Regional District of Okanagan-Similkameen
Liquid Waste Management Plan *Update*
Gallagher Lake & Vaseux Lake Area
Wastewater Advisory Committee Meeting

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June 22, 2011

Wastewater Advisory Committee Meeting - June 22, 2011

Agenda & Meeting Objectives

- Welcome & Introductions
- Solicit feedback from the WAC on the combined *RDOS Interim Report June 7, 2011*
- Review options with WAC with ***Preferred Solution*** selection in mind
- Wrap-up

Interim Report ……..Discussion

(No Option discussion yet… that comes later)




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Option review

…But first a quick LWMP process overview




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What is a LWMP?

A LWMP is a tool used to develop *cost-effective* solutions to address local liquid waste issues, it allows a community to:

- Protect human health and the environment
- Develop strategies to minimize wastewater generation
- Meet water conservation goals
- Maximize use of reclaimed water, and (for this LWMP)
- Provide a stormwater management overview

Why develop a LWMP?

A LWMP provides an opportunity for ratepayers to assist in the process of selecting the best option(s) for the management of liquid wastes for their community and can increase local support for current and future implementations

How do you develop a LWMP?

Ground Rules:

- RDOS Board makes a decision on the "Preferred Solution(s)" at the end of the combined Stage 1 / 2 **only** after carefully considering all information
  - This includes feedback from the Wastewater Advisory Committee and from an **informed** public

How do you develop a LWMP?

Stage I: Data Gathering

- Background on current status
  - Environmental or Health issues
  - Status of the existing systems
- List and Outline of potential options

Completed!

How do you develop a LWMP?

Stage II: Option Development, Cost Analysis & Option Selection

- Provide details for each identified option
  - Develop options in sufficient detail to permit comparison
    - Pros and cons of each option presented
    - Staging and phasing of upgrades shown
    - Cost Analysis developed to permit Order of Magnitude cost comparisons of options - including costs on a per household basis*
    - Environmental and health pros and cons outlined
- WAC selects their “Preferred Solution(s)”
- “Preferred Solutions” presented to public at PIM

We are here!

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Any questions before we move on?

What are the Wastewater Issues?




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What are the Wastewater Issues?

- Need to review & update Wastewater Management practices for Gallagher & Vaseux Lake areas
- Ageing on-site systems
  - Very costly replacement ~$15,000 to $50,000 each
- Environmental impact on Okanagan lake system
- Impact on Gallagher Lake water quality and water level changes
- Impact on Vaseux Lake water quality

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Any questions before we move on?

Discussion of the Options

(For Managing Wastewater)

Review Options
WAC Selects
Preferred
Solution(s)




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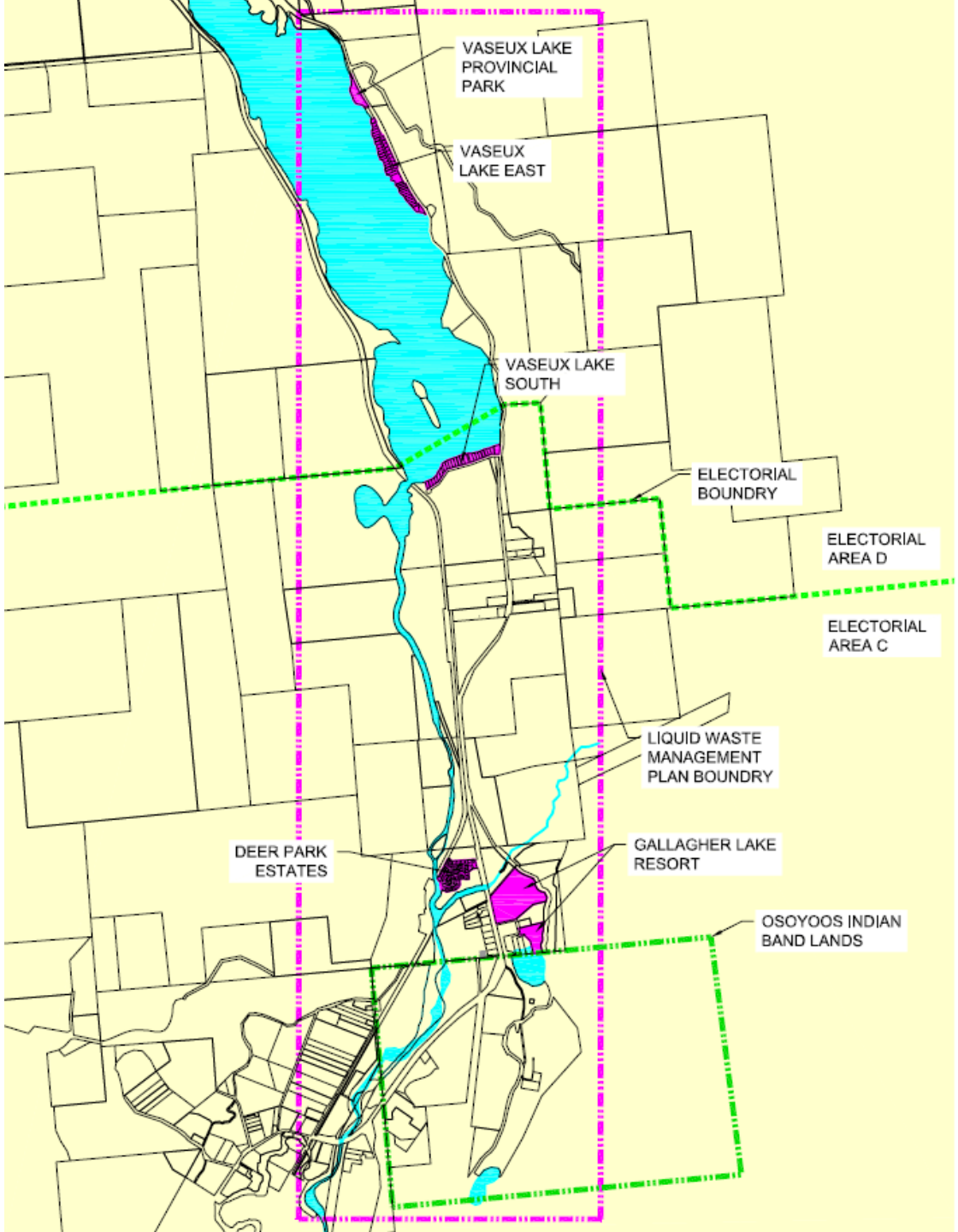
LWMP Area



