

A Technical and Community Assessment of Potential Spray Park Locations

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Prepared by:

Aaron Van Eyk, P.Eng., *Director of Engineering*

Edited by:

Danielle Laporte, *Communications System Analysis Advisor*

DISTRICT OF
HOPE

325 Wallace Street, Hope, BC, V0X 1L0

EXECUTIVE SUMMARY

As Hope continues to invest in recreation, healthy living, and family-friendly amenities, community interest in developing a spray park has continued to grow. This feasibility study evaluates potential locations, servicing requirements, operational considerations, project costs, and overall viability to support future Council decision-making.

Key Findings

✓ Three feasible candidate locations were evaluated.
✓ Existing municipal infrastructure can support future development.
✓ Spray parks provide significant recreational, tourism and community benefits.
✓ Infrastructure considerations can be addressed during future design.
✓ Further detailed design will refine costs and servicing requirements.

Overall, the study concludes that the development of a spray park within Hope is technically feasible. While each location presents unique considerations, all candidate sites have the potential to support a successful community recreation facility subject to detailed design, funding, and Council direction.

Community Benefits

✓ Free summer recreation
✓ Supports healthy lifestyles
✓ Helps residents stay cool during extreme heat
✓ Inclusive play opportunities
✓ Tourism attraction
✓ Family gathering place
✓ Investment in parks and recreation

In response to growing community interest in the development of a spray park, the District of Hope undertook this feasibility study to evaluate the technical, operational, financial, and community considerations associated with constructing a new spray park. The study examines potential locations, servicing requirements, operational and maintenance needs, public health and safety considerations, community impacts, and estimated project costs.

Two primary spray park system types were evaluated as part of this study: **flow-through** and **recirculation** systems. Flow-through systems use fresh potable water supplied directly from the municipal water system before discharging it to the sanitary sewer, resulting in a simpler and more cost-effective design. Recirculation systems continuously filter, disinfect, and reuse water, significantly reducing water consumption while requiring additional mechanical equipment, operational oversight, and higher capital investment.

Three candidate locations were evaluated, including one site within Memorial Park and two potential locations at the 6th Avenue Fairgrounds. Each location offers existing recreational amenities, municipal servicing, and opportunities to support a future spray park. Preliminary servicing assessments indicate that all candidate locations can be connected to the District's

existing water and sanitary sewer infrastructure, with final servicing requirements to be confirmed during detailed design.

The study also evaluated the capacity of the District's broader municipal infrastructure, including the gravity sewer network, Coquihalla Lift Station, Pollution Control Centre, and potable water supply. While a future spray park would increase seasonal demands on these systems, preliminary review indicates that the existing infrastructure can accommodate anticipated flows. Additional engineering analysis will be required during detailed design to confirm long-term system capacity and identify any required upgrades.

Operational requirements were reviewed for both mechanical system types. Routine maintenance is expected to include seasonal startup and winterization, daily inspections, cleaning, and minor repairs. Recirculation systems require additional responsibilities related to water treatment, filtration, and regulatory water quality monitoring, while flow-through systems have simpler operational requirements and lower long-term maintenance demands.

Public health and safety considerations were also assessed. Appropriate design features (including slip-resistant surfacing, regulatory signage, effective drainage, and routine inspections) can help provide a safe and enjoyable environment for park users. Spray parks are regulated as public pools under Fraser Health, and the selected design will require regulatory review and operating approval prior to construction and operation.

Beyond technical feasibility, a spray park has the potential to provide significant recreational and community benefits. It would create a free, inclusive outdoor recreation opportunity that supports healthy lifestyles, encourages family gathering, enhances accessibility, and contributes to Hope's parks and recreation network. Site-specific considerations, including parking, community events, accessibility, and compatibility with existing park uses, should continue to be evaluated during future planning.

The candidate locations identified in this study are conceptual and intended to support feasibility analysis only. Final site selection will be subject to future Council direction, public engagement, detailed design, and funding considerations.

Based on the findings of this study, the development of a spray park in the District of Hope is considered technically feasible. While each candidate location presents unique opportunities and design considerations, no significant technical barriers were identified that would prevent the project from moving forward.

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1. BACKGROUND

Interest in developing a community spray park has continued to grow in Hope for several years. Community members, families, and the Hope Splash Park Volunteer Committee have advocated for this amenity, recognizing its potential to enhance recreation, promote healthy living, and create a welcoming gathering place for residents and visitors. In response to this growing interest and the District of Hope's commitment to supporting recreation and young families, District staff undertook this feasibility study to better understand the technical requirements, potential challenges, and community benefits associated with developing a spray park.

A spray park would provide a free, accessible outdoor recreation space for residents and visitors of all ages. It would create new opportunities for children and families to stay active, cool off during the summer months, and gather in a safe, inclusive public space. Beyond recreation, the facility has the potential to strengthen community connections, support local tourism, and complement Hope's existing parks and recreation network.

This study is intended to inform District staff and Council on the overall feasibility of developing a community spray park in Hope. It provides information on candidate locations, municipal servicing requirements, operational and maintenance considerations, and estimated project costs. Additional factors, including public safety, community impacts, accessibility, and inclusivity, are also evaluated to support informed, equitable, and sustainable decision-making. If advanced, the project has the potential to become a lasting community asset that supports the District's vision for recreation, healthy living, tourism, and an inclusive, family-friendly community.

2. SPRAY PARK CANDIDATE LOCATIONS

The locations presented in this report are conceptual and were selected for the purposes of evaluating technical feasibility, servicing requirements, community impacts, and overall suitability. They should not be interpreted as the only potential locations for a future spray park. Additional sites or refinements to the conceptual layouts may be considered through future Council direction, public engagement, and detailed design.

Candidate Location	Existing Amenities	Utilities Nearby	Parking	Recreation Context
Memorial Park	✓	✓	Moderate	Downtown
6th Avenue Site 2A	✓	✓	Excellent	Recreation Hub
6th Avenue Site 2B	✓	✓	Excellent	Recreation Hub

Two candidate locations were evaluated as part of this feasibility study: Memorial Park, located adjacent to the District of Hope Municipal Hall, and the 6th Avenue Fairgrounds, located adjacent to the Hope Recreation Centre. Within the 6th Avenue Fairgrounds, two potential spray park locations (Sites 2A and 2B) were considered. An overview of the candidate locations is provided in Figure 1.



Figure 1. Candidate Spray Park Locations Evaluated in this Study

Each candidate location was evaluated using consistent criteria, including existing amenities, available space, municipal servicing, community impacts, accessibility, and parking. Together, these factors help identify the opportunities and considerations associated with each site.

Site	Key Strengths
Memorial Park	Downtown location, existing playground, washrooms, picnic areas
Site 2A	Large open area, excellent parking, recreation hub
Site 2B	Close to washrooms, visible location, easier accessibility

2.1. Candidate Location 1 - Memorial Park

Memorial Park has long been identified as a potential location for a community spray park due to its central downtown location, established park amenities, and role as one of Hope's most popular gathering spaces. The proposed spray park location is adjacent to the existing playground, creating opportunities to complement existing recreational amenities while making use of the surrounding picnic areas and washroom facilities. Although the site offers many advantages, it must also accommodate existing community events and seasonal parking demands. These considerations are discussed in greater detail in the Community Benefits section of this report. An overview of the proposed location is shown in Figure 2.

The suitability of Memorial Park for a future spray park is also supported by previous District planning initiatives. The Hope Downtown Action Plan (2023), under Section 4.4 *Enhance the Heart – Memorial Park*, identifies the creation of a spray park adjacent to the existing children's playground as one of the key strategies to strengthen Memorial Park as the heart of downtown.

The Action Plan recognizes the park as a valued destination for residents and visitors and recommends additional recreational amenities that encourage year-round community use. The proposed spray park location identified in this feasibility study aligns with that long-term strategic direction while building upon the park's existing role as central gathering place.

Memorial Park Highlights

✓ Downtown location
✓ Existing playground
✓ Existing washrooms
✓ Picnic facilities
✓ Mature park setting
✓ Walkable from nearby neighbourhoods



Figure 2: Conceptual Spray Park Location within Memorial Park

The proposed location within Memorial Park provides ample space to accommodate a moderately sized spray park while complementing the park's existing recreational amenities. Approximately 600 m² (6,460 sq. ft.) of space is available, with additional room for seating, picnic areas, landscaping, and other park amenities if desired. Locating the spray park adjacent to the existing playground creates an opportunity to establish a larger, multi-use family

recreation destination where children of different ages can enjoy complementary play experiences within a single park visit.

The site's proximity to existing washroom facilities reduces the need for additional supporting infrastructure and enhances convenience for park users. These facilities are in good condition, are regularly maintained by District staff, and support the site's suitability for a future spray park. Figure 3 below identifies the proposed spray park location adjacent to the existing playground.



Figure 3: Photograph of Proposed Location for a Spray Park within Memorial Park

While Memorial Park offers many advantages (including its central location, established amenities, and existing playground), several site-specific considerations should be addressed during detailed design. The park's mature tree canopy contributes significantly to its character while providing valuable shade during the summer months. Design should seek to preserve mature trees where possible while minimizing the potential impacts of falling leaves, conifer needles, and branches on spray park infrastructure and maintenance requirements. Parking demand may also increase during peak summer periods and community events; however, this should be considered alongside the site's excellent walkability and central downtown location. As Memorial Park regularly hosts community events, the final spray park layout should maintain flexibility for existing park uses while enhancing the park's long-term recreational value.

Memorial Park Considerations

✓ Preserve mature trees where possible
✓ Evaluate parking during peak periods
✓ Maintain flexibility for community events
✓ Design drainage to reduce maintenance

Overall, Memorial Park remains a strong candidate location. The identified considerations are primarily related to site planning and park operations and can be further evaluated during detailed design.

2.2. Candidate Location 2 – 6th Avenue Fairgrounds

The 6th Avenue Fairgrounds represent Hope's primary recreation hub and provides a strong opportunity for the development of a future spray park. The surrounding area includes the Hope Recreation Centre, skate park, bike park, baseball diamonds, campground, and other recreational amenities, creating an established destination for residents and visitors. The site offers ample open space, existing municipal servicing, and excellent parking, making it well suited to accommodate a spray park while complementing the surrounding recreation facilities. Existing washroom facilities, located north of the Hope Curling Club, are maintained by District staff; however, they are a relatively small, aging facility, and do not currently meet modern accessibility standards.

Due to the size of the 6th Avenue Fairgrounds, two potential spray park locations were evaluated. Candidate Location 2A is situated adjacent to the existing skate park, immediately north of the conference centre, while Candidate Location 2B is located northeast of the Hope Curling Club within the northern portion of the existing off-leash dog park. Both locations offer sufficient space to accommodate a future spray park and are evaluated independently throughout this report.

