

Central Saanich Civic Facility Concept Design Report

May 29, 2025



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Introduction

Background

The District of Central Saanich is undertaking a pivotal project to develop a new Civic Facility to serve as a hub for municipal offices, fire and police services with an option to also potentially include recreation amenities. For this stage of the project, the District has asked the consultant team to generate three conceptual building design options across two potential sites.

As requested by the District, the three options have been designed to be equivalent except for those aspects that are unique to site or program.

Options 1 + 2, located at the Hovey Road site are essentially the same in terms of siting, footprint, parking (surface and underground), location of main entrance, exterior expression, plus building system approach. In addition, the design of the fire and police department spaces are the same for both options. The difference being that in Option 1 the municipal departments are located on the first floor with the council chamber on level 2, whereas in Option 2 the recreation programming is located on level 1, municipal programming on level 2 and council chambers on level 3.

For Option 3, located at Mount Newton Cross Road, the different site considerations have resulted in a differently shaped building from Options 1 + 2, however the same approach has been taken for the arrangement of building program, exterior expression and building system design. The differences come from the requirement to building the new Civic building while keeping the existing operational and then selling off roughly half of the site for future development. This has resulted in a different floorplan shape, but all building systems will be comparable, how public and staff navigate between space follow the same approach to Options 1 + 2 and despite the different massing, can have the same exterior expression.

Two Sites, Three Options

Council defined the 3 following options to be explored in this phase of the project



Site 1:
Hovey Road



Site 2:
1903 Mt. Newton Cross Rd

Common to all options

- Underground parking required for all options
- Energy Performance Targets (LEED Silver, BC Energy Step Code, Step 2 or 3) required for all options
- Accessibility Targets same for all options
- Construction Approach (overall systems approach same for all options)
- Exterior Envelope (Walls, windows, doors same for all options)
- Interior Assemblies and Finishes same for all options

Option 1

- 2 Storey
- Civic facility program (Municipal, Fire, Police)
- Surface and underground parking

Option 2

- 3 Storey
- Civic facility PLUS 1000m² dry floor recreation
- Surface and underground parking as required
- Additional parking as required for recreation program

Option 3

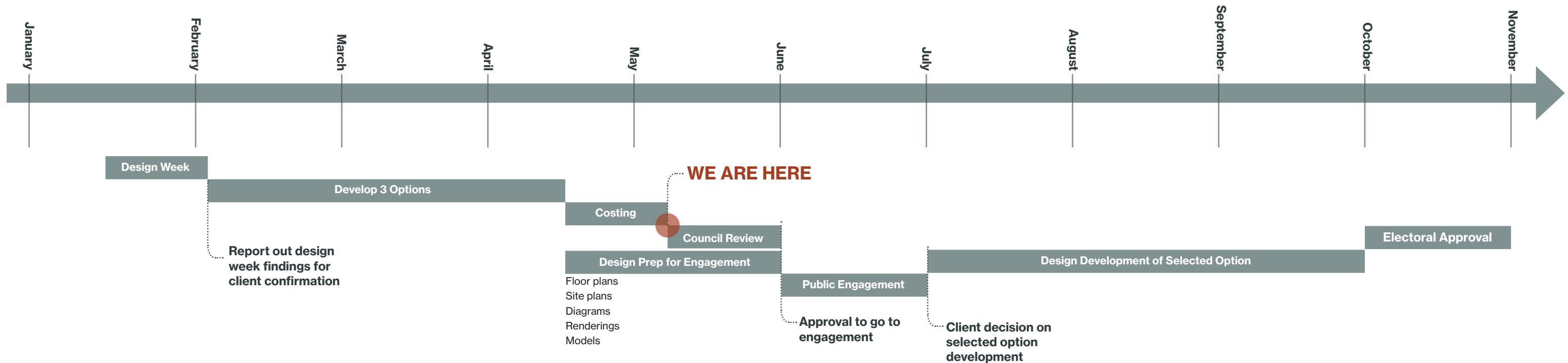
- 2 Storey
- Civic facility program (Municipal, Fire, Police)
- Locate parking at 'rear' of site to permit continuous operation and future development of 'front' corner property
- Site has +/- 2m slope allowing for potentially less excavation for underground parking
- Involves subdividing existing site into two separate properties and eventual sale of East property for private development.
- Requires an approach to construction that will allow current civic facility to continue to operate at existing location while new facility is being built on adjacent site
- Costing will capture portion of new internal road.

General Project Process

Overview

Following on a design sprint process where hcma worked from the Central Saanich District offices for a week, engaging directly with stakeholder groups, the consultant team has developed three schematic design concepts to be submitted for high-level costing. Costing results will be used in a Staff Report to be submitted to Central Saanich Council for review and approval to proceed to public engagement in June.

Overall Project Schedule



Building Design

Architectural

The following are the assumptions being used for concept design pricing of the three options.

Exterior Materials

- Walls to be clad with metal and/or cementitious panels on thermally broken insulated walls. Energy modelling and building envelop analysis will determine final composition and detailing.
- High performance aluminum windows with a combination of 'punched' windows set within insulated walls in most areas plus larger areas of curtain wall windows are the main entrance and other featured locations.
- Roofs to be low slope (flat), with access as needed for rooftop equipment.

Interior Partitions

- Typical areas will have wood stud partitions with acoustic insulation and painted drywall finish to achieve acoustic and fire ratings, as necessary
- Glazed partitions as needed to provide visual connections while maintaining acoustic and security separations (around lobby, council chambers, multipurpose rooms, meeting rooms and department separations)
- Wood paneling or slats will be included in the main lobby and council chambers.
- Concrete block partitions
 - Basement area of the police station for holding cells and associated spaces.
 - Main floor of fire station in the apparatus bays and support areas.

Floor Finishes

- Typical floors will be finished in sheet resilient flooring or carpet tile
- Entrance lobby will have polished concrete or porcelain tile
- Washrooms will have ceramic tiles
- The firehall apparatus bays and support areas will have polished concrete floors

Ceilings

- Typical ceilings will have suspended acoustic tiles, with drywall bulkheads where needed for routing of services and ceiling features
- The lobby and council chambers will have a premium finish, either exposed wood structure or suspended wood slats with acoustic absorbing material

Structural

Police and fire stations are required by the BC Building Code to meet post-disaster structural requirements. Although the municipal hall portion of the building and the possible recreation portion of the building are not required to meet the same post disaster structural level, it may end up being optimal to combine the full building structurally with all areas meeting post disaster structural levels rather than isolating the different areas. This will be confirmed during the Schematic Design (Phase 2) stage of the project, following the selection of the preferred option.

The building's structure will likely be a combination of concrete, steel and possibly mass timber in featured areas such as the entrance atrium and top floor columns and roof. The one level underground parking structure will be constructed on cast in place concrete, with the option of concrete sheer walls, elevator core and stair cores. Alternatively, it may prove beneficial to have the sheer walls built of steel. Final determination to follow in the schematic design stage through further design refinement including consideration of possible steel tariffs and other market considerations that a construction manager will be able to advise on. Upper-level columns above parking garage will likely be of steel or wood, with similar considerations during schematic design stage.

Mechanical

The building is being designed to meet the unique requirements of the different occupancy types and will be an energy efficient, robust and optimized to the District's capital and operational needs. Although the building houses emergency responders and will be designed to meet their needs during and after a disaster, it is understood that the building will not function as a gather space for the public in a disaster. The District's EOC will remain at the Firehall #1.

High Performance Building Design Objectives:

- Robust and resilient core M&E systems
- Exceptional building enclosure
- Ultra-high efficiency mechanical heating and cooling
- Focus on occupant wellness--> optimized indoor air quality
- Low-carbon performance--> electrified building
- Demonstrate leadership in sustainability

The mechanical and electrical systems will be designed to meet the following design and performance criteria:

- Optimal thermal comfort, ease of operation, system controllability, and noise privacy.
- Integration of mechanical systems with interior and architectural building expression.
- Sustainable features, including those for optimizing energy- and water-efficiency, to the extent practical for a modern commercial office building.
- Maintaining functionality and security for the Fire, Police and Municipal spaces.
- Optimize life-cycle ownership and operation cost by minimizing complexity, incorporating a plan for measurement and verification, and mitigating energy costs by including alternate energy source and technology options.

Special attention is required in the fire station areas as a result of the apparatus bays and support areas. From an energy perspective, the regular opening of the apparatus bay doors results in significant heat loss. As a result, the apparatus bays will be semi-isolated from the rest of the building through insulated assemblies and airtight doors and the apparatus bays will be semi-heated spaces.

From an occupant health perspective, a vehicle exhaust system will be included for improved firefighter health, as well as additional care taken in the air quality of decontamination and gear storage areas.

The building will be sprinklered throughout.

Cooling to be provided in commonly occupied spaces.

Building Design

Electrical

Backup power generation will be provided to the building for key operations specific devices, some lighting, and selected mechanical equipment. The loads will be confirmed during detailed design. In general, the backup power distribution will provide power to a panel in each of the civic centre, police station, and fire department to cover strategic loads within these areas.

IT and Security systems will be designed to the District standards.

Although on-site solar power generation is not included in the project, provision can be provided for future installation. The large rooftop and limited shading at both sites would make this a viable option should the District pursue in the future as technology advancements mean that photo voltaic systems are become more and more financially viable.

Electric Vehicle charging stations will be provided for the site. Preliminarily these will be provided for level 2 x 40A chargers from a dedicated panel 200A three phase panel, located in a convenient location near the parking space. During further design this may be expanded to suit the site's needs

LED fixtures shall be used for all lighting on the project.

Civil

The civil servicing calculations have been undertaken conservatively due to limited existing utility capacity information available. Frontage improvements are focussed on accommodating all modes of travel, implementing the District's proposed facilities from Council-endorsed plans. The design seeks to enhance the infiltration, retention and storage of rainwater.

Hovey Road Site

- Without a sanitary system model or upstream inputs, existing excess capacity cannot be predicted, although the added demand likely represents less than 1% of the existing 400mm diameter asbestos cement (AC) sewer main's full pipe flow. Upgrades are not anticipated to be required at this stage but should be confirmed with modeling as design progresses.
- Given the anticipated fire flow demands of the Hovey Road site, upsizing of the existing water main along Hovey Road is almost certainly required (approx. 260m). It is highly likely that upstream water mains may also need to be upsized as a result; this will need to be confirmed in further design stages with water modeling or input from the District's Water Master Plan. It should be assumed that an additional hydrant is required to service the Hovey Road site, although this should be confirmed in further stages of design.
- A combination of on-site infiltration / retention capacity and storage capacity is required to meet provisions in the District's Surface Water Management Bylaw No. 1606.
- A new crosswalk on the north side of the Hovey Road and Wallace Drive intersection creates a safe and direct connection between the new civic facility and Centennial Park.
- Curb extensions will enhance pedestrian refuge space and visually narrow the road width while reducing crossing distance. Rectangular Rapid Flashing Beacons (RRFBs) should be included at this location for costing purposes, although further analysis should be conducted at a later design stage to confirm applicability.
- Active transportation facilities along the Wallace Drive frontage provide safe "All Ages and Abilities" connectivity, including separated bike lanes and wide sidewalks.
- Future improvements on the west side of Wallace Drive include a pedestrian pathway (identified in the Central Saanich Active Transportation Plan), as well as formalized on-street parking and parking-protected bicycle lanes.
- Pedestrian and bicycle connectivity to the Hovey Site from Wallace Drive is achieved through the entry and community plaza spaces. However, for conservative costing purposes, a 1.8m-2.5m separated sidewalk could be considered if a future connection is desired along Hovey Road (the Active

Transportation Plan identifies a future roadside pedestrian facility).

- If possible, conversations should be initiated with BC Transit in future to relocate the existing northbound bus stop along Wallace Drive to north of Hovey Road, enabling better access to the site and Centennial Park.

Mount Newton Cross Road Site

- Without a sanitary system model or upstream inputs existing excess capacity cannot be predicted, although the added demand likely represents less than 2% of the existing 200mm diameter vitrified clay (VC) sewer main's full pipe flow. Capacity upgrades are not anticipated to be required at this stage but should be confirmed with modeling as design progresses.
- Existing water infrastructure in the area consists of 200mm AC water main along Mt Newton Cross Road. No upgrades are anticipated at this stage resulting from redevelopment demand; this should be confirmed with modeling at a later date.
- It should be assumed for costing purposes that an additional hydrant is required to service the site, although this should be confirmed in further stages of design.
- A combination of on-site infiltration / retention capacity and storage capacity is required to meet provisions in the District's Surface Water Management Bylaw No. 1606. A stormwater detention tank will be required due to the tight site. Placement of the storm tank should be determined at a later design stage, accounting for existing site drainage primarily flowing north to south.
- Active transportation facilities along the Mt Newton Cross Road frontage will provide safe "All Ages and Abilities" connectivity, including separated bike lanes and wide sidewalks in alignment with the District's Saanichton Village Design Plan. These should be raised at the entrances for emergency vehicles and at the fire hall apron, to emphasize vulnerable road user presence.
- The Mt Newton Cross Road / Wallace Drive intersection is envisioned as compact on the southeast corner, with additional space achieved through the future removal of the eastbound channelized right turn lane. Curb extensions are proposed here to narrow vehicle lanes, aligning with the Saanichton Village Design Plan.
- Active transportation facilities along Wallace Drive align with the District's Active Transportation Plan to prioritize All Ages and Abilities infrastructure, including sidewalks and physically protected uni-directional bike lanes.

Building Design

Landscape

Hovey Road Site

The conceptual landscape design for the Hovey Road site envisions a welcoming, ecologically grounded, and community-focused civic space that connects people to place.

- A new crosswalk on the north side of the Hovey Road and Wallace Drive intersection creates a safe and direct connection between the new civic facility and Centennial Park – an important community asset offering baseball fields, tennis courts, a playground, lawn bowling, picnic areas, and forest trail access. At the southwest corner of the site, an entry plaza welcomes visitors with a native plant garden and sculpted berms that rise up to ~1.5 metres along Wallace Drive. These landscaped landforms offer visual screening and a buffer from traffic noise, while creating a natural, immersive arrival experience.
- Within the garden, a small gathering node offers an intimate space framed by moss-covered boulders, rain gardens, and Garry Oak ecosystem plantings. A 3-metre-wide accessible trail that is graded to be 8% and includes a handrail. The path winds through the landscaped berm, linking the entry plaza to Wallace Drive and its north sidewalk.
- It is intended that future collaboration between the landscape architect and the W̱JOŁEŁP (Tsartlip) and STÁUTW̱ (Tsawout) First Nations will inform opportunities for cultural expression. Informal seating is offered on natural boulders and custom benches, designed with poured-in-place concrete bases and wood tops integrated into the berms.
- Along Wallace Drive, large-caliper street trees will create a shaded green edge that enhances the building's presence and softens the street. A 4.5-metre-wide boulevard is planted with a short-stemmed meadow mix, reflecting the area's agricultural heritage.
- Transitioning from the entry garden, visitors arrive at the Farm Heritage Plaza – an open-air space defined by long linear rows of plantings and canopy trees that offer moments for rest and gathering. Custom benches with Corten steel bases and cedar

seating echo the rural-industrial character of the region.

- The Farm Heritage Plaza leads into a large community gathering plaza designed to accommodate food trucks, market stalls, public art, a monument or cenotaph, and ample seating. This space serves as a civic heart and flexible venue for public events.
- A row of medium-sized trees and low planting along the south property line preserves open views to existing boulevard trees and Centennial Park. Pedestrians can cross the bioswale via a defined connection that links directly to the tennis court entrance.
- A rollover curb with removable bollards at the plaza entry allows for occasional vehicle access during special events or vendor set-up, enhancing flexibility of use.
- A one-way drive along the south edge of the site includes four accessible parking stalls and designated drop-off and waiting spaces, providing convenient access for all users.
- Paving throughout the plaza will feature long, linear bands of unit pavers intersected by curvilinear bands of coloured concrete. These patterns will be informed by the building's architectural geometry, reinforcing spatial rhythm and visual interest.
- Pedestrian pathways link parking areas to the main entrance, with planting and a guardrail fence provided along the parkade ramp for safety and visual cohesion.
- A secure fence will separate the municipal staff parking lot from the public parking area, with a gated access point available for staff use if required.
- A private staff patio with tables and chairs offers an outdoor retreat for coffee breaks and lunches, tucked into the landscape for comfort and privacy

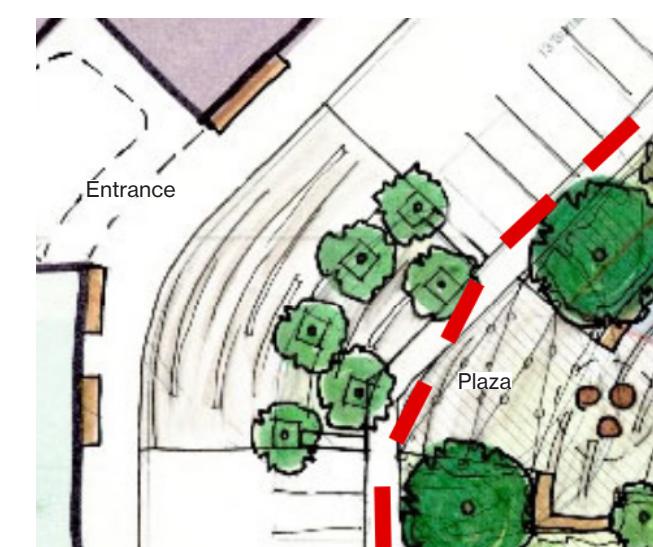


Hovey Rd Site

Mount Newton Cross Road Site

The Mount Newton site is quite limited in terms of site area for hard and soft landscape treatments. The north and west sides of the site will be taken up by surface parking areas and vehicle ramp down to the basement. The west and south sides of the site will be taken up by a new internal road, sidewalks and surface parking. The remainder of the site will be developed by a future development partner. It is recommended that the District develop a public realm concept design that can guide the improvements in the future through agreements and negotiations.

- A woonerf-style elevated crosswalk will create a continuous, curbless surface that visually and physically connects the building's lobby to the outdoor plaza. This shared surface will prioritize pedestrian movement while calming vehicle traffic, reinforcing the site's community-focused design intent.
- Street trees (6-8cm caliper size) in metal grates will be paired with integrated bench seating to provide shaded, comfortable rest areas along the pedestrian corridors. These tree-lined edges will enhance the walkability and human scale of the streetscape.
- Screening along the western edge of the site will incorporate dense planting and potential fencing or vertical elements to provide privacy and acoustic buffering for the adjacent police and fire department parking areas. This treatment will ensure operational zones remain discreet and protect neighbouring properties from disturbance.



Mt Newton X Rd Site

Post-Disaster Construction

The new civic building will be designed and built to post-disaster standards as requested by the District. At a minimum, the BC Building Code (BCBC) sets out requirements for structural aspects of buildings and classifies a building's importance factor as "Low" (buildings with low numbers of occupants), "Normal", "High" (community centres, schools), and "Post-Disaster" (fire, rescue and police stations). The importance factor impacts lateral and vertical loads differently and independently for Earthquake, Wind and Snow. Following the requirements of the BCBC, only the police and fire department areas of the building are required to meet post-disaster and if recreation is included in the Hovey Road option, then that portion of the building will be built to a high importance factor.

From a mechanical perspective the plumbing systems will be designed to be operational but contingent on connections to services such as water and sewer surviving a significant seismic event. No provisions such as water treatment or sewage storage or treatment has been considered. Limited heating or cooling capacity will be provided following a significant seismic event and will depend partly on the size of emergency generator and size of fuel tank on site. Select critical areas such as server rooms could receive cooling, but it is anticipated that occupants would 'make do' with a building that is cooler or warmer than standard room temperatures. In the mild climate of Vancouver Island, this is typically considered an acceptable approach given that there is low likelihood of drastically low or high temperatures happening concurrently with a significant seismic event. The District can decide on this risk factor and additional redundancies for heating and cooling after a seismic event can be added. Other possible disaster scenarios to consider are wildfire events which can be addressed through changing of intake air filters as needed and lastly, in the southern Vancouver Island zone, high temperature events are becoming more common, and this can be addressed through higher cooling capacity in the mechanical systems.

For the electrical systems, the emergency power generation on site will ensure uninterrupted operation to select areas of the building. It is understood that the District will maintain the EOC at the Fire Station #1. With that in mind, it is anticipated that limited coverage for the municipal hall areas of the building for short periods of time, with only the police and fire department areas to run on an emergency generator following longer power outages. The consultant team will work with the district to refine which areas within police and fire departments (and municipal hall) need to be powered and for how long. This will then determine the size of the emergency generator (or generators) and the size of the fuel tank.

Post-Disaster : Single Building vs. Multiple Buildings

As noted previously, only the police and fire departments are required to meet post-disaster requirements of the Building Code. The consultant team has considered three options for combining a building with post-disaster and non-post-disaster areas and has determined that it would be most cost effective when considering both first construction costs and ongoing maintenance costs to join the building structurally instead of separating into independent areas.

The three options identified are:

1. Fully joined

The entire building is joined together with all areas structurally built to post-disaster standards. Although there would be additional cost with building a stand-alone municipal hall as post-disaster, there are structural efficiencies in combining this particular building as lateral forces can be shared across the entire building. Stair cores and sheer walls that restrict the horizontal movement of the building can be spread out evenly through the entire building, resulting in structural efficiencies. With the entire building meeting post-disaster standards, the exiting stairs in the municipal hall area can be used by both police and fire departments.

2. Seismic gap

The building would appear to be joined together but would be separated with a moveable joint running through the entire building, roughly 200-300mm wide between post-disaster and non-post-disaster areas. Each side of the seismic gap would move independently and therefore requires duplicate vertical (columns) and lateral resisting structure (sheer walls). Although the size of each sheer wall on the municipal hall (non-post-disaster) side may be smaller there would be more of them. Additionally, not all of the municipal hall areas could be designed as non-post disaster as the upper floors are located over police areas below. Therefore, a portion of the upper floor(s) of the municipal hall area would need to meet post-disaster standards in order to provide a second, safe exit from the second storey of the police station and in order to align the seismic gap vertically on all levels. Lastly, the full underground parking and basement areas would be designed to withstand the post-disaster loading. For the mechanical systems (plumbing, heating, fire suppression) the seismic gap results in costly flexible joints and/or duplication of vertical shafts on either side of the joint. Lastly, from a building expression point of view, roof overhangs would be more difficult (costly) to incorporate in a building with a seismic gap.

3. Independent buildings

The approach here would be to separate post-disaster and non-post disaster into wholly separate buildings. This would mean that the entire municipal hall could be built to non-post-disaster standards so there would be an apparent reduction in cost for some of the individual structural elements such as sheer walls and cores. However, this would be offset by the additional stairs (two in each building), sheer walls, heating and cooling systems and additional exterior walls.

In summary, due to the limited savings that may be possible by reducing the importance factor of the municipal hall portion of the building (with some being on the post-disaster side) and the added cost and complexity related to the seismic gap or multiple buildings, it is recommended by the consultant team that the building be designed as one building from a post-disaster lens.

Traffic and Parking

Traffic

BUNT Associates analyzed existing and future traffic patterns adjacent to the two sites and found that mitigation would not be necessary from a vehicle operations perspective. However, is noted that pedestrian infrastructure are likely required at both the Wallace Drive and Mt Newton Crossroad intersection as well as at Wallace Drive and Hovey Road intersection to address pedestrian safety.

Parking Demand

Building Program

The building program developed by the District outlines the parking requirements for each department for staff, fleet vehicles, visitors, and bicycles.

Municipal Hall	
Staff/Visitor	55
Accessible	2
Fleet - regular	4
Fleet - oversized	4
Total	65
Fire	
Staff/Visitor	14
Accessible	1
Fleet - regular	2
Fleet - oversized	3
Total	20
Police	
Staff	16
Visitor	5
Accessible	1
Fleet	15
Total	37
Grand Total	122
Recreation (Option 2 only)	TBD

Existing Parking Demand

To understand the parking demand of the municipal facility, BUNT Associates, the traffic consultant on the project, conducted a parking supply and demand assessment over the course of one week to evaluate existing conditions.

The existing municipal facility, which includes the Municipal Hall, Police Department, and Fire Department, currently provides 87 parking spaces. BUNT observed an average demand of 50 spaces, resulting in an average occupancy rate of approximately 57 percent. Based on this analysis, Bunt considers the existing supply of 87 spaces to be sufficient to accommodate the future parking needs of the municipal facility. Additional analysis may be necessary to look at peak demand times such as may occur during tax payment season.

Recreation Parking

BUNT has also conducted a preliminary analysis of potential parking needs that would be generated by adding a recreation component at the Hovey Site.

For recreation space, the current Central Saanich municipal by-law requires a rate of 2 parking stalls per 10m² of gross floor area, therefore the addition of a 10,000 square foot (1000 m²) recreation component would result in a requirement for 200 additional parking stalls.

The addition of 200 stalls to the 122 stalls called for by the building program would result in a need for a total of 322 stalls. The maximum number of stalls that can be accommodated as surface parking on the Hovey site is approximately 100 stalls and this would therefore result in a need to accommodate an additional 222 stalls by either providing underground parking and/or finding an acceptable off-site solution. However, based on their preliminary analysis, BUNT suggests that 34 additional stalls for the type of recreation component currently being contemplated would likely be sufficient. BUNT also notes that a case could be made to reasonably expect that some overflow parking be accommodated across Wallace Drive adjacent to Centennial Park at peak periods.

Surface Parking Capacity

The three design options presented in this report provide a mix of surface and underground parking, depending on what the site and potential underground area can accommodate. For all design options there are parking options to be confirmed. There is the question of how much, if any, underground parking should be built since underground parking is typically more costly than surface parking. With that said, the Mt. Newton site has a natural grade slope of approximately 4m from the north to south of the site and it may prove cost effective to build underground parking by taking advantage of the existing natural grade specific to this site.

Option 1A

Includes Underground Parking (Hovey Road – Municipal Hall, Police and Fire)

There are roughly 82 surface parking stalls, plus an additional 34 underground for police for a total of 116 stalls on site. This falls short of the requirements by 6 parking stalls. We can work with the District to determine if there is a possible reduction in required parking or if the additional 6 stalls must be provided. These additional stalls could be located on the south side of the building where the designs show a public plaza space. Alternatively, it may be acceptable that the additional stalls are to be located across Wallace Drive along Centennial Park.

Option 1B

Surface Parking Only (Hovey Road – Municipal Hall, Police and Fire)

There are roughly 100 surface parking stalls. This falls short of the requirements by 22 parking stalls. We can work with the District to determine if there is a possible reduction in required parking or if the additional 22 stalls must be provided. It may be acceptable that the additional stalls are to be located across Wallace Drive along Centennial Park.

Option 2A

Includes Underground Parking (Hovey Road – Municipal Hall, Police, Fire and Recreation)

There are roughly 82 surface parking stalls, plus an additional 34 underground for police for a total of 116 stalls on site. This falls short of the requirements by 40 parking stalls if it is assumed that 34 stalls would suffice for the recreation component. There is room to add an additional 22 surface parking stalls at the south of the building where site plans show a public plaza for a maximum total of 138 stalls on site (See Option 2B). This is still up to 26 stalls short of the required number of stalls if all police, fire, municipal hall and recreation parking is required at the same time. The parking requirements and how they are met when recreation is added to the building program will need to be discussed further should this be the favoured option. There may be opportunities to look in detail at different peak times for different program areas and there may also be options to provide overflow parking across Wallace Drive along Centennial Park.

Option 2B

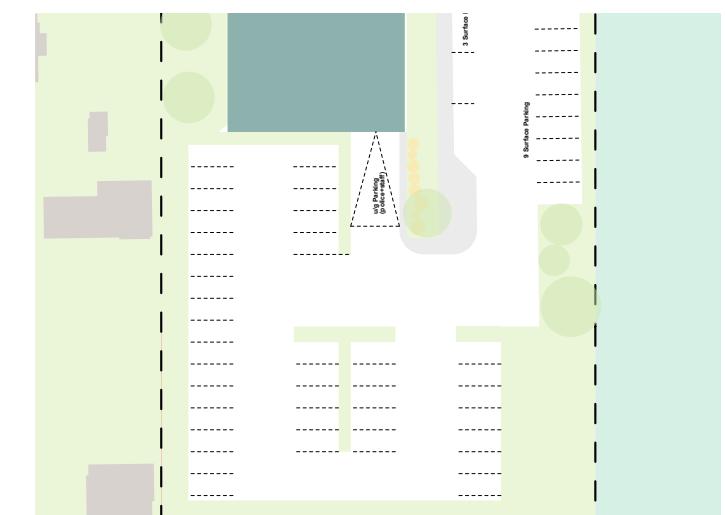
Surface Parking Only (Hovey Road – Municipal Hall, Police, Fire and Recreation)

Same as Option 1B except there is a need for additional parking for recreation as noted in Option 2A.

Option 3

(Mt. Newton – Municipal Hall, Police and Fire)

There are roughly 70 surface parking stalls, plus an additional 23 underground for police for a total of 93 stalls on site. This falls short of the requirements by 19 parking stalls. We can work with the District to determine if there is a possible reduction in required parking or if the additional 19 stalls must be provided. There is an option to increase the size of the property to the south side of the building to provide for these stalls and in fact there appears to be room for up to 25 additional stalls. We can work with the District to find the optimum number of parking stalls versus land value should this become the preferred option.



Potential additional surface parking at South of Mt Newton Site

Costing

The costing is based on the drawings and reports prepared by the design consultants as summarized in this report and in appendices. The base building assumptions are the same across all options, with differences coming from factors associated with the two different sites, building program and parking. There were several revisions made to reduce and refine the costing and further analysis is required by the District to compare the pricing of these options with other options being explored.

A design contingency has been included within this report with the understanding that the District is carrying an overall contingency.

The cost per unit area is relatively high in this report and we understand that the District may engage another cost consultant for a comparative analysis using the same design drawings. This is a common approach taken with other municipal clients and is sometimes completed by a construction manager or a cost consultant.

The costing exercise of the various options is extremely helpful in comparing the budget implications of the options being considered by the District. To that end, below are a few key points to look at when reviewing the costing report to help in understanding the differences.

The estimated construction cost of the project may be summarized as follows:

Description	Option 1A Hovey 2-Storey	Option 1B Hovey 2-Storey Op 1A with UG Parking Removed and Max Surface Parking	Option 2A Hovey 3-Storey	Option 2B Hovey 3-Storey Op 2A with UG Parking Removed and Max Surface Parking	Option 3 Mt Newton 2-Storey
A. Construction	\$	\$	\$	\$	\$
A1 Base Building	26,131,500	22,686,400	32,062,100	28,829,800	24,330,200
A2 Interior Fit-out	16,162,100	15,243,200	19,410,100	18,491,200	16,060,100
A3 Site Development	5,070,200	5,088,600	5,039,300	5,077,100	2,620,800
NET CONSTRUCTION COST	\$47,363,800	\$43,018,200	\$56,511,500	\$52,398,100	\$43,011,100
B. Contingencies					
B1 Design Contingency (12%)	5,683,700	5,162,200	6,781,400	6,287,800	5,161,300
TOTAL CONSTRUCTION COST	\$53,047,500	\$48,180,400	\$63,292,900	\$58,685,900	\$48,172,400
<i>Gross Floor Area (m²)</i>	<i>3,801 m²</i>	<i>3,801 m²</i>	<i>5,060 m²</i>	<i>5,060 m²</i>	<i>3,801 m²</i>
<i>Unit Net Construction Cost (\$/m²)</i>	<i>\$12,461/m²</i>	<i>\$11,318/m²</i>	<i>\$11,168/m²</i>	<i>\$10,355/m²</i>	<i>\$11,316/m²</i>
<i>Unit Total Construction Cost (\$/m²)</i>	<i>\$13,956/m²</i>	<i>\$12,676/m²</i>	<i>\$12,508/m²</i>	<i>\$11,598/m²</i>	<i>\$12,674/m²</i>

Notes on costing

Note 1

The building cost for Option 1A and Option 3 (same program, different site) are slightly different due to building geometry and level of design development at this stage. They should be considered the 'same' for decision making purposes.

Note 2

The increase in base building cost for adding recreation (Option 2A over Options 1A) is roughly \$6m plus an additional \$3.2m for interior fit out for a total of \$9.2m before contingencies. A detailed analysis of cost sharing for the additional space would need to be completed in a later stage of the design process.

Note 3

The difference between 1A and 1B of \$4.4M is due to the cost of underground parking. There is a minimal increase in site development costs for relocating the underground spaces to surface parking.

Note 4

The site development cost for Option 3 is lower due to smaller site and less street frontage.

