City of Richmond

Report to Committee

To:	General Purposes Committee	**Date:**	July 7, 2025
From:	Martin Younis, B. Eng., M. Eng. Director, Facilities and Project Development	**File:**	06-2000-01/2025-Vol 01
Re:	**Works Yard Replacement Project – Program, Form, Phasing and Budget**		

Staff Recommendations

1. That the program totalling approximately 400,000 sq. ft. and building form be approved, as outlined in the report titled, "Works Yard Replacement Project – Program, Form, Phasing and Budget," dated July 7, 2025, from the Director, Facilities and Project Development;

2. That in order to reduce the overall project schedule, and manage cost escalation risks, the workshop program and other elements be added to the scope of work for Phase 1 and a capital submission for the Works Yard Replacement - Enabling Works and Phase 1 capital projects' scope change and budget increase of $74.0 million (2025 dollars) be endorsed for Council's consideration as part of the 2026 budget process; and

3. That staff begin the planning process for the balance of the unallocated land as outlined in the report titled, "Works Yard Replacement Project – Program, Form, Phasing and Budget," dated July 7, 2025, from the Director, Facilities and Project Development.

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Director, Facilities and Project Development
(604-204-8501)

Att. 6

REPORT CONCURRENCE		
ROUTED TO:	**CONCURRENCE**	**CONCURRENCE OF DEPUTY CAO**
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SENIOR STAFF REPORT REVIEW	**INITIALS:**	**APPROVED BY CAO**

Staff Report

Origin

At the Open Council meeting on July 10, 2023, it was announced that the existing Lynas Lane location will be the site for the replacement of the Works Yard (the "Project"). The purpose of this report is to present the program, proposed building form, phasing and budget strategy for Council consideration.

This report supports Council's Strategic Plan 2022-2026 Focus Area #3 A Safe and Prepared Community:

> *Community safety and preparedness through effective planning, strategic partnerships and proactive programs.*
>
> *3.1 Advance proactive, sustainable, and accelerated flood protection in collaboration with other governments and agencies.*
>
> *3.3 Ensure the community is collectively prepared for emergencies and potential disasters.*
>
> *3.4 Ensure civic infrastructure, assets and resources are effectively maintained and continue to meet the needs of the community as it grows.*

Background

The Works Yard is critical to operations, emergency response and disaster recovery, supporting services, equipment, and material storage that are fundamental for disaster mitigation and management of the City's infrastructure. The structures are not post-disaster rated, which will impede the City's ability to respond and recover when community safety events occur such as dike breaches, seismic events, or major floods.

On July 22, 2024, Council approved the Project's key design parameters and guiding principles, fundamental in design and program development.

The approved key design parameters include:

- Construct to post-disaster standard;
- Construct to a Flood Construction Level target of 4.7 metre geodetic elevation for all operational areas; and
- Incorporate the existing trees and berms around the site perimeter into the new design.

The approved guiding principles include:

- Resilient
- Innovative
- Connected
- Sustainable
- Inclusive

Located at 5599 Lynas Lane, the 30.2 acre Works Yard property is situated at the northwest corner of the City and is bound by River Road, Lynas Lane, Westminster Highway and McCallan Road. Built in the late 1970's and early 1980's, the primary facilities include:

- Administration building
- Parks, Recreation and Culture Services administration trailers
- Operations staff dispersal buildings
- Fleet operations and workshop buildings
- Stores warehouse building
- Fueling Station
- Recycling Depot (*not in scope of replacement Project*)
- RCMP Police Exhibit Storage Compound

In addition to these primary facilities, there are numerous trailers and temporary structures that have been added over the decades to accommodate demand growth. While these temporary structures have provided low-cost solutions, many have aged well past their expected lifespan and they have accelerating maintenance costs, representing the lowest standard of structure within the City's entire building portfolio.

Council establishes service levels through comprehensive needs assessments that consider evolving community factors such as population growth, ageing demographics, and the increasing impacts of climate change. In response, staff design and implement strategic, cost-effective solutions that aim to maintain high-quality services, support community resilience, and ensure long-term sustainability.

On March 11, 2024, Council approved the award of the Architectural Services contract and Construction Manager Pre-Construction Services contract, which was announced for Phase 1 of the Project. The initial services of these contracts have focused on detailed program review and verification, concept layouts, phasing plan development and budgetary estimates for Project approval.

Advanced Planning

Advanced Planning is a comprehensive process that commences with Project engagement to determine program space requirements, spatial form, budget, schedule, and preliminary phasing strategies.

Project Engagement

Internal

In Q2 2024, program stakeholders appointed key representatives to ensure the sharing of accurate, firsthand information for their respective areas. A total of 44 sub-section groups from four divisions and eight departments were identified to provide the Project with valuable experience and knowledge regarding Works Yard operational requirements.

In Q3 2024, 19 workshops were conducted with over 100 staff stakeholder representatives, gathering detailed information about work outputs, service levels, objectives and understanding of all operational programs. Additionally, the conversations aimed to identify current challenges, future opportunities and long-term plans for initiatives, programs and departments.

Ongoing collaboration and follow-ups with management teams and stakeholder groups were essential to validating information, sharing asset and resource data, and guiding discussions that informed the functional, operational, and technical requirements of the new facility.

Tailored engagement strategies, including information sessions, digital tools, events, one-on-one conversations, and an intranet website were used to share updates, gather feedback, and promote an inclusive, participatory process. Continued engagement and communication will ensure stakeholders remain involved and informed of new developments and onsite activities.

Community Connections

Public engagement events included the Capital Projects Open House, Public Works Open House and a neighbourhood event at Dover Park, coordinated with the Council-approved North Dike Upgrade Project consultation. Information about the Project's preliminary stages and contact information was shared to encourage public feedback.

Additionally, ongoing updates and correspondence occur with the management team and staff of the Richmond School District No. 38 Facilities Services Branch located adjacent to the Works Yard.

Program Development

The preliminary program was developed using the following:

- Analysis of existing building drawings and site surveys;
- Collection of organizational charts, staffing lists, statistics, assets and resources;
- Information sessions with all Works Yard staff, which included interactive digital survey questions, providing opportunities to submit information and feedback;

- Consultation with internal and external subject matter experts, consultants, and staff;
- Exploration of current and future opportunities and efficiencies, including centralized and consolidated solutions; and
- Observations, lessons learned and best practices gathered during visits to several municipal operations facilities.

Specific program needs were also considered. Conditioned indoor storage for high-value equipment like hydro-vac units and line painting trucks are essential to minimize downtime and prevent costly weather-related damage. These units are vulnerable to freezing temperatures, which can cause frozen lines, operational delays, and expensive repairs. With hydro excavators costing over $800,000 each, exposure to cold significantly shortens their lifespan, increasing replacement costs. Providing heated, enclosed storage ensures equipment remains operational, extends asset life, and improves cost efficiency, supporting uninterrupted service and responsible asset management.

The proposed program allows for 25 years of growth in the administration space and staff parking areas. The primary drivers for expansion include the current facility's inadequate capacity, inefficient layouts and inability to meet required standards. When evaluating the Works Yard program, expansion and growth projections were calculated separately for each functional and operational area. Feedback from several other jurisdictions that recently constructed works yard facilities, highlighted undersized new facilities as the primary project shortcoming. To mitigate the risk of constructing an undersized facility by the time construction is complete, multiple factors were considered, including:

- Administration personnel and operational workforce;
- Fleet and equipment (parking, storage and respective energy sources);
- Operational requirements (workshop space and operational storage);
- Department and program scalability;
- Adaptable spaces; and
- Service level demand.

Future considerations involved a thorough analysis of past feasibility studies, data from City Human Resources and Payroll, as well as population projections. This process included the collection of organizational charts, staffing lists, vacant positions, and information about assets and resources. A review of 10 years of historical staffing data (2014-2023) was conducted to evaluate periods of high staffing levels, such as seasonal staff, as well as low periods, including March and August mid-week, excluding long weekends.

As technology continues to improve, operational processes within the Works Yard are expected to become more efficient, potentially reducing overall space requirements over time. This is particularly relevant for areas such as storage, fleet management, and administrative functions, where automation and digital tools can streamline operations. Designing the facility with flexibility in mind will allow the City to scale down or repurpose space as needs evolve, ensuring long-term adaptability and value.

Analysis

Major Construction Projects Oversight Committee

Staff engaged the Council-appointed Major Construction Projects Oversight Committee (MCPOC), commencing with a presentation of the Project background, program, building form, phasing and budget strategy, follow-up discussions, and a site visit (refer to Attachments 1 and 2 – Meeting Minutes). During the meetings, the MCPOC provided several recommendations for further consideration to strengthen project planning and risk management. All comments have been reviewed, considered within the subsequent analysis, and will continue to be assessed through the detailed design phase. Key points of feedback from the MCPOC are summarized as follows:

Project Contingency:

- The project contingency may be low relative to the Class D estimate level of accuracy ahead of detailed design as well as site-specific risks, environmental and geotechnical factors, operational phasing continuity, potential regulatory updates, Project duration and complexity. In response, the overall contingency increased from 25% to 30%.
- Staff acknowledged the importance of contingency planning and cautioned that significantly increasing the contingency at this early stage could reduce long-term funding flexibility and limit Council's future options.

Geotechnical Considerations:

- Accurately assessing and allocating for risks, especially geotechnical ground conditions, are particularly challenging without more advanced design development and tendering information.
- Feedback will be considered and coordinated with the geotechnical design team, construction manager and peer review.

Flood Construction Level (FCL):

- Review the program for elements that could be placed below the FCL.
- Suggested maintaining Phase 3 at the site's current grade, which would keep fleet and other program elements at a lower elevation.

  Key Risks and Challenges:
  - Flooding of the Works Yard would render fleet vehicles and equipment inaccessible or damaged, severely limiting emergency response capabilities and delaying critical infrastructure repairs needed to restore safe operations across the City (including roads, sanitary, storm, water, pump stations and dikes);
  - Significant repair and replacement costs of high-value assets that may outweigh initial savings;
  - Added complexity and cost due to dewatering, groundwater treatment, temporary shoring, and consultant/abatement work; and
  - Not raising the site would be inconsistent with the Council approved Flood Protection Management Strategy and the future Works Yard would not be at a post-disaster standard.

Potential Benefits:

- Budget reduction of approximately $10 million due to decreased need for structural fill, retaining walls, and temporary ramps;
- Shortens project schedule; and
- Reduces long-term escalation by shifting budget from Phase 3 to Phase 1.

- On the balance of analysis, the expenditure of $10 million to achieve long term flood protection of the site represents an approximate 2.5% increase to the overall estimated project cost, which is excellent value for achieving this level of post-disaster standard.

