



**INFRASTRUCTURE COMMITTEE MEETING
OF THE VILLAGE OF LIONS BAY
HELD ON THURSDAY, FEBRUARY 15, 2024 AT 6:00 PM
COUNCIL CHAMBERS, 400 CENTRE ROAD, LIONS BAY
AND VIA ZOOM VIDEO CONFERENCE**

ZOOM INVITE LINK: [HTTPS://US02WEB.ZOOM.US/J/2780145720](https://us02web.zoom.us/j/2780145720)
TO JOIN VIA PHONE, DIAL 778-907-2071 | MEETING ID: 278 014 5720

AGENDA

1. **Call to Order**
2. **Appointment of Recorder**
3. **Approval of the Agenda**
4. **Public Questions & Comments**
5. **Approval of Minutes**
 - A. Infrastructure Committee Meeting Minutes – December 14, 2023 (*page 4*)
6. **Business Arising from the Minutes**
7. **Unfinished Business**

| Identifier | Description | Responsible | Status |
|------------|---|-------------|--------|
| 23087 | Locate previous PWM’s update report to the IMP indicating the projects that are completed. | PWM | |
| 23092 | Solicit Village resident technical expertise for each working sub group. | All | |
| 23095 | Prepare a resident volunteer recruitment piece for the 01 September Village Up-date. | NTA | |
| 23101 | PWM to meet with NTA and ASG to determine the level of assistance required by the PWD from the I.C. on select PWD projects. | PWM All | ✓ |
| 23111 | All I.C. members will be provided with a copy of the IMP and the enhanced Asset Management Plan. The document is | KB/PWM | |

Agenda – Infrastructure Committee – February 15, 2024

Village of Lions Bay

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| | | | |
|-------|--|------------|---------|
| | complicated and requires a dedicated I.C. meeting to fully understand the implications for the Village. | | |
| 23112 | Convene a February I.C. Round Table Meeting to focus on a 10 and 20 year horizon plan to identify the new and replacement infrastructure requirements and related expenses. | NTA/All | |
| 23113 | CAO and/or Council to be asked to allow members of the I.C. to have selective access to the PW document library. | PWM | |
| 23114 | The I.C. to solicit the Village for an individual with the relevant programming skills to assist the PWM with the OLDER initiative. | All | ✓ |
| 23115 | PWM to ask administration to post the 2022 Water Report and ASG to review for a discussion in February as a part of 23112. | PWM/ASG | Partial |
| 23116 | A group tour of the Magnesia and Harvey Creek intakes to fully understand the concern and consequences of the Magnesia Creek intake pluggage is to be arranged before the end of November. ASG to solicit the expertise of a competent and responsive engineer to allow this project to proceed. | All | |
| 23117 | BU will review the SCADA system on behalf of the I.C. and work with the PWM to up-grade the hardware and software. A Requirements Document is anticipated at mid 2024. | BU/PWM | Partial |
| 23118 | Assist the PWM in determining the best option for the replacement of the Highway Water Tank. ASG to solicit the expertise of a competent and responsive engineer to allow this project to proceed. | ASG | |
| 23121 | HM to assist the PWM in preparing REQ/RFP documentation for estimate and work on water main replacement Creekview Place and for the estimate for Highview Place. HM to assist the PWM and CAO in reviewing submissions once received. | HM/PWM | |
| 23122 | ASG to assist the PWM in preparing REQ/RFP documentation for estimate for the supply and installation of an alkalinity feed system for each WTP. ASG to assist the PWM and CAO in reviewing submissions once received. | ASG/PWM | |
| 23123 | The I.C. submit a written list of projects it feels Council should support in 2024 prior to the forthcoming budget session. | All | |
| 23124 | Meet with members of the CAC to see if and where the common ground is with respect to water metering in the Village, allowing for possible coordinated recommendations. | NTA/ASG/BU | |
| 23125 | ASG to find vendors who can supply portable WTP on short notice, in the event of a local wildfire in the watersheds, for | ASG | |

| | | | |
|--|---------------------------|--|--|
| | rent for up to 36 months. | | |
|--|---------------------------|--|--|

8. New Business

- A. Leak Detection protocol – both public and private side leaks.
- B. Update from Council & COW budget meetings held in January related to Infrastructure Funding Recommendations. *(page 11)*
- C. Public Works Budget Supplementals *(page 15)*
- D. Consider Item 23112 as the primary agenda item for the 21 March I.C. meeting

9. Public Questions & Comments

10. Adjournment

11. Next Meeting – March 21, 2024



**INFRASTRUCTURE COMMITTEE MEETING
OF THE VILLAGE OF LIONS BAY
HELD ON THURSDAY, DECEMBER 14, 2023 AT 6:00 PM
COUNCIL CHAMBERS, 400 CENTRE ROAD, LIONS BAY
AND VIA ZOOM VIDEO CONFERENCE**

MINUTES

In Attendance : Neville Abbott – Chair
Ken Berry
Anthony Greville
Brian Ulrich

PWM – Karl Buhr.

Absent with regrets : Hilary Monfared
: Jaime Cunliffe

Absent :

1. Call to Order

The Infrastructure Committee Meeting was called to order at 18:04.