Architectural Drawings + Renderings

Option 1A

Hovey Road Site
2 Storey
Landscaped Plaza at South West
Includes Underground Parking
No Recreation Program



Option 1B

Hovey Road Site
2 Storey
Surface Parking instead of Plaza at South West
No Underground Parking
No Recreation Program



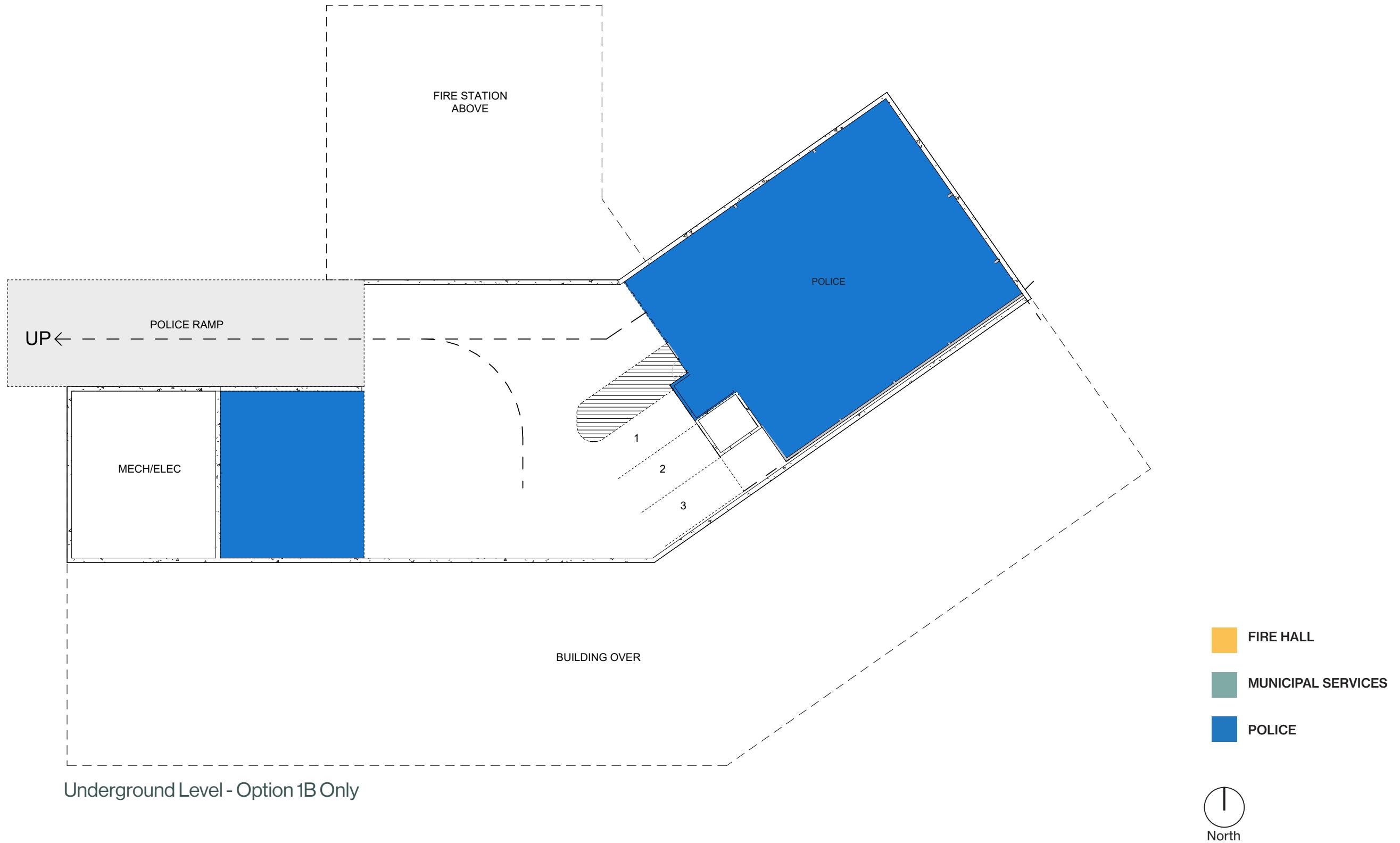
Option 1A only

Hovey Road Site
2 Storey
Includes Underground Parking
No Recreation Program



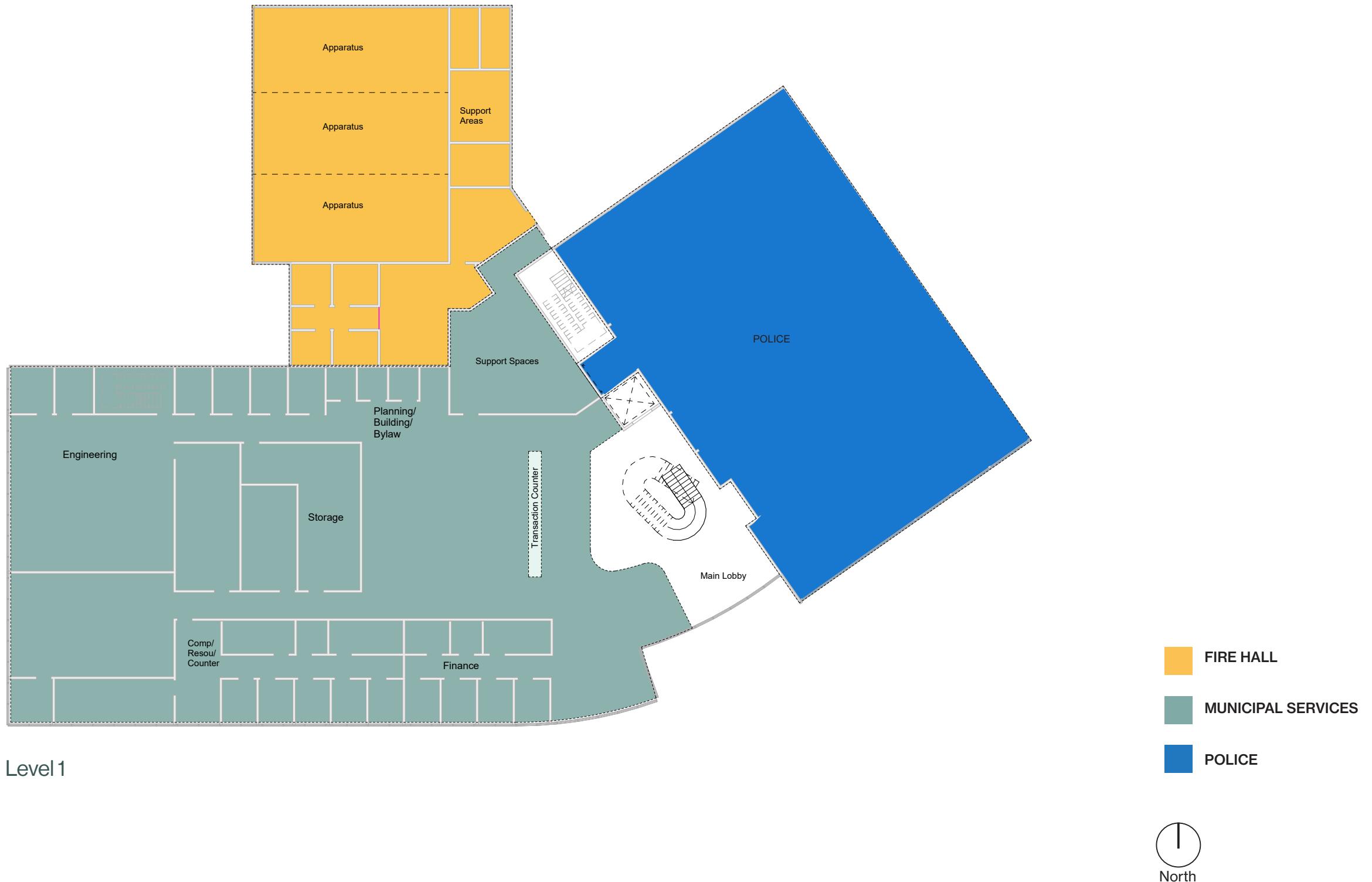
Option 1B only

Hovey Road Site
2 Storey
No Underground Parking
No Recreation Program



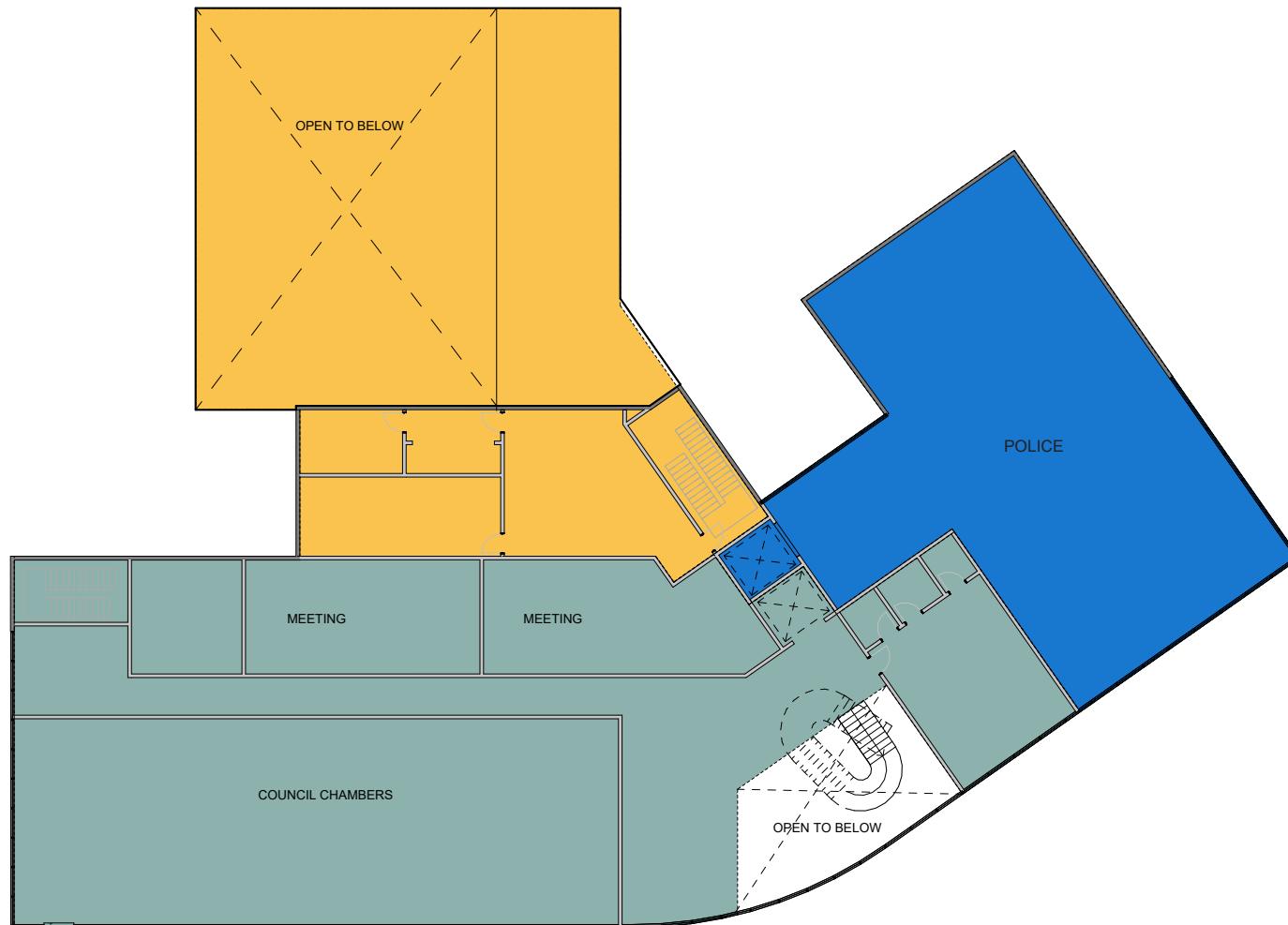
Option 1A + 1B

Hovey Road Site
2 Storey
No Recreation Program



Option 1A + 1B

Hovey Road Site
2 Storey
No Recreation Program



Level 2

- █ FIRE HALL
- █ MUNICIPAL SERVICES
- █ POLICE



North

Option 1A



View of Entrance from Hovey Rd

Option 1A



View of Firehall from Wallace Drive

Option 2A

Hovey Road Site
3 Storey
Includes Recreation Program
Landscaped Plaza at South West
Includes Underground Parking



Option 2B

Hovey Road Site
3 Storey
Includes Recreation Program
Surface Parking instead of Plaza at South West
No Underground Parking



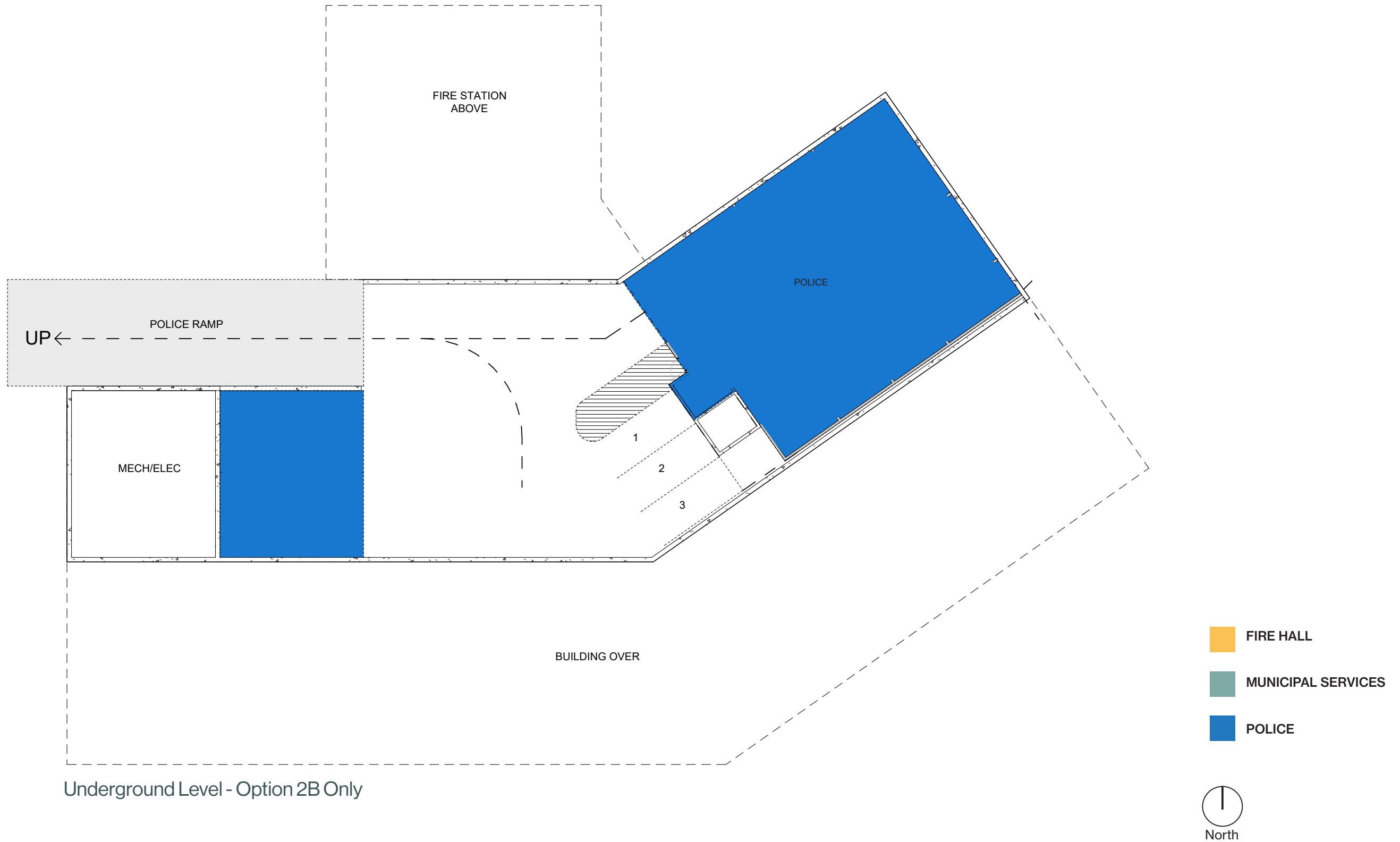
Option 2A only

Hovey Road Site
3 Storey
Includes Underground Parking
Includes Recreation Program



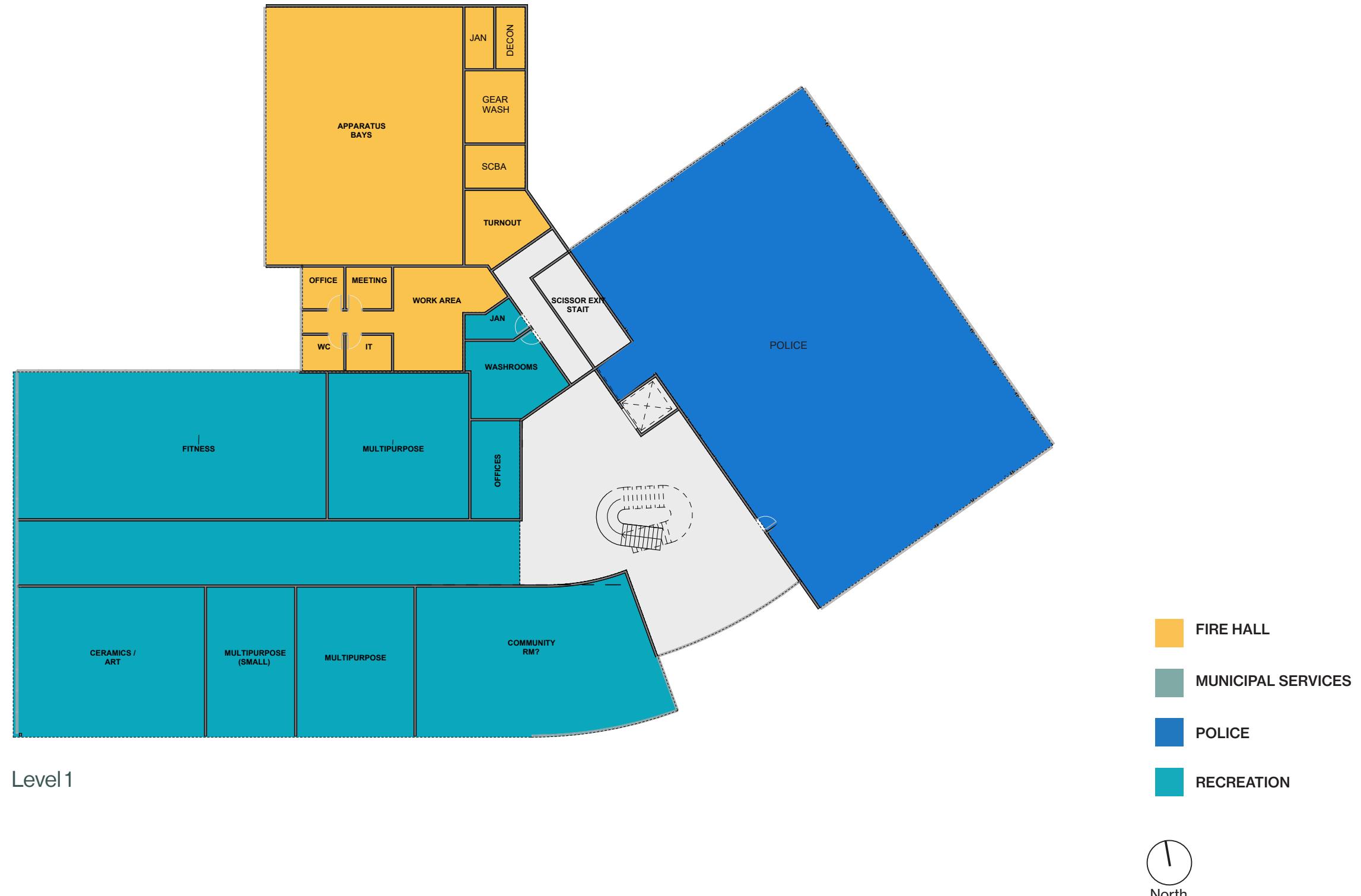
Option 2B only

Hovey Road Site
2 Storey
No Underground Parking
No Recreation Program



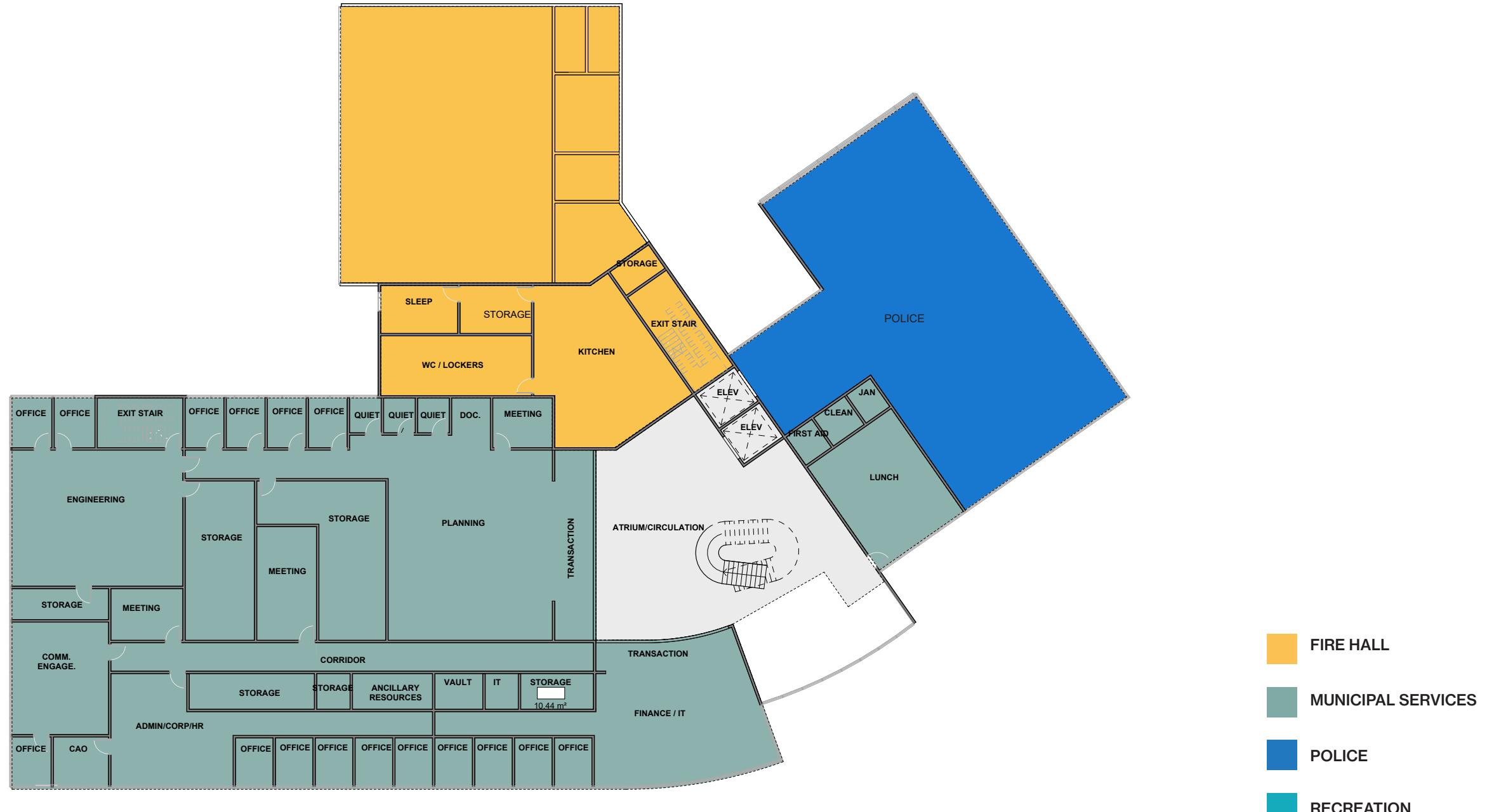
Option 2A + 2B

Hovey Road Site
3 Storey
Includes Underground Parking
Includes Recreation Program



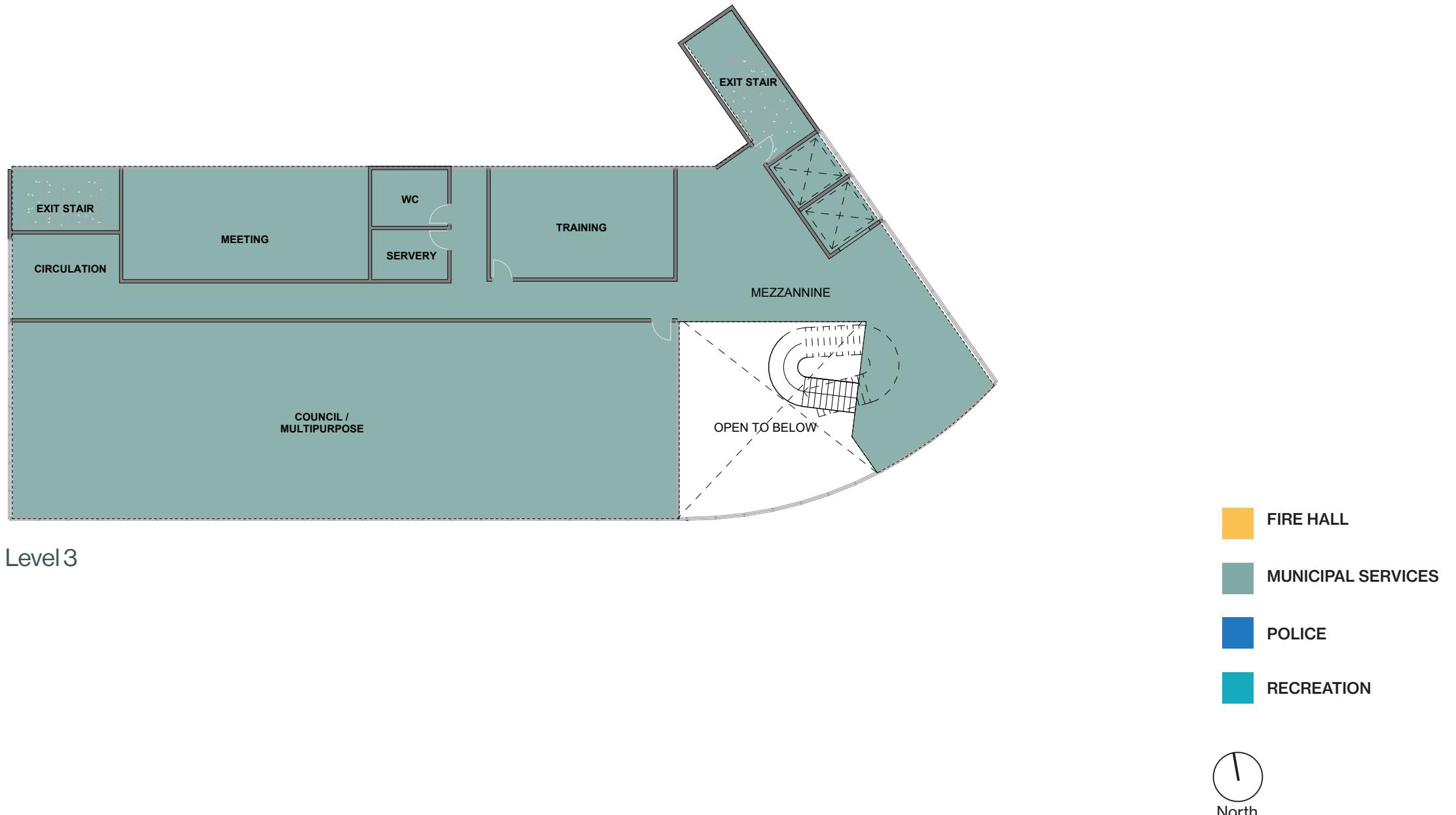
Option 2A + 2B

Hovey Road Site
3 Storey
Includes Underground Parking
Includes Recreation Program



Option 2A + 2B

Hovey Road Site
3 Storey
Includes Underground Parking
Includes Recreation Program



Option 2A



View of Entrance from Hovey Rd

Option 2A



View of Firehall from Wallace Drive

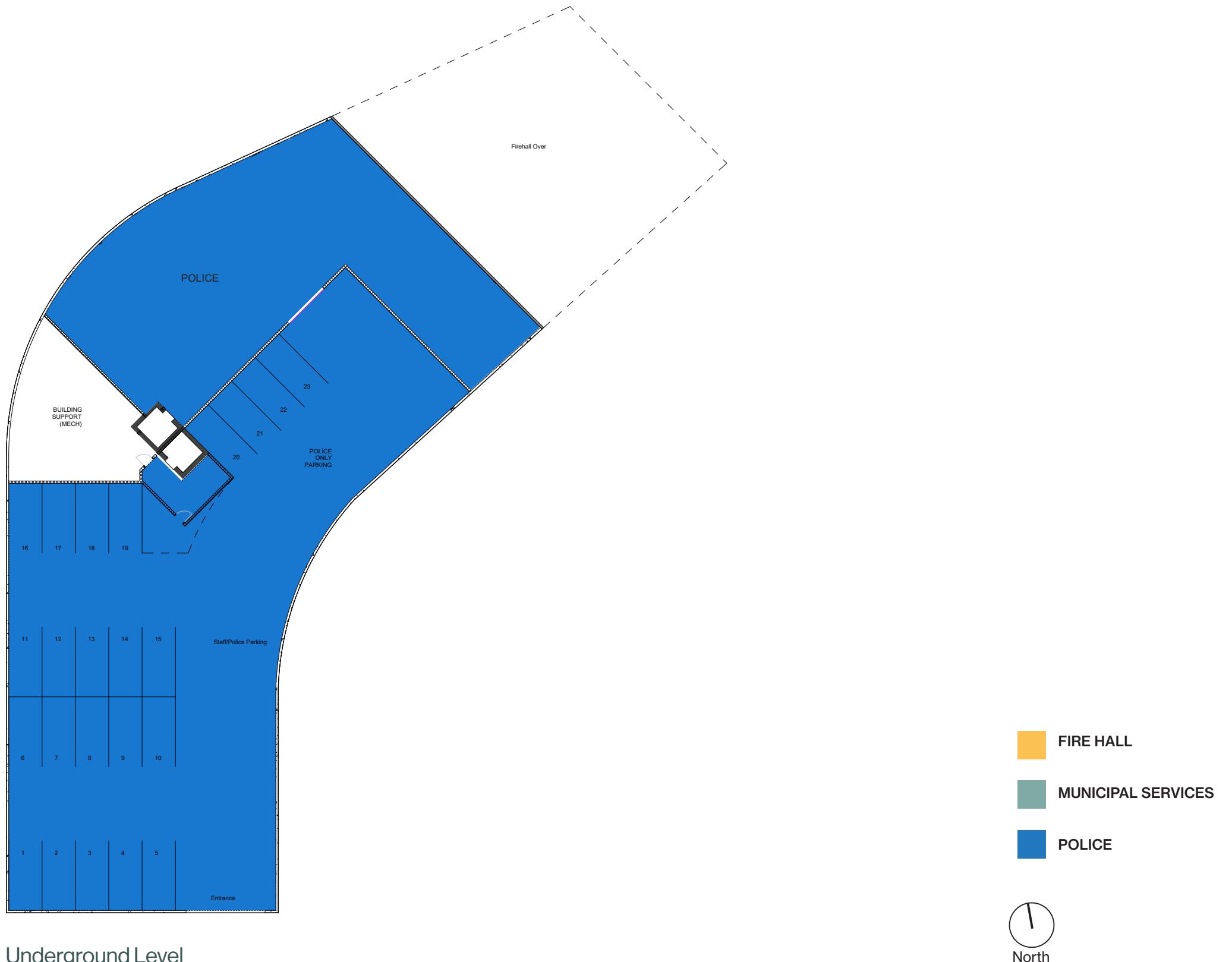
Option 3

Mt Newton X Road Site
2 Storey
Includes Underground Parking



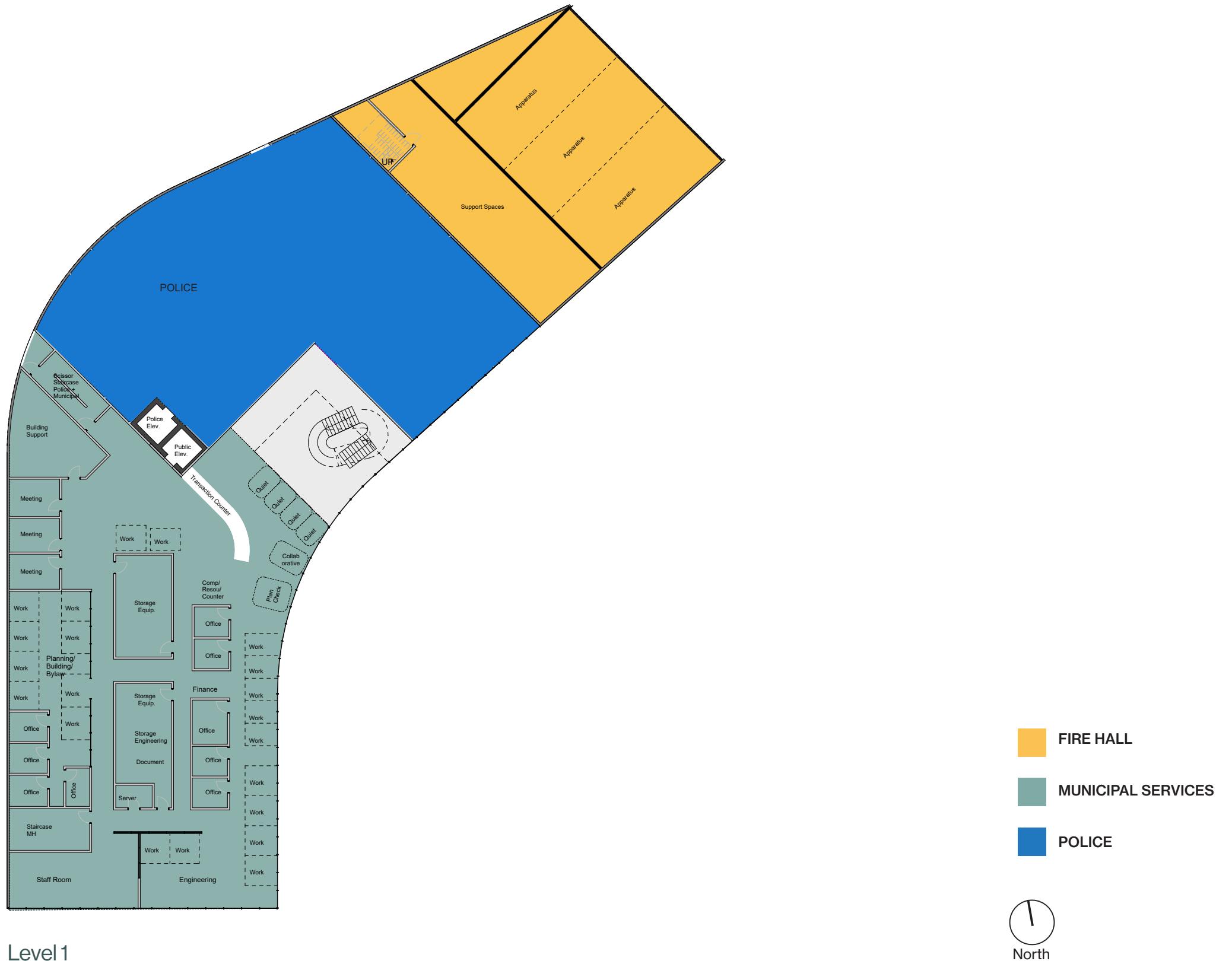
Option 3

Mt Newton X Road Site
2 Storey
Includes Underground Parking



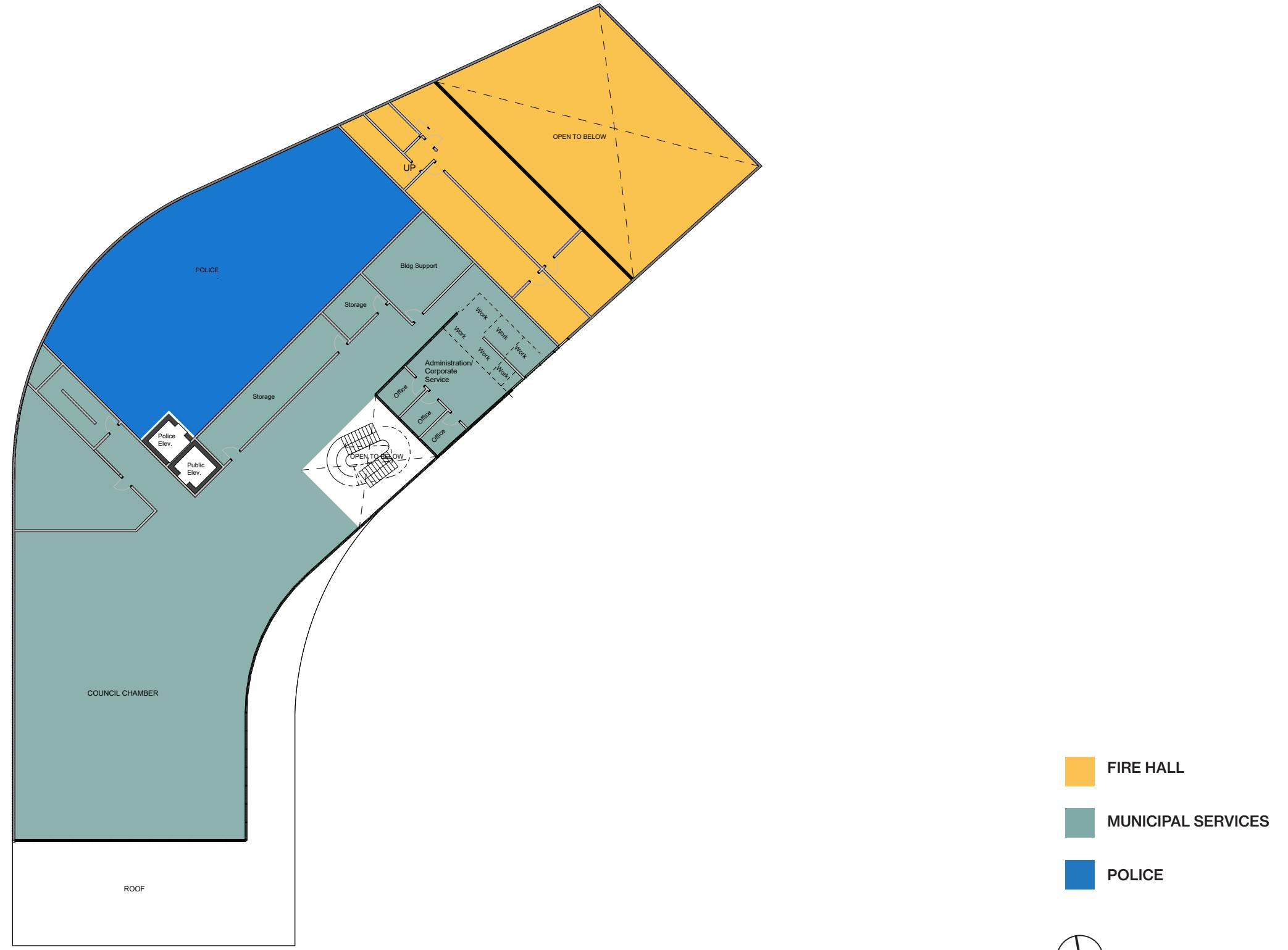
Option 3

Mt Newton X Road Site
2 Storey
Includes Underground Parking



Option 3

Mt Newton X Road Site
2 Storey
Includes Underground Parking



Level 2

Option 3



View of Entrance from South of Site

Option 3



View of Firehall from Mt Newton Cross Road

Appendices

Costing Report: Central Saanich Civic Facility Class D Estimate

Mechanical and Electrical Concept Design

Structural Engineering Concept Design

Landscape and Civil Conceptual Design Report

Transportation Perspectives for Site Selection (Preliminary Parking and Traffic Impact Findings)

We are **hcma**. We believe human connections are the best path to solving the fundamental problems of our time.



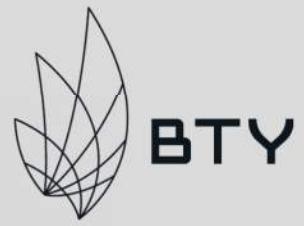
As a gesture of respect, peace, and friendship, We acknowledge and respect the *lək̓ʷəŋən* peoples on whose territory the land of this feasibility study stands and the Songhees, Esquimalt and *WSÁNEĆ* peoples and all their ancestors who have lived on and served as faithful stewards of these lands.

