Irrigation System Strategy

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Agenda

- Communication & Outreach Plan
- Summary of Technical Memos (System Strategy Document)
- 10-Year Action Plan
- Next Steps

Communication & Outreach Plan

Communication & Outreach Plan

- Two (2) public meetings
  - Irrigators AGM (June, 2019)
  - PIC (August, 2019)
- Field tour with IC Chair (June, 2019)
- Consultation with St Davids Hydroponics (June, 2019)
- AMO meeting support (August, 2019)
- Irrigation Committee Meetings (regularly 2019 – 2021)

Stakeholders

- Irrigation Committee Members
- Agricultural Committee Members
- Wineries, Nurseries, Greenhouse Operators
- Public (incl. future potential irrigators)
- Grape Growers Association
- Tender Fruit Board


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Open house held to help flow irrigation system
August 21, 2019 by Jennifer Chorney
News
Grapegrowers Gary Wiens and Stan Lament, fruit farmer Bill Falk, and Michael Cairns, civil designer with Associated Engineering, look over the drainage map. (Jennifer Chorney)

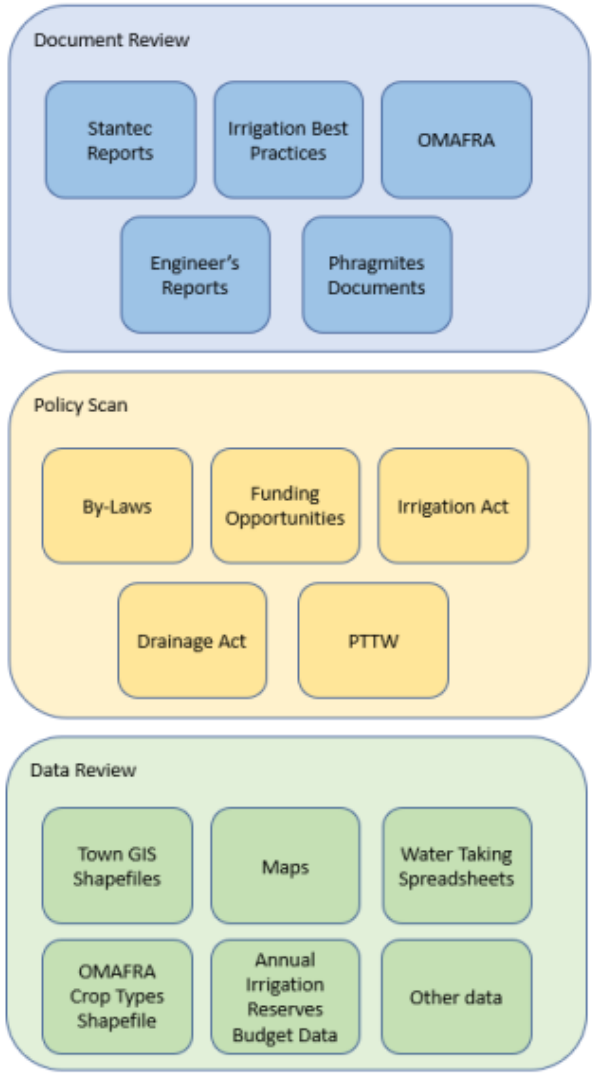
Summary of Technical Memos

TM#1 – Existing Documents Review

Summarizes pertinent data and documents

Findings:

- Although there has been recent expansion of irrigation infrastructure (i.e. Dee Road pumping station) there is significant farm acreage that does not have water security with respect to meeting current and future irrigation needs and water quality
- Limited data available on actual water use, which can be a limitation when evaluating and designing supporting infrastructure and securing PTTW
- System is not automated and requires a lot of on-the-ground work by the Town
- Current by-laws in place restrict the Town from effectively implementing timely infractions