Program Considerations:

- Review program for additional uses that could be brought forward into Phase 1.
- The project team has already taken steps to enhance efficiency by incorporating the workshops into Phase 1, allowing for more effective use of the site and supporting ongoing operations during future phases. However, due to space constraints on the site, no additional program elements can be accommodated within the Phase 1 footprint without compromising functionality or constructability.
- In response to MCPOC's recommendation of accelerating key components of the project, staff are actively exploring the possibility of relocating some programs offsite to expedite Phase 2 of the project.

Site Circulation:

- Review the site circulation to explore opportunities to reduce the overall project footprint. This included evaluating internal roads, access points, and movement patterns to identify potential efficiencies.
- In response, the project team conducted a review of the site circulation and determined that the current layout strikes an appropriate balance between efficiency and safety. While some adjustments were considered, the existing configuration will make effective use of the site while supporting safe and functional access for vehicles, pedestrians, and emergency services.

Project Program

A feasibility study and high-level program definition were completed in 2023 for the purposes of site selection. Stakeholder program requests were identified through Project engagement efforts.

Through extensive engagement and planning, the recommended program reflects design efficiencies and a reduction in the overall Project footprint:

- The Administration space allocation was reduced by implementing new modern space planning design guidelines, which highlight collaboration areas and breakout meeting rooms, but reduce the individual workstation sizes.

- The workshop spaces have increased to accommodate the functional requirements for staff based on a more refined understanding of operational, construction and maintenance activities, identified through consultations with user groups and functional analysis.

- The program allocation for storage space has been reduced across all impacted areas, however, significant efficiencies have been achieved through solutions such as storage-shelf systems and spatially optimized configurations.
- The design will support initiatives and processes that prioritize organization and efficiency, to maximize vertical space utilization and streamline workflows.

The recommended program increases the overall usable space by approximately 23,000 sq. ft. and includes appropriate space for building circulation, structure, and mechanical/electrical rooms. Table 1 (further detailed in Attachment 3) presents the program changes through the various stages of analysis.

Table 1: Works Yard Program Areas

Program Area	Existing Program (sq. ft.)	Feasibility Study Program (sq. ft.)	Stakeholder Program Requests (sq. ft.)	Recommended Program (sq. ft.)
Main Building Administration Space	45,000	76,000	74,250	53,000
Main Building Workshops Dispersals Change Rooms	19,000	24,000	60,000	55,000
Garage	22,000	32,000	40,000	40,000
Stores Warehouse	15,000	17,000	25,000	25,000
Conditioned Storage	11,000	20,000	15,000	15,000
Covered Storage	43,000	58,000	77,000	52,000
Yard Storage	202,000	141,000	160,000	140,000
RCMP Exhibit Storage	20,000	20,000	20,000	20,000
Staff Parking	280 stalls	519 stalls	519 stalls	494 stalls
Total Program	**377,000**	**388,000**	**471,250**	**400,000**

Additional efficiencies have been realized by locating the staff parking lot beneath the Main Building (Administration and workshops), similar to the configuration of City Hall. Instead of utilizing structural fill to elevate the site to the Project's 4.7 metre geodetic Flood Construction Level (FCL), this approach optimizes site utilization while still achieving the intended FCL elevation for operational areas.

All fleet vehicles will be located at or above the site's FCL, ensuring they remain protected and fully operational to respond to major events. Only staff vehicles will be parked below the FCL, maintaining operational resilience while maximizing available space on site.

The program review confirmed that the recommended program considers:

- City policies and administrative directives;
- Works Yard Replacement Project guiding principles and key design parameters;
- Operational, technical and functional requirements;
- Values, priorities and feedback from staff representatives and subject matter experts;
- Best practices, trends and efficiencies;
- Opportunities for centralized and consolidated work areas, incorporating innovative future-state concept and design solutions;
- Future staff, operational, service level and program expansion; and
- Space for community engagement, resident support, outreach programs and events.

Through the next steps consisting of Character Development and Detailed Design, the program will be refined to optimize adjacencies, technical and functional requirements.

Unallocated Land

The City owned properties at Lynas Lane total 30.2 acres in area. The Recycling Depot, Park House and Skate Board Park occupy 3.7 acres of this total and are not within the scope of the Project. The recommended Project program is designed to occupy a consolidated footprint of approximately 22.0 acres, yielding approximately 4.5 acres of unallocated land adjacent to the waterfront. In the Official Community Plan (OCP), this unallocated land is currently designated for industrial use. The availability of this land presents a valuable opportunity, as its potential worth is considerable. However, the exact value would depend on a variety of factors, including future land use designations, developmental potential and market conditions.

Given the strategic significance and development potential of this unallocated area, staff recommend initiating the formal planning process. This process would explore potential land use options, assess infrastructure requirements, engage stakeholders and align any proposed changes with broader community objectives outlined in the OCP. Commencing this planning effort will help ensure the most effective and beneficial use of the land, maximizing both economic and community value. The newly available land holds substantial monetary value and offers potential for future revenue generation or expansion of Works Yard programs at the current site.

Concept Design and Phasing

Enabling Works and the Phase 1 scope of work based on a 4-Phase delivery model was approved with a total $100.0 million budget for design and construction of an administration building and staff parkade. The unaudited Project expenditures as of June 25, 2025 for Enabling Works and Phase 1 are $6.4 million.

The following is the status of the Enabling Works:

Complete

- Geotechnical Site Investigation to determine the current ground conditions and the required ground preparations works to facilitate construction;
- Initial Environmental Overview and Environmental Site Assessment to delineate any known and unknown contaminants across the site; and
- Staff relocations to clear the Phase 1 construction zone.

In progress

- Utility relocations from the Phase 1 construction zone;
- Construction of a temporary staff parking lot;
- Removal of structures from the Phase 1 construction zone; and
- Consolidation and centralization of materials and activities.

Concept Design

The proposed Project concept design is presented in Attachment 4, providing a conceptual visualization of the building's overall scale, form, and spatial organization within the site context. These early-stage models are critical in evaluating how the proposed development integrates with surrounding urban fabric, responds to site constraints, and aligns with zoning requirements.

The accompanying perspective views in Attachment 5, illustrate the massing from various vantage points, offering a realistic sense of proportion and spatial relationships with adjacent buildings and public spaces. The perspectives highlight the benefit of the existing landscape and mature tree buffer that exists around the site, which largely obscures the proposed facility from various neighbouring viewpoints.

To meet the City's flood protection requirements and account for projected sea level rise, operational areas of the site will be raised to achieve the Flood Construction Level (FCL) of 4.7 metres geodetic. This elevation considers long-term settlement, sea level rise projections to Year 2100 and ensures compliance with Richmond's floodplain design requirements for post-disaster infrastructure.

Site plan cross-sections in Attachment 6 illustrate vertical slices through the Project site, showing how the proposed development interacts with existing topography, infrastructure, and adjacent properties. The drawings help visualize grading, retaining walls, building heights, and landscape features, providing a clear understanding of the Project's impact on the surrounding context.

Project Phasing

The Project was originally conceptualized to be delivered in four phases over 12 years, to ensure continuous operations throughout construction.

Multi-phase construction Projects spanning several years carry key risks. Cost escalation due to inflation, material shortages, labor fluctuations, and market conditions such as tariffs or trade policy changes can significantly affect budgets. Regulatory updates over time may require design modifications, while maintaining site operations adds logistical complexity. Changes in Project personnel, consultants or contractors are also a risk as it could disrupt continuity. Extended timelines also heighten exposure to evolving community expectations and shifting priorities.

To mitigate some of these risks, it is recommended to deliver the Project in three phases, rather than four, by bringing forward the workshop spaces into Phase 1 and integrating them into the Main Building. This will result in an increased budget requirement for Phase 1 but will provide significant long-term benefits by optimizing site utilization for future phases and reducing the phase turnovers. Given that the site must remain operational throughout construction, advancing the workshops to Phase 1 will facilitate the relocation of key operations to the new footprint, thereby improving overall Project logistics and execution in subsequent phases. See Table 2 for the phasing of the recommended program.

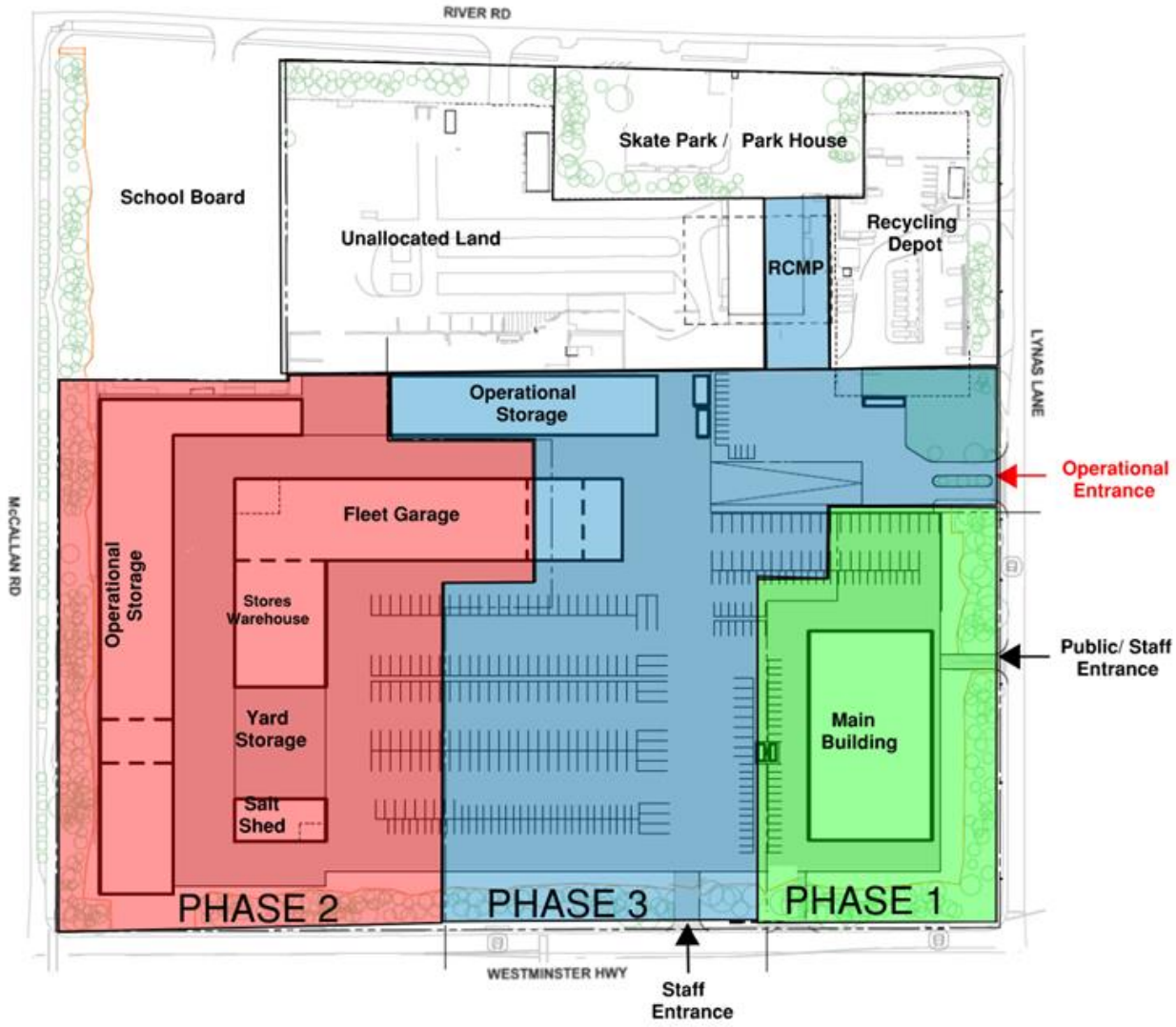
Table 2: Works Yard Replacement Project - Recommended Facility Program and Phasing