Vancouver
400 – 675 W Hastings St
Vancouver BC V6B 1N2
604.732.6620
vancouver@hcma.ca

Victoria
201-844 Courtney St
Victoria BC V8W 1C4
250.382.6650
victoria@hcma.ca

Edmonton
304 – 10110 104 St NW
Edmonton AB T5J 1A7
780.885.9609
edmonton@hcma.ca

Calgary
1900-700 2 St SW
Calgary AB T2P 2W2
403.269.4796
calgary@hcma.ca



COST MANAGEMENT REPORT

Central Saanich Civic Facility, Saanich, BC Class D Estimate

REPORT NUMBER 1.3
MAY 28, 2025

PREPARED FOR:
HCMA

Suite 300 – 30 East 6th Avenue, Vancouver, BC V5T 1J4
T 604 734 3126

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APPENDICES:

APPENDIX I	Cost Plan	15 pages
APPENDIX II	Basis & Assumptions	1 page
APPENDIX III	Design Drawings	4 pages

Prepared By	Reviewed By	Date
Jacky Yim	Eldon Lau	5/28/2025

1.0 Introduction

1.1 Instructions Received

This report has been prepared by BTY Group ("BTY") at the request of HCMA (the "Client").

HCMA has appointed BTY to provide a Preliminary Design estimate developed for the new Central Saanich Civic Facility, Saanich, B.C. (the "Project"). The Project will be delivered using a Construction Management (CM) at Risk construction model, therefore, BTY strongly recommends that estimates are prepared at each of the key design milestones. This report has been prepared in accordance with the scope of our Fee Proposal, dated November 24, 2024, and is subject to the terms of that appointment.

Information related to the Project for the purposes of this report was received by BTY on April 25, 2025. Please refer to Section 13.0 for a list of information received in producing this report.

1.2 Report Reliance

This Report is owned by BTY Group, and it is provided for the benefit and sole reliance of the Client. BTY Group, its directors, staff, or agents do not make any express or implied representation or warranty whatsoever as to the factual accuracy of the information provided to us on behalf of the Client, its subcontractors or agents, upon which this Report is based. This Report contains confidential, proprietary information and related intellectual property rights of BTY Group which is licensed on a non-exclusive and limited basis to the Client and the Report may not be reproduced, transferred, copied, shared, or distributed, in whole or in part, to any party, without the express prior written permission of BTY Group.

1.3 Reporting Qualifications

This Report has been prepared based on information provided to us by the Client up to the date of issue of this Report. BTY Group does not accept any liability or accountability for information that has not been provided, or made available to us, at the time of preparing this Report. Any advice, opinions, or recommendations within this Report should be read and relied upon only in the context of the report as a whole. The contents do not provide legal, insurance or tax advice or opinion. Opinions in this report do not advocate for any party and if called upon to give oral or written testimony it will be given on the same assumption.

1.4 Contacts

Should you have any queries regarding the content of this report, please do not hesitate to contact either of the following:

Jacky Yim

Associate Director

Tel: 604-734-3126

Email: jackyyim@bty.com

Nicholas Jackson

Director

Tel: 604-734-3126

Email: nicholasjackson@bty.com

2.0 Executive Summary

2.1 Report Purpose

The purpose of this report is to provide a realistic estimate of the Project cost based on the information available at the time of writing.

The opinion expressed in this report has been prepared without the benefit of detailed architectural, mechanical, electrical or processing system drawings and should, therefore, be considered a Preliminary Design (Class D) estimate. Based on the documents reviewed, our estimate should be correct within a range of approximately 20% to 25%.

To provide an accurate cost estimate for the Project, BTY Group strongly recommends that a professional Quantity Surveying organization, such as BTY Group, be retained to provide a detailed analysis of any design information produced on behalf of the Client during the remaining stages of design.

2.2 Project Background and Description

The proposed development consists of 5 options on 2 sites:

SITE 1: Hovey Road

Option 1A:

1. 1-level underground parkade
2. 2-storey building
3. Civic facility program: Municipal, Fire, Police

Option 1B:

1. Option 1A with underground parkade removed and maximum surface parking

Option 2A:

2. 1-level underground parkade
3. 3-storey building
4. Civic facility program: Municipal, Fire, Police, Recreation

Option 2B:

1. Option 2A with underground parkade removed and maximum surface parking

SITE 2 - 1903 Mt. Newton Cross Road

Option 3:

1. 1-level underground parkade
2. 2-storey building
3. Civic facility program: Municipal, Fire, Police

Associated site development is also included in the estimate.

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Executive Summary (Cont'd)

2.3 Project Overview

Construction Budget Status	Option 1A	Option 1B	Option 2A	Option 2B	Option 3
Current Estimate	\$53,047,500	\$48,180,400	\$63,292,900	\$58,685,900	\$48,172,400
Current Cost	\$13,956 /m ²	\$12,676 /m ²	\$12,508 /m ²	\$11,598 /m ²	\$12,674 /m ²
Project Specifics					
GFA	3,801 m ²	3,801 m ²	5,060 m ²	5,060 m ²	3,801 m ²
Construction Start	August-2026	August-2026	August-2026	August-2026	August-2026
Construction Completion	October-2028	October-2028	October-2028	October-2028	October-2028
Duration	27 months				
Design Contingency	12.00%	12.00%	12.00%	12.00%	12.00%
Construction Contingency	Excluded	Excluded	Excluded	Excluded	Excluded
Escalation	Excluded	Excluded	Excluded	Excluded	Excluded

3.0 Basis & Assumptions

Please refer to Appendix II for the basis & assumptions list.

Please note that BTY is not qualified to act as design consultant. The assumptions in our estimate should be

4.0 Exclusions

The construction estimate includes all direct and indirect construction costs derived from the drawings and other information provided by the Consultants, except for the following:

1. Land costs
2. Professional fees and disbursements
3. Planning, administrative and financing costs
4. Legal fees and agreement costs / conditions
5. Building permits and development cost charges
6. Temporary facilities for user groups during construction
7. Removal of hazardous materials from existing site and building
8. Loose furnishings and equipment
9. Unforeseen ground conditions and associated extras
10. Environmental remediation outside building footprint
11. Servicing outside the project site boundary (except water and storm services)
12. General contractor bonding
13. Phasing of the works and accelerated schedule
14. Decanting & moving
15. Costs associated with "LEED" certification
16. Project commissioning
17. Erratic market conditions, such as lack of bidders, proprietary specifications
18. Unforeseen existing building conditions
19. Cost escalation past May 2025

5.0 Construction Cost Summary with Options

The estimated construction cost of the project may be summarized as follows:

Description	Option 1A Hovey 2-Storey	Option 1B Hovey 2-Storey Op 1A with UG Parking Removed and Max Surface Parking	Option 2A Hovey 3-Storey	Option 2B Hovey 3-Storey Op 2A with UG Parking Removed and Max Surface Parking	Option 3 Mt Newton 2-Storey
A. Construction	\$	\$	\$	\$	\$
A1 Base Building	26,131,500	22,686,400	32,062,100	28,829,800	24,330,200
A2 Interior Fit-out	16,162,100	15,243,200	19,410,100	18,491,200	16,060,100
A3 Site Development	5,070,200	5,088,600	5,039,300	5,077,100	2,620,800
NET CONSTRUCTION COST	\$47,363,800	\$43,018,200	\$56,511,500	\$52,398,100	\$43,011,100
B. Contingencies					
B1 Design Contingency (12%)	5,683,700	5,162,200	6,781,400	6,287,800	5,161,300
TOTAL CONSTRUCTION COST	\$53,047,500	\$48,180,400	\$63,292,900	\$58,685,900	\$48,172,400
<i>Gross Floor Area (m²)</i>	<i>3,801 m²</i>	<i>3,801 m²</i>	<i>5,060 m²</i>	<i>5,060 m²</i>	<i>3,801 m²</i>
<i>Unit Net Construction Cost (\$/m²)</i>	<i>\$12,461/m²</i>	<i>\$11,318/m²</i>	<i>\$11,168/m²</i>	<i>\$10,355/m²</i>	<i>\$11,316/m²</i>
<i>Unit Total Construction Cost (\$/m²)</i>	<i>\$13,956/m²</i>	<i>\$12,676/m²</i>	<i>\$12,508/m²</i>	<i>\$11,598/m²</i>	<i>\$12,674/m²</i>

6.0 Areas

The gross floor area of the project, measured in accordance with the guidelines established by the Canadian Institute of Quantity Surveyors, is:

Option 1A:

Location	Parking	Municipal Hall	Fire Department	Police	Total
Basement	1,627 m ²			323 m ²	323 m ²
L1		1,210 m ²	411 m ²	600 m ²	2,221 m ²
L2		728 m ²	173 m ²	356 m ²	1,257 m ²
Total GFA	1,627 m²	1,938 m²	584 m²	1,279 m²	3,801 m²

Option 1B:

Location	Parking	Municipal Hall	Fire Department	Police	Total
Basement				323 m ²	323 m ²
L1		1,210 m ²	411 m ²	600 m ²	2,221 m ²
L2		728 m ²	173 m ²	356 m ²	1,257 m ²
Total GFA	0 m²	1,938 m²	584 m²	1,279 m²	3,801 m²

Option 2A:

Location	Parking	Municipal Hall	Fire Department	Police	Recreation Centre	Total
Basement	1,627 m ²			323 m ²		323 m ²
L1		288 m ²	411 m ²	600 m ²	993 m ²	2,292 m ²
L2		1,185 m ²	173 m ²	356 m ²		1,714 m ²
L3		731 m ²				731 m ²
Total GFA	1,627 m²	2,204 m²	584 m²	1,279 m²	993 m²	5,060 m²

Option 2B:

Location	Parking	Municipal Hall	Fire Department	Police	Recreation Centre	Total
Basement				323 m ²		323 m ²
L1		288 m ²	411 m ²	600 m ²	993 m ²	2,292 m ²
L2		1,185 m ²	173 m ²	356 m ²		1,714 m ²
L3		731 m ²				731 m ²
Total GFA	0 m²	2,204 m²	584 m²	1,279 m²	993 m²	5,060 m²

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Areas (Cont'd)

Option 3:

Location	Parking	Municipal Hall	Fire Department	Police	Total
Basement	1,341 m ²			323 m ²	323 m ²
L1		1,210 m ²	411 m ²	600 m ²	2,221 m ²
L2		728 m ²	173 m ²	356 m ²	1,257 m ²
Total GFA	1,341 m²	1,938 m²	584 m²	1,279 m²	3,801 m²

7.0 Taxes

The estimate includes the Provincial Sales Tax (P.S.T.) where applicable.

The estimate excludes the Goods & Services Tax (G.S.T.).

8.0 Project Schedule & Escalation

No cost escalation allowance has been included in this estimate. BTY strongly recommends that the client establish a separate budget to cover the escalation cost from the date of this estimate to the mid-point of construction of the project. Our current projected escalation rates are shown below:

Current BTY Group Forecast	2025	2026	2027 +
	3%	3%	3%

9.0 Pricing

This estimate has been priced at second quarter 2025 rates assuming a normal market. The unit rates utilized are considered a construction management form of contract with competitively bid sub-trade pricing.

The estimate allows for labour, material, equipment and other input costs at current rates and levels of productivity. It does not consider extraordinary market conditions, where bidders may be few and may include in their tenders' disproportionate contingencies and profit margins.

A separate allowance has not been included in the estimate to cover Canada's response to potential tariffs that may be imposed by the U.S. Government. Design, escalation and construction contingencies may also be adjusted to reflect the increased risk associated with the current environment. BTY will continue to monitor the construction market and adjust estimates to reflect current pricing.

10.0 Risk Mitigation

BTY Group recommends that the Owner, Project Manager and Design Team carefully review this document, including exclusions, inclusions and assumptions, contingencies, escalation and mark-ups. If the project is over budget, or if there are unresolved budgeting issues, alternative systems/schemes should be evaluated before proceeding into the next design phase.

Requests for modifications of any apparent errors or omissions to this document must be made to BTY Group within ten (10) days of receipt of this estimate. Otherwise, it will be understood that the contents have been concurred with and accepted.

It is recommended that BTY Group design and propose a cost management framework for implementation. This framework would require that a series of further estimates be undertaken at key design stage milestones and a final update estimate be produced which is representative of the completed tender documents, project delivery model and schedule. The final updated estimate will address changes and additions to the documents, as well as addenda issued during the bidding process. BTY Group is unable to reconcile bid results to any estimate not produced from bid documents including all addenda.

11.0 Contingencies

11.1 Design Contingency

A design contingency of Twelve Percent (12%) has been included in the estimate to cover modifications to the program, drawings and specifications during the design.

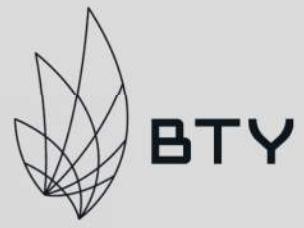
11.2 Construction Contingency

No construction contingency has been included in this estimate, but BTY strongly recommends that the client establish a construction contingency to cover unforeseen costs which may arise during the construction period.

12.0 Documents Reviewed

The list below confirms the information reviewed in preparing our report:

Description	Revised Date
Report	
Concept Design Options for Preliminary Costing	April 24, 2025
Option 1A Floor Plans	May 8, 2025
Option 1B & 2B Site Plans	May 15, 2025
Option 2 Reduced Floor Plans	May 23, 2025
Option 3 Revised Floor Plan and Site Plan	May 23, 2025
Geotech Report - Hovey Road	April 10, 2025
Geotech Report - 1903 Mount Newton Cross Road	April 10, 2025



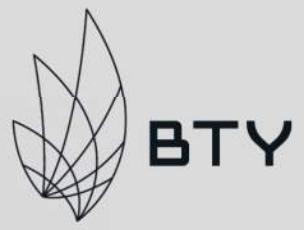
COST MANAGEMENT REPORT

Central Saanich Civic Facility, Saanich, BC

APPENDICES

APPENDIX I	Cost Plan	15 pages
APPENDIX II	Basis & Assumptions	1 page
APPENDIX III	Design Drawings	4 pages

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APPENDIX I

Cost Plan

15 PAGES

Description / Assumptions	Qty	Unit	Rate	Amount
Option 1A - Hovey 2-Storey				
A1 Base Building	3,801	m ²		
Sub-Structure	3,801	m ²	727.18	2,764,000
Concrete strip, pad & core footings including detail excavation & backfill (based on GBA)				
Footing drainage				
Shotcrete shoring with tie back anchors (along road only)				
Bulk excavation for basement including disposal offsite				
Allowance for over-excavation to engineered fill				
Engineered fill (600mm dp)				
Imported fill to working space				
Allowance for dewatering & sediment control				
Structure	3,801	m ²	2,132.73	8,106,500
Bsmt - Concrete slab on grade 125mm with poly vapour barrier & granular sub-base				
Concrete ramp on grade 150mm with poly vapour barrier & granular sub-base				
L1 - Concrete suspended floor slab with conc. columns & beams				
L2 - Concrete topping on steel floor deck with steel columns & beams				
Concrete suspended stairs (L0-L1)				
Concrete fill on steel pad stairs (L1-L2)				
Feature stairs to Municipal hall (L1-L2)				
L1 - Concrete suspended roof slab with conc. columns & beams (not req'd)				
L2 - Steel roof deck with steel columns & beams				
Roof - Steel roof deck with steel columns & beams				
Allowance for concrete equipment pad				
Concrete walls below grade with waterproofing membrane & drain mat				
Concrete core walls				
Other concrete walls				
Envelope	3,801	m ²	1,837.52	6,984,400
Metal/cementitious panels with z-girt, air vapour barrier membrane, insulation, metal stud framing & interior drywall (60% of total walls above grade)				
Aluminum double-glazed curtain walls (20% of total walls above grade)				
Aluminum double-glazed windows (20% of total walls above grade)				
Exterior door & frame with hardware (based on GFA)				
Roofing to parkade (not req'd)				
Roofing to apparatus bays (R32)				
Roofing to building (R55)				
Allowance for soffits to roof				
Allowance for canopy with structural support				

Description / Assumptions	Qty	Unit	Rate	Amount
Option 1A - Hovey 2-Storey				
Equipment	3,801	ft ²		
Allowance for roof anchors (not required)				
Elevator	3,801	ft ²	164.59	625,600
Hydraulic passenger elevators - Public				
Hydraulic passenger elevators - Police				
A1 Base Building				
5.0 Mechanical	3,801	m ²	1,386.73	5,271,000
Base building plumbing and drainage				
Base building fire protection				
Base building HVAC system utilising hybrid VRF system				
Base building controls				
Base Mechanical to parking				
6.0 Electrical	3,801	m ²	626.14	2,380,000
Base building services and distribution				
Base building lighting, devices & heating				
Base building system and ancillaries				
Base Electrical to parking				
Total Base Building	3,801	m ²	6,875	26,131,500
A2 Interior Fit-out				
Interior Fit-out				
Parking - Public	759	m ²	514	390,200
Parking - Police	868	m ²	609	528,700
Municipal Hall	1,938	m ²	3,256	6,309,200
Fire Hall	584	m ²	5,483	3,202,100
Police	1,279	m ²	4,482	5,731,900
Recreation Centre		m ²	2,399	
Interior Fit-out Sub-Total:	5,428	m ²	2,978	16,162,100
Gross Up Area		incl.		
Interior Fit-out Total:	5,428	m ²	2,978	16,162,100
Total Interior Fit-out	3,801	m ²	4,252	16,162,100

Description / Assumptions	Qty	Unit	Rate	Amount
Option 1A - Hovey 2-Storey				
A3 Supplementary Items				
Allowance for gymnasium equipment			excl.	
Allowance for commercial laundry equipment			excl.	
Total Supplementary Items	3,801	m²		
A4 Site Development				
Site preparation	9,061	m ²	27	240,700
Allowance for hard landscaping	4,946	m ²	295	1,456,700
Concrete walkway and pavers				
Asphalt parking and driveway				
Asphalt apron (heavy-duty)				
Allowance for offsite boulevard improvement	1,685	m ²	332	559,500
Allowance for soft landscaping	1,894	m ²	106	201,300
Allowance for site improvements	1 sum		454,000	454,000
Allowance for water and sanitary drainage main	1 sum		266,000	266,000
Allowance for storm drainage system including storm detention tank	1 sum		398,000	398,000
Allowance for incoming power, communication and exterior lighting	1 sum		332,000	332,000
Allowance for new mechanical off site services	1 sum		1,162,000	1,162,000
Water main				
Storm main				
Total Site Development	3,801	m²	1,334	5,070,200
Net Construction Cost	3,801	m²	12,461	47,363,800

Description / Assumptions	Qty	Unit	Rate	Amount
Option 1B - Hovey 2-Storey				
Op 1A with UG Parking Removed and Max Surface Parking				
A1 Base Building	3,801	m ²		
Sub-Structure	3,801	m ²	419.92	1,596,100
Concrete strip, pad & core footings including detail excavation & backfill (based on GBA)				
Footing drainage				
Shotcrete shoring with tie back anchors (along road only)				
Bulk excavation for basement including disposal offsite				
Allowance for over-excavation to engineered fill				
Engineered fill (600mm dp)				
Imported fill to working space				
Allowance for dewatering & sediment control				
Structure	3,801	m ²	1,666.70	6,335,100
Bsmt - Concrete slab on grade 125mm with poly vapour barrier & granular sub-base				
L1 - Concrete suspended floor slab with conc. columns & beams				
L2 - Concrete topping on steel floor deck with steel columns & beams				
Concrete suspended stairs (L0-L1)				
Concrete fill on steel pad stairs (L1-L2)				
Feature stairs to Municipal hall (L1-L2)				
L2 - Steel roof deck with steel columns & beams				
Roof - Steel roof deck with steel columns & beams				
Allowance for concrete equipment pad				
Concrete walls below grade with waterproofing membrane & drain mat				
Concrete core walls				
Other concrete walls				
Envelope	3,801	m ²	1,837.52	6,984,400
Metal/cementitious panels with z-girt, air vapour barrier membrane, insulation, metal stud framing & interior drywall (60% of total walls above grade)				
Aluminum double-glazed curtain walls (20% of total walls above grade)				
Aluminum double-glazed windows (20% of total walls above grade)				
Exterior door & frame with hardware (based on GFA)				
Roofing to apparatus bays (R32)				
Roofing to building (R55)				
Allowance for soffits to roof				
Allowance for canopy with structural support				

Description / Assumptions	Qty	Unit	Rate	Amount
Option 1B - Hovey 2-Storey				
Equipment	3,801	ft ²		
Allowance for roof anchors (not required)				
Elevator	3,801	ft ²	138.38	526,000
Hydraulic passenger elevators - Public				
Hydraulic passenger elevators - Police				
A1 Base Building				
5.0 Mechanical	3,801	m ²	1,308.33	4,972,900
Base building plumbing and drainage				
Base building fire protection				
Base building HVAC system utilising hybrid VRF system				
Base building controls				
6.0 Electrical	3,801	m ²	597.71	2,271,900
Base building services and distribution				
Base building lighting, devices & heating				
Base building system and ancillaries				
Total Base Building	3,801	m ²	5,969	22,686,400
A2 Interior Fit-out				
Interior Fit-out				
Municipal Hall	1,938	m ²	3,256	6,309,200
Fire Hall	584	m ²	5,483	3,202,100
Police	1,279	m ²	4,482	5,731,900
Recreation Centre		m ²	2,399	
Interior Fit-out Sub-Total:	3,801	m ²	4,010	15,243,200
Gross Up Area		incl.		
Interior Fit-out Total:	3,801	m ²	4,010	15,243,200
Total Interior Fit-out	3,801	m ²	4,010	15,243,200

Description / Assumptions	Qty	Unit	Rate	Amount
Option 1B - Hovey 2-Storey				
A3 Supplementary Items				
Allowance for gymnasium equipment			excl.	
Allowance for commercial laundry equipment			excl.	
Total Supplementary Items	3,801	m²		
A4 Site Development				
Site preparation	9,061	m ²	27	240,700
Allowance for hard landscaping	5,287	m ²	286	1,511,400
Concrete walkway and pavers				
Asphalt parking and driveway				
Asphalt apron (heavy-duty)				
Allowance for offsite boulevard improvement	1,685	m ²	332	559,500
Allowance for soft landscaping	1,553	m ²	106	165,000
Allowance for site improvements	1 sum		454,000	454,000
Allowance for water and sanitary drainage main	1 sum		266,000	266,000
Allowance for storm drainage system including storm detention tank	1 sum		398,000	398,000
Allowance for incoming power, communication and exterior lighting	1 sum		332,000	332,000
Allowance for new mechanical off site services	1 sum		1,162,000	1,162,000
Water main				
Storm main				
Total Site Development	3,801	m²	1,339	5,088,600
Net Construction Cost	3,801	m²	11,318	43,018,200

Description / Assumptions	Qty	Unit	Rate	Amount
Option 2A - Hovey 3-Storey				
A1 Base Building	5,060	m ²		
Sub-Structure	5,060	m ²	567.40	2,871,100
Concrete strip, pad & core footings including detail excavation & backfill (based on GBA)				
Footing drainage				
Shotcrete shoring with tie back anchors (along road only)				
Bulk excavation for basement including disposal offsite				
Allowance for over-excavation to engineered fill				
Engineered fill (600mm dp)				
Imported fill to working space				
Allowance for dewatering & sediment control				
Structure	5,060	m ²	1,919.73	9,713,800
Bsmt - Concrete slab on grade 125mm with poly vapour barrier & granular sub-base				
Concrete ramp on grade 150mm with poly vapour barrier & granular sub-base				
L1 - Concrete suspended floor slab with conc. columns & beams				
L2 & L3 - Concrete topping on steel floor deck with steel columns & beams				
Concrete suspended stairs (L0-L1)				
Concrete fill on steel pad stairs (L1-L3)				
Feature stairs to Municipal hall (L1-L2)				
L2 & L3 - Steel roof deck with steel columns & beams				
Roof - Steel roof deck with steel columns & beams				
Allowance for concrete equipment pad				
Concrete walls below grade with waterproofing membrane & drain mat				
Concrete core walls				
Other concrete walls				
Envelope	5,060	m ²	1,666.49	8,432,500
Metal/cementitious panels with z-girt, air vapour barrier membrane, insulation, metal stud framing & interior drywall (60% of total walls above grade)				
Aluminum double-glazed curtain walls (20% of total walls above grade)				
Aluminum double-glazed windows (20% of total walls above grade)				
Exterior door & frame with hardware (based on GFA)				
Roofing to apparatus bays (R32)				
Roofing to building (R55)				
Allowance for soffits to roof				
Allowance for canopy with structural support				

Description / Assumptions	Qty	Unit	Rate	Amount
Option 2A - Hovey 3-Storey				
Equipment	5,060	m ²		
Allowance for roof anchors (not required)				
Elevator	5,060	m ²	143.33	725,200
Hydraulic passenger elevators - Public				
Hydraulic passenger elevators - Police				
A1 Base Building				
5.0 Mechanical	5,060	m ²	1,380.50	6,985,400
Base building plumbing and drainage				
Base building fire protection				
Base building HVAC system utilising hybrid VRF system				
Base building controls				
Base Mechanical to parking				
6.0 Electrical	5,060	m ²	658.91	3,334,100
Base building services and distribution				
Base building lighting, devices & heating				
Base building system and ancillaries				
Base Electrical to parking				
Total Base Building	5,060	m ²	6,336	32,062,100
A2 Interior Fit-out				
Interior Fit-out				
Parking - Public	759	m ²	514	390,200
Parking - Police	868	m ²	609	528,700
Municipal Hall	2,204	m ²	3,256	7,175,200
Fire Hall	584	m ²	5,483	3,202,100
Police	1,279	m ²	4,482	5,731,900
Recreation Centre	993	m ²	2,399	2,382,000
Interior Fit-out Sub-Total:	6,687	m ²	2,903	19,410,100
Gross Up Area		incl.		
Interior Fit-out Total:	6,687	m ²	2,903	19,410,100
Total Interior Fit-out	5,060	m ²	3,836	19,410,100

Description / Assumptions	Qty	Unit	Rate	Amount
Option 2A - Hovey 3-Storey				
A3 Supplementary Items				
Allowance for gymnasium equipment			excl.	
Allowance for commercial kitchen equipment			excl.	
Total Supplementary Items	5,060	m²		
A4 Site Development				
Site preparation	9,061	m ²	27	240,700
Allowance for hard landscaping	4,825	m ²	295	1,424,500
Concrete walkway and pavers				
Asphalt parking and driveway				
Asphalt apron (heavy-duty)				
Allowance for offsite boulevard improvement	1,685	m ²	332	559,500
Allowance for soft landscaping	1,944	m ²	106	206,600
Allowance for site improvements	1 sum		450,000	450,000
Allowance for water and sanitary drainage main	1 sum		266,000	266,000
Allowance for storm drainage system including storm detention tank	1 sum		398,000	398,000
Allowance for incoming power, communication and exterior lighting	1 sum		332,000	332,000
Allowance for new mechanical off site services	1 sum		1,162,000	1,162,000
Water main				
Storm main				
Total Site Development	5,060	m²	996	5,039,300
Net Construction Cost	5,060	m²	11,168	56,511,500

Description / Assumptions	Qty	Unit	Rate	Amount
Option 2B - Hovey 3-Storey				
Op 2A with UG Parking Removed and Max Surface Parking				
A1 Base Building	5,060	m ²		
Sub-Structure	5,060	m ²	357.62	1,809,600
Concrete strip, pad & core footings including detail excavation & backfill (based on GBA)				
Footing drainage				
Shotcrete shoring with tie back anchors (along road only)				
Bulk excavation for basement including disposal offsite				
Allowance for over-excavation to engineered fill				
Engineered fill (600mm dp)				
Imported fill to working space				
Allowance for dewatering & sediment control				
Structure	5,060	m ²	1,570.96	7,949,100
Bsmt - Concrete slab on grade 125mm with poly vapour barrier & granular sub-base				
L1 - Concrete suspended floor slab with conc. columns & beams				
L2 & L3 - Concrete topping on steel floor deck with steel columns & beams				
Concrete suspended stairs (L0-L1)				
Concrete fill on steel pad stairs (L1-L3)				
Feature stairs to Municipal hall (L1-L2)				
L2 & L3 - Steel roof deck with steel columns & beams				
Roof - Steel roof deck with steel columns & beams				
Allowance for concrete equipment pad				
Concrete walls below grade with waterproofing membrane & drain mat				
Concrete core walls				
Other concrete walls				
Envelope	5,060	m ²	1,666.49	8,432,500
Metal/cementitious panels with z-girt, air vapour barrier membrane, insulation, metal stud framing & interior drywall (60% of total walls above grade)				
Aluminum double-glazed curtain walls (20% of total walls above grade)				
Aluminum double-glazed windows (20% of total walls above grade)				
Exterior door & frame with hardware (based on GFA)				
Roofing to apparatus bays (R32)				
Roofing to building (R55)				
Allowance for soffits to roof				
Allowance for canopy with structural support				

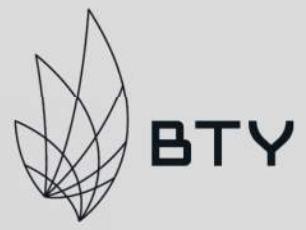
Description / Assumptions	Qty	Unit	Rate	Amount
Option 2B - Hovey 3-Storey				
Equipment	5,060	m ²		
Allowance for roof anchors (not required)				
Elevator	5,060	m ²	143.33	725,200
Hydraulic passenger elevators - Public				
Hydraulic passenger elevators - Police				
A1 Base Building				
5.0 Mechanical	5,060	m ²	1,321.61	6,687,300
Base building plumbing and drainage				
Base building fire protection				
Base building HVAC system utilising hybrid VRF system				
Base building controls				
6.0 Electrical	5,060	m ²	637.56	3,226,100
Base building services and distribution				
Base building lighting, devices & heating				
Base building system and ancillaries				
Total Base Building	5,060	m ²	5,698	28,829,800
A2 Interior Fit-out				
Interior Fit-out				
Municipal Hall	2,204	m ²	3,256	7,175,200
Fire Hall	584	m ²	5,483	3,202,100
Police	1,279	m ²	4,482	5,731,900
Recreation Centre	993	m ²	2,399	2,382,000
Interior Fit-out Sub-Total:	5,060	m ²	3,654	18,491,200
Gross Up Area			incl.	
Interior Fit-out Total:	5,060	m ²	3,654	18,491,200
Total Interior Fit-out	5,060	m ²	3,654	18,491,200

Description / Assumptions	Qty	Unit	Rate	Amount
Option 2B - Hovey 3-Storey				
A3 Supplementary Items				
Allowance for gymnasium equipment			excl.	
Allowance for commercial kitchen equipment			excl.	
Total Supplementary Items	5,060	m²		
A4 Site Development				
Site preparation	9,061	m ²	27	240,700
Allowance for hard landscaping	5,287	m ²	286	1,511,400
Concrete walkway and pavers				
Asphalt parking and driveway				
Asphalt apron (heavy-duty)				
Allowance for offsite boulevard improvement	1,685	m ²	332	559,500
Allowance for soft landscaping	1,482	m ²	106	157,500
Allowance for site improvements	1 sum		450,000	450,000
Allowance for water and sanitary drainage main	1 sum		266,000	266,000
Allowance for storm drainage system including storm detention tank	1 sum		398,000	398,000
Allowance for incoming power, communication and exterior lighting	1 sum		332,000	332,000
Allowance for new mechanical off site services	1 sum		1,162,000	1,162,000
Water main				
Storm main				
Total Site Development	5,060	m²	1,003	5,077,100
Net Construction Cost	5,060	m²	10,355	52,398,100

Description / Assumptions	Qty	Unit	Rate	Amount
Option 3 - Mt Newton 2-Storey				
A1 Base Building	3,801	m ²		
Sub-Structure	3,801	m ²	420.16	1,597,000
Concrete strip, pad & core footings including detail excavation & backfill (based on GBA)				
Footing drainage				
Shotcrete shoring with tie back anchors (note req'd)				
Bulk excavation for basement including disposal offsite				
Allowance for over-excavation to engineered fill				
Engineered fill (600mm dp)				
Imported fill to working space				
Allowance for dewatering & sediment control				
Structure	3,801	m ²	1,930.38	7,337,400
Bsmt - Concrete slab on grade 125mm with poly vapour barrier & granular sub-base				
L1 - Concrete suspended floor slab with conc. columns & beams				
L2 - Concrete topping on steel floor deck with steel columns & beams				
Concrete suspended stairs (L0-L1)				
Concrete fill on steel pad stairs (L1-L2)				
Feature stairs to Municipal hall (L1-L2)				
L2 - Steel roof deck with steel columns & beams				
Roof - Steel roof deck with steel columns & beams				
Allowance for concrete equipment pad				
Concrete walls below grade with waterproofing membrane & drain mat				
Concrete core walls				
Other concrete walls				
Envelope	3,801	m ²	1,891.77	7,190,600
Metal/cementitious panels with z-girt, air vapour barrier membrane, insulation, metal stud framing & interior drywall (60% of total walls above grade)				
Aluminum double-glazed curtain walls (20% of total walls above grade)				
Aluminum double-glazed windows (20% of total walls above grade)				
Exterior door & frame with hardware (based on GFA)				
Roofing to apparatus bays (R32)				
Roofing to building (R55)				
Allowance for soffits to roof				
Allowance for canopy with structural support				

Description / Assumptions	Qty	Unit	Rate	Amount
Option 3 - Mt Newton 2-Storey				
Equipment	3,801	m ²		
Allowance for roof anchors (not required)				
Elevator	3,801	m ²	164.59	625,600
Hydraulic passenger elevators				
Traction passenger elevators				
A1 Base Building				
5.0 Mechanical	3,801	m ²	1,372.95	5,218,600
Base building plumbing and drainage				
Base building fire protection				
Base building HVAC system utilising hybrid VRF system				
Base building controls				
Base Mechanical to parking				
6.0 Electrical	3,801	m ²	621.14	2,361,000
Base building services and distribution				
Base building lighting, devices & heating				
Base building system and ancillaries				
Base Electrical to parking				
Total Base Building	3,801	m ²	6,401	24,330,200
A2 Interior Fit-out				
Interior Fit-out				
Parking - Police	1,341	m ²	609	816,900
Municipal Hall	1,938	m ²	3,256	6,309,200
Fire Hall	584	m ²	5,483	3,202,100
Police	1,279	m ²	4,482	5,731,900
Recreation Centre		m ²	2,399	
Interior Fit-out Sub-Total:	5,142	m²	3,123	16,060,100
Gross Up Area		incl.		
Interior Fit-out Total:	5,142	m²	3,123	16,060,100
Total Interior Fit-out	3,801	m ²	4,225	16,060,100

Description / Assumptions	Qty	Unit	Rate	Amount
Option 3 - Mt Newton 2-Storey				
A3 Supplementary Items				
Allowance for gymnasium equipment			excl.	
Allowance for commercial kitchen equipment			excl.	
Total Supplementary Items	3,801	m²		
A4 Site Development				
Site preparation	7,366	m ²	27	195,700
Allowance for hard landscaping	3,914	m ²	222	869,500
Concrete walkway and pavers				
Asphalt parking and driveway				
Asphalt apron (heavy-duty)				
Allowance for offsite boulevard improvement	461	m ²	332	153,000
Allowance for soft landscaping	1,231	m ²	106	130,800
Allowance for site improvements	1	sum	341,759	341,800
Allowance for water and sanitary drainage main	1	sum	266,000	266,000
Allowance for storm drainage system including storm detention tank	1	sum	332,000	332,000
Allowance for incoming power, communication and exterior lighting	1	sum	332,000	332,000
Allowance for new mechanical off site services (assume not req'd)			excl.	
Total Site Development	3,801	m²	690	2,620,800
Net Construction Cost	3,801	m²	11,316	43,011,100



APPENDIX II

Basis & Assumptions

1 PAGE

Basis & Assumptions

Element Assumptions	
General	<ul style="list-style-type: none"> Hazmat abatement will be excluded Demolition of the existing buildings will be excluded No phasing All works to be carried out during normal working hours Workers will not undergo daily security checks An allowed 5% general contractor's fees is included No allowance for Passive House requirement Post disaster requirement - structural only, no allowance for M&E redundancy Building will meet LEED Silver Certification requirement
Foundation	<ul style="list-style-type: none"> Conventional footing foundations Basement excavation (Options 1 & 2): Full height excavation Basement excavation (Option 3): Upper 2m will be half height excavation, below 2m will be full height excavation 600mm engineered fill below the foundation
Structure	<ul style="list-style-type: none"> Basement: Concrete slab on grade L1: Concrete suspended slabs L2 & L3: Concrete topping on steel floor deck with structural steel support (assume 12 lb/ft²) Roof: Steel roof deck with structural steel support (assume 5 lb/ft²)
Exterior Enclosure	<ul style="list-style-type: none"> 60% of Total Cladding area – Metal/Cementitious panels on steel studs 20% of Total Cladding area – Double-glazed aluminum curtain walls 20% of Total Cladding area – Double-glazed aluminum punched windows
Interior	<ul style="list-style-type: none"> Interior walls to be 140mm wood studs walls, masonry wall to basement, cells and firehall opeartion areas Allow for acoustic batt insulation to work areas Interior solid wood doors, hollow metal doors & aluminum glazed doors. Detention doors to cell areas
Specific to Municipal Hall	<ul style="list-style-type: none"> Lobby/Atrium floor to be polished concrete/porcelain tiles Allow for feature stair in atrium Council chambers: allow for special wood wall and acoustic wood ceiling panels
Specific to Fire Department	<ul style="list-style-type: none"> Apparatus bays are semi-conditioned space Apparatus bay floor to be polished concrete Support areas floors to be epoxy finish on concrete
Specific to Police	<ul style="list-style-type: none"> Underground program area (cells, prisoner processing and storage) - assume concrete/masonry block construction Resilient flooring throughout Allow for heavy-duty security hardware in prisoner areas
Specific to Recreation	<ul style="list-style-type: none"> Multi-Purpose rooms to have rubber sport flooring Vented sprung floor assemblies in 2 multipurpose rooms Resilient flooring in common areas No pool construction is required
Mechanical	<ul style="list-style-type: none"> Full Heating and Cooling/air-conditioning to overall building except to apparatus bay which will be maintained as semi-heated space Mechanical system utilising air sourced heat pumps with hybrid VRF and electric boilers
Site	<ul style="list-style-type: none"> Existing services is adequate and minimum upgrade is required Offsite water and storm services upgrade is included



Mechanical and Electrical Concept Report – PRELIMINARY

Central Saanich Civic Facility

Prepared for:

hcma
201 – 844 Courtney Street
Victoria, BC, V8W 1C4

Developed by:

Introba
Suite 210 - 1515 Douglas Street
Victoria, BC, V8W 2G4

Project No: 2010.0011747.000

Issuance 1: 2025.04.24
Issuance 2: 2025.05.29

SEALED

Electrical Consultant

SEALED

Mechanical Consultant
Permit to Practice Number: 10017

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1. Introduction

1.1 **General**

The intent of this report is to provide a general concept level overview of proposed sustainability strategies and major mechanical and electrical systems to be implemented for the Central Saanich Civic Facility (CSCF), along with the basis and reasoning for their proposal.