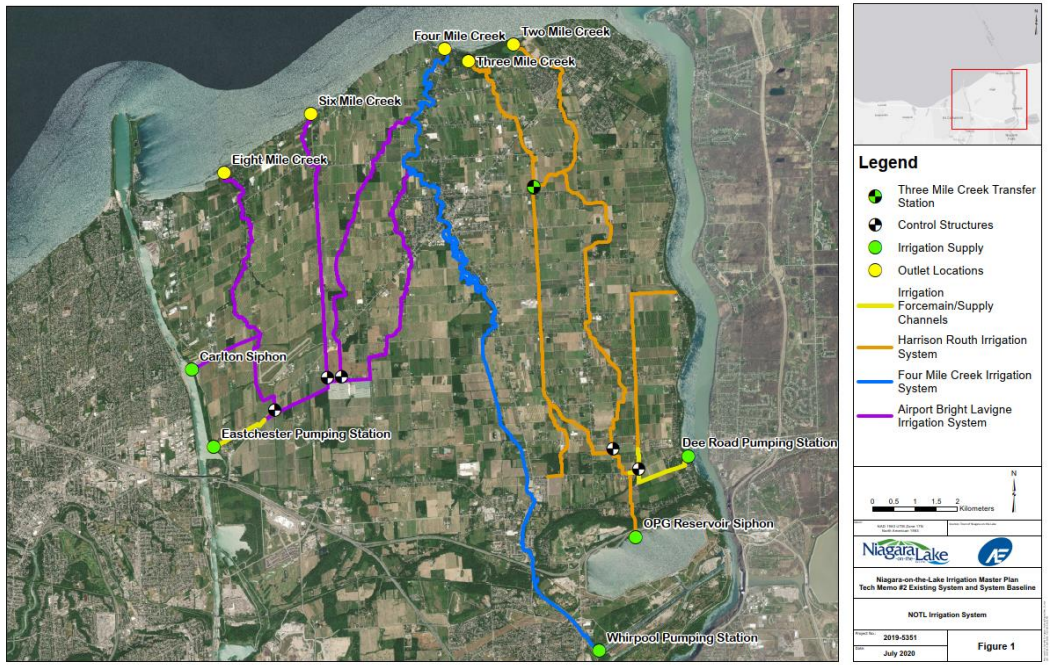


TM#2 – Existing System and Baseline

Characterizes the existing irrigation system and issues and constraints

Findings:

- Channel network serves for both drainage and irrigation
- Existing system cannot deliver water to the whole system when irrigation demands are high
- There may be opportunities for seeking funding that is beneficial to both the drainage and irrigation systems