2. Appointment of Recorder

ASG was appointed recorder for this meeting.

3. Approval of the Agenda

The agenda was modified in that Item 8.d was corrected to read Potential Effects of Wildfires on Source Water Quality. The agenda so written was adopted for use.

4. Public Questions & Comments

No public comments or delegation were forthcoming.

5. Approval of Minutes

- A. Infrastructure Committee Meeting Minutes – November 16, 2023
THAT the Infrastructure Committee Meeting Minutes of November 16, 2023 be approved as circulated.
Approved unanimously.

6. Business Arising from the Minutes

See Below in Unfinished Business.

Minutes – Infrastructure Committee – December 14, 2023

Village of Lions Bay

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7. Unfinished Business

| Identifier | Description | Responsible | Status |
|------------|--|-------------|---------|
| 23087 | Locate previous PWM's update report to the IMP indicating the projects that are completed. | PWM | |
| 23092 | Solicit Village resident technical expertise for each working sub group. | All | |
| 23095 | Prepare a resident volunteer recruitment piece for the 01 September Village Up-date. | NTA | |
| 23101 | PWM to meet with NTA and ASG to determine the level of assistance required by the PWD from the I.C. on select PWD projects. | PWM All | ✓ |
| 23111 | All I.C. members will be provided with a copy of the IMP and the enhanced Asset Management Plan. The document is complicated and requires a dedicated I.C. meeting to fully understand the implications for the Village. | KB/PWM | |
| 23112 | Convene a February I.C. Round Table Meeting to focus on a 10 and 20 year horizon plan to identify the new and replacement infrastructure requirements and related expenses. | NTA/All | |
| 23113 | CAO and/or Council to be asked to allow members of the I.C. to have selective access to the PW document library. | PWM | |
| 23114 | The I.C. to solicit the Village for an individual with the relevant programming skills to assist the PWM with the OLDER initiative. | All | ✓ |
| 23115 | PWM to ask administration to post the 2022 Water Report and ASG to review for a discussion in February as a part of 23112. | PWM/ASG | Partial |
| 23116 | A group tour of the Magnesia and Harvey Creek intakes to fully understand the concern and consequences of the Magnesia Creek intake pluggage is to be arranged before the end of November. ASG to solicit the expertise of a competent and responsive engineer to allow this project to proceed. | All | |
| 23117 | BU will review the SCADA system on behalf of the I.C. and work with the PWM to up-grade the hardware and software. A Requirements Document is anticipated at mid 2024. | BU/PWM | Partial |
| 23118 | Assist the PWM in determining the best option for the replacement of the Highway Water Tank. ASG to solicit the expertise of a competent and responsive engineer to allow this project to proceed. | ASG | |

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| 23121 | HM to assist the PWM in preparing REQ/RFP documentation for estimate and work on water main replacement Creekview Place and for the estimate for Highview Place. HM to assist the PWM and CAO in reviewing submissions once received. | HM/PWM | |
| 23122 | ASG to assist the PWM in preparing REQ/RFP documentation for estimate for the supply and installation of an alkalinity feed system for each WTP. ASG to assist the PWM and CAO in reviewing submissions once received. | ASG/PWM | |
| 23123 | The I.C. submit a written list of projects it feels Council should support in 2024 prior to the forthcoming budget session. | All | |
| 23124 | Meet with members of the CAC to see if and where the common ground is with respect to water metering in the Village, allowing for possible coordinated recommendations. | NTA/ASG/BU | |
| 23125 | ASG to find vendors who can supply portable WTP on short notice, in the event of a local wildfire in the watersheds, for rent for up to 36 months. | ASG | |

NOTES:

- 23087 The PWM will present same to Council during the 2024 budget meetings, at which time the update will become public and the I.C. will have access.
- 23092 It was decided the best option was to determine the select group of projects the I.C. will work on and then solicit resident expertise to avoid exciting some individuals and them “putting them on the shelf” because their specific expertise is not required.
- 23095 See 23092
- 23101 PWM addressed his major requests to the full I.C. as a part of Agenda Item 8.b. below under New Business.
- 23111 The PWM will send the enhanced Asset Management Plan to I.C. members with the understanding the document is complicated and requires a dedicated meeting to review and fully understand the implications for the Village.
- 23113 The PWM and KB are to ask the CAO for a second time to allow this to happen.
- 23114 PWM made a short presentation to examine significant potential water losses to the Village distribution system (as much as 500,000 usgpd). BU to undertake an analysis of the SCADA data to verify PWM’s preliminary conclusions.
- 23115 2022 Annual Water Quality Report is now available, ASG to review and report back to the February meeting.

- 23116 ASG and BU still to visit the water intakes. See Item 8.b below under New Business for up-date on recommended Magnesia Creek intake design solution.
- 23117 BU has had a chance to review the SCADA system outlines. Need to define and clarify real concerns and generate a Requirements Document. See Item 8.b below under New Business.
- 23118 Require a competent and responsive engineering company to assist PWM. ASG to ask his contacts, see Item 8.b below under New Business.