This report also provides a summary of system types, major equipment, and MEP space requirements to be considered and incorporated into the preliminary architectural drawings that will form the report to Central Saanich Council and eventual referendum. In general, some assumptions have been identified within the report, which can be clarified further into the design.

The proposed concept design has been prepared based on minor collaboration meetings with Schematic Design Part 1 Project Team (Architectural – hcma, Structural – Equilibrium, Mech + Elec – Introba, Civil + Landscape – Urban Systems, Traffic – Bunt) and should be read in conjunction with reports and schematic drawings from other disciplines. Architectural plans were received on April 15 and 17, 2025 for each site option. Additionally, comments were received on May 28, 2025 for incorporation into Issuance 2.

The site options which are explored throughout the report are as follows:

Option 1:

Hovey Rd with no recreational centre; three levels including a parking garage and approximately 6,700 sqm.

Option 2:

Hovey with a recreational centre; four levels including a parking garage and approximately 8,200 sqm.

Option 3:

1903 Mt Newton (Location of existing Civic Facility); three levels including a parking garage, no recreation centre and approximately 6,000 sqm.

This report provides a summary of design criteria developed as part of initial discussions to provide a record of the assumptions and recommendations made to-date, with respect to functional requirements and recommended system solutions. It is our understanding that this report along with its appendices will be reviewed by the client and cost consultant to confirm that our understanding of project requirements is correct, the pricing is within the District's tolerance and that proposed solutions are acceptable, prior to proceeding on with the Schematic Design Phase.

1.2 **Post Disaster**

This is an emergency services building and is intended to be designed as a "Post Disaster Facility" though the building is not anticipated to be used as a public shelter, or to support anything other than fundamental operations for a crew (Police / Fire) of approximately 11 and 5-7 responders respectively.

1.3 Project Description

This project involves the design of the Central Saanich Civic Facility (CSCF) located in Saanichton, BC. There are two possible locations and three different options for this new facility, as stated within the introduction section. The intention is that either site will have equivalent components, including Police, Fire, Municipal Offices, and a Recreation Centre (only option 2), arranged to suit the site layouts. Both sites are intended to be either three or four levels, including a basement and/or parking garage, with buildings ranging between 6,000 and 8,200 square meters.



Figure 1: Architect's existing site plan indicating relative location and size of the project on Mount Newton X-Road.

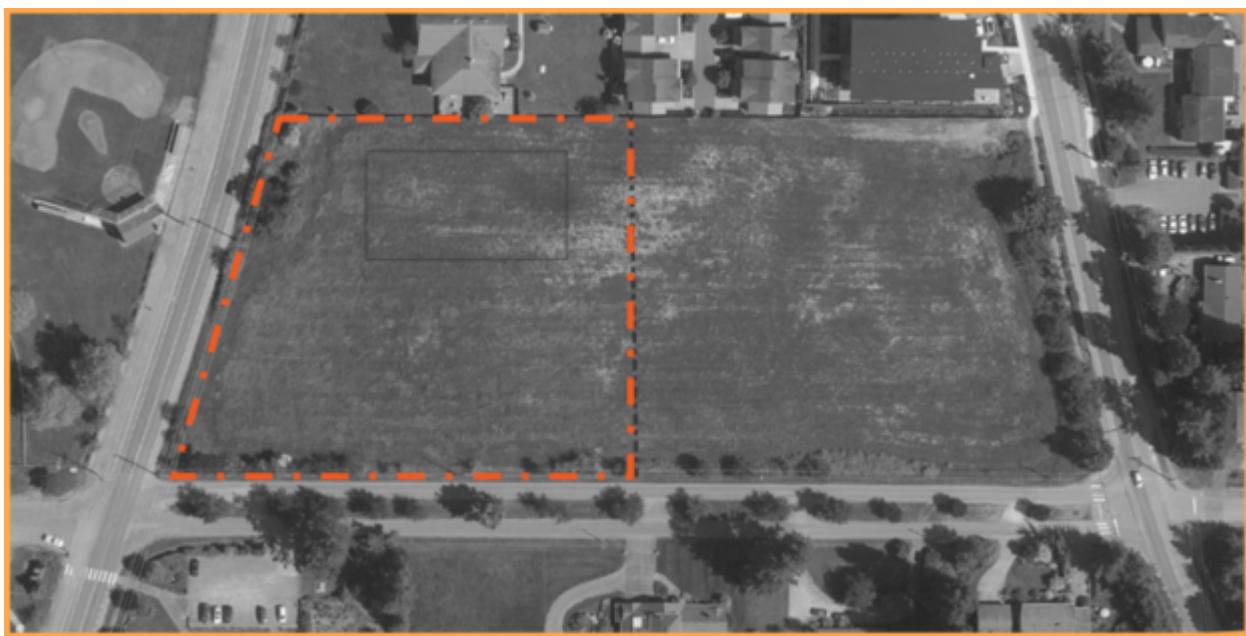


Figure 2: Architect's site plan indicating relative location and size of the project on Hovey Road.

1.4 Project Requirements/Objectives

The design criteria for this project have been developed in consultation with the integrated design team. Our main objective for the project is to deliver a sustainable development with high performance and optimal occupant comfort that aligns with the client's design objectives. The systems will be designed and installed by the following objectives established by the client, as well as principles of good engineering practice and meeting or exceeding requirements:

1.4.1 High Performance Building Design Objectives:

1. Robust and resilient core M&E systems
2. Exceptional building enclosure
3. Ultra-high efficiency mechanical heating and cooling
4. Focus on occupant wellness--> optimized indoor air quality
5. Low-carbon performance--> electrified building
6. Demonstrate leadership in sustainability

1.4.2 Building Technology Objectives:

1. Occupant experience and engagement
2. Demonstrate state-of-the-art smart building innovations
3. Integration of handheld devices

1.4.3 Primary Purpose and Use:

The CSCF will accommodate the local Fire, Police, Municipal Office and one option, option 2, includes a recreation centre within an energy and water efficient building. The systems within our scope will be designed to meet the following design and performance criteria:

1. Optimal thermal comfort, ease of operation, system controllability, and noise privacy.
2. Integration of mechanical systems with interior and architectural building expression.
3. Sustainable features, including those for optimizing energy- and water-efficiency, to the extent practical for a modern commercial office building.
4. Maintaining functionality and security for the Fire, Police and Municipal spaces.
5. Optimize life-cycle ownership and operation cost by minimizing complexity, incorporating a plan for measurement and verification, and mitigating energy costs by including alternate energy source and technology options.

1.5 Codes and Standards

Codes and Standards relevant to new construction of this project are as follows.

1.5.1 Building Codes (Mandatory Compliance):

- BC Building Code 2024
- *BC Energy Step Code* Commercial Step 2, although a desire to exceed this requirement and conform with Commercial Step 3 has been expressed
- BC Zero Carbon Step Code Zero Carbon Performance (EL-4)
- British Columbia Fire Code
- Capital Regional District – Cross Connection Control Bylaws

1.5.2 Industry Standards (as required or where stipulated for relevant equipment, materials, and systems)

- Canadian Standards Association (CSA)
 - CSA B51 “Boiler, Pressure Vessel, and Pressure Piping Code”
 - CSA B52 “Mechanical Refrigeration Code”
 - CSA B64.10 “Selection and Installation of Backflow Preventers”
 - CSA B128.1 “Design and Installation of Non-Potable Water Systems”
- Leadership in Energy and Environmental Design (LEED), LEED Silver
- ASHRAE Standard 90.1 – 2010, Energy Efficient Design for New Buildings
- ASHRAE Standard 62.1 – 2016, Ventilation for Acceptable Indoor Air Quality
- ASHRAE Standard 55 – 2010, Thermal Comfort
- National Fire Protection Association (NFPA)
 - NFPA 10 Standard for Portable Fire Extinguishers
 - NFPA 13 Standard for the Installation of Sprinkler Systems
 - NFPA 14 Standard for the Installation of Standpipe and Hose Systems
 - NFPA 20 Standard for the Installation of Stationary Pumps for Fire Protection
- American Standards for Testing and Materials (ASTM)
- American National Standards Institute (ANSI)
- American Water Works Association (AWWA)
- Sheet Metal and Air Conditioning Contractors' National Association Inc. (SMACNA) Manuals
- WorkSafe BC regulations, and Canadian Occupational Health and Safety
- Underwriters Laboratories of Canada (ULC)

1.6 Sustainability

A separate Sustainability Report will be developed by a different consultant. It is understood the parameters and recommendations for proceeding into Schematic Design Phase 2 central strategy focused on occupant wellness, low-carbon performance, resilience, and biodiversity. The recommendations in that report will inform the incorporation of the following measures in the proposed Mechanical and Electrical design. As Introba has yet to receive this report, general parameters will be as follows:

1.6.1 Daylighting + Interior Light

- Daylighting: Optimize daylight opportunities through modeling and analysis focusing on improving the quality of light, providing access to natural light, and creating visual connections with nature, while controlling glare to improve comfort.
- Human-Centric Lighting: Consider technologies including advanced lighting controls linked to occupant devices, and tunable-white LED, to allow individual user adjustability and provide sleep-health support by respecting human circadian rhythm.

1.6.2 Electrical

- On-Site Renewable Energy: Working with site options and available PV technologies, Introba can provide building energy offset for on-site renewable energy production via solar photovoltaic panels as required. This concept report will outline methods for installation, with sizing and placement to be explored further into design.
- Electrified Building System: It is anticipated that the building will operate electric-only systems. This will include the use of electrical building system selections such as electric heat pumps.

1.6.3 Mechanical

- Energy Efficiency and Thermal Comfort: A central heating and cooling plant will either be an all electric hydronic OR refrigerant based to meet all space conditioning needs of the building, coupled with low-energy heating and cooling terminal systems within occupied spaces to maximize performance with respect to energy, carbon, and occupant comfort and health.
- Energy Recovery: Central air systems will include air-to-air heat recovery technology with the highest efficiency that is commercially available for the Greater Victoria climate. The heating/cooling plant will maximize heat recovery between heating and chilled systems.
- Indoor Air Quality: Based on LEED and WELL best practices, office spaces will use Dedicated Outdoor Air Systems (DOAS) with CO₂ monitoring, demand-controlled ventilation, and carbon filtration. Air distribution will introduce fresh air at low-level with exhaust at high-level, achieving a once-through Displacement Ventilation Strategy. These approaches, combined with natural ventilation in select areas of the building, would promote optimum indoor air quality and building health, by maximizing the supply of fresh air, eliminating recirculation, and providing flexibility and resilience against warming climate conditions and the potential of forest fire smoke.

1.6.4 Plumbing

- Water Efficiency: Thoughtful selection of building-standard plumbing fixtures will contribute to water efficiency through conservation and reduction at point-of-use. Zero water will be used for evaporative cooling (e.g. cooling towers). Landscape plant selection will emphasize indigenous and drought-resilient species. An extensive network of water meters through the building will allow operations to remain accountable to annual water budgets and eliminate sources of waste.

2. Heating Ventilation and Air Conditioning (HVAC)

2.1 **Climate Design Conditions**

This project will be designed with climate resiliency as a priority. The mechanical heating and cooling plant sizes will be designed to a proposed design criteria that follows the baseline outdoor design conditions nearest to Saanichton, British Columbia (Sidney BC) as published by ASHRAE and the Provincial Building Code. A dynamic energy model, used for sizing of the mechanical heating and cooling plant will also be provided.

Cooling (air conditioning) is not a mandatory requirement for the whole building but is desired for commonly occupied spaces. The apparatus bay is to be always maintained as a semi-heated space.

OUTDOOR DESIGN CONDITIONS	
Winter Outdoor Temperature - BCBC January 1% Heating Design Temperature ([Sidney BC]) - Proposed design criteria	-6C (DB) -8C (DB)
Summer Outdoor Temperature - BCBC July 2.5% Cooling Design Temperature ([Sidney BC]) - Proposed design criteria	24°C (DB) / 18°C (WB) 28°C (DB) / 20°C (WB)
INDOOR DESIGN CONDITIONS	
Minimum Indoor Operative Temperature (Occupied) • Public and Staff Areas • Apparatus Bay	21°C ±1°C 15°C ±1°C
Maximum Indoor Operative Temperature (Occupied) • Public and Staff Areas • Apparatus Bay	24°C ±1°C Not Limited

2.2 **Building Envelope Performance**

As part of the overall strategy to achieve an energy efficient and sustainable building, a high-performance building envelope will be required to contribute to an overall high level of energy performance, complimenting efficient active mechanical and electrical systems.

While the current code minimum requirement in Central Saanich is Step 2 and EL-4 (Zero Carbon Performance) as a minimum standard for new residential and commercial buildings, the team will target conformance with those mandates while striving to achieve Step 3 and LEED Silver.

The minimum recommended performance of major building envelope components is required and will be outlined further as the design progresses. There have been early discussions which will be further explored and optimized through the design-assist energy modeling process.

2.3 **Summary of Design Assist Energy Modeling**

In the Schematic Design Phase, a preliminary energy modeling is being provided by another consultant and will be required to determine the sensitivity of building energy performance (peak loads, annual energy consumption, and energy intensity) with respect to various envelope treatment options, particularly on the west façade. These details will be explored further to optimize the envelope and mechanical systems.

2.4 Ventilation

Ventilation rates for conditioned areas will be dictated by the Local Building Code requirement in conformance with required ASHRAE Code. A ventilation system with variable air volume control will achieve code compliance and provide flexibility.

Building ventilation will be provided by electric-driven Dedicated Outdoor Air System (DOAS) Air Handling Units (AHUs), also known as Energy Recovery Ventilators (ERVs), with integrated air-to-air heat recovery located in mechanical rooms or at the roof level. Units located in mechanical room(s) for each respective area separated to serve each distinct program would be recommended to ensure longevity of the equipment. Standard of acceptance for these units will be semi-custom with an estimated minimum sensible efficiency of 80%.

Maintaining a high level of indoor air quality is of paramount importance for occupant health and comfort. The DOAS approach is ideal to achieve high indoor air quality as it provides 100% outdoor air to the occupied space with no recirculated air. One of the control parameters for the ventilation rates in each space will be by CO₂ sensors. This will limit the CO₂ to 700 parts per million (ppm) in these spaces. The ERV units are proposed to be equipped with dynamic filters with minimum MERV 13 performance to eliminate air contaminants in the ventilation supply air. Additionally, with the rise in wildfire smoke during the summer months, it is recommended that all units are complete with activated carbon filter sections to mitigate the effects of wildfire smoke in the building.

Ventilation distribution is recommended to be supplied at low level and returned at high level to duct mains back to the unit. Soiled exhaust from core washrooms will be collected and returned to the ERVs downstream of the general exhaust as the last connection, complete with a back-draft damper.

2.5 Heating and Cooling Systems

A mixed mode heating and cooling strategy with full mechanical heating and a combination of mechanical and passive cooling would be proposed for this project. Actuated operable windows proposed for natural ventilation provide the added benefit of enabling passive cooling during the shoulder seasons or when outdoor conditions are favourable to reduce the annual cooling load. The geometry of the building modules with glass or windows on both ends of the building creates a great opportunity for cross flow ventilation for optimal passive cooling.

Preliminary building heating and cooling loads have yet to be determined though feasible Heating/Cooling plants are noted below prior to preliminary building loads and envelope performance data. Preliminary loads and envelope parameters will be required prior to moving on to the next phase though they are expected to vary as the design is progressed.

2.5.1 Hydronic vs. Refrigerant Based Heating / Cooling Plant

1. Hydronic

- Air to Water – Air source Heat Pump (ASHP) utilizes a hydronic distribution system complete with electric trim boiler(s). The outside atmosphere would serve as an energy source/sink during the warmest and coldest periods of the year. By transferring heat from the atmosphere, the system will provide chilled fluid for cooling and heated fluid for heating which will be distributed to terminal units. The added exterior shades and natural ventilation via operable windows can provide partial mechanical cooling to achieve adaptive comfort.
- Water-to-Water – Vertical Geothermal Geo-exchange coupled with heat pumps and electric trim boiler(s). The (GSHP) coupled with a vertical closed loop geo-exchange (GHX) field. The system will provide chilled water for cooling and heated water for space heating. A closed loop GHX field would provide an energy source/sink during the warmest and coldest periods of the year. Incorporating a GHX as part of the design would take advantage of the relatively stable ground temperatures, allowing the system to maintain high efficiencies during all times of the year. The added exterior shades and natural

ventilation via operable windows can provide partial mechanical cooling to achieve adaptive comfort.

With an on-site area of approximately 7,000 or 9,000 sqm (depending on the site location), the project site can potentially accommodate a geo-exchange field of approximately 400 boreholes at 15.5sqm per borehole. This sizing approach assumes a load-balanced field, where equal amounts of cooling heating rejection and heating absorption would be exchanged with the ground on an annual basis, using the thermal mass of the building foundation like a "thermal battery". Final sizing and configuration of borehole field is to be designed as part of the Geo-exchange System design scope. Additionally, a thermal conductivity borehole test will be required to understand the thermal conductivity of the ground prior to selecting this option.

2. Refrigerant

- Hybrid VRF – Hybrid Variable Refrigerant Flow (VRF) combines the benefits of traditional VRF systems with the flexibility of hydronic chillers. It uses a two-pipe system where refrigerant is used on the outdoor side, while water is used between the Hybrid Branch Controller (HBC) and indoor units, effectively removing refrigerant from occupied spaces. This allows for simultaneous heating and cooling in different zones, and offers greater comfort and control compared to traditional VRF systems
- VRF – A heat recovery Variable Refrigerant Flow (VRF) system, is a multi-split air-source heat pump system that uses variable refrigerant flow throughout the building within refrigerant piping to provide simultaneous zone control heating and cooling to occupied spaces. The VRF system consists of an outdoor unit and an indoor fan coil unit located within each occupied zone for optimal individual zone control. This is a simple, cost-effective packaged system with standalone controls. The proposed VRF system has a variety of terminal unit types available to suit interior design and architectural preferences. Additionally, this type of system is required to meet A2L requirements per the latest CSA B52 Refrigeration Code which may include additional mechanical room exhaust and ventilation indoors.

2.6 Terminal Heating and Cooling Units

Terminal units, for either hydronic or refrigerant based systems can be completed by several different types of terminal units. These units provide heating and cooling for all spaces. The options are as follows:

- 2.6.1 Hydronic / Refrigerant: Horizontal ducted fan coil units (FCUs)
- 2.6.2 Hydronic: Fan assisted trench convectors
- 2.6.3 Hydronic: Wall mounted fan coil units (FCUs)
- 2.6.4 Hydronic: Radiant ceiling
- 2.6.5 Hydronic: Radiant floor in apparatus bay and decon
- 2.6.6 Electric: Baseboards and unit heaters in storage rooms, BoH, stairways and M&E rooms

2.7 Additional Zone Ventilation and/or Exhaust

2.7.1 Underground Parking Garage

The underground parking garage at both sites for either options will be mechanically ventilated using a push-pull arrangement of fans with Variable Speed Drive (VSD) control interlocked with a gas detection system monitoring presence of carbon monoxide and combustible gases. Preliminary sizes of intake and exhaust shaft allowances have been not coordinated at this time. In general, the initial project budget should allow for the following:

- Parking Garage intake via ramp + two exhaust fans at 4,400 L/s each

Fans will be wall-mounted propeller style with backdraft damper and wire guards. Additional allowances will be required for individual exhaust fans serving residential garbage room, recreation centre garbage room, mechanical room, elevator mechanical rooms, bike storage room, staff bike room and storage rooms. It is assumed these rooms will be heated/conditioned by electric baseboard heaters.

2.7.2 Kitchen Spaces

The kitchen spaces shown on either site and each option has been assumed to be a servery and limited to domestic appliances not capable of producing smoke or grease-laden vapours therefore NFPA 96 exhaust is not required. Exhaust will be complete with a residential range hood, ducted direct to the exterior.

2.7.1 Apparatus Bay

A single packaged rooftop ERV unit will operate when doors are closed, to provide a constant-volume minimum "background" ventilation rate, maintaining a slightly negative pressurization relative to adjacent building areas, while using rotary-type heat recovery to minimize required ventilation heating energy. The unit will include a heating coil downstream of the heat recovery wheel to maintain a minimum supply air temperature of 21°C during the winter.

A specialty vehicle exhaust extraction system, designed and manufactured specifically for emergency fire department operations will operate at any time that a vehicle within the apparatus bay is running. The standard of acceptance for this system is Nederman Magna Rail. Major components of this system will include:

- A rooftop utility-style upblast fan (Greenheck USF series).
- Interior exhaust ductwork.
- Exhaust "rails" between each vehicle bay, of average length 20m.
- Telescoping flexible duct drops with electromagnetic truck attachments, and
- Packaged controls system including wireless vehicle ignition interlocks and a factory-programmed variable-frequency drive.

2.7.2 Decontamination and Gear Storage

A single packaged rooftop ERV unit will operate continuously to provide variable-volume exhaust from the decontamination washroom and gear storage area. The system will normally operate at reduced speed corresponding with 2 ACH and will increase speed to correspond with 8 ACH (a) to maintain a maximum interior relative humidity, (b) when occupancy sensors are activated, or (c) on a manual override timer switch. The unit will include a hydronic heating coil downstream of the heat recovery wheel, to maintain a minimum supply air temperature of 20°C during the winter. Supply and exhaust ductwork will be arranged to transfer air from clean to dirty areas and negatively pressurize the gear wash and decon washrooms relative to adjacent building areas. Branch supply and exhaust ducts will be positioned directly below and above gear lockers to evacuate humidity, odours, and contaminants as efficiently as possible. Additionally, local high intensity electric heaters may be required to dry the gear.

2.7.3 Compressed Air / SCBA

A compressed air system will be required for vehicle maintenance and SCBA maintenance. Detailed requirements for the air compressor are still to be developed. The preliminary project budget should anticipate a single electric-driven indoor air compressor including air dryer and filter, manifolds with multiple pressure reducing valves, and distribution using either copper tube or steel pipe to air outlets in the following locations as part of the mechanical scope of work:

- Compressed air hose reels within the apparatus bay.
- SCBA room.

Additionally, the specific SCBA station general equipment (typically Jordair) includes the following:

- Compressor.
- Fill station (Jordair or equivalent).
- Storage tanks / required volumes.

2.7.4 Elevator Hoistway(s)

Each hoistway will be complete with louvered opening at top of each overrun with a two-position motorized damper and temperature sensor, set to open when hoist way temperature is 30°C or greater. The damper will also close upon fire alarm to avoid fresh air being pulled into the building in a fire event.

2.7.5 Electrical / Comm Rooms

Complete with ducted refrigerant-based fan coils, designated spaces, such as IT rooms, will be equipped with dedicated split systems to ensure adequate cooling and to maintain temperature & humidity within the required band. Each space will be complete with BMS connected thermostats monitoring temperature and humidity. These units will also be connected to emergency power.

3. Plumbing

3.1 **Stormwater Drainage**

It is currently understood that the above-grade stormwater (STW) collection system will consist of sloped roof to architectural downspouts picked up at grade by Mechanical and directed to civil. Internal rainwater leaders will not be utilized. All mechanical piping where utilized will terminate one meter outside the building footprint where it will connect to civil piping.

A standard perimeter drain tile system will be implemented for this project, as confirmed in the provided geotechnical Desktop Study by Ryzuk for both sites dated April 10, 2025, however input from the Geotechnical Consultant is required to assist with determining the expected flowrate. It is undetermined if perimeter drainage will require pumping to meet the Civil invert. It is currently assumed that perimeter drain tile will be provided locally around the elevator pit – TBC by Geotechnical/Architectural. Any drain tile will be required to be a minimum of 300mm below the top of the floor slab of the proposed structure. The stormwater system will also require a sediment sump prior to connecting to civil and elevators pits will be complete with a drain and routed to its own sump complete with a backwater valve. It is assumed that elevators will not be hydraulic and therefore will not require an additional oil interceptor.

STORMWATER DRAINAGE LOAD TABLE		
Designed with a rainfall intensity of 8mm / 15 minutes		
AREA	STORMWATER LOAD (L)	PIPE SIZE
Option 1: Hovey Rd with no Rec	19,014	6" ø 1% slope
Option 2: Hovey Rd with Rec	16,397	6" ø 1% slope
Option 3: 1903 Mt Newton Rd, no rec	16,924	6" ø 1% slope

3.2 **Domestic Water**

Domestic water for the site is served by the Capital Regional District (CRD) and does not require any water treatment on site. The domestic water service will enter the building from the street and then directly into either a water entry or mechanical room at the perimeter. Domestic water entry is anticipated to consist of main isolation, the main building water meter, premises isolation backflow, and a pressure reducing valve (PRV) station. It is undetermined if an additional domestic water booster pump is required at this time and will be confirmed with Civil.

The domestic water metering for all three options is assumed to be a single meter for the incoming service. Though there may be a meter externally provided by Civil, an internal meter will be connected to DDC for informational purposes.

It is recommended that hose bibs are added at 30m intervals around the building for maintenance purposes and where chemical may be used for cleaning (interior or exterior), an RPBA will be provided.

DOMESTIC WATER METERING STRATEGY			
SERVICE	METER LOCATION	METER TYPE	BILLING
Domestic Cold Water	Water Entry or MECH room	Velocity Flow Meter/DDC/INFO	NO

3.3 Domestic Hot Water

The domestic hot water system is proposed to be provided by an all-electric centralized system. The recommended Water Heating Equipment could be as follows:

- 3.3.1 Connected to the geo-exchange system complete with storage / temperature top-up tanks and circulation pumps
- 3.3.2 Air-to-Water Variable Refrigerant Flow Heat Pump Water Heater complete with storage tanks, circulation pumps and back-up electric heat.
- 3.3.3 Electric Resistance Water Heater Storage Tank(s) complete with a circulation pump.

All above options are complete with domestic hot water recirculation piping and recirculation pumps.

The above options are an excellent alternative to traditional electric or gas water heaters and will reduce energy consumption and reduce greenhouse gas emissions. No natural gas or venting is required for heat pump water heaters.

Domestic hot water and hot water return piping will be sized with a maximum velocity of 0.9m/s (3ft/sec). Pipe sizing will be sized based on Local Plumbing Code as best practice. Domestic hot water pipe material will be either stainless steel or plastic. All piping shall be insulated and jacketed.

Allowances should be made for linear thermal expansion during the working drawing phase.

3.4 Plumbing Fixtures

Plumbing fixtures will be specified by Mechanical with review and comment of compatibility from Architectural. It is recommended that water closets are wall-mount flush valve and lavatories will be low-flow. Inclusion of urinals in male washrooms will be included at this juncture. Additionally, vandal resistant penal quality fixtures will be included at cell locations.

PLUMBING FIXTURE TABLE	
Fixture Type	Notes
WC-1 (Accessible)	-
WC-2 (Public)	Suitable for all Locations, wall mount.
WC-3 (Penal Ware)	Lavatory and Water closet combination. Stainless Steel, vandal resistant.

LAV-1 (Accessible)	-
LAV-2 (Public)	Suitable for all Locations, wall mount.
DF-1 (Drinking Fountain)	Suitable for all Locations. Not Filtered or chilled
SH-1 (Typical Shower)	Police and Fire Staff Shower
SH-2 (Decon Shower)	Fire Station Only
SH-3 (Rec Centre)	Vandal Resistant
FD-1 (Floor Drain)	-
RD-1 (Roof Drain)	-
TD-1 (Trench Drains)	Truck Bay(s)

Accessible fixtures, as determined by Architectural, will meet the requirements of the applicable BC Accessibility Code.

Floor drains will be provided in each washroom and shower room, the mechanical rooms/spaces, and all janitor rooms for easy cleaning solutions, and to mitigate any flooding concerns.

Wall-mounted commercial-grade freeze-proof maintenance 'brass box' hose bibbs will be provided along the exterior perimeter for exterior maintenance. Locations to be coordinated with Architectural.

3.5 Heat Tracing

Heat tracing will be provided for all P-Traps within unheated or exposed locations. For this project it is estimated this will be limited to the parking garage. All locations where a p-trap is utilized in unheated or exposed locations will be complete with heat tracing. Heat tracing will be Raychem.

3.6 Trap Primers

Where floor drains are complete with P-traps, the P-traps will be served by electronic manifold type trap primers. The trap primers will be manifold type with piping from the manifold to the p-trap will be within the concrete slab. The manifolds will be in mechanical, janitor, or storage/MEP rooms. Trap primer manifolds will service 4-12 p-traps.

3.7 Sanitary Drainage

The mechanical design will include sanitary drainage, waste, and vent systems to the requirements of BCBC for all tenant and common areas. Any oil interceptors from the Fire or Police Department are anticipated to be exterior to the building and provided by civil.

Sanitary drain connections are also anticipated for backflow preventer testing, sprinkler device testing (including all stairs), mechanical rooms, and waste collection areas.

Sanitary drainage is anticipated to be collected by gravity and directed to a municipal service connection coordinated with the Civil Engineer though has yet to be confirmed as there are no specific civil connections designed.

3.8 Irrigation

It is the current understanding that irrigation will be required for the project though there are no details at the time of this report. TBC by Client/Landscape Consultant. Where irrigation is required, the cold water line serving the irrigation system will be complete with an RPBA.

3.9 Grease Waste Drainage

Grease waste is not anticipated for this project though this will need to be confirmed through coordination with the client and CRD.

3.10 Natural Gas

A natural gas service may be available but not anticipated to be used for this project, due to a strong preference for low-carbon systems and minimized greenhouse gas emissions.

A natural gas utility connection to the site would not provide resiliency in the case of a natural disaster such as an earthquake. Backup in this kind of emergency (power loss) would be provided by the onsite emergency generator, which would be capable of running the electric heat pump system in the event of loss of normal power.

4. Fire Protection Strategy

The CSCF is recommended to include automatic sprinkler protection of all areas in accordance with the current edition of Local Building Code at time of submission. A water-based fire suppression system will connect from the local water utility and use a common water entry room in the parkade at the building perimeter. Wet and dry Zone control sprinkler valves will be located in this room. Branch fire water mains will be routed from this central room to the floors above the parking garage. The dry system will route from the central room to the parking garage.

Once water pressure is confirmed, the requirement for a fire pump will be reviewed at that time.

It is expected that a single fire department connection (FDCs) may be desired by the local fire department. The quantity and location of FDCs, as well as their proximity to available fire hydrants, is a topic that we recommend be reviewed early in the design stage prior to Building Permit Application, with the Authorities Having Jurisdiction.

Sprinkler piping will generally be black steel with grooved Victaulic mechanical couplings. Underground piping will typically be 'blue brute' CPVS pressure piping with mechanical joint fittings though none is expected.

Sprinkler head finishes will be reviewed with the Architect during the detailed design phase. In general, it is recommended that sprinklers located in heated finished areas be fully recessed concealed pendant type.

AREA	SYSTEM	HAZARD GROUP	DENSITY		DESIGN AREA		MAX AREA PER HEAD		SPRINKLER HEAD FINISH
			(GPM/F T ²)	(L/S-M ²)	(FT ²)	(M ²)	(FT ²)	(M ²)	
LOBBY, CORRIDORS, GENERAL PUBLIC OR CIRCULATION AREAS	WET	LIGHT	0.1	0.07	1500	139	225	20.9	WHITE SEMI-RECESSED PENDANT
OFFICES	WET	LIGHT	0.1	0.07	1500	139	225	20.9	WHITE SEMI-RECESSED PENDANT
FITNESS, MEETING, AND LOUNGE AREAS	WET	LIGHT	0.1	0.07	1500	139	225	20.9	WHITE SEMI-RECESSED PENDANT
APPARATUS BAY	WET	ORD. GROUP 1	0.16	0.11	1950	181	130	12.1	UPRIGHT BRASS WITH WIRE GUARD
MECHANICAL/SERVICE	WET	ORD. GROUP 1	0.16	0.11	1950	181	130	12.1	UPRIGHT BRASS WITH WIRE GUARD
STORAGE	WET	ORD. GROUP 2	0.2	0.14	1500	139	130	12.1	UPRIGHT BRASS WITH WIRE GUARD

5. Controls & Metering

A comprehensive Building Automation System (BAS) is proposed for this project, to oversee efficient day-to-day operations and to provide empirical utility usage data for ongoing optimization and proof of performance.

Depending on the heating and cooling system selected, the function/complexity of the BAS will vary.

The main function of the BAS will include:

ITEM / SYSTEM DESCRIPTION	MONITOR	CONTROL	REMARKS
Outdoor Ambient Air Temperature, Humidity, and CO2 Sensors	X	X	Full Control of all Components
Indoor Air Temperature, Slab Temperature, Humidity, and CO2 Sensors	X	X	Full Control of all Components
HVAC Plant, Pumps and ERVs	X	X	Full Control of all Components
DHW Plant & Pumps	X	X	Full Control of all Components
Miscellaneous Fans	X	X	Full Control of all Components
Interior and Exterior Lighting			Refer to Electrical

6. Electrical

6.1 **Electrical Distribution**

6.1.1 General Distribution

Regardless of selected site, it's intended that power will be delivered to site by BC Hydro at three phase 600V. This voltage will enable the selection of a broader range of larger specialty devices, such as mechanical heating and cooling equipment, for more efficient building distribution. This may be changed during detailed design but will be carried in this report.

At 1903 Mt Newton, the existing site, power appears to be delivered from an overhead pole on Mt. Newton Cross Road, which is routed underground across the road to the site. This service appears to be sized at 150kVA, which could be confirmed with more investigation during a future phase. If this site is selected, this service will need to be upgraded to facilitate the all-electric equipment on site as well as electric vehicle chargers. This upgrade will take power from the existing high voltage service on Mt. Newton Cross Road and run a dip service to an exterior pad-mounted transformer in type DB2 conduit.

At the Hovey Road site, (which currently has two options for layouts), three phase power is available on both Hovey Road and the crossroad Wallace Drive. Regardless of configuration, power will be routed from one of the overhead poles via a dip service and underground type DB2 conduits to a pad-mounted transformer on site.

Regardless of building configuration, the main transformer pad will be 1.7m x 1.6m and will require an unobstructed area of 2.8m x 4.6m in front of the transformer. If the transformer is near a driveway or if it is possible to hit the transformer with a vehicle, concrete bollards will be required on any side of the transformer which will protect the equipment. If the bollards are required to be in front of the transformer for protection, they will need to be removable for BC Hydro maintenance access.

At any of the sites, the underground connection on the secondary side of the pad mounted transformer will be installed a minimum of 900mm and a maximum 1800mm below grade to meet BC Hydro requirements. All conduit into and out of the transformer will run in type DB2 conduit, at a minimum size of 50mm. Final connections, 90 degree bends, and conduits into the building will be fully encased in concrete.

6.1.2 Building Distribution

Regardless of which type of building is selected building, electrical distribution will follow the same requirements, with different overall power requirements based on the building size.

Either variation building will require a "main electrical room" which would be approximately 4m x 3m and about 3.5m tall. This will require a double door to the exterior, or a parkade, that opens *out* of the room. This will allow BC Hydro access to equipment for meter readings or maintenance of their equipment, as well as easier equipment replacement in the case of failure or requirements for repair.

The main electrical room will host the BC Hydro meter and disconnect. This will be in front of the main electrical distribution board, which will feed all systems in the building.