Program Area	**Phase 1 (sq. ft.)**	**Phase 2 (sq. ft.)**	**Phase 3 (sq. ft.)**	**TOTAL (sq. ft.)**
Main Building - Administration Space	53,000			53,000
Main Building - Workshops, Dispersals, Change Rooms	55,000			55,000
Staff Parking	247 stalls		247 stalls	494 stalls
Garage		40,000		40,000
Stores Warehouse		25,000		25,000
Conditioned Storage		15,000		15,000
Covered Storage		26,000	26,000	52,000
Yard Storage		70,000	70,000	140,000
RCMP Exhibit Storage			20,000	20,000
			Total Program	**400,000**

The recommended phasing strategy (see Figure 1) consolidates the schedule from four phases to three and shortens the overall Project timeline from 12 years to 10 years. The streamlined approach also reduces cumulative costs for contractor fees and mobilization costs associated with extended project durations.

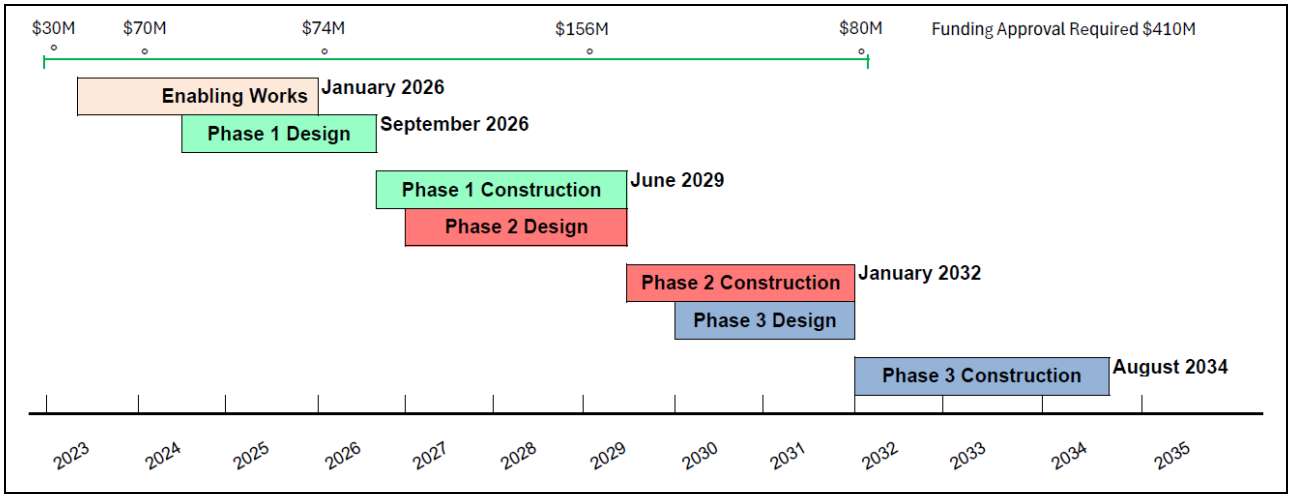
By implementing the workshop facilities earlier in the schedule, the City can proceed with procurement and installation of valuable, key equipment sooner, which supports operational continuity and helps mitigate the impacts of market-driven cost escalation. Earlier workshop delivery also enhances scheduling flexibility for subsequent phases and reduces dependency on ageing infrastructure that would otherwise remain in use longer under the initial phasing plan.

Figure 1: Phased Project Site Plan



As illustrated in Figure 2, in order to progress the Project schedule, construction and design work (e.g. Enabling Works and Phase 1 Design) are planned to progress concurrently. The funding approval requirement schedule is also noted in Figure 2.

Figure 2: Works Yard Replacement Project Schedule



Tree Management

A comprehensive tree management plan will be developed in tandem with the landscape design during the detailed design phase and will include:

- a complete inventory, condition assessment and retention value of all the trees that will likely be impacted;
- a protection plan for all retained trees during construction; and
- tree compensation of 3:1 ratio.

Through the traffic management analysis process, a separate access and exit from Westminster Highway will be provided to support traffic volumes and mitigate traffic build-up for staff personal vehicles. The new right-in/right-out access from Westminster Highway, which is included in Phase 3 construction works, is estimated to require the removal of approximately 8 - 10 trees. The exact number of trees affected will be confirmed through the detailed design phase.

Financial Analysis

Preliminary Project Cost

A preliminary estimate and a final Project budget can vary significantly depending on the expenditure timeline, approved scope, and risk mitigation strategies. A Class D estimate (order-of-magnitude budget) is prepared with limited design information and carries an expected accuracy range of ±30% due to various financial risks.

One key factor is market-driven cost adjustments which are fluctuations in construction costs due to external economic influences beyond the Project's control. These may include changes in material prices, labour availability, supply chain disruptions, inflation, fuel costs, tariffs, and broader demand shifts within the construction industry.

Tariffs are placing upward pressure on global cost projections. The International Monetary Fund (IMF) has highlighted that tariffs contribute to rising inflation, leading to increased costs and potential price hikes for consumers. These inflationary pressures, driven by trade restrictions, underscore the importance of flexible and responsive cost planning.

As these variables continue to evolve, they can have a substantial impact on the total Project cost over time. To remove this variability and allow for capital project comparisons and prioritization ahead of the annual capital budget approval process, cost estimates are typically presented to Council in current-year dollars. Once a given project is prioritized, then further design development and scheduling occurs with escalation factors applied to account for projected increases based on market conditions and industry benchmarks. This approach helps ensure budget planning remains realistic and adaptive to changing market conditions at the time of budget approval.

Consistent with this approach, in 2023, for the purposes of completing the site selection analysis, the Project cost was estimated at $247 million in 2023 dollars with a Class D accuracy range of ±30% or $173 million to $321 million. At the site selection stage, costs were not escalated into the future as there was no Project timeline or confirmed program.

Annual Escalation Impacts

To inform capital budget updates, staff collaborate annually with industry professionals and reference Statistics Canada’s non-residential construction cost indices. The escalation rates for capital Projects were 6.6% for 2024 and are projected to be 6.9% for 2025.

In addition, staff consult key publications such as the Altus Group Canadian Cost Guide for public sector construction benchmarks. For the remaining years of the Project timeline, an annual escalation rate of 3% is forecasted and comparable to the escalation rate of 3.3% carried by the construction management firm overseeing Phase 1.

An escalation rate range of 2% and 5% has been applied to the forecasted expenditures, reflecting historical Consumer Price Index (CPI) trends from Statistics Canada, observed over the preceding 10-year period. The 2% rate corresponds to the average annual CPI increase during more stable economic cycles, while the 5% rate aligns with averaged peak inflationary periods experienced in recent years. By incorporating both low and high range escalation factors, Table 3 captures a realistic spectrum of potential cost growth, thereby enhancing budget resilience and facilitating informed decision making under variable market conditions.

Table 3: Escalation Impacts to the $247 million (2023 Forecast) over the new Project Duration Projection

Year	No Escalation 2023 site selection estimate	Low Escalation 2% annually from 2026 to 2033	Predicted Escalation 3% annually from 2026 to 2033	High Escalation 5% annually from 2026 to 2033
2023	N/A	N/A	N/A	N/A
2024	$13.0 million	*$13.9 million	*$13.9 million	*$13.9 million
2025	$13.0 million	**$14.8 million	**$14.8 million	**$14.8 million
2026	$13.0 million	$15.1 million	$15.3 million	$15.6 million
2027	$25.0 million	$29.6 million	$30.2 million	$31.4 million
2028	$25.0 million	$30.2 million	$31.1 million	$33.0 million
2029	$37.0 million	$45.6 million	$47.5 million	$51.2 million
2030	$34.0 million	$42.8 million	$44.9 million	$49.4 million
2031	$35.0 million	$44.9 million	$47.6 million	$53.4 million
2032	$35.0 million	$45.8 million	$49.1 million	$56.1 million
2033	$17.0 million	$22.7 million	$24.5 million	$28.6 million
TOTAL	$247.0 million	$305.5 million	**$318.9 million**	$347.5 million

** 6.6% escalation rate*

*** 6.9% escalation rate*

Factoring in the full range of predicted cost escalation of 3% annually, the forecasted $318.9 million with a stated ±30% Class D accuracy equates to a cost range of $223.2 million (minus 30%) to $414.5 million (plus 30%).

Project Budget

Budgeting and Council approval for Major Facility Projects is generally completed when design is at a very early concept stage and subsequent detailed design can take up to two years before construction tendering. As part of Phase 1 budget planning, a conservative approach was adopted to address the two-year tendering delay and mitigate project risks.

For example, although the design drawings were still in development, approximately twice the number of stone columns were provisioned compared to initial concept estimates to address geotechnical uncertainties. This increased allowance for ground improvement measures was intended to mitigate the risk of cost overruns resulting from unforeseen subsurface conditions, as more detailed geotechnical data would become available later in the design process.

Cost Validation

The Construction Manager developed the budget based on the recommended concept design. For an added degree of cost certainty, the budget was verified by two independent cost experts to update preliminary Project cost estimates concurrently, based on the recommended concept design.

Project Contingency

The estimated costs and scope for each phase, as outlined in Table 4, include a total contingency of 30%, which aligns with MCPOC's suggestion to reflects the expected level of uncertainty associated with a Class D cost estimate. At this early stage, limited design detail is available and a higher contingency is necessary to account for potential variability in scope, site conditions and market fluctuations. This level of contingency is consistent with industry practice for Class D estimates, which typically have an accuracy range of ±30%.