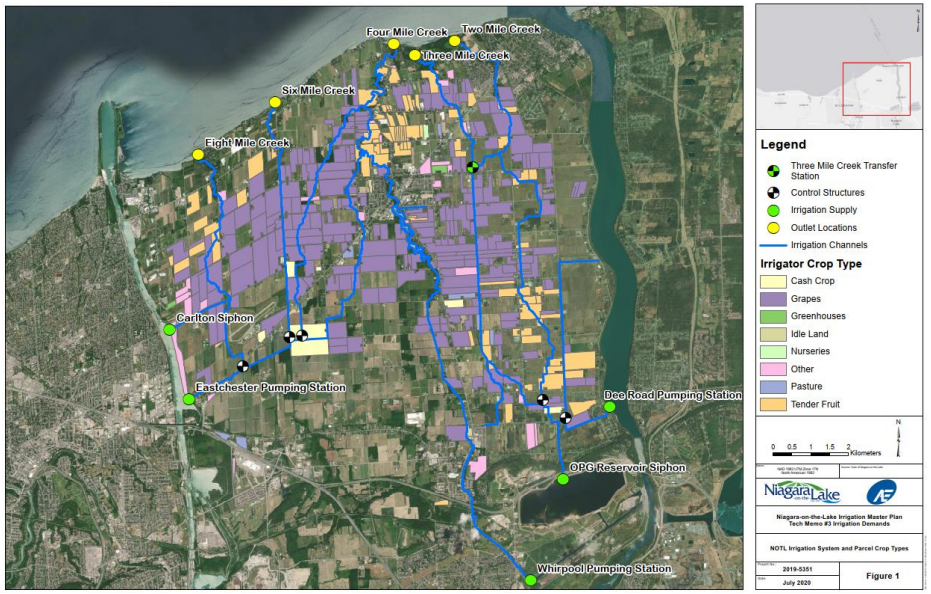


TM#3– Irrigation Demands

Summarizes crop types, application rates, and peak irrigation demands

Findings:

- Two (2) irrigation demand scenarios were carried forward into a more detailed analysis:
  - 1) 51 mm application rate (2 days; every 2wks)
  - 2) 76 mm application rate (2 days; every 2 wks)
- These two scenarios were selected to simulate average irrigation demands and irrigation demands during a 10-year drought, respectively



TM#4– Level of Service Assessment

Summarizes hydraulics model parameters, assumptions, and results (system deficiencies)

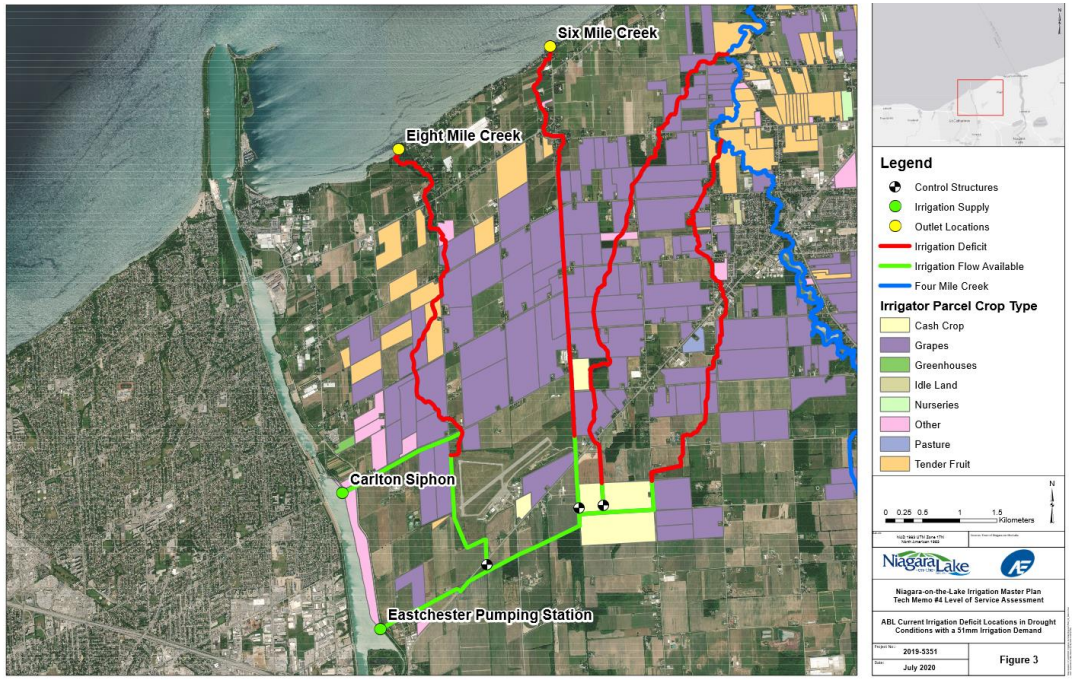
Findings:

- Level of service provided by existing system is inadequate to supply complete system during target scenarios
- Model indicated:
  - Water shortages approximately halfway through the ABL system, compounded by conveyance issues at crossing culverts
  - Water shortages at the tail end of the Four Mile Creek system
  - Water shortages may impact bottom of Harrison Routh system during 10-Year drought conditions