It is anticipated that the main building distribution to the building will be between 400kW and 600kW, depending on the selected equipment and specialty loads. At 600V this equates to approximately 400A to 600A services. Dependent on final equipment selections, this may be altered to a 120/208V system, which would eliminate transformers within the building but increase general distribution cable sizing and may increase mechanical equipment connection sizes. This trade-off analysis will be done after further design has been completed, but for this report it has been assumed that a 600V system will be used.

The main electrical distribution board will sub-feed 600V to key areas of the building and the mechanical equipment room. At each of these rooms, a 600V:120/208V transformer will be provided for local distribution. Each of the police station, fire station, and civic facility will have its own main electrical room which will have sub-panels for mechanical loads, lighting loads, and plug, and specialty equipment-loads. Sub-distribution rooms will be approximately 1m deep by 2.5m wide, with final sizing to be confirmed based on equipment requirements for each area. Typically, these sub panels will be 200A, 120/208V and 42 circuits. At each of the sub and main electrical rooms a 600V main panel will supply the local transformer as well as any 600V connections required in the area. The main electrical panel will include a surge protection device to protect the entire system against power surges caused by exterior influences into the building.

The design intent will be to keep all panels within the electrical room spaces or in the mechanical room, with minimal panels provided in corridors or office rooms.

The main electrical room will also house some controls devices, such as the main lighting controller, the fire alarm control panel, sub-metering equipment, and any other power management devices required for the building.

6.1.3 Backup Electrical Distribution

Backup power generation will be provided to the building for key operations specific devices, some lighting, and selected mechanical equipment. The loads will be confirmed during detailed design. In general, the backup power distribution will provide power to a panel in each of the civic centre, police station, and fire department to cover strategic loads within these areas. This might include operational equipment or mission critical communications devices, depending on the client requirements.

At this time, it is unknown if a fire pump will be required. Once this is understood, the requirement for additional generator equipment will be reviewed.

The backup generator will be diesel with a belly-tank capable of holding up to a seventy-two hour period to provide fuel during outages. It will be installed at the exterior of the building in a location that will enable testing and refueling by a truck without damaging landscaping. This generator will include permanent camlock connectors for easy connection of testing equipment.

The backup distribution equipment will be classified as "non-life safety" and be provided an automatic transfer switch to initiate the startup of the generator during outages. This transfer switch will be appropriately rated for the generator and be located in the electrical room.

It is anticipated that the generator will be between 100kW and 150kW, depending on the equipment that needs to be backed up. This equates to about 100A to 150A of power at 600V, which would require a 200A transfer switch.

6.1.4 Uninterrupted Power Supplies (UPS)

UPS devices will be provided in all communications rooms, which will supply power to main equipment racks. These will likely be provided by the District of Central Saanich and provide power at 120/208V. Devices will include double-bypass configurations so that they can be worked on without affecting data equipment or used in normal power mode. Dedicated power will be provided to UPS from local electrical panels.

6.2 Devices

6.2.1 General

In general, devices such as panelboards, breakers, or similar equipment installed in sprinklered areas shall be protected by sprinkler shields. Additionally, any water-carrying mechanical equipment installed in the electrical rooms will require drip-pans to ensure no leaks damage distribution equipment.

Conduit used within the building shall be EMT type. In general, EMT conduits shall be run from distribution panels to junction boxes within ceilings. From here, drops from the ceiling may be distributed by AC90 (BX) cable or further conduit, depending on the security of the devices and the client's preference.

All exterior conduits shall be type RPVC, except for conduit to and from the BC Hydro pad mounted transformer, which shall be type DB2. Conduit shall be installed underground at depths required by the Canadian electrical code, which is generally 600mm under areas that vehicles do not drive over, and 900mm where vehicles drive over the conduit.

Conduit transition from the exterior to the interior at surface mounted locations shall take place in PVC junction boxes. Other transitions, such as underground to in-building, may occur with poke-throughs to open air.

Communication conduits from the utility to the building shall be installed in 3 x 103mm orange RPVC conduits, which may be used by either TELUS or Shaw/Rogers, the two typical communications utilities available in Central Saanich.

All conductors shall be copper. Aluminum feeders may be considered where permitted by code and for cost savings above 200A.

6.2.2 Digital Metering

Utility metering will be provided in the main electrical room off the building's main electrical equipment. See Section 6.1.2.

To satisfy ASHRAE requirements, digital building metering will be provided for each of the lighting, mechanical, and plug load panels. This metering will have network capabilities in order to remotely access the meters or integrate the meters into Building Management Systems (BMS), if desired. This information will be managed by a head-end device, located in the electrical rooms, which will wrap a donut current transformer around the main panel wires to monitor the power flowing through the panels. This head-end device will be provided reference power from a 3P breaker within the power and will be connected via an ethernet cable to the internet, allowing networked readings to be provided.

6.2.3 Transformers

Transformers will be dry-type and installed in electrical rooms and sub electrical rooms. All transformers will be 600:120/208V and most likely sized between 75kVA (200A) and 225kVA (600A) depending on the range of power required for the area. Transformers will be floor-mounted on a slight transformer curb, or wall mounted on seismically designed platforms.

6.2.4 Panel Boards

Panel boards shall be suitable for bolt-on full size breakers and complete with full neutral copper bussing. Panel boards will be lockable and strategically located within the floor areas to service local equipment. All panelboards will be three phase four-wire.

There will be a dedicated panel for the mechanical equipment within the mechanical room. Each floor of the building will have a local distribution panel for lights and plug loads, as well as each distinct part of the building including the civic centre, fire fighters, and police station.

Panel boards will include minimum 20% future spaces and 10% spare breakers. All panel boards shall be bonded to ground by using a separate copper equipment bonding conductor sized to code compliance.

6.3 Grounding

Electrical systems will be completely bonded to ground per the Canadian Electrical Code requirements. Separate ground wires will be in PVC or EMT conduits. The ground shall be established at the main transformer and anchored at a main bus.

19mm x 3m ground rods or appropriately sized ground plates shall be installed per the Canadian Electrical Code and connected to the main bus. All grounding conductors and buses are to be copper. Aluminum shall not be considered.

Provide minimum #6 insulated green ground conductor from main bus radially to grounding sub-buses in each electrical and telecommunications room, connected to equipment.

6mm x 50mm copper ground buses will be mounted on insulated supports on wall of Electrical Rooms, Entrance Facility Room, and Telecom Rooms. The main ground bus will be in the main electrical room. The main ground bus shall be connected to the main water service and ground electrodes.

6.4 **Receptacles, Equipment Connections, Branch Circuit Wiring**

Convenience receptacles (20A T-Slot) will be strategically located throughout the facility at roughly 9m (30') off-centre to optimize end usage. Additional receptacle will be placed in areas where particular equipment will be provided, such as AV equipment locations, and behind screens and projectors. In kitchens / kitchenettes, a receptacle with a dedicated receptacle shall be supplied to each above-counter receptacle as well as all dishwashers, fridges, and microwaves.

Data receptacles shall be provided at all desks and in all offices. In meeting rooms or areas with open areas, receptacles shall be provided in floor boxes with appropriate quantities of power and data cables for the area. Photocopy machines shall be provided a single receptacle and data receptacle.

Coordination with other disciplines will be required to finalize electrical connections of specialty equipment. This will be accomplished with appropriately sized conduits, junction boxes, feeders, specialty receptacles, or disconnects. All mechanical equipment will be provided with local disconnects. Roof mounted equipment will be provided a receptacle within a 7.5m radius.

All exterior receptacles shall be GFCI, as well as any heat trace receptacles, bike charging receptacles, or receptacles that are within 1.5m of water sources.

6.5 **Solar Power**

On-site photovoltaic energy generation may be provided on the roofspace to offset energy use and help meet energy requirements, as required by the project.

Solar voltaic arrays are typically sized at approximately 100kW, which is the maximum that BC Hydro will allow as a connection to a non-generator system. Sizes above 100kW become significantly more expensive and difficult to connect. Using solar panels available at the time of writing this report, which are typically around 600W, this would require around 170 panels on the roof. Each panel is approximately 1m x 2m, so in order to install panels to their fullest extent, approximately 340sqm of roofspace would be required, not accounting for spacing between panels. Exact placement, size, and confirmation of system can be determined during further design.

Panels will connect to an inverter system and then the main busboard on the building. This power will be fed straight into the main distribution of the building and if it exceeds the requirements of the building, be sold back to BC Hydro under a net-metering agreement. This will require a bi-directional breaker system for the main breakers on the systems, as well as a main panelboard increased to the next available size to handle the additional energy introduced by the panels. Rapid shutdown disconnects will also be required on the inverter.

6.6 **ELECTRIC VEHICLE CHARGERS**

Electric Vehicle charging stations will be provided for the site. Preliminarily these will be provided for level 2 x 40A chargers from a dedicated panel 200A three phase panel, located in a convenient location near the parking space. During further design this may be expanded to suite the site's needs.

7. Lighting

7.1 Interior Lighting

The lighting designs throughout the project will follow the recommendations of the Illuminating Engineering Society (IES) of North America, the rules and regulations of the Workers' Compensation Board, and BC Building Code for illuminance and uniformity requirements.

LED fixtures shall be used for all luminaires. The lighting designs will follow the energy use recommendations set out by the BC Building Code and ASHRAE 90.1 2019, as well as the National Energy Code of Canada for Building (NECB) as a base.

Refer to the below figure for summary of lighting requirements, and power densities for individual spaces per NECB 2020.

AREAS	LIGHTING POWER DENSITY (LPD) W/m ² TABLE 4.2.1.5	NECB 2020 AREA REQUIREMENTS									
		MANUAL CONTROL	RESTRICTED TO MANUAL-ON	PARTIAL AUTOMATIC-ON	BI-LEVEL CONTROL	AUTOMATIC DAYLIGHT RESPONSIVE CONTROLS (SIDELIGHTING)	AUTOMATIC DAYLIGHT RESPONSIVE CONTROLS (TOPLIGHTING)	AUTOMATIC PARTIAL-OFF	AUTOMATIC FULL-OFF	SCHEDULED FULL-OFF	
CONFERENCE / MEETING / MULTI-PURPOSE ROOM	10.5X	A	A	X	X	X	-	X	-	-	
CONFINEMENT CELL	7.5X	A	A	X	X	X	-	-	B	B	
CORRIDORS (OTHER)	4.4X	-	-	-	X	X	-	-	B	B	
ELECTRICAL / MECHANICAL ROOM	4.6X	-	-	-	X	X	-	-	B	B	
FOOD PREPARATION AREA (KITCHEN / KITCHENETTE)	11.7X	A	A	X	X	X	-	-	B	B	
GYMNASIUM (EXERCISE)	9.6X	A	A	X	X	X	-	-	B	B	
GYMNASIUM (PLAY)	9.2X	A	A	X	X	X	-	-	B	B	
LAUNDRY / WASHING AREA	5.7X	A	A	X	X	X	-	-	B	B	
LOBBY (OTHER)	9.0X	-	-	-	X	X	X	B	B	B	
LOCKER ROOM	5.6X	A	A	X	X	X	-	-	X	-	
LOUNGE / BREAK ROOM (OTHER)	6.3X	A	A	X	X	X	-	X	-	-	
OFFICE (ENCLOSED) < 25m ²	8.0X	A	A	X	X	X	-	-	X	-	
OFFICE (OPEN PLAN)	6.6X	A	A	X	X	X	-	-	B	B	
SEATING AREA (GENERAL)	2.5X	A	A	-	X	X	-	-	B	B	
STAIRWELL	5.3X	-	-	X	X	X	X	B	B	B	
STORAGE ROOM < 5m ²	5.5X	-	-	-	-	-	-	-	B	B	
STORAGE ROOM BETWEEN 5m ² AND 100m ²	4.1X	A	A	-	X	X	-	-	X	-	
TRAINING / CLASS ROOM (OTHER)	7.6X	A	A	X	X	X	-	-	X	-	
WASHROOM (OTHER)	6.8X	-	-	-	X	X	-	-	X	-	
WORKSHOP	13.5X	A	A	X	X	X	-	-	B	B	

For notations of "A" or "B", only one must be selected

7.2 Exterior Lighting

All site lighting luminaires will comply with Dark Sky policy and be designed based on the IES recommendations. Luminaires will be placed away from the property line, and complete with full cut-off lenses to minimize light intrusion into the surrounding buildings.

Exterior Luminaires will have a colour temperature of 4000K, with a minimum CRI of 80+. In areas where lighting is required, a minimum average value of 20 lux will be designed to, which will satisfy recommendations for safety while not oversaturating the area in light. This value will also provide sufficient light to allow most available security cameras to monitor the exterior areas. Lighting will also be provided above exterior doorways at minimum average of 50 lux for building egress lighting, and along the walls directly exterior to the building for visual comfort and to guide building users during the nighttime. Lighting will be mounted on poles in the exterior parking areas to enable even distribution.

7.3 Emergency Lighting

Emergency lighting will be provided by battery units with integral or remote emergency LED Lighting heads. Lights will be strategically located throughout the complex to facilitate safe access to exits in case of normal power failure. Illumination will be designed to achieve the required minimum 10 lux (1fc) illumination along the path of egress.

7.4 **Lighting Controls**

All lighting fixtures shall be controlled in compliance with NECB 2020 requirements shown in Section 7.1.

Lighting control will utilize a low-voltage control configuration connected to a central controller. This will allow the building's users to set schedules for each room, including when lights should come on and how bright they are to be. This low voltage cabling will terminate in a lighting control box within the main electrical room which will be network connected. This will allow building maintenance staff to remotely set schedules and adjust the lighting intensity while connected to the building's network, or if desired, while logged on remotely from anywhere in the world.

Lighting within specialty areas such as classrooms, meeting rooms, or large rooms will be set up to provide multiple scenes, including typical usage and "presentation" lighting. This presentation lighting will provide additional light to an area and allow users to naturally focus on it, dimming lighting in the rest of the area. This will be reconfigurable through the lighting controllers to adjust as needed.

The rest of the building will receive typical fixtures to align with the reflected ceiling plan. Washrooms will be provided with fixtures appropriate for wet/damp areas, back of house rooms will be provided with typical utility fixtures, and specialty areas like apparatus bays, police holding areas, lobbies, and kitchens will be provided with fixtures to suit the room's use.

Occupancy sensors shall be provided in all rooms, except utility rooms including closets, mechanical, and electrical rooms, to shut off lighting after a period of time. These sensors will utilize dual-technology (infrared & ultrasonic) sensors.

Lighting Controls shall be provided in all spaces in compliance with energy code requirements. Refer to NECB 2020 Area Requirements table in Section 7.1 for detail of how the lighting control system will be required to operate.

Exterior luminaires will utilize exterior photocell control to determine the appropriate timing for when to turn on lights at dusk, and astronomical 365 day/24 hour timeclock for when to turn off.

7.5 **EXIT SIGNAGE**

Exit signage will be co-ordinated with architectural plans and located to clearly mark the direction of travel to the nearest exit. All exit signs will be Green Pictogram style (ISO7010) in compliance with governing codes. Housing to be robust thermoplastic throughout facility. All exit signs shall have a built in battery pack enabling them to stay lit at least one hour after power loss.

8. Communication Systems

8.1 **Distribution**

Provisions consisting of conduit, outlet boxes, cabling, and jack terminations will be incorporated throughout the facility. Coordination will be provided to ensure that computer/monitors/printers/etc. which is supplied and installed by others will have the appropriate supporting infrastructure within the facility.

All separately identified cabling will be installed on Category 6 J-hooks/basket tray throughout the facility.

All data and telephone outlets will be terminated on rack mounted RJ45 high density patch panels.

The main Telecommunications room will be located outside but adjacent to the main electrical room. This room will house demarcation equipment and be the main distribution point for communications throughout the site. A preliminary room size of 3m x 3m (10'x10') has been provided at this stage of design, which can be refined once all of the equipment is verified.

The main communications cable will enter into the building via 3 x 103mm (4") orange conduit. This will allow for Rogers/Shaw and TELUS connections.

This room will house a data rack which will allow for internet connections throughout the building, access control systems, and security as needed.

Surge Protection Devices (SPDs) will be provided on the main distribution and branch panels supplying computers, electronic equipment or lighting fixtures with electronic ballasts.

A sub-telecommunications room shall be provided in each of the Fire Hall, Police Station, and Civic facility for each floor. This will allow the communications to be separately demarcated and physically separated from each other. Each room will have capacity for a single four-post data rack, preliminarily sized for 3m x 3m (10'x10'). All walls of the telecommunications room shall be covered in 19mm fire retardant plywood, which can be used to mount additional equipment such as access controllers or punch-down blocks.

9. Fire Alarm

9.1 Fire Alarm

A single stage fire alarm system will be incorporated with an annunciator located at the front entrance area. All alarm devices, including required pull stations, smoke detectors, heat detectors, and signaling devices, will be appropriately installed at code complying locations. The fire alarm system will be designed to BC Building Code requirements and CAN/ULC-S524:2019.

The building sprinkler system will be monitored for flow & tamper functions. The fire alarm panel will be monitored by an external monitoring agency.

The main fire alarm control panel will be located in the main electrical room. Mini annunciators shall be supplied for each of the civic centre Police Station, and Fire Station. These will help the fire department easily locate the cause of alarms at each entrance to each facility. The fire alarm will be tied together for each of these areas.

Fire detectors within holding cells of the Police Station will use an aspirating smoke detector or approved smoke detector guard for safety. Any guard stations shall be provided a local remote annunciator and local pull station while monitoring the cells.

10. Electronic Safety & Security

10.1 Access Control

A Security system with access keypads (located at strategic entrance locations), motion/instruction detectors, glass breaks, door switches, & accessories, will be incorporated after consultation with end user to ensure proper operations/applications tailored specifically to the building functions/programs. Specifically, it is anticipated that the police portion of the building will require stringent security standards that will be defined working with the District.

10.2 Video Surveillance

Video surveillance shall be provided via PTZ (Pan, Tilt, Zoom) and fixed cameras strategically placed throughout the building and yards. Surveillance shall be preliminarily provided on all entrances and within the parking areas. Additional surveillance is anticipated to be provided within the building areas, but shall be confirmed with the occupants to ensure comfort.

Surveillance footage shall be stored for up to 48 hours within a server rack, with final length of storage to be confirmed by the district. Exterior surveillance shall be accessible to all building users, while interior footage shall be only accessible to the user group of the area, for each of the civic centre, Fire Department, and Police Station

11. Next Steps and Closure

We trust that the foregoing provides the information required at this time. This report should be reviewed by the project stakeholders and accepted prior to starting the next phase of design. We welcome an opportunity to discuss our recommendations and address any questions or concerns.

Respectfully Submitted,

Mechanical Lead



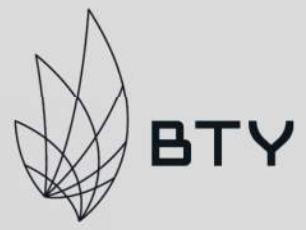
Ryan Chora | AScT, CPHD, LEED GA
Associate Principal

On behalf of Introba

Electrical Lead



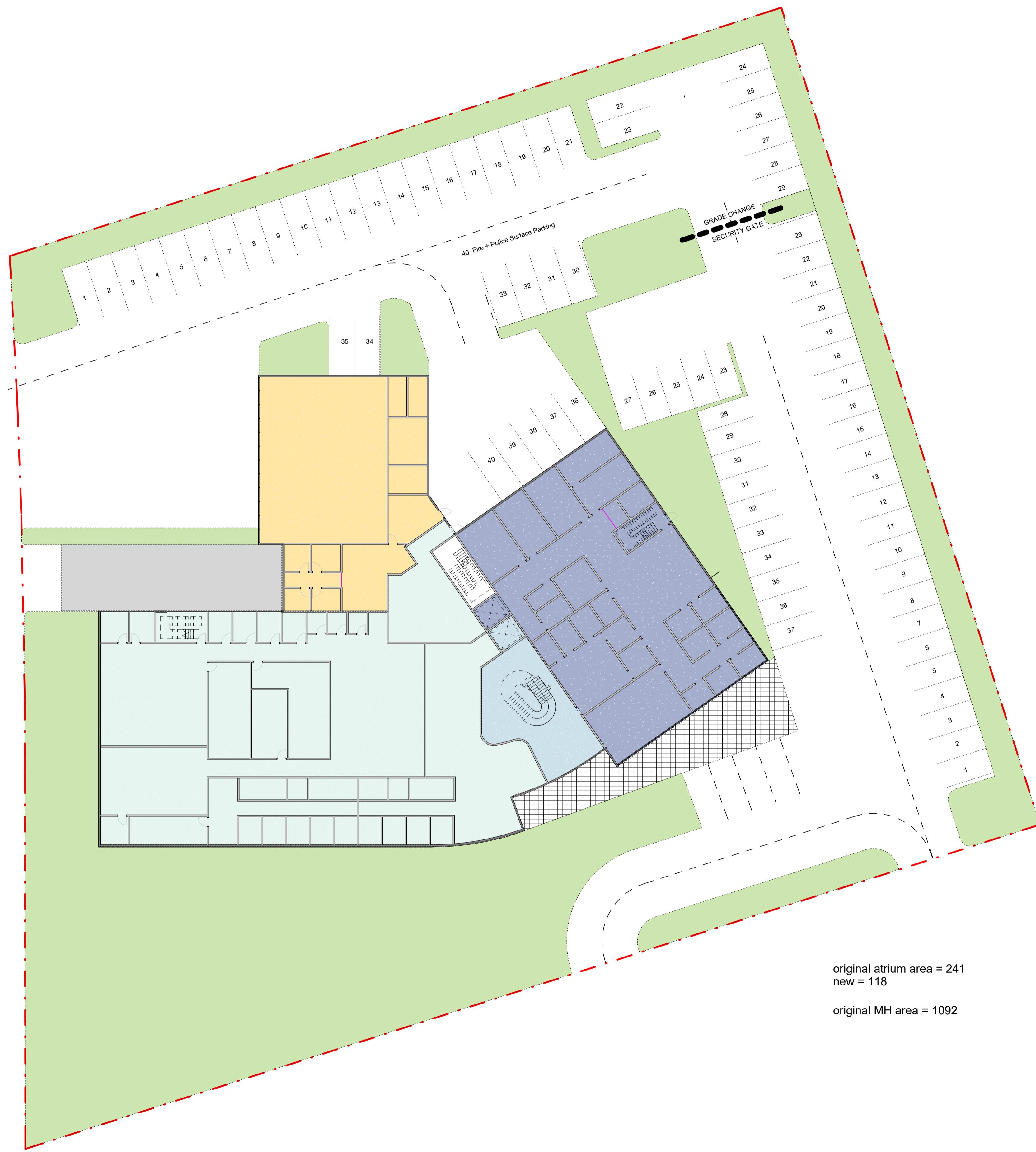
Wyatt Ritchie | P.Eng.
Senior Associate



APPENDIX III

Design Drawings

4 PAGES

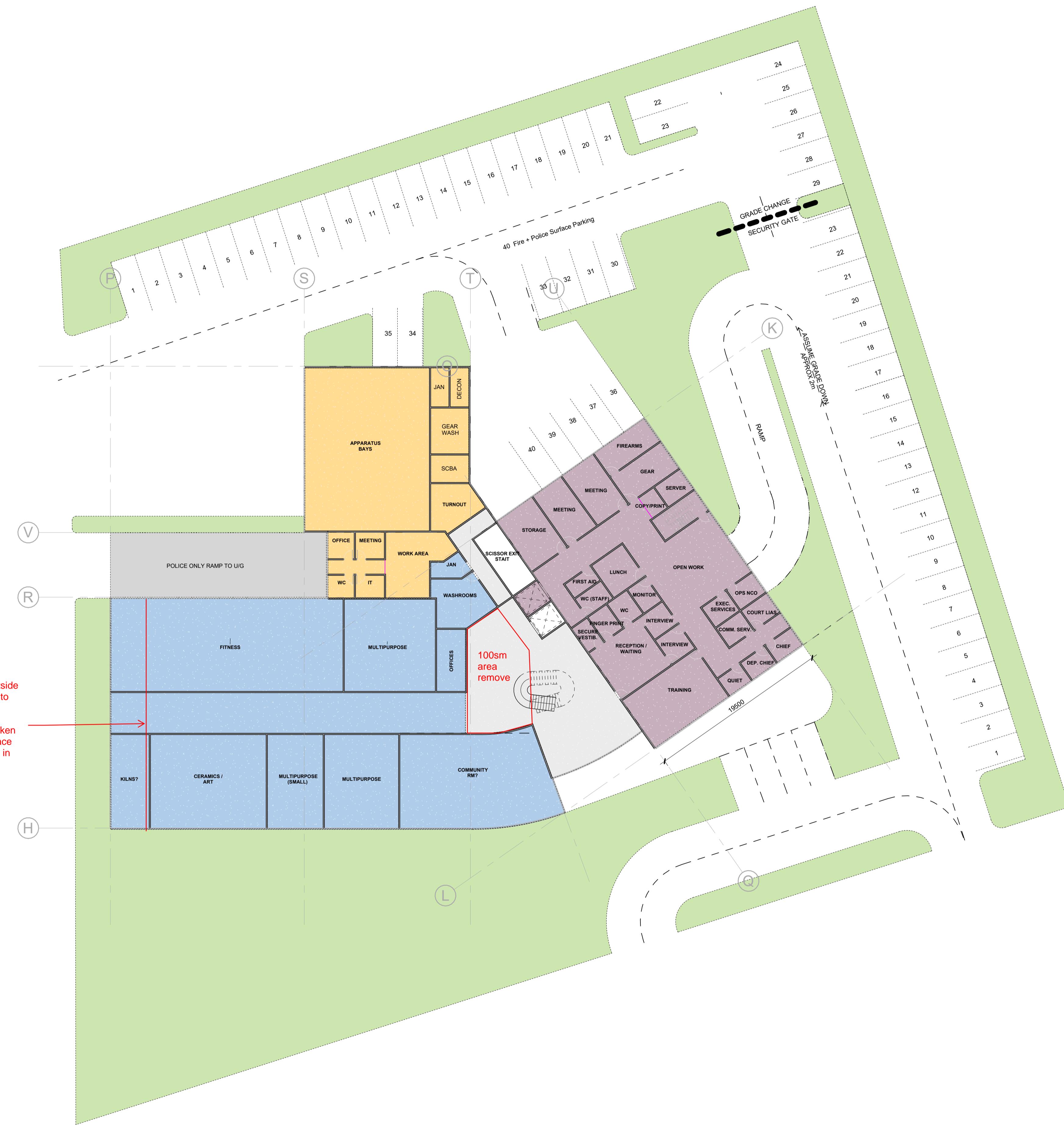


1 FLOOR PLAN - LEVEL 1 - OPT 1
1 : 250

PROGRAM

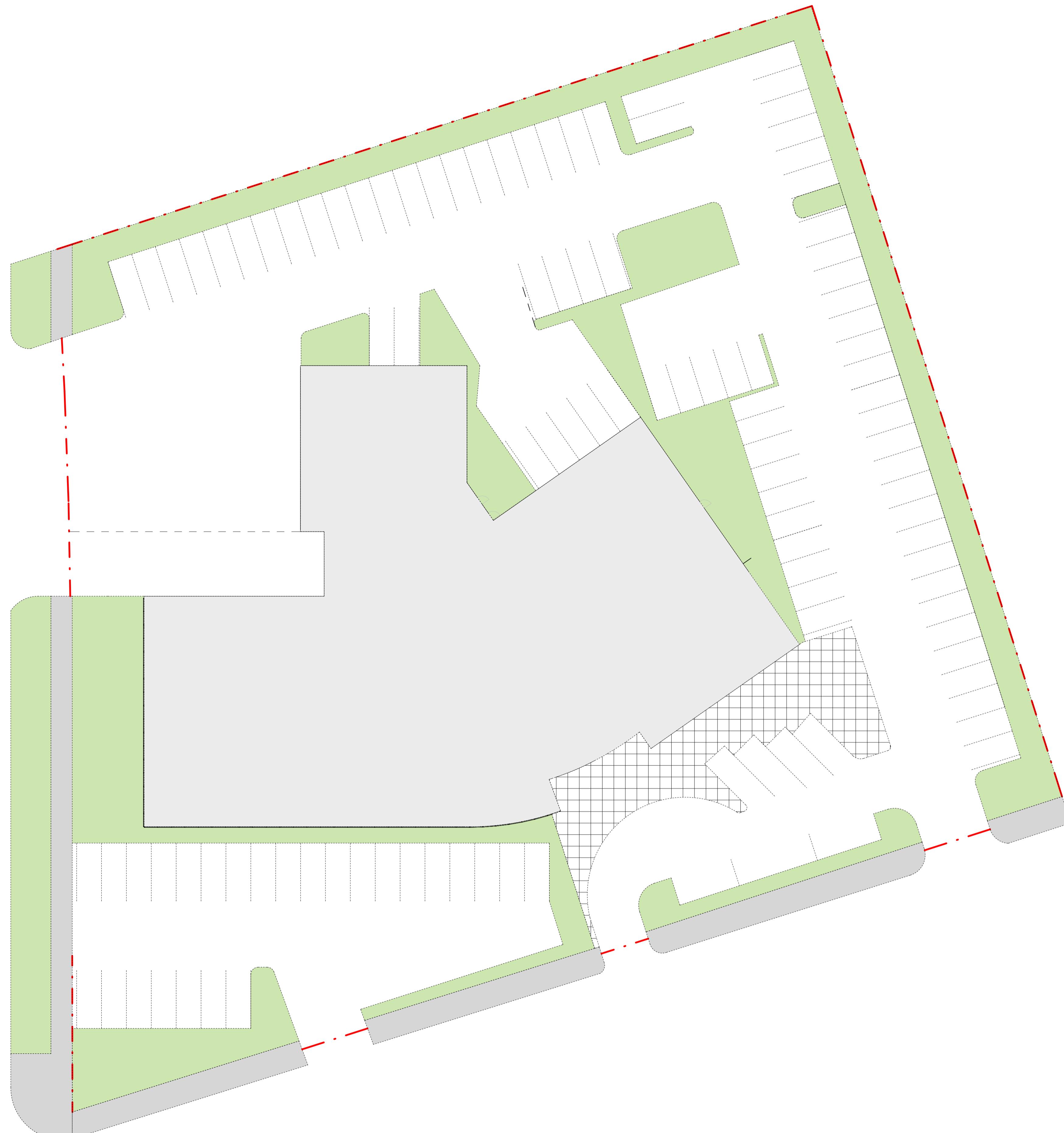
-  MUNICIPAL HALL
-  FIRE DEPARTMENT
-  POLICE

OPTION 2

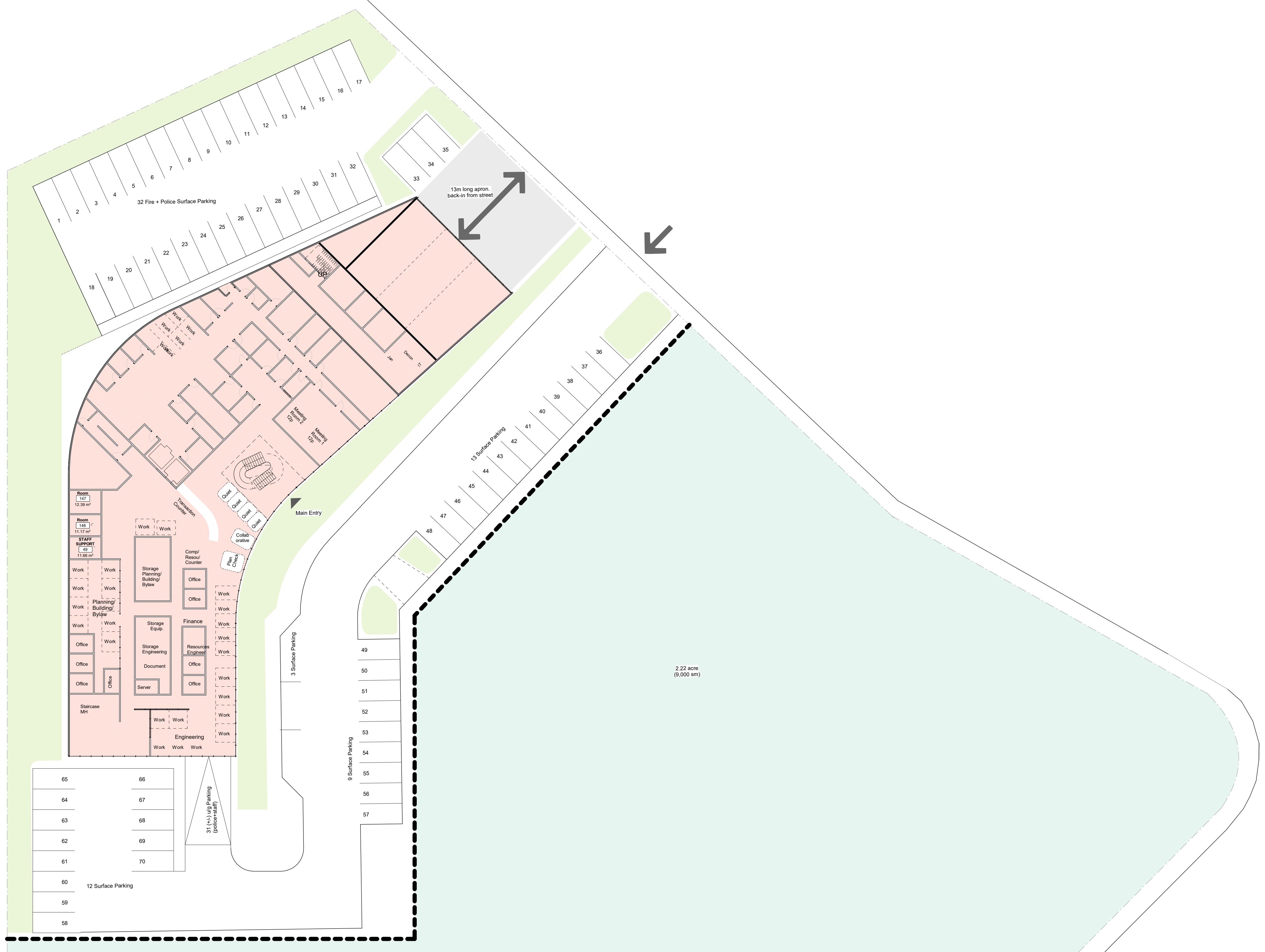


PROGRAM

- MUNICIPAL HALL
- FIRE DEPARTMENT
- POLICE
- RECREATION



1 OPTION 1B+2B - SITE DIAGRAM
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BUILDING INTELLIGENCE



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NOTES:

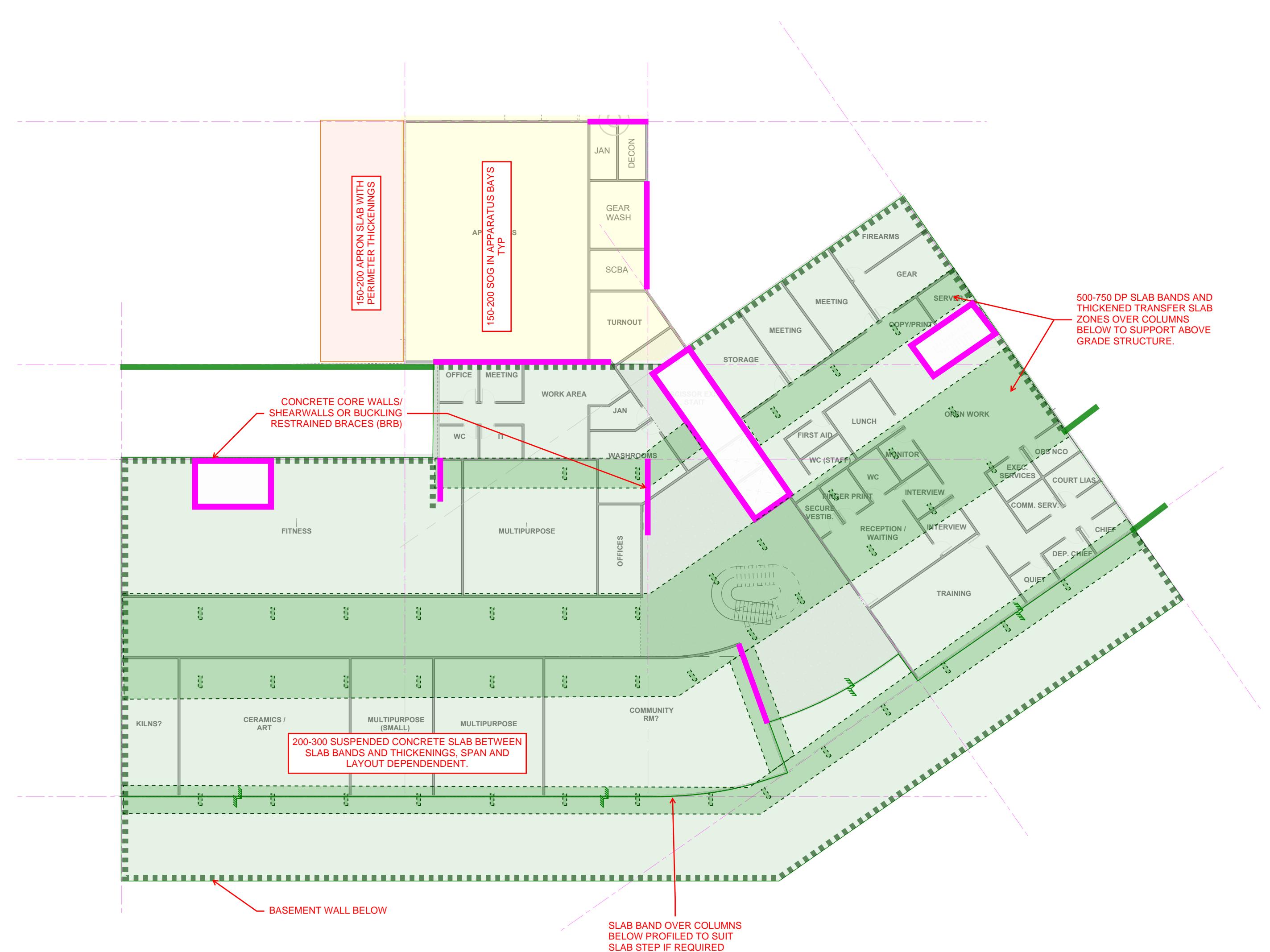
- CONCEPT LAYOUTS SHOWN TO ILLUSTRATE STRUCTURAL SYSTEMS AT EACH LEVEL AND OVERALL DESIGN INTENT ONLY. ELEMENT SIZING AND PLACEMENT TO BE COORDINATED IN FURTHER DESIGN ITERATIONS.
- SKETCHES ON SSK001 AND SSK002 ARE FOR THE HOVEY OPTION 2 DESIGN. HOWEVER THE SYSTEMS WILL BE SIMILAR FOR HOVEY OPTION 1. REFER TO SSK003 FOR BUILDING SECTIONS SHOWING INDICATIVE STRUCTURAL SYSTEMS FOR BOTH OPTIONS.
- DESKTOP GEOTECHNICAL STUDY HAS BEEN PERFORMED BY RYZUK, AND IS COMPARABLE FOR BOTH SITES. SEE TABLE BELOW. FOR FURTHER GEOTECH RECOMMENDATIONS, REFERENCE THE DESKTOP STUDY REPORTS DATED APRIL 10, 2025. FOUNDATION SIZES TO BE CONFIRMED FOLLOWING A DETAILED SITE INVESTIGATION OF THE SELECTED SITE, AND CONFIRMATION OF STRUCTURAL SYSTEM LAYOUT.