The budget was developed by the Construction Manager and independently verified by two external cost consultants to ensure a robust and reliable estimate. A 30% contingency is appropriate for complex, large-scale projects at the conceptual stage, helping to confidently manage unexpected challenges and protect the project's schedule and budget from costly disruptions, such as design changes, site conditions, or market fluctuations. This approach provides the financial flexibility needed to respond effectively and ensures the project remains on track through planning and delivery, safeguarding the overall success and timely completion of the project.

Given the extended project duration of 10 years, the financial buffer will protect the City from unforeseen factors that may occur between approval and 2035, when Project costs will largely be incurred. A contingency model was utilized during the planning process for the Oval and the Major Capital Facilities Program (Steveston Community Centre and Library, Minoru Centre for Active Living, Fire Hall No. 1, Fire Hall No. 3 and City Centre Community Centre).

Unused funds from any phase will be returned to the overall Project budget, which may be allocated to support future phases, based on Project needs. The overall Project budget will be presented alongside the staff Report to Council that outlines the character of the next phase. This approach ensures financial transparency and provides clarity on the nature of work involved in each phase.

The proposed budget in Table 4 includes design fees, construction costs, Furniture, Fixtures and Equipment (FF&E), public art contribution, permit fees, insurance, escalation allowances, utilities, internal project management fees, temporary facilities and contingency.

Table 4: Proposed Project Budget Estimate

Phase	Description	Projected Budget
Enabling Works and Phase 1	• Utility Relocations • Staff Relocations • Site Investigations • Site Reconfigurations • Main Building - Administration Space • Main Building - Workshops • Dispersals • Change Rooms • Staff Parkade (50% - 247 stalls)	$174.0 million
Phase 2	• Storage • Fleet Parking • Stores Warehouse • Garage • Salt Shed • Enclosed Parking	$156.0 million
Phase 3	• Fuel Station • Wash Bay • Staff Parkade (50% - 247 stalls) • Covered Parking • RCMP Exhibit Storage • FCL Site Grading	$80.0 million
		Total $410.0 million
		Estimated Project Duration:10 years

Capital Budget Projections

The approved and/or projected capital budget requests are identified in Table 5. Approved budgets will also fund the design of the next phase. The design of Phase 2 is planned to be finalized concurrently with the construction of Phase 1, ensuring the most efficient delivery schedule.

Table 5: Capital Budget Projections

Year	Funding Forecast	Cumulative Funding
2023	Council-approved $30.0 million	$30.0 million
2024	Council-approved $70.0 million	$100.0 million
2026	*$74.0 million	$174.0 million
2029	*$78.0 million	$252.0 million
2030	*$78.0 million	$330.0 million
2032	*$80.0 million	**$410.0 million**
	***Total $410.0 million**	

**Includes Project Contingency 30%*

To accommodate the proposed Project budget totalling $410.0 million, the following is the recommended budget strategy:

- In accordance with Council's Long Term Financial Management Strategy Policy 3707, an annual property tax increase of 1% towards infrastructure replacement needs will need to be maintained for the next 10 years;
- Utility Reserves will fund a third of the proposed Project Budget of $410.0 million (based on the allocation of the original estimate of $247.0 million, 2023 dollars);
- CBI funding to support other capital requests will be limited to $15.0 million annually; and
- Grant funding opportunities will be pursued throughout the duration of the project.

This is the same strategy that has been successfully used to fund and deliver previous Major Facilities Projects such as Minoru Centre For Active Living, Fire Hall No. 1, and currently the Steveston Community Centre.

Deferring the Project to a later date would result in additional priority repair costs associated with ageing infrastructure. If the existing Works Yard buildings remain in use for another 5 years, (bringing most of the buildings close to 50 years old), major building system maintenance or replacement would be required at an order of magnitude cost, estimated to be $35 million (in 2025 dollars). This includes replacement of most existing building systems components, such as fire protection, mechanical, electrical, and building envelope. These investments would only serve to maintain core functionality and will not respond to the continued growth of operations, will not bring the facilities up to current building code standards nor meet post-disaster requirements.

Financial Impact

Staff recommend the total construction budget be established at $410.0 million, which includes a Project contingency of 30%.

Staff recommend a scope change in Enabling Works and Phase 1 capital projects, as outlined in Table 2 - Works Yard Replacement Project – Recommended Facility Program and Phasing.

By incorporating the workshops within the Phase 1 footprint, the revised Phase 1 scope of work requires an increase of $74.0 million (2025 dollars) to the Enabling Works and Phase 1 budget. Staff recommends a capital submission for the Works Yard Replacement - Enabling Works and Phase 1 capital projects' scope change and budget increase of $74.0 million, be endorsed for Council's consideration as part of the 2026 budget process.

An annual property tax increase of 1% towards infrastructure replacement needs will need to be maintained for the next 10 years.

Operating Budget Impact (OBI)

The preliminary OBI for the program and facility is estimated at $900,000 annually, which aligns with the anticipated year of operations. A comprehensive operating plan, detailing program scope, service levels and a refined OBI, will be submitted to Council for consideration closer to construction of the facility. While the proposed program represents an increase in size, the new facility is expected to offset ongoing maintenance and repair costs associated with ageing infrastructure.

Next Steps

Upon Council approval of the program, building form, phasing plan and capital budget, staff will proceed to the Phase 1 Character Development and Detailed Design stages, which involves refining the overall concept and developing comprehensive technical specifications and drawings. This phase will also address key factors such as material selection, sustainability goals and regulatory compliance. The program will be refined and the information will continue to serve as insight for optimal adjacencies, operational, technical and functional requirements.

The Project's delivery schedule incorporates multiple decision points at which Council may choose to assess the Project, particularly in response to an economic downturn, thereby mitigating financial exposure. Delaying the Project may risk continued expenditures to maintain the existing facility in operational condition. By advancing the Project now, Council secures the best value proposition, optimizes budget forecasts and retains the flexibility to discontinue further investment should economic circumstances warrant.

Staff will develop a consultation and planning strategy for the unallocated lands that will be brought back to Council for consideration.

Conclusion

The program provides critical improvements to the Works Yard, with essential administration space requirements, functional workshop spaces and operational storage that support operations, construction, and maintenance activities. This new facility will enhance the efficient execution and delivery of essential services to the community. The program and design will create opportunities for innovative, future-state efficiencies, and expansion.

Martin Younis, B. Eng., M. Eng.
Director, Facilities and Project Development
(604-204-8501)

MY:mr/fs/ek/nh

Att. 1: Meeting Minutes #1 – MCPOC – May 14, 2025
2: Meeting Minutes #2 – MCPOC – June 19, 2025
3: Works Yard Replacement Project - Program Development
4: Works Yard Replacement Project - Concept Design and Building Form
5: Works Yard Replacement Project - Perspective Views
6: Works Yard Replacement Project - Cross-section Elevation Renderings

City of Richmond

Minutes
Deputy CAO's Office
Facilities and Project Development
Works Yard Planning

Major Construction Projects Oversight Committee – Meeting #1

Wednesday, May 14, 2025

Place: Room M.2.002
Richmond City Hall

Present: COMMITTEE MEMBERS (the "Committee")
Councillor Laura Gillanders
Jeff Ilich
Neil Cumming
Shawn Smith
Thor Fairburn
Tim Loo

CITY OF RICHMOND STAFF (Staff)
Serena Lusk
John Irving
Martin Younis
Mile Racic
Ben Dias
Ferman Suleyman
Anthony Sy
Fatima Qaddoumi

Call to Order: Martin Younis called the meeting to order at 5:22pm.

INTRODUCTIONS

TERMS OF REFERENCE REVIEW

PRESENTATION

WORKS YARD REPLACEMENT PROJECT

Capital Buildings Project Development and Works Yard Planning staff presented the Works Yard Replacement Project, providing an overview of the project's rationale, design direction and current progress. The presentation outlined the need to replace ageing infrastructure with a resilient, efficient facility that meets post-disaster standards and future operational needs. Key elements included the proposed program, guiding principles and a proposed phasing strategy that consolidates operations and maintains services during construction. Staff reviewed the enabling works underway, the two-stage procurement process for Phase 1 Consultant and Construction Manager, as well as the estimated project budget. Ongoing engagement and next steps toward detailed design and Council approvals were highlighted.

PRESENTATION DISCUSSION

The Committee inquired about the contractors, consultants and peer reviewers. They posed questions regarding raising grade, layout plans, program and next steps in design.

The Committee additionally raised questions regarding flood resilience and parking strategy, and recommended looking into the feasibility of relocating non-critical operations to below-grade spaces in consideration of flood events.

Staff shared the engagement program with Works Yard Operations to better inform planning decisions. Approximately 100 staff, including managers, supervisors and labourers were engaged in the development of the program to identify best practices and operational needs. The program was refined by stacking functions and finding efficiencies, while also incorporating 25 years of projected growth in administrative space and parking, based on historical and anticipated staffing trends.

Staff discussed the challenges of maintaining operations during Phase 1 construction, particularly the coordination and logistics required to construct the administration building and workshops while managing varied site operations and varying elevations.

Confidence was expressed in the external consultants, who have experience delivering similar operational projects across Canada. Staff also highlighted the value of peer reviews and constructability input from the contracted Construction Manager as key strategies to mitigate risk.

The importance of receiving input from the Oversight Committee was emphasized ahead of presenting the overall project program, form, phasing, and budget to the General Purposes Committee. The Committee also discussed how evolving market conditions, such as tariffs, could impact cost escalation.

Staff clarified that consultants and CM teams have been engaged for Phase 1 only, with the intention to retain them for future phases pending satisfactory performance. While only Phase 1 has been awarded for detailed design and implementation at this stage, the overall approach allows for phased design, with consultants engaged separately for each phase. This strategy provides flexibility to assess performance before committing to future phases.

DISCUSSION POINTS

The Committee was presented with 12 questions to consider prior to the committee meeting.

a. From your perspective, what are the most significant project risks at this stage, and how would you recommend we monitor or mitigate them?

The Committee discussed the geotechnical consultant's experience with local conditions in Richmond and emphasized the importance of thorough ground preparation and testing prior to fill placement, to minimize risk. It was noted that a full assessment is difficult without detailed design and staff were encouraged to ensure phasing remains feasible and aligned with geotechnical findings.

The Committee highlighted the importance of proactively addressing long-term cost risks and inflation. It was acknowledged that, in some cases, design decisions had prioritized operational functionality and parking capacity.