2.2.1. Candidate Location 2A

With more than 1,300 m² (14,000 sq. ft.) of available space, this site offers considerable flexibility for future design, including seating areas, landscaping, shade structures, and potential future expansion. The conceptual location for site 2A is shown below in Figure 4.

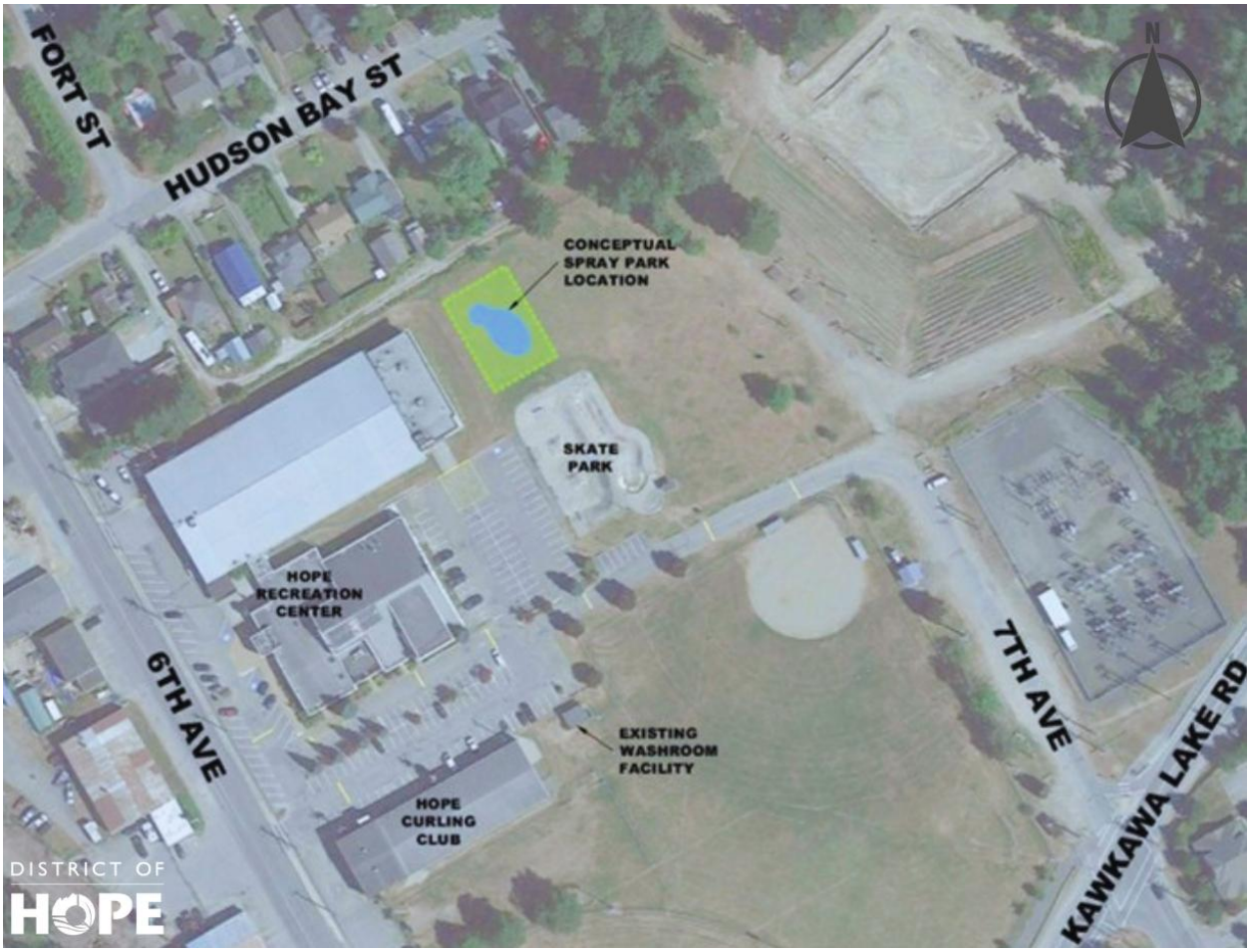

Figure 4: Conceptual Spray Park Location at the 6th Avenue Fairgrounds Adjacent to the Skate Park

While this site offers significant advantages, including abundant open space and excellent parking, several design considerations should be addressed. The site has limited natural shade, reduced visibility (compared to Site 2B) and is located farther from the existing washroom facilities north of the Hope Curling Club. Users would be required to cross the roadway to access the washrooms; therefore, a marked pedestrian crossing should be considered part of any future spray park development. In addition, the existing washroom facilities are relatively small and do not meet current accessibility standards, which may result in future upgrades or replacement being considered.



Figure 5: Candidate Location 2A Adjacent to the Skate Park and Conference Center.

As shown in Figure 5, Candidate Location 2A provides a largely unobstructed site with minimal impacts on existing park uses. The available space offers considerable flexibility for the future layout of spray features, seating, landscaping, and supporting amenities. Additional details regarding municipal servicing and community considerations are discussed in the following sections of this report.

2.2.2. Candidate Location 2B

Candidate Location 2B is situated northeast of the Hope Curling Club, occupying the northern portion of the existing off-leash dog park. This location offers good visibility within the recreation complex and is located closer to existing washroom facilities than Candidate Location 2A. A conceptual layout of the proposed spray park location is shown in Figure 6 below.

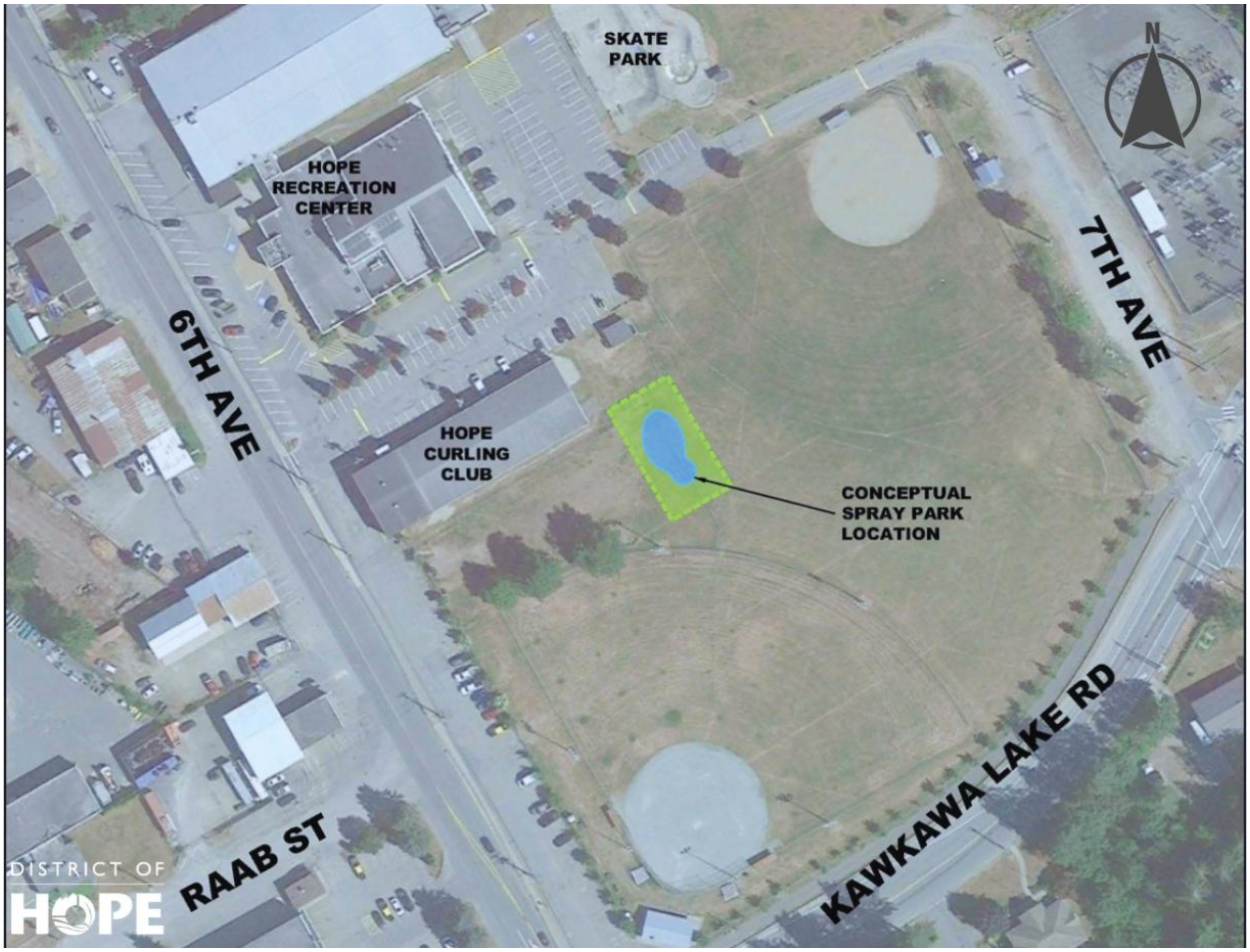

Figure 6: Candidate Location 2B Adjacent to the Hope Curling Club

This location provides approximately 800 m² (8,600 sq. ft.) of available space for a future spray park. Compared to Candidate Location 2A, the site offers increased visibility, closer proximity to existing washroom facilities, and a smaller elevation change, simplifying accessibility planning and site design. Figure 7 shows the location of Candidate location 2B adjacent to the ball diamonds.



Figure 7: Photograph of Candidate Location 2B Adjacent to the Dog Park and Ball Diamonds

The primary consideration associated with this location is the potential impact on the existing off-leash dog park. The close proximity of a children's play area and dog park may reduce user comfort and create potential conflicts between recreational activities. Additional considerations include the age and limited accessibility of the nearby washroom facilities, as well as the potential for foul balls from the adjacent baseball diamonds to enter the spray park area. These considerations, together with municipal servicing requirements, are discussed in greater detail in the following sections of this report.

3. WATER AND SEWER INFRASTRUCTURE

To support a future spray park, connections to the District's municipal water supply and sanitary sewer system will be required. All candidate sites evaluated in this study are located in close proximity to existing municipal infrastructure, making water and sewer servicing technically feasible. Two primary mechanical system types are commonly used for spray parks: **flow-through** and **recirculation** systems. Each offers distinct advantages and operational considerations. To better understand available system options and servicing requirements, District staff consulted with two spray park manufacturers—Vortex (PlayQuest) and Waterplay (Makr Group). Both manufacturers are based out of Western Canada and have extensive experience designing installations throughout British Columbia. These manufacturers are capable of providing either system type to suit site-specific requirements.