Table 1: Design Bearing Resistance Values

Subgrade Material	Strip Footings (SLS/ULS)	Pad Footings (SLS/ULS)
Native stiff to hard brown silty clay*	145 kPa / 218 kPa	170 kPa / 255 kPa
Native dense silty sand and gravel (glacial till)**	250 kPa / 375 kPa	300 kPa / 450 kPa

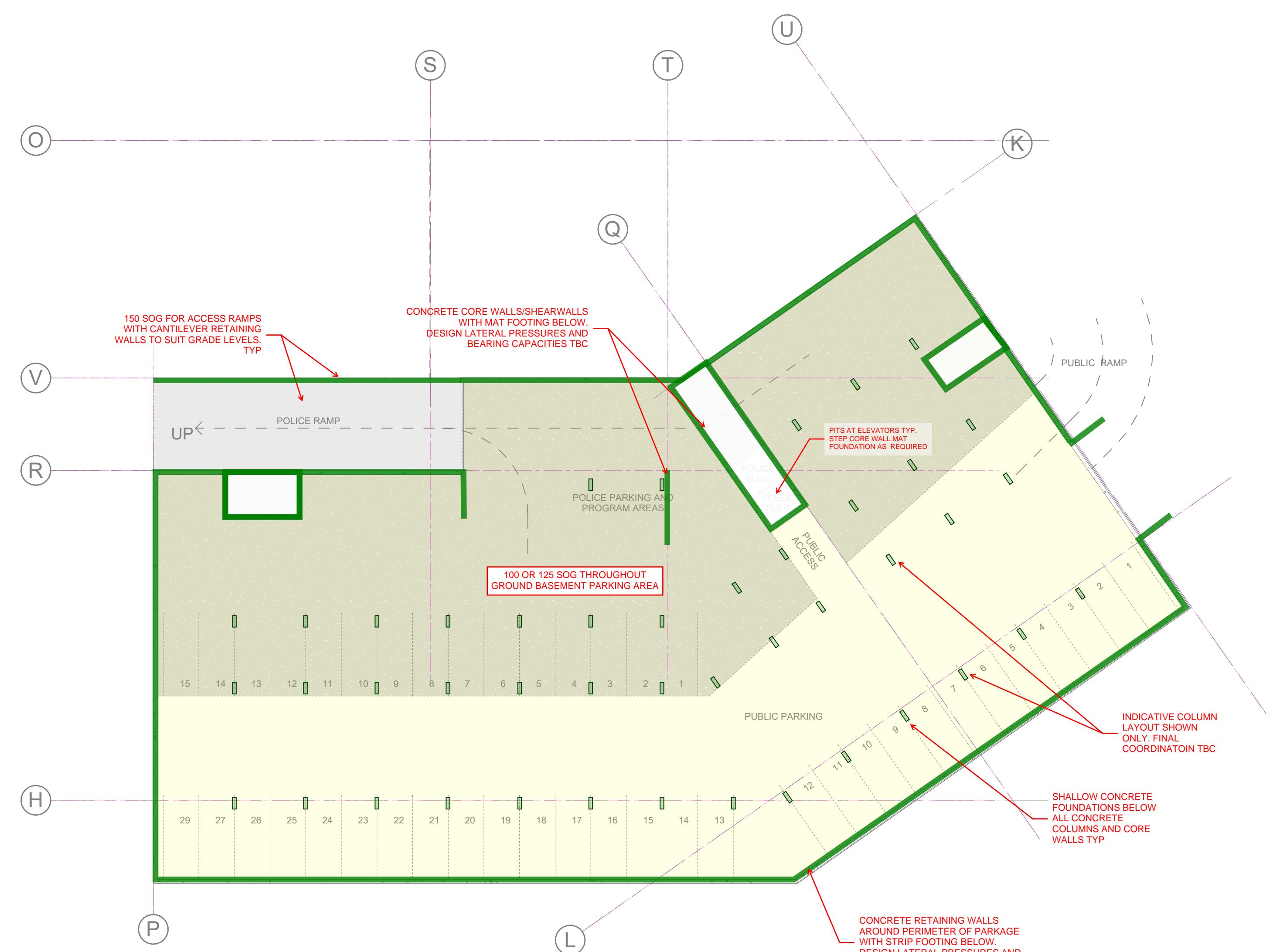
*or engineered fill atop such

**or less than 600 mm of engineered fill atop such



1 L1 PLAN

1:250



0 L0 PLAN

1:250

Central Saanich
Civic Facility
Central Saanich, BC

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April 25, 2025

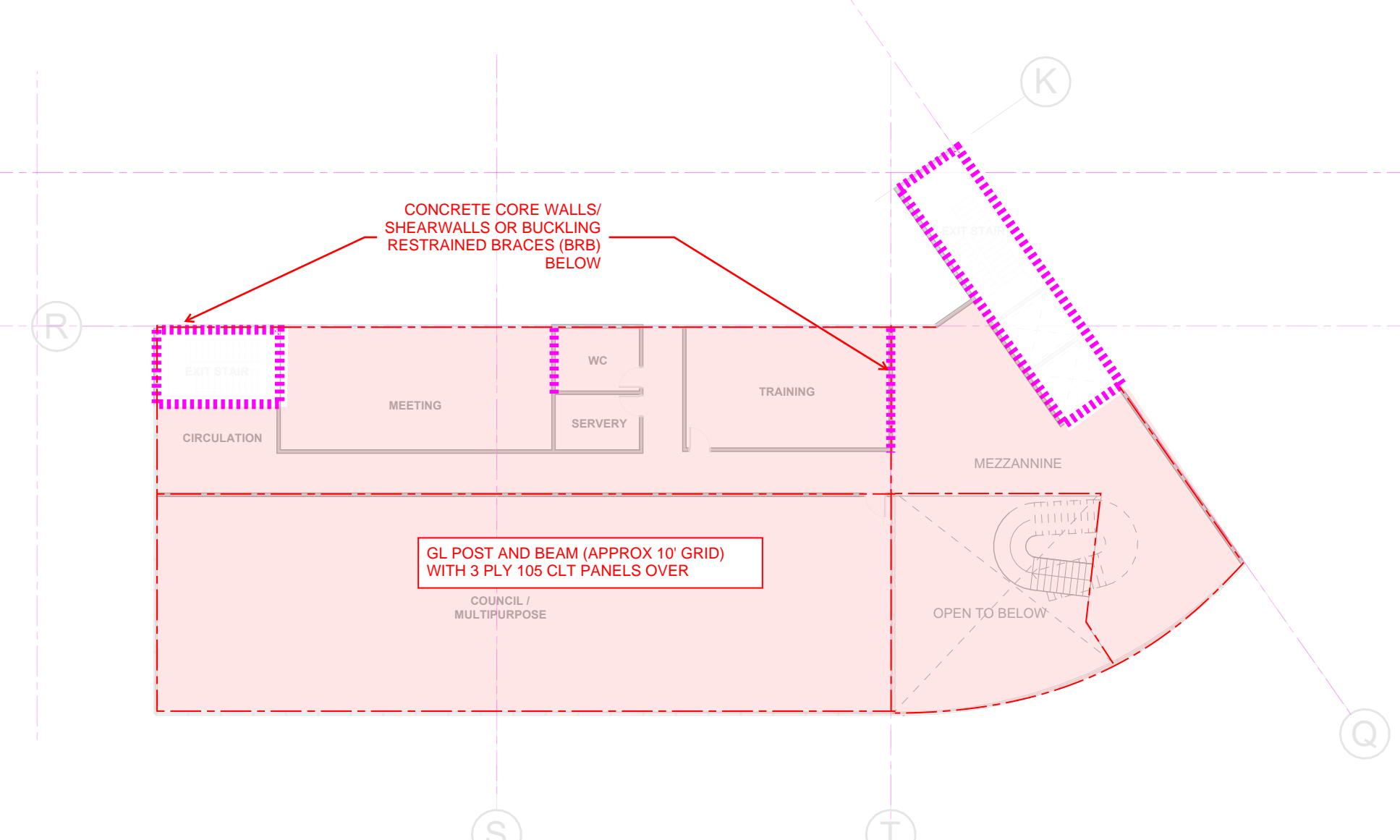
Rev. dd/mm/yy Issued
Project No. 24140
Drawn by FB/CF
Designed by -
Checked by -
Scale 1:250 [Arch D Sheet] NTS

HOVEY OPTION 2
L0 & L1 PLANS

SSK-001



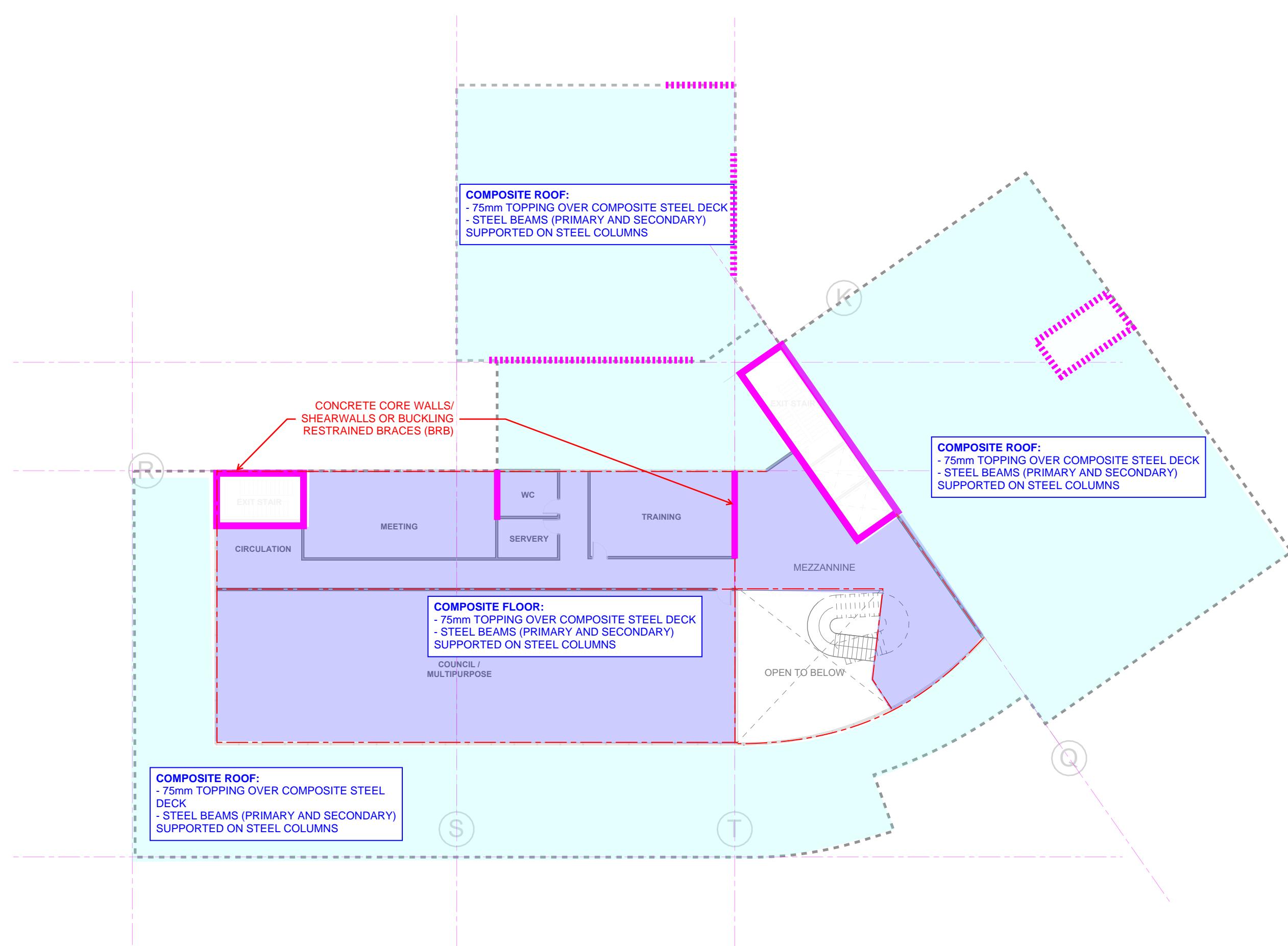
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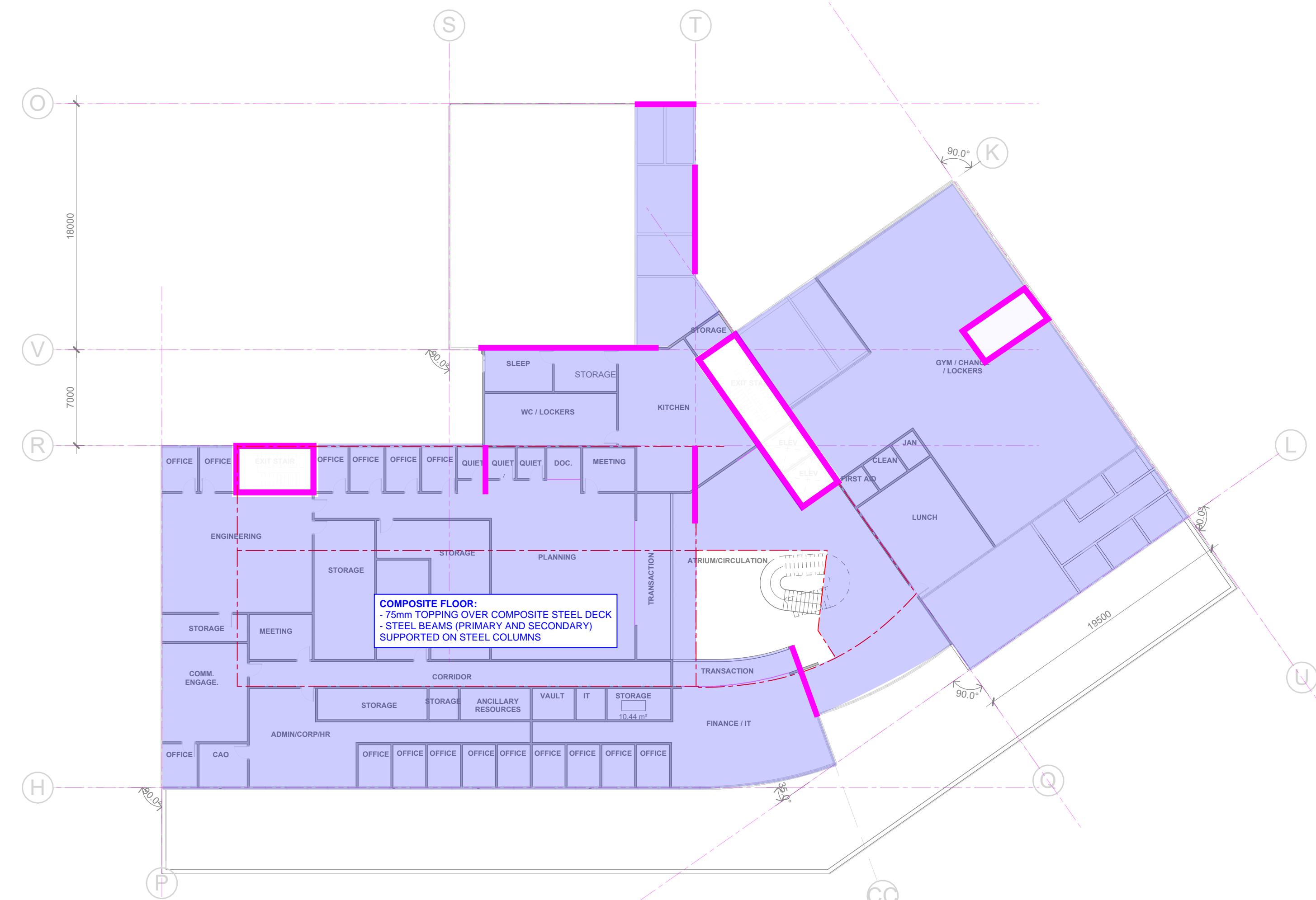
3 ROOF PLAN



1 3D

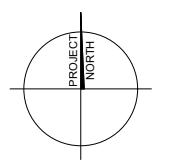


3 L3 PLAN



2 L2 PLAN

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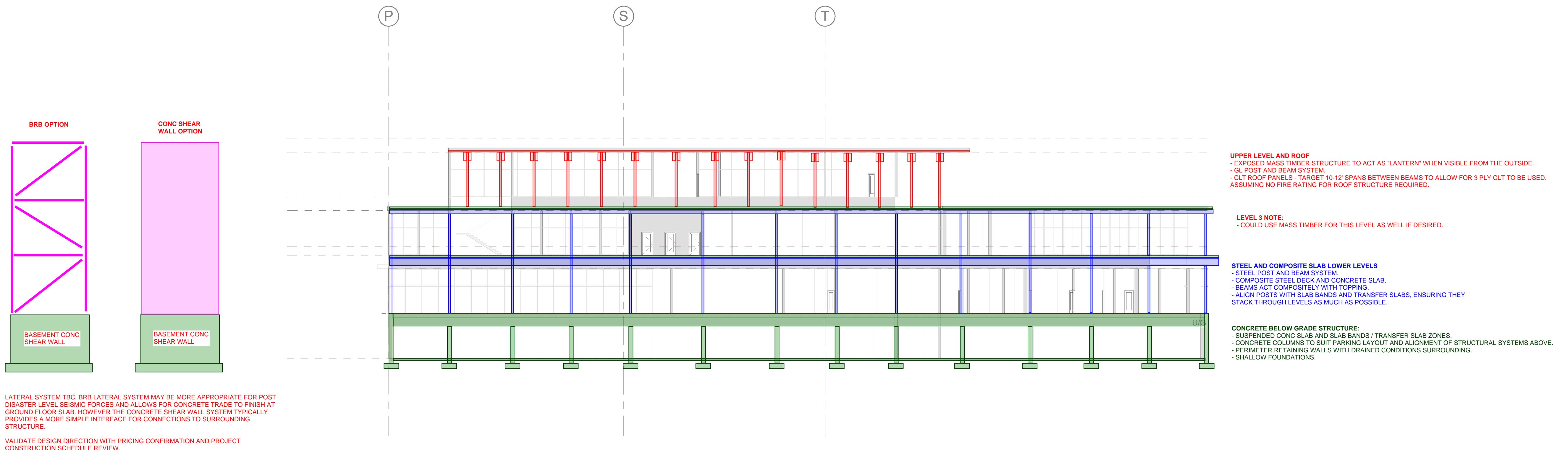
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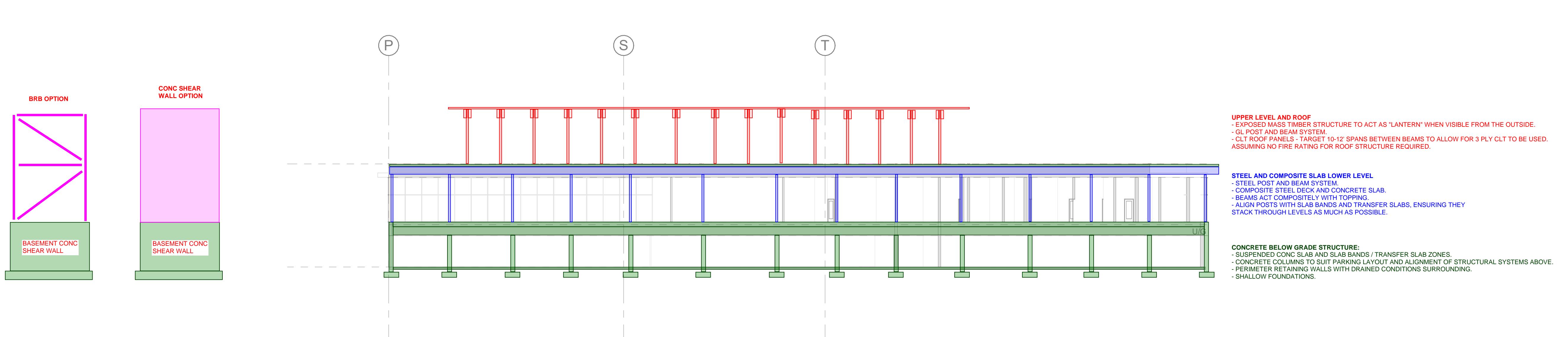
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HOVEY OPTION 2
L1 & L2 PLANS

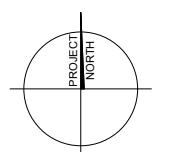
SSK-002



2 HOVEY OPTION 2 - INDICATIVE BUILDING SECTION



1 HOVEY OPTION 1 - INDICATIVE BUILDING SECTION

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HOVEY OPTION 1 AND 2
SECTIONS

SSK-003

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*or engineered fill atop such

**or less than 600 mm of engineered fill atop such

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April 25, 2025

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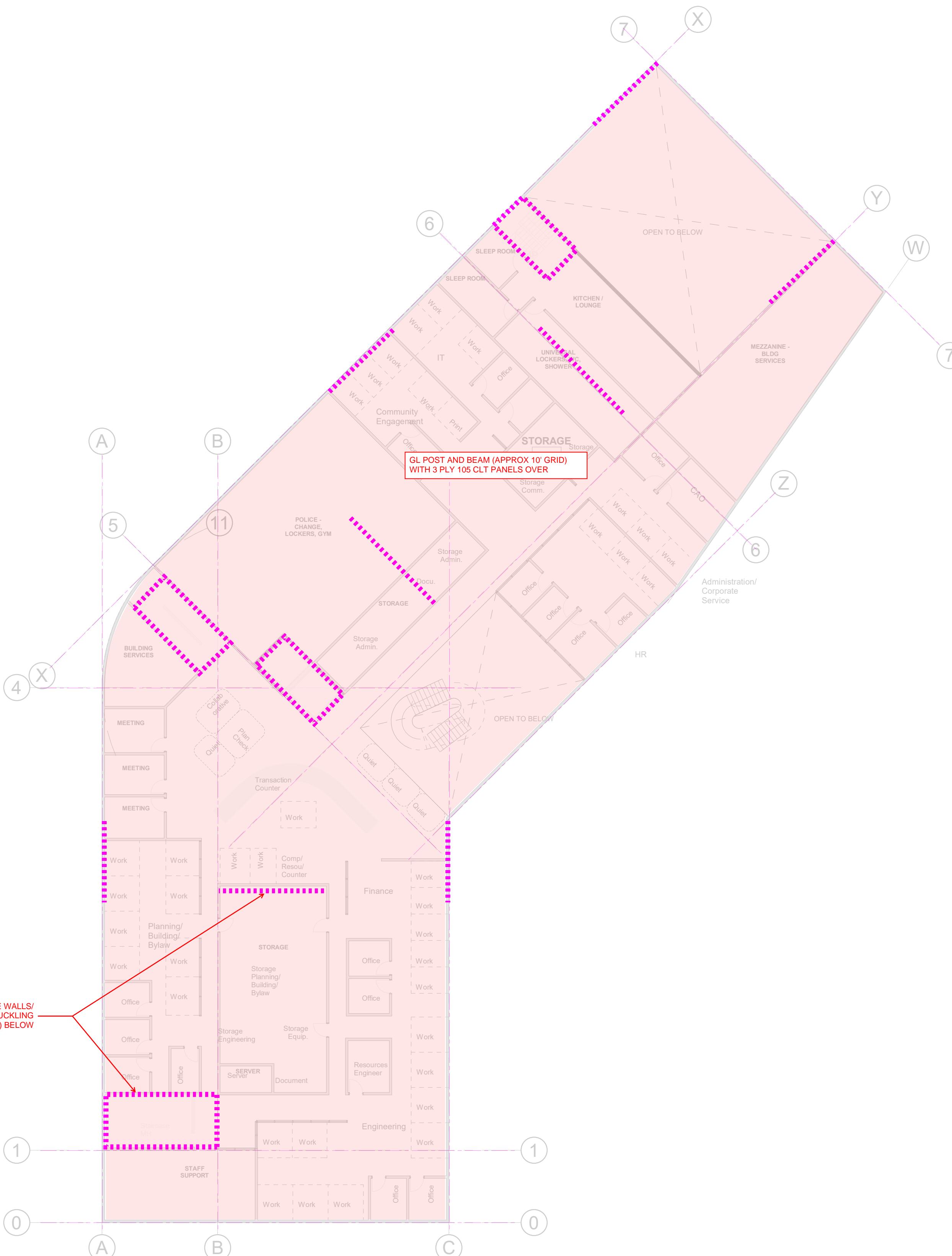
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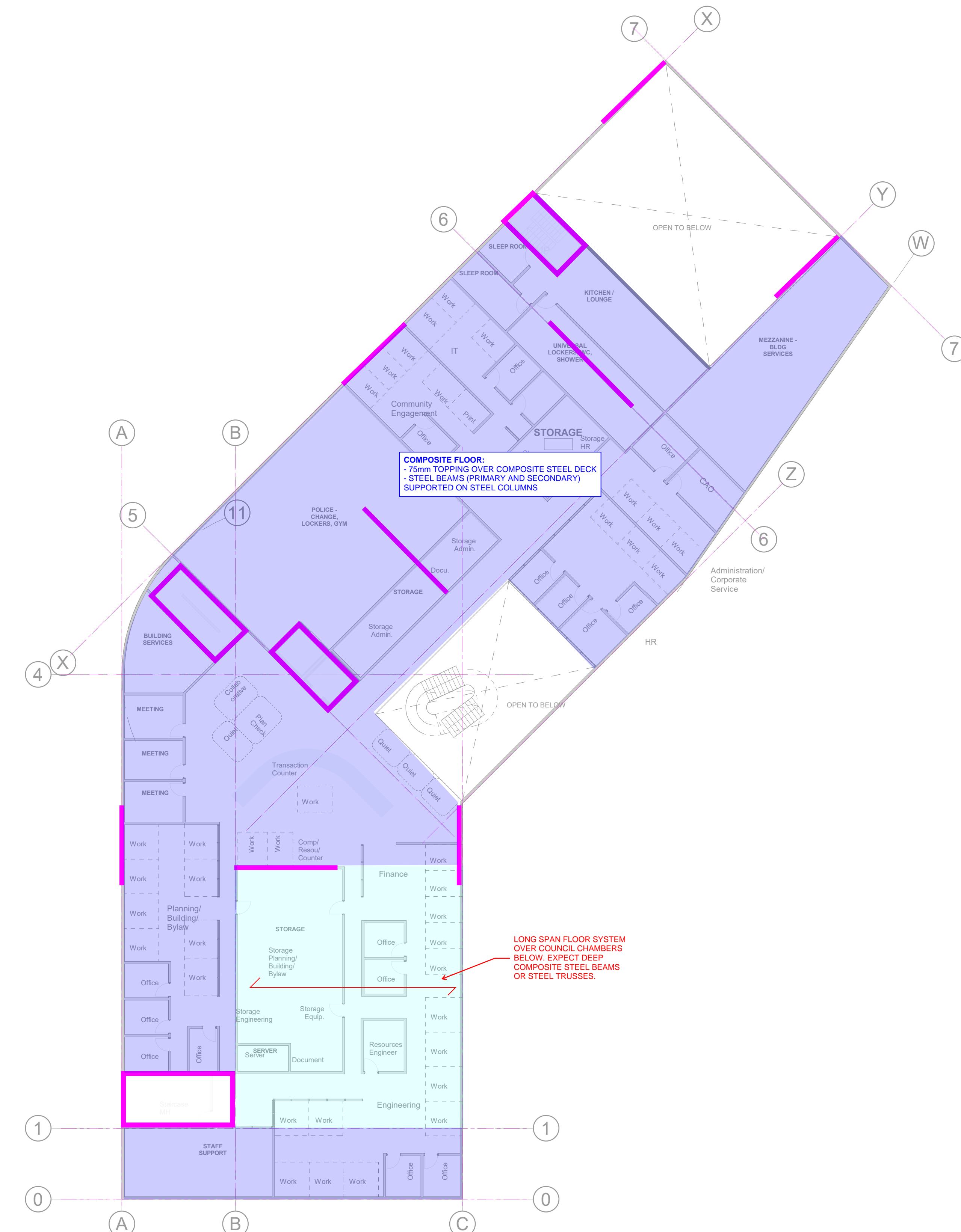
L0 & L1 PLANS

SSK-001



1 ROOF PLAN

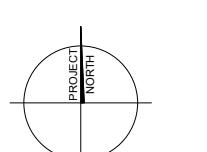
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0 L2 PLAN

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Central Saanich
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Central Saanich, BC



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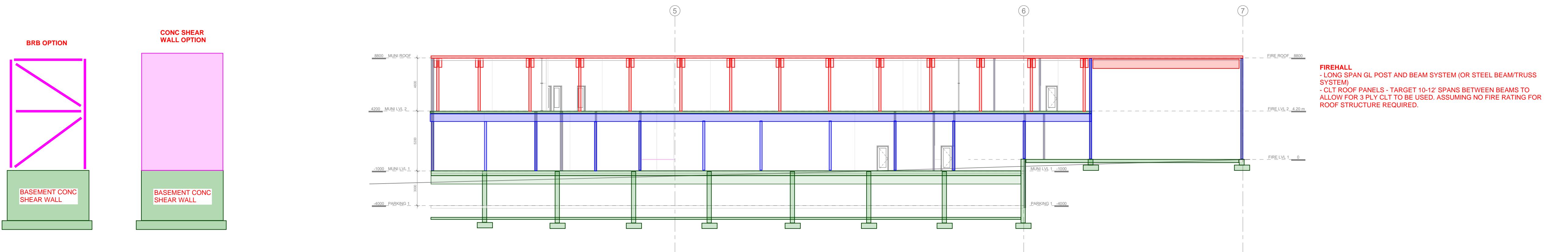
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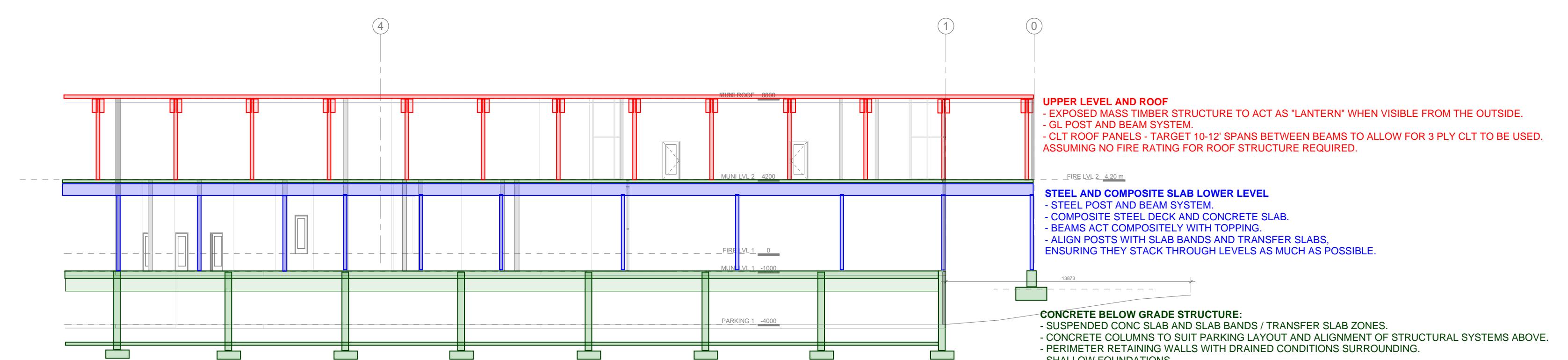
MT NEWTON SITE
L2 & ROOF PLANS

SSK-002

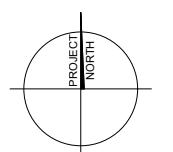
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MT NEWTON SITE - INDICATIVE BUILDING SECTION (NORTH)



Central Saanich
Civic Facility
Central Saanich, BC



FOR INFORMATION ONLY
April 25, 2025

MT NEWTON SITE - INDICATIVE BUILDING SECTION (SOUTH)

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MT NEWTON SITE
SECTIONS

SSK-003



CENTRAL SAANICH CIVIC FACILITY

CONCEPTUAL DESIGN REPORT

April 24, 2025

URBAN
S Y S T E M S

312 - 645 Fort Street, Victoria, BC V8W 1G2 | T: 250.220.7060

CONTACT: Tenille Thompson
E: tthompson@urbansystems.ca

PREPARED FOR:

HCMA Architecture + Design
201-844 Courtney Street
Victoria, BC, V8W 1C4

312 - 645 Fort Street, Victoria, BC V8W 1G2 | T: 250.220.7060

File: 4237.0014.01

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CONCEPTUAL DESIGN - LANDSCAPE AND CIVIL OVERVIEW

1.1 INTRODUCTION

The District of Central Saanich is planning a new civic facility to accommodate municipal offices, fire and police services, and community recreation amenities. This project is a key investment, supporting most of the District's staff.

The District of Central Saanich would like to explore design solutions for the new civic facility at two sites. The first site is located at the intersection of Hovey Road and Wallace Drive. The second design solution desired is for the existing Central Saanich Municipal Hall located at 1903 Mt. Newton Cross Road.



Figure 1: Hovey Road and Wallace Drive



Figure 2: 1903 Mt. Newton Cross Road

1.2 BACKGROUND AND CONTEXT

Central Saanich spans the traditional territory of the WSÁNEĆ peoples, including the W̱JOŁEŁP (Tsartlip) and STÁUTW (Tsawout) First Nations and is home to over 17,000 residents. It features a mix of parks, beaches, trails, and the region's highest concentration of farmland, with over 60% of land in the Agricultural Land Reserve.

Central Saanich was named British Columbia's most resilient community in 2024, reflecting its strong local economy, which is supported by agriculture and a diverse mix of businesses. Growth in the community is focused within the Urban Settlement Area, with key commercial hubs located in Saanichton, Brentwood Bay, and the Keating Business District.

In early 2023, the District of Central Saanich engaged Kasian Architecture to conduct a feasibility study on renewing or replacing several key municipal facilities. These facilities—identified as priorities in the District's asset management and financial plans—include the Municipal Hall (which also houses Police Services), Fire Hall #2, and the Works Yard. Kasian assessed site options and facility configurations to support future planning and cost analysis at both locations.