The Committee recommended breaking up interface components and integrating build flow into the design schedule. Concerns were raised regarding the low contingency; staff responded that significantly increasing contingency at this stage could limit long-term funding flexibility and Council options, while also noting the challenge of accurately assessing risk without detailed design and tendering.

b. What considerations or best practices should we keep in mind as we move into ground preparation to minimize schedule or cost risks?

The Committee emphasized the importance of minimizing risk through thorough ground preparation and recommended ensuring that all phases are appropriately considered in geotechnical planning.

c. Are there specific building materials, particularly nationally sourced options, or systems you recommend we explore further to enhance lifecycle performance, durability, or operational efficiency?

The Committee discussed challenges with international sourcing, particularly from the United States, due to potential supply disruptions. It was noted that there should be sufficient time to identify and transition to alternative sources over the long term.

The Committee emphasized the importance of sustainability and durability in material selection, especially for flood-resistant applications, and encouraged staff to prioritize materials that meet high performance standards.

d. What engagement strategies have you used for complex, long-term infrastructure projects involving large, diverse groups of internal staff and stakeholders, while ensuring effective information sharing with local residents?

The Committee emphasized the importance of continuous engagement and consistent communication throughout all project stages. It was suggested that detailed staging drawings and integration with existing conditions can support effective stakeholder understanding and coordination.

e. What best practices have you observed in preparing active operational sites for successful multi-phase construction projects, particularly regarding maintaining full operations and minimizing disruptions (both for staff and residential neighbours)?

The Committee highlighted the use of detailed staging drawings as a key best practice to support operational continuity and minimize disruptions during multi-phase construction on active sites.

f. What are some lessons learned from comparable complex, multi-phase projects in the programming, concept, or schematic design stages of the new facility? Our analysis has identified a shorter schedule, lower cost, and better functionality of combined workshops and administration in the Main Building in a 3 phase strategy instead of 4 phases, do you see any issues with this analysis and conclusion?

The Committee proposed shortening the schedule to reduce costs and mitigate escalation risks, and suggested locking in prices early while employing strategic contracting to protect against escalation.

g. What design considerations are critical when constructing a post-disaster facility, beyond seismic code standards and constructing to a new Flood Construction Level (FCL), to ensure resilience, functionality, and continuity of operations during extreme events?

The Committee inquired about the continuity of services like water supply and drainage during disaster events, critical infrastructure, and how recovery plans would handle extreme weather such as atmospheric rivers. The Committee emphasized the need to plan for continuous operations during post-disaster scenarios, including backup power for these critical services.

h. How should we be planning for financial risks and potential cost escalation over a multi-year construction period, particularly in today's volatile market?

The Committee advocated for the Construction Manager model as an effective way to mitigate risks like cost escalation, but noted that this could extend the procurement timeline.

i. Are there contractual or procurement strategies you've seen effectively reduce the impact of inflation and escalation in long-term infrastructure projects?

The Committee commented for the Construction Manager to commit to general conditions, which has been completed during the tendering phase of the procurement. The Committee agrees with the strategy of phasing consultants with the ability to off-ramp if the relationship with the contractor is not working.

j. In your experience, how have public facilities successfully integrated future-ready infrastructure such as automation, digital monitoring, or smart systems while avoiding unnecessary complexity or cost?

The Committee discussed the value of considering future-ready infrastructure and commented to get ahead of transitions to electric.

k. How can we balance flexibility in design with long-term certainty in scope and function, particularly for facilities expected to adapt to changing service delivery models?

The Committee suggested making the facility compact without sacrificing functionality.

l. What operational efficiencies can we gain through early planning for decarbonisation, energy reduction, or low-carbon building materials?

The Committee noted that concrete will be a big ticket item. Reduce carbon; recommended reviewing with structural consultant.

CONCLUSION

Martin Younis addressed the Committee with the following question:
Are you in support of the approach of 3-phases and budgeting?

The Committee was in support.

KEY TAKEAWAYS

(1) Assess and consider increasing the project contingency;
(2) Review program for elements that may potentially be placed below the Flood Construction Level of 4.7m geodetic; and
(3) Review program for additional uses that could be brought forward into Phase 1.

ACTION ITEMS

(1) Present the project program, form, phasing, and budget to the General Purposes Committee for Council consideration on July 7, 2025;
(2) Coordinate a Works Yard site tour for the Committee Members in July 2025; and
(3) Organize the next Major Construction Projects Oversight Committee meeting to review the Character Design in Q4 of 2025.

ADJOURNMENT

Meeting adjourned (8:35pm).

City of Richmond

Minutes
Deputy CAO's Office
Facilities and Project Development
Works Yard Planning

Major Construction Projects Oversight Committee – Meeting #2

Thursday, June 19, 2025

Place: Works Yard
5599 Lynas Lane

Present: COMMITTEE MEMBERS (the "Committee")
Councillor Laura Gillanders
Jeff Ilich
Neil Cumming
Shawn Smith
Thor Fairburn
Tim Loo

CITY OF RICHMOND STAFF (Staff)
John Irving
Martin Younis
Mile Racic
Ben Dias
Ferman Suleyman
Nicole Haraguchi
Fatima Qaddoumi

Call to Order: Martin Younis commenced discussion at 4:41pm.

DISCUSSION OF MINUTES FROM MEETING #1

The Committee inquired on plans for communication back to Council. Staff confirmed that Councillor Gillanders, as Council-liaison, had received the previous meeting's minutes. A comprehensive report, inclusive of committee feedback and minutes, is being prepared for the target date of July 7 Open General Purposes meeting (Open Council July 14).

SITE TOUR

Staff led a site tour for the Committee, highlighting the Phase 1 footprint, Lynas Lane entrance, phasing boundaries, and the north boundary of site limits. Flood Construction Level (FCL) target of 4.7 metres geodetic elevation were reflected on structures throughout the Works Yard and subsequently discussed. The current dike elevation (3.5 metres) and neighbouring residential complex (4.37 metres) was also shown near the Lynas Lane entrance.

The Committee inquired about the nature of the main structure and division of parkade and operations, as well as expectations for receiving a more detailed design site layout with traffic flow. Staff confirmed that the main structure will have parking below and smaller workshops above; direction will be provided to the Architect to proceed with detailed design upon Council approval of the program.

SELECTION OF CHAIR AND VICE CHAIR

Neil Cumming was appointed as Chair. Thor Fairburn was appointed as Vice Chair.

FOLLOW-UP DISCUSSION

Project Contingency

Staff acknowledged the importance of contingency planning and the need to assess and potentially increase the project contingency to better account for unforeseen risks. However, they cautioned that significantly increasing it at this early stage could reduce long-term funding flexibility and limit Council's future options. Accurately assessing risk is also difficult without more detailed design development or tendering information. To manage this, the construction budget has been shared with the Architects. The project team will be accountable for the budget and any cost overruns will be addressed through value engineering.

The Committee raised questions about peer reviews, budget transparency, geotechnical risks, phasing, and long-term escalation, expressing concerns about ground improvement reliability and schedule alignment. Staff confirmed ongoing peer reviews, phased budget updates, and extensive geotechnical testing with built-in contingencies. Staff emphasized phased construction over 10 years, flexibility in schedule to manage risks, and strong risk management practices based on past project successes.

Flood Construction Level (FCL)

Staff explained that the City's flood protection strategy sets a design elevation of 4.7m geodetic based on provincial flood levels, sea level rise, land subsidence, and freeboard (the vertical distance added to the calculated flood level to account for uncertainties and provide a safety margin).

The project team discussed the Committee's previous suggestion to keep Phase 3 at the current grade. This could reduce the budget by about $10 million and offer benefits like avoiding structural fill, simplifying stormwater design, shortening the schedule, and reducing escalation. However, the emergency response during a flood is significantly compromised due to fleet vehicles being unprotected at the lower elevation. Risks also include the need for additional ramping, increased complexity, dewatering, hazardous water treatment, and shoring. The potential damage to assets in the event of a flood will outweigh any cost savings achieved by not raising the grade. This does not align with the flood protection strategy. Past flood responses showed tides can drop quickly, allowing equipment to resume operations promptly, which can be achieved if the equipment is protected.

The Committee provided the suggestion of flood walls, flood gates at entrances, and raising berms around the site to enhance protection. Staff clarified concerns with perimeter concrete flood walls as geotechnical conditions are challenging. Staff additionally raised concerns about potential damage to trees if the berms are raised, indicating a balance is needed between flood protection and preserving site ecology.

Phase 1 Program Discussion

The project team has optimized Phase 1 by including workshops that support ongoing operations and site efficiency, but site constraints limit adding more elements without affecting constructability. In response to the Committee's recommendation to accelerate key components, staff are exploring advancing Phase 2 to deliver additional program elements sooner. The Committee raised questions about site circulation, operational efficiency, and space planning, suggesting improvements like optimizing traffic flow and adding vertical racking for better space use. Architects are incorporating circulation optimization and vertical storage, with the design allowing for future expansion. Staff referenced other Works Yards in the region to highlight the need for comprehensive infrastructure and more space. They also noted that consolidating shared facilities, such as eateries and lockers, has improved workplace culture.

NEXT STEPS

Staff are targeting to present a report to the General Purposes Committee on July 7, followed by Council on July 14. The decision will focus on program, phasing and funding approval. Staff will incorporate their learnings from discussions with the Committee. The next meeting will be scheduled upon reaching the next project milestone.

ADJOURNMENT

Meeting adjourned (7:15pm).

Works Yard Replacement Project - Program Development

The preliminary program was developed using the following:

- Analysis of existing building drawings and site surveys;
- Collection of organizational charts, staffing lists, statistics, and information about assets and resources;
- Workshops and correspondence with staff stakeholder representatives to collect, review and confirm key information, providing critical operational, technical and functional requirements;
- Regular consultation with internal and external subject matter experts, consultants, staff user groups;
- Information sessions were held for all Works Yard staff, during which interactive digital survey questions were posed and opportunities were provided to submit or voice input, information and feedback;
- Exploration of current and future-growth opportunities and efficiencies, including centralized and consolidated solutions; and
- Observations, lessons learned, best practices, and visual inspections gathered during several site visits.

Main Building

The necessity for additional meeting spaces was identified through engagement and ongoing conversations with staff and management teams. Equipping the facility with adequate multi-functional spaces provides usage flexibility. Through adjacencies in Concept Design phase, multi-purpose spaces will be designed throughout the facility to support the needs of staff, community, and programs. Through engagement and key stakeholder workshops, it was identified that there is a high demand for spaces to conduct confidential or discreet conversations, especially as over 30 staff transition from having offices at the Works Yard to not having dedicated offices in the new facility, in alignment with current City practices.

Additionally, it was noted that touchdown stations are needed for operational staff without assigned computers due to the nature of their roles. These stations will support staff participation, inclusion and development by enabling access to courses, email, and City-wide opportunities and initiatives.