*Assumes water taking is all happening simultaneously

Figure 4 Existing 800 mm diameter culvert crossing beneath Eastchester Avenue

Figure 5 Existing 800 mm diameter culvert crossing beneath Niagara Stone Road

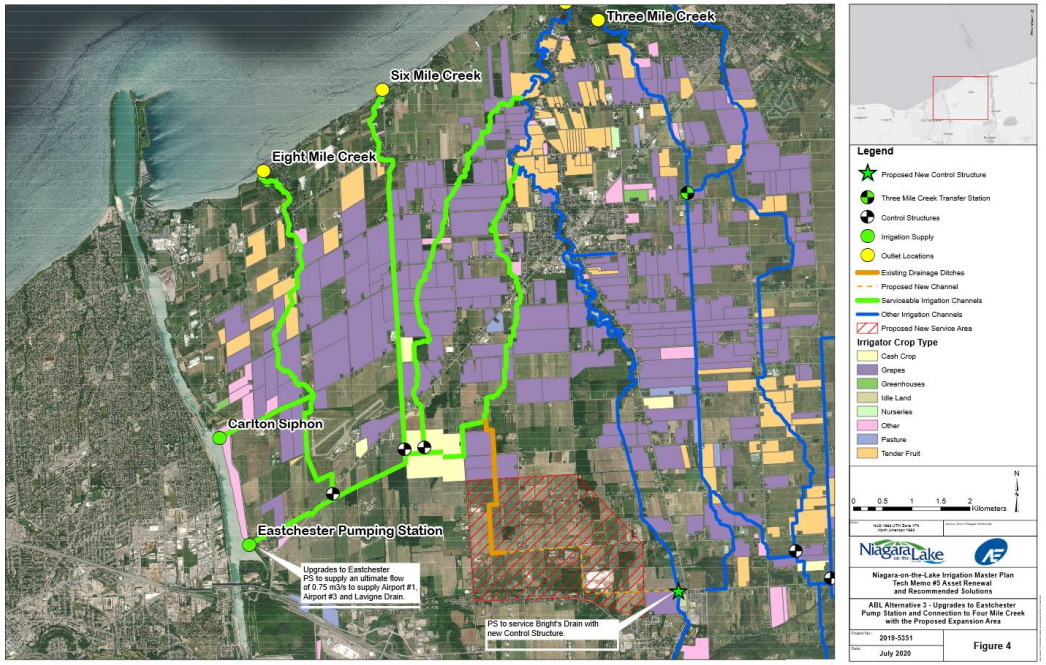


TM#5– Asset Renewal and Recommended Solutions

Summarizes list of potential servicing alternatives for ABL, Four Mile Creek, and Harrison Routh and their performance under the two (2) target levels of service (51mm & 76mm)

Findings:

- Some solutions cannot meet 76mm target level of service within a 2 week cycle
- Oftentimes a combination of alternatives is required
- Town and farmer cooperation is required to implement solutions
- Farmers are responsible for not taking water from the system above their allotment and the Town is responsible for enforcement



TM#5B– Preferred Capital Plan

Summarizes 25-Year Capital Plan

Findings:

- The following goals were identified:

  1) Short term improvements to **meet minimum level of service** for existing irrigators;

  2) Long term improvements to **meet ultimate level of service** for existing irrigators;

  3) Ensure **security of supply**;

  4) System improvement and **expansion** to provide opportunities for future irrigators;

  5) **Sustainability** to maintain assets.