In late 2024, HCMA Architecture + Design, along with their team of subconsultants, was hired to provide design services for the project. The work is being completed in two phases. Phase 1 involves the development of conceptual designs for the two site options, which will be shared with the public for feedback. In Phase 2, one of the preferred concepts will be advanced to the schematic design stage. This design will support either a referendum or an Alternate Approval Process. If the project is approved, it will move forward into detailed design and construction.

1.3 HOVEY ROAD CONCEPTUAL DESIGN

1.3.1 LANDSCAPE ARCHITECTURE SITE DESIGN

The conceptual landscape design for the Hovey Road site envisions a welcoming, ecologically grounded, and community-focused civic space that connects people to place.

- A new crosswalk on the north side of the Hovey Road and Wallace Drive intersection creates a safe and direct connection between the new civic facility and Centennial Park—an important community asset offering baseball fields, tennis courts, a playground, lawn bowling, picnic areas, and forest trail access.
- At the southwest corner of the site, an entry plaza welcomes visitors with a native plant garden and sculpted berms that rise up to ~1.5 metres along Wallace Drive. These landscaped landforms offer visual screening and a buffer from traffic noise, while creating a natural, immersive arrival experience.

- Within the garden, a small gathering node offers an intimate space framed by moss-covered boulders, rain gardens, and Garry Oak ecosystem plantings. A 3-metre-wide accessible trail that is graded to be 8% and includes a handrail. The path winds through the landscaped berm, linking the entry plaza to Wallace Drive and its north sidewalk.
- Collaboration with Tsartlip and Tsawout First Nations will inform opportunities for cultural expression—such as the potential inclusion of a welcome pole—at a prominent location in the landscape. Informal seating is offered on natural boulders and custom benches, designed with poured-in-place concrete bases and wood tops integrated into the berms.
- Along Wallace Drive, large-caliper street trees (8–10 cm) create a shaded green edge that enhances the building's presence and softens the street. A 4.5-metre-wide boulevard is planted with a short-stemmed meadow mix, reflecting the area's agricultural heritage.
- Transitioning from the entry garden, visitors arrive at the Farm Heritage Plaza—an open-air space defined by long linear rows of plantings and canopy trees (6 cm caliper) that offer moments for rest and gathering. Custom benches with Corten steel bases and cedar seating echo the rural-industrial character of the region.
- The Farm Heritage Plaza leads into a large community gathering plaza designed to accommodate food trucks, market stalls, public art, a monument or cenotaph, and ample seating. This space serves as a civic heart and flexible venue for public events.
- A row of medium-sized trees and low planting along the south property line preserves open views to existing boulevard trees and Centennial Park. Pedestrians can cross the bioswale via a defined connection that links directly to the tennis court entrance.
- A rollover curb with removable bollards at the plaza entry allows for occasional vehicle access during special events or vendor set-up, enhancing flexibility of use.
- A one-way drive along the south edge of the site includes four accessible parking stalls and designated drop-off and waiting spaces, providing convenient access for all users.
- At the main building entrance, three large-caliper heritage trees (10–12 cm) will anchor the space. Significant soil volume and soil cell infrastructure will support their long-term health.
- A spacious patio under the building's southeast canopy will be furnished with various seating types—accommodating groups of two, four, or six—encouraging social interaction and casual use throughout the day.

- Paving throughout the plaza will feature long, linear bands of unit pavers intersected by curvilinear bands of coloured concrete. These patterns will be informed by the building's architectural geometry, reinforcing spatial rhythm and visual interest.
- Pedestrian pathways link parking areas to the main entrance, with planting and a guardrail fence provided along the parkade ramp for safety and visual cohesion.
- A secure fence will separate the municipal staff parking lot from the public parking area, with a gated access point available for staff use if required.
- A private staff patio with tables and chairs offers an outdoor retreat for coffee breaks and lunches, tucked into the landscape for comfort and privacy.



Figure 3: Landscape Concept - Hovey Site

1.3.2 CIVIL DESIGN AND SERVICING

The civil servicing calculations have been undertaken conservatively due to limited existing utility capacity information available. Frontage improvements are focussed on accommodating all modes of travel, implementing the District's proposed facilities from Council-endorsed plans. The design seeks to enhance the infiltration, retention and storage of rainwater.

Underground utility impacts are estimated based approximate floor areas and conservative assumptions where necessary (e.g., building type).

Sanitary:

- Sanitary sewer demands are anticipated to be minor, approximately 0.4 L/s (no recreation facilities) to 0.6 L/s (with recreation facilities)¹. Without a sanitary system model or upstream inputs, existing excess capacity cannot be predicted, although the added demand likely represents less than 1% of the existing 400mm diameter asbestos cement (AC) sewer main's full pipe flow. Upgrades are not anticipated to be required at this stage but should be confirmed with modeling as design progresses.
- A minimum 100mm diameter service connection is proposed from the building to the existing 400mm diameter AC sanitary main along Wallace Drive, PVC DR 35 material, with anticipated length of approximately 20m.

Water:

- Daily water demands are anticipated to be approximately 0.6 L/s (no recreation facilities) and 0.8 L/s (with recreation facilities)².
If future site / programming expansion may include additional water-consuming activities (e.g., fire department training), this should be considered in subsequent design phases to ensure appropriate service capacity.
- Required fire flow estimates based on conservative building construction type and separation distance vary from 200 L/s (Option 1) to 217 L/s (Option 2). This is significant for a building of this size. Typical steel or concrete construction would result in a fire flow reduction of up to 30% from these values.

¹ Water and sanitary demands for both sites calculated using MMCD 2022 Design Guidelines population equivalent for Institutional land use applied to the entire site area. Sanitary demand calculated in line with Central Saanich Engineering Specifications.

² Conservative water demand estimate for Option 2 (with rec facilities) factored up by 50%. Additional check performed assuming 80% of water demand translates to sanitary load, with approximately 200 building users / visitors and non-residential flows in line with the Sewerage System Standard Practice Manual, V3 (BC Ministry of Health).

Existing water infrastructure in the area consists of 100mm AC water main along Hovey Road, tying into 150mm PVC mains either side along E Saanich Road and Wallace Drive. The 150mm water main along E Saanich Road continues north until reaching larger 200 and 250mm pipes at Mt Newton Cross Road.

Given the anticipated fire flow demands of this site, upsizing of the existing 100mm AC water main along Hovey Road is almost certainly required (approx. 260m). It is highly likely that upstream water mains may also need to be upsized as a result; this will need to be confirmed in further design stages with water modeling or input from the District's Water Master Plan. Pipe size and material can be assumed to be minimum 200mm HDPE for costing purposes for any required upsizing.

- It should be assumed for costing purposes that an additional hydrant is required to service the site, although this should be confirmed in further stages of design.
- An approximately 25m long interconnected service connection with separate 150mm diameter domestic and fire flow mains, PVC C-900 material, complete with individual water meters is proposed to the existing 100mm diameter AC water main along Hovey Road. This existing main is likely to require upsizing as discussed above, and should be accounted for in cost estimates for this site.

Storm:

- A combination of on-site infiltration / retention capacity and storage capacity is required to meet provisions in the District's Surface Water Management Bylaw No. 1606. See **Appendix A** for additional calculations. Assumed distribution for costing purposes is proposed to be:
 - Amended topsoil over all pervious areas of the site
 - Approximately 250m² of pavement infiltration area (e.g., permeable pavers or other solutions)
 - An approximately 85m long bioswale along the south edge of the site
 - A stormwater detention tank size of approximately 76m³ if the above is implemented, or 112m³ if no permeable pavers are used (can be cost prohibitive or not approved by municipalities).
- A new storm main is proposed along Wallace Drive, connecting inflows from the proposed rain garden (SE corner of site) and storm detention tank to the existing municipal storm main at the northwest corner of the site. This should be assumed as 250mm PVC DR 35 material, approximately 90m in length, with manholes at each end for costing purposes. No upgrades are anticipated to the existing main at this stage; this should be confirmed in future design phases.
- A service connection from a flow control outlet device (connected to stormwater detention tank) to the proposed storm main on Wallace Drive is anticipated to be approximately 25m in length, PVC DR 35 material, and assumed 200mm in diameter for costing purposes.

- Internal site grading will be required to ensure stormwater flows remain on-site (e.g., from parking areas) and are routed appropriately to the rain garden and/or stormwater detention tank. This will likely require a combination of site grading and internal piping.

Frontage Improvements:

- As discussed in the landscape section above, a new crosswalk on the north side of the Hovey Road and Wallace Drive intersection creates a safe and direct connection between the new civic facility and Centennial Park. Curb extensions will enhance pedestrian refuge space and visually narrow the road width while reducing crossing distance. Rectangular Rapid Flashing Beacons (RRFBs) should be included at this location for costing purposes, although a warrant should be conducted at a later design stage to confirm applicability.
- Active transportation facilities along the Wallace Drive frontage provide safe “All Ages and Abilities” connectivity, including separated bike lanes and wide sidewalks.
- Future improvements on the west side of Wallace Drive include a pedestrian pathway (identified in the Central Saanich Active Transportation Plan), as well as formalized on-street parking and parking-protected bicycle lanes.
- Pedestrian and bicycle connectivity to the Hovey Site from Wallace Drive is achieved through the entry and community plaza spaces. However, for conservative costing purposes, a 1.8m-2.5m separated sidewalk could be considered if a future connection is desired along Hovey Road (the Active Transportation Plan identifies a future roadside pedestrian facility).
- If possible, conversations should be initiated with BC Transit in future to relocate the existing northbound bus stop along Wallace Drive to north of Hovey Road, enabling better access to the site and Centennial Park.

1.4 NEWTON ROAD CONCEPTUAL DESIGN

1.4.1 LANDSCAPE ARCHITECTURE SITE DESIGN

The conceptual landscape design for the Newton Cross Road site envisions a semi-urban plaza and park space that builds on the vibrancy of the Saanichton Town Center by offering gathering, play, and green space in the community core.

Municipal Civic Facility Site

- A woonerf-style elevated crosswalk will create a continuous, curbless surface that visually and physically connects the building's lobby to the outdoor plaza. This shared surface will prioritize pedestrian movement while calming vehicle traffic, reinforcing the site's community-focused design intent.
- Street trees (6-8cm caliper size) in metal grates will be paired with integrated bench seating to provide shaded, comfortable rest areas along the pedestrian corridors. These tree-lined edges will enhance the walkability and human scale of the streetscape.
- Screening along the western edge of the site will incorporate dense planting and potential fencing or vertical elements to provide privacy and acoustic buffering for the adjacent police and fire department parking areas. This treatment will ensure operational zones remain discreet and protect neighbouring properties from disturbance.

Offsite Future Development

- The central public plaza will offer an open, flexible space framed by generous seating opportunities, creating a welcoming environment for gathering, informal play, and community events. At its heart, a designated location for a flagpole or piece of public art will serve as a visual anchor and cultural landmark within the space.
- Paving throughout the woonerf and plaza will feature linear bands that guide movement and recall the historic agricultural rows of the region. This patterning will be reinforced by allées of trees, establishing spatial rhythm and a strong visual framework within the semi-urban setting.
- Planting will include a mix of evergreen species to maintain structure and year-round presence, complemented by soft, grassy textures that reference the surrounding rural landscape. Seasonal variation in color and texture will enrich the site experience while reinforcing its agricultural character.

- Adjacent to the plaza, a children's play area will be bordered by seating to provide comfort and visibility for caregivers, while promoting social interaction and multigenerational use.
- A connected open space will extend between the buildings, integrating trails that support casual recreation, nature immersion, and pedestrian connectivity. Planting in this area will focus on native and culturally significant species to reflect the ecological and Indigenous history of the area.
- At the northeast corner, a small urban plaza will activate the street edge and create a welcoming connection between the site and the downtown Saanichton area, encouraging movement into and through the broader development.



Figure 4: Landscape Concept - Mt. Newton Cross Road Site including Municipal Civic Facility and future development site

1.4.2 CIVIL DESIGN AND SERVICING

The civil servicing calculations have been undertaken conservatively, with limited existing utility capacity information available. Frontage improvements are focussed on accommodating all modes of travel, implementing the District's proposed facilities from Council-endorsed plans. The design seeks to enhance the infiltration, retention and storage of rainwater.

Underground utility impacts are estimated based approximate floor areas and conservative assumptions where necessary (e.g., building type).

Sanitary:

- Sanitary sewer demands are anticipated to be minor at approximately 0.4 L/s. Without a sanitary system model or upstream inputs existing excess capacity cannot be predicted, although the added demand likely represents less than 2% of the existing 200mm diameter vitrified clay (VC) sewer main's full pipe flow. Capacity upgrades are not anticipated to be required at this stage but should be confirmed with modeling as design progresses. Any upgrades to replace sewer material due to age should be considered separate from this project for costing and comparison purposes.
- A minimum 100mm diameter service connection is proposed from the building to the existing 200mm diameter VC sanitary main along Mt Newton Cross Road, PVC DR 35 material, with anticipated length of approximately 26m to the building.

Water:

- Daily water demands are anticipated to be approximately 0.6 L/s.
If future site / programming expansion may include additional water-consuming activities (e.g., fire department training), this should be considered in subsequent design phases to ensure appropriate service capacity.
- The estimated required fire flow based on conservative building construction type and separation distance is 217 L/s. This is significant for a building of this size. Typical steel or concrete construction would result in a fire flow reduction of up to 40% from these values.
Existing water infrastructure in the area consists of 200mm AC water main along Mt Newton Cross Road. No upgrades are anticipated at this stage resulting from redevelopment demand; this should be confirmed with modeling at a later date.
- It should be assumed for costing purposes that an additional hydrant is required to service the site, although this should be confirmed in further stages of design.
- An approximately 20m long interconnected service connection with separate 150mm diameter domestic and fire flow mains, PVC C-900 material, complete with individual

water meters is proposed to the existing 200mm diameter AC water main along Mt Newton Cross Road.

Storm:

- A combination of on-site infiltration / retention capacity and storage capacity is required to meet provisions in the District's Surface Water Management Bylaw No. 1606. See **Appendix A** for additional calculations. Assumed distribution for costing purposes is proposed to be:
 - Amended topsoil over all remaining pervious areas of the site
 - Approximately 320m² of pavement infiltration area (e.g., permeable pavers or other solutions)
 - A stormwater detention tank size of approximately 71m³ if the above is implemented, or 119m³ if no permeable pavers are used (can be cost prohibitive or not approved by municipalities). Placement of the storm tank should be determined at a later design stage, accounting for existing site drainage primarily flowing north to south.
- A service connection from a flow control outlet device (assumed in line with building footprint) to the existing municipal storm main along Scohon Drive is conservatively estimated at 50m in length, PVC DR 35 material, and assumed 200mm in diameter for costing purposes.

Frontage Improvements:

- Active transportation facilities along the Mt Newton Cross Road frontage will provide safe "All Ages and Abilities" connectivity, including separated bike lanes and wide sidewalks in alignment with the District's Saanichton Village Design Plan. These should be raised at the entrances for emergency vehicles and at the fire hall apron, to emphasize vulnerable road user presence.
- The Mt Newton Cross Road / Wallace Drive intersection is envisioned as compact on the southeast corner, with additional space achieved through the future removal of the eastbound channelized right turn lane. Curb extensions are proposed here to narrow vehicle lanes, aligning with the Saanichton Village Design Plan.
- Active transportation facilities along Wallace Drive align with the District's Active Transportation Plan to prioritize All Ages and Abilities infrastructure, including sidewalks and physically protected uni-directional bike lanes.

APPENDIX A.

**PRELIMINARY STORMWATER
CALCULATIONS**

Calculated per the Central Saanich Surface Water Management Bylaw No. 1606, line item 7:

6. In the case of construction of a single-family or two-family dwelling, where the total area of roof areas and impermeable surfaces is less than 400 square metres, the Owner must install and maintain in perpetuity on-site works providing at least the minimum volume of water storage and not more than the maximum outlet diameter specified in Schedule A in respect of the roof areas and impermeable surfaces proposed to be constructed on the parcel, unless the Owner elects to provide alternative facilities for disposing of surface water run-off and storm water on the parcel and provides to the Municipal Engineer a Run-off Control Plan for such facilities, and the Municipal Engineer approves the plan.
7. In the case of construction other than that described in Section 6, the building permit application shall be accompanied by a Run-off Control Plan prepared by a Professional Engineer, who has certified in writing that installation and maintenance of the works identified on the Run-off Control Plan will on an ongoing basis provide:
 - (a) a combined infiltration and retention capacity greater than or equal to the depth of 28 mm of water over the area of the parcel;
 - (b) water storage capacity on the parcel equal to at least the depth of 15 mm of water over all impermeable areas of the parcel; and
 - (c) a device limiting the stormwater flow from the parcel to the public drainage system to a maximum of 17.5 litres per second per hectare of parcel area.

Run-off Control Plans prepared in accordance with this Section shall be submitted for review and approval by the Municipal Engineer prior to the issuance of the building permit authorizing the construction.

Mt. Newton Site Hovey Road Site

	Mt. Newton Site	Hovey Road Site
Approximate Property Area (m ²)	5600	9028
* Property area for Mt. Newton site does not include new internal road; to be calculated at a later date		
Approximate Impervious Area %, rounded	85%	70%
Impervious Area (m ²)	4760	6320

Required Surface Water Management Parameters (per Bylaw No. 1606, Item 7):

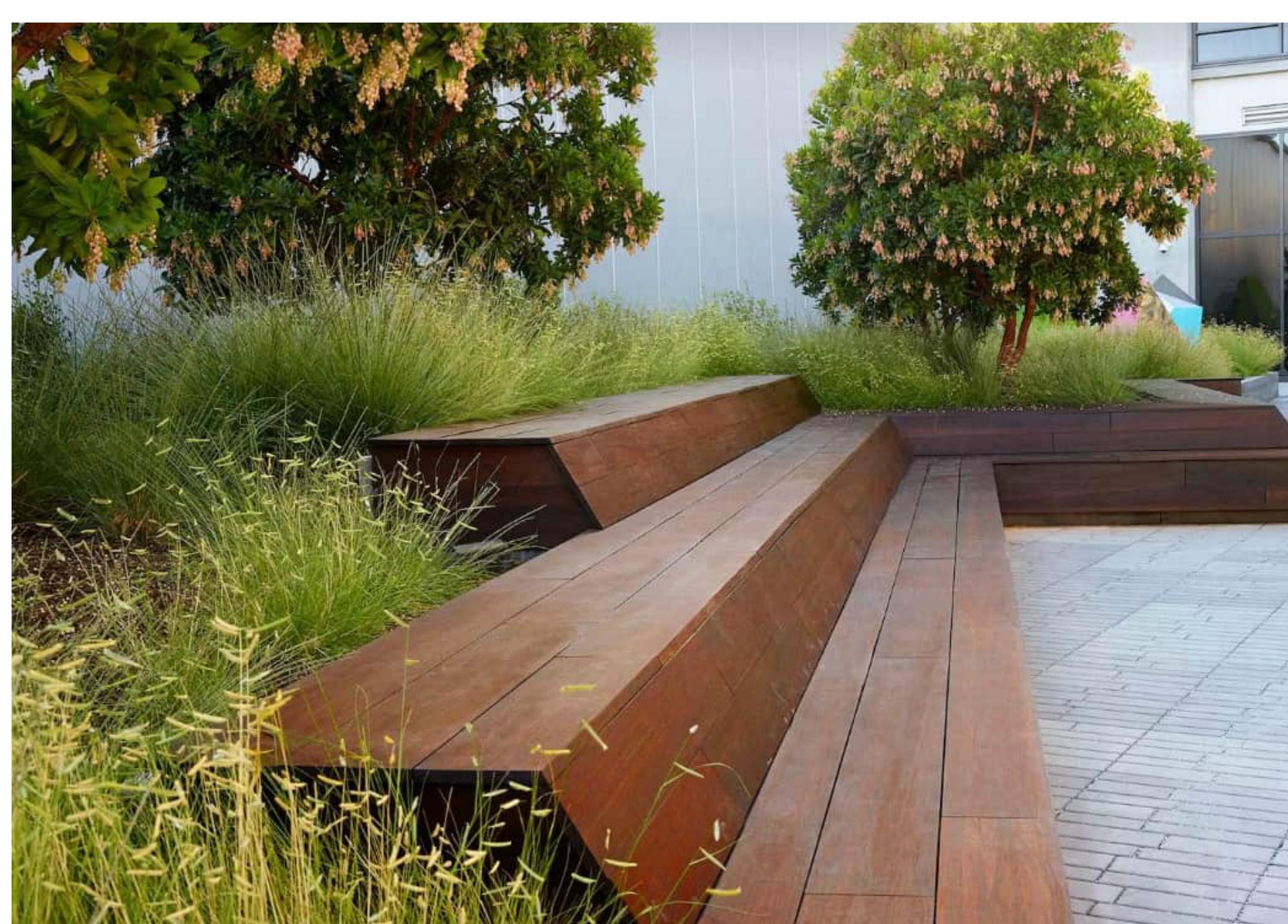
a) Combined infiltration + retention capacity >=			
28mm depth over parcel area (m ³)	157	253	
b) Water storage capacity = 15mm depth over impermeable areas of parcel (m ³)	71	95	
c) Maximum allowable stormwater release rate (L/s)	9.8	15.8	

Surface Water Management Capacity Checks:

Infiltration Capacity - Ammended Topsoil (m ³)	38	122	Assumes 150mm topsoil over all pervious areas of site
Infiltration Capacity - Pavement Infiltration (m ³)	300	300	Permeable pavers (assumed 150mm), all paved areas
Retention / Storage Capacity - Bioswale (m ³)	N/A	19	Typical bioswale along south extent of Hovey site (85m)

Assumed site distribution:

Infiltration Capacity - Ammended Topsoil (m ³)	38	122	150mm topsoil over all pervious areas of site
Infiltration Capacity - Pavement Infiltration (m ³)	48	36	Approx. 320m ² , 250m ² of pavement infiltration area, respectively
Retention Capacity - Bioswale (m ³)	0	19	Typical bioswale along south extent of Hovey site (85m)
Storage Capacity - Detention Tank Assumed (m ³)	71	76	Est. volume to meet water storage req., incl. bioswale

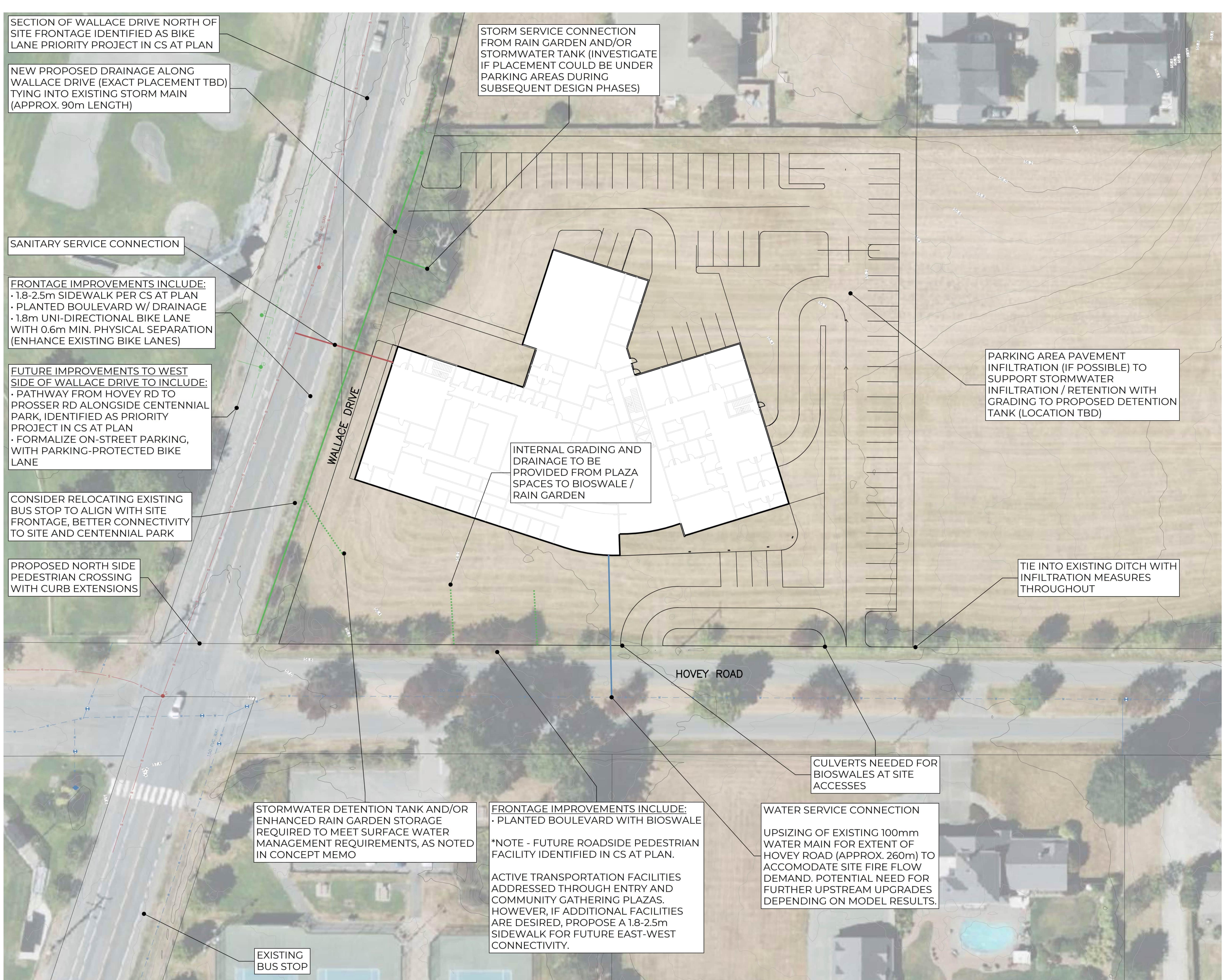


CENTRAL SAANICH CIVIC FACILITY

HOVEY SITE - LANDSCAPE CONCEPT PLAN

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URBAN SYSTEMS

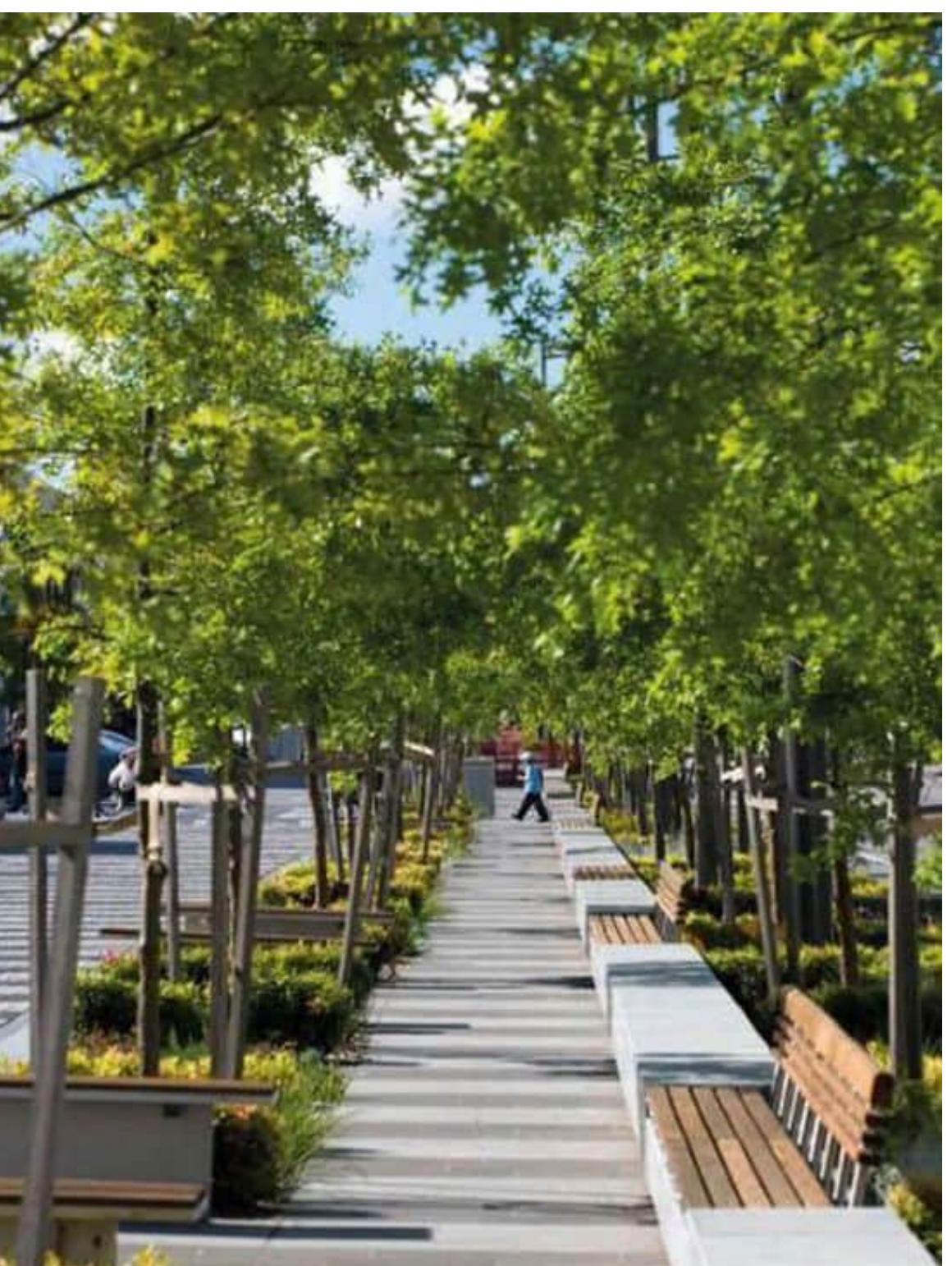
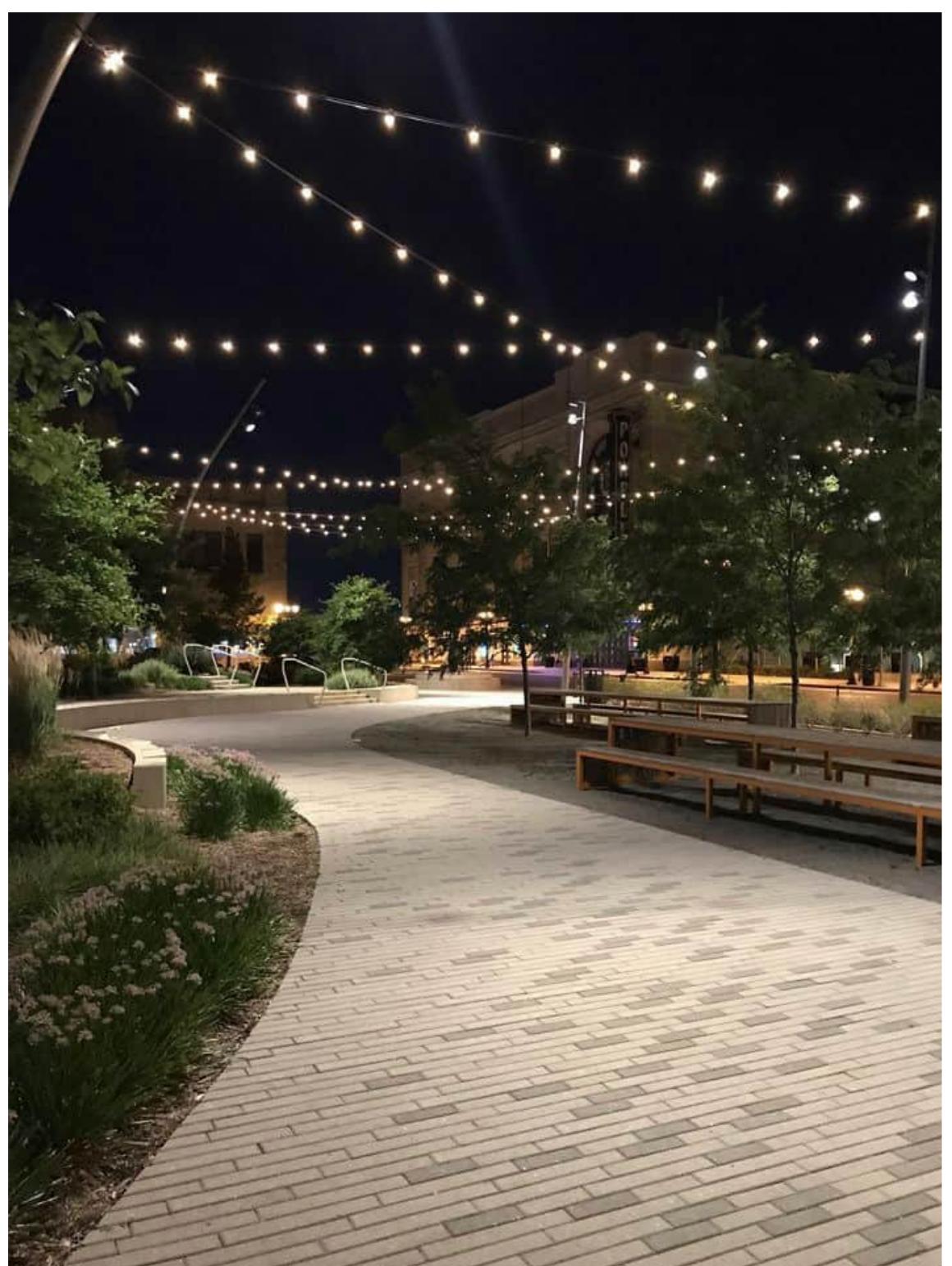


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CENTRAL SAANICH CIVIC FACILITY

HOVEY SITE - CIVIL SERVICING

URBAN
SYSTEMS



FIRE AND POLICE ENTRANCE

PLANTED SCREENING
BETWEEN POLICE
AND FIRE PARKING
+ NEIGHBOURING
PROPERTIES

PEDESTRIAN ACCESS
TO EXISTING TRAIL
NETWORK



CENTRAL SAANICH CIVIC FACILITY
1903 MT. NEWTON CROSS ROAD- LANDSCAPE CONCEPT PLAN

URBAN
SYSTEMS

MEMO

DATE: May 29, 2025
PROJECT NO: 08-25-0065
PROJECT: **Central Saanich Civic Facility**
SUBJECT: **Transportation Perspectives for Site Selection**

TO: Adam Fawkes
HCMA

PREPARED BY: Jason Potter, PTP, Senior Transportation Planner / Associate
Bunt & Associates Engineering Ltd.

REVIEWED BY: Christephen Cheng, P.Eng. Principal In Charge
Bunt & Associates Engineering Ltd.

This Memo provides transportation perspectives for two contemplated development locations for a future new Central Saanich Civic Facility. This Memo will address the following for each site:

- Anticipated traffic impacts to adjacent road networks
- Parking opportunities and considerations
- Multi-modal opportunities and constraints

1. PROPOSED DEVELOPMENT

Central Saanich is considering redeveloping its existing Municipal Hall, Police and Fire Service facility. Two sites are being considered, they are:

1. The existing site (referred to herein as **Mt Newton Cross Site**)
2. A site on the northeast corner of Wallace Drive and Hovey Road intersection (referred to herein as **Hovey Site**)

The two locations are shown in **Exhibit 1.1**

This Memo will inform site selection. After a preferred site is selected, Bunt will elaborate our traffic and parking analysis with a comprehensive transportation impact assessment of the selected site.

