 4.1 Municipal Development Plan (MDP)

- A large portion of the initiatives and policies in the MDP impact Engineering Services.
- Master plans for infrastructure will be updated based on the adopted MDP update and Land Use Bylaw (LUB).
- Technical Growth Study developed as part of the MDP, as well as the MDP itself, will serve as significant foundation documents for the Hamlet Re-investment Strategy (HRS) as well as for developing the Hamlet Area Redevelopment Plan (HARP) for each Hamlet in priority.

##### 4.2 Integrated Community Sustainability Plan (ICSP)

The ICSP also impacts Engineering Services master and long range planning as well as implementing some of the recommended actions.

##### 4.3 Fire Services Master Plan

Outputs of this plan, especially any new capital projects or expansions, may require Engineering review and input.

#### 5. KEY PERFORMANCE INDICATORS

- Asset Inventory totals, amount of network assessed and Condition Ratings of:
  - Roads
  - Water
  - Wastewater
  - Storm
- Roads- Capital Road Program (km):
  - New constructed
  - Re-constructed
  - Rehabilitated (Re-surfacing)
  - Subdivision Preservation
  - Subdivision Local Improvement
- Transit ridership
- Transit Business Satisfaction

#### 6. PROGRAMS AND SERVICES

- Aggregate
- Asset Management
- Water Systems
- Waste Water Systems
- Storm Water Systems
- Drainage

- Pest Management
- Transit
- Road Construction
- Bridge Files (bridges, large scale culverts)
- Land Management with Road and Utility Right-of-Ways
- Utilities

## 7. KEY AREAS OF FOCUS, PROJECTS AND INITIATIVES FOR 2018

	Title	Summary	Target Start Date and Completion Date (I.e. Sept 2018-Sept 2019)
1	Storm Operations & Maintenance Analysis (Budget Initiative)	Engineering analysis is needed to develop short and long term (current-to-25 years) operation and maintenance (O & M) plans for the County's stormwater system that incorporates industry standards and best practices to ensure the County meets all regulatory requirements. The analysis will look at several O & M philosophies and models with regards to internally resourced versus contracted services and will develop service standards and best practices tailored to the County. Outcomes of this initiative will feed short- and long-range plans for resources, training/certification, equipment and funding to meet the anticipated O&M needs of the County's growing stormwater system.	January 2018- December 2018
2	Stormwater Utility Bylaw - Establishment Study (Budget Initiative)	Baseline review to investigate options for establishing a Stormwater Utility Bylaw in Parkland County. The outcome of this study will allow the County to make informed strategic decisions on whether a storm utility should be established, and if so, how would it be implemented and what are its impacts both financially and operationally.	April 2018- October 2019
3	Aggregate Compliance Review	Complete review of all aggregate pits in the County to define any outstanding or up-coming compliance items to meet provincial requirements. Obligation to do this once every 5 years. Currently not meeting these standards.	January 2018
4	Stormwater Operations and Management (O & M)	In 2018, the County anticipates operating 4 lift stations, 31 County owned storm ponds, Acheson Outfall in addition to older storm infrastructure in the Hamlets and Acheson Zone 3 - Previous direction to use current (2017) operating budget for any O & M required in 2017 was provided	January 2018 – Ongoing

	Title	Summary	Target Start Date and Completion Date (l.e. Sept 2018-Sept 2019)
		as most storm infrastructure not anticipated to come into County's ownership until 2017.	
5	Condition Assessment Program	Expansion of the road condition assessment program to include water, wastewater and storm/drainage infrastructure. Includes wastewater and storm system CCTV (camera) inspections, flow monitoring, and road safety and geotechnical assessments.	
6	Capital Road Program	2018 Roadway construction, maintenance and rehabilitation plan implemented by Engineering Services.	2018
7	Capital Infrastructure Program	2018 includes the following: - design of wastewater lines for increased capacity (construct in 2019).	2018
8	Gravel Pit Reclamation, Stripping and Brushing	2018 includes ongoing reclamation work at Bamber and Brightwood aggregate pits. Additional brushing and stripping is required at Bamber Pit to prepare for 2019 program.	2018