

REGIONAL DISTRICT OF NANAIMO

**REGULAR BOARD MEETING
TUESDAY, JUNE 28, 2011**

For your information, attached please find the related appendices to the following reports.

PAGES

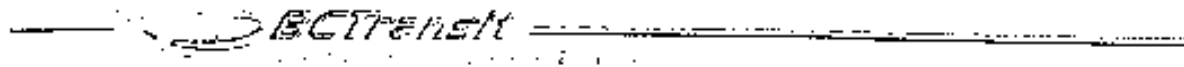
From the Transit Select Committee Meeting minutes:

- | | |
|-------|--|
| 2-16 | Electoral Area 'A' Transit Service Feasibility Study |
| 17-72 | Electoral Area 'H' Transit Service Feasibility Study |
| 73-91 | 2011/2012 Annual Operating Agreement - Regional District of Nanaimo/BC Transit |

From the Regional Parks and Trails Advisory Committee Meeting minutes:

- | | |
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| 92-106 | Moorecroft Regional Park Management Plan Terms of Reference |
| 107-219 | Mt. Arrowsmith Massif Regional Park Management Plan |

APPENDIX A



March 20, 2011

Dennis Trudeau
General Manager Transportation Services and Solid Waste
Regional District of Nanaimo
6300 Hammond Bay Road
Nanaimo, BC V9T 6N2

Dear Mr. Trudeau:

RE: Regional District of Nanaimo Electoral Area "A" Transit Service Review & Update

As requested, this letter reviews current and projected transit demand within Electoral Area "A" of the Regional District of Nanaimo (RDN). This area is already served by the Nanaimo Regional Transit System and has options for expanded service included in the April 2008 Nanaimo Regional Transit Business Plan. Therefore, the focus of this review is primarily to re-examine current and proposed service levels for the area in light of any demographic, operational, or land use changes, particularly since the Electoral Area is in the process of finalizing a revised Official Community Plan (OCP). The revised OCP is currently going before the RDN Board of Directors for first and second reading, with the earliest potential adoption in May, 2011.

1.0 Community Overview

1.1 Community Profile and Key Destinations

RDN Electoral Area "A" is the southern-most electoral area, south of the City of Nanaimo and north of the Town of Ladysmith and Electoral Area "H" of the Cowichan Valley Regional District. Area "A" has a population of approximately 6,750 in the following communities:

- **Cedar** is the centre of Area "A" and is comprised of single-family residences, a small portion of multi-family residential and commercial/retail services, such as a grocery, pharmacy and restaurants. The Cedar village area also boasts elementary, intermediate and secondary schools, a fire hall, and two community centres.
- **Cassidy** is located at the south of Area "A" and contains a significant residential population and small-scale retail uses. The Nanaimo Regional Airport is directly adjacent Cassidy.
- **Cedar by the Sea** is located at the northeast of Area "A" and is comprised of single-family residences. Cable Bay and Oceanview are two significant proposed developments immediately north of Cedar by the Sea (within the City of Nanaimo) and include up to a potential new 4,500 residential units.
- **Yellowpoint** is located at the southeast of Area "A" and contains largely large-lot residential uses, with some tourist and bed-and-breakfast activities.
- **South Wellington** is at the northwest of Area "A". It is comprised of single-family residential properties, a commercial/industrial area adjacent the Trans-Canada Highway, a school, fire hall, and community centre.

Cedar is the area's primary service centre. The Trans Canada Highway runs north-south through Area 'A' and serves as the basis for highway-oriented commercial and industrial uses in the Cassidy and South Wellington communities. South Parkway Plaza is located on the Trans Canada Highway immediately north of Area 'A'. Area residents also rely heavily on Nanaimo and to a lesser extent, Ladysmith for access to employment and services.¹

The remainder of Area 'A' is predominantly rural in nature, including nearly 60% rural residential lands, 27% agricultural lands, and a series of parks and undeveloped crown properties.

1.2 Land Use and Demographics

The RDN is currently in the process of revising the OCP slated for adoption as early as May 2011. While policy directions have yet to be formally adopted, there are a number of conclusions that are of interest to this study.

- Cedar and Cassidy are the only communities within the Urban Containment Boundary (UCB), meaning that the majority of future development will occur in these areas. Additional residential, commercial, and mixed-use development is supported in Cedar and a range of housing types, commercial and industrial uses are supported in Cassidy.
 - The most significant development proposed within the UCB in the near term is the Cedar Estates area in the Cedar village, which will feature mixed uses, good pedestrian connections and is the site of a new 75-unit senior's residential development.
 - Upcoming work is proposed to take place to further define the Cedar Main Street area and the Cassidy Village.
- The OCP proposes the expansion of light industrial-zoned land in South Wellington, which in turn could increase travel demand to the area from elsewhere within the RDN.
- Significant development is proposed for Cable Bay and Ocean View, immediately north of Area 'A'. A rezoning application has been submitted to the City of Nanaimo for the Cable Bay properties which includes 2,000 residential units, retail, and a hotel. The adjacent Ocean View proposal is expected to include over 2,500 residential units, a golf course, and significant commercial/retail space.
- In terms of transportation, the draft OCP supports increasing community sustainability and health by reducing dependence on automobiles. The focus of this shift is on increasing active transportation and travel modes other than single occupant vehicles. In terms of transit, the OCP specifically notes that the community supports "expanding transit service where it is justified by cost and demand to serve Cassidy and South Wellington." The draft OCP also supports:
 - improved handyDART and transit services to remote neighbourhoods, where it can be efficiently delivered, potentially using alternate service delivery models.
 - Use of smaller transit vehicles where feasible and other means to reduce emissions.