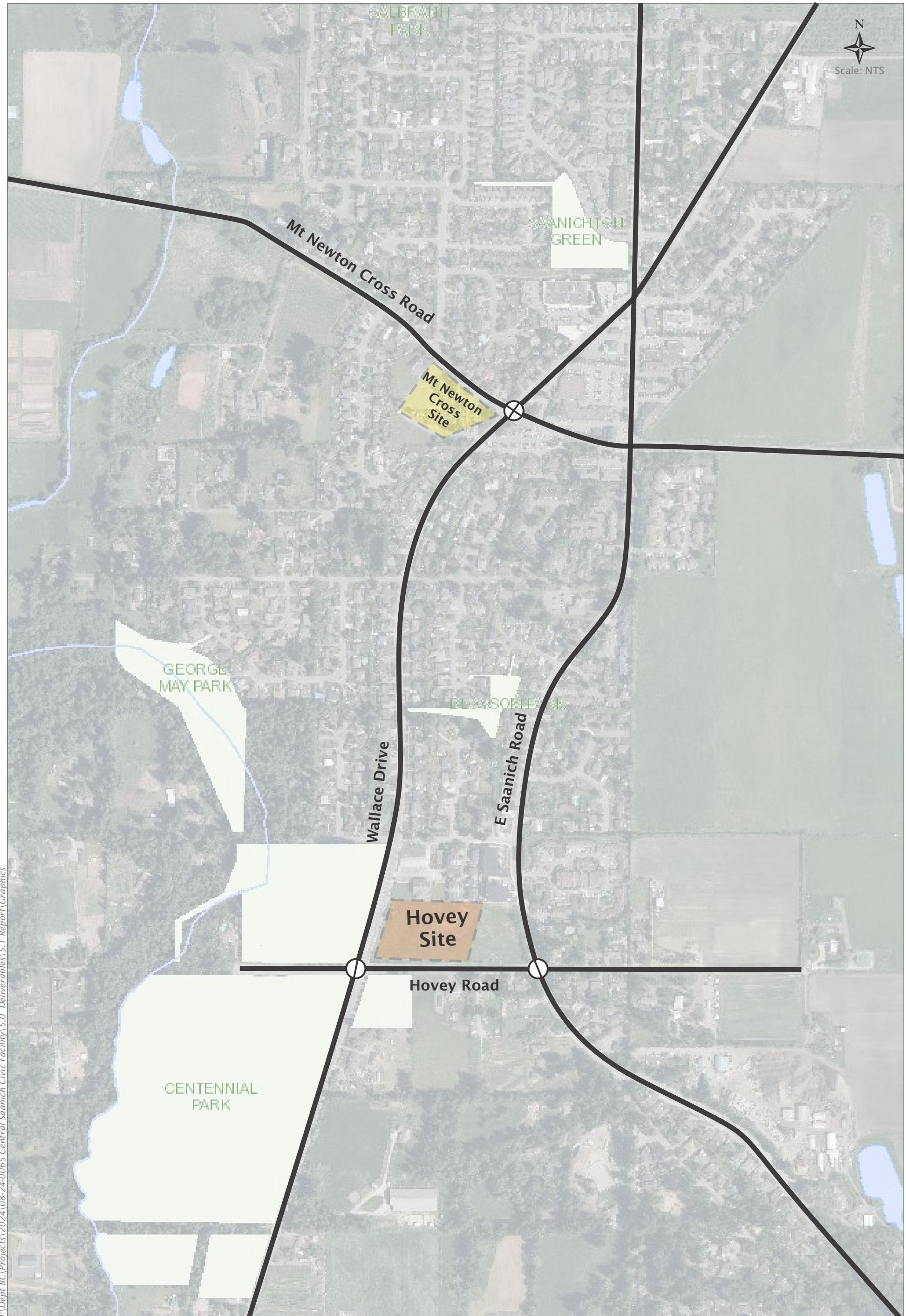


Exhibit 1.1
Site Location

Central Saanich Civic Facility
08-24-0065 May 2025

bunt
& associates

2. TRAFFIC ANALYSIS

2.1 Mount Newton Cross Site

2.1.1 Land Use

The Mount Newton Cross location is at the site of the existing Central Saanich Municipal Hall location. The development plan at this location is to continue Police, Municipal Hall and Fire services with new buildings and to then section off the southeast portion of the site for separate development, which is expected to be primarily residential with approximately 1,500 square feet of commercial land use.

2.1.2 Road Network

The Mt Newton Cross Road site is bounded by Mt Newton Cross Road to the north and Wallace Drive to the east.

Mt. Newton Cross Road is a two-lane collector road (one travel lane in each direction) with curbside parking along the site's frontage (south side of road).

Wallace Drive is a two-lane (one travel lane in each direction) arterial road; it does not have curbside parking along the site's frontage. Wallace Drive is a BC transit route. There are plans to introduce cycling lanes along Wallace Drive.

The Wallace Drive & Mt Newton Cross Road intersection operates under 4-way stop control. Both the Wallace Drive approaches have two lanes at the intersection while the Mt Newton Cross Road approaches have one approach lane.

2.1.3 Existing Traffic Volumes

Bunt collected weekday AM and PM peak period traffic counts at the Wallace Drive & Mt Newton Cross Road intersection on Thursday March 13, 2025. Heavy vehicles, bicycles, and pedestrians were also counted. From the count data, the peak vehicle traffic hour was identified to occur from 4:00pm to 5:00pm.

As the weekday PM peak hour was found to be the critical time period reporting herein is minimized to PM period analysis.

2.1.4 Existing Traffic Operations

Performance Thresholds

The existing operations of study area intersections and access points were assessed using the methods outlined in the 2000 Highway Capacity Manual (HCM), using the Synchro 11 analysis software (Build 1). Synchro is a software used in the Transportation Engineering industry to model

traffic operations of intersections. The traffic operations were assessed using the performance measures of Level of Service (LOS), volume-to-capacity (V/C) ratio, and 95th percentile queue length.

The LOS rating is based on average vehicle delay and ranges from "A" to "F" based on the quality of operation at the intersection. LOS "A" represents optimal, minimal delay conditions while a LOS "F" represents an over-capacity condition with considerable congestion and/or delay. Delay is calculated in seconds and is based on the average intersection delay per vehicle.

Table 2.1 below summarizes the LOS thresholds for the six Levels of Service for unsignalized intersections.

Table 2.1: Intersection Level of Service Thresholds

LEVEL OF SERVICE	AVERAGE CONTROL DELAY PER VEHICLE (SECONDS)
	UNSIGNALIZED
A	≤10
B	>10 and ≤15
C	>15 and ≤25
D	>25 and ≤35
E	>35 and ≤50
F	>50

Source: Highway Capacity Manual

The volume to capacity (V/C) ratio of an intersection represents ratio between the demand volume and the available capacity. A V/C ratio less than 0.85 indicates that there is sufficient capacity to accommodate demands and generally represents reasonable traffic conditions in suburban settings. A V/C value between 0.85 and 0.95 indicates an intersection is approaching practical capacity; a V/C ratio over 0.95 indicates that traffic demands are close to exceeding the available capacity, resulting in saturated conditions. A V/C ratio over 1.0 indicates a very congested intersection where drivers may have to wait through several signal cycles. In downtown and town-centre contexts, during peak demand periods, V/C ratios over 0.90 and even 1.0 are common.

The 95th percentile queue is defined as the length that has only a 5-percent probability of being exceeded during the analysis time period. It is a useful parameter for determining the appropriate length of turning storage bays, but it is not typical of what an average driver would experience.

The performance thresholds that were used to trigger consideration of roadway or traffic control improvements to support roadway or traffic control improvements employed in this study are listed below:

Unsignalized Intersections:

- Individual movement Level of Service = LOS E or better, unless the volume is very low in which case LOS F is acceptable.

In interpreting of the analysis results, note that the HCM methodology reports performance differently for various types of intersection traffic control. In this report, the performance reporting convention is as follows:

- For unsignalized two-way stop-controlled intersections: HCM 2000 LOS and V/C output is reported just for individual lanes as the HCM methodology does not report overall performance. SimTraffic estimated queues and delays have also been reported, as the HCM 2000 methodology does not directly take into account the gaps afforded by adjacent signalized intersections;
- For unsignalized All-way Stop controlled intersections: HCM 2000 unsignalized LOS is reported for the overall intersection as well as by intersection approach LOS. The HCM 2000 methodology does not report an overall V/C ratio for All Way Stop controlled intersections. Degree of Utilization calculated with the HCM 2000 methodology is reported for individual movements in place of V/C, which is not part of the HCM 2000 report.

The performance reporting conventions noted above have been consistently applied throughout this document and the detailed outputs are provided in **Appendix A**.

2.1.5 Traffic Operations Findings

As shown in **Exhibit 2.1**, the existing PM peak hour encounters delays and volume to capacity ratios that are within operational thresholds and hence would not require mitigation from a vehicle operations perspective.

It is however noted (and discussed further in Section 4) that the Wallace Drive & Mt Newton Cross Road intersection may benefit from pedestrian infrastructure improvements. Future residential and commercial development at this site would increase pedestrian volume at this intersection which would further increase the need for pedestrian level improvements.

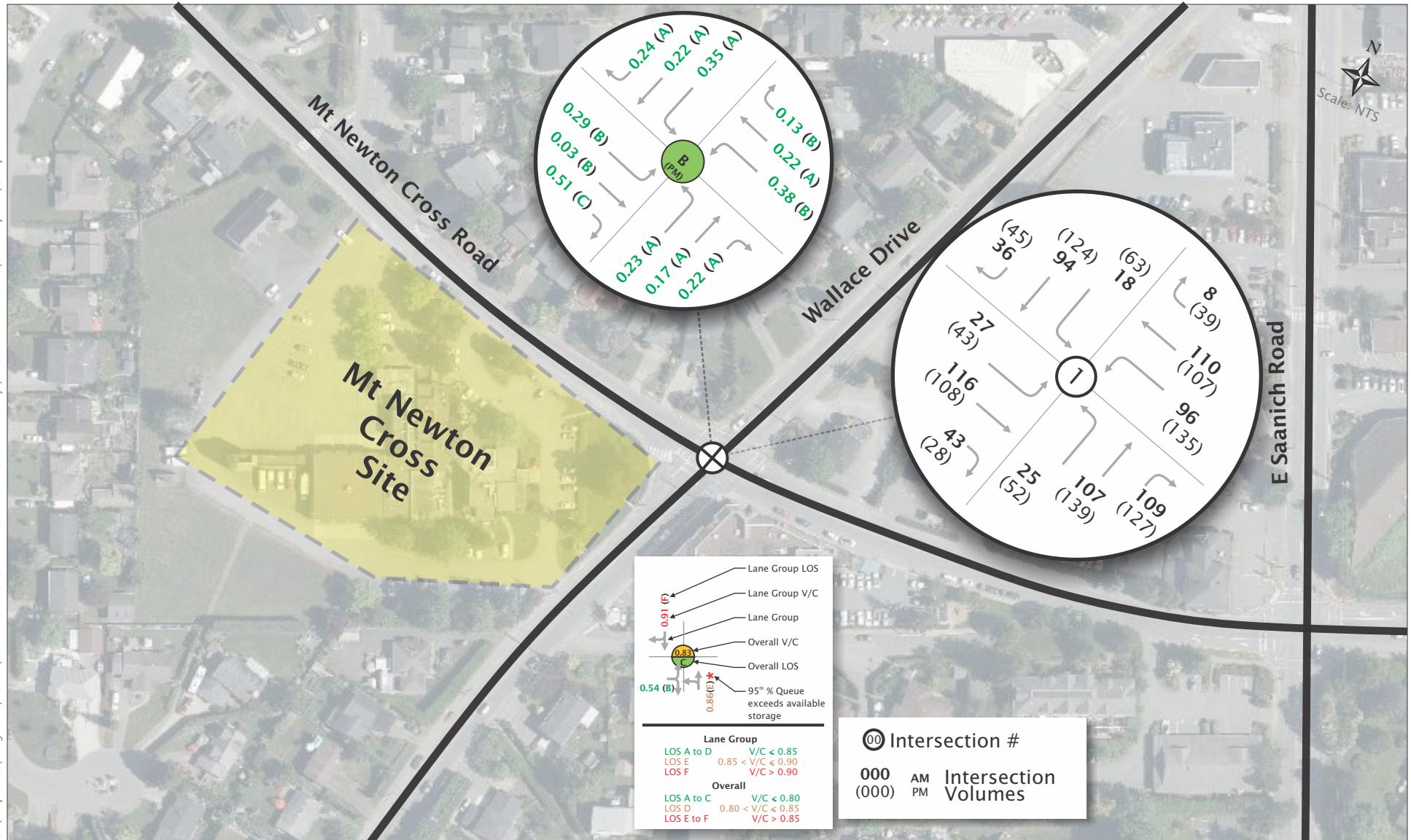


Exhibit 2.1
Existing Volumes and Operations - Mt Newton Cross Site

2.2 Site Traffic – Mt Newton Cross Site

Trip Generation

Site-generated vehicle trips for the proposed residential development portion of the Mt Newton Cross Site were estimated using trip rates from the 11th Edition of the *Institute of Transportation Engineers' (ITE) Trip Generation Manual*. These applied rates assume a general urban/suburban location that is not close to rail transit.

Trip generation rates for the Municipal Hall, Police, and Fire Department were derived from driveway counts conducted by Bunt. These counts were carried out at all three existing site access points to comprehensively capture trip generation activity associated with each facility.

Table 2.2 summarizes anticipated future site-generated vehicle trip rates for the Mount Newton Cross site development.

Table 2.2: Peak Hour Vehicle Trip Rates

LAND USE	VARIABLE	DENSITY	PM PEAK HOUR		
			IN	OUT	TOTAL
Residential Mid- Rise (ITE LUC 221)	Dwelling units	200	61%	39%	0.39 trips per unit
Commercial (ITE LUC 822)	1,000 ft ²	15	50%	50%	6.59 trips per 1,000 ft ²
Municipal Hall, Police & Fire Dept ¹	1,000 ft ²	-	24%	76%	-

¹ Trip rates derived from the existing Municipal Facility driveway counts

Table 2.3 summarizes the anticipated future site generated vehicle trips for the proposed development based on the above rates.

Table 2.3: Estimated Peak Hour Site Vehicle Trips

LAND USE	PM PEAK HOUR		
	IN	OUT	TOTAL
Residential Mid- Rise (ITE LUC 221)	48	30	78
Commercial (ITE LUC 822)	49	49	98
Municipal Hall, Police & Fire Dept	9	28	37
	106	107	213

As the table indicates, the proposed development is expected to generate approximately 213 (106 inbound, 107 outbound) vehicle trips in the weekday PM peak hour. This is equivalent to approximately 3-4 vehicles per minute during the peak hour in any direction, spread evenly across the hour.

Trip Distribution & Assignment

Trip assignment and distribution for future analysis were based on existing travel patterns, engineering judgment, and consideration of the proposed future site layout and access configurations.

Table 2.4: Estimated Site Trip Distribution

ORIGIN/DESTINATION	PM PEAK HOUR – MUNICIPAL FACILITY (MUNICIPAL HALL, POLICE & FIRE)		PM PEAK HOUR – RESIDENTIAL & COMMERCIAL	
	IN (%)	OUT (%)	IN (%)	OUT (%)
Wallace Drive North	10	10	60	60
Wallace Drive South	15	15	40	40
Mt Newton Cross Rd West	37	37	-	-
Mt Newton Cross Rd East	38	38	-	-
TOTAL	100%	100%	100%	100%

Based on the preliminary site layout and access configurations, it was assumed that the municipal facility would primarily use access points along Mount Newton Cross Road, while the residential and commercial components would rely on Wallace Drive access. While it is recognized that some residential/commercial traffic may use Mount Newton Cross Road access, these occurrences are expected to be minimal and were not reflected in the trip distribution assumptions.

2.3 Hovey Site

2.3.1 Land Use

The site is currently vacant. The surrounding area is generally comprised of residential single-family homes or is undeveloped. To the west of the site is Centennial Park which hosts various sporting events and is serviced with various informal vehicle parking areas.

2.3.2 Road Network

The Hovey Road site is bounded by Hovey Road to the south and Wallace Drive to the west.

Hovey road is a two-lane (one travel lane in each direction) collector road with no curbside parking along the site's frontage. Hovey Road has a landscaped centre median. It has no sidewalks or cycling infrastructure.

Wallace Drive is a two-lane (one travel lane in each direction) arterial road; it does not have curbside parking along the site's frontage. Wallace Drive is a BC Transit route. There are plans to introduce cycling lanes along Wallace Drive. Across Wallace Drive on the Hovey site frontage is curbside 90-degree parking, which is used during peak Centennial Park periods but is signed as no permitted parking.

The Wallace Drive & Hovey Road intersection operates under a 2-way minor leg (Hovey Road and Centennial Park approaches) stop control. All approaches to the intersection have one travel lane. There is a marked pedestrian crossing at the intersection's south leg.

2.3.3 Existing Traffic Volumes

Bunt collected weekday AM and PM peak period traffic counts at the Wallace Drive & Hovey Road intersection on Thursday April 3, 2025. Heavy vehicles, bicycles, and pedestrians were also counted. From the count data, the peak vehicle traffic hour was identified to occur from 4:00pm to 5:00pm.

2.3.4 Existing Operations

The performance reporting conventions noted above have been consistently applied throughout this document, and the detailed outputs are provided in **Appendix A**.

2.3.5 Traffic Operations Findings

As shown in **Exhibit 2.2**, the existing PM peak hour encounter delays and volume to capacity ratios that are within an acceptable range that would not require mitigation from a vehicle operations perspective.

It is, however, noted (and discussed further in Section 4) that the Hovey Road & Wallace Drive intersection may benefit from pedestrian infrastructure improvements.



Exhibit 2.2
Existing Volumes and Operations - Hovey Site

2.4 Site Traffic – Hovey

Trip Generation

Similar to the Mount Newton Cross Road Site, the site-generated vehicle trips for the proposed recreational /community centre portion of the development were estimated using trip rates from the 11th Edition of the *Institute of Transportation Engineers' (ITE) Trip Generation Manual*.

Trip generation rates for the Municipal Hall, Police, and Fire Department were derived from driveway counts conducted by Bunt. These counts were carried out at all three existing site access points to comprehensively capture trip generation activity associated with each facility.

Table 2.5 summarizes anticipated future site-generated vehicle trip rates for the Hovey site development.

Table 2.5: Peak Hour Vehicle Trip Rates

LAND USE	VARIABLE	DENSITY	PM PEAK HOUR		
			IN	OUT	TOTAL
Recreation/Community Centre (ITE LUC 495)	1,000 ft ²	10	47%	53%	2.5 trips per 1,000 ft ²
Municipal Hall, Police & Fire Dept ¹	10,000 ft ²	-	24%	76%	-

¹ Trip rates derived from the existing Municipal Facility driveway counts

Table 2.6 summarizes the anticipated future site generated vehicle trips for the proposed development based on the above rates.

Table 2.6: Estimated Peak Hour Site Vehicle Trips

LAND USE	PM PEAK HOUR		
	IN	OUT	TOTAL
Recreation/Community Centre (ITE LUC 495)	12	13	25
Municipal Hall, Police & Fire Dept	9	28	37
	21	41	62

As shown in the table, the proposed development is anticipated to generate approximately 62 (21 inbound, 42 outbound) vehicle trips during the weekday PM peak hour. This equates to roughly 1 vehicle per minute in either direction, assuming an even distribution throughout the hour.

Trip Distribution & Assignment

Trip assignment and distribution for future analysis were based on existing travel patterns, engineering judgment, and consideration of the proposed future site layout and access configurations. Based on the preliminary site layout and access configurations, it was assumed that the Police and Fire services will have their access on Wallace Drive while the Municipal Hall and Community Centre facilities would access the site from Hovey Road.

Tables 2.7 and 2.8 provide the trip distribution proportions for each of the Hovey site driveways.

Table 2.7: Estimated Site Trip Distribution Hovey Site – Municipal Hall & Recreation/ Community Centre

ORIGIN/DESTINATION	PM PEAK HOUR – MUNICIPAL HALL & RECREATION/COMMUNITY CENTRE	
	IN (%)	OUT (%)
Hovey Road West	70	70
Hovey Road East	30	30
	100%	100%
Wallace Drive North	45	45
Wallace Drive South	25	25
East Saanich North	10	10
East Saanich South	20	20
TOTAL	100%	100%

Table 2.8: Estimated Site Trip Distribution Hovey Site- Police & Fire Department

ORIGIN/DESTINATION	PM PEAK HOUR – POLICE & FIRE DEPT	
	IN (%)	OUT (%)
Wallace Drive North	60	60
Wallace Drive South	40	40
	100%	100%
Wallace Drive North	60	60
Wallace Drive South	20	20
East Saanich North	5	5
East Saanich South	15	15
TOTAL	100%	100%

2.5 Future Total Traffic

Total (with development) traffic operations address traffic operations after the introduction of the proposed development. For this analysis, the development site generation vehicle volumes were added to the existing volumes. The analysis for this Memo does not address future scenarios such as opening day plus 10-year scenarios. Once a site has been selected, a more comprehensive traffic impact analysis will be conducted for that selected location.

Total traffic operations are presented in **Exhibit 2.3** for both locations. As shown, future traffic operations at both locations are shown to remain within operational thresholds.

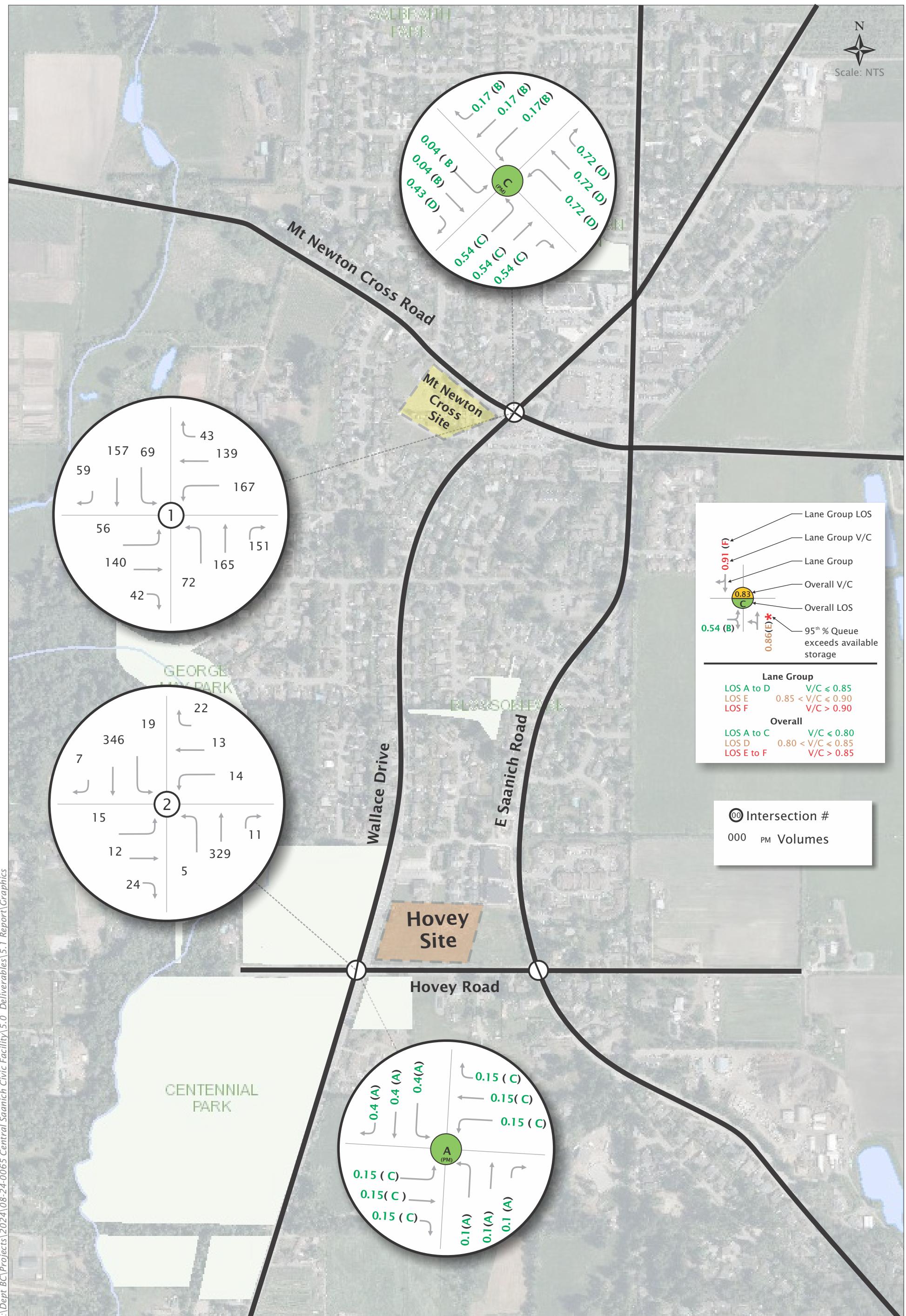


Exhibit 2.3
Total Volumes and Operations - Mt Newton Cross & Hovey Sites

3.1.2 Hovey Site

Table 3.2 below summarizes the minimum vehicle parking supply requirements for the Hovey site, based on applicable land uses and zoning regulations. Similar to the Mt Newton Cross site the existing supply of 87 spaces is deemed sufficient for the site's Municipal Hall, Police and Fire operations.

Table 3.2: Vehicle Parking Supply Requirement

LAND USE	DENSITY	BYLAW RATE	BYLAW SUPPLY REQUIREMENT (EXISTING SUPPLY)
Recreation/Community Centre	10,000 ft ²	2 per 10 m ² of GFA	200
Municipal Facility	Municipal Hall	-	(87)
	Fire Hall		
	Police		
TOTAL			287

As shown above, the recreation/community centre portion of the Hovey site will require a minimum of 200 parking spaces. However, Bunt's preliminary research indicates that a case could be made for a lower parking provision for the recreation component for the Hovey site scenario. Below are some datapoints to consider:

- ITE's Parking Generation Manual's Recreational Community Centre land use, in a suburban context for 1,000m² using a fitted curve equation results in a peak parking demand estimate of 34 vehicle spaces.
- Central Saanich's rates for community centre or recreation centre are comparatively high. For example, North Saanich's rate of 1 per 50m for Recreation Facility would equate to just 20 vehicle spaces.

The Hovey site is noted to have flexibility regarding its parking supply, as it can use adjacent parking for peak overflow scenarios.

4. MULTI-MODAL TRANSPORTATION CONSIDERATIONS

4.1 Mt Newton Cross Site

The Wallace Drive & Mt Newton Cross Road intersection (shown in **Figure 1**) may benefit from pedestrian infrastructure improvements. Future residential and commercial development at this site would also increase pedestrian volume at this intersection, which would further increase the need for pedestrian-level improvements. Potential reconfiguration of the intersection to allow for one-lane approaches to the 4-way stop control intersection may be considered, as this would help reduce crossing distances for pedestrians. However, this would need to be assessed in regard to anticipated increased vehicle delays.

Figure 1: Mt Newton Cross Road & Wallace Drive Intersection Facing Southwest



4.2 Hovey Site

It is also noted that the Hovey Road & Wallace Drive intersection would benefit from pedestrian infrastructure improvements should this location be selected.

Potential for shared parking with Centennial Park is anticipated to increase pedestrian crossing demand at the intersection's north leg (crossing Wallace), resulting in the need for pedestrian-level improvements at this intersection. Improvements may include adding a crossing to the intersection's north leg or the potential conversion of the intersection to all-way stop control.

5. SUMMARY

5.1 Benefits of Mt Newton Cross Site

- Being located closer to the urban core can help reduce vehicle dependency for residential and commercial land uses.

5.2 Constraints of Mt Newton Cross Site

- Pedestrian-level improvements are likely required at Mt Newton Cross Road & Wallace Drive intersection.

5.3 Benefits of Hovey Site

- The Hovey site is noted to have flexibility regarding its parking supply as it can use nearby Centennial Park and tennis court parking for peak overflow scenarios.

5.4 Constraints of Hovey Site

- Pedestrian-level improvements are likely required at the Hovey Road & Wallace Drive intersection.

5.5 Conclusions

Both sites are considered viable for their respective proposed developments. Each scenario is anticipated to necessitate improvements to one adjacent intersection, and in both cases, the likely required improvements are aimed at addressing pedestrian safety.

APPENDIX A

Traffic Modelling Outputs

HCM Unsignalized Intersection Capacity Analysis

1: Wallace Dr & Mt Newton Cross Rd

05-26-2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control												
Stop												
Traffic Volume (vph)												
43 108 28 135 107 39 52 139 127 63 124 45												
Future Volume (vph)												
43 108 28 135 107 39 52 139 127 63 124 45												
Peak Hour Factor												
0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92												
Hourly flow rate (vph)												
47 117 30 147 116 42 57 151 138 68 135 49												
Direction, Lane #												
EB 1 EB 2 WB 1 NB 1 NB 2 SB 1 SB 2												
Volume Total (vph)												
164 30 305 208 138 68 184												
Volume Left (vph)												
47 0 147 57 0 68 0												
Volume Right (vph)												
0 30 42 0 138 0 49												
Hadj (s)												
0.09 -0.57 0.13 0.17 -0.67 0.53 -0.15												
Departure Headway (s)												
6.3 3.2 6.0 6.6 5.8 7.1 6.4												
Degree Utilization, x												
0.29 0.03 0.51 0.38 0.22 0.13 0.33												
Capacity (veh/h)												
516 1121 561 505 582 468 518												
Control Delay (s)												
11.8 6.3 15.0 12.5 9.2 10.0 11.3												
Approach Delay (s)												
10.9 15.0 11.1 11.0												
Approach LOS												
B C B B												
Intersection Summary												
Delay 12.1												
Level of Service B												
Intersection Capacity Utilization 51.6% ICU Level of Service A												
Analysis Period (min) 15												

HCM Unsignalized Intersection Capacity Analysis

2: Wallace Dr & Hovey Rd

05-26-2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	12	24	14	13	22	5	329	11	19	346	7
Future Volume (Veh/h)	15	12	24	14	13	22	5	329	11	19	346	7
Sign Control	Stop			Stop			Free			Free		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	17	13	27	16	14	24	6	366	12	21	384	8
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	845	820	388	848	818	372	392				378	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	845	820	388	848	818	372	392				378	
tC, single (s)	7.1	6.5	6.2	7.4	6.5	6.2	4.1				4.1	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.8	4.0	3.3	2.2				2.2	
p0 queue free %	93	96	96	93	95	96	99				98	
cM capacity (veh/h)	258	303	660	231	303	674	1167				1180	
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	57	54	384	413								
Volume Left	17	16	6	21								
Volume Right	27	24	12	8								
cSH	381	358	1167	1180								
Volume to Capacity	0.15	0.15	0.01	0.02								
Queue Length 95th (m)	4.2	4.2	0.1	0.4								
Control Delay (s)	16.1	16.9	0.2	0.6								
Lane LOS	C	C	A	A								
Approach Delay (s)	16.1	16.9	0.2	0.6								
Approach LOS	C	C										
Intersection Summary												
Average Delay			2.4									
Intersection Capacity Utilization		40.2%		ICU Level of Service								
Analysis Period (min)		15										

HCM Unsignalized Intersection Capacity Analysis

1: Wallace Dr & Mt Newton Cross Rd

05-26-2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control												
Stop												
Traffic Volume (vph)	56	140	42	167	139	43	72	165	151	69	157	59
Future Volume (vph)	56	140	42	167	139	43	72	165	151	69	157	59
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	61	152	46	182	151	47	78	179	164	75	171	64
Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2					
Volume Total (vph)	213	46	380	257	164	75	235					
Volume Left (vph)	61	0	182	78	0	75	0					
Volume Right (vph)	0	46	47	0	164	0	64					
Hadj (s)	0.09	-0.57	0.13	0.19	-0.67	0.53	-0.16					
Departure Headway (s)	7.3	3.2	6.8	7.6	6.7	8.1	7.4					
Degree Utilization, x	0.43	0.04	0.72	0.54	0.30	0.17	0.48					
Capacity (veh/h)	441	1121	506	447	504	411	446					
Control Delay (s)	15.6	6.3	25.2	17.9	11.4	11.5	15.9					
Approach Delay (s)	14.0		25.2	15.3		14.8						
Approach LOS	B		D	C		B						
Intersection Summary												
Delay												17.7
Level of Service												C
Intersection Capacity Utilization				67.5%								ICU Level of Service C
Analysis Period (min)												15

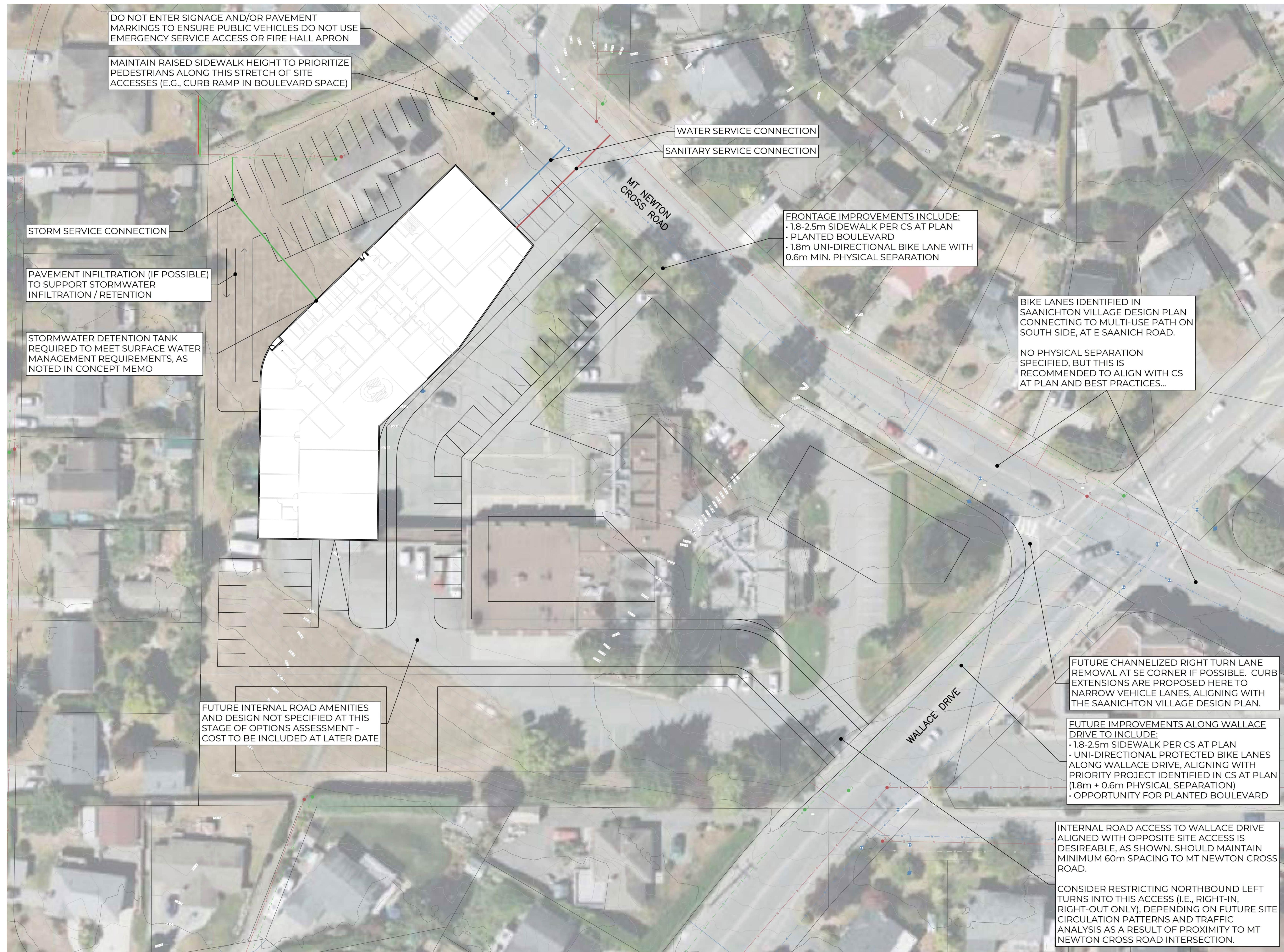
HCM Unsignalized Intersection Capacity Analysis

2: Wallace Dr & Hovey Rd

05-26-2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	12	24	14	13	22	5	329	11	19	346	7
Future Volume (Veh/h)	15	12	24	14	13	22	5	329	11	19	346	7
Sign Control	Stop			Stop			Free			Free		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	17	13	27	16	14	24	6	366	12	21	384	8
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	845	820	388	848	818	372	392			378		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	845	820	388	848	818	372	392			378		
tC, single (s)	7.1	6.5	6.2	7.4	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.8	4.0	3.3	2.2			2.2		
p0 queue free %	93	96	96	93	95	96	99			98		
cM capacity (veh/h)	258	303	660	231	303	674	1167			1180		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	57	54	384	413								
Volume Left	17	16	6	21								
Volume Right	27	24	12	8								
cSH	381	358	1167	1180								
Volume to Capacity	0.15	0.15	0.01	0.02								
Queue Length 95th (m)	4.2	4.2	0.1	0.4								
Control Delay (s)	16.1	16.9	0.2	0.6								
Lane LOS	C	C	A	A								
Approach Delay (s)	16.1	16.9	0.2	0.6								
Approach LOS	C	C										
Intersection Summary												
Average Delay			2.4									
Intersection Capacity Utilization		40.2%		ICU Level of Service						A		
Analysis Period (min)		15										



SCALE: NTS

CENTRAL SAANICH CIVIC FACILITY
1903 MT. NEWTON CROSS ROAD- CIVIL SERVICING

URBAN
S Y S T E M S

We are **hcma**. We believe human connections are the best path to solving the fundamental problems of our time.



As a gesture of respect, peace, and friendship, We acknowledge and respect the *lək̓ʷəŋən* peoples on whose territory the land of this feasibility study stands and the Songhees, Esquimalt and *WSÁNEĆ* peoples and all their ancestors who have lived on and served as faithful stewards of these lands.

Vancouver
400 – 675 W Hastings St
Vancouver BC V6B 1N2
604.732.6620
vancouver@hcma.ca

Victoria
201-844 Courtney St
Victoria BC V8W 1C4
250.382.6650
victoria@hcma.ca

Edmonton
304 – 10110 104 St NW
Edmonton AB T5J 1A7
780.885.9609
edmonton@hcma.ca

Calgary
1900-700 2 St SW
Calgary AB T2P 2W2
403.269.4796
calgary@hcma.ca