Flow-Through vs. Recirculation Spray Park Systems

Feature	Flow-Through	Recirculation
Water Use	Higher	Lower
Construction Cost	Lower	Higher
Maintenance	Lower	Higher
Water Treatment	Not Required	Required
Daily Testing	Minimal	Required
Power Requirements	Lower	Higher
Complexity	Lower	Higher

3.1. Flow-Through Systems Infrastructure Requirements

Flow-through spray park systems use the municipal potable water supply to operate the park's spray features. Water pressure within the municipal system powers the spray equipment, and the water is used once before being discharged to the sanitary sewer system for treatment at the District's Pollution Control Centre (PCC).

Flow-through systems are mechanically simpler to construct, operate, and maintain, resulting in lower capital costs and reduced operational requirements. Because fresh potable water is continuously supplied, water quality management is significantly simpler than with recirculation systems. This eliminates the need for daily water quality testing and could result in faster approvals from health authorities due to the lack of treatment facilities and simplicity of the design.

Due to their simpler design, flow-through systems have fewer mechanical components to maintain and lower power requirements than recirculation systems. Permanent power supplied through a standard single-phase 15-amp (120-volt) electrical connection is typically sufficient to operate the control system. Some manufacturers also offer battery-powered control systems for installations where permanent power is not readily available; however, a permanent electrical connection is recommended wherever practical.

While flow-through spray parks are constructed using simpler systems, they have a greater demand on the municipal potable water supply and sanitary sewer system. In practice, this means higher peak water usage during the dry summer months when the park is expected to operate, which also coincides with peak water conservation measures. Peak operating flows are expected to range between approximately 12–18 L/s (190–285 US gpm), depending on the final design and number of active spray features. These peak flows assume simultaneous operation of all spray fixtures but can be reduced through sequencing of spray fixtures in the electronic control system. As Hope sources potable water from groundwater wells, this water usage would result in increased duty cycles of well pumps and create an additional demand to the affected water storage reservoir.

The discarded water from the facility would also have an increased demand on the sanitary sewer system, not only for conveyance in the gravity sewer mains, but also in pump station duty cycles and wastewater volumes being treated at the PCC. The connection of the spray park to the sewer system will, in essence, increase the infiltration and inflows (I&I) to the

sanitary sewer from the resulting precipitation entering the spray park drains during after-hours and in the off season.

An innovative approach recently implemented by the City of Abbotsford uses an adjustable diversion structure that directs precipitation runoff to the storm drainage system during the off-season while routing spray park water to the sanitary sewer during operation. A similar approach could be considered during detailed design.

Key Considerations: Flow-Through Systems

✓ Lower construction and operating costs
✓ Simpler to operate and maintain
✓ Reduced regulatory and water quality monitoring requirements
✕ Higher potable water consumption
✕ Greater demand on municipal sewer infrastructure

3.2. Recirculation Systems Infrastructure Requirements

A recirculation system is an alternative spray park system that significantly reduces water consumption by continuously collecting, treating, and reusing water. These systems rely on additional mechanical equipment to filter, disinfect, monitor, and pump water before it is recirculated through the park's spray features.

Although recirculation systems require periodic top ups to replace water lost through evaporation and splash out, they significantly reduce overall demand on the municipal potable water supply and sanitary sewer system compared to flow-through systems. Recirculation systems also provide greater operational control through more advanced automation. Depending on the manufacturer, operators may have enhanced capabilities for system monitoring, performance adjustments, diagnostics, and future upgrades. While the recirculation pump and controller systems offer additional flexibility to park operators, the power requirements for these systems are higher than flow-through type systems. These systems typically require split-phase or three-phase electrical service connections and may draw a peak current up to approximately 50 amps, depending on the final system design.

The primary operational consideration associated with recirculation systems is the increased complexity required to safely treat and reuse water. Water must be continuously filtered, disinfected, and chemically treated to meet applicable health standards. As a result, operational staff are required to perform routine water quality testing each day the facility is in operation, with additional testing following contamination events involving fecal matter, urine, pets, or wildlife.

The additional treatment equipment, pumps, filtration systems, chemical storage, and control infrastructure increase both initial construction costs and long-term operating expenses. Higher power consumption, chemical usage, routine maintenance, and more complex repairs all contribute to increased lifecycle costs compared to flow-through systems.

Key Considerations: Recirculation Systems

✓ Significantly reduced water consumption
✓ Lower demand on municipal water and sewer systems
✓ Greater operational flexibility and system controls
✕ Higher construction costs
✕ More complex operation, maintenance, and regulatory requirements

Flow-Through vs. Recirculation Spray Park Systems

Feature	Flow-Through System	Recirculation System
Water Use	Higher – potable water is used once before being discharged to the sanitary sewer.	Lower – water is continuously filtered, treated, and reused, with only periodic top-ups required.
Construction Cost	Lower capital cost due to simpler mechanical systems.	Higher capital cost due to pumps, filtration, treatment, and control equipment.
Operating Cost	Lower annual operating and maintenance costs.	Higher annual operating costs for treatment chemicals, testing, maintenance, and electricity.
Maintenance	Simpler operation with fewer mechanical components.	More complex operation requiring specialized maintenance and equipment servicing.
Water Quality Testing	Minimal, as fresh potable water is continuously supplied.	Daily water quality testing and ongoing monitoring required to meet health regulations.
Power Requirements	Low; typically a standard 120V electrical connection.	Higher; typically requires split-phase or three-phase electrical service.
Environmental Considerations	Greater potable water consumption and higher sanitary sewer discharge volumes.	Conserves water but requires chemical treatment and additional energy use.
Operational Complexity	Low	Moderate to High

3.3. Municipal Water & Sewer Infrastructure Capacity

Although a spray park would increase demand on the District's water and sanitary sewer systems, preliminary review indicates that existing municipal infrastructure can accommodate the anticipated flows. Additional engineering analysis will be required during detailed design to confirm system capacity and identify any required upgrades.

Key Findings

✓ Existing municipal water and sewer infrastructure can support a future spray park.

✓ Additional engineering analysis will be required during detailed design to confirm long-term system capacity.

✓ Seasonal spray park operations reduce impacts because peak demand occurs during the summer rather than during wet-weather sewer events.

3.3.1. Gravity Sewer Network Capacity

Regarding sanitary sewer servicing, there is generally sufficient capacity within the gravity sewar system to accommodate additional flows from the candidate sites. Downstream of Candidate Location 2, the District's Sanitary Master Plan identifies two isolated sections of the gravity sewer network along Coquihalla Street, between 4th and 5th avenues, that are approaching capacity. The 200mm diameter sewers in this area are at approximately 90% capacity in existing conditions, and in future growth scenarios these mains will reach their available capacity. The addition of flows from spray park operations could approach or exceed available capacity during peak operating conditions, but a more detailed analysis of the capacity of this system should be conducted to determine the risk of surcharging the main. Peak spray park usage is expected to occur during summer afternoons, whereas peak sanitary sewer flows typically occur during wet-weather events and during the morning and evening hours. Because these peak demands are unlikely to occur simultaneously, the overall impact on sewer capacity may be reduced. Additional analysis will be required during detailed design to confirm this assumption.

3.3.2. Coquihalla Lift Station Capacity

Regardless of the selected location, wastewater generated by the spray park would ultimately be conveyed through the Coquihalla Lift Station. The Coquihalla Lift Station is a critical infrastructure, conveying wastewater from the downtown and Kawkawa Lake areas to the District's Pollution Control Centre (PCC). This pump station is estimated to have a total capacity of 110L/s according to the District's Sanitary Master Plan. Existing flows entering this pump station are estimated to be approximately 80L/s at the Coquihalla pump station, at 73% of total capacity. Future growth scenarios have estimated an ultimate demand of 97 L/s, reaching 88% of capacity. Peak flows from a spray park, particularly a flow-through system, could increase flows to near or above the station's theoretical capacity during peak spray park operation. Because peak spray park usage is expected to occur during summer conditions rather than peak wet-weather events, these peak demands may not occur simultaneously. This assumption should be confirmed during a detailed design.

3.3.3. Contribution of Rainfall to Sanitary Sewer Flows

Seasonal operating patterns reduce one of the primary concerns associated with additional sanitary sewer flows. Typical sewer flows reach their peak during the wettest months of the year, when unintended infiltration and inflows enter the sanitary sewer network due to elevated groundwater levels and heavy rainfall events. Sanitary sewer design is typically governed by these Peak Wet Weather Flow (PWWF) conditions which consider the additional flow observed in sewer system following extended periods of wet weather. In Hope, the PWWF is frequently over twice the Average Dry Weather Flow (ADWF) which is more reflective of the day-to-day demands on the sewer system.

A unique advantage of spray park flows is their seasonal nature. Peak wet weather conditions rarely occur during the summer months when spray park usage is expected to be highest. As a result, peak rainfall inflows and peak spray park flows are unlikely to occur simultaneously, reducing the potential impact on sanitary sewer capacity. This assumption should be confirmed during a detailed design of the selected site.

To further reduce impacts on the sanitary sewer system, a secondary connection to the stormwater drainage system could be incorporated into the spray park design. While this connection would not be used during normal spray park operation, it could direct precipitation runoff to the storm system during the off-season, reducing unnecessary contributions to the sanitary sewer and the District's Pollution Control Centre. A simple valve and wye assembly would allow Operations staff to redirect drainage as part of the annual winterization process. This approach should be considered during preliminary design.

3.3.4. Capacity of Potable Water Supply

Both candidate sites explored in this study would draw from the District's 87m water zone. A spray park would increase overall demand within the District's 87m water zone, resulting in modest additional reservoir drawdown during operation and a temporary reduction in available fire flows nearby. This would present itself as an additional reservoir drawdown during park operations as well as a possible reduction of available flows for fire protection in the immediate vicinity of the splash pad.

Available flow in the 87m water systems varies by location but are generally acceptable for residential land-usage. Available flows in the vicinity of the Memorial Park exceed 80L/s and exceed 110L/s at 6th Avenue according to the Water Master Plan. These available fire flows do fall short of requirements for commercial and industrial land usage, which ideally require more than 150L/s for full fire protection. Flow utilized by the splash pad during operating hours could directly reduce this available fire flow by up to 18L/s in the case of a large flow-through system. Given the existing nature of these flow deficiencies, the intermittent and seasonal nature of the spray park and the availability of alternative solutions to reduce fire flow requirements, these constraints to water conveyance could be deemed acceptable.