¹ 2006 Census information backs up this much stronger emphasis on travel north to the Nanaimo area rather than south to Ladysmith and the Cowichan Valley. Of the 71% (2,355 people) of Area A's work force who travel to a regular place of work (with the remainder either working from home or at varying localities), 15% (345) commute within Area A, 67% (1,550) to elsewhere in the RDN, and 16% (415) are employed beyond the RDN, likely to other communities to the south.

Transit service to the Airport

- Improving the link between land use and transit by a number of means (focusing density on lands within the Growth Containment Boundary, assessing transit impacts in conjunction with development, etc.)
- Looking at opportunities to gain transit-related amenities (bus shelters, park & rides, etc.) as part of the development process.
- There are only a limited number of road network changes envisioned in the OCP, including:
 - Future streetscape upgrade along Cedar Road within the Cedar village (Cedar Main Street).
 - The potential connection between Barnes Rd and Duke Point Highway (Hwy 19), which would enable access between the Cedar village and the proposed Oceanview development.

Population growth in Area 'A' has been slower than the rest of the RDN. The 2006 Census indicates that the Area 'A' population is 6,751. It is expected that the 2026 population will be approximately 8,700, an increase of approximately 1.4% per year.

Based on the 2006 Census, Area 'A' has slightly fewer (10.7% vs. 11.8%) youth and young adults in the age 15 to 24 age bracket, which tends to have strong transit ridership. However, the Area has a larger number of youth below the age of 15 than the rest of the RDN (16.5% vs. 14.3%). This would seem to indicate good opportunity to grow youth ridership in this community in the future.

Area 'A' has slightly fewer younger seniors (ages 55 - 74) and about half the number of older seniors (age 75+) than the region as whole. Older seniors are much more likely to take transit than their younger counterparts and so these two age brackets can provide a sense of present and future transit demand by older people.

Taken by themselves, these numbers would seem to indicate less future seniors demand than other areas within the RDN. However, a significant theme within the revised OCP is the desire to build the community by attracting and retaining young families and seniors, particularly by increasing access to affordable and senior's housing. Therefore, both the seniors and youth markets would grow as land use and development within the area evolve.

Area 'A' has a higher proportion of adults aged 25 to 54 than the rest of the region (43.7% vs. 37.5%). In general, this age group can be the hardest to attract to transit and is most responsive to improved commuter frequencies and fast, direct service.

1.3 Regional Transportation

There are two major regional transportation hubs located in and adjacent to the Area 'A' which are worth noting here for consideration as part of transportation options.

The **Nanaimo Regional Airport (YCD)** is located adjacent to Cassidy and provides air travel for the entire mid-Island. Air Canada, Island Express Air, and Orca Air operate regular passenger service to Vancouver, Victoria, and Abbotsford. Smaller operators and flight schools also operate out of the Airport. In 2006 approximately 140,000 passengers flew through YCD. The Airport forecasts 2026 passenger volumes of 334,000 passengers, almost 2.5-times the number of passengers in 2006. A recent runway expansion was undertaken to accommodate larger planes and allow for direct travel to further destinations. The Airport also plans to expand its airside and groundside uses in the future. While these uses have not been confirmed, the expansion of either commercial or industrial uses would potentially change the profile of feasible transit services to the airport site. There is currently no transit service to the Nanaimo Airport, with ground transportation now being provided by

- Nanaimo Airporter - service to Greater Nanaimo area including as far south as Ladysmith and north to Parksville/Qualicum.
- AC Taxi - fleet of 44 vehicles providing service to the mid-Island.
- Greyhound Bus - service between Nanaimo and Victoria four times daily
- Car rental service - Budget, Avis, National.

Cost to park a vehicle at the Airport is \$1 per hour or \$8 per day, as compared to the current Nanaimo transit fare of \$2.25 each way.

The **Duke Point Ferry Terminal** is located immediately north of Area 'A' and provides passenger ferry service to Tsawwassen. No immediate changes are anticipated to the Terminal. Transit service was previously provided to the terminal when it opened but was discontinued after several years. The terminal is now served only by the Nanaimo Airporter and AC Taxi. While Duke Point Ferry Terminal is not within Area 'A,' it has been considered as part of this review given its close proximity, regional significance and potential impacts on Area 'A' transit routing.