- 25-Year Plan is a good tool as a plan to move forward and to secure additional funding

TM#6– Financials

$$$

Summarizes 25-Year Capital Plan Financials & 10-Year Action Plan

Findings:

- 25-Year Plan is not feasible under rate stabilization, nor under *acceptable* rate increases
- To fully achieve 25-Year Plan would require significant increases and/or require supplemental funding from other agencies
- A 10-Year Action Plan was therefore developed to help Irrigators achieve a more agreeable, sustainable plan in the short term to achieve small projects and maintain acceptable rates between 2020 – 2030

10-Year Action Plan

10-Year Action Plan

The Plan Includes:

- Updated ABL Engineering Report
- Securing PTTW along canal
- Increase in Eastchester pumping capacity to ~8,000 usgpm
- Second pump at Whirlpool increasing capacity to ~2,000 usgpm
- Repairs to Carlton Siphon
- Annual vegetation management
- Bluetooth enabled water monitoring
- Financial review of capital program (every 5 years)

The Rates: ↑20% to $40.02/acre in 2021; maintain 1% increases every year from 2022 - 2030 (details on the next slide)

Findings:

- This scenario will help keep up with inflation (~2% every year)
- The reserves will maintain a positive balance by 2030 and debt does not exceed $5M
- Additional funding will still be required to achieve improvements of ABL system within the next 10-Years; this is largely a result of the Dee Road debenture that is still being paid off, and it's too expensive to assume additional large amounts of debt during this period
- ABL Engineering Report can refine financials and present a more detailed picture of the works and money required to further improve levels of service

10-Year Action Plan

Financial Details

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Capital Program Expenditures	$253,000	$286,000	$319,000	$132,000	$77,000	$55,000	$55,000	$55,000	$55,000	$66,000
Total Expenditures* (Capital + Operating)	$465,865	$469,523	$488,216	$518,849	$535,045	$547,079	$557,522	$568,088	$578,780	$589,600
Operating Revenue (Town Grant + Irrigation Reserve)	$100,000	$100,000	$114,998	$141,899	$154,325	$162,552	$169,150	$175,832	$182,601	$189,459
Net Costs to be Recovered from Irrigators	$365, 865	$369,523	$373,218	$376,951	$380,720	$384,527	$388,373	$392,256	$396,179	$400,141

* incl. debt principal and interest

Irrigation Rates

Irrigation Rates											
	2020 Rate	2021 Rate	2022 Rate	2023 Rate	2024 Rate	2025 Rate	2026 Rate	2027 Rate	2028 Rate	2029 Rate	2030 Rate
Increase	-	20%	1%	1%	1%	1%	1%	1%	1%	1%	1%
	Capital Rates										
Per Acre	$19.85	$23.82	$24.06	$24.30	$24.54	$24.79	$25.04	$25.29	$25.54	$25.79	$26.05
Classification	Operating Rates										
1 – 5 Acres*	$132.00	$158.40	$159.98	$161.58	$163.21	$164.83	$166.48	$168.14	$169.83	$171.52	$173.24
5.1 – 20 Acres*	$264.00	$316.80	$319.97	$323.17	$326.40	$329.66	$332.96	$336.29	$339.65	$343.05	$346.48
20.1 + Acres	$13.50	$16.20	$16.36	$16.53	$16.69	$16.86	$17.03	$17.20	$17.37	$17.54	$17.72
Golf Courses	$33.00	$39.60	$40.00	$40.40	$40.80	$41.21	$41.62	$42.04	$42.46	$42.88	$43.31
Greenhouses	$17.16	$20.59	$20.80	$21.01	$21.22	$21.43	$21.64	$21.86	$22.08	$22.30	$22.52
Nursery Stock	$17.16	$20.59	$20.80	$21.01	$21.22	$21.43	$21.64	$21.86	$22.06	$22.30	$22.52

* Flat rate

Next Steps

Next Steps

Proposed next steps include:

- Approval of the Strategy (Committee and Council)
    - ✓ Irrigation Committee supported the Strategy and 10-Year Action Plan rate increases and accepted them on February 24, 2021
- Proceed with 10-Year Action Plan
- Seek provincial and federal opportunities for funding
- Town to evaluate by-laws and the potential for irrigation scheduling during drought periods
- Reevaluate financial position in 2025 to move projects into / out of the Plan (this can also be used as a time to reevaluate priorities)

Any Questions?

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