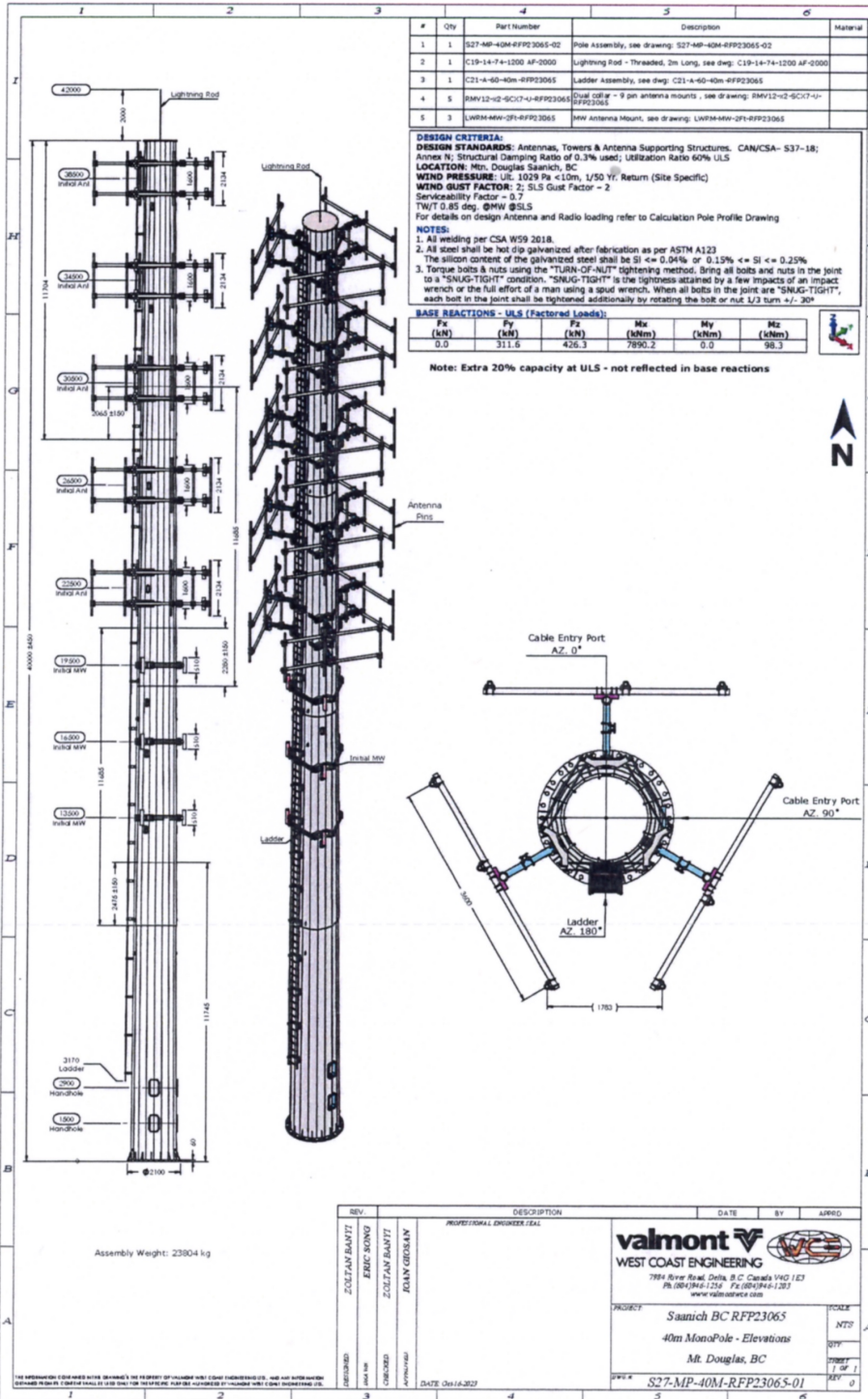




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770 Vernon Ave
Victoria BC V8X 2W7

t. 250-475-5401
f. 250-475-5444
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PKOLS Tower Replacement



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Why is the tower being upgraded:

The current tower is 20+ years of age and fatigued under new Canadian Standards Association guidelines. There is additional concern based on increasing wind magnitudes experienced.

Tenants' new technology are requiring larger equipment to maintain adequate levels of service.

Where is the new tower being built and what will it look like:

Pending a Geotech and building structural analysis report for location purposes, the final location is currently being determined. Factors such as environmental impact, installation and future maintenance safety, and costs are being considered.

The monopole tower will be 40m in height with a 6m vhf antenna at the top. This is the same model that is currently mounted on the existing tower. The first of three microwave antennas will start 13.5m from the base and the first of five antenna pinwheel arms will start 22.5m from the base. There is a locked anti-climb ladder included in the design starting at 3.2m from the base.

The new tower will be significantly heavier than the current tower, resulting in more considerations needed to address safety and environmental impact.

What is the anticipated schedule for the project:

March, 2024: Geotechnical and Structural Engineering reports to be received.

April, 2024: Report to Council.

April-May, 2024: Public Notice in accordance with Innovation, Science, and Economic Development Canada.

May 2024: Material Manufacture.

June, 2024: Foundation installation.

July, 2024: Monopole installation.

August, 2024: Installation of Ducting and Final Cleanup.

What are the benefits of this new tower:

Compliance with new Canadian Standards Association guidelines.

Ability of service providers to provide services based on changing technology.

Revenues contribute to enhancements in PKOLS (Mount Douglas Park) such as Douglas Creek restoration, new trails and bridge over Douglas Creek, and many environmental restoration projects.

What will happen to the current tower:

We are anticipating removing the current tower in late 2024/early 2025 once tenants have been transitioned to the new tower.

The current tower will remain until the new tower is operational.

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Alternate Cell Tower Locations

Legend

- Alternate Cell Tower Locations
- Zoning

Scale: 1:500

A - New Tower Adjacent to Existing Tower

Environmental Considerations	Construction Considerations	Safety Considerations during Construction	Costs (subject to change)	Recreation and Viewscape Considerations
<ul style="list-style-type: none"> » Removal of trees for road development construction. <ul style="list-style-type: none"> • Minimum: <ul style="list-style-type: none"> • 5-6 semi-mature Douglas Fir • 1 Large multi stem Arbutus • 1 Garry Oak • Possible: <ul style="list-style-type: none"> • 4 Garry Oak depending on conduit re-routing » Permanent removal of habitat » Area noted as potential habitat for six species or plant communities at risk. Permanent impacts to this location: <ul style="list-style-type: none"> • Moss Elfin (<i>Callophrys mossi</i>) • Poverty Clover (<i>Trifolium depauperatum t.</i>) • Douglas-fir / Arbutus (<i>Pseudotsuga menziesii / Arbutus menziesii</i>) • Garry Oak / Ocean Spray (<i>Quercus garryana / Holodiscus discolor</i>) • Propertius Duskywing (<i>Erynnis propertius</i>) • Garry Oak / California Brome (<i>Quercus garryana / Bromus carinatus</i>) 	<ul style="list-style-type: none"> » Requires temporary access road to site for drilling and blasting machinery. » Drilling and rock blasting required for road and site preparation. » Park summit would be continuously closed for 6-9 months longer than other options due to equipment and construction techniques required. » Crane would be required to be barged in from the Lower Mainland. » Require geotechnical and structural Engineer report for cable placement. 	<ul style="list-style-type: none"> » Create safe site for construction and future maintenance challenging. » Leveling of some surfaces for worker safety required. 	<ul style="list-style-type: none"> » \$1,201,428.70 » Create temporary access road for tower construction. » Decommission temporary road. » Increased crane costs. Barge crane from Vancouver as no crane large enough on Vancouver Island for this location. » Permanent tree removal (additional cost) » Further removal, restoration and tree replacement (Additional Cost) 	<ul style="list-style-type: none"> » Similar visibility to existing viewscape.

*If building a road, why is a large crane required
If tower is adjacent - weight 30M or 40M*



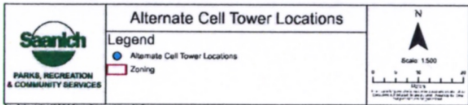
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770 Vernon Ave
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t. 250-475-5401
f. 250-475-5444

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B - New Tower Adjacent to Building at Top of Glendenning Trail

Environmental Considerations	Construction Considerations	Safety Considerations during Construction	Costs (subject to change)	Recreation and Viewscape Considerations
<ul style="list-style-type: none"> » Removal of trees for tower base. <ul style="list-style-type: none"> • Minimum: <ul style="list-style-type: none"> • 2-3 Garry Oak • Possible: <ul style="list-style-type: none"> • 1 Douglas Fir » Removal native vegetation to accommodate new conduit route. » Area noted as potential habitat for six species or plant communities at risk. Permanent impacts to this location: <ul style="list-style-type: none"> • Moss Elfin (<i>Callophrys mossi</i>) • Poverty Clover (<i>Trifolium depauperatum</i> t.) • Douglas-fir / Arbutus (<i>Psuedotsuga menziesii</i> / <i>Arbutus menziesii</i>) • Garry Oak / Ocean Spray (<i>Quercus garryana</i> / <i>Holodiscus discolor</i>) • Propertius Duskywing (<i>Erynnis propertius</i>) • Garry Oak / California Brome (<i>Quercus garryana</i> / <i>Bromus carinatus</i>) 	<ul style="list-style-type: none"> » Considered too close to communications building. » Blasting and leveling a large area of surround rock would be required to support monopole base. » Smaller crane required » Less conduit needed to building (less signal loss) » Require geotechnical and structural Engineer report for cable placement 	<ul style="list-style-type: none"> » Leveling of some surfaces for worker safety required. » Need to reroute or close Glendenning Trailhead and upper trail. 	<ul style="list-style-type: none"> » \$933,770.70 » Need to reroute Glendenning Trailhead (additional cost). » Further removal, restoration and tree replacement (Additional Cost) 	<ul style="list-style-type: none"> » May result in loss of one or two parking stalls.



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Alternate Cell Tower Locations

Legend

- Alternate Cell Tower Locations
- Zoning

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N
Scale: 1:500

C - New Tower on North Side of Building

Environmental Considerations	Construction Considerations	Safety Considerations during Construction	Costs (subject to change)	Recreation and Viewscape Considerations
<ul style="list-style-type: none"> » Removal of trees for road development construction. <ul style="list-style-type: none"> • Minimum: <ul style="list-style-type: none"> • 1 Douglas Fir • 2 Garry Oak » Some habitat loss, but likely less than Option A. » Area noted as potential habitat for six species or plant communities at risk. Permanent impacts to this location: <ul style="list-style-type: none"> • Moss Elfin (<i>Callophrys mossi</i>) • Poverty Clover (<i>Trifolium depauperatum t.</i>) • Douglas-fir / Arbutus (<i>Pseudotsuga menziesii / Arbutus menziesii</i>) • Garry Oak / Ocean Spray (<i>Quercus garryana / Holodiscus discolor</i>) • Propertius Duskywing (<i>Erynnis propertius</i>) • Garry Oak / California Brome (<i>Quercus garryana / Bromus carinatus</i>) 	<ul style="list-style-type: none"> » Considered too close to communications building. Blasting and leveling a large area of surround rock would be required to support monopole base. » Smaller crane required » Blasting and drilling to create site and conduit. » Less conduit needed to building (less signal loss) » Require geotechnical report and Structural Engineer report 	<ul style="list-style-type: none"> » Simple to secure site for safety. 	<ul style="list-style-type: none"> » \$933,770.70 » Further removal, restoration and tree replacement (Additional Cost) 	<ul style="list-style-type: none"> » Removal of large Douglas Fir more noticeable from skyline » Tower not prominent in skyline. » May result in loss of one or two parking stalls.

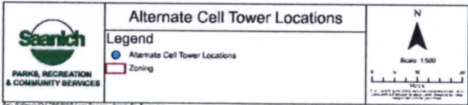


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f. 250-475-5444
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D - New Tower Adjacent to The PKOLS Welcome Sign

Environmental Considerations	Construction Considerations	Safety Considerations during Construction	Costs (subject to change)	Recreation and Viewscape Considerations
<ul style="list-style-type: none"> » Possible removal of Garry Oak » Possible pruning of Douglas Fir » Some habitat loss, but likely less than Option A. » Area noted as potential habitat for six species or plant communities at risk. Permanent impacts to this location: <ul style="list-style-type: none"> • Moss Elfin (<i>Callophrys mossi</i>) • Poverty Clover (<i>Trifolium depauperatum t.</i>) • Douglas-fir / Arbutus (<i>Psuedotsuga menziesii / Arbutus menziesii</i>) • Garry Oak / Ocean Spray (<i>Quercus garryana / Holodiscus discolor</i>) • Propertius Duskywing (<i>Erynnis propertius</i>) • Garry Oak / California Brome (<i>Quercus garryana / Bromus carinatus</i>) » Permanent impacts to location. 	<ul style="list-style-type: none"> » Drilling and rock blasting required for site preparation » Smaller crane required » Parking lot disturbance for conduit. » Some blasting and drilling to create site. » Require geotechnical and structural Engineer report for cable placement 	<ul style="list-style-type: none"> » Simple to secure site for safety. 	<ul style="list-style-type: none"> » \$817,770.70 » Possible pruning and possible tree removal (Additional Cost) 	<ul style="list-style-type: none"> » Need to relocate WSÁNEĆ sign and Charter rock. » Removal of large Douglas Fir more noticeable from skyline » Tower not prominent in skyline.



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Victoria BC V8N 2V7

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f. 250-475-5444
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Alternate Cell Tower Locations

Legend

- Alternate Cell Tower Locations
- Zoning

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Scale: 1:500

E - New Tower Adjacent to Water Cistern

Environmental Considerations	Construction Considerations	Safety Considerations during Construction	Costs (subject to change)	Recreation and Viewscape Considerations
<ul style="list-style-type: none"> » Removal of 1 Arbutus tree » Some native tree removals (Arbutus, possibly others) to allow for rock excavation. » Permanent habitat loss due to vegetation removal. » Area noted as potential habitat for six species or plant communities at risk. Permanent impacts to this location: <ul style="list-style-type: none"> • Moss Elfin (<i>Callophrys mossi</i>) • Poverty Clover (<i>Trifolium depauperatum t.</i>) • Douglas-fir / Arbutus (<i>Pseudotsuga menziesii</i> / <i>Arbutus menziesii</i>) • Garry Oak / Ocean Spray (<i>Quercus garryana</i> / <i>Holodiscus discolor</i>) • Propertius Duskywing (<i>Erynnis propertius</i>) • Garry Oak / California Brome (<i>Quercus garryana</i> / <i>Bromus carinatus</i>) » Permanent impacts to location. » Permanent removal of habitat 	<ul style="list-style-type: none"> » Requires blasting for site preparation » Smaller crane required » Blasting and drilling to create site and conduit. » Parking lot disturbance for conduit. » May require parking lot closure during construction. » Require geotechnical and structural Engineer report for cable placement. 	<ul style="list-style-type: none"> » Simple to secure site for safety. 	<ul style="list-style-type: none"> » \$904,770.70 » Possible relocation of water cistern (Additional Cost) » Tree removal (Additional Cost) 	<ul style="list-style-type: none"> » Tower not prominent in skyline



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G - New Tower in Parking Lot



Alternate Cell Tower Locations

Legend

- Alternate Cell Tower Locations
- Zoning

Scale: 1:500

Environmental Considerations	Construction Considerations	Safety Considerations during Construction	Costs (subject to change)	Recreation and Viewscape Considerations
<ul style="list-style-type: none"> » No tree removal » No damage to habitat. » No impacts to species at risk as area is already disturbed. 	<ul style="list-style-type: none"> » Require geotechnical and structural Engineer report for cable placement. » Smaller crane required. 	<ul style="list-style-type: none"> » Simple to secure site for safety. » Future maintenance easier and safer. 	<ul style="list-style-type: none"> » \$771,232.34 » No restoration costs. 	<ul style="list-style-type: none"> » Tower not prominent in skyline, including from lookout (large Douglas fir assists camouflage).

Cost difference 30m vs 40m tower.

↑ requires closure of parking lot

Cost changes to parking lot not included

- changing sign & chad rock

- cost of mural? around tower

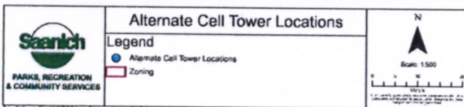


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770 Vernon Ave
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f. 250-475-5444
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F - New Tower Adjacent to Trail to Summit Lookout

Environmental Considerations	Construction Considerations	Safety Considerations during Construction	Costs (subject to change)	Recreation and Viewscape Considerations
<ul style="list-style-type: none"> » Removal of two small Arbutus trees » Area noted as potential habitat for six species or plant communities at risk. Permanent impacts to this location: <ul style="list-style-type: none"> • Moss Elfin (<i>Callophrys mossi</i>) • Poverty Clover (<i>Trifolium depauperatum t.</i>) • Douglas-fir / Arbutus (<i>Psuedotsuga menziesii / Arbutus menziesii</i>) • Garry Oak / Ocean Spray (<i>Quercus garryana / Holodiscus discolor</i>) • Propertius Duskywing (<i>Erynnis propertius</i>) • Garry Oak / California Brome (<i>Quercus garryana / Bromus carinatus</i>) » Permanent impacts to location. » Permanent. habitat loss of native vegetation. 	<ul style="list-style-type: none"> » Too far from communications building. Would require pull boxes for cables. » Signal compromised due to cable distance too long » Drilling and rock blasting required for road, site preparation » Smaller crane required » Outside of P-9 zone requires rezoning of P-4N parkland » Some blasting and drilling to create site. » Parking lot disturbance for conduit. » Require geotechnical and structural Engineer report for cable placement. 	<ul style="list-style-type: none"> » Simple to secure site for safety. 	<ul style="list-style-type: none"> » \$904,770.70 » Tree removal (Additional Cost) 	<ul style="list-style-type: none"> » May require parking lot closure during construction. » May require rerouting of trail to summit. » Permanent loss of two or more parking stalls » Tower not prominent in skyline



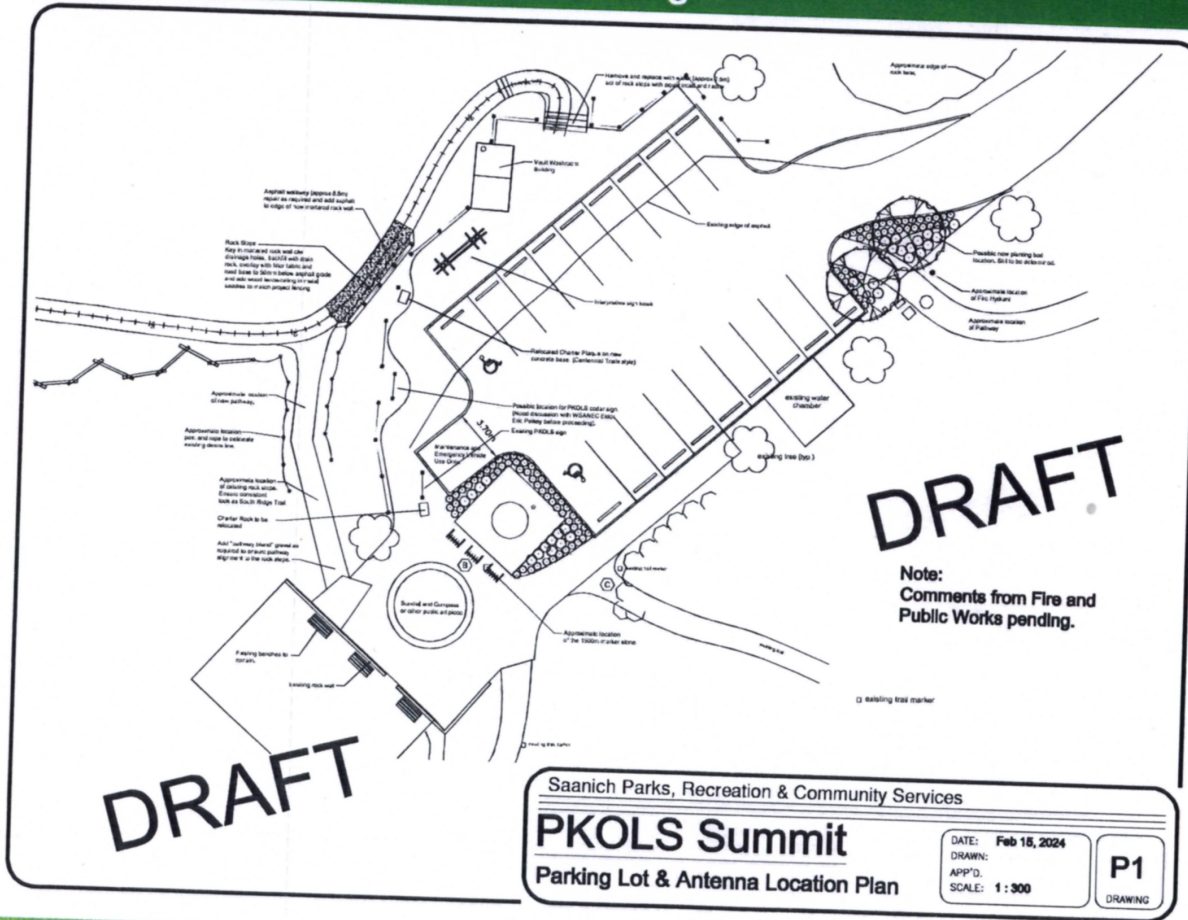
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770 Vernon Ave
Victoria BC V8X 2W7

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f: 250-475-5444
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Parking



DRAFT

Note:
Comments from Fire and
Public Works pending.

DRAFT

Saanich Parks, Recreation & Community Services

PKOLS Summit

Parking Lot & Antenna Location Plan

DATE: Feb 15, 2024
DRAWN:
APP'D:
SCALE: 1 : 300

P1
DRAWING