8. New Business

- A. Proposed 2024 Infrastructure Meeting Calendar.
2024 Infrastructure Meeting Calendar was approved as presented.
- B. PWM non-core needs for 2024 discussion.
The PWM introduced a list of 17 preferred projects for 2024. He prefaced his comments with the fact he and the crew simply do not have the time to address more than 4 or 5 projects, and that several are very expensive and require considerable grant funding, which is not currently available. The request was to review the project list and see where the I.C. can provide real assistance. NA added a request that the I.C. submit a written list of projects it feels Council should support in 2024 prior to the forthcoming budget review session.
After a full and lengthy discussion, the I.C. settled on the following projects as those it feels the Village should budget for and complete in 2024.
- i. The I.C. recommends as a top priority that Council approve the spending of the previously allocated (and so far, unspent) \$300,000 on very necessary bridge repairs. Corrosion due to salt applications over the years, and bridge age, are the main factors causing bridge support integrity loss. The recommendation further specifies that the Cross Creek Bridge be the first examined to determine the real extent of the problem and the real cost of repair. It is anticipated \$300 K may not even repair one bridge let alone 13!
Once the Cross Creek bridge has been effectively repaired, with the knowledge obtained, the I.C. can recommend further projects within the \$300 K allocated. It is further recommended that should the Cross Creek bridge repairs cost more than the \$300 K allocated, that full funding be provided to complete this task, at which time a complete Village wide assessment, including realistic costing can be prepared for Council.
 - ii. The major unfunded project within the Village is the replacement of the Highway Water Storage Tank at the entrance to the Village below Cross Creek bridge opposite Broughton Hall and the Council Chambers. The current plan is to replace the tank with 2 PRV stations to supply potable and fire water to the lower Village.

It is believed the Highway Tank is the source of much of the water loss currently experienced; its replacement was originally scheduled as a part of the project to replace the Harvey WTP reservoir. This is an immediate need and a “must do” for 2024. This project is expected to cost in excess of \$1 M, with only \$100,000 currently allocated and unspent.

The concerns associated with this project include the land being owned by MOTI, and the absence of a competent and responsive engineering company.

Action Step - ASG to ask his contacts within the industry to find a competent and responsive engineer to allow this project to proceed.

- iii. The reconstruction of the Magnesia Creek Intake (or full rebuild) is the third priority the I.C. feels must be addressed in 2024. This project is also currently unfunded. A budget figure of \$100,000 has been suggested, but an allotment of \$250,00 should be made.

The current proposal is to emulate/improve on Harvey Intake design and, as far as possible, replicate the same at Magnesia Creek. There is proof of concept with a full-scale application in place on Harvey Creek. The basic design work has been completed; however, it will need to be modified for Magnesia Creek. This is essentially a “concrete and steel-plate” project, but the expense will come in getting materials to site etc.

As with the Highway Tank, finding a competent and responsive engineer is the primary challenge with this project.

Action Step - ASG to ask his contacts within the industry to find a competent and responsive engineer to allow this project to proceed.

- iv. The fourth priority for 2024 is the need to significantly up-date, if not replace, the aging SCADA hardware and software. The PWM reports he cannot find spare parts for the hardware when it fails. An initial review by the I.C. has shown much of the hardware is now over 35 years old, and no longer serviceable in a modern community. The SCADA system needs to be rebuilt from the ground up to be far more robust and meet current Village needs and industry specifications.

Currently, the I.C. is in the process of defining and clarifying the real concerns and therefore the real requirements. It is expected a “Requirements Document” report will be available at mid year that will outline exactly what needs to be done with some attached costing. Currently there is \$100,000 of allocated money not yet spent on this project.

Action Step – BU will continue his review of the SCADA system on behalf of the I.C. and work with the PWD to up-grade the hardware and software. A Requirements Document is anticipated at mid 2024.

- v. The fifth project the I.C. feels should proceed in 2024 can be split into two separate previously funded sub projects; namely the replacement of the 90 m of water main on Creekview Place and the replacement of the water main along Highview Place. Currently there is \$225,000 in unspent funds allocated to the Creekview Place project and \$100,000 in unspent allocated monies available for Highview Place.

It is the opinion of the I.C. that the work on Creekview should proceed in 2024, after a responsible estimate has been secured, and that a responsible estimate for the Highview Place project be obtained in 2024, with a view to competing this work in 2025.

Action Step – HM to assist the PWM in preparing REQ/RFP documentation for estimate and work on Creekview Place and for the estimate for Highview Place. HM to assist the PWM and CAO in reviewing submissions once received.

- vi. The final recommended project for 2024 is the requirement to provide pH adjustment (elevation in pH and alkalinity concentration) to the finished water to bring our potable water quality into compliance with the GCDWQ and to mitigate any corrosion potential in the distribution system and in private households.

As a consequence of the Flint, Mi scandal, in 2015 Health Canada revised the guidelines for pH in potable water, classifying the Lions Bay water as corrosive and requiring chemical adjustment. This work needs to be completed as soon as possible.