Despite these drawbacks, the 87m water zone is relatively robust, as it is supplied by three operational wellheads (wells #1, #2 and #3), and a 1587m^3 reservoir volume with sufficient head pressure supplying the zone. The wells themselves are over 50 years old and will require eventual replacement, but the replacement of pumps at well #1 and #2 in the past 10 years have extended their operational lifespans, reducing the risk to the water system. **The anticipated annual water demand of approximately 12,000m^3 represents roughly 1.5% of the existing annual water consumption within the 87m water zone.**

The Water Master plan has indicated that a small deficiency of 400m^3 exists in the 87m water zone under the design scenario of a sustained 150L/s fire flow for 2 hours. This deficiency assumes simultaneous occurrence of maximum daily water usage plus fire flows. While this is the ideal design scenario, very few locations in the 87m water zone are even capable of delivering this theoretical 150L/s fire flow requirement in the existing condition without adversely impacting pressure in the water system. Future improvements to the cross-

connection between the 87m and 138m water zones will reduce these impacts as water can flow between the different zones during limited periods of extreme water usage.

Infrastructure	Assessment
Gravity Sewer	✓ Generally adequate; localized capacity review recommended
Coquihalla Lift Station	✓ Additional analysis required during detailed design
Water Supply	✓ Existing system capable of supporting projected demand
Seasonal Demand	✓ Peak spray park use occurs outside peak sewer design events

3.4. Conceptual Spray Pad Servicing Strategy

Both candidate locations have convenient access to existing municipal water and sanitary sewer infrastructure, making municipal servicing technically feasible. The final servicing requirements will depend on the selected site, spray park size, and mechanical system type. The conceptual servicing strategies presented below illustrate one potential approach and are intended to guide future detailed design.

Note: Conceptual Only

The servicing layouts shown in this section are preliminary and are intended to demonstrate technical feasibility only. Final utility alignments, pipe sizes, and construction methods will be confirmed during detailed design.

3.4.1. Candidate Location 1 - Memorial Park Site Servicing Strategy

Water and sewer servicing for the proposed Memorial Park spray park would most likely originate between the existing bus stop and the Japanese Friendship Garden. This location provides access to municipal water, sanitary sewer, and—if incorporated into the final design—storm drainage infrastructure. Servicing the site adjacent to the existing playground would require excavation and restoration of 3rd Avenue and the sidewalk passing through Memorial Park. A brief overview of the existing municipal water systems is shown in Figure 8.

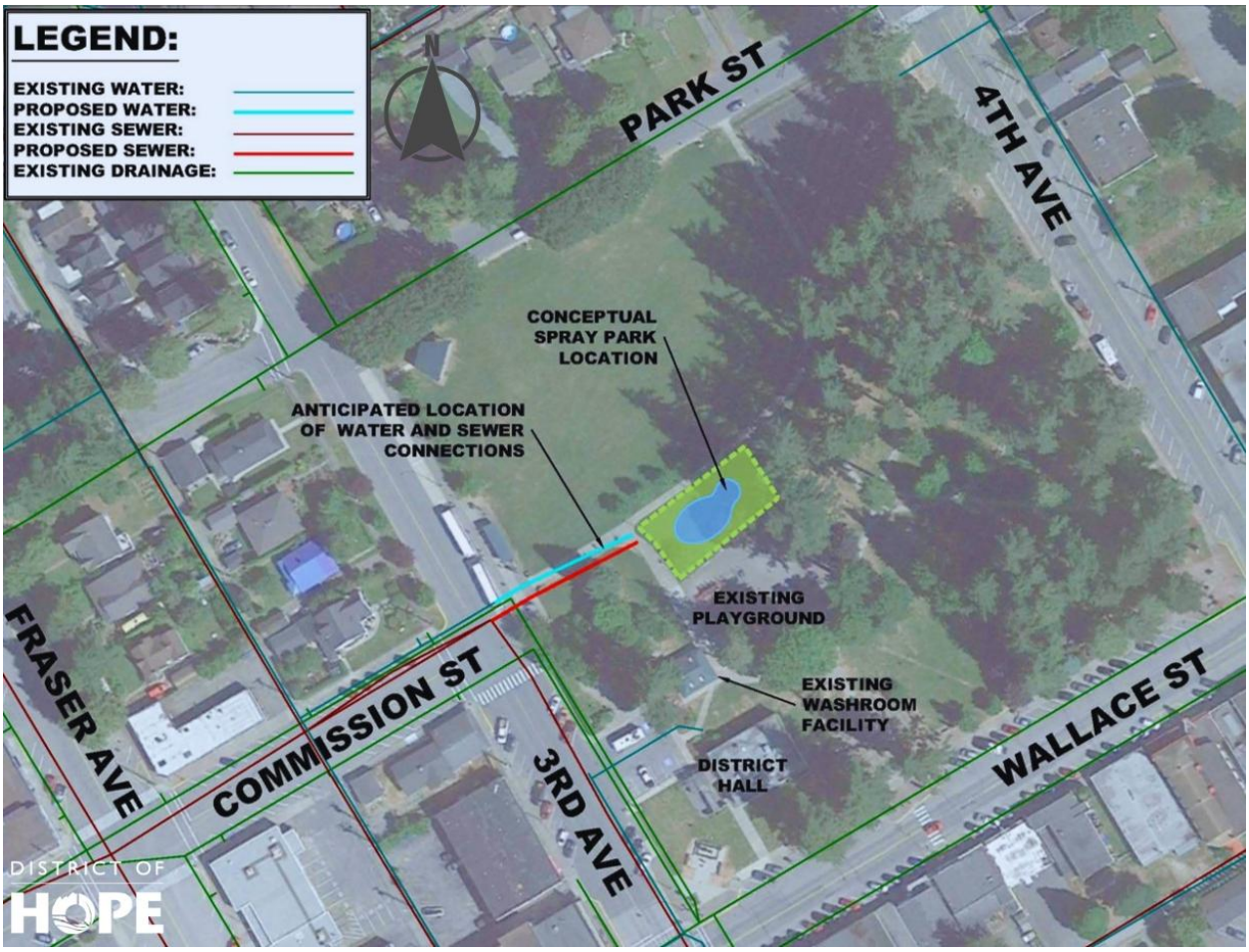

Figure 8: Conceptual Servicing Strategy for Spray Park in Memorial Park

The water connection could be sourced from the 150 mm diameter watermain along Commission Street. The proposed water connection would tie into the 150 mm watermain along Commission Street, which transitions to a 50 mm diameter crossing beneath 3rd Avenue. Typical spray park services require a 50 mm connection or smaller; however, should detailed design indicate a larger service is required, this section of watermain could be upgraded accordingly.

The sanitary sewer connection can be made to the existing sanitary sewer infrastructure at the intersection of 3rd Avenue and Commission Street. To avoid disturbing the existing 200 mm asbestos concrete sewer main, it is recommended that the connection be made directly at the existing sanitary manhole. If the optional drainage service is pursued, to provide off-season drainage to the pad, the connection can be made in the same area as the water and sewer connections. If an optional storm drainage connection is included for off-season drainage, it is also recommended that the connection be made directly at the existing manhole to avoid tapping the asbestos concrete pipe.

Overall, Memorial Park can be serviced using existing municipal water and sewer infrastructure, with no significant servicing constraints identified at the feasibility stage. Final utility alignments,

pipe sizing, and construction requirements can be refined during detailed design based on the selected spray park configuration.

3.4.2. Candidate Location 2A - 6th Avenue Site Servicing Strategy

Because of the size of the 6th Avenue property, servicing requirements vary depending on the selected spray park location. Separate conceptual servicing strategies have therefore been prepared for Candidate Locations 2A and 2B.

Candidate location 2A, adjacent to the existing skate park, can be serviced through the existing 200 mm water main beneath the parking lot beside the conference center. The existing 200 mm watermain adjacent to the conference centre provides sufficient capacity to service a future spray park. The sanitary sewer connection to the pad could be made with a short service connection to the 200 mm asbestos concrete sewer in the lane immediately adjacent to the site, located south of Hudson Bay Street. Depending on the final alignment, installation of an additional manhole may be recommended to avoid tapping directly into the existing asbestos concrete sewer main. A conceptual servicing plan is shown in Figure 9 below.

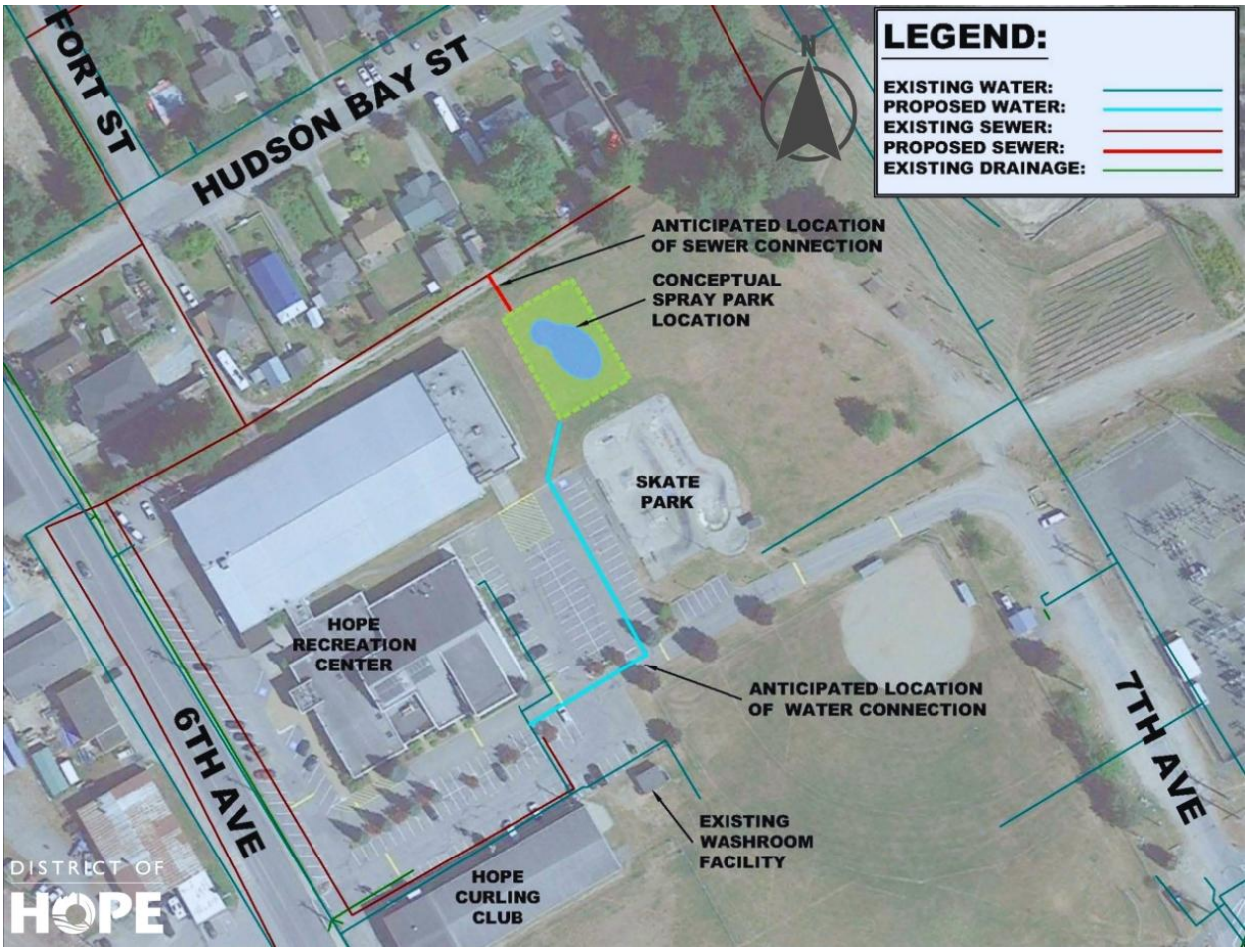

Figure 9: Conceptual Servicing Strategy for Candidate Location 2A at 6th Avenue Fairgrounds

The optional drainage connection could likely be made into the parking lot area, near the proposed water service connection, but minimal information is currently available for the

drainage infrastructure within the conference center parking lot. The length of water and drainage connections for this location would be the longest of all candidate sites but has the shortest sewer connection length. Servicing this site would require excavation and restoration of the parking lot to accommodate the construction.

Overall, Candidate Location 2A can be serviced using existing municipal infrastructure, with no significant servicing constraints identified at the feasibility stage. The site's proximity to existing water and sewer mains provides a practical servicing solution, while final utility alignments and construction requirements can be confirmed during detailed design.

3.4.3. Candidate Location 2B – 6th Avenue Site Servicing Strategy

Candidate Location 2B can be serviced using existing municipal water and sanitary sewer infrastructure located adjacent to the Hope Curling Club. The conceptual servicing strategy shown below demonstrates one potential servicing arrangement and is intended to guide future detailed design.

This location would provide the shortest connection lengths of all the candidate sites. An existing 50mm diameter watermain branches off the 200 mm diameter watermain in the recreation center parking lot to service the existing washroom facility. While the 50 mm main is immediately adjacent to the proposed location, either of these two watermains could be easily connected to, depending on the actual required water demand. The sanitary sewer connection would tie into the existing municipal sewer system located adjacent to the site. Like the other sewer connections, it is recommended to make connection at the manhole rather than connecting directly into the asbestos concrete sewer main. A conceptual servicing plan is shown in Figure 10.

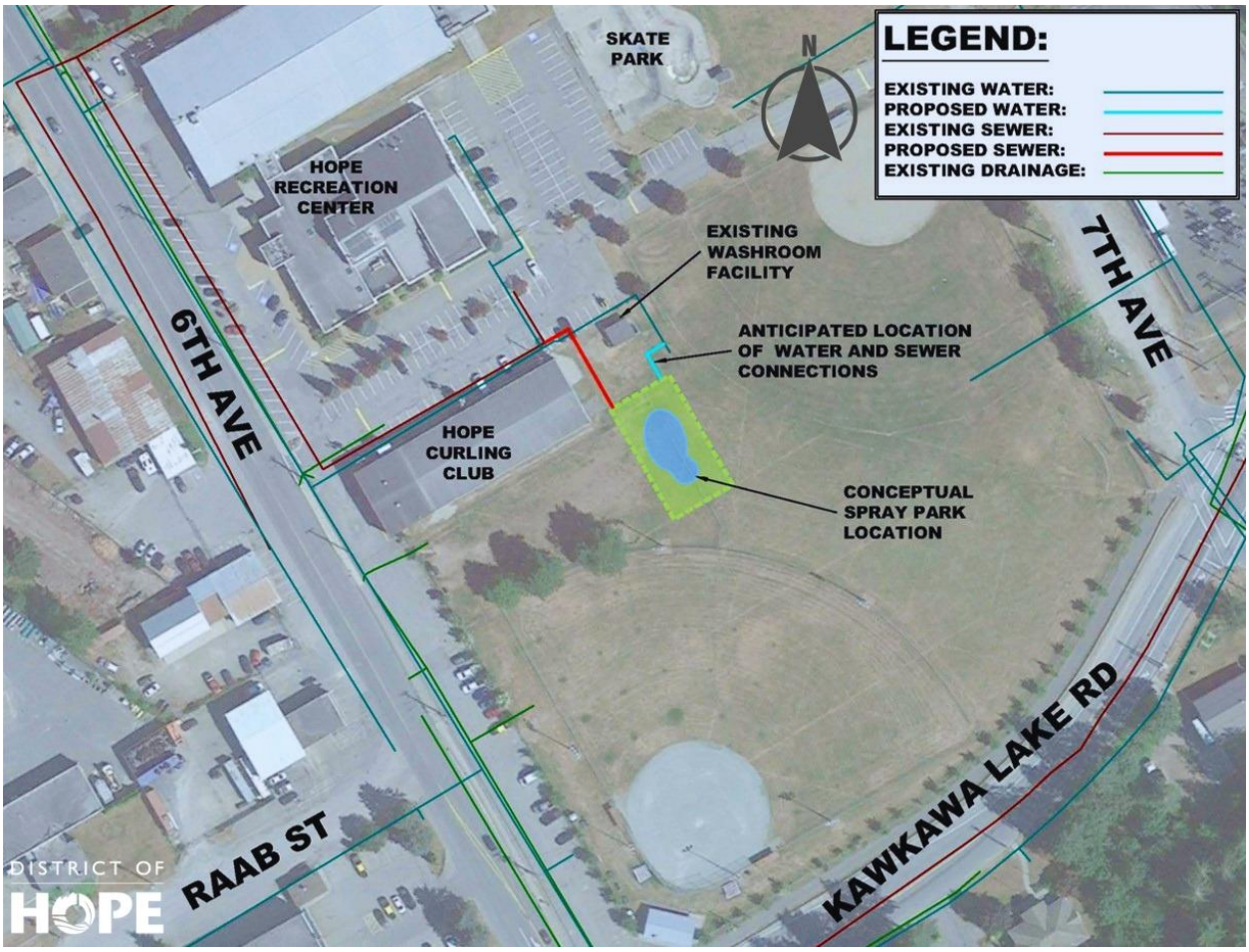

Figure 10: Conceptual Servicing Strategy of Candidate Location 2B at 6th Avenue Fairgrounds

Should an off-season drainage connection be incorporated into the final design, it could be routed to the municipal drainage system using a manually operated diversion valve but limited information is available on the drainage infrastructure in the parking lot adjacent to the site. The servicing to this location would likely require the shortest overall service connection lengths of all the candidate locations and additionally would require the least amount of disturbance to paved areas, minimizing pavement restoration costs.

Overall, Candidate Location 2B can be serviced using existing municipal infrastructure with no significant servicing constraints identified at the feasibility stage. Final utility alignments and construction requirements will be confirmed during detailed design.

4. OPERATIONS AND MAINTENANCE REQUIREMENTS

Once constructed, a spray park would require routine seasonal operation and maintenance similar to other municipal recreation assets. The level of maintenance depends largely on the mechanical system selected, with flow-through systems requiring simpler daily operation and recirculation systems requiring additional water treatment and monitoring.

4.1. Flow-Through Systems Operations and Maintenance

Flow-through systems use municipal potable water pressure to supply the spray park features. Although these systems place a greater day-to-day demand on municipal water and sanitary sewer infrastructure, the spray park itself relies on relatively simple mechanical equipment. This simplicity reduces the amount of routine maintenance and staff time required to operate the facility.

Typical Flow-Through Maintenance

✓ Seasonal Spring startup
✓ Daily visual inspection
✓ Routine cleaning and debris removal
✓ Minor repairs as required
✓ Fall winterization

Flow-through systems still require electronic controllers, push-button activators, and control valves to operate the spray features; meaning periodic maintenance and occasional repairs will be required. However, the overall scale of maintenance is relatively limited. Because fresh potable water is supplied directly from the municipal system, onsite water treatment and continuous water quality testing are not required.

Operations staff will complete seasonal startup and winterization procedures at the beginning and end of each operating season. During the operating season, a daily pre-opening inspection is required to comply with Fraser Health requirements and identify any hazards, debris, or maintenance issues before the facility opens to the public. Day-to-day operation of the spray features is managed automatically through the electronic control system and push-button activators, requiring minimal staff intervention during normal operation.

Overall, flow-through systems have relatively straightforward operational requirements and can be maintained using routine municipal operations practices. Their mechanical simplicity results in lower labour demands and reduced long-term maintenance requirements compared to recirculation systems.

4.2. Recirculation Systems Operations and Maintenance

Recirculation systems require additional mechanical equipment to operate the spray park, resulting in increased operational and maintenance requirements compared to flow-through systems. Additional costs include electricity for pumps, treatment chemicals, routine water quality testing, and ongoing maintenance of filtration and mechanical equipment. The increased complexity of components such as pumps, variable frequency drives, and chemical dosing systems may also require specialized contractors for some maintenance and repair activities.

Recirculation systems significantly reduce demand on the municipal water supply and sanitary sewer system by continuously treating and reusing water. These reductions in water consumption can help offset the increased operational complexity while supporting water conservation objectives. The advanced control systems also provide operators with greater flexibility to monitor, adjust, and optimize system performance.

The primary operational requirement associated with recirculation systems is routine water quality monitoring. At a minimum, water quality testing must be completed daily to ensure compliance with public health requirements, with additional testing required following contamination events. Seasonal startup and winterization procedures are also more involved than those for flow-through systems due to the additional pumps, filtration equipment, and treatment systems that must be inspected and maintained.

Maintenance Activity	Flow-Through	Recirculation
Spring Startup	✓	✓
Daily Inspection	✓	✓
Water Quality Testing	✗	✓ Daily
Chemical Treatment	✗	✓
Filtration Maintenance	✗	✓
Winterization	✓	✓
Mechanical Complexity	Low	Higher

Recirculation systems require more specialized operation due to water treatment, filtration, and regulatory monitoring requirements. While these systems reduce water consumption, they also increase annual operating costs, maintenance complexity, and staff time compared to flow-through systems.

5. WATER QUALITY AND PUBLIC SAFETY

Providing a safe, clean, and well-maintained spray park is essential to protecting public health and ensuring a positive user experience. This section outlines key considerations related to water quality, regulatory approvals, user safety, and facility security that should be incorporated into the design and operation of a future spray park.

Public health and safety are fundamental considerations in the planning, design, and operation of a public spray park. Under Fraser Health regulations, spray parks are classified as public pools and are therefore subject to the same permitting, approval, and operational requirements as other public aquatic facilities.

5.1. Water Quality

Water used within a spray park must meet potable water standards established by the BC Ministry of Health's *Pool Design Guidelines*. Flow-through systems use municipal drinking water supplied directly through the District's water system before discharging it to the sanitary sewer. Recirculation systems, by comparison, continuously treat and reuse water through onsite filtration and disinfection systems. As a result, recirculation systems require routine water quality monitoring and testing to ensure ongoing compliance with applicable public health standards.

Contamination events involving park users, pets, or wildlife have the potential to affect water quality and require an operational response. While both system types require staff to respond appropriately to these incidents, recirculation systems require additional precautions because

treated water is reused throughout the facility. District Operations staff should be trained to respond to contamination events in accordance with Fraser Health requirements. Additional design measures, including perimeter fencing where appropriate, can also help discourage after-hours access by pets and wildlife and reduce the potential for contamination.

Cross connection controls, typically in the form of backflow prevention devices, should be used at the municipal water service connection to prevent water from the facility from re-entering the municipal water supply. These will be required on the facility to prevent contamination of the larger system, regardless of system type.



Figure11: Implementation of Drinking Water Provided at Crossley Park in Abbotsford

Potable drinking water must also be provided in accordance with applicable health regulations. Given the anticipated use of the facility during hot summer weather, a drinking fountain should be located within or immediately adjacent to the spray park. Incorporating a bottle filling station is also recommended to improve user convenience and encourage hydration. Many spray park manufacturers offer integrated drinking fountain options as part of their standard product lines. Figure 11 shows an example of a drinking fountain provided at a spray park.

Water Quality Highlights

✓ Flow-through systems use fresh potable water that meets drinking water standards.
✓ Recirculation systems continuously filter and disinfect water for reuse.
✓ Regular inspections and maintenance help ensure safe operation.

5.2. Fraser Health Pool Permit

Spray parks are regulated as public pools under provincial health legislation and require Fraser Health approval before construction and operation. Prior to construction, the District must obtain both an Application for Health Approval and a Pool Construction Permit Application. Based on recent spray park projects within the Fraser Valley, obtaining these approvals may require several months depending on project complexity and Fraser Health review timelines. Early application is recommended to avoid delays during tendering and construction.

In addition, an annual operating permit will be required by Fraser Health for each season of use. Obtaining an annual operating permit typically requires an onsite inspection with a Fraser Health representative. During these inspections, Fraser Health may review facility rules posted clearly on signage at the site, a plan for daily inspection by the park operator, access to potable drinking water for users, availability of washrooms located in the immediate vicinity and

verification that the park spray elements do not spray or splash water beyond the designated pad drainage areas. Early coordination with Fraser Health during detailed design will help ensure the facility meets all applicable health and safety requirements prior to construction and operation.

5.3. User Safety Concerns

As with any water recreation facility, slip and fall hazards must be considered during design and operation. Spray park surfaces should incorporate slip-resistant finishes, positive drainage, and accessible walking routes while remaining free of tripping hazards. Clear signage should identify facility rules and promote safe use for all visitors.

Hope's climate is conducive to seasonal moss and algae growth, particularly on damp concrete surfaces. Routine cleaning and periodic pressure washing should therefore be incorporated into the facility's maintenance program to maintain safe walking surfaces and reduce slip hazards. Figure 12 illustrates algae accumulation observed at an existing spray park in Abbotsford.



Figure 12: Accumulation of Aglae Growth Observed at the Mill Lake Spray Park in Abbotsford

Zero-depth spray features are recommended to improve user safety while reducing opportunities for standing water and excessive algae growth. Additional safety measures should include routine inspections, scheduled cleaning, clear facility rules, and well-maintained signage. An example of spray park signage is provided in Figure 13.



Figure 13: Example of Signage Posted at the Spray Park located at Crossley Park in Abbotsford

While traditional swimming pools require fencing enclosures for user safety, spray parks that are completely drained when not in use (i.e. zero ponding depth) are not strictly required to have fencing. Despite this, recirculating spray parks are highly recommended to still have fencing enclosures to keep animals from entering the pad and affecting the water quality in the reservoir and treatment system. Details of the fencing requirements can be found in the BC Ministry of Health's Pool Design Guidelines.

Additional consideration should be given to Candidate Location 2B due to its proximity to the adjacent baseball diamonds. During detailed design, measures should be evaluated to reduce the potential for foul balls entering the spray park area and to maintain a safe environment for park users.

Safety Features

✓ Slip-resistant surfacing
✓ Accessible pathways
✓ Good sightlines
✓ Regulatory signage
✓ Daily inspections
✓ Routine maintenance

5.4. Vandalism concerns

As with any public recreation facility, consideration should be given to vandalism, after-hours use, and general site security. Existing public spaces throughout Hope, including Memorial Park and the 6th Avenue recreation area, occasionally experience issues related to vandalism, litter, and inappropriate after-hours activity. These considerations should be incorporated into the

planning and long-term operation of a future spray park but are not unique to the proposed facility.

The development of a new spray park presents an opportunity to incorporate design features that promote a safe, welcoming, and well-maintained public space. Although fencing may not be required for all spray park designs, it could be considered appropriate to discourage after-hours access and reduce opportunities for vandalism or misuse. Routine inspections, appropriate lighting, visible sightlines, and periodic patrols by Bylaw Services and the RCMP can further support a safe and enjoyable environment for all users.

Public Health & Safety Framework

Topic	Key Consideration
Water Quality	Safe operation through potable water or treatment systems
Fraser Health	Approval and operating permits required
User Safety	Slip-resistant surfaces, inspections, signage
Accessibility	Inclusive design for all users
Security	Lighting, visibility, routine inspections

Experience from comparable municipalities suggests that thoughtful site design, regular maintenance, and active community use can significantly reduce vandalism and improve long-term stewardship of the facility.

6. COMMUNITY BENEFITS, ACCESSIBILITY & PARKING

Beyond technical feasibility, the development of a community spray park has the potential to provide lasting recreational, social, and economic benefits for the District of Hope. In addition to creating a free outdoor recreation opportunity for residents and visitors, a spray park would support healthy lifestyles, encourage community gathering, enhance accessibility, and strengthen Hope's parks and recreation network. This section reviews these broader community benefits together with site-specific considerations related to accessibility and parking.

A spray park would provide a free outdoor play and cooling opportunity for families while expanding recreation options and supporting inclusive play within the community. Although the overall impact of the project is expected to be positive, consideration should also be given to its interaction with existing park users, community events, parking areas, and other established site uses.

6.1. Community Benefits and Site Considerations

Peak spray park usage is expected during the summer months when school is out of session, generally from late May through early September. This operating period overlaps with many existing community events, creating opportunities to enhance the experience for families while also requiring coordination with established event programming and site operations.

Community Benefits

✓ Free outdoor summer recreation
✓ Inclusive play opportunities for children of all abilities
✓ Encourages healthy, active lifestyles
✓ Creates a gathering place for families
✓ Supports tourism and local visitation
✓ Enhances Hope's parks and recreation network
✓ Long-term investment in community well-being

6.1.1. Community Impacts & Benefits on Memorial Park

Memorial Park contains a wide range of established amenities that contribute to its appeal as a potential spray park location. Existing features include a children's playground, two tennis courts, the Japanese Friendship Garden, a tour-bus stop, the cenotaph, and a performance stage. The park also serves as a prominent venue for recurring summer events, including outdoor concerts, classic car shows, Indigenous celebrations, farmers' markets, and chainsaw carving festivals.

A spray park could enhance many of the community events hosted in Memorial Park, particularly those attended by young families. Locating the facility immediately adjacent to the existing playground would create a more diverse family recreation destination and broaden the range of play opportunities available within the park. The spray park would also help reinforce Memorial Park's role as a central recreation and gathering space for both residents and visitors. Detailed design would need to preserve sufficient flexible space for established events and consider potential increases in activity and ambient noise during peak operating periods.

Memorial Park's central location within the downtown core makes it highly accessible to residents and visitors. Many nearby neighbourhoods are within walking distance, and continued improvements to the District's active transportation network may further strengthen connections from surrounding areas. Increased visitation to the park could also support nearby retailers and restaurants, as families and visitors may purchase meals, refreshments, or other goods during their time downtown.

Benefits

- **Central downtown location**
- **Existing playground creates a family recreation destination**
- **Walkable from nearby neighbourhoods**
- **Mature park setting**
- **Existing washrooms and amenities**
- **Supports downtown visitation and local businesses**

Considerations

- **Community event space**
- **Seasonal parking demand**
- **Tree preservation**
- **Integration with existing park uses**

6.1.2. Community Impact and Benefits on the 6th Avenue Fairgrounds

The 6th Avenue Fairgrounds serve as a major recreation hub for the District of Hope and the broader Fraser Valley Regional District. The adjacent Hope Recreation Centre, operated by the FVRD, includes an indoor swimming pool, fitness centre, library, and ice arena. Additional amenities within or near the fairgrounds include the Hope Curling Club, three baseball diamonds, a skate park, an off-leash dog park, a motorsports arena, a bike park, a disc golf course, and a campground.

The 6th Avenue Fairgrounds also host a range of community events, including Hope Brigade Days, Canada Day celebrations, outdoor concerts, motorsport competitions, and hockey and baseball tournaments. Despite the concentration of recreation amenities and events, the site does not currently include a children's playground. As a result, the area primarily serves older children, youth, and adults rather than the younger age groups most likely to use a spray park. If the 6th Avenue Fairgrounds are selected, the District may wish to consider incorporating a playground as part of the project or as a future complementary improvement.

The area surrounding the 6th Avenue Fairgrounds is characterized more by industrial and institutional uses than by the commercial activity found near Memorial Park. Consequently, fewer nearby businesses are available for visitors seeking meals, refreshments, or other services during their visit. A spray park would also occupy space currently available for Hope Brigade Days and other events. At Candidate Location 2B, development would reduce the size of the existing off-leash dog park and would require careful integration with that established use.

Because the Hope Recreation Centre is operated by the FVRD on District-owned land, the proximity of a District-operated spray park may create some uncertainty regarding operational responsibilities. Visitors could reasonably assume that recreation centre change rooms, staff support, first aid, or maintenance services are available for spray park users. If this site is selected, the District and FVRD should establish clear operating protocols, signage, facility access expectations, and communication procedures before the spray park opens. Early coordination would help minimize impacts on recreation centre operations and provide a clear, consistent experience for the public.

Benefits

- **Recreation hub**
- **Ample space for development**
- **Excellent parking**
- **Future expansion opportunities**
- **Complements existing recreation facilities**
- **Reduced conflicts with downtown activities**

Considerations

- **Accessibility improvements**
- **Integration with existing dog park (Site 2B)**
- **Older washroom facilities**
- **Pedestrian crossings**

6.2. Accessibility & Inclusivity

Accessibility and inclusivity should be foundational design principles for any future spray park. The facility should accommodate people of varying ages, abilities, and mobility levels, helping ensure that everyone has the opportunity to participate in outdoor recreation in a safe, welcoming, and engaging environment.

Accessibility Highlights

✓ Barrier-free access
✓ Inclusive play opportunities
✓ Accessible seating
✓ Universal design principles
✓ Family-friendly amenities

Consideration should be given to organizing spray features into activity zones that accommodate different ages, play styles, and comfort levels. Higher-energy features, such as tipping buckets and high-volume sprays, could be grouped separately from gentler features such as misting sprays and low-pressure water effects. This approach would allow users to select play experiences that best suit their individual preferences and sensory needs. Tactile signage, contrasting colours, and visual or auditory cues could also be incorporated to support users with sensory, visual, or cognitive differences.

Spray park manufacturers can provide guidance on recommended age groups, accessibility ratings, and inclusive design considerations for individual features. Many manufacturers also offer pre-configured layouts that incorporate universal design principles to maximize accessibility, encourage inclusive play, and create engaging experiences for a broad range of users.

Accessibility should extend beyond the spray features to include parking, pathways, washroom facilities, seating areas, and overall site circulation. Where grade differences exist, accessible ramps and manageable slopes should be incorporated into the design. Smooth pathway connections, curb letdowns, and appropriate walkway grades should support wheelchair users, caregivers with strollers, and individuals using mobility aids. Shaded seating and picnic areas should also be provided to create comfortable spaces for rest, supervision, and social gathering. The availability and location of accessible parking and accessible washroom facilities should be carefully considered during detailed site design.

6.3. Parking

A future spray park is expected to generate additional visitor traffic during peak summer operating periods. To better understand potential parking demand, existing parking availability at each candidate's location was reviewed using available parking studies, parking inventories, and field observations.

6.3.1. Parking at Memorial Park

Memorial Park does not have a dedicated parking lot and is bordered primarily by downtown commercial development. Visitors therefore rely on existing on-street parking located throughout the surrounding area. To better understand parking availability, the District's 2025

Downtown Parking Analysis was reviewed, as its study area included the streets immediately surrounding Memorial Park.



Figure 14: Downtown Parking Analysis Excerpt Showing Parking Availability on August 30, 2025

The study included multiple midday parking counts completed during the busiest summer months between July and September. Results indicated that parking along Wallace Street and portions of 3rd Avenue frequently exceeded 80 percent of occupancy during peak periods, while parking along the 4th Avenue frontage generally remained below 60 percent of occupancy. An excerpt from the parking inventory completed on August 30, 2025, is shown in Figure 14. Additional information should be referenced from the finalized Downtown Parking Analysis, dated April 13, 2026 (File No. 6440-10).

6.3.2. Parking at 6th Avenue Recreation Facilities

No formal parking study has previously been completed for the 6th Avenue recreation area. To better understand existing demand, the District's Planning Department completed an observational parking inventory for this feasibility study. The review used a methodology similar to the previously completed Downtown Parking Analysis to support a consistent comparison between the two candidate areas.

A total of 168 parking stalls were inventoried at the 6th Avenue Fairgrounds. This included 33 stalls in the front lot along 6th Avenue, 71 stalls in the central lot between the Hope Recreation Centre and Hope Curling Club, and 64 stalls in the rear lot adjacent to the Conference Centre and skate park. The total includes three accessible stalls and one designated motorcycle stall.



Figure 15: Parking Availability at 6th Avenue on July 24, 2026

In addition to the formal parking lots, informal roadside parking is currently used along portions of 6th Avenue and, to a lesser extent, 7th Avenue. These areas could be formalized in the future to accommodate increased demand. The paved area along 6th Avenue between the Hope Curling Club and Kawkawa Lake Road could accommodate approximately 33 marked parking stalls based on a 3.0 m stall width. Similarly, the road shoulder along 7th Avenue opposite the BC Hydro substation could provide approximately 24 additional stalls, although this area would require more substantial improvements, including asphalt surfacing and pavement markings.

Parking observations were completed on June 8, June 15, and July 24, 2026. Figure 15 summarizes the observed parking occupancy at the 6th Avenue Fairgrounds on July 24, 2026. The front lot consistently experienced the highest use, with occupancy exceeding 50 percent on the observation dates. The central lot experienced moderate use of approximately 30 percent, while the rear lot generally had the lowest occupancy except when events were held at the Conference Centre. Informal parking along 6th Avenue also provided substantial additional capacity.

Site	Parking
Memorial Park	Moderate parking with excellent walkability and downtown access
6th Avenue	Excellent parking capacity supporting larger recreation events

Overall, the 6th Avenue site provides greater flexibility for parking improvements than in the downtown area, where parking demand is more constrained during the summer months. However, locating the spray park at Memorial Park could also reduce overall parking requirements due to its central location and walkability for nearby residents.

7. PROJECT COSTS & FUNDING OPPORTUNITIES

The development of a spray park represents a significant capital investment that extends beyond initial construction costs. This section summarizes estimated capital and operational costs, along with potential funding opportunities, to support future budgeting and Council decision-making.

7.1. Capital Costs

Preliminary capital costs were developed through discussions with spray park suppliers and municipalities that have recently completed similar projects. Two suppliers (Vortex, represented locally by PlayQuest, and Waterplay, a division of the Makr Group) provided budget pricing and information from recently completed projects to assist in establishing potential construction costs.

The following estimates are intended for feasibility planning purposes only. Actual project costs will depend on the selected location, spray park size, mechanical system, site servicing requirements, market conditions, and detailed design.

Municipal construction cost estimates are commonly classified according to the level of design information available and the anticipated degree of accuracy. As the project advances and decisions are made regarding site selection, project scale, scope, and servicing requirements, estimates can be refined using increasingly detailed design information. Table 1 provides an overview of the standard construction cost estimate classes used for municipal projects.

Table 1: Overview of Classes of Construction Cost Estimates

Estimate Class	Basis of Cost Estimate	Typical Design Completion	Anticipated Accuracy
Class D	Conceptual planning and historical cost data with limited project information	0% to 10%	± 30%
Class C	Preliminary design, conceptual layouts, and major quantities identified	10% to 33%	± 20%
Class B	Design development, preliminary drawings, and quantity take-offs	33% to 85%	± 10%
Class A	Detailed design, completed drawings and specifications, and comprehensive quantity take-offs	85% to 100%	± 5%

Given the conceptual stage of the project, a Class D construction cost estimate has been prepared for preliminary budget planning. A Class D estimate provides an indicative, order-of-magnitude cost based on conceptual project information and carries an anticipated accuracy of approximately ±30 percent. Costs were differentiated by mechanical system type and used to establish approximate unit rates per square foot of wetted spray pad area. The estimates shown in Table 2 are based on moderate-sized facilities, including approximately 2,000 sq. ft. of wetted area for a flow-through system and 1,700 sq. ft. for a recirculation system.

Table 2: Class D Construction Cost Estimate for a Spray Park

System Type	Pad Area (sq.ft.)	Unit Rate ($ CAD / sq.ft.)	Total Cost ($ CAD)
Flow-Through	2,000 sq. ft.	$340/sq. ft.	$680,000
Recirculation	1,700 sq. ft.	$600/sq. ft.	$1,020,000

As shown in Table 2, a recirculation system carries a substantial capital cost premium compared with a flow-through system due to its additional pumping, filtration, treatment, and control equipment. The unit rates were developed using a combination of budget quotes provided directly to the District and cost information from recently completed projects in southwestern British Columbia. Based on the information reviewed, overall project pricing for Vortex and Waterplay systems was generally comparable. Manufacturer-specific pricing can be evaluated once the project scope, preferred system, and detailed design have been further developed.

In addition to the spray pad and water features, the estimated unit rates include allowances for earthworks, site preparation, grading, and utility service connections that are typically excluded from equipment supplier pricing. A further allowance of 10 percent has been included for basic engineering design, professional oversight, and assurance documentation not included within the supplier's scope. These estimates do not include the construction or renovation of supporting amenities such as washrooms, shade structures, seating areas, or conventional playground equipment that may be developed alongside the spray park.

Capital & Lifecycle Cost Comparison

Cost Category	Flow-Through System	Recirculation System
Initial construction cost	Lower	Higher
Water and sewer infrastructure	Moderate	Moderate
Mechanical system complexity	Lower	Higher
Electrical requirements	Lower	Higher
Long-term maintenance	Lower	Higher

7.2. Operational & Maintenance Costs

In addition to the capital investment required to construct a spray park, ongoing operational and maintenance costs were estimated to assess the project's long-term budget implications for the District. These costs primarily fall into three categories: electricity, water and sewer services, and labour.

Cost estimates are based on a 120-day operating season from May through August, with the facility operating for 10 hours per day. A fully burdened labour rate of $55 per hour, including wages and benefits, was applied to all staff time estimates. Electricity costs were calculated using the applicable BC Hydro small general service rate, including base connection charges. Water and sewer costs were estimated using the District of Hope's current Fees and Charges Bylaw rates of $0.50/m³ for water and $0.78/m³ for sewer services. Because flow-through and

recirculation systems have significantly different operating requirements, their estimated costs are presented separately.

7.2.1. Flow-Through System Operational & Maintenance Costs

Flow-through systems are mechanically simple, which limits the amount of specialized maintenance and reduces the potential for extensive equipment repairs. Because water is used only once before being discharged to sewer, operating costs are driven primarily by water consumption, while electricity and labour represent smaller portions of the annual budget.

A flow-through spray park typically only requires a single-phase, 15-amp, 120-volt electrical connection to operate its control equipment. Actual current draw is expected to remain well below the maximum service capacity. Assuming a continuous operating current of approximately 4 amps during park hours, seasonal electricity consumption is estimated at approximately 400 kWh, with an annual cost of about $200.

Water and sewer charges represent the largest operating expense for a flow-through system due to the single-use nature of the water features. Based on an assumed design flow of 12 L/s (190 US gpm), with the push-button activator in use for approximately 25 percent of operating hours, theoretical seasonal water consumption is estimated at 12,960 m³. Actual consumption may be lower based on operating data from comparable local facilities. Using current District utility rates, the combined seasonal water and sewer cost is estimated at more than $16,500. Flow-through systems do not require separate chemical treatment or filtration media costs.

Labour requirements for a flow-through spray park are relatively modest. Seasonal startup and winterization are expected to require less than one day of staff time each. During the operating season, approximately one hour per day has been allocated for daily startup procedures, site inspection, cleaning, and basic functionality checks. A further 16 hours per season has been included for minor maintenance, repairs, and spray pad cleaning. Based on these assumptions, approximately 120 hours of staff time would be required each season, representing an estimated labour cost of $6,600. The total estimated annual operating cost is summarized in Table 3.

