



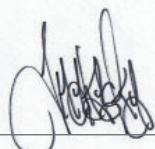
Nanaimo Operations Centre - Amendment to 2021 Master Plan / Conceptual Plan

April 26, 2022

SIGNATURES


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PROJECT OVERVIEW

1.1 INTRODUCTION

2022 Re-development Option

Kasian prepared a Master Plan for the Nanaimo Operations Centre in 2021. In preparation for the start of Phase 1 of the Master Plan, the steering committee approached Kasian to amend Phase 1 to provide an alternate option focused mainly on the fleet maintenance building.

The following revisions to Phase 1 were requested:

- Fleet Maintenance Facility to proceed in Phase 1.
- Purpose-built Storage Building to be undertaken in a future phase.
- Reduce amount of site clearing along the northeast property line to minimum required for long-term operation of site.
- Assume that existing housing site area will not be immediately available, identify other existing site areas for fleet parking.
- Identify potential growth space (administration, interior and exterior storage) for long-term operation of site following completion of Phase 1.
- Identify extent of off-site upgrades.
- Revise electrical and civil phasing to reflect revisions to Phase 1.
- Update stormwater line on the property part of revised phase 1.

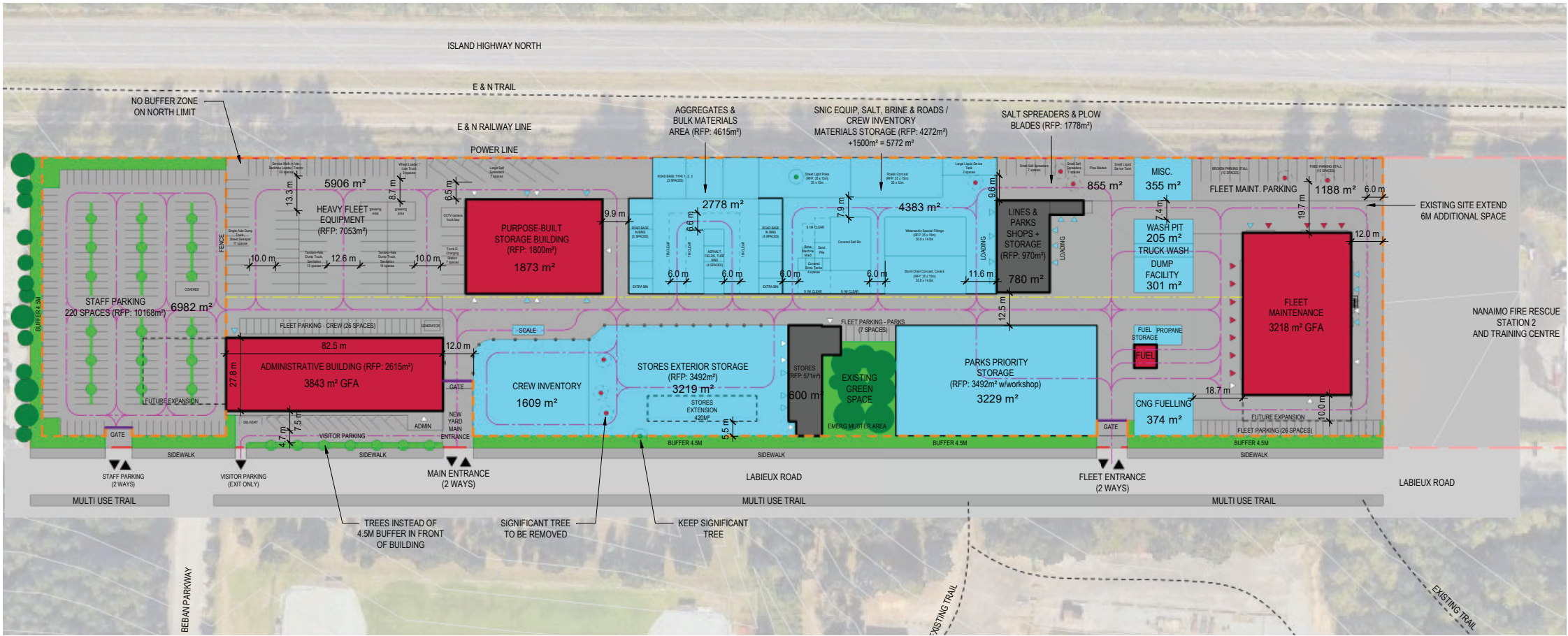
2.0 MASTER PLAN

2021 MASTER PLAN

OVERVIEW

The 2021 master plan was developed through a combination of information obtained from prior master planning exercises, input from the steering committee and user groups and a review of existing site conditions. It is a response to planning objectives established at the outset of the master planning exercise, among them a focus on safety by design, establishing and maintaining critical operational adjacencies, establishing safe and effective circulation patterns (pedestrian, vehicular and operational) and striking a balance between short-term economy and long term operational value.

This amendment makes no changes to the 2021 master plan. For further information regarding planning objectives and master plan approach refer to the original report.



PROGRAM LEGEND

EXISTING BUILDING	PROPERTY LINE	REMOVABLE BOLLARDS	SITE ACCESS
PROPOSED BUILDING	SECURITY FENCE	SIGNIFICANT TREE TO BE REMOVED	HEAVY OVERHEAD DOOR
EXISTING GREEN SPACE	FLEET CIRCULATION	SIGNIFICANT TREE TO REMAIN	OVERHEAD DOOR
PROPOSED GREEN SPACE	PEDESTRIAN CIRCULATION		PEDESTRIAN ACCESS
UNCOVERED AREA	SETBACK		
PARKING AREA			

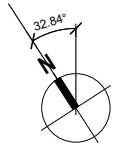


Figure 2. 1 Master Plan

2.1 IMPLEMENTATION / PHASING STRATEGY

APPROACH

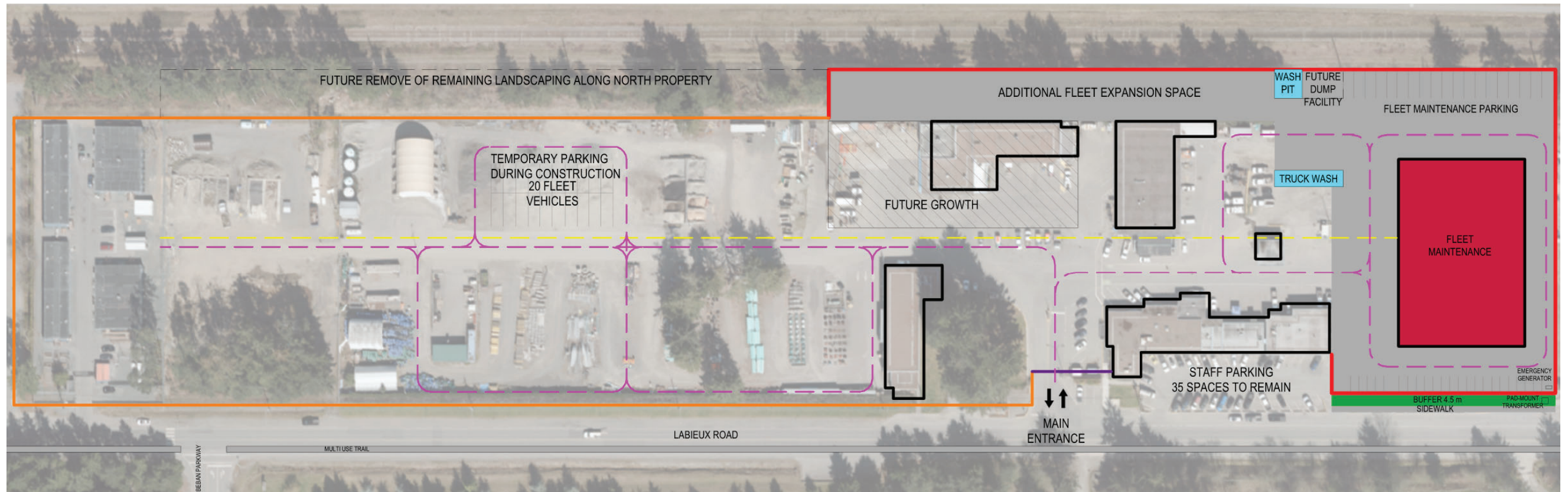
The primary objective of the execution of the Master Plan is the continued and uninterrupted operation of the Nanaimo Operations Center. To that end, the original Phasing Plan divided the work necessary to execute the Master Plan into four phases.

The original phasing represented an ideal approach to the execution of the master plan, one that would prioritize completing work as quickly as possible while maintaining continuous operation of the site. The original phases were also organized so that site areas are redeveloped only once, and functions are relocated to their final location wherever possible.

As the city of Nanaimo contemplates the start of further design work, it has become necessary to review and modify the original phase 1 of the phasing plan to ensure it reflects current priorities. The following modifications are reflected in the revised phasing:

- As a result of the required modifications, the original phase 1 has been divided into two phases with the fleet maintenance building forming the bulk of phase 1 and the purpose built storage building being moved to phase 2. Phases 3-4 remain the same, however, as the project moves forward into future phases, these can also be reviewed and modified to reflect any changing needs that may arise.
- Additionally, options to phase 1 have been provided that respond to the possibility that the temporary housing on the northwest portion of the site may or may not be available to the project at the outset of the phase.
- Refer to the original report for further information on the original phasing plan.

PHASE 1



PHASE 1 - FLEET MAINTENANCE AREA

Figure 2.2 Master Plan Phasing - Phase 1

- Temporary housing to remain.
- Relocate aggregates off-site to accommodate temporary 20 fleet vehicles parking stalls during construction.
- Relocate 38 staff parking stalls off-site.
- Remove portion of landscaping along northeast property line, extent as shown; add new fence and tie into existing as shown.
- Relocate wash pit and truck wash.
- Build fleet maintenance building.
- Following completion of phase 1, existing fleet maintenance building and site areas vacated by fleet to act as growth space for interior storage, administration growth and exterior storage/parking until beginning of next phase of work.

LEGEND

	EXISTING BUILDING		GATE		FLEET CIRCULATION
	DEMOLISHED		EXISTING FENCE		PEDESTRIAN CIRCULATION
	NEW BUILDING		NEW FENCE		SITE ACCESS
	UNCOVERED AREA				

ALTERNATIVE PHASE 1

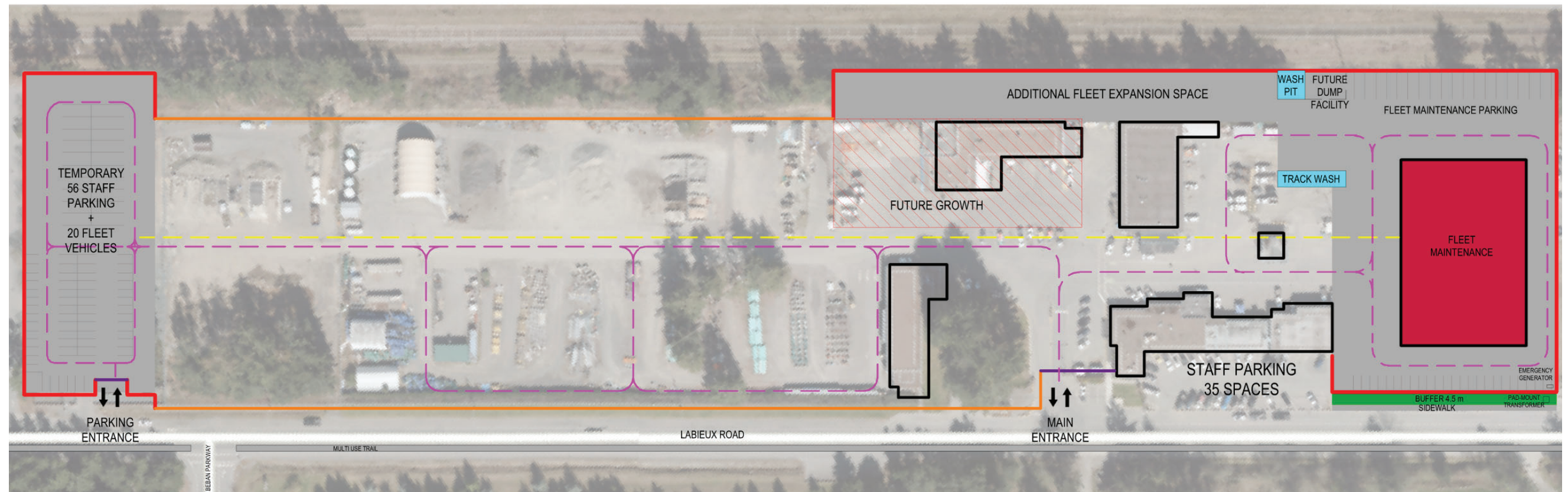


Figure 2. 3 Master Plan Phasing -Alternative Phase 1 Figure

ALTERNATIVE PHASE 1 - FLEET MAINTENANCE AREA

- Relocate temporary housing.
- Relocate 38 staff parking stalls and 20 heavy fleet vehicle parking to temporary area.
- Remove portion of landscaping along northeast property line, extent as shown; add new fence and tie into existing as shown.
- Relocate wash pit and truck wash.
- Build fleet maintenance building.
- Following completion of phase 1, existing fleet maintenance building and site areas vacated by fleet to act as growth space for interior storage, administration growth and exterior storage/parking until beginning of next phase of work.

LEGEND

	EXISTING BUILDING		GATE		FLEET CIRCULATION
	DEMOLISHED		EXISTING FENCE		PEDESTRIAN CIRCULATION
	NEW BUILDING		NEW FENCE		SITE ACCESS
	UNCOVERED AREA				

ALTERNATIVE PHASE 1 ADDITIONAL GROWTH SPACE OPTION

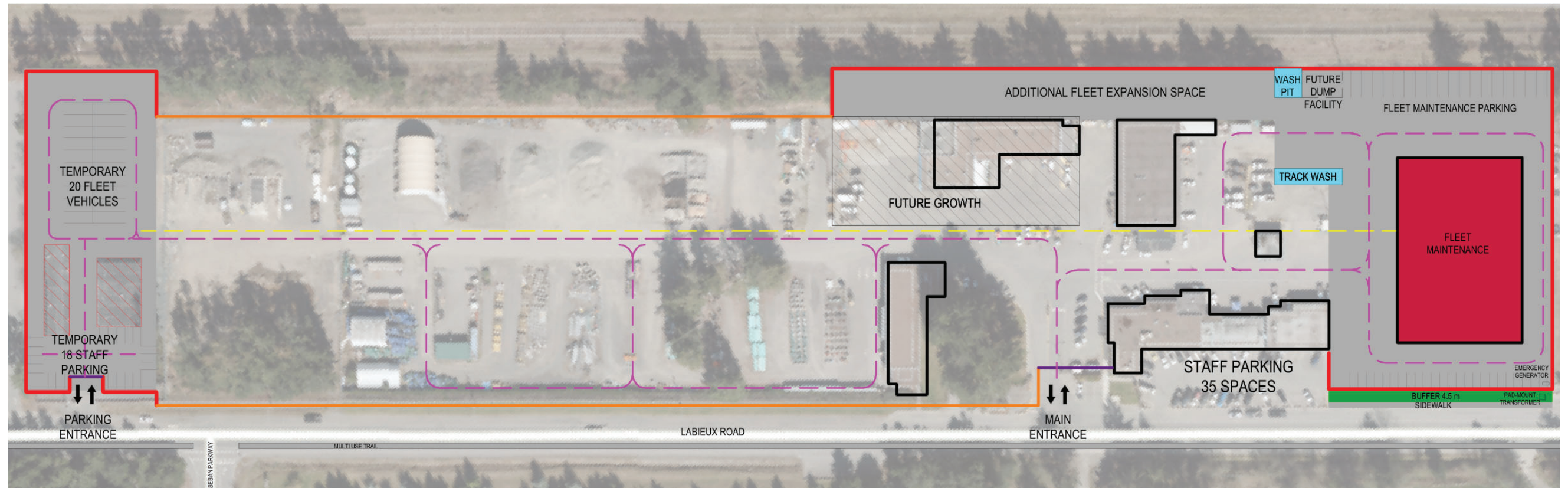


Figure 2. 4 Master Plan Phasing - Alternative Phase 1 Additional growth space option

ALTERNATIVE PHASE 1 - ADDITIONAL GROWTH SPACE OPTION

- Relocate temporary housing, but keep half of the modular units on site for administrative growth.
- Relocate 20 staff parking stalls off-site, options include beban park, Nanaimo fire rescue station 2, street parking or a combination of the three.
- Relocate 20 heavy fleet vehicle parking to temporary area adjacent modular units.
- Remove portion of landscaping along northeast property line, extent as shown; add new fence and tie into existing as shown.
- Relocate wash pit and truck wash.
- Build fleet maintenance building.
- Following completion of phase 1, existing fleet maintenance building and site areas vacated by fleet to act as growth space for interior storage, administration growth and exterior storage/parking until beginning of next phase of work.

LEGEND

	EXISTING BUILDING		GATE		FLEET CIRCULATION
	DEMOLISHED		EXISTING FENCE		PEDESTRIAN CIRCULATION
	NEW BUILDING		NEW FENCE		SITE ACCESS
	UNCOVERED AREA				

PHASE 2

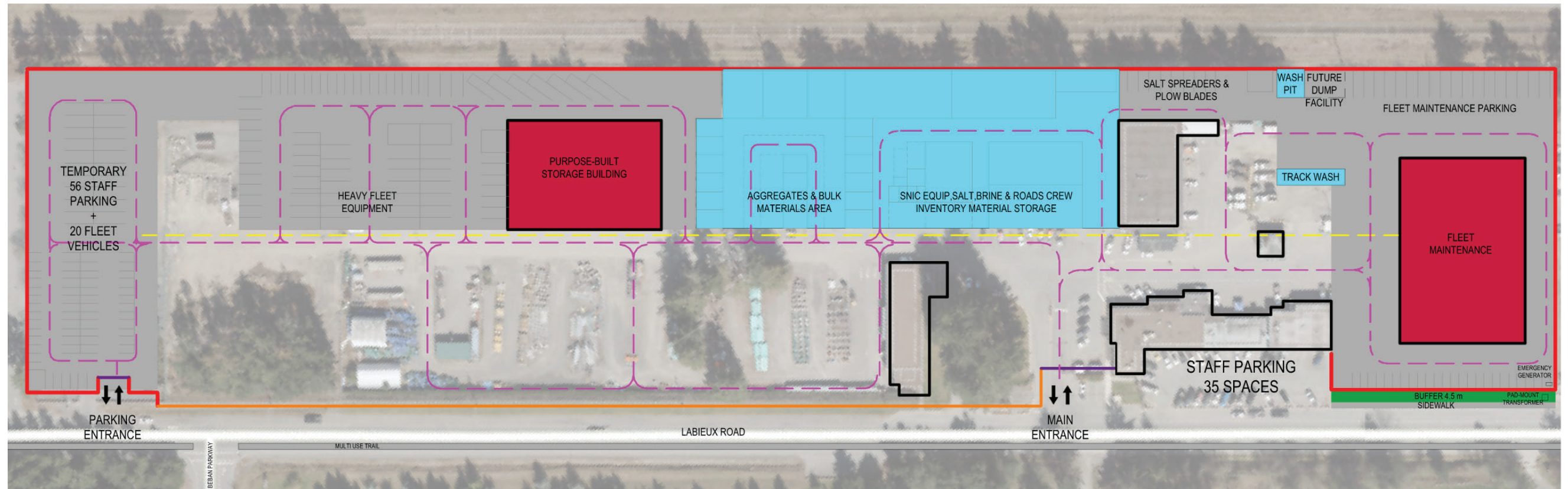


Figure 2.5 Master Plan Phasing - Phase 2 Figure

PHASE 2- PURPOSE BUILT STORAGE BUILDING, AGGREGATES AREA AND HEAVY FLEET EQUIPMENT

- Remove remaining landscaping along northeast property line; add new fence and additional parking.
- Relocate aggregates off site.
- Add three temporary aggregates bins.
- Build purpose built storage building.
- Relocate sea can storage to purpose built storage building.
- Demolish existing fleet maintenance building.
- Relocate salt storage structure.
- Relocate aggregates.
- Relocate SNIC equipment.
- Complete heavy fleet equipment area.

LEGEND

	EXISTING BUILDING		GATE		FLEET CIRCULATION
	DEMOLISHED		EXISTING FENCE		PEDESTRIAN CIRCULATION
	NEW BUILDING		NEW FENCE		SITE ACCESS
	UNCOVERED AREA				

PHASE 3

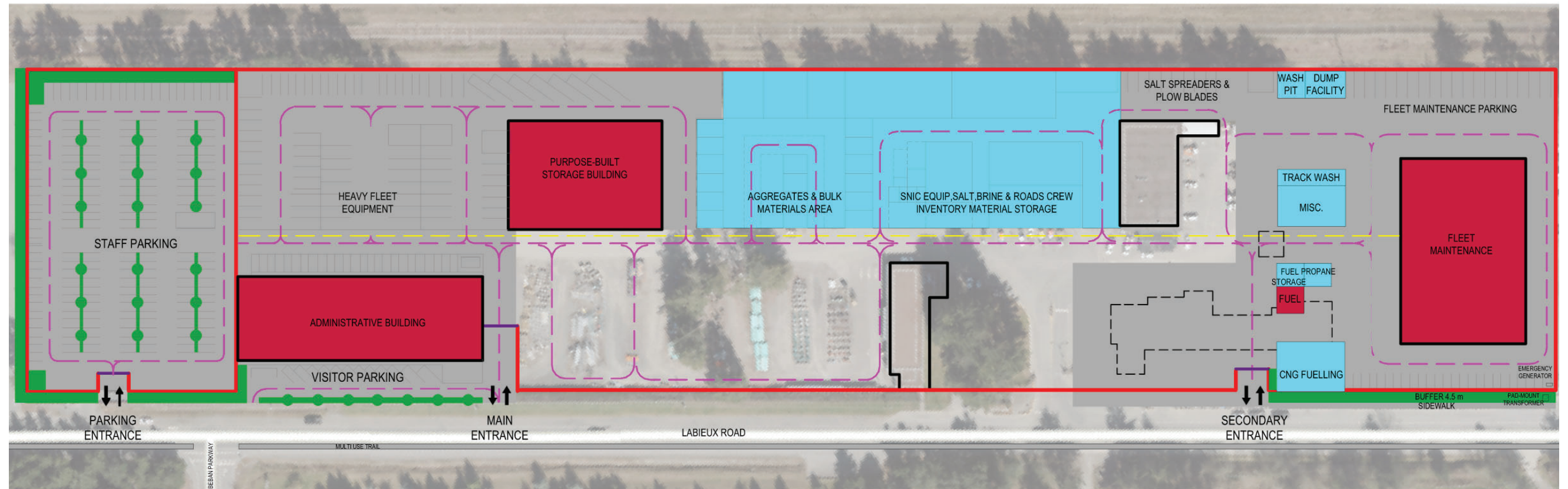


Figure 26 Master Plan Phasing - Phase 3 Figure

PHASE 3 - ADMINISTRATION BUILDING AND STAFF PARKING

- Relocate dump facility.
- Construction of new administration building.
- Establishment of new main entrance.
- Demolition of existing administration building.
- Relocation of fueling station.
- Addition of CNG fueling station.
- Establishment of secondary entrance.
- Addition of miscellaneous material site area.

LEGEND

	EXISTING BUILDING		GATE		FLEET CIRCULATION
	DEMOLISHED		EXISTING FENCE		PEDESTRIAN CIRCULATION
	NEW BUILDING		NEW FENCE		SITE ACCESS
	UNCOVERED AREA				

PHASE 4

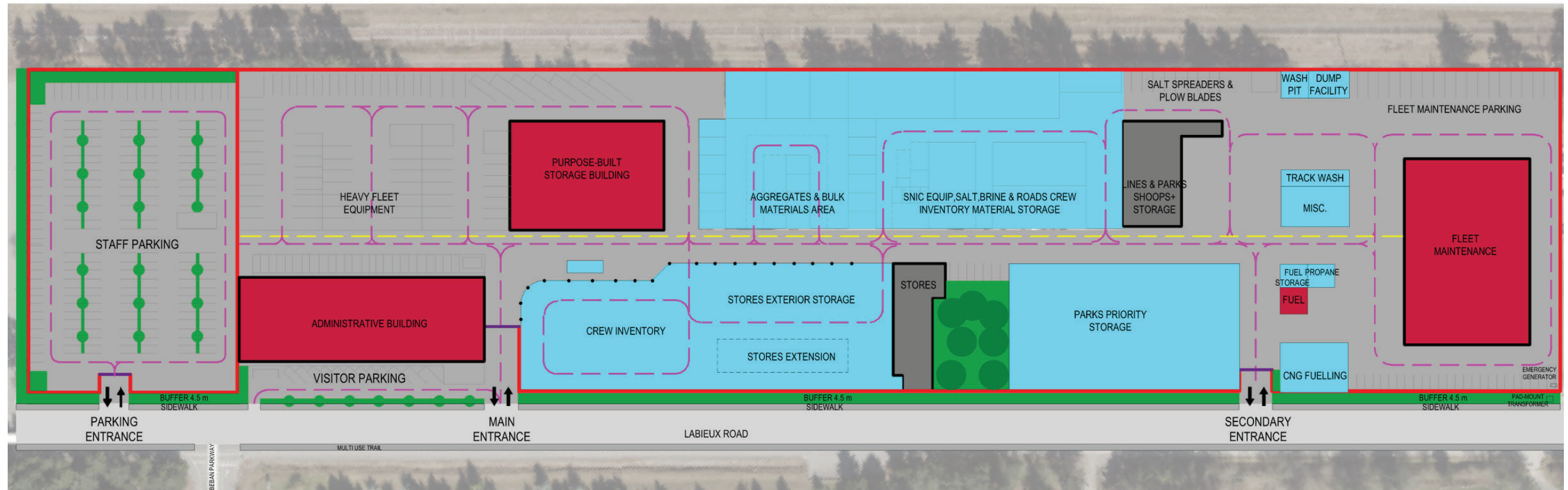


Figure 2.7 Master Plan Phasing - Phase 4 Figure

PHASE 4 - PARKS AND STORES

- Renovation of lines and parks shops and storage building.
- Renovation of stores building.
- Stores exterior storage and crew inventory areas.
- Parks priority storage.

LEGEND

	EXISTING BUILDING		GATE		FLEET CIRCULATION
	DEMOLISHED		EXISTING FENCE		PEDESTRIAN CIRCULATION
	NEW BUILDING		NEW FENCE		SITE ACCESS
	UNCOVERED AREA				

3.0 ENGINEERING OVERVIEW

3.1 CIVIL REPORT

CITY OF NANAIMO

NANAIMO PUBLIC WORKS YARD REDEVELOPMENT NANAIMO, BC





City of Nanaimo
Nanaimo Public Works Yard Redevelopment

ADDENDUM #1

Date: April 18, 2022

Revisions

DRAWINGS

See revised drawings attached to this Addendum.

SECTION 1.3 PROPOSED DEVELOPMENT

Revise as follows:

Section 1.3.1 New services for water, sanitary, storm, and hydro are proposed to access the facility through the two vehicle access points located on the east and west ends of the property. This preliminary design has been prepared assuming that all existing utilities will be replaced on site. To accommodate the first phase which includes the construction of the Fleet Maintenance building, we are proposing that services should be installed at the west entrance and capped to accommodate future phase construction.

SECTION 1.7 PHASING

Add the following sections:

1.7.1 Phase 1 It is recommended that the civil infrastructure progress starting at the east end to accommodate the work planned for the Fleet Maintenance, and Fleet Maintenance Parking areas. The primary stormwater management features such as the downstream rain garden would also be constructed during the first phase to facilitate future extension of the drainage system. Temporary tie-ins of utilities will be required for each phase. Due to the condition of the existing storm line on site, it is recommended that the proposed storm main be installed fully in the first phase which may have cost saving affects. The sanitary main may be installed simultaneously with the storm in a shared trench for further cost savings.

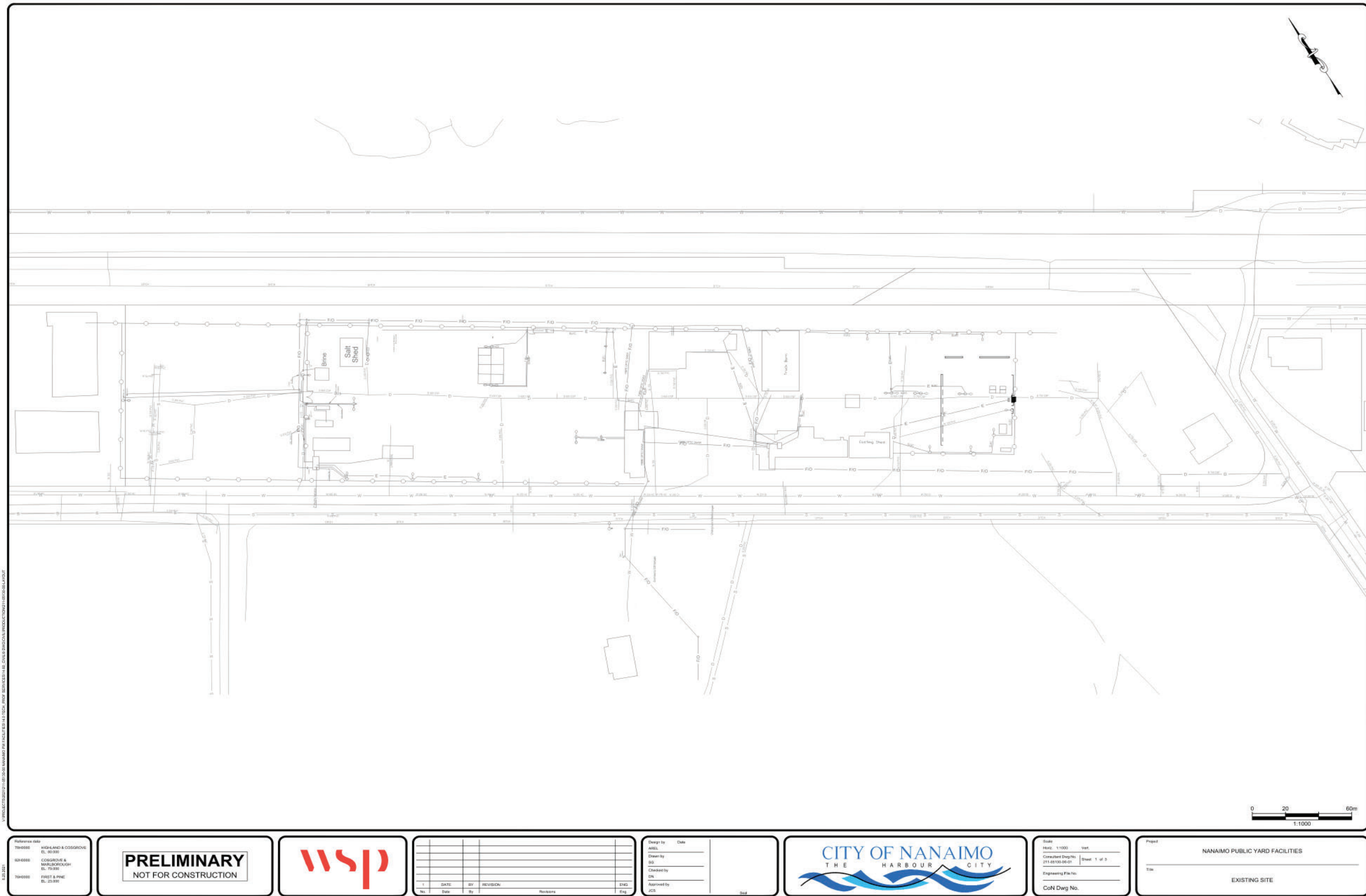
Alternatively, the first phase of construction could enter from the east and terminate with capped ends with the intention of adding on in future phases. In this case, the existing storm would be temporarily tied into the new storm line well enough that it could function for many years.

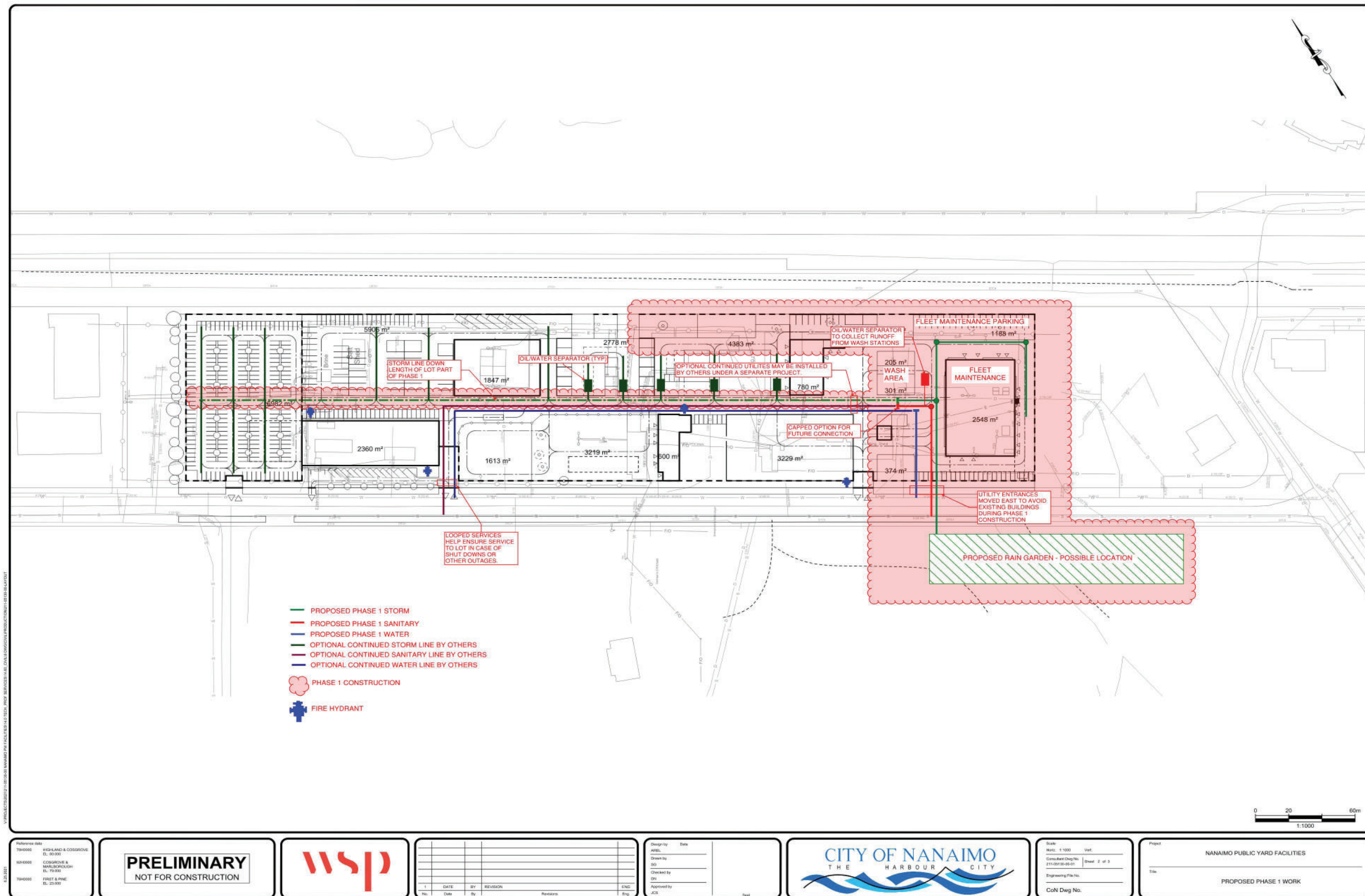
1.7.2 Phase 1.5 Extend services north to the Purpose-Built Storage Building for storm, water, and sanitary.

1.7.3 Phase 2 The second phase requires extension of services to the north for the Heavy Fleet Equipment, Aggregates/Materials/Roads Storage areas.

1.7.4 Phase 3 Extension to the west for the parking lot to service the Administration Building and Fueling Facilities with services that have not already been installed (in case services are installed all at once as discussed in phase 1).

1.7.5 Phase 4 Lines & Parks Shops + Storage, Stores, and Parks Storage requires extension of services to the south.





CITY OF NANAIMO

NANAIMO PUBLIC WORKS YARD REDEVELOPMENT NANAIMO, BC

3.2 ELECTRICAL REPORT





City of Nanaimo
Nanaimo Public Works Yard Redevelopment

ADDENDUM #1

Date: April 25, 2022

Revisions

SECTION 1.2 SITE SERVICES

Revise as follows:

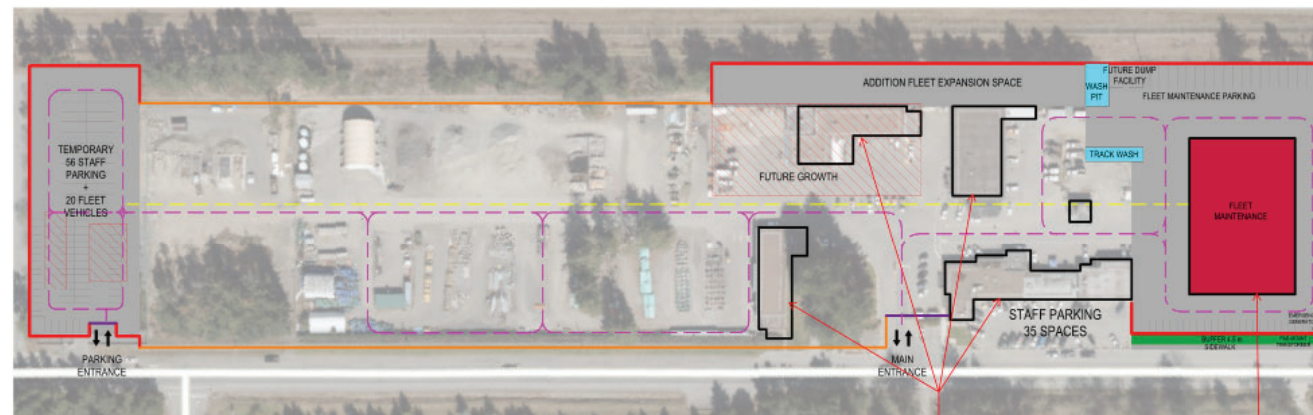
Section 1.2.1 Primary Service

Due to phasing two new BC Hydro connections are proposed for the site. For both, a new underground primary service in a concrete encased duct bank from the adjacent hydro poles to a new BC Hydro owned pad mount transformer (PMT) is proposed to service the site. The expected size of the new pad mount transformers at each location will be a 1000kVA, however this will need to be further confirmed during detailed design when more load information becomes available. BC Hydro will also need to be engaged to determine what the maximum size PMT they can provide in this area if they cannot provide a PMT of adequate size the PMT will need to be owner supplier and the site fed from BC hydro at 12.5/25kV. The new voltage of the site will be 600V as BC hydro no longer provide 480V services. One PMT will be located on the south west side of the site adjacent to the Admin building and other on the east of the site just south of the fleet maintenance building. Concrete encased underground raceways and cabling from secondary side of the transformer to the service entrance switchgear in the Main Electrical Rooms located in the new Admin and Fleet maintenance buildings. The Admin or Fleet maintenance building will then sub-feed all new and existing buildings via concrete encased underground ducts. Refer to figure 3 proposed distribution strategy.

SECTION 1.3 ELECTRICAL PHASING

Revise as follows:

Below figures 1 & 2 show the proposed electrical phasing for the project. Currently the fleet maintenance is to be constructed in phase 1 which could be constructed years before the rest of the new proposed buildings. Due to this a new permanent BC hydro service is proposed to feed the fleet maintenance building. Once the admin building is constructed in phase 3 a second BC hydro feed is proposed to feed the remainder of the site and replace the existing 480V feed.



Building continue to be fed from main electrical room in the existing Admin building. Provide new BC Hydro feed connected to main electrical room.



City of Nanaimo
Nanaimo Public Works Yard Redevelopment

ADDENDUM #1

Date: April 25, 2022

Figure 1 – Phase 1 Electrical

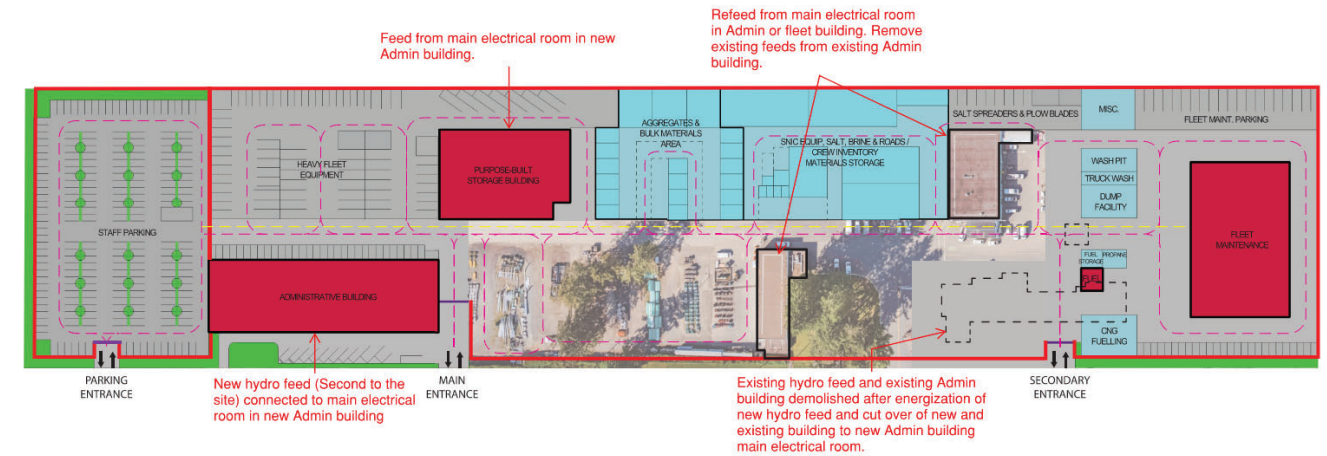


Figure 2 – Phase 2 Electrical

Currently two main electrical rooms for the site are proposed located in the administrative and fleet maintenance buildings. The remaining new and existing buildings could be fed from either of these locations. These options will be explored further during detailed design. Ducts will be stubbed out of the new fleet maintenance building during phase 1 and capped off for future connections to existing buildings and other loads to be refeed or constructed in the future. Temporary services such as lighting will be required to support the phasing for areas such as the temporary parking until the yard is completed to its ultimate configuration.

SECTION 1.4 BUILDINGS

Revise as follows:

Section 1.4.1 Power Distribution

Normal and stand by power will be distributed throughout the site at 600V and 480V via concrete underground duct from the main electrical room which is currently proposed in the Admin and fleet maintenance buildings. Refer to figure 3 for the high-level distribution strategy.



City of Nanaimo
Nanaimo Public Works Yard Redevelopment

ADDENDUM #1

Date: April 25, 2022



City of Nanaimo
Nanaimo Public Works Yard Redevelopment

ADDENDUM #1

Date: April 25, 2022

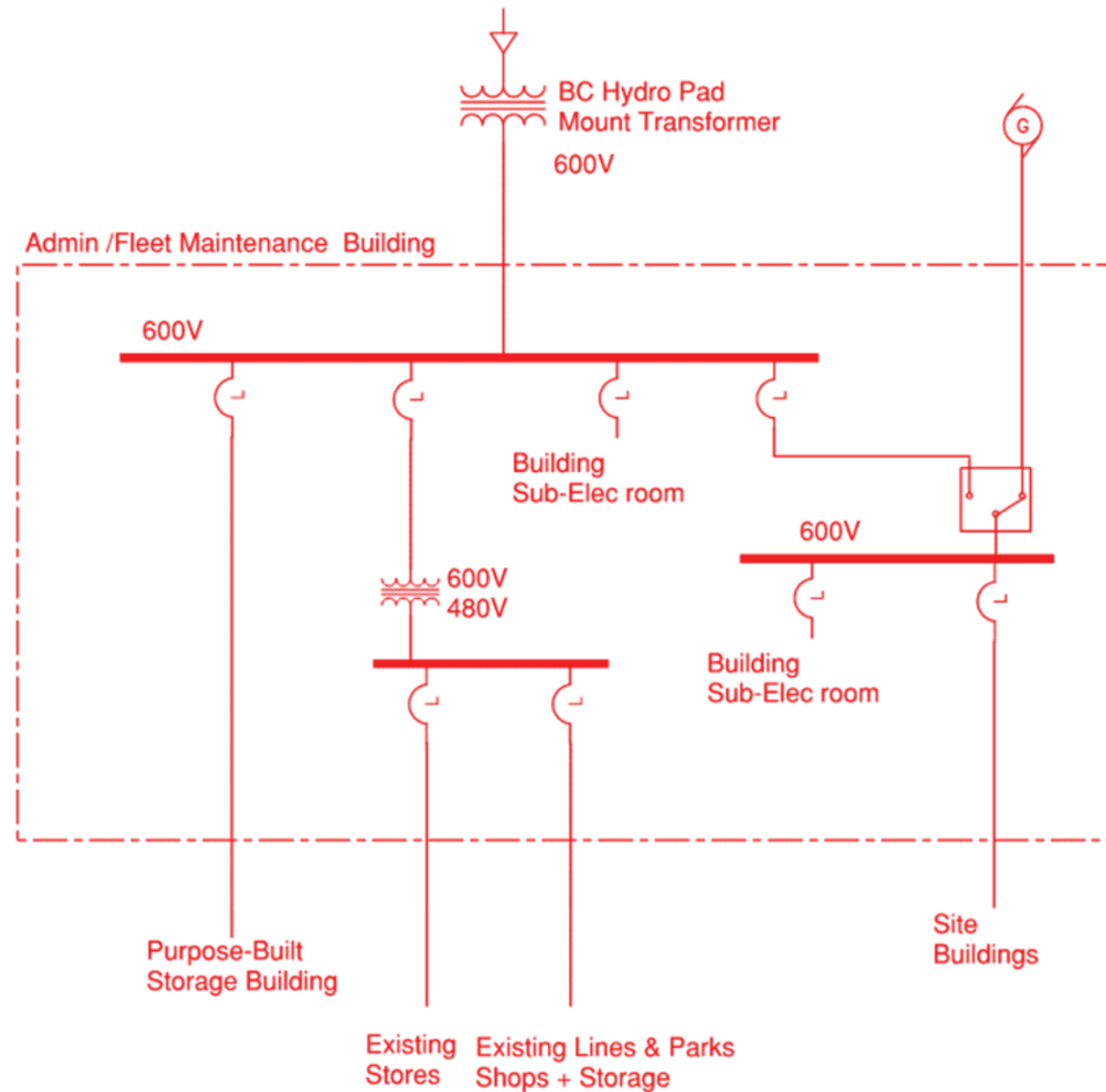


Figure 3 – Proposed new high-level single line

Section 1.4.1.2 Fleet Maintenance

The other main electrical room for the site will be located in the fleet maintenance building, the main electrical room will house the follow:

- 600V main distribution board
- Automatic transfer switch
- 600V to 120/208V Transformers
- 120/208V central distribution panels
- Lighting control panels
- Hydro metering
- Misc. panels

In this building an additional 480V will be provided for maintenance equipment as typically some of this equipment is only available at 480V.

For locations where CNG vehicles are to be serviced (Alternative Fuel Bay) at the fleet maintenance buying Class 1 Div. 2 will need to be allowed for.

Section 1.4.12 Standby Power

A new generator will be provided at both the Admin and fleet maintenance building, it is expected that the generator will backup the below percentage of the following buildings:

- Admin Building – 100%
- Fleet Maintenance – 100%
- Purpose-build storage building – 10%
- Stores – Fed from existing
- Line & Parks Shops + Storage – Fed from existing

Diesel Generator description:

- The generators will be a 600V, 500 - 1000kW (size to be confirmed at design stage, when more information becomes available for loads that require standby power) in a weatherproof, skin-tight enclosure, c/w sub-base fuel tank for minimum 72 hours operation, or as required by the city of Nanaimo.