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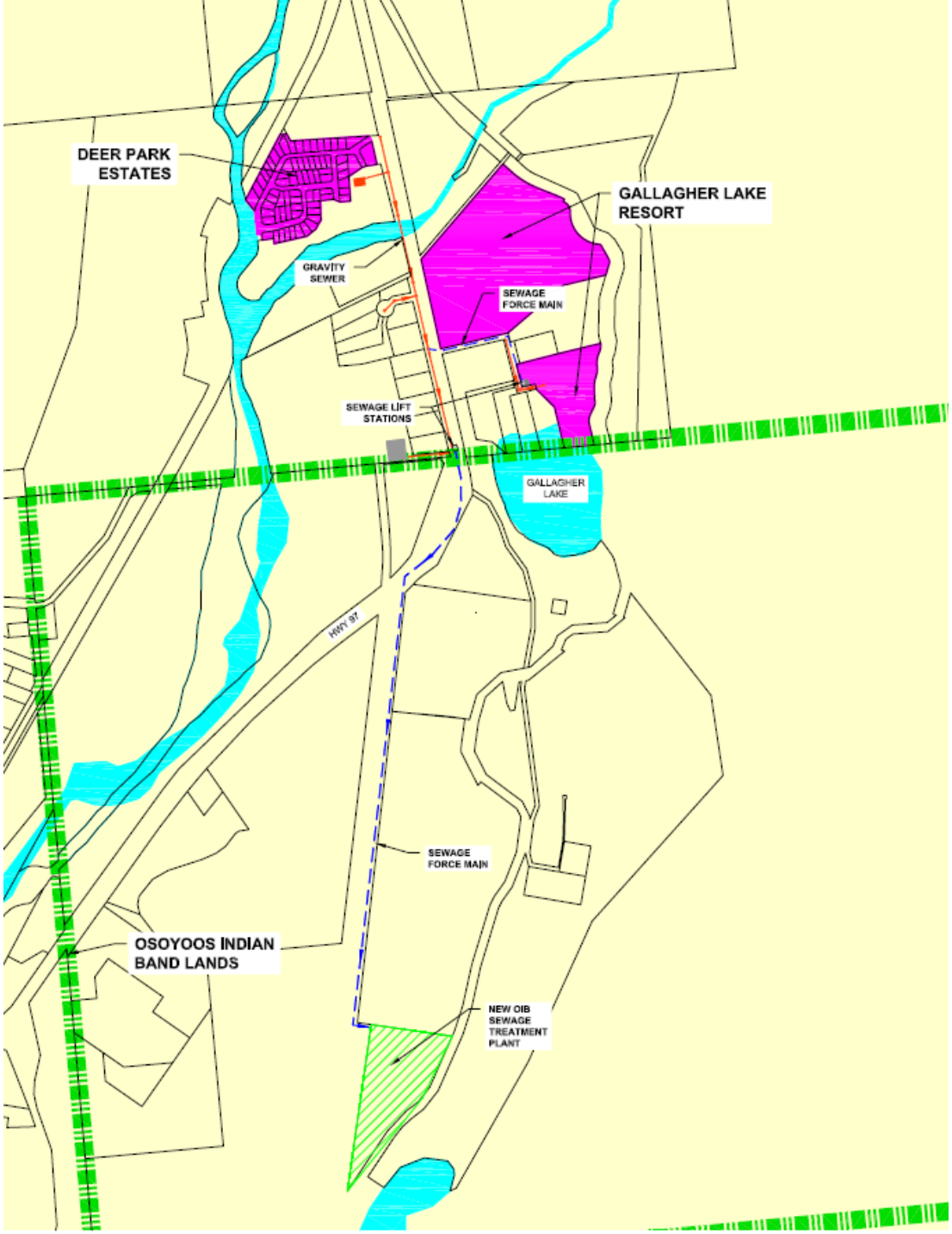
Gallagher Lake Area

Wastewater Management Options



Gallagher Lake area: <u>Option 1</u>

Gallagher Lake Wastewater to OIB Treatment Facility

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Options Discussion

Gallagher Lake area wastewater management

Option 1:

- Gallagher Lake Wastewater to OIB Treatment Facility
  - OIB WWTP is relatively close
  - A lift station has been installed for a 90 lot development that will pump wastewater to the OIB treatment plant
  - The conveyance system is almost complete
    - There may be an opportunity to utilize this line

Conceptual Estimate Gallagher Lake Wastewater to OIB Treatment Facility

Item	Unit	Quantity	Cost/Unit	Total Cost
1.) 200 mm diameter gravity sewer main (includes average 3.0m trench depth, bedding, backfill, road and landscape restoration)	m	1,100	$300	$330,000
2.) 1,200 diameter sewer manhole (includes base, frame and cover)	v.m.	50	$1,200	$60,000
3.) Gallagher lift station	LS	1	$250,000	$250,000
4.) Central lift station	LS	1	$350,000	$350,000
5.) 150 mm sewer forcemain from central lift station to OIB treatment facility (includes trenching, backfill, road and landscape restoration)	m	1,600	$250	$400,000
6.) Land acquisition allowance	LS	1	$100,000	$100,000
			Sub-Total	$1,490,000
			Engineering and Contingency	$500,000
			Total (w/o HST)	$1,990,000

This cost would also be split with the new development as a latecomer fee would need o be paid to the developer who has already installed this system

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Single Family Unit (SFU) estimated cost is based on:

- 2/3 senior government funding for capital expenditures
- $75,000/year in conveyance costs to OIB
- OIB connection fee of $7,500/unit
- $330/unit for annual OIB operations and maintenance
- 69 SFU for Deer Park and 136 SFU for Gallagher Lake
- Costs exclude:
  - private and strata lands connections and collections systems
  - campground contributions
  - potential new residential development contributions

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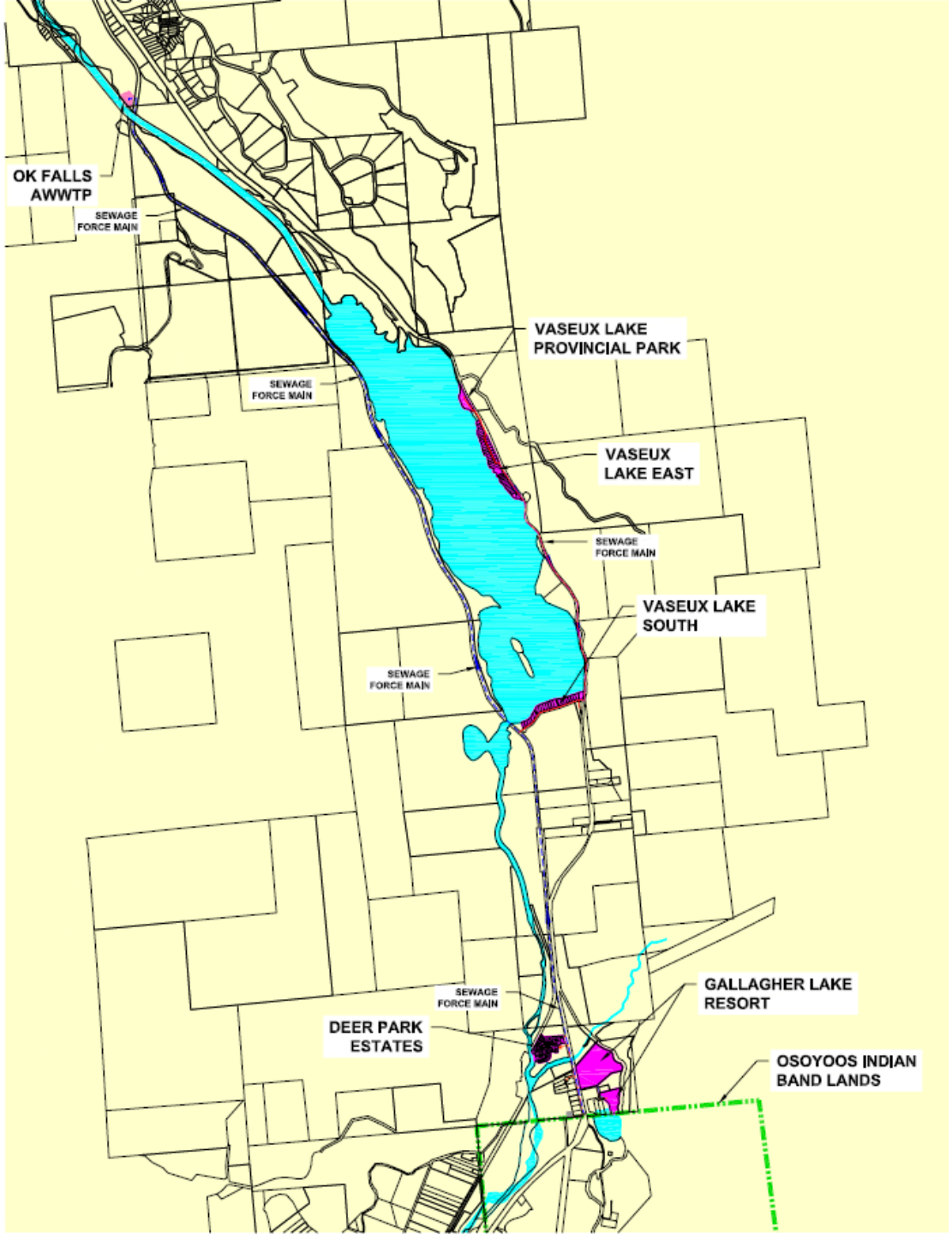
Per Unit Estimate for Gallagher Lake to OIB Treatment Facility

Item	Total Cost
1.) Capital improvements	$3,236
2.) Per unit OIB connection fee	$7,500
Total Capital Estimate per SFU (w/o HST)	$10,736
Total Annual Operation per SFU	$696/year



