



Swastika WPCP Decommissioning & Sewer System Connection to Kirkland Lake WWTP

Class EA and PreDesign

Project No – 493-16

Public Information Centre

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Wednesday Dec 13, 2017



Be Safe



When walking near construction ... Ask Yourself

Where is it Safe to be ??

Remember ...

Make Eye Contact

Agenda

1. Purpose of this Information Centre
2. Class EA Process
3. Problem Statement
4. Alternatives that were investigated
5. Preferred Solution
6. Next Steps

1. Introduction

Study Team

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Study Lead (Stantec)

Asim Masaud, M.Sc., P.Eng., PMP
Project Manager (OCWA)

Technical Steering Committee

Todd Morgan
Councillor, Kirkland Lake

Samir Ebrahim, M. Sc., P. Eng.
Town Engineer

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Environmental Compliance, Town

Eric Nielson
OCWA NE Regional Mgr

Anthony Danis
OCWA, Sr Operations Mgr

1. Purpose of Public Information Centre

- Ontario mandates that an Environmental Assessment (EA) be completed before the construction of municipal infrastructure
- Must follow the Municipal Class EA process
- Public Consultation is required by the Class EA planning process

Purpose of this Meeting is to explain:

- 1. Why** are we undertaking this project
- 2. What** this project is about
- 3. When** this project will be constructed
- 4. To get input from the Public**

2. Class EA Process

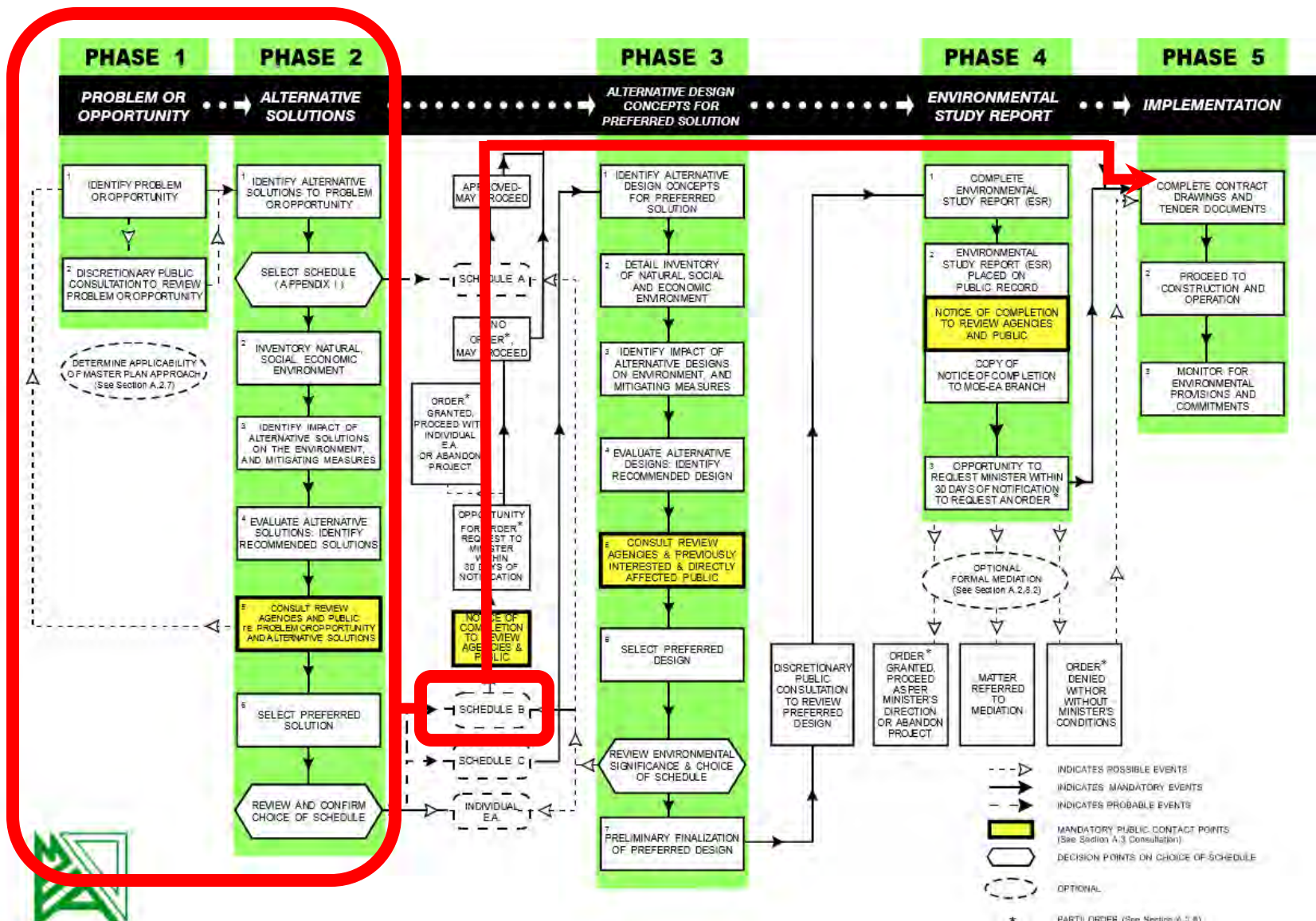
Class EA process consists of (5) Phases

1. Identify the Problem (or Opportunity)
2. Identify and Evaluate Alternative Solutions to address the Problem. Select the Preferred Solution
3. Examine Alternative Design Concepts for the Preferred Solution. Select the Preferred Design.
4. Environmental Study Report
5. Design and Construction

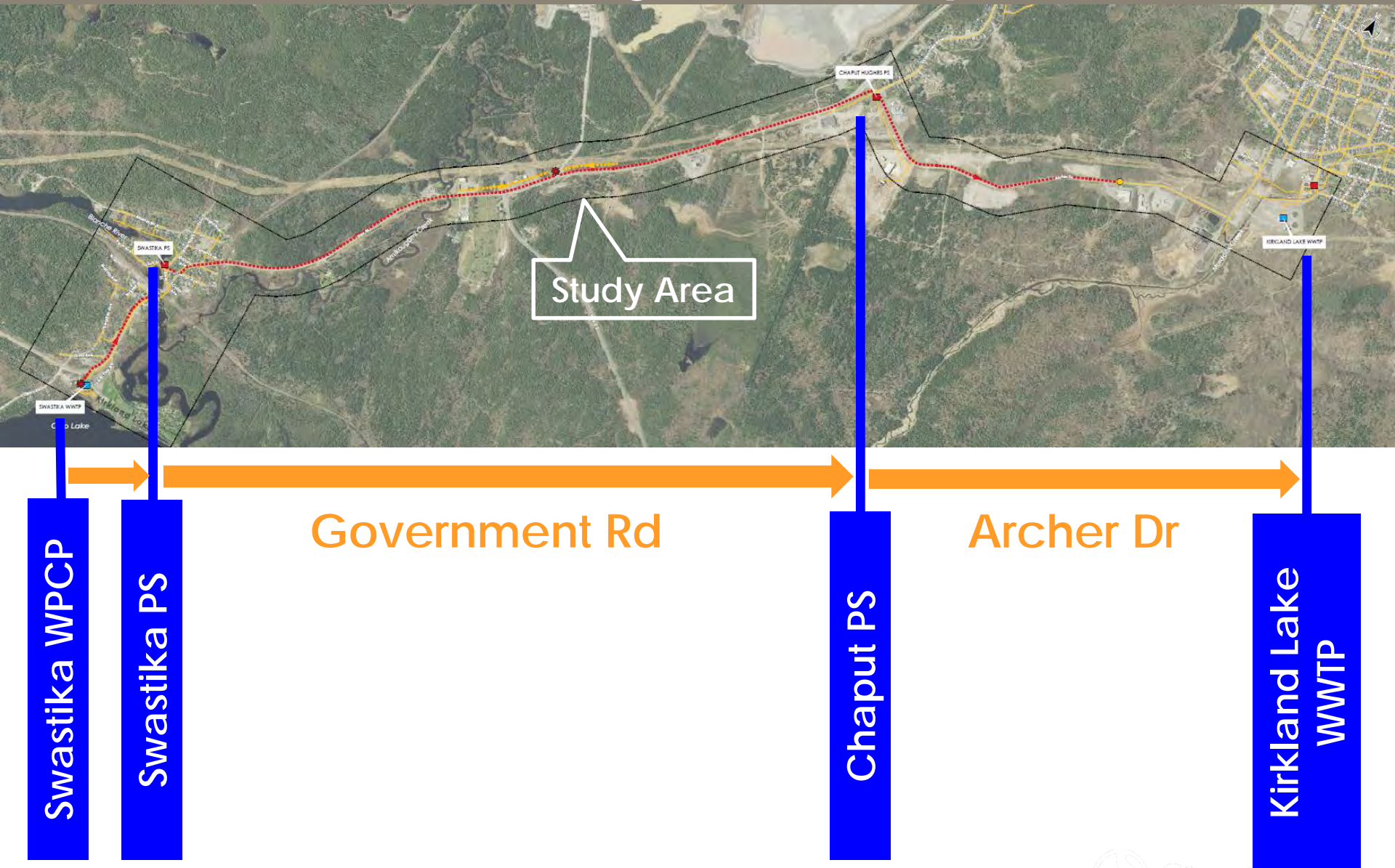
**This is a Schedule B Project
Requires completing Phases 1 & 2**

Part II Order Requests can be made under the EBR, through the MOECC Director

2. Class EA Process



2. Study Area Map



Why we are doing this Project ?

1. In 2014, a condition assessment and energy audit of Swastika Wastewater Pollution Plant (WPCP) identified health, safety, environmental, and financial risks.
2. In 2016, the Town explored solutions, which identified:
 - Keeping Swastika WPCP = \$15.8M, over 20 yrs
 - Proposed pumping to Kirkland Lake = \$9.5M, over 20 yrs
 - Expected savings = \$6.3M
3. In 2016, Town applied for and secured Grant Funding from Federal and Provincial Gov'ts.
 - Total eligible construction value = \$8.2M
 - Federal and Provincial share = \$5.6 (67%)
 - Town's share = \$2.6M (33%)

Why we are doing this Project ?

4. In 2017, the Town initiated this Class EA which is a provincially mandated study, to implement the solution of pumping to Kirkland Lake for treatment.
5. If implemented, this project could save up to \$6.3M, over 20 yrs.
6. Conversely, if the project does not proceed, then these cost savings would be forfeited.

3. Problem Statement

1. Town of Kirkland Lake plans to decommission the Swastika WPCP and pump Swastika's wastewater to Kirkland Lake's wastewater system for treatment;
2. Sanitary service will be extended to existing and new properties along Government Road between Swastika and Kirkland Lake;
3. Swastika's sanitary sewer system will be improved to reduce storm water infiltration and Inflow; and,
4. This will provide environmental and financial benefits to the Town.

The Proposed Solution has to address these (4) items

4. Alternatives

Overall Project consists of the following:

1. Athenia Blvd – Resolve Sanitary Sewer I&I Problem
2. Swastika PS Upgrade
3. New Forcemain to KL
4. Service Properties between Swastika & KL
5. KL Wastewater System - Upgrades
6. Swastika WPCP – Decommission
7. Gravity Flows to WPCP – Redirect to Swastika PS

There are (7) Major Work Scope Components

1 - Athenia Blvd – Resolve Sanitary Sewer I&I Problem

Alternatives to be evaluated:

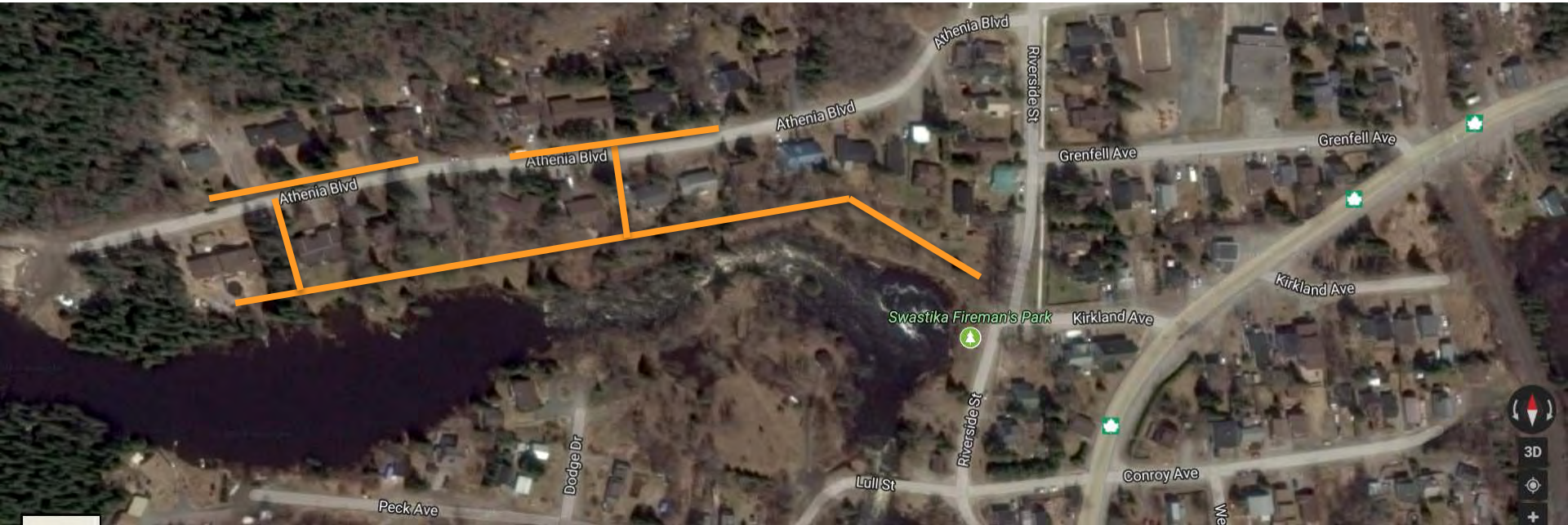
A. Replace Sewer (same route)

- i. Conventional construction
- ii. Trenchless construction

B. Repair Sewer

- i. CIPP (Cured In Place Pipe)

C. New Sewer (new route)



2 - Swastika PS – Upgrade

No alternatives per say, simply the PS will be upgraded:

- New pumps;
- Piping mods for flow meter and 2nd forcemain connection, if needed;
- New control systems with SCADA Capability;
- New electrics and outdoor genset;
- Building refurbishment as needed



3 - New Forcemain to KL

There are multiple Alternatives to consider:

- (2) Routing options (Government Rd vs Gas Line Easement)
- Each routing option has sub-options
- Wide ranging impacts with each option

Slide 15



3A – Swastika PS to Govt Rd

Alternatives to be evaluated:

- i. Re-Use existing Forcemain
- ii. New Forcemain
 - a. Riverside St – Kirkland Ave – Govt Rd
 - b. Riverside St – other street – Govt Rd
 - c. Riverside St – Gas Easement – Govt Rd