A previous estimate, in 2021, indicated the costing for 2 dry soda ash feeders (one for each WTP) would total \$100,000. The best option is to pursue the dry soda ash (sodium carbonate) as carbonate alkalinity is critical for corrosion mitigation, however, a less expensive option is to provide hydroxide alkalinity using a small positive displacement pump to inject liquid sodium hydroxide (caustic soda).

Action Step – ASG to assist the PWM in preparing REQ/RFP documentation for estimate for the supply and installation of an alkalinity feed system for each WTP. ASG to assist the PWM and CAO in reviewing submissions once received.

Action Step - The I.C. submit a written list of projects it feels Council should support in 2024 prior to the forthcoming budget session.

C. Water Leakage and Use Savings.

A discussion on private side water leaks and their effect on total water losses. Two recent instances of small leaks, each one possibly being as significant as 50,000 usgpd where highlighted. With much of the local infrastructure being 50 years old, and reaching the end of its service life, continued leaks can be expected. The PWM feels the Highway Tank is the major source of significant water loss and recommended waiting until this source has been addressed to determine the real private side losses and then make public awareness, and hopefully action, a priority.

The discussion evolved into a Village wide water meter cost (estimated at \$3,000 - \$4,000 per connection, or \$1.5 M – \$2.00 M Village wide) versus benefits review. Zone metering is a positive and should proceed, while individual household metering is more difficult to justify. It is recognized many residents will simply pay a little extra each year and so reduce the potential impact on measurable water use savings. However, there are some regulatory options available that will encourage water meter installation (building permit requirement etc.).

It was decided to delay any publicity and awareness campaign until later in 2024 once the Highway Tank issue has been properly addressed. It was suggested some members of the I.C. could meet with members of the Climate Action Committee to see where the common ground is and consider a joint recommendation to Council.

Action Step - Meet with members of the CAC to see if and where the common ground is with respect to water metering in the Village allowing for possible coordinated recommendations to Council.

D. BCWWA - Impacts of Wildfires on Source Water.

A recent paper and technical presentation suggested the Village can expect to see some impact to our raw water quality as a result of a wildfire in our watershed, but perhaps it is not as drastic as some commentators in the Village have suggested. The positive is that our creeks are not long running rivers or large lakes, and so will be less impacted by a fire several to hundreds of kilometers away. However, the Village could still expect to see a long term effect on our disinfection efficiencies and protocols as a consequence of a significant wildfire in our geographically small watersheds. A short term (months) spike in turbidity should be expected, and a longer term (3 – 5 years) increase in TOC has been experienced in other locations. Both these effects will compromise disinfection, but both can be easily managed with a properly functioning coagulation and filtration water treatment plant (UF membrane facility would be perfect).

Action Step - Ensure a water filtration facility is included in the February meeting agenda to determine how the I.C. will procedurally examine the 20 year horizon and determine which infrastructure functions/areas will be the initial focus.

Action Step - Understanding any WTP cannot be built in a few months, and that a wildfire could happen at anytime, it is essential the Village has a contingency plan to be able to bring in some temporary water treatment plants on short notice. ASG to find vendors who has supply portable WTP on short notice for rent for up to 36 months.

9. Public Questions & Comments

No public comments or delegation were forthcoming.

10. Adjournment

Meeting was adjourned at 20:57.

11. Next Meeting

Next meeting of the Infrastructure Committee was confirmed to be 18 January, 2024.



| | | | |
|-------------------|--|---------------------|-------------------------|
| Type | Committee Recommendation | | |
| Title | Infrastructure Projects Recommendation to Council for 2024 Budget Year. | | |
| Author | Neville Abbott | Reviewed By: | Anthony Greville |
| Date | December 27, 2023 | Version | V2 |
| Issued for | CotW Mtg January 09 and RCM January 23, 2024 | | |

Recommendation:

THAT Council provide direction to staff with respect to the Infrastructure Committee Projects Recommendation to Council for 2024 Budget Year as follows:

1. The I.C. recommends, as the top priority, Council approve budget on bridge end repairs.
2. The major unfunded project within the Village is the replacement of the Highway Water Storage Tank at the entrance to the Village below Cross Creek bridge.
3. The reconstruction of the Magnesia Creek Intake (or full rebuild) is the third priority the I.C. feels must be addressed in 2024.
4. The fourth priority for 2024 is the need to significantly up-date, if not replace, the aging SCADA hardware and software.
5. The fifth project the I.C. feels should proceed in 2024 can be split into two separate sub projects; namely the replacement of the 90 m of water main on Creekview Place and the design for the replacement of the water main along Highview Place.
6. The final recommended project for 2024 is the requirement to provide pH adjustment to the finished water.

Attachments:

(1) Draft minutes from Infrastructure Committee meeting of December 14, 2023

Key Information:

The Infrastructure Committee has been working with the Public Works Manager to review the extensive list of required infrastructure projects while attempting to determine the top priorities for 2024. We have based our priority weightings on safety, infrastructure life expectancy, need and budget criteria.



As a committee, we wish to submit the following six (6) recommendations to Council as it prepares the public works budgets for 2024. After a full and lengthy discussion during our 14 December meeting, the I.C. settled on the following projects as those it feels the Village should budget for and complete in 2024.

i. The I.C. recommends, as the top priority, Council approves a budget for bridge repairs. Bridge deck joints are critical components of a bridge structure as they provide essential functions such as accommodating thermal movements, allowing for vehicular traffic, and ensuring the safety and durability of the bridge. Properly designed and maintained bridge deck joints can help prevent premature deterioration and failure of the bridge, ensuring its long-term performance and safety.

The cost of these repairs increases each year with further deterioration and escalation. The recommendation is that the Cross Creek Bridge be the first bridge deck joints to be repaired and the real cost of these repairs be confirmed.

A previous budget request in 2022 of \$150k proved to be insufficient and a subsequent \$320K budget for 2023 was proposed. It has been suggested some, or all, of these funds have been reallocated to other bridge repairs and the amount of funding available from previous budgets needs to be confirmed.

Once the Cross Creek Bridge has been repaired, with the knowledge obtained, the PWM will be able to assess how many of the 8 bridges can be repaired within the available budget. The IC could weigh in with a further recommendation if necessary.

ii. The major unfunded project within the Village is the replacement of the Highway Water Storage Tank at the entrance to the Village below Cross Creek bridge. The current plan is to replace the tank with 2 PRV stations to supply the lower Village. It is believed the Highway Tank is the source of much of the water losses currently experienced, and its replacement was originally scheduled as a part of the project to replace the Harvey WTP reservoir. This is an immediate need and a “must do” for 2024. This project is expected to cost approximately \$1 mm, with only \$100,000 currently allocated and unspent.

iii. The reconstruction of the Magnesia Creek Intake (or full rebuild) is the third priority the I.C. feels must be addressed in 2024. This project is also currently unfunded. A budget figure of \$100,000 has been suggested, but an allotment of \$250,000 should be made.

The current proposal is to emulate/improve on Harvey Intake design and, as far as possible, replicate the same at Magnesia Creek. There is proof of concept with a full-scale application in place on Harvey Creek. The basic design work has been completed; however, it will need



to be modified for Magnesia Creek. This is essentially a “reinforced concrete and steel plate” project, but the expense will be due to the difficult access getting materials to site etc.

iv. The fourth priority for 2024 is the need to significantly up-date, if not replace, the aging SCADA hardware and software. The PWM reports he cannot find spare parts for the hardware when it fails. An initial review by the I.C. has shown much of the hardware is now over 35 years old, and no longer serviceable. The SCADA system needs to be rebuilt from the ground up to be far more robust and meet current Village needs and industry specifications. Currently, the I.C. is in the process of defining and clarifying the real concerns and therefore the real requirements. It is expected a “Requirements Document” report will be available at mid year that will outline exactly what needs to be done with some attached costing. Currently there is \$100,000 of allocated money not yet spent on this project.

v. The fifth project the I.C. feels should proceed in 2024 can be split into two separate previously funded sub projects; namely the replacement of the 90 m of water main on Creekview Place and the replacement of the water main along Highview Place. The previously requested budget is \$225,000 for the design & installation of the Creekview Place project and \$100,000 for the design only for Highview Place.

It is the opinion of the I.C. that the work on Creekview should proceed in 2024, after a responsible estimate has been secured, and that a responsible estimate for the Highview Place project be obtained in 2024, with a view to completing this work in 2025.

vi. The final recommended project for 2024 is the requirement to provide pH adjustment (elevation in pH and alkalinity concentration) to the finished water to bring our potable water quality into compliance with the GCDWQ and to alleviate any corrosion potential in the distribution system and in private households.

As a consequence of the Flint, Mi scandal, in 2015 Health Canada revised the guidelines for pH in potable water, classifying the Lions Bay water as corrosive and requiring chemical adjustment. This work needs to be completed as soon as possible.

A previous estimate, in 2021, indicated the costing for 2 dry soda ash feeders (one for each WTP) would total \$100,000. The best option is to pursue the dry soda ash (sodium carbonate) as carbonate alkalinity is critical for corrosion mitigation, however, a less expensive option is to provide hydroxide alkalinity using a small positive displacement pump to inject liquid sodium hydroxide (caustic soda).



We trust that Council will review these Committee recommendations in a positive light as all are necessary and are but a very small number drawn from the project list on hand. Should Council members require any technical background, please do not hesitate to contact us and the respective expert will be happy to answer any questions.

Options to Pursue Desired Result:

- (1) Finance Staff to confirm unspent budget available from previous budgeting cycles for these items.
- (2) WYM to incorporate these recommendations into his Supplemental Budget Requests for 2024.
- (3) Council to consider these requests during the CotW (budget session) on 09 January.
- (4) CotW recommendations to be presented to RCM on 23 January for approval on a case-by-case basis or in entirety.

Communication Plan: residents have statutory prescribed access to budgetary deliberations which will be complied with, no additional requirements are necessary as long as these are observed in best practice.



BUDGET SUPPLEMENTAL DETAIL

| | | | |
|-----------------------------|--|---------------------------|-------------------------|
| Date: 5 January 2024 | Item: PW2024.1 | | |
| From: KB | Project: Highway Tank replacement | | |
| Amount: 1,000,000 | One time: <input checked="" type="checkbox"/> Ongoing: <input type="checkbox"/> | Impact 3 | Risk 3 |

DESCRIPTION

1960-era Highway Tank known from recent diver inspection to be failing from the inside, and floor is suspected to have significant leaks. Drain valve rusted shut. With advent of upsized Harvey Tank, 21,000 iG capacity is no longer required: today only serves as a break-head (pressure reduction) vessel.

AECOM 2016 preliminary design would see tank replaced with a PRV, housed in a kiosk alongside a replacement of the adjacent PRV 3.

Quotes for the necessary design work have been requested from ISL, AECOM and Corollo.

IMP recommendations 21, 52.

RATIONALE

- Delivery by mid-July will reduce leakage to help anticipated 2024 supply constraints
- Replacement with a PRV will provide better pressures, to address fireflow deficiencies on Lions Bay Ave (subject to redo on hydraulic model)
- Offers zone flow/leak metering for 2 major branches of the mains network
- Addresses compromised water quality and Coastal Health involvement from failing tank materials
- Removes an eyesore and offers future use of area as a dog park.

FINANCIAL IMPLICATIONS

\$25,000 budgeted in 2023 for design. \$1,000,000 estimate is educated guess for temporary units, demo of current tank, drop-in dual-PRV kiosk, instrumentation, reinstallation of screen.

Candidate for \$998,000 BC Growing Communities Fund grant to address “community’s unique infrastructure and amenity demands?”



BUDGET SUPPLEMENTAL DETAIL

| | | | |
|-----------------------------|--|---------------------------|-------------------------|
| Date: 5 January 2024 | Item: PW2024.2 | | |
| From: KB | Project: End-Tidewater drainage | | |
| Amount: 500,000 | One time: <input checked="" type="checkbox"/> Ongoing: <input type="checkbox"/> | Impact 2 | Risk 1 |

DESCRIPTION

Design and construction of 150 meters of pipe, including railway crossing (extent of required replacement to be confirmed by crawling and with CCTV). Repave full width of poor-moderate roadway. Crack seal and patch poor sections of roadway uphill of the culvert replacement.

IMP recommendation 47B

RATIONALE

Culvert is likely undermining along route and compromising sewer and watermain in area.

FINANCIAL IMPLICATIONS

Will get worse every year



BUDGET SUPPLEMENTAL DETAIL

| | | | | |
|-----------------------------|--|---------------------------|-------------------------|-------------------------|
| Date: 5 January 2024 | Item: PW2024.3 | | | |
| From: KB | Project: Klatt Public Safety building renovation | | | |
| Amount: 499,000 | One time: <input checked="" type="checkbox"/> Ongoing: <input type="checkbox"/> | Impact 1 | Risk 2 | Rank 3 |

DESCRIPTION

Reduced-scope for renovation of Klatt Public Safety building, previously approved, to be delivered by 31 Dec., project managed by PW.

Architect: Millenia, Russ Meiklejohn

M&E: Integral Group, Stuart Hood

CM: Harrier Construction, Andrew Oliver

RATIONALE

Previously rationised.

FINANCIAL IMPLICATIONS

100% grant funded.



BUDGET SUPPLEMENTAL DETAIL

| | | | | | |
|-----------------------------|--|--|---------------------------|-------------------------|-------------------------|
| Date: 5 January 2024 | Item: PW2024.4 | | | | |
| From: KB | Project: Connector Project including Wayfinding Signage | | | | |
| Amount: 429,333 | One time: <input type="checkbox"/> | Ongoing: <input type="checkbox"/> | Impact 2 | Risk 1 | Rank 3 |

DESCRIPTION

A la carte options for Translink’s 75% grant-funded Walking Infrastructure to Transit (WITT) and Bicycle Infrastructure Capital Cost Sharing (BICCS) projects.

Existing design pulled by Council in late 2022, now being rescoped by citizen taskforce. Translink has assigned ISL Group, their captive engineering project group, as turnkey project managers (partially funded within grant).

RATIONALE

- Better public bus shelter
- Pedestrian access to LBBP

FINANCIAL IMPLICATIONS

Amount quoted represents full use of allocated funds at 75% grant funding, implying \$100,000 in taxpayer funding required. Given other demands this year, Municipality involvement here is necessarily minimal.



BUDGET SUPPLEMENTAL DETAIL

| | | | |
|-----------------------------|--|---------------------------|-------------------------|
| Date: 5 January 2024 | Item: PW2024.5 | | |
| From: KB | Project: Magnesia intake reconstruction | | |
| Amount: 333,333 | One time: <input checked="" type="checkbox"/> Ongoing: <input type="checkbox"/> | Impact 3 | Risk 1 |

DESCRIPTION

Reconstruct Magnesia Intake weir as a replica of successful Harvey weir to reducing clogging, improve organics separation, reduce servicing. Add adjacent settler/laundry/raceway to drop out gravel and sand to allow poorly performing and difficult to service settling building to be abandoned. Carollo Engineers producing quote for design and construction management.

RATIONALE

Improve reliability of intake, which blocks frequently (sometimes twice a day in leaf season, at onset of heavy rains, and during freshette), or for weeks at a time if it occurs when PW is constrained by access safety weather windows.