Gallagher Lake area: <u>Option 2</u>

Gallagher Lake Wastewater to OK Falls Treatment Facility

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Options Discussion

Gallagher Lake area wastewater management

<u>Option 2</u>:

- Gallagher Lake Wastewater to OK Falls Treatment Facility
  - The proposed OK Falls AWWTP is about 10 km away and conveyance cost will be large
  - This option would likely include running a line along the KVR to the proposed AWWTP in OK Falls

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Conceptual Estimate Gallagher Lake Wastewater to OK Falls Treatment Facility

Item	Unit	Quantity	Cost/Unit	Total Cost
1.) 200 mm diameter gravity sewer main (includes average 3.0m trench depth, bedding, backfill, road and landscape restoration)	m	1,100	$300	$330,000
2.) 1,200 diameter sewer manhole (includes base, frame and cover)	v.m.	50	$1,200	$60,000
3.) Gallagher lift station	LS	1	$250,000	$250,000
4.) Central lift station	LS	1	$500,000	$500,000
5.) 150 mm sewer forcemain from central lift station to OK Falls treatment facility (includes trenching, backfill, road and landscape restoration)	m	10,000	$250	$2,500,000
6.) Land acquisition allowance	LS	1	$1,000,000	$1,000,000
			Sub-Total	$4,640,000
			Engineering and Contingency	$1,400,000
			Total (w/o HST)	$6,040,000

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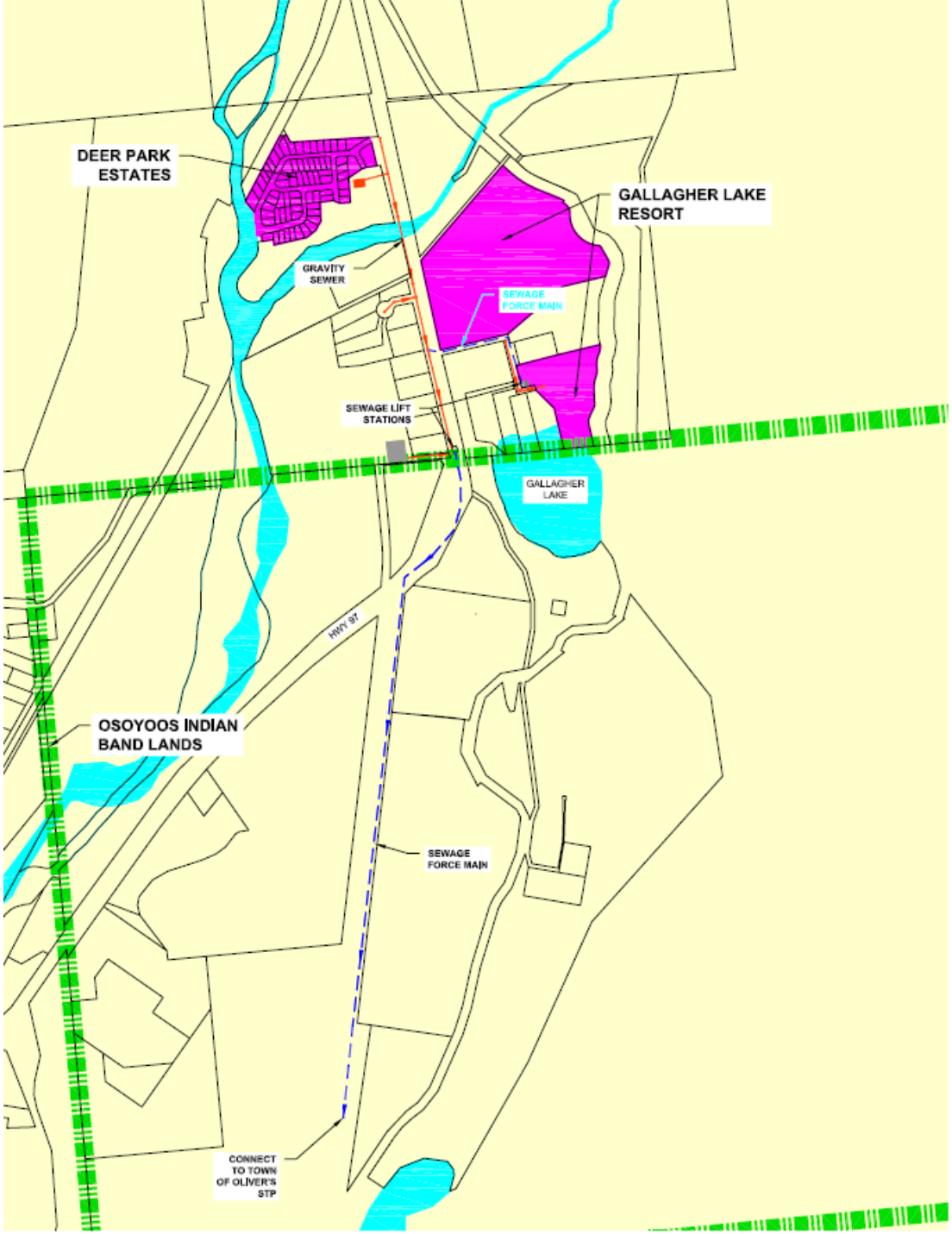
Single Family Unit (SFU) estimated cost is based on:

- 2/3 senior government funding for capital expenditures
- $100,000/year in conveyance costs to OK Falls
- $639/SFU for annual OK Falls operations and maintenance in addition to connection fee reserve
- 136 SFU for Gallagher Lake
- Costs exclude:
  - private and strata lands connections and collections systems
  - Vaseux Lake connections and cost sharing

Per Unit Estimate for Gallagher Lake to OK Falls Treatment Facility

Item	Total Cost
Total Capital Estimate per SFU (w/o HST)	$9,821
Total Annual Operation per SFU	$1,127



Gallagher Lake area: <u>Option 3</u>

Gallagher Lake Wastewater to Oliver Treatment Facility

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Options Discussion

Gallagher Lake area wastewater management

Option 3:

- Gallagher Lake Wastewater to Oliver Treatment Facility
  - The Town of Oliver will need to be approached to ensure there is sufficient capacity in their system to accommodate wastewater from the Gallagher Lake area
  - If Vincor should connect to the OIB system there would be an existing unused forcemain from Vincor to the Oliver WWTP that could be utilized for the Gallagher Lake area wastewater
  - Vincor originally covered the cost of this pipeline and there would be a cost to those connecting to the pipeline that would go to Vincor
    - Vincor will need to be approached to ascertain the viability of this concept as they are currently constructing a pretreatment facility for their wastewater and plan to continue to discharge to Oliver

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Conceptual Estimate Gallagher Lake Wastewater to Oliver Treatment Facility

Item	Unit	Quantity	Cost/Unit	Total Cost
1.) 200 mm diameter gravity sewer main (includes average 3.0m trench depth, bedding, backfill, road and landscape restoration)	m	1,100	$300	$330,000
2.) 1,200 diameter sewer manhole (includes base, frame and cover)	v.m.	50	$1,200	$60,000
3.) Gallagher lift station	LS	1	$250,000	$250,000
4.) Central lift station	LS	1	$500,000	$500,000
5.) 150 mm sewer forcemain from central lift station to Oliver treatment facility (includes trenching, backfill, road and landscape restoration)	m	5,580	$250	$1,395,000
6.) Land acquisition allowance	LS	1	$1,000,000	$1,000,000
7.) Upgrades to the Town of Oliver's sewer system allowance	LS	1	$700,000	$700,000
			Sub-Total	$4,235,000
			Engineering and Contingency	$1,300,000
			Total (w/o HST)	$5,535,000

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Single Family Unit (SFU) estimated cost is based on:

- 2/3 senior government funding for capital expenditures
- $100,000/year in conveyance costs to Oliver
- Oliver connection fee of $857/unit
- $225/unit for annual Oliver operations and maintenance
- 136 SFU for Gallagher Lake
- Costs exclude private and strata lands connections and collections systems
- **Cost <u>exclude</u> potential for savings in the event that the existing Vincor forcemain is used**

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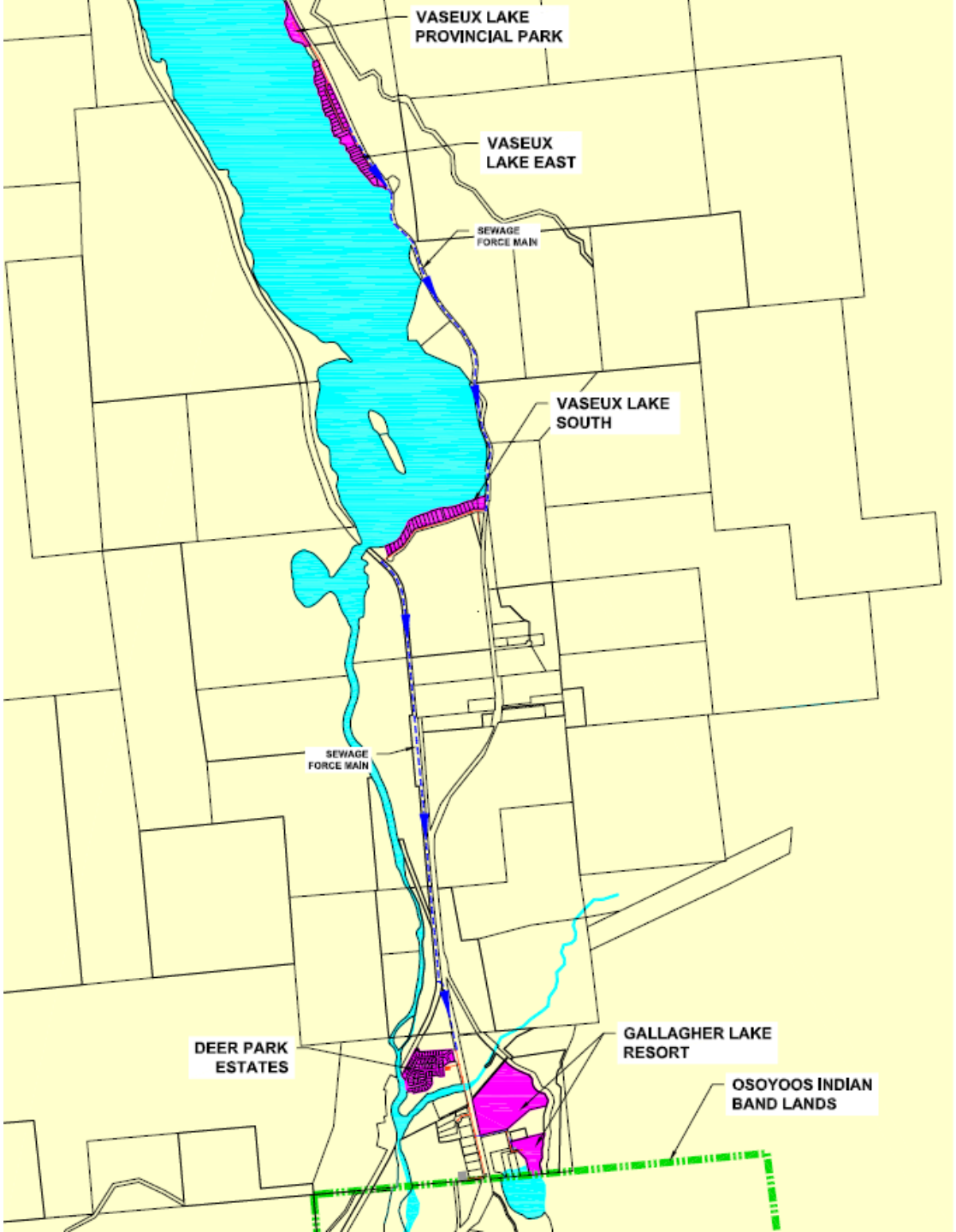
Per Unit Estimate for Gallagher Lake Wastewater to Oliver Treatment Facility

Item	Total Cost
1.) Capital improvements	$9,000
2.) Per unit Oliver connection fee	$857
Total Capital Estimate per SFU (w/o HST)	$9,857
Total Annual Operation per SFU	$713/year



Gallagher Lake area: <u>Option 4</u>

Stand alone local WWTP in Gallagher Lake Area

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Options Discussion

Gallagher Lake area wastewater management

Option 4:

- Stand alone local WWTP in Gallagher Lake Area
  - This plant could handle wastewater from the Gallagher Lake area alone or it could be upsized to also handle wastewater from the Vaseau Lake area
  - The primary issue would be locating a suitable effluent disposal site
    - During a previous LWMP project there were no nearby suitable disposal sites identified
    - A suitable disposal site will be required for this option to be viable
      - Local soils are VERY coarse and have limited effluent renovation capability

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Conceptual Estimate Stand alone local WWTP in Gallagher Lake Area

Item	Unit	Quantity	Cost/Unit	Total Cost
1.) 200 mm diameter gravity sewer main (includes average 3.0m trench depth, bedding, backfill, road and landscape restoration)	m	1,150	$300	$345,000
2.) 1,200 diameter sewer manhole (includes base, frame and cover)	v.m.	50	$1,200	$60,000
3.) Central lift station	LS	1	$250,000	$250,000
4.) 100 mm sewer forcemain from lift station to treatment facility(includes trenching, backfill, road and landscape restoration)	m	280	$200	$56,000
5.) Tertiary wastewater treatment plant	LS	1	$3,000,000	$3,000,000
6.) Land acquisition allowance	LS	1	$500,000	$500,000
			Sub-Total	$4,211,000
			Engineering and Contingency	$1,200,000
			Total (w/o HST)	$5,411,000

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Single Family Unit (SFU) estimated cost is based on:

- 2/3 senior government funding for capital expenditures
- $200,000/year in WWTP operations and maintenance
- 69 SFU for Deer Park and 136 SFU for Gallagher Lake
- Costs exclude private and strata lands connections and collections systems

Per Unit Estimate for Stand alone local WWTP in Gallagher Lake Area

Item	Total Cost
Total Capital Estimate per SFU (w/o HST)	$8,798
Total Annual Operation per SFU	$976

Options Discussion

Gallagher Lake area wastewater management

Option 5:

- Gallagher Lake Wastewater to new stand alone WWTP in Vaseux Lake area
  - This plant could handle wastewater from both the Vaseau Lake area and the Gallagher Lake area
  - The primary issue would be locating a suitable effluent disposal site
    - A suitable disposal site will be required for this option to be viable

Note: Cost estimates were not prepared for this option as this alternative is deemed to be high in overall capital and operational costs and therefore is not considered a viable alternative as part of the preferred solution evaluations

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Options Discussion

Gallagher Lake area wastewater management

Option 6:

- Gallagher Lake Wastewater to enhanced Deer Park WWTP

Note: Cost estimates were not prepared for this option as this alternative is deemed not viable as the Deer Park owners plan to shut down their existing system and are negotiating with the OIB to send their wastewater to the proposed OIB WWTP

Gallagher Lake Area Options: Cost Comparison

- Based on 2/3 senior government capital funding
  - comparison of estimated costs is for wastewater servicing to property line and excludes private and strata land connections and collections systems
- Assumes a 20 year amortized period for the capital expenditure and 5% interest rate over the 20-year period
- Excludes costs related to private and strata land connections and collections systems
- Costs in 2011 dollars and excludes annual sewer rate increases

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Gallagher Lake Area Option Cost Comparison

Description	Total Capital	Connection Fee/SFU	SFU Cost	Annual SFU Sewer Rate	Total Annual SFU Cost *
Gallagher Lake to OIB WWTP	$1,990,000	$7,500	$10,736	$696	$1,555
Gallagher Lake to OK Falls WWTP	$6,040,000	N/A	$9,821	$1,127	$1,913
Gallagher Lake to Oliver WWTP	$5,535,000	$857	$9,857	$713	$1,502
Gallagher Lake to Satellite WWTP	$5,411,000	N/A	$8,798	$976	$1,680

Costs for the last 3 options will likely be higher per SFU as the 69 Deer Park units wastewater is committed to the OIB WWTP