The multi-functional spaces will be outfitted accordingly to meet functional requirements including collaborative meeting technology, touchdown stations for the operational workforce and spaces for confidential conversations.

The recommended program includes multi-purpose rooms and multi-functional spaces of varying sizes, used to accommodate the following:

- Meetings
- Crew talks
- Training

- Recruitment
- Departmental Operations Centre (DOC)
- Public engagement and outreach
- Rest and recovery
- Reflection room
- Confidential conversations
- Shared touchdown stations

Workshops

The workshop space within the newly developed program has been expanded compared to the initial feasibility report. This increase from the initial feasibility report is based on a more refined understanding of operational, construction and maintenance activities and requirements identified through in-depth consultations with user groups and functional analysis.
As intensity and frequency of weather events increase, the new facility's program, that includes catch-up growth, enhances the City's ability to effectively respond to and recover from events and is programmed to support operations and function during major events such as dike breaches, seismic events, or floods.

The additional space is designed to support current service needs and evolving operational workflows.

Storage

The areas allocated for conditioned, covered, and yard storage in the newly developed program have been reduced compared to those outlined in the initial feasibility report. This reduction was made possible by identifying and implementing more efficient storage strategies.

These strategies include:

- incorporation of high-density racking systems;
- consolidation of storage needs through shared spaces among multiple groups; and
- centralization of shared items such as tools, aggregates, materials and items.

These strategies have not only reduced the overall footprint but also contributed to significant improvements in operational efficiency and flexibility. The program design has been optimized to prioritize organization and efficiency, supporting centralization, streamlined workflows and maximizing vertical space utilization. The design also includes spatially optimized configurations, ensuring that storage areas are utilized to their fullest potential.

The program review confirmed that the recommended design aligns with best practices, current trends, and operational efficiencies. Furthermore, it presents opportunities for creating centralized and consolidated work areas, incorporating innovative future-state concepts and design solutions that will support long-term needs and adaptability.

Parking

Through comprehensive data analysis and collaboration with internal and external subject matter experts, parking requirements were thoroughly evaluated for staff personal vehicles and City fleet and equipment. A review of 10 years of historical staffing data (2014-2023) was conducted to evaluate periods of high and low staffing levels, staff attendance and absenteeism, compressed workdays, and factors such as carpool and City fleet take-home vehicles. Additionally, specific requirements for the City fleet and equipment, including covered parking, enclosed heated and shore-power needs, were addressed. Consideration was given to staff levels, fleet and equipment initiatives and expansion, potential future energy sources ensuring the design accommodates evolving energy demands and sustainability goals.

High rate of vehicle ownership significantly contributes to parking demand at the Works Yard. Due to the location of the Works Yard and the nature of its operations, staff are frequently required to attend call-outs during weather events or emergencies. Additionally, staff working irregular hours and overtime further increase the need for personal vehicles parking onsite.

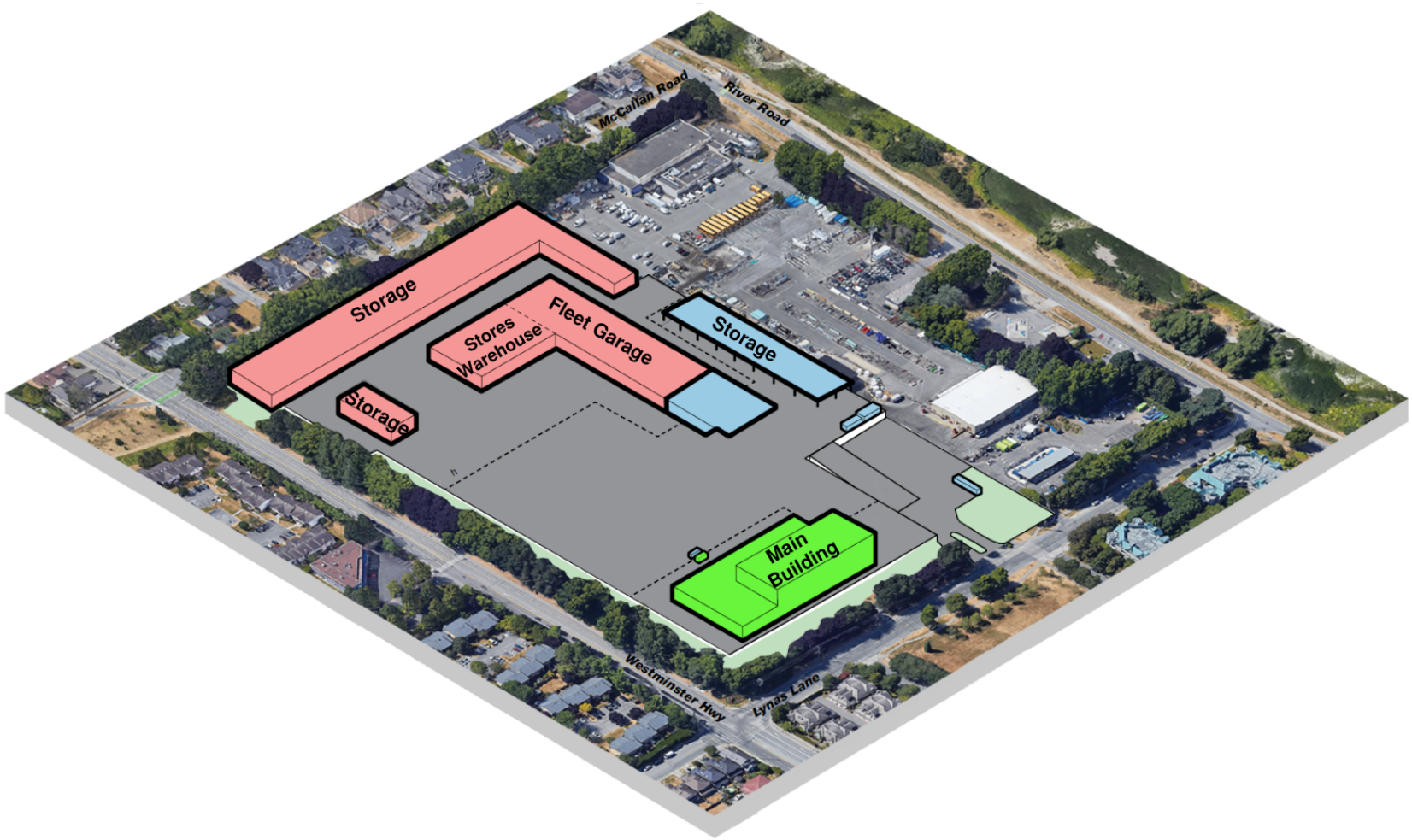
In coordination with the architect and transportation consultants, staff parking needs for the Project on the first day of occupancy is 368 stalls, this represent a 0.75 ratio of staff to parking stalls.

A 25-year Projection to the parking plan is anticipated to be 31.5%. This results in an additional 116 parking spaces. The total number of parking stalls is 484 stalls for staff as well as 10 spaces for visitor parking to match the existing configuration. Accessible parking stalls will be incorporated as per the City's Zoning Bylaw.

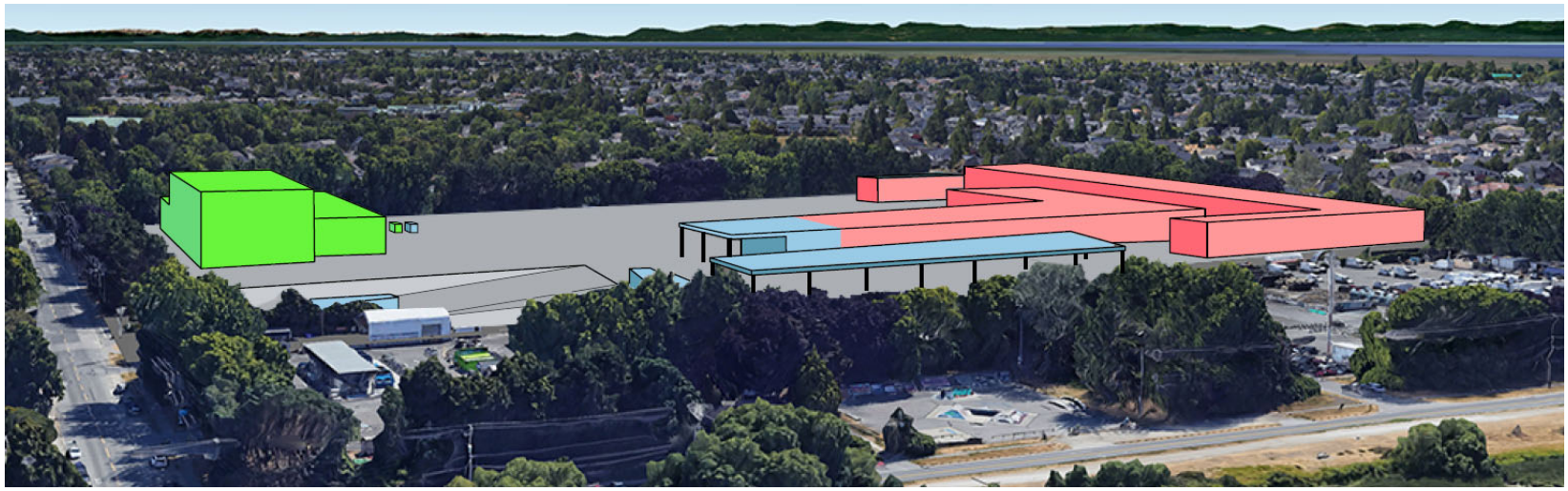
Due to the high volumes of staff accessing and egressing the Works Yard during peak flow times, parking considerations include the recommendation for an additional access point for personal vehicles from Westminster Highway. This access will address vehicle backlogs during peak hours and alleviate congestion on Lynas Lane, while the egress points will be optimized for smoother traffic flow. Constructing an access point from Westminster Highway is estimated to require the removal of approximately 8-10 trees.

Works Yard Replacement Project – Concept Design

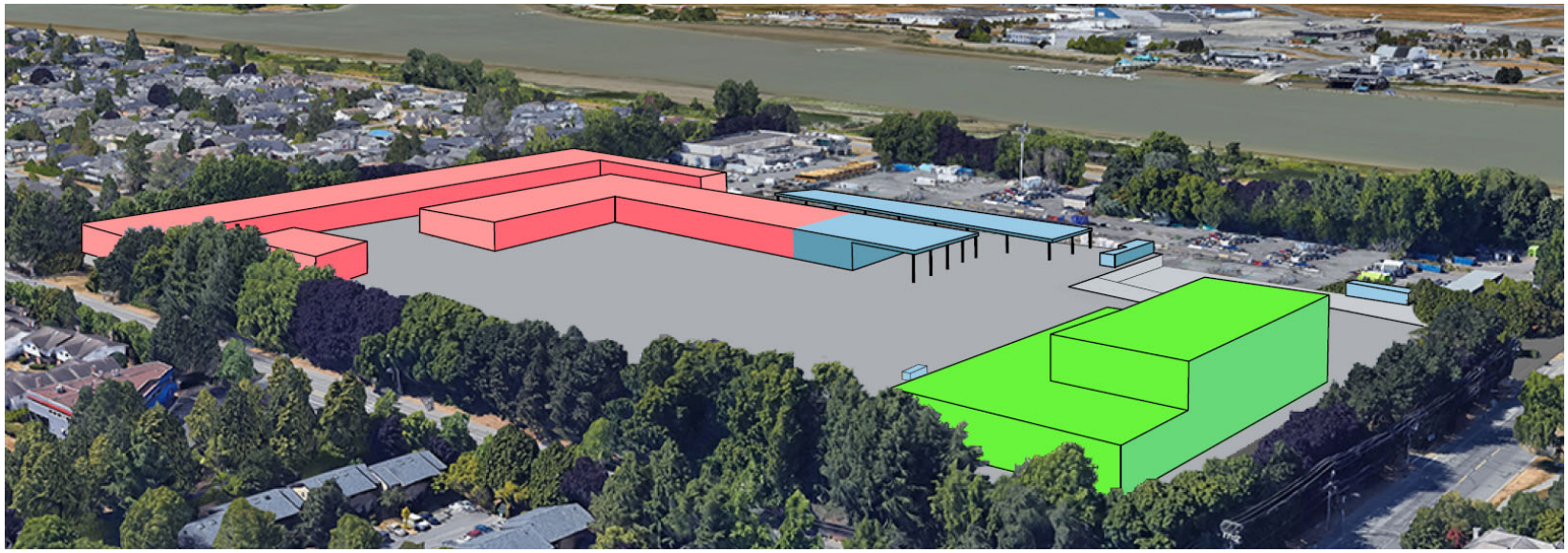
The Project concept design provides a conceptual visualization of the building's overall scale, form, and spatial organization within the site context. These early-stage models are critical in evaluating how the proposed development integrates with surrounding urban fabric, responds to site constraints, and aligns with zoning requirements.



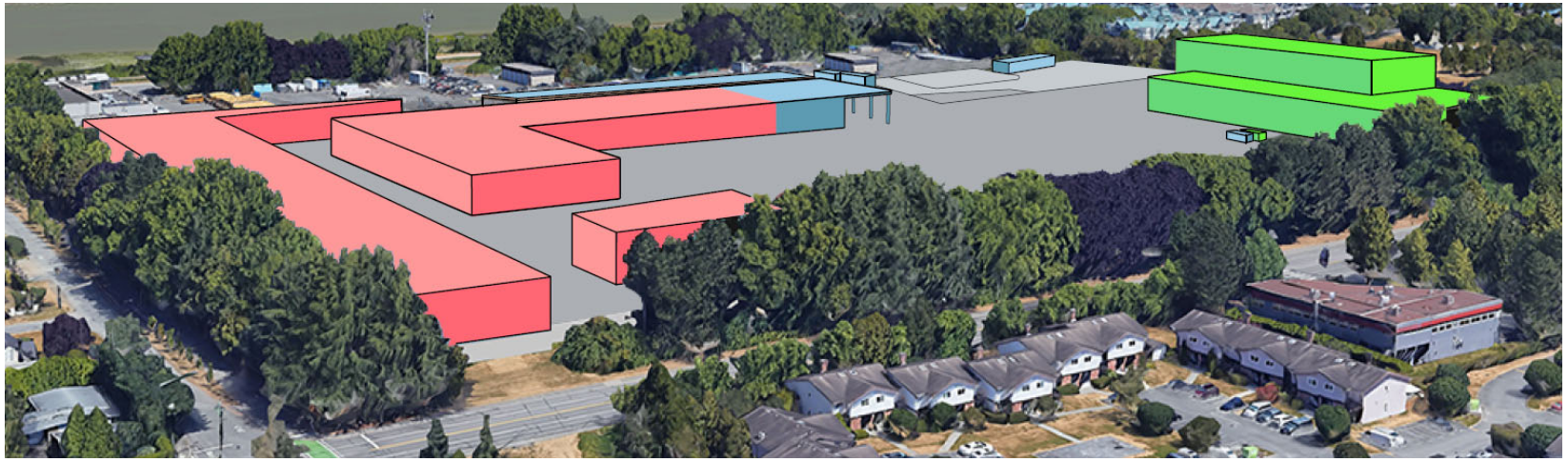
Aerial Concept Design



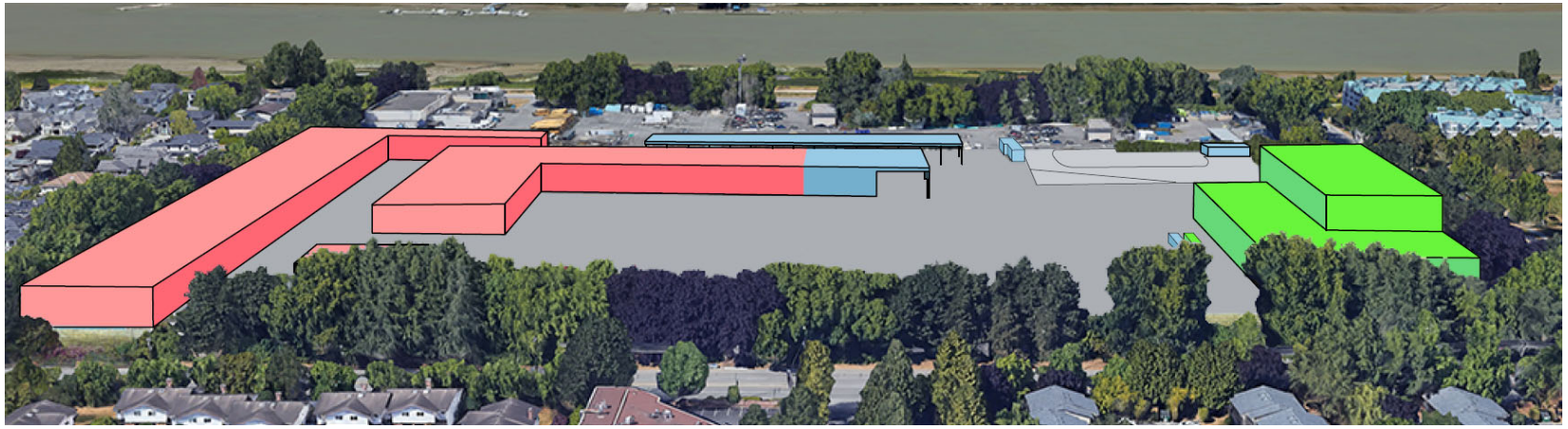
Concept Design View Looking Southwest



Concept Design View Looking Northwest



Concept Design View Looking Northeast



Concept Design View Looking North

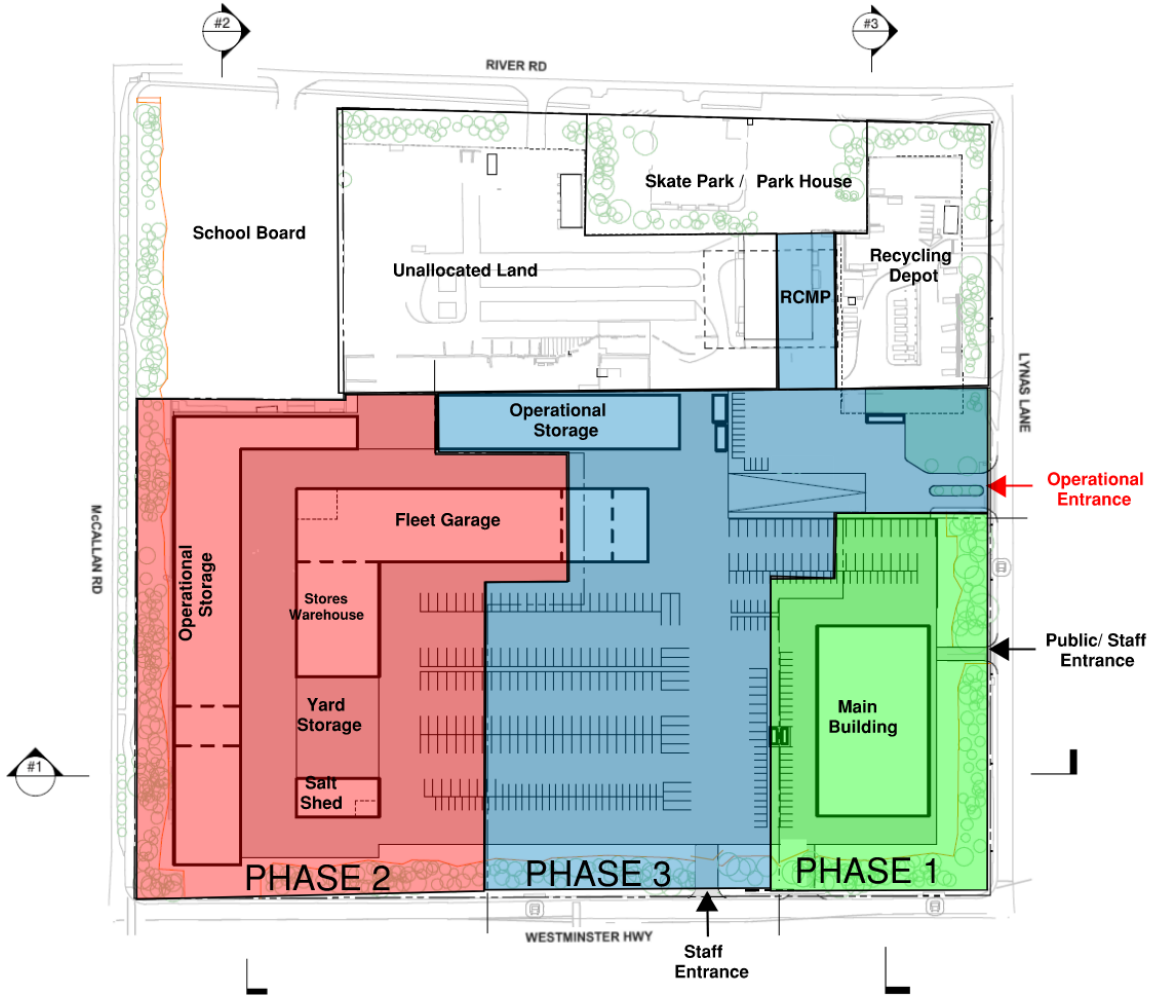
Works Yard Replacement Project – Perspective Views

The accompanying perspective views illustrate the massing, (represented in yellow), from various vantage points, offering a realistic sense of proportion, and spatial relationships with adjacent buildings and public spaces. The perspectives highlight the benefit of the existing landscape and mature tree buffer that exists around the site, which largely obscures the proposed facility from various neighbouring viewpoints. These visualizations are an essential communication tool, supporting stakeholder engagement and informing design refinements as the Project progresses into more detailed phases.

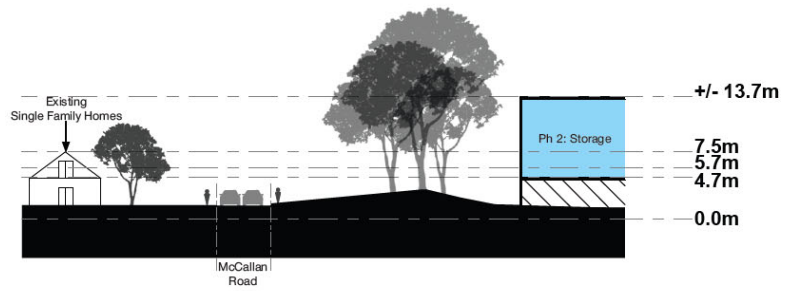
Perspective View from Westminster Highway and Lynas Lane

Perspective View from McCallan Road

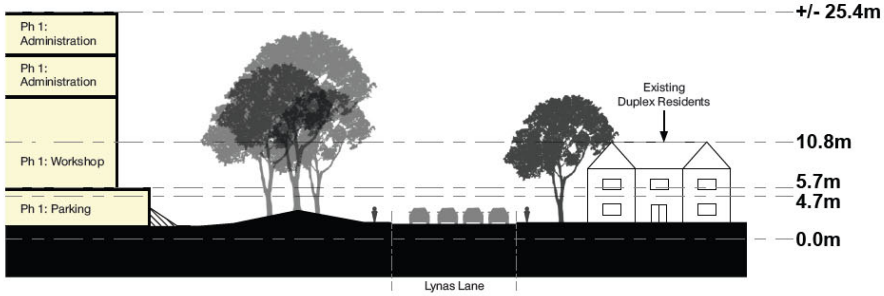
Site plan cross-sections illustrate vertical slices through the Project site, showing how the proposed development interacts with existing topography, infrastructure, and adjacent properties. Drawings help visualize grading, retaining walls, building heights, and landscape features, providing a clear understanding of the Project's impact on the surrounding context.



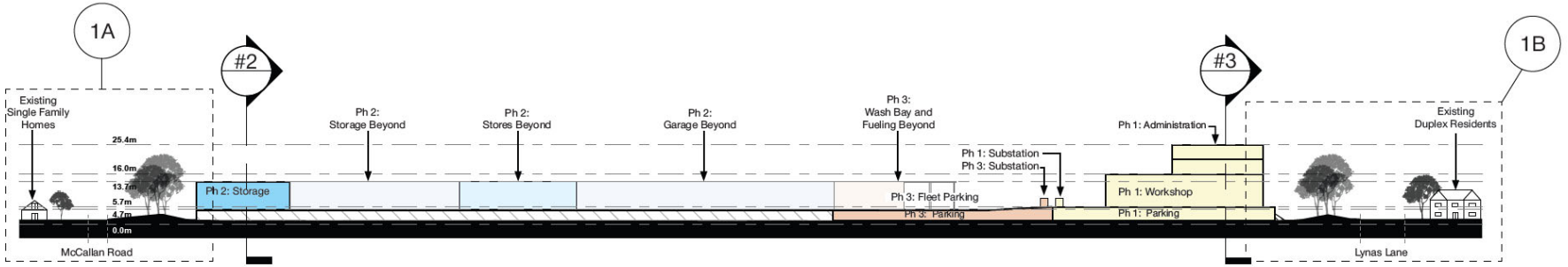
Phased Project Site Plan with Cross-section Cut Lines



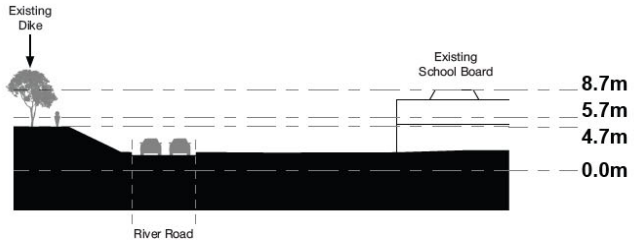
1A Section Through Ph2 & McCallan Road



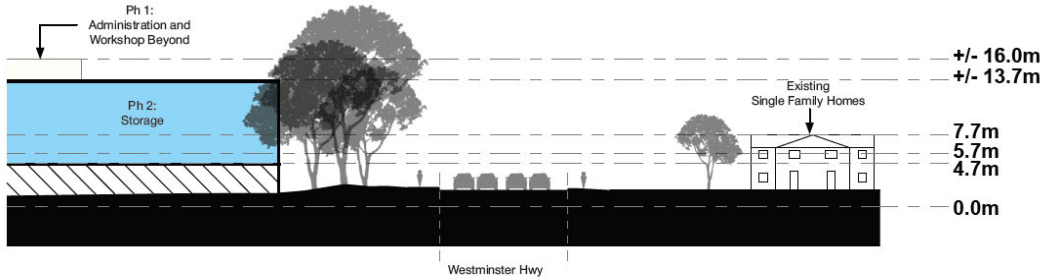
1B Section Through Ph1 & Lynas



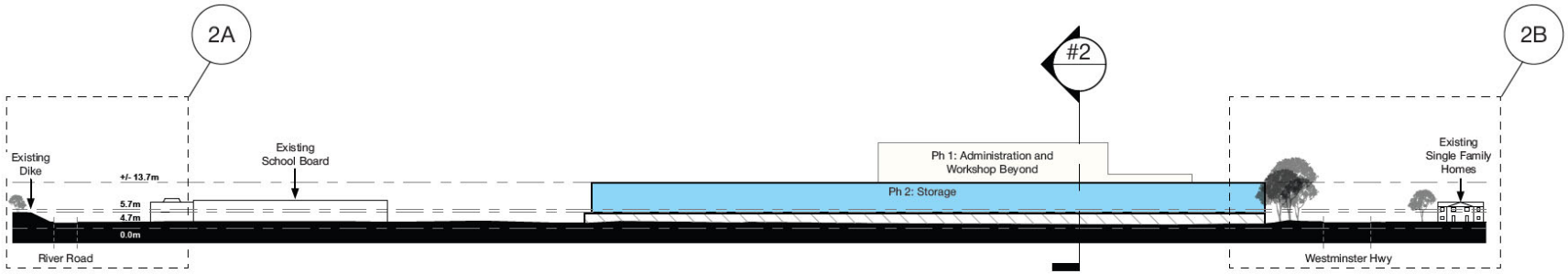
Site Section #1
South Site Section



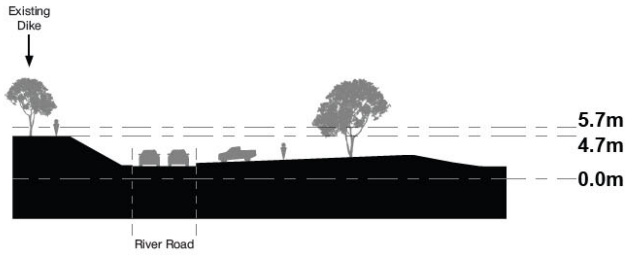
2A Section Through River Road



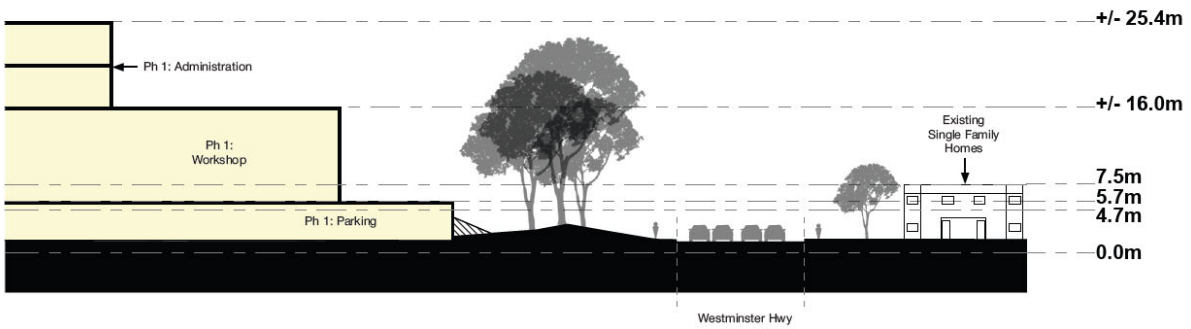
2B Section Through Ph2 & Westminster Hwy



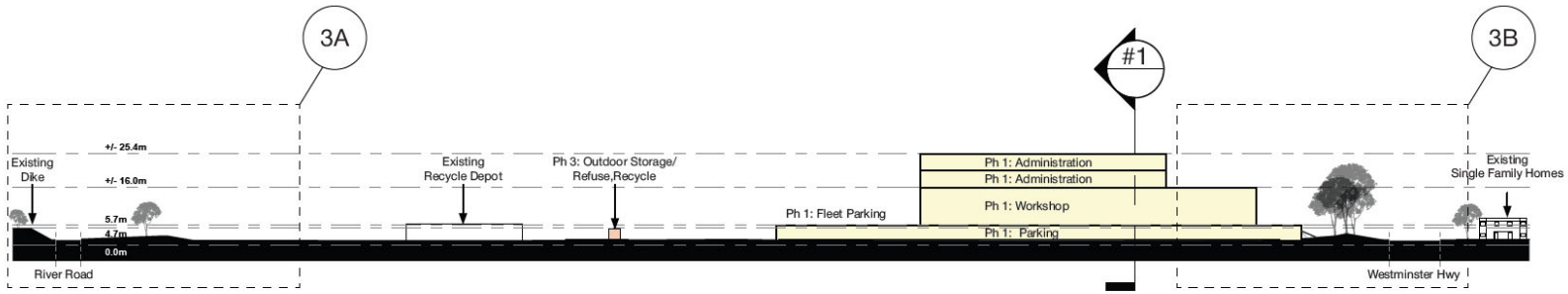
Site Section #2
West Site Section



3A Section Through River Road



3B Section Through Ph1 & Westminster Hwy



Site Section #3
East Site Section