Nature of pool hydraulics currently means that it freezes at quite high temperatures.

FINANCIAL IMPLICATIONS

Savings of PW hours ranging from 2 to 28 hours a week, often OT or double-OT.

BUDGET SUPPLEMENTAL DETAIL

| | | | |
|-----------------------------|--|---------------------|-------------------|
| Date: 5 January 2024 | Item: PW2024.6 | | |
| From: KB | Project: Bridge deck joints | | |
| Amount: 320,000 | One time: <input checked="" type="checkbox"/> Ongoing: <input type="checkbox"/> | Impact 2 | Risk 3 |

DESCRIPTION

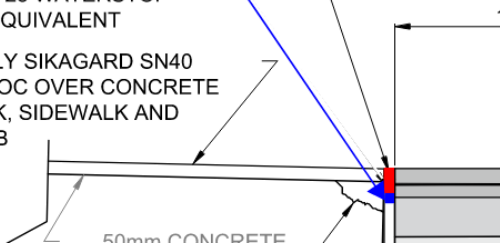
Bridge-deck joints connect the bridge to the road, allow tires to transition from one to the other, and provide for thermal expansion and contraction. Properly maintained bridge deck joints prevent premature deterioration and failure of the bridge. Visual and acoustic inspection of the joints of Lions Bay’s seven public road bridges indicate remediation is urgently required to:

25mm wide x 75mm deep

HOT-POURED RUBBERIZED SEALANT (~~OR SIKAFLEX~~ JOINT SEALER)

SIKADUR HYDROTITE CJ-0725 WATERSTOP OR EQUIVALENT

APPLY SIKAGARD SN40 LO VOC OVER CONCRETE DECK, SIDEWALK AND CURB



Expose and reseal joints

- Repair concrete spalling and cracking on abutments, soffits and footings as needed
- Mill and fill asphalt on approaches
-

RATIONALE

Needed to extend the service life of Lions Bay’s seven public road bridges, and before rebar rots back so far that deck integrity is compromised. Neglect will lead to far more significant repair costs, while compromising safety.

FINANCIAL IMPLICATIONS

\$150,000 was approved for this project in 2022, but rescinded when the 325 Bayview bridge project expanded. Unit costs have increased significantly since then. Depending on extent of repair needed, this budget may not cover all bridges, but it will give an indication of how much more is required. Note that slumping SW approach of B01 (Lions Bay Ave. over Harvey Ck.) will be addressed in-house first, as soon as the lock-block retention structure design is produced by the assigned engineers (or others, if they don’t get a move on).



BUDGET SUPPLEMENTAL DETAIL

| | | | |
|-----------------------------|--|---------------------------|-------------------------|
| Date: 5 January 2024 | Item: PW2024.7 | | |
| From: KB | Project: Design and construction of end-Mountain drainage culvert | | |
| Amount: 200,000 | One time: <input checked="" type="checkbox"/> Ongoing: <input type="checkbox"/> | Impact 2 | Risk 2 |

DESCRIPTION

Existing underground concrete drainage pipe has deteriorated to the point that there is no bottom and a large sinkhole has formed in the Mountain cul-de-sac. Assume will require replacement of 40 meters of pipe, extent of required replacement to be confirmed with CCTV.

RATIONALE

Project approved for 2023. Repairs will only get more difficult as time goes on.

FINANCIAL IMPLICATIONS

\$150,000 approved in 2023 budget.



BUDGET SUPPLEMENTAL DETAIL

| | | | |
|-----------------------------|--|---------------------------|-------------------------|
| Date: 5 January 2024 | Item: PW2024.8 | | |
| From: KB | Project: SCADA equipment updates, zone flow metering | | |
| Amount: 205,000 | One time: <input checked="" type="checkbox"/> Ongoing: <input type="checkbox"/> | Impact 3 | Risk 3 |

DESCRIPTION

- New SCADA programmable logic controllers (PLCs) at Yard, Mag Plant, Harvey Plant, KG STP, spare (current PLCs run under Windows NT virtual machines)
- 5 clamp-on flow/leak zone meters (in addition to flowmeters now on Upper Bayview PRV, Mountain PRV, and on LBA/Southview and Islevue pressure zones for PW2024.1); connectivity by cellular modem if signal exists, or hardwire)
- Trial three inline chlorine monitoring stations in parallel with current hand sampling approach (connectivity by cellular modem if signal exists, or hardwire)
- Trial two models of premise meters (driveby reading) at Marina and School.

IMP recommendations 11, 4, 7, 57, 58

RATIONALE

- We must find 350,000 GPD in leakage before August 2024 and zone metering allows us to narrow down problem areas and track repairs. Premise metering will unequivocally quantify usage at presumed large consumers, and demonstrate commitment vital for upcoming grant opportunities.
- Spares are not available for PLCs (lightning strike of Summer 2023 almost did us in)
- Chlorine monitoring provides live warning of decreasing residuals at the ends of the network and allow us to confidently reduce complaints of excessive chlorine.

FINANCIAL IMPLICATIONS

20% sewer / 80% water.