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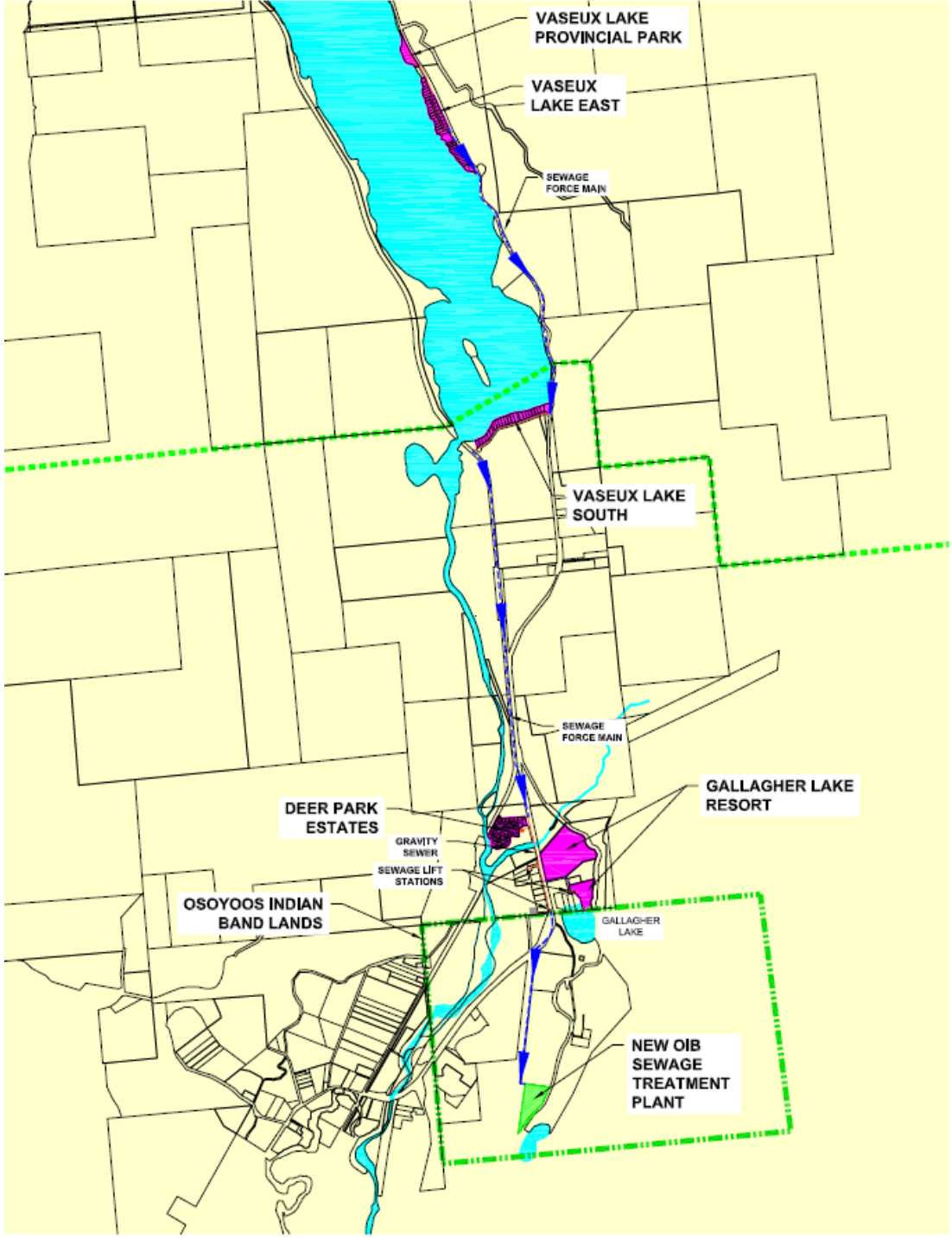
Vaseux Lake Area

Wastewater Management Options



Vaseux Lake area: <u>Option 1</u>

To OIB WWTP

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Options Discussion

Vaseux Lake area wastewater management

<u>Option 1</u>:

- Vaseux Lake Wastewater to OIB
  - The OIB WWTP is relatively close to Gallagher Lake area and the wastewater conveyance system would be sized to accommodate the Vaseux area wastewater in addition to Deer Park Estates and the service area of Gallagher Lake
  - There will also be a lift station for the proposed 90 homes in the nearby new development and a letter of intent and a contract has apparently already been let to put in that pipeline

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Options Discussion

Vaseux Lake Area Wastewater to OIB WWTP

Pipeline to Gallagher Lake area

Item	Unit	Quantity	Cost/Unit	Total Cost
1.) 100mm diameter gravity pipe from main to property line (includes average 1.5m trench depth, bedding and backfill, road and landscape restoration)	m	700	$140	$98,000
2.) Inspection Chamber at Property Line	each	65	$200	$13,000
3.) 200 mm diameter gravity sewer main (includes average 3.0m trench depth, bedding, backfill, road and landscape restoration)	m	1,500	$300	$450,000
4.) 1,200 diameter sewer manhole (includes base, frame and cover)	v.m.	60	$1,200	$72,000
5.) Vaseux east lift station	LS	1	$250,000	$250,000
6.) Vaseux south lift station	LS	1	$350,000	$350,000
7.) 100 mm sewer forcemain from Vaseux east to Vaseux south (includes trenching, backfill, road and landscape restoration)	m	2,400	$200	$480,000
8.) 150 mm sewer forcemain from Vaseux south to Gallagher (includes trenching, backfill, road and landscape restoration)	m	2,900	$250	$725,000
9.) Land acquisition allowance	LS	1	$500,000	$500,000
			Sub-Total	$2,938,000
			Engineering and Contingency	$900,000
			Total (w/o HST)	$3,838,000

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Single Family Unit (SFU) estimated cost is based on:

- 2/3 senior government funding for capital expenditures
- $75,000/year in conveyance costs to OIB
- OIB connection fee of $7,500/unit
- $330/unit for annual OIB operations and maintenance
- 24 SFU for Vaseux South and 41 SFU for Vaseux East

Vaseux Lake Area Wastewater to OIB WWTP

Item	Total Cost
1.) Capital improvements	$19,682
2.) Per unit OIB connection fee	$7,500
Total Capital Estimate per SFU (w/o HST)	$27,182
Total Annual Operation per SFU	$1,484/year

This option appears rather expensive

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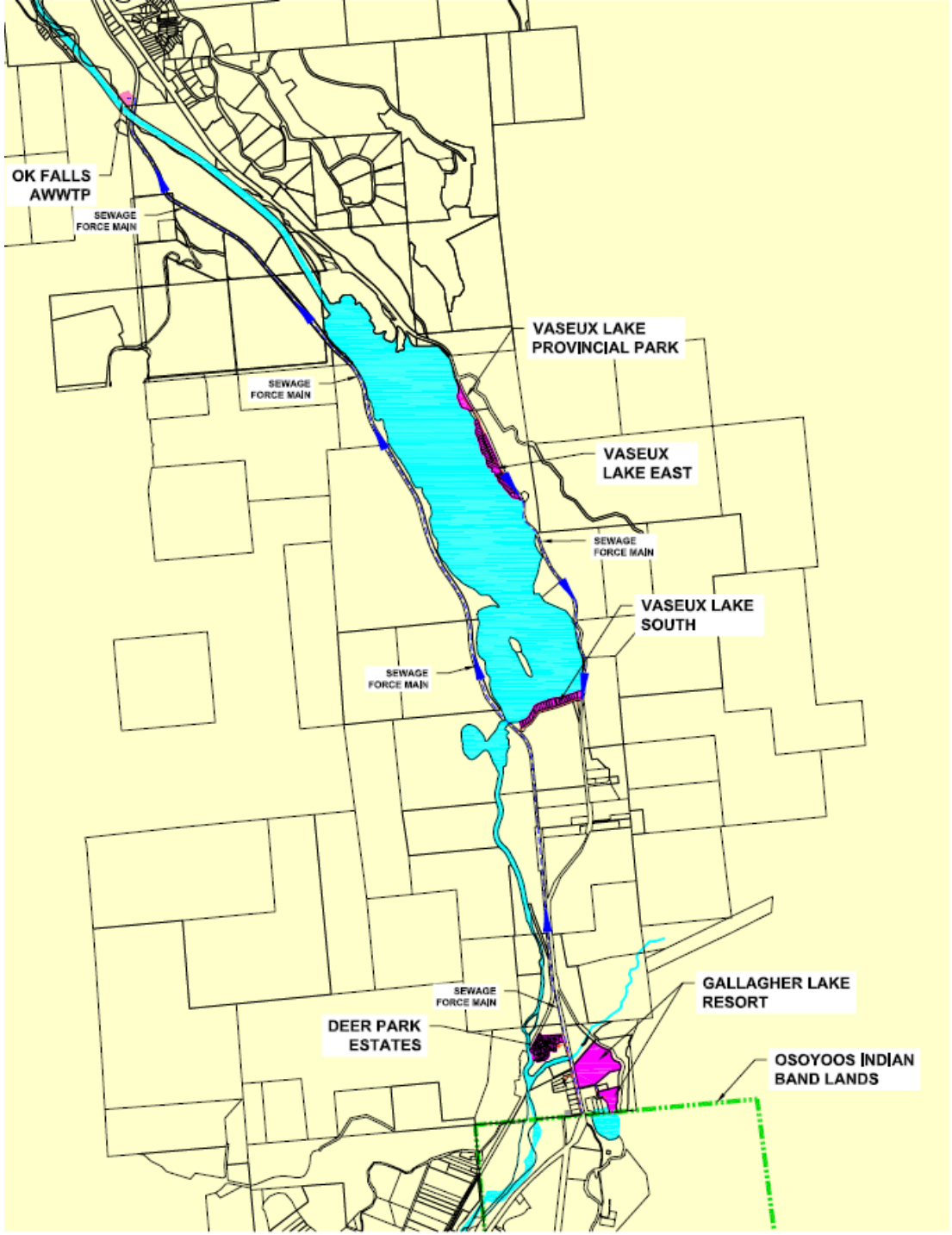
Vaseux Lake area: Option 2



To OK Falls AWWTP

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Options Discussion

Vaseux Lake area wastewater management

Option 2:

- Vaseux Lake Wastewater to OK Falls AWWT
  - The proposed AWWTP is some distance away but much closer to both Vaseux Lake high density areas than for the Gallagher Lake area and **if** the Gallagher Lake area were to consider this option the costs for the Vaseux area residents would be lower as they would be able to share the pipeline costs
    - If Vaseux Lake areas are unable to share the pipeline costs with the Gallagher Lake area residents this option is rather expensive

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Options Discussion

Vaseux Lake Wastewater to OK Falls AWWT

Item	Unit	Quantity	Cost/Unit	Total Cost
1.) 100mm diameter gravity pipe from main to property line (includes average 1.5m trench depth, bedding and backfill, road and landscape restoration)	m	700	$140	$98,000
2.) Inspection Chamber at Property Line	each	65	$200	$13,000
3.) 200 mm diameter gravity sewer main (includes average 3.0m trench depth, bedding, backfill, road and landscape restoration)	m	1,500	$300	$450,000
4.) 1,200 diameter sewer manhole (includes base, frame and cover)	v.m.	60	$1,200	$72,000
5.) Vaseux east lift station	LS	1	$350,000	$350,000
6.) Vaseux south lift station	LS	1	$250,000	$250,000
7.) 100 mm sewer forcemain from Vaseux east to Vaseux south (includes trenching, backfill, road and landscape restoration)	m	2,400	$200	$480,000
8.) 150 mm sewer forcemain from Vaseux south to OK Falls via KVR ROW (includes trenching, backfill, road and landscape restoration)	m	6,**900**	$250	$1,725,000
9.) Land acquisition allowance	LS	1	$1,000,000	$1,000,000
			Sub-Total	$4,438,000
			Engineering and Contingency	$1,300,000
			Total (w/o HST)	$5,738,000

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Single Family Unit (SFU) estimated cost is based on:

- 2/3 senior government funding for capital expenditures
- $75,000/year in conveyance costs to OK Falls
- $639/SFU for annual OK Falls operations and maintenance in addition to connection fee reserve
- 24 SFU for Vaseux South and 41 SFU for Vaseux East
- Costs exclude connections within lots
- Costs related solely to Vaseux and connection to the Gallagher Lake to OK Falls Forcemain is estimated to be $3,013,000 and is used in the summary below

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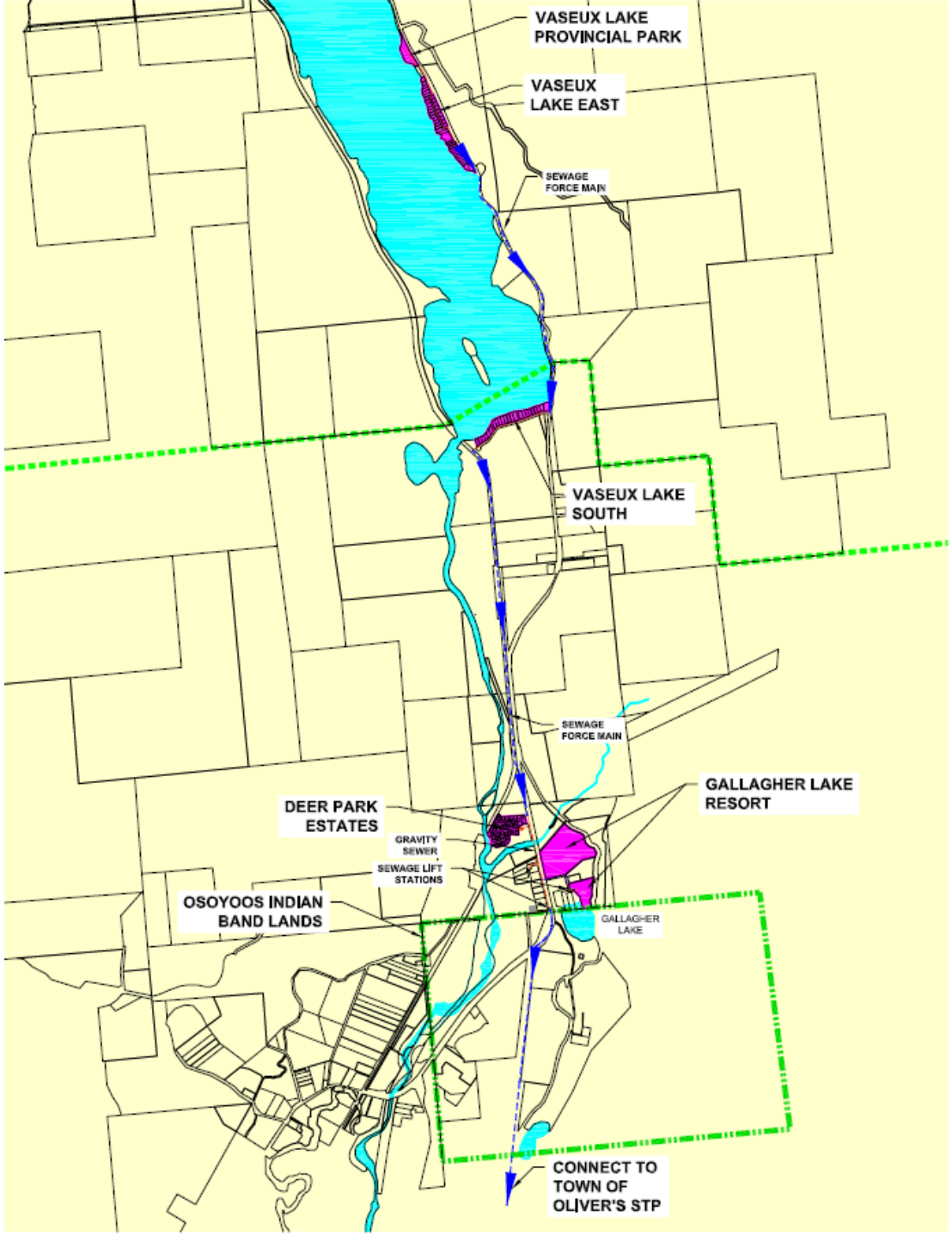
Vaseux Lake Wastewater to OK Falls AWWT