2.0 Existing Transit Service

2.1 Overview of Current Transit Service

Within Area 'A,' the Nanaimo Regional Transit System currently provides both conventional transit service (operating on fixed routes and schedules) and custom handyDART transit service (on demand travel for people with disabilities registered with the system).

Conventional Transit: The 7 **Cinnabar / Cedar** route currently offers service to the Cedar village surrounding residential area in Cedar and the residential neighbourhood of Cinnabar north of Area 'A'. Trips operate in a number of patterns, with most trips serving a loop through the more populous area of Cinnabar alone, some offering combined service to Cedar and Cinnabar, and a minority (three per weekday) serving a loop through the Cedar area alone. All trips start and end at South Parkway Plaza, where they continue in service to other Nanaimo area destinations as the route 8 South and 9 North.

In all, the number of trips serving Cedar range from seven trips per weekday to five trips per Sunday. While there are slightly more trips clustered in the afternoon commuter period, service to Cedar is very sporadic, operating at intervals that vary throughout the day from one to four hours. This inconsistent and infrequent schedule makes it harder to build ridership on the route.

Similarly, the practice of combining Cedar trips with those serving Cinnabar Valley offers operational and cost efficiencies. This practice may be appropriate for the population and density of Cedar but it also means less direct travel and therefore less convenience for passengers, again impacting potential ridership.

On the other hand, since all route 7 trips currently operate as “no transfer required” extensions to routes 8 South and 9 North—which offer direct travel to key destinations along the linear spine of the Nanaimo area (from South Parkway Plaza to Woodgrove Mall)—this operational design reduces the number of transfers required for Cinnabar and Cedar residents once they are on a bus and improves the convenience of the route.

Custom Transit: Custom or handyDART service is available to eligible people with a disability living in all areas within Electoral Area “A.” There are currently six individuals within Area “A” who use the service regularly. Due to the length of time required to travel to and within Area “A,” handyDART service to the area is usually limited to about three hours per week.

2.2 Operational Issues

Discussion with RDN Transportation Services staff noted the following key operational issues for the existing Area “A” transit services:

- The most frequent passenger complaint / request for change is for an increase in service frequency, particularly to Cedar during commuter times and additional evening trip. (Currently there is a gap in evening service Monday to Saturday with no trip offered between approximately 6:00pm and the last trip after 10:00pm)
- Lack of coverage for existing service—especially to Cassidy, the Airport and Yellow Point resorts.
- The looped nature of service in the Cedar area, meaning that local residents cannot easily access their closest service centre in both directions.
- Operational issues accessing the stops within South Parkway Plaza
- Extremely limited access to handyDART services.

The Director for the Area also highlighted a lack of transit coverage to Cassidy, the Airport, Cedar by the Sea and Ladysmith.

3.0 Existing Business Plan Proposals for Electoral Area "A"

Approved by the RDN in April 2008, the Nanaimo Regional Transit Business Plan outlines long-term transit system objectives and development, including transit service guidelines, performance measures and service options.

A major theme underlying many of the Business Plan service options is the proposed evolution of the 6 South / 9 North routes into a frequent, limited stop "Bus Rapid Transit-style" spine for the region. Impacting feeder transit services across the entire RDN, it is envisioned that this spine would operate between Woodgrove Mall and Downtown Nanaimo, with alternating extensions operating to Vancouver Island University (VIU) and South Parkway Plaza. The eventual frequency for the route projected over an optimal ten year time frame (as outlined in the culmination of Business Plan Proposals S3, M1, M2 and M13) was to be 15 minute service throughout each weekday between Woodgrove and Downtown and 30 minute service between Downtown and South Parkway Plaza / VIU. Service between Woodgrove and Downtown was envisioned to have limited stops while the Downtown to South Parkway Plaza portion would retain more focal-style stop spacing.

Similarly, the Transit Business Plan also proposed additional service on the existing V/U Connector (Proposal S8) to enable it to extend from Vancouver Island University to South Parkway Plaza on half of its trips. Offering connections to the 7 Cinnabar / Cedar at South Parkway Plaza, it would enable students and other commuters to more easily connect to the University, Nanaimo North Town Centre, Woodgrove Centre and other destinations.

Since the rapid transit route and extension to the VIU connector are so regionally significant, they are not specifically addressed in this update except where it impacts Area "A" through transfers to local services at South Parkway Plaza. This report assumes their eventual implementation as presented in the Business Plan. However, these proposed routes and all others in the region are scheduled to be reassessed and confirmed when BC Transit collaborates with the RDN to undertake an update to the Business Plan in 2012.

Local transit service options presented for Area "A" in the 2008 Transit Business Plan include:

- **Short Term Proposal S7: 7-Cinnabar/Cedar 3 additional trips per day**
This option would add three additional trips per day (Monday to Saturday) on the 7 Cinnