In late 2018, The Ministry of Transportation and Infrastructure initiated a discussion on how to address safety concerns at the existing Cathedral Grove park access while continuing to protect inherent environmental, social, and cultural values. We heard extensive feedback about values and a range of ideas that could be considered.

Based on this initial input, a number of potential ideas were identified and initially studied. Several appear to have merit for further consideration. We would like to obtain your feedback on these emerging ideas to contribute to their evaluation, as well as identify refinements or additional ideas.

Cathedral Grove is a very special place. We appreciate your help in planning carefully for the future.

In this discussion guide you will find:

- Background and process information
- Key planning considerations
- Preliminary options for review
- Instructions on how to provide feedback
We would appreciate hearing your feedback on the information and preliminary options outlined in this discussion guide.

Please share your feedback by:

- Submitting a feedback questionnaire online at engage.gov.bc.ca/cathedralgrove
- Emailing your feedback questionnaire or comments to cathedralgrove@gov.bc.ca
- Completing a feedback questionnaire in hard copy and dropping it at one of the Public Information Sessions:
  - Parksville Session
    Wednesday, June 19, 2019  4:00 - 8:00 pm
    Parksville Community Centre, 132 E. Jensen Ave
  - Port Alberni Session
    Thursday, June 20, 2019  4:00 - 8:00 pm
    Port Alberni Friendship Centre, 3555 4th Ave
- Mailing a feedback questionnaire or other comments to:
  - Ministry of Transportation and Infrastructure
    3rd Floor - 2100 Labieux Road
    Nanaimo, BC  V9T 6E9

Please provide your input by July 31, 2019.

In Fall 2019, watch for:

- A feedback summary posted on the Project website: engage.gov.bc.ca/cathedralgrove
- Announcements about next steps in the process and opportunities to continue to be involved

Thank you for participating!
Background

- Each year roughly 500,000 visitors from around the world come to experience the old growth giants and unparalleled beauty of Cathedral Grove in MacMillan Provincial Park.
- Visitors arrive by vehicle, parking along Hwy 4 and crossing the highway to visit both sides of the park.
- Parking demand often exceeds capacity during peak times which leads to unsafe maneuvers that compromise safety for pedestrians and motorists.
- A safety issue has existed for many years and continues to grow as traffic increases.
- The Ministry of Transportation and Infrastructure aims to build and maintain a safe and reliable multi-modal transportation system for British Columbians.

Process

- Initial engagement was focused on outlining the scope of the Study and understanding public values and ideas to help shape potential options.
- Based on input received, a long list of options to address pedestrian and traffic safety issues was initially studied. A key part of this step was analyzing strengths and challenges of each idea and confirming feasible options to bring forward for further public engagement.
- This current step invites public participation in option review – working together to assess pros and cons of each of the options. This input will help focus in on the options that appear to have most merit.
- Further engagement steps will be defined based on the outcomes of this review.

The objective of this study is to make recommendations for pedestrian and traffic safety improvements that could be completed in a short-term time frame.
We acknowledge the traditional territories of the Coast Salish and the Nuu-chah-nulth peoples.
Common scenes at Cathedral Grove during the summer months
In Fall / Winter 2018, initial engagement was completed for the study. The first phase focused on listening and understanding. The goal was to work with participants to identify potential ideas that address both safety concerns AND protection of Cathedral Grove’s inherent values. The following graphic summarizes key information collected during this first phase.

The full engagement summary can be read online at engage.gov.bc.ca/cathedralgrove.

**PARTICIPATION**

- 488 questionnaires completed
- 75 participants at public events
- 1,584 visits to the project website

**KEY OBSERVATIONS**

- Many discussions and opinions about the balance between human safety and protection of rare old growth trees and valued environmental assets

**VALUES**

**HIGH PRIORITY VALUES IDENTIFIED BY QUESTIONNAIRE PARTICIPANTS**

1. Safety of park visitors and road users
2. Potential fish habitat impacts
3. Potential effects on important old growth forest
4. Potential effects on the Cameron River
5. Opportunities to continue visiting Cathedral Grove

**SEASONS PLAY A ROLE**

- Summer is consistently reported as busy
- People also feel the area is getting increasingly busy through spring and fall and on some weekends in winter

**“FIT” IS VERY IMPORTANT**

Along with protection of environment, improvements should also incorporate design and aesthetics that “fit” with the forest setting

**ACTIVE TRANSPORTATION**

Should be considered and integrated as ideas are developed
IDEAS

316 SUGGESTIONS TO RELOCATE OR ADD PARKING TO A DIFFERENT AREA

290 SUGGESTIONS TO CONSIDER A PEDESTRIAN OVERPASS OR UNDERPASS TO HELP PEOPLE SAFELY VISIT BOTH SIDES OF THE PARK

138 SUGGESTIONS FOR MORE TRAILS TO CONNECT TO PARKING AND PROVIDE SAFE ROUTES

124 COMMENTS ABOUT PROTECTING OLD GROWTH TREES

255 SUGGESTIONS TO CONSIDER A HIGHWAY BYPASS AROUND THE PARK

114 IDEAS ABOUT SHUTTLES TO TRANSPORT PEOPLE TO/FROM THE PARK

+ MANY MORE IDEAS INCLUDING:

- Designated / controlled at-grade pedestrian crosswalk
- Improvements to existing parking area
- Traffic calming
- Enforcement
- Limiting access to the park
- Separated bus and RV parking
- Highway shoulder improvements
- Additional signage
- Accessibility
Over the years, several safety improvements have been completed at Cathedral Grove. These have improved conditions by increasing motorist awareness and slowing vehicles. However, safety concerns still exist. The following three key issue types contribute to safety concerns.

**Pedestrian Movements**

Thousands of people travel through Cathedral Grove daily. Pedestrians walking along or crossing the highway at various locations increase the potential for an accident that could have serious consequences.

- Most park-goers cross Highway 4 to visit trails on both sides of Cathedral Grove.
- Visitors park in unauthorized locations along the highway shoulder and walk on the highway from their vehicles to park destinations, at times walking in vehicle travel lanes.
- Groups of 1 - 20 (or more) people cross the highway at a time, often including children, infants in strollers, and the elderly.
- There is no designated crossing point or time – pedestrians cross when traffic stops or slows – sometimes waiting several minutes, running to beat vehicles, or walking into traffic to stop vehicles.
Parking

People travel many kilometres to visit Cathedral Grove. Because the park is a destination, people want to complete their visit even if the parking lot is full. This can lead to visitors parking in unsafe ways.

- The location of the park means most visitors arrive by personal vehicle, with some arriving by tour bus. Parking demand often exceeds capacity at mid-day during the busy season.
- Vehicles parked on narrow shoulders often encroach into highway vehicle lanes, impacting pedestrian and motorist safety.
- Vehicles often park in no-parking zones when designated lots are full.
- Larger vehicles like buses and RVs often double park, impacting sight-lines for pedestrians and drivers.

Vehicle Movements

Over 10,000 vehicles pass through Cathedral Grove on Hwy 4 daily. During site analysis, vehicles at Cathedral Grove were observed using the highway in a number of unauthorized ways: as a loading zone, conducting u-turns and three-point turns in the travel lanes, reversing into oncoming traffic, and backing up across both highway lanes, creating unsafe highway conditions.

- Daily Highway 4 traffic volumes are heaviest in midday (11 am to 4 pm). Weekly volumes are heaviest Friday afternoon and Saturday mid-day.
- About 90% of the traffic is passenger vehicles. The remaining 10% is heavy vehicles and recreational vehicles.
- Long platoons of motorists following slow-moving vehicles are frequently observed on the highway.
- Park visitors often use illegal manoeuvres to access or leave the parking area at Cathedral Grove.
A LiDAR analysis of tree heights was completed to begin building an understanding of the size, age class, and forest composition of the broad study area. This information provides an early indication of areas that should be avoided and those that may warrant further study, helping to narrow the focus to sites that may be more suitable for potential improvements.

Looking at the height of trees provides initial information about the potential locations of valuable old growth ecosystems within a large study area. However, tree heights do not necessarily confirm whether or not a tree is old growth. As options are narrowed, more detailed environmental analysis, including field surveys of candidate sites, will be completed to inventory tree species and diameters and review habitat value and complexity to confirm their viability based on environmental values.

**Tree Heights Map**

The purple, red, and yellow areas indicate locations with taller trees.
To continue building a comprehensive picture of the study area, an **Environmental Overview Study** was completed.

This desktop study used existing data and site photos to identify potential environmental values in the study area. This provides input to the option development and identifies key considerations for future planning and design.

Read the Environmental Overview Study online at: [engage.gov.bc.ca/cathedralgrove](http://engage.gov.bc.ca/cathedralgrove).

**Next Steps**

Once options for pedestrian and traffic safety improvements have been narrowed, specific and detailed environmental study, including focused fieldwork, will be completed. This entails assessing potential sites for habitat suitability for the species identified in the Environmental Overview Study using applicable standards. It is important to note that there are key times of year to conduct these studies which vary by species. The results of additional habitat suitability study would be used to confirm whether or not options should proceed and mitigation measures that may be required.

### Environmental Overview Highlights

The following key observations are from the Environmental Overview Study.

#### Regulatory Considerations

Both federal and provincial legislation will need to be followed when planning safety improvements:

- Federal Migratory Birds Convention Act
- Federal Species at Risk Act
- Federal Fisheries Act
- BC Wildlife Act
- BC Water Sustainability Act
- BC Heritage Conservation Act
- BC Park Act

#### Topography

The Cameron River Valley is relatively flat and surrounded by very steep slopes (50%+ grades) to both the east and west.

#### Species at Risk

31 species at risk have potential to be found in the area. Surveys would be required to confirm their presence:

- 3 species at risk have been previously documented: Howell’s violet, waterwort water-milfoil, and western branded skipper
- Critical habitat has been identified for 1 species: marbled murrelet
- 2 provincially-listed plant species have been previously documented: Western St. John’s-wort (yellow listed) and dwarf Trillium (blue listed)

#### Water and Fisheries Resources

Cameron River and Cameron Lake are both fish-bearing:

- Rainbow trout and steelhead are in both the river and the lake
- Brown trout, bull trout, cutthroat trout, and prickly sculpin are in the lake only

Movement of the Cameron River bed is influenced by forestry activity, extreme rain and winds, large woody debris, and fallen trees. There is no known aquifer beneath the area.

#### Vegetation

The area includes old growth trees from 300 - 800 years old, as well as regenerating areas where openings have been created by windthrow or previous logging activity. Primary tree species include Douglas-fir, western hemlock, western redcedar, bigleaf maple, and red alder.

#### Wildlife

The coniferous forest and riparian habitats are potentially attractive to a wide range of mammals, birds, amphibians, and reptiles. Many wildlife species depend on old growth forest. Studies suggest the area contains habitat suitable for Roosevelt Elk.
A wide range of ideas were identified in Phase 1. The tables below provide an overview of the ideas recorded and a summary and rationale of those being pursued as part of this Study.

### PARKING IMPROVEMENT IDEAS

<table>
<thead>
<tr>
<th>IDEA</th>
<th>DESCRIPTION</th>
<th>BENEFITS</th>
<th>INITIAL ANALYSIS</th>
<th>STUDYING FURTHER?</th>
</tr>
</thead>
</table>
| Existing Parking Area Improvements | - Centre barrier to limit illegal turns on hwy  
                              | - Barriers to separate parking from hwy  
                              | - Organization / marking of parking stalls | Better defines / controls parking movements and improves safety for all users | Feasible, subject to creating a place for oversize vehicles (buses, RVs) to park or stop | ![](image1.png) |
| Existing Parking Area Expansion | - Addition of stalls near existing parking area, where space between trees permits | Defined parking areas (rather than parking along the hwy shoulder) improves safety for all users | Feasible, subject to protecting old growth trees | ![](image2.png) |
| Shoulder Parking Improvements / Expansion | - Expanded shoulders allow cars to fully pull off highway | Safer for people getting into / out of cars and highway traffic passing parked vehicles | Feasible, subject to protecting old growth trees  
May necessitate addition of trails from shoulder parking to the grove to reduce people walking on highway | ![](image3.png) |
| Shoulder Parking Removal | - Removal of shoulder parking | A separated parking lot (rather than parking along the hwy shoulder) improves safety for all users | Many people visit the grove. Shoulder parking should only be removed if parking demand is reduced or visitors have another place to park | ![](image4.png) |
| New Parking Areas Outside the Main Grove | - Addition of new parking area(s) away from the main grove (within or outside park)  
                              | - Requires trails to connect back to the main grove | Additional parking away from the main grove reduces pedestrian and vehicular conflicts at the grove. Siting / design must avoid removal of old growth trees | There are a limited number of feasible alternative parking sites within an easy walking distance of the main grove  
Trails could be designed to accommodate cycling to improve use / accessibility | ![](image5.png) |
| U-turn Routes (Outside the Park) | - Legal u-turn routes outside the park boundaries allow visitors to turn around once their visit is complete | Limiting u-turns to safe locations with good sight distance enhances safety for park visitors and highway traffic | Required if a centre barrier is installed at the parking area (see above – Existing Parking Area Improvements)  
Will require good signing to direct users | ![](image6.png) |

### PEDESTRIAN IMPROVEMENT IDEAS

<table>
<thead>
<tr>
<th>IDEA</th>
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<th>BENEFITS</th>
<th>INITIAL ANALYSIS</th>
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</tr>
</thead>
</table>
| Pedestrian Overpass | - Overpass near the existing parking area | Eliminates pedestrians crossing the highway | Feasible, subject to protecting old growth trees and financial viability  
Should be designed to “fit” with natural park character | ![](image7.png) |
| Pedestrian Underpass | - Underpass near the existing parking area | Eliminates pedestrians crossing the highway | Low feasibility due to susceptibility to flooding and impacts to existing old growth tree roots | ![](image8.png) |
| At-Grade Signalized Pedestrian Crossing | - Signalized crosswalk to stop traffic at intervals allowing safe pedestrian crossing | Reduces risk to pedestrians by stopping vehicles  
Focuses crossings to one location | Feasible, but concerns about driver and pedestrian compliance and interruption of highway traffic flow | ![](image9.png) |
| Trails from Shoulder Parking to Main Grove | - New trails in park or road right-of-way from shoulder parking to the main grove | Provides alternative to pedestrians walking along the highway | Feasible, subject to protecting old growth trees and alignment with BC Parks’ objectives | ![](image10.png) |
| Trails from New Parking Areas | - New trails between new parking areas and the main grove | Connects parking areas located away from the main grove  
May reduce visitor impacts by spreading out visitor footprint | Feasible, subject to protecting old growth trees and alignment with BC Parks’ objectives  
Trails could be designed to accommodate cycling to improve use / accessibility | ![](image11.png) |
## MANAGEMENT / PROGRAM IDEAS

<table>
<thead>
<tr>
<th>IDEA</th>
<th>DESCRIPTION</th>
<th>BENEFITS</th>
<th>INITIAL ANALYSIS</th>
<th>STUDYING FURTHER?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Shuttle System / Transit Improvements</strong></td>
<td>Shuttles or transit to provide a park access alternative to personal vehicles</td>
<td>Reduces traffic conflicts and parking demand</td>
<td>Would require participation by private or not-for-profit enterprise. Demand difficult to estimate and may only be feasible if as or more convenient than personal vehicle.</td>
<td>🟠</td>
</tr>
<tr>
<td><strong>Traffic Calming</strong></td>
<td>Reduced speed limits, rumble strips, narrower driving lanes</td>
<td>Raises driver awareness, encourages lower speeds</td>
<td>Audible rumble strips are being considered. Additional measures could be considered.</td>
<td>🟠</td>
</tr>
<tr>
<td>** Enforcement**</td>
<td>More enforcement for managing motorist and pedestrian behaviour</td>
<td>Raises awareness about behaviours</td>
<td>RCMP / CVSE indicate general support to increase enforcement programs at key times.</td>
<td>🟠</td>
</tr>
<tr>
<td><strong>Closure of All Park Access</strong></td>
<td>Close the park to visitors / parking</td>
<td>Protects existing old growth</td>
<td>Compliance would be difficult to enforce. Would impact tourism to the area.</td>
<td>🟠</td>
</tr>
<tr>
<td><strong>Additional Signage</strong></td>
<td>More advanced warning signs, digital message readers, multi-lingual signs</td>
<td>Improves safety and awareness, supports Cathedral Grove as an international tourism destination</td>
<td>Solar power required for digital signs (no electricity available). Care needed to avoid over-signing the area.</td>
<td>🟠</td>
</tr>
<tr>
<td><strong>Parking Restrictions</strong></td>
<td>Time-limited parking, pay parking, reservation system</td>
<td>Potentially reduces demand and frees up parking spaces</td>
<td>Paid parking trials at Rathtrevor Provincial Park were poorly received by the public and subsequently removed.</td>
<td>🟠</td>
</tr>
<tr>
<td><strong>Park Wardens</strong></td>
<td>Personnel on site to educate visitors about safe behaviour</td>
<td>Serves an educational role</td>
<td>Park wardens are not trained to deal with managing vehicle / pedestrian conflicts.</td>
<td>🟠</td>
</tr>
<tr>
<td><strong>Park Expansion</strong></td>
<td>Increase protected areas around the Grove</td>
<td>Helps protect additional parkland</td>
<td>Park expansion is outside the scope of this MoTI-led traffic and pedestrian safety study.</td>
<td>🟠</td>
</tr>
<tr>
<td><strong>Car Pooling</strong></td>
<td>Encourage visitors to carpool when visiting the park</td>
<td>Reduces parking demand</td>
<td>BC Parks could update their website to encourage car pooling. Effectiveness may be limited.</td>
<td>🟠</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td>Inform visitors about park conditions, encourage visitation off-peak</td>
<td>Reduces parking demand at peak periods</td>
<td>Information posted in park and on BC Parks website / social media to encourage off-peak visitation.</td>
<td>🟠</td>
</tr>
<tr>
<td><strong>Variable Speed Limits</strong></td>
<td>Seasonal / time-of-day changes to speed limits to reflect busy times</td>
<td>May encourage driver speeds that are appropriate to conditions</td>
<td>Existing speed limits are generally appropriate if drivers obey limits.</td>
<td>🟠</td>
</tr>
</tbody>
</table>

## LONG-TERM BYPASS IDEAS

<table>
<thead>
<tr>
<th>IDEA</th>
<th>DESCRIPTION</th>
<th>BENEFITS</th>
<th>INITIAL ANALYSIS</th>
<th>STUDYING FURTHER?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Horne Lake Connector</strong></td>
<td>Previously-studied route between Hwy 19 and Hwy 4. Approximately 18 - 28 km of new highway development</td>
<td>Diverts ~10-20% of the 10,000 vehicles per day on Hwy 4, primarily those traveling to/from Comox Valley area</td>
<td>Previous studies indicate route is currently cost prohibitive. May be considered further in the long-term, but is beyond the short-term time frame.</td>
<td>🟠</td>
</tr>
<tr>
<td><strong>E&amp;N Railway (north side of Cameron Lake)</strong></td>
<td>Use of E&amp;N Rail line for future road development</td>
<td>Hwy traffic no longer goes through Cathedral Grove</td>
<td>E&amp;N Rail line is designated for rail transportation and is not in MoTI’s jurisdiction to consider for highway use at this time.</td>
<td>🟠</td>
</tr>
<tr>
<td><strong>Cathedral Grove Southeast Bypass</strong></td>
<td>New two-lane highway routed southeast of the grove. Approximately 2.5 to 5.0 km of new highway development</td>
<td>Through traffic could avoid Cathedral Grove, limiting traffic through the grove to park visitors</td>
<td>Potentially feasible, but would require extensive land clearing and terrain changes to route through steep embankments. Environmental impact assessment required. May be considered further in the long-term, but is beyond the short-term time frame.</td>
<td>🟠</td>
</tr>
</tbody>
</table>
PRELIMINARY IMPROVEMENT OPTIONS

Based on input to date and technical analysis, a number of potential options are being brought forward for further public engagement. These preliminary improvement options are being explored to assess pros and cons, identify refinements, and help focus in on those that appear to have the most merit to study further. The options are not mutually exclusive – several could be considered together to improve pedestrian and traffic safety.

Options Overview

The following six types of options have been developed for review and consideration:

A. Existing Parking Area Improvements
B. U-Turn Routes (Outside the Park)
C. Pedestrian Overpass
D. New Parking Area(s) West of Cathedral Grove
E. Long-Term Bypass Options
F. Management / Program Options

Please learn more about each on the following pages and complete a feedback questionnaire to record your comments.

Early Relative Assessment Criteria

Based on project goals and engagement input on values, the following relative assessment criteria were identified to help assess the pros and cons of preliminary options. Early relative assessments are used to support review and comparison of the options. More detailed assessments will be conducted on options that are advanced.

<table>
<thead>
<tr>
<th>COST</th>
<th>POTENTIAL TREE IMPACTS</th>
<th>PEDESTRIAN BENEFITS</th>
<th>TRAFFIC SAFETY</th>
<th>ENVIRONMENTAL IMPACTS</th>
<th>ACCESSIBILITY</th>
<th>HWY 4 MOBILITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>$</td>
<td>Planning-level capital cost estimating and maintenance and operations assumptions to allow comparison of investment requirements</td>
<td>Approximate treed area, including old growth and regenerating areas, that has potential to be affected</td>
<td>How improvements could affect pedestrian safety and ease of movement at Cathedral Grove</td>
<td>How improvements could affect traffic safety at Cathedral Grove and on Highway 4</td>
<td>Potential disruption to watershed, habitat, or other environmental features</td>
<td>Potential to maintain or improve accessibility for all ages and abilities at Cathedral Grove</td>
</tr>
</tbody>
</table>

COLOUR LEGEND FOR EARLY RELATIVE ASSESSMENTS

- Early assessment positive
- Some concerns identified
- Significant concerns identified
A. EXISTING PARKING AREA IMPROVEMENTS

Purpose:
Existing parking area improvements are being considered to organize traffic movements at the main grove and improve separation between park visitors and traffic on Highway 4.

Preliminary Concept:

Key Features:
- Centre barrier to prevent illegal turns in/out of parking area (requires addition of u-turn routes to allow visitors to turn around after a visit – see p.14)
- Shoulder barriers to separate parking area from traveled highway
- All improvements designed to avoid removal of existing old growth trees
- Redesign of existing parking lots to a one-way access road with angle parking, organized with approximately 23 marked stalls
- Potential for parking expansion of approximately 26 stalls west of the main grove (space permitting)
- Shoulder parking allowed where space permits safe pull-off; removal of other shoulder parking
- Potential addition of approximately 7 oversize vehicle stalls to accommodate buses and/or RVs
- In total, about 50 stalls at main grove, similar to what is available today, but organized to improve safety and separation from Highway 4

Early Relative Assessment:

COST
Lower relative cost to develop and maintain due to use of existing parking area footprint

POTENTIAL TREE IMPACTS
Minimizes tree impacts by working within existing parking area footprint and careful design around old growth trees

PEDESTRIAN BENEFITS
Restricts pedestrians from crossing highway in varied locations (defined crossing must be provided)

TRAFFIC SAFETY
Improves traffic safety by eliminating pedestrians crossing in various locations and illegal left turns

ENVIRONMENTAL IMPACTS
Limited impact to watershed, habitat, or other environmental features by utilizing existing parking area footprint

ACCESSIBILITY
Maintains close parking access for visitors with limited mobility

HWY 4 MOBILITY
Improves traffic mobility by streamlining traffic movements at the main grove
B. U-TURN ROUTES (OUTSIDE THE PARK)

Purpose:
If a centre barrier is added at the main grove parking area to allow right in/out movements only and prevent illegal turns, u-turn routes would be required to allow visitors to turn around after their visit.

Key Features:
- U-turn routes on both sides of the grove, outside the park boundary, for motorists to complete a legal u-turn allowing them to return in the same direction of their arrival
- General locations selected based on adequate sightlines, opportunities to utilize existing infrastructure, and avoidance of large trees
- Potential to incorporate additional parking at u-turn route sites
- Potential to create a multi-functional site at the west u-turn route to include a truck chain-up area in winter (a chain-up area has been identified as a need for the area) and a bus/oversize parking area in summer

Preliminary Concept Locations:
Note: The map shows two general locations for u-turn routes. Final siting would be based on environmental assessment and detailed design.

Typical U-Turn Route Characteristics:

Early Relative Assessment:
- COST $: Moderate relative cost to build and maintain
- POTENTIAL TREE IMPACTS ♦️: Potential tree impacts minimized through siting and design that avoids existing large trees
- PEDESTRIAN BENEFITS 🚶️: Improves pedestrian safety by streamlining vehicle movements at the main grove
- TRAFFIC SAFETY 🚗: Improves traffic safety by providing safe u-turn routes, reducing illegal movements
- ENVIRONMENTAL IMPACTS 🌳: Reduces impacts to watershed, habitat, or other environmental features through siting and design
- ACCESSIBILITY 🧑‍🦳: Limited accessibility benefits
- HWY 4 MOBILITY 🏁: Improves traffic mobility by reducing illegal manoeuvres at the main grove and providing safe pull-off locations for slow-moving traffic
C. PEDESTRIAN OVERPASS

Purpose:
A pedestrian overpass would allow a safe, separated pedestrian access across Highway 4. An underpass option was also initially reviewed, but was determined to have low feasibility due to susceptibility to flooding and impacts to existing tree roots. An overpass could be designed in several different ways. Three example ideas are shown below.

Preliminary Concepts:

Example A: Forest Walk Overpass
Access ramps travel between trees sloping up slowly to the overpass

Example B: Parallel Ramp Overpass
Parallel access ramps travel directly up to the overpass

Example C: Spiral Overpass
Access ramps spiral around sloping up slowly to the overpass

Key Features:
- Connection points from both sides of the existing parking area
- Accessible ramps
- Designed around existing trees to avoid old growth trees and to minimize other vegetation removals
- Opportunities to provide experiential aspects such as lookout areas and educational information
- Protection fencing over Highway 4
- Clearance beneath for large trucks
- Materials and design that fits with the natural setting
- Associated road improvements (e.g., centre barrier) to restrict pedestrians from crossing Highway 4

Early Relative Assessment:

| COST | Moderate relative initial cost to build and ongoing costs to maintain |
| POTENTIAL TREE IMPACTS | Potential tree impacts minimized by siting and designing structure outside tree drip lines and utilizing low impact building methods. Careful construction planning would be required |
| PEDESTRIAN BENEFITS | Improves pedestrian safety by eliminating need to cross the highway |
| TRAFFIC SAFETY | Improves traffic safety by eliminating pedestrians crossing the highway |
| ENVIRONMENTAL IMPACTS | Low impact to watershed, habitat, or other environmental features due to limited footprint. Careful construction planning would be required |
| ACCESSIBILITY | Ramps to provide access for all abilities, but ramp slopes can still provide some mobility challenges |
| HWY 4 MOBILITY | Improves Hwy 4 traffic mobility by eliminating pedestrians crossing the highway |

Note: The sketches shown are conceptual only and provided for discussion. Design would be refined through detailed study and analysis.
Purpose:
The existing main grove does not currently have parking capacity to meet demand and there is limited potential for expansion near the main grove due to extensive old growth. A number of suggestions from the first phase of engagement identified potential locations that could be considered for new parking areas. Many participants suggested that parking should be sensitive to its context by avoiding removal of old growth trees, selecting previously disturbed sites, and designing parking in and around the environment, rather than as a single large lot. Some preliminary ideas that could be used for parking approaches are outlined below and seven sites that appear to have merit for further study as new parking areas are shown on the next page.

Preliminary Criteria for Siting & Designing Parking

- Work towards providing sufficient parking to meet current needs using a phased approach (i.e., only add parking to match park use)
- Seek opportunities to reduce parking demand over time through management initiatives such as shuttles and education (see p. 20)
- Select parking locations and set size based on existing conditions with the objective of avoiding impacts to important trees or habitat
- Prioritize sites with previous disturbance
- Avoid removal of old growth trees
- Minimize impacts to other trees and natural areas
- Provide safe access to parking from Hwy 4
- Design parking to maintain existing drainage patterns
- Use free-draining surface materials (e.g., gravel) where possible
- Provide trails to connect from parking areas to the main grove
- Consider opportunities to integrate alternative transportation options such as a cycling trail to connect between distant parking areas and the main grove to encourage use

Assessing Potential Parking Areas

Seven sites with potential merit for new parking were identified based on: the Environmental Overview Study, tree height analysis, terrain analysis, identification of previous disturbances (e.g., forestry roads, utility corridors, tree loss from windthrow or forestry activities), public input, and preliminary site visits. Once key sites are selected for further analysis, the next step would be a detailed assessment of environmental, cultural, and physical characteristics to determine site suitability and to inform design.
Locations with Potential for New Parking Area Development

LEGEND

- Possible Parking Location
- Park Boundary

NOTE: Tree height information obtained from 2010 and 2013 LiDAR data and is limited to the area that LiDAR has been taken. In areas where no tree height colour is shown, trees are below 30 m in height. See page 6 for more details about tree heights.

Tree Heights
- 80 m Tree Canopy
- 70 m Tree Canopy
- 60 m Tree Canopy
- 50 m Tree Canopy
- 40 m Tree Canopy
- 30 m Tree Canopy

P1 ➤ 3.6 km from main grove
- Outside park boundary
- Close to cleared utility easement that could support trail connection to the main grove
- Requires approval of private landowner

P2 ➤ 3.3 km from main grove
- Outside park boundary
- In previously cleared area
- Existing access via former logging road
- Close to Cameron River
- Requires approval of private landowner

P3 ➤ 3.1 km from main grove
- At edge of park boundary
- In previously cleared area
- Existing access via former logging road
- Close to Cameron River
- Requires approval of BC Parks or private landowner

P4 ➤ 2.3 km from main grove
- Within park boundary
- In previously cleared area
- Close to Cameron River
- Requires approval of BC Parks

P5 ➤ 1.6 km from main grove
- Within park boundary
- In previously cleared area
- Near location considered in early 2000s
- Requires new access road
- Requires approval of BC Parks

P6 ➤ 1.5 km from main grove
- Within park boundary
- In previously cleared area
- Near location considered in early 2000s
- Requires a longer access road than other options
- Requires approval of BC Parks

P7 ➤ 1.5 km from main grove
- Within park boundary
- Located near cleared utility easement that could support road / trail connection to the park
- Limited capacity (smaller area than others)
- Requires approval of BC Parks

Early Relative Assessment:

COST
- Moderate relative capital costs and additional operations and maintenance costs for a new parking area

ENVIRONMENTAL IMPACTS
- May limit impacts by flexible siting and design of parking to avoid significant habitat and environmental features

ACCESSIBILITY
- Distance from parking areas to main grove could limit accessibility

PEDESTRIAN BENEFITS
- Improves pedestrian safety by reducing vehicle activity at the main grove

HWY 4 MOBILITY
- Moderately improves Hwy 4 traffic mobility by reducing some congestion at the main grove

TRAFFIC SAFETY
- Improves traffic safety by providing a safe, alternate parking area, reducing congestion at the main grove
E. LONG-TERM BYPASS OPTIONS

Purpose:
During Round 1 engagement participants suggested a bypass could reduce traffic traveling through Cathedral Grove. The scale, complexity, and cost would not allow implementation of a bypass in the short-term. However, options that may have potential merit as long-term projects are identified here.

Cathedral Grove Southeast Bypass

Summary:
The routes consider a two-lane Highway 4 bypass to the southeast of the Cathedral Grove area. Park access would be maintained along the existing Highway 4.

The three routes identified were selected to avoid significantly steep terrain and minimize cut / fill to the extent possible; however, all options would require significant land clearing. All routes would require further study to confirm alignment.

1. START: East side of Cameron River
   END: Base of the “Hump”
   Length: 4.5 km
   Construction Area (road + cut/roll): 15 ha (37 acres)
   Bridges: One over Cameron River near west end

2. START: East side of Cameron River
   END: MacMillan Provincial Park Boundary
   Length: 2.7 km
   Construction Area (road + cut/roll): 7 ha (17 acres)
   Bridges: Two over Cameron River near middle

3. START: East side of Cameron River
   END: Base of the “Hump”
   Length: 4.4 km
   Construction Area (road + cut/roll): 15 ha (37 acres)
   Bridges: One over Cameron River near west end

Typical Bypass Cross-section

Early Relative Assessment:

| COST | Significan costs and additional costs to operate and maintain a new highway |
| POTENTIAL TREE IMPACTS | Large area of tree removal including cut/fill area for road construction on a steep embankment |
| PEDESTRIAN BENEFITS | Improves pedestrian safety by reducing the amount of traffic through the main grove |
| TRAFFIC SAFETY | Improves traffic safety by avoiding a high use pedestrian area at the main grove |
| ENVIRONMENTAL IMPACTS | Significant impacts to watershed, habitat, and environmental features, including bridges over Cameron River, significant tree removals, and bisecting habitat areas with a new corridor |
| ACCESSIBILITY | Maintains parking access at the main grove for visitors with limited mobility |
| HWY 4 MOBILITY | Improves Hwy 4 traffic mobility by providing an alternate route that avoids the main grove |
**Summary:**
Over the years, several potential routes have been studied for a Horne Lake Connector between Hwy 19 and Hwy 4. All options begin at the Horne Lake intersection on Hwy 19 and end east of Port Alberni.

All the options are in mountainous terrain with challenging grades. The routes range in length from 18 km to 28 km.

While the Horne Lake Connector would provide a shorter route between Port Alberni and the Comox Valley and an alternate route should Highway 4 be closed, only about 10% - 20% of Highway 4 traffic would be diverted. Pedestrian and traffic safety at Cathedral Grove would remain largely unchanged.

<table>
<thead>
<tr>
<th>Option</th>
<th>Length (km)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>27.7</td>
</tr>
<tr>
<td>B</td>
<td>26.7</td>
</tr>
<tr>
<td>C</td>
<td>25.0</td>
</tr>
<tr>
<td>D</td>
<td>18.0</td>
</tr>
</tbody>
</table>

**Early Relative Assessment:**
- **Cost ($)**: Very significant capital costs and additional costs to operate and maintain a new highway.
- **Potential Tree Impacts**: Much of the area around Horne Lake has been previously logged, although some potential impacts to existing parks.
- **Pedestrian Benefits**: Pedestrian safety at the main grove remains largely unchanged as Hwy 4 users continue to pass through Cathedral Grove.
- **Traffic Safety**: Traffic safety on Hwy 4 remains largely unchanged as Hwy 4 users continue to pass through Cathedral Grove.
- **Environmental Impacts**: Significant impacts to watershed, habitat, and environmental features, including bridges, significant tree removals, and bisecting habitat areas with a new corridor.
- **Accessibility**: Maintains parking access at the main grove for visitors with limited mobility.
- **HWY 4 Mobility**: Marginally improves Hwy 4 traffic mobility as travelers to/from the Comox Valley use the new route, but diverts less than 20% of all Hwy 4 traffic.
F. MANAGEMENT / PROGRAM OPTIONS

Purpose:
A number of programs could be pursued to help reduce or manage traffic activity at Cathedral Grove and raise awareness by both park visitors and Highway 4 users. These programs would be executed in partnership with other agencies and organizations.

Shuttle Options
A shuttle between populated areas and Cathedral Grove would provide an alternative to personal vehicle use. Most often these services are provided through private operators or are sponsored through not-for-profit organizations. A key to success of these operations is sufficient demand and funding to offset service costs.

Traffic Calming
Rumble strips may be considered to provide an audible and tactile indication of speed reductions. Other traffic calming measures such as narrowing traffic lanes using paint or barriers or further speed limit reductions could also be considered.

Car Pooling
As part of an educational strategy, BC Parks can post information about parking limitations at Cathedral Grove and encourage visitors to share rides or choose alternative modes of transportation as they become available.

Additional Signage
Placement of additional signs could help raise awareness of both motorists and pedestrians. As an international tourism destination, multi-lingual signs could be used to convey critical information to park visitors.

Enforcement
Working with local enforcement to identify and plan programs that increase presence at the park during certain times can help encourage responsible driving and visitor behaviors.

Education
Information can be posted in the park and on BC Parks website to inform potential visitors about peak times and encourage off-peak visits.

Technology, such as real-time webcams, can allow people to see current parking conditions when preparing to visit.

Social media campaigns can be used during key times to raise awareness, prepare visitors, and encourage people to care for a sensitive area.

Early Relative Assessment:

<table>
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<tr>
<th>COST</th>
<th>POTENTIAL TREE IMPACTS</th>
<th>PEDESTRIAN BENEFITS</th>
<th>TRAFFIC SAFETY</th>
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<tbody>
<tr>
<td>$</td>
<td>Typically little or no impact to key habitat or environmental features; some benefits by raising awareness</td>
<td>Improves pedestrian safety by increasing information, but requires compliance by visitors</td>
<td>Improves motorist safety by increasing information, but requires compliance by motorists</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>ENVIRONMENTAL IMPACTS</th>
<th>ACCESSIBILITY</th>
<th>HWY 4 MOBILITY</th>
</tr>
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<tr>
<td>Typically lower capital costs to implement, operational costs vary by program</td>
<td>Shuttle options could provide alternate modes of accessible transportation</td>
<td>Traffic calming measures may have minor effects on traffic mobility on Highway 4</td>
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</table>
SUMMARY TABLE

The following table summarizes the Early Relative Assessments of each of the options studied during this phase. They are compiled here to support review and comparison of the options. For more details on each assessment refer to the previous pages. It is important to note that the options are not mutually exclusive – many work well together and could be considered as part of a package of feasible recommendations for improving pedestrian and traffic safety at Cathedral Grove.

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