\$100,000 already funded in 2023 budget



BUDGET SUPPLEMENTAL DETAIL

| | | | |
|-----------------------------|--|---------------------------|-------------------------|
| Date: 5 January 2024 | Item: PW2024.9 | | |
| From: KB | Project: Design of watermain and drainage Oceanview Rd (215m) | | |
| Amount: 150,000 | One time: <input checked="" type="checkbox"/> Ongoing: <input type="checkbox"/> | Impact 3 | Risk 2 |

DESCRIPTION

Design 215 m of watermain and drainage from 270 Oceanview to Highview, plus tie-ins to

- Main/drain on 415 m of Highview (design at \$80,000 and construction at \$100,000, which sounds low, approved in 2023)
- Main/drain of 90 m of Creekview (design and construction at \$225,000 approved in 2023)

IMP recommendation 8

RATIONALE

- The 1960s-era Oceanview cast iron main is beyond the end of its expected lifespan: rust nodules are likely the cause of fire flow deficiencies on Highview Place
- Given the drainage issues and visible slumping of Oceanview, it is believed mains joints themselves, as opposed to service lines, are a significant cause of leakage. This main needs to be replaced ASAP to ensure the safety and reliability of the water supply system; to get there we need a shovel-ready design.

FINANCIAL IMPLICATIONS

\$50,000 funded in 2023 budget



BUDGET SUPPLEMENTAL DETAIL

| | | | |
|-----------------------------|---|---------------------------|-------------------------|
| Date: 5 January 2024 | Item: PW2024.10 | | |
| From: KB | Project: Pride Trail rebuild | | |
| Amount: 70,000 | One time: <input type="checkbox"/> Ongoing: <input type="checkbox"/> | Impact 3 | Risk 2 |

DESCRIPTION

Extension of existing no-post retaining wall 15 m and placement of 1 m boulders along Pride Trail, per MOTI specification.

Council approval of waiver of Purchasing Policy provided by resolution in 2023, and contractor appointed.

RATIONALE

MOTI requirement for Trail-user safety

Formalise use of OLOG property

Trail will be widened to allow maintenance by PW skid-steer.

FINANCIAL IMPLICATIONS

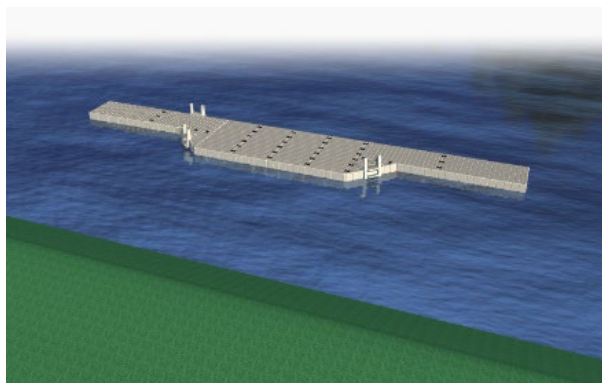
100% funded by MOTI



BUDGET SUPPLEMENTAL DETAIL

| | | | |
|-----------------------------|--|---------------------------|-------------------------|
| Date: 5 January 2024 | Item: PW2024.11 | | |
| From: KB | Project: LBBP - floating dock | | |
| Amount: 50,000 | One time: <input checked="" type="checkbox"/> Ongoing: <input type="checkbox"/> | Impact 3 | Risk 2 |

DESCRIPTION



\$34,000: 65-foot long EZ-Dock product, with 3 ladders, grounding blocks and anchor attachments

\$16,000: 6 anchor blocks, shock line, mid-cable deadweights to manage 20' tidal range.

Expansion possible if proves successful

RATIONALE

- With recent unavailability of Marina to do the work at \$5000/cycle, logs and dock will cost \$16,000-20,000/year to put in and take out by barge. This product can be installed and removed by PW alone, even without a vehicle gate to the parking lot.
- Current barely floating slippery log boom near end of service
- Crush risk between heavy logs and dock

FINANCIAL IMPLICATIONS

Expected to last 20 years, with a 3 year ROI

BUDGET SUPPLEMENTAL DETAIL

| | | | |
|-----------------------------|--|---------------------|-------------------|
| Date: 5 January 2024 | Item: PW2024.12 | | |
| From: KB | Project: Kuboda side-by-side utility vehicle | | |
| Amount: 25,000 | One time: <input checked="" type="checkbox"/> Ongoing: <input type="checkbox"/> | Impact 2 | Risk 3 |

DESCRIPTION

Pending potential funding by HLOG of regrading, ditching and culverting of the Mag Intake access road as part of a Tunnel Bluffs Y toilets scheme, in lieu of utilising \$335,000 budgeted in 2023 to remediate the access road, purchase new Kuboda RTV-X diesel side-by-side utility vehicle to access Mag Intake. Unit would be stored inside Mag Plant fence.



RATIONALE

- Save wear and tear on trucks
- More likely to get through in heavy snow (as opposed to snowshoeing in)
- Trailer to LBBP service if Marina gate remains closed to us.

FINANCIAL IMPLICATIONS

Return \$315,000 to reserves, at least for now