Table 3: Estimated Seasonal Operating Costs – Flow-Through System

Expense	Seasonal Usage	Unit Rate	Estimated Seasonal Cost
Electricity	400 kWh	Current BC Hydro rate and base charges	$200
Water and sewer	12,960 m³	Current District utility rates	$16,500
Labour	120 hours	$55/hour	$6,600
Estimated Total			**$23,300**

As shown in Table 3, water usage represents the largest component of flow-through operating costs, followed by labour and electricity. These estimates exclude replacement parts and staff or contractor costs associated with major repairs beyond routine seasonal maintenance.

Flow-through systems generally have lower mechanical maintenance and staffing requirements due to their simpler design. However, these savings must be weighed against the higher water and sewer consumption associated with single-use operation.

7.2.2. Recirculation System Operational & Maintenance Costs

Recirculation systems incorporate additional mechanical and treatment components, including pumps, holding tanks, filtration equipment, chemical dosing systems, and more advanced electrical controls. As a result, labour, electricity, treatment, and equipment maintenance costs are expected to be higher than those associated with a flow-through system.

The additional mechanical equipment required for a recirculation system results in higher electricity consumption. Three-phase power is recommended where available to maximize equipment efficiency, with peak electrical demand may reach approximately 50 amps depending on the final design. For feasibility planning, electricity consumption was estimated using a 208-volt, three-phase service operating continuously at an average current of 20 amps during park hours. Based on these assumptions, seasonal electricity use is approximately 6,050 kWh, with an estimated cost of about $1,000 per season at current BC Hydro rates.

By treating and reusing water, a recirculation system can reduce seasonal water consumption by more than 50 percent compared with a flow-through system. Water use consists primarily of the initial filling of the holding tank and ongoing make-up water required to replace losses from evaporation, splash-out, and routine maintenance. For this estimate, make-up water was assumed to equal 3 percent of the 12 L/s design flow, with spray features activated for approximately 25 percent of operating hours. Using an estimated 7.5 m^3 (2,000 US gallon) holding tank, total seasonal water consumption is estimated at approximately 400 m^3, with a combined water and sewer cost of about $500. An additional allowance of approximately $1,500 per season has been included for treatment chemicals and filtration media.

Labour requirements for a recirculation system are substantially greater than those for a flow-through system. Seasonal startup and winterization may each require a couple of days each due to the additional pumps, tanks, filtration equipment, and treatment systems. Daily inspections must also include water quality testing in addition to basic site inspection and functionality checks. Approximately two hours of staff time per operating day has therefore been assumed. A further 60 hours per season has been allocated for periodic maintenance, filter cleaning, water quality management, and spray pad cleaning. Based on these assumptions, approximately 280 hours of labour would be required each season, representing an estimated cost of $15,400. The total estimated annual operating cost is summarized in Table 4.

Table 4: Estimated Seasonal Operating Costs – Recirculation System

Expense	Seasonal Usage	Unit Rate	Estimated Seasonal Cost
Electricity	6,050 kWh	Current BC Hydro rate and base charges	$1,000
Water and sewer	400 m³	Current District utility rates	$500
Treatment chemicals and filtration media	Seasonal allowance		$1,500
Labour	280 hours	$55/hour	$15,400
Estimated Total			**$18,400**

As shown in Table 4, labour represents the largest component of recirculation system operating costs. Treatment materials and electricity represent the next-largest expenses, while water and sewer charges are comparatively low because the system continuously reuses water. These estimates exclude replacement parts and costs associated with major repairs beyond routine maintenance.

Recirculation systems require greater investment in water treatment, monitoring, staff time, and mechanical maintenance. Although these systems have more complex operating requirements, they offer substantial reductions in potable water consumption and sanitary sewer discharge.

7.3. Grants & Fundraising

A variety of external funding opportunities may be available to offset construction costs and reduce the financial impact on the District. Combining grant funding with community partnerships, corporate sponsorships, and local fundraising initiatives could significantly improve project affordability while strengthening community investment in the facility.

In addition to identifying funding sources, consideration should be given to how the project is presented to prospective funders. Positioning the project as a broader *Community Water Play and Wellness Park*, rather than solely as a spray park, may improve alignment with grant programs focused on recreation, wellness, accessibility, climate resilience, community gathering spaces, and inclusive public amenities. Expanding the project scope to include complementary features such as shade structures, seating areas, landscaping, accessible play elements, picnic facilities, and other park improvements would emphasize the broader community benefits achieved by the project.

Potential Funding Sources

✓ Provincial infrastructure grants
✓ Federal recreation funding
✓ Community fundraising
✓ Corporate sponsorships
✓ Service clubs and community organizations
✓ Donations, sponsorships and naming opportunities

Numerous funding programs may be applicable to a future spray park project, particularly those supporting recreation, community infrastructure, health and well-being, accessibility, and community development. Potential funding partners include the federal and provincial governments, financial institutions, health organizations, charitable foundations, non-profit organizations, and community service clubs. Examples of funding programs that may be applicable, depending on the final project scope and project positioning, are summarized in Table 5 below.

Table 5: Potential Grant Funding Opportunities Available to Spray Park Projects

Name	Provider	Typical Funding	Comments
Build Communities Strong Fund	Government of Canada	Over $2.5 billion awarded annually	Supports recreation, sport, tourism, and cultural infrastructure projects.
Community Gaming Grants	Province of British Columbia	Max of $250k funding per project	20% – 50% funding available for projects under $1.25 million
Growing Community Fund	Province of British Columbia	$2 million remain in Hope's reserve fund	One-time municipal grant. All of Hope's remaining funds are allocated to projects already
Capital Project Grant	Province of British Columbia	Max of $250k funding per project	20% – 50% funding available, one application per year
Community Spaces Grant	RBC Foundation	Max of $500k/yr, up to 50% funding	For equipment designed to create accessible recreation

The Growing Communities Fund provides a one-time grant to municipalities to allocate towards their community's unique needs. Currently, approximately $2 million remains in Hope's reserve fund, but all these funds have already been earmarked for other capital works projects in the 2026-2030 budget. Additional funding opportunities may become available as new grant programs are introduced, or existing programs evolve. Future funding applications should emphasize the project's integration with existing park amenities, promotion of healthy and active lifestyles, accessibility and inclusive design features, and the broader social and economic benefits the facility would provide to the community. Demonstrating strong community support, together with financial or in-kind contributions from local businesses, organizations, and service clubs, will further strengthen future funding applications.

In addition to grants, the District may wish to explore sponsorship opportunities for individual park amenities, including shade structures, seating areas, landscaping features, donor recognition elements, or naming rights where appropriate and consistent with District policy. These partnerships could further reduce the municipal contribution required to complete the project. These partnerships may also foster long-term community ownership and recognition of local contributions toward the project. The Hope Splash Park Volunteer Committee has proactively begun fundraising efforts in support of this project and have raised approximately $50 thousand in donations to date.

Although a spray park represents a significant capital investment, the availability of multiple funding sources and partnership opportunities suggests the project may be financially achievable through a phased funding strategy that combines municipal investment, grants, sponsorships, community fundraising, and long-term capital planning. As the project advances through detailed design, refining the overall project vision and confirming the scope of supporting amenities may further improve funding eligibility and strengthen future grant applications.

8. RECOMMENDATIONS

This feasibility study concludes that the development of a community spray park in the District of Hope is technically feasible and has the potential to become a valuable long-term community asset. While site-specific considerations will influence future design and site selection, all locations evaluated have the potential to support a successful and well-used community amenity that strengthens Hope's parks and recreation network.

Existing municipal infrastructure is generally capable of supporting a future spray park, and although each candidate location presents unique opportunities and design considerations, no significant technical constraints were identified that would prevent the project from moving forward. Each candidate location can offer opportunities to support recreation, healthy living, inclusivity, and community gathering.

Recommended Next Steps

1. Confirm Community Support

- Undertake public engagement to gather feedback on preferred locations, accessibility features, design priorities, and community expectations.

2. Select a Preferred Site

- Evaluate community input alongside the technical findings of this report to identify the preferred location.

3. Advance Preliminary Design

- Prepare a conceptual site design, servicing plan, and Class C construction cost estimate to further refine the project scope and budget.

4. Consult Regulatory Agencies

- Engage Fraser Health and other applicable agencies early in the design process to confirm regulatory requirements and approvals.

5. Pursue Funding Opportunities

- Identify and pursue applicable grant programs while continuing to explore community partnerships, sponsorship opportunities, and fundraising initiatives.

6. Develop a Long-Term Operating Plan

- Confirm annual operating budgets, maintenance requirements, and lifecycle replacement planning prior to construction.

Public engagement should form an important component of the next phase of the project. Community surveys, stakeholder meetings, and online engagement tools can help identify preferred locations, accessibility priorities, desired spray features, and opportunities to enhance existing park amenities. As all candidate locations evaluated in this study are technically feasible, community feedback should play a meaningful role in determining the preferred site and identifying complementary improvements that could be incorporated into the project.

If community support remains favorable and Council chooses to proceed, the preferred site can be confirmed and the project advanced into preliminary design. This phase would include detailed site planning, utility design, water management strategies, regulatory approvals, and refinement of project costs in preparation for future budgeting and construction.



Figure 16: Next Steps to Take to Move the Project Forward

A community spray park would represent a lasting investment in recreation, healthy living, and community well-being. Beyond providing a free outdoor water play experience for residents and visitors, the facility would create opportunities for families to gather, encourage active lifestyles, strengthen connections to Hope's parks and public spaces, and contribute to local tourism. With thoughtful planning and community support, a spray park has the potential to become a valued recreational amenity for generations to come.

Key Findings

✓ Three technically feasible candidate locations were evaluated.
✓ Existing municipal infrastructure can support a future spray park.
✓ Both flow-through and recirculation systems are viable, with different capital and operational trade-offs.
✓ Operational and maintenance requirements are manageable with appropriate planning.
✓ Spray parks provide meaningful recreational, tourism, accessibility, and community benefits.
✓ Additional design, public engagement, and funding planning is recommended before construction proceeds.

While this study focuses on three conceptual candidate locations, Council may also consider additional locations or alternative site configurations as the project advances. A community spray park represents an opportunity to enhance Hope's parks and recreation network while providing an inclusive, family-friendly gathering space for residents and visitors. With thoughtful planning, community engagement, and strategic investment, the project has the potential to become a valued community asset that supports healthy living, tourism, and year-round community vibrancy for years to come.

Prepared by:

Aaron Van Eyk
Director of Engineering

Approved for submission to Council:

Kevin Dicken
Chief Administrative Officer

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