Item	Total Cost
Total Capital Estimate per SFU (w/o HST)	$15,451
Total Annual Operation per SFU	$1,793

If Vaseux Lake areas are unable to share the pipeline costs with the Gallagher Lake area residents this option is rather expensive

Vaseux Lake area: <u>Option 3</u>



To Town of Oliver's WWTP

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Options Discussion

Vaseux Lake area wastewater management

Option 3:

- Vaseux Lake Wastewater to Town of Oliver's WWTP
  - The Town of Oliver will need to be approached to ensure there is sufficient capacity in their system to accommodate wastewater from the Gallagher Lake and Vaseux Lake areas
  - The pipeline, as in the option to the OIB is quite expensive on a per connection basis as there are only a few residents in the Vaseux Lake area

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Single Family Unit (SFU) estimated cost is based on:

- 2/3 senior government funding for capital expenditures
- $125,000/year in conveyance costs to Oliver
- Oliver connection fee of $857/unit
- $225 for annual Oliver operations and maintenance
- 24 SFU for Vaseux South and 41 SFU for Vaseux East
- Costs exclude:
  - connections within lots
  - Gallagher forcemain capital costs from Gallagher to Oliver
    - The residents would share the costs with the Gallagher Lake area residents which would increase the total cost of this option but would reduce the SFU cost as more connections would be involved

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Vaseux Lake Wastewater to Oliver WWTP

Item	Total Cost
1.) Capital improvements	$19,682
2.) Per unit Oliver connection fee	$857
Total Capital Estimate per SFU (w/o HST)	$20,539
Total Annual Operation per SFU	$2,148/year

Vaseux Lake areas would be able to share the pipeline costs from Gallagher Lake to the Vincor pipeline with the Gallagher Lake area residents which may decrease the cost of this option slightly. This option would appear to be **extremely** costly

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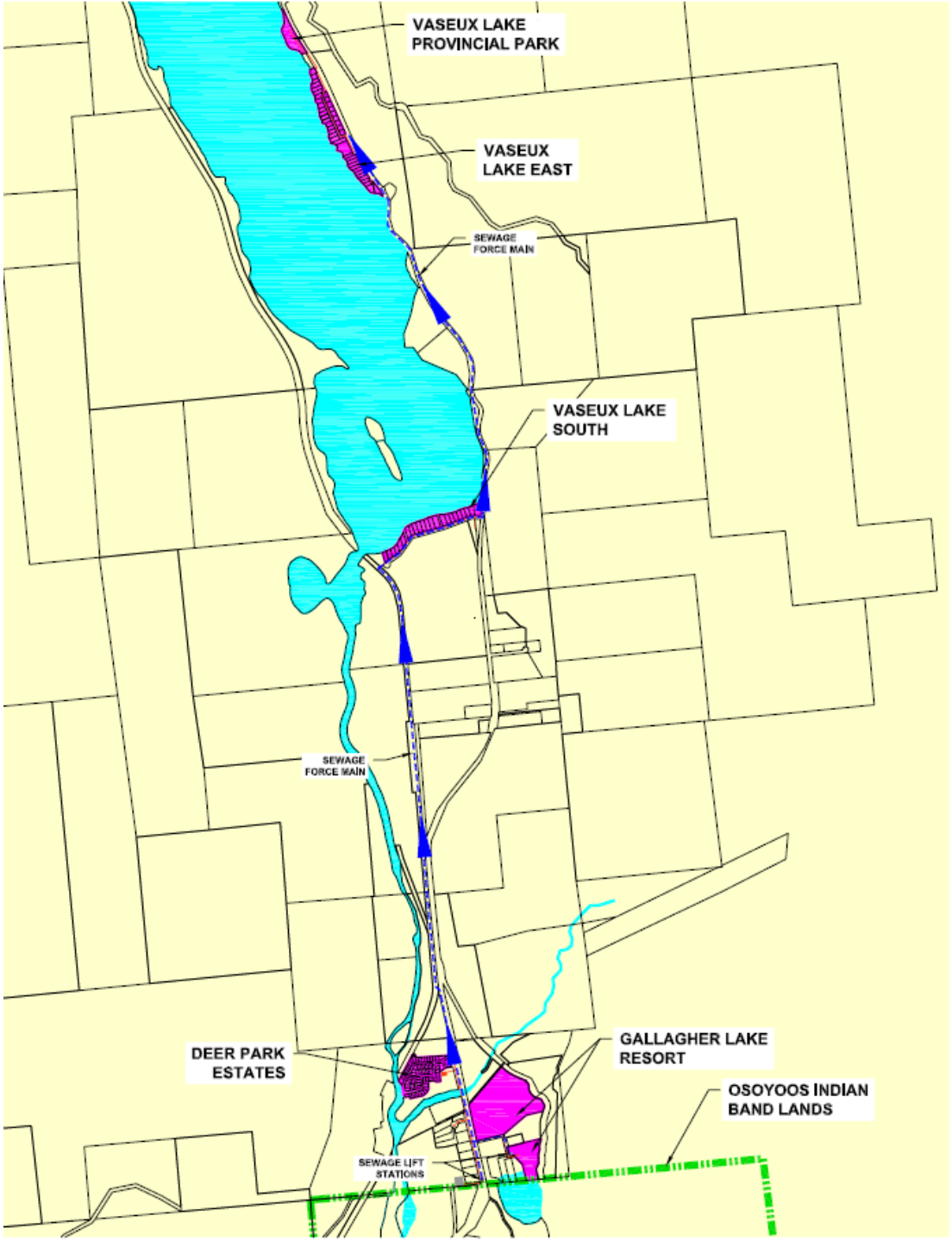

Vaseux Lake area: <u>Option 4</u>

Vaseux Lake area with its own small WWTP

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Options Discussion

Vaseux Lake area wastewater management

Option 4:

- Vaseux Lake area with its own small WWTP
  - This plant could handle wastewater from the Vaseux Lake area alone or it could be upsized to also handle wastewater from the Gallagher Lake area
  - The primary issue would be locating a suitable effluent disposal site. There will be nutrients in the effluent that need to be removed either in the plant or by the ground

Options Discussion

Vaseux Lake area with its Own Small WWTP

Item	Unit	Quantity	Cost/Unit	Total Cost
1.) 100mm diameter gravity pipe from main to property line (includes average 1.5m trench depth, bedding and backfill, road and landscape restoration)	m	700	$140	$98,000
2.) Inspection Chamber at Property Line	each	65	$200	$13,000
3.) 200 mm diameter gravity sewer main (includes average 3.0m trench depth, bedding, backfill, road and landscape restoration)	m	1,500	$300	$450,000
4.) 1,200 diameter sewer manhole (includes base, frame and cover)	v.m.	60	$1,200	$72,000
5.) Vaseux east lift station	LS	1	$250,000	$250,000
6.) Vaseux south lift station to new AWWTP	LS	1	$350,000	$350,000
7.) 100 mm sewer forcemain from Vaseux east to Vaseux south (includes trenching, backfill, road and landscape restoration)	m	2,400	$200	$480,000
8.) 150 mm sewer forcemain from Vaseux south to Vaseux AWWTP (includes trenching, backfill, road and landscape restoration)	m	500	$250	$125,000
9.) Tertiary wastewater treatment plant	LS	1	$2,500,000	$2,500,000
10.) Land acquisition allowance	LS	1	$500,000	$500,000
			Sub-Total	$4,838,000
			Engineering and Contingency	$1,400,000
			Total (w/o HST)	$6,238,000

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Single Family Unit (SFU) estimated cost is based on:

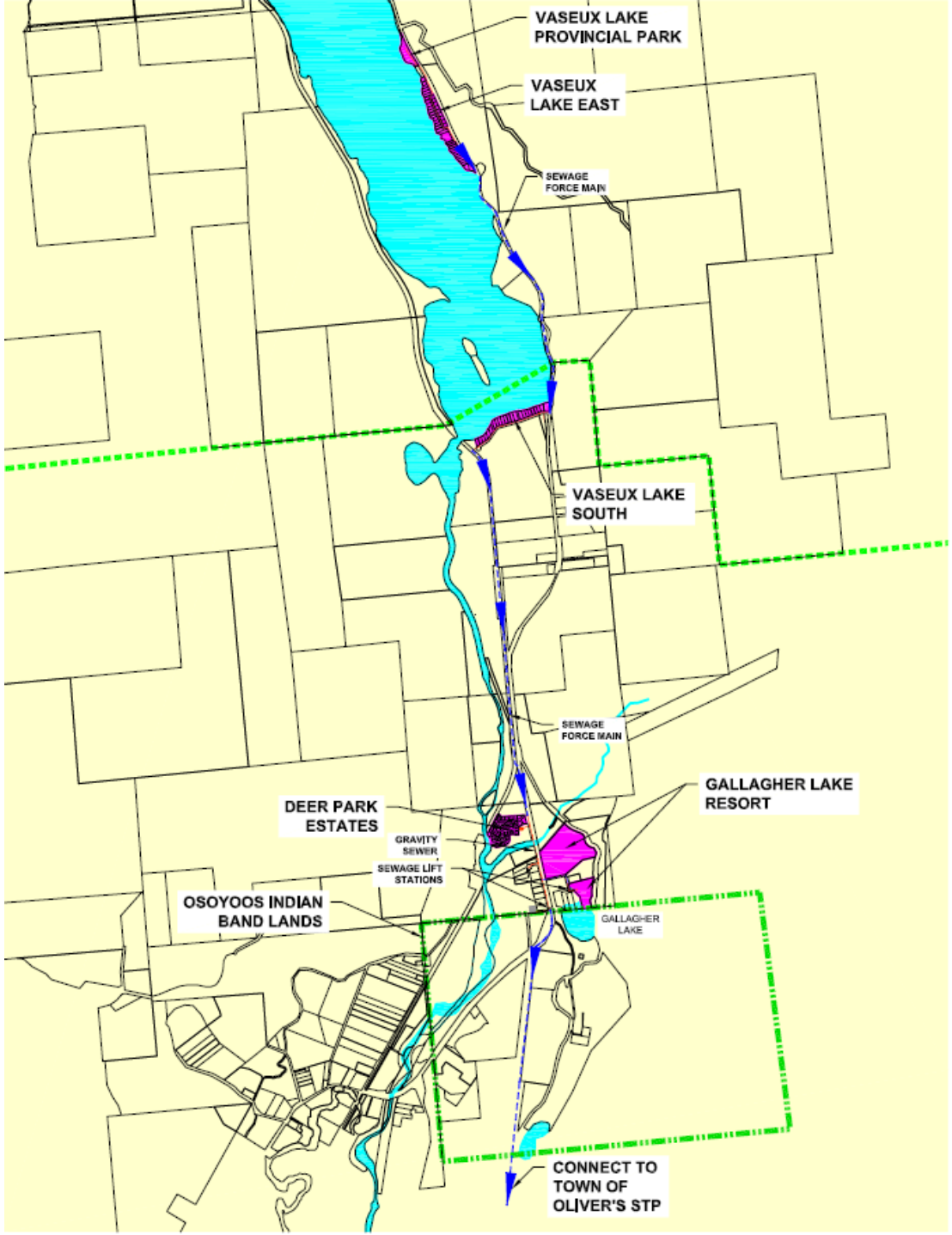
- 2/3 senior government funding for capital expenditures
- $200,000/year in WWTP operations and maintenance
- 24 SFU for Vaseux South and 41 SFU for Vaseux East
- Costs exclude connections within lots

Vaseux Lake area with its Own Small WWTP

Item	Total Cost
Total Capital Estimate per SFU (w/o HST)	$31,990
Total Annual Operation per SFU	$3,077

Vaseux Lake areas may be able to share the plant costs with Gallagher Lake area residents which would decrease the cost of this option somewhat. This option would appear to be **extremely** costly

Vaseux Lake area: Option 5



To Gallagher Lake Area WWTP

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Options Discussion

Vaseux Lake area wastewater management

Option 5:

- Vaseux Lake Area Wastewater to Gallagher Lake Area WWTP
  - This plant could be upsized to handle wastewater from the Vaseux Lake area
  - The primary issue would be locating a suitable effluent disposal site
    - There will be nutrients in the effluent that need to be removed either in the plant or by the ground.

Options Discussion

Vaseux Lake Area Wastewater to Gallagher Lake Area WWTP

- The capital cost for Vaseux wastewater to Gallagher is estimated at $3,838,000 as identified above
- Costs for the Gallagher WWTP is $5,411,000 as identified above

Single Family Unit (SFU) estimated cost is based on:

- 2/3 senior government funding for capital expenditures
- $250,000/year in WWTP operations and maintenance
- 24 SFU for Vaseux South and 41 SFU for Vaseux East
- 136 SFU for Gallagher Lake
- Costs exclude private and strata land connections and collections systems

Vaseux Lake Area Wastewater to Gallagher Lake Area WWTP

Item	Total Cost
Total Capital Estimate per SFU (w/o HST)	$26,362
Total Annual Operation per SFU	$926

This option is only viable IF the Gallagher Lake area installs its own WWTP

Vaseux Lake Area Options: Cost Comparison

- Based on 2/3 senior government capital funding
  - comparison of estimated costs is for wastewater servicing to property line and excludes private and strata land connections and collections systems
- Assumes a 20 year amortized period for the capital expenditure and 5% interest rate over the 20-year period
- Excludes costs related to private and strata land connections and collections systems
- Costs in 2011 dollars and excludes annual sewer rate increases

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Vaseux Lake Area Option Cost Comparison

Description	Total Capital	Connection Fee/SFU	SFU Cost	Annual SFU Sewer Rate	Total Annual SFU Cost *
Vaseux Lake to OIB WWTP via Gallagher Forcemain	$3,838,000	$7,500	$27,182	$1,484	$3,659
Vaseux Lake to OK Falls WWTP via Gallagher Forcemain	$3,013,000	N/A	$15,451	$1,793	$3,029
Vaseux Lake to Gallagher and on to Oliver WWTP	$3,838,000	$857	$20,539	$2,148	$3,791
Vaseux Lake Satellite WWTP	$6,238,000	N/A	$31,990	$3,077	$5,636
Vaseux Lake to Gallagher WWTP	$3,838,000	N/A	$26,362	$926	$3,035

Overall LWMP Area

Wastewater Management Option(s)

Options Discussion

Option: Do nothing

- Do nothing, everything stays as it is
  - **Pros**: No cost
  - **Cons**: The existing issues are not resolved, and will get worse

Note: The pure “Do nothing” option is **not** an option as something needs to be done.

Options Discussion

Option: Enhanced Do nothing

- *Enhanced* "Do nothing option"
  - Although the "do nothing" option would appear not viable for the entire plan area there are isolated homes to which this approach would apply
  - To assist these homes in maintaining their "On-Site" waste management systems in an environmentally sound and affordable manner, additional effort is needed
    - Educational programs for the ongoing maintenance and operation of "On-Site waste management systems will need to be developed. Including:
      - Source control, operation & maintenance and water conservation
    - Environmental Monitoring, determine impact of high density development areas
    - By-laws needed if the educational programs should fail. Including:
      - Mandatory septic tank pump-out, Mandatory water conservation, Mandatory source control & Mandatory turn-over of new WWTP systems to RDOS

Note: The educational programs will also benefit those who will be connected to wastewater collection systems at a later date by helping them extend the life of their existing systems.

Any questions before we move on?

LWMP Overview Summary




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LWMP Overview Summary

- A LWMP is a tool which allows the citizens of a community to understand the wastewater issues in their community, and assists them in selecting the best option for the management and resolution of those issues
- A LWMP belongs to the community which developed it
- The job of the consultant and Regional District staff is to **ASSIST** in the development of the LWMP, by providing clear, understandable, technical and cost information

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Any questions before we move on?

Next Steps?




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Next Steps

- Moving on from the WAC's ***Preferred Solutions***
  - Prepare for Public Information Meeting (PIM)
    - Story Boards
    - Presentation
  - PIM
  - Meld PIM feedback into combined Stage 1 / 2 report
  - Circulate draft final report
  - Finalize report and present to RDOS Board
  - Move on to Stage 3


Thank you!