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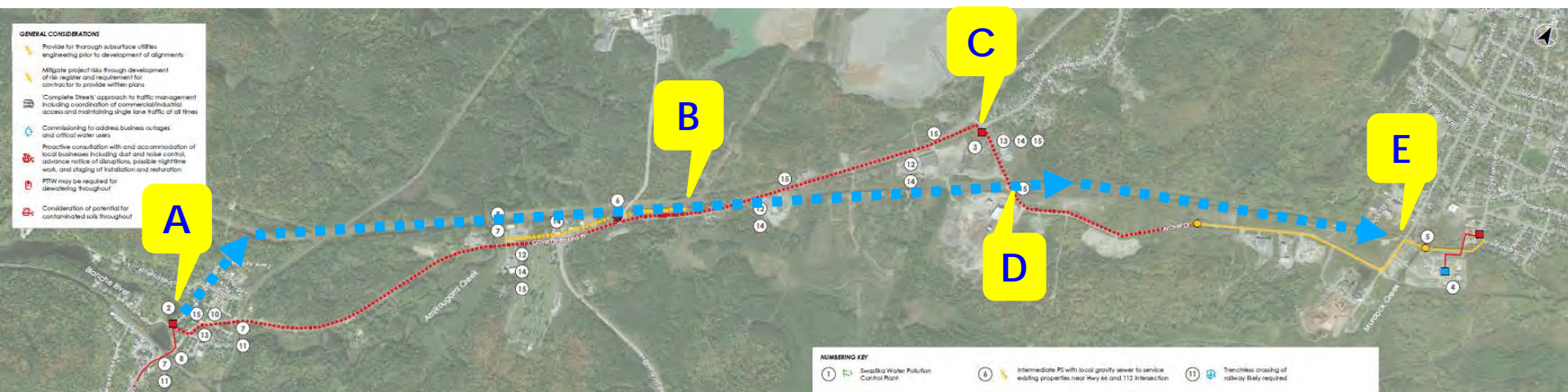


3B – Swastika to KL

Alternatives to be evaluated:

- i. Along Government Rd & Archer Dr
 - a. New Forcemain/Sewer
 - b. Repurpose Existing Watermain
- ii. Gas Easement
- iii. Combination of above with intermediate PS, gravity sewer or forcemain, or repurposing existing watermain

Slide 17



3C - Chaput PS

Alternatives to be evaluated:

- i. Pump to Chaput PS, combine with existing flows,
 - a. Pump thru existing forcemain
 - b. New forcemain to KL WWTP
- ii. Pump directly to KL WWTP

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4 Servicing Properties between Swastika and KL

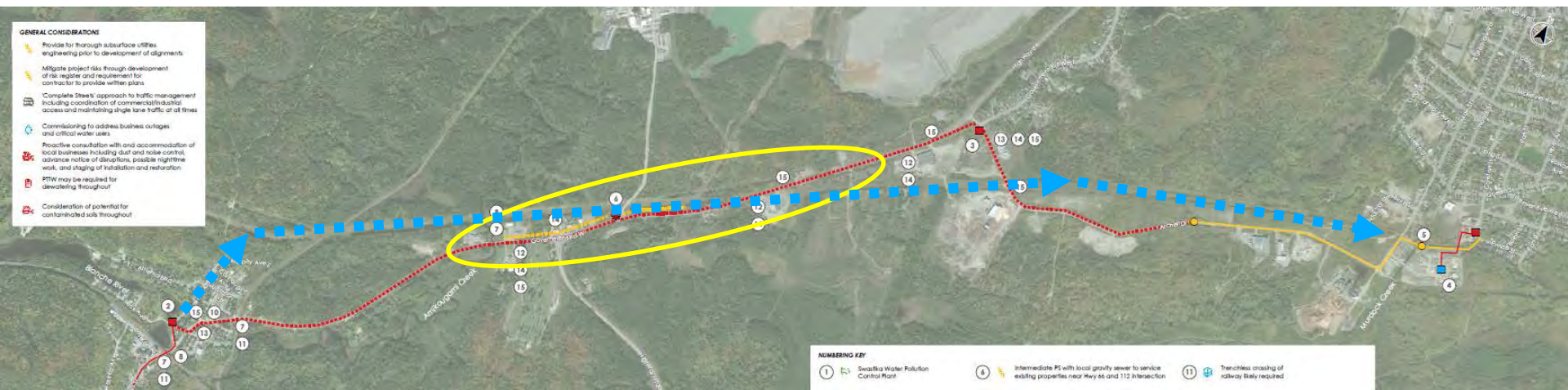
There are (3) Alternatives to consider:

A. Intermediate PS with local sewer

B. Private Drain Connection - Gravity vs Pumped

C. Construct today vs make allowance for future

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5 KL System Upgrades

Depending upon the Preferred Solution selected, upgrades could be required to Kirkland Lake facilities:

- A. Chaput PS
- B. KL WWTP
- C. Sewers leading to KL WWTP
- D. SCADA
- E. Other (ie PS Upgrades, etc)??

Slide 20



6 Swastika WPCP Decommissioning

Existing Swastika Water Pollution Control Plant will need to be decommissioned. Consideration will be given to what to do with the facility:

- A. Demolish the Facility
- B. Repurpose the Facility
- C. Do Nothing



7 Redirect Gravity Flows from Swastika WPCP, to Swastika PS

Existing sanitary flows that gravity flow directly to the Swastika WPCP, will need to be redirected to Swastika PS. The sub-alternatives would include

- A. Modify existing sewers such that flows are redirected by gravity toward Swastika PS
- B. Construct a New PS to pump flows toward Swastika PS
- C. Combination of above, where some flows are redirected by gravity flow toward Swastika PS, and remainder is pumped



Evaluation Criteria for Long-List Review

How might construction or long-term operation cause impacts for the following

Problem Statement	Does it address the Problem Statement?
Archaeological	Archaeological sites or resources Cultural sites, structures, or services
Environmental	Surface water resources Air quality and noise Wildlife and vegetation
Financial	Construction cost (Capital) O&M cost Life cycle cost
Social-Economical	Residents (houses, mobility/driving, services) Commercial Allow for growth Sensory impacts (dust, noise)
Technical	O&M Complexity Risks

Scoring Methodology

Impact Severity		Impact Consequence	
Description	Value	Negative Adverse	Positive Benefit
None	0	0	0
Low	1	(-1)	(+1)
Medium	2	(-2)	(+2)
High	3	(-3)	(+3)

4. Evaluation of Alternatives

Purpose:

- Long List of Alternatives
- Need to reduce or short-list the number of sub-alternatives. Some of these can be easily rejected as being not practical or viable, too risky, excessive impacts, etc.,
- Short-List of Sub-Alternatives will be evaluated in detail

Alternative Evaluation Summary

Alternative Long-List

Summary

Score

Rank

Preferred

1. Athenia Blvd - Resolve I&I Problem

A. Replace Sewer - Replace the existing buried sewer with new pipe. Same route

i. Conventional Construction

-9

4

ii. Trenchless Construction

-6

3

B. Repair Sewer

i. CIPP (Cured in Place Pipe)

-4

2

C. New Sewer (New Route)

-9

4

D. Investigate to confirm source of I&I Source

1

1

Yes

Conclusion - Recent sewer video along Athenia Blvd sewers did not uncover significant I&I. As such, replacing or repairing this sewer might not address the excessive wet weather peak flow event at the Swastika PS. Further investigation will be undertaken in Spring 2018, to identify source of I&I and determine corrective action.



Alternative Evaluation Summary

Alternative Long-List

Summary

Score

Rank

Preferred

2. Swastika PS Upgrade - There are no alternatives to consider, simply the Pumping Station will need to be upgraded. This would generally involve: new pumps; piping modifications for flow meter and 2nd forcemain connection; new SCADA control system; electrical system upgrades and new outdoor diesel emergency genset; and building refurbishment.

Yes

Alternative Evaluation Summary

Alternative Long-List

Summary

Score	Rank	Preferred
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3. New Forcemain to Kirkland Lake

A. Swastika PS to Government Rd

i. Re-Use Existing Forcemain	-1	2	
ii. New Forcemain			
a. Riverside St – Kirkland Ave – Govt Rd	1	1	Yes
b. Riverside St – other street – Govt Rd	0	3	
c. Riverside St – Gas Easement – Govt Rd	-3	3	

Conclusion - Preferred route is along Kirkland Ave. Lowest cost and risk.

B. Swastika to Kirkland lake

i. Along Govt Rd & Archer Dr			
a. New Forcemain/Sewer	1	1	Yes
b. Repurpose Existing Watermain	0	2	
ii. Gas Easement	-9	5	
iii. Combination of above	-8	3	
iv. Combination of above, with Intermediate PS	-8	3	

Conclusion - Preferred route is along Government Rd and archer Dr. Lowest cost and risk.

C. Chaput PS

i. Pump to Chaput PS, combine with existing flows			
a. Pump thru existing forcemain	3	4	
b. New forcemain to KL WWTP	5	1	Yes
ii. Pump directly to KL WWTP	5	1	Yes
iii. Interim solution for New Dev	5	1	Yes

Conclusion - C.i.b, C.ii, and C.iii are technically viable and similar cost, and will be carried forward to PreDesign Phase for technical/financial analysis, to select solution with the lowest life cycle cost.

Alternative Evaluation Summary

Alternative Long-List

Summary

Score

Rank

Preferred

4. Servicing Properties between Swastika and KL

A. Intermediate PS with local sewer	-1	2	Yes
B. Private drain connection - Gravity vs Pumped	-2	3	Yes
C. Construct today vs make allowance for future	2	1	Yes

5. KL System Upgrades - These do not address the problem statement, but need to be taken into consideration for implementing the preferred solution(s). These will be carried forward during the upcoming design phase.

A. Chaput PS			Yes
B. KL WWTP			Yes
(i) Use ex tankage at Old WWTP, to mitigate for excessive wet weather peak flows			Yes
(ii) Use 2nd Train at New WWTP, to mitigate excessive wet weather peak flows			Yes
(iii) Operational Improvement			Yes
C. Sewers leading to KL WWTP			Yes
D. SCADA			Yes
F. San Sewer Use Bylaw Enforcement			Yes

Conclusion - These will be carried forward during upcoming preliminary and detailed design phases.

Alternative Evaluation Summary

Alternative Long-List

Summary

Score

Rank

Preferred

6. Swastika WPCP Decommissioning

A. Demolish the facility

7

1

Yes

B. Repurpose the facility

7

1

Yes

C. Do Nothing

-7

3

Conclusion - Alternatives 6A and B will be carried forward to preliminary design, for a more thorough technical/financial analysis, to select the alternative with the best return of investment.

7. Redirect Gravity Flows from Swastika WPCP, to Swastika PS

A. Modify existing sewers to redirect flows, by gravity

-1

3

B. Construct a New PS to pump flows

3

1

Yes

C. Combination of above

3

1

Yes

Conclusion - Alternatives 7B and C will be carried forward to preliminary design, for a more thorough technical/financial analysis, to select the alternative with the best return of investment.

5. Preferred Solution

Overall Project consists of the following:

1. I&I Problem – Further investigation required
2. Swastika PS Upgrade
3. New Forcemain to KL
 - Swastika PS to Gov't Rd, along Riverside St & Kirkland Ave
 - Swastika to Kirkland lake – Along Gov't Rd & Archer Dr
4. Service Properties between Swastika & KL
5. KL Wastewater System – upgrades as needed
6. Swastika WPCP – Decommission or repurpose. Further investigation required
7. New PS at Swastika WPCP to pump local flows to Swastika PS

6. Schedule

1. Class EA – Complete by February 2018
2. Design – Complete by Fall 2018
3. Tender – Fall/Winter 2018/19
4. Construction - 2019/20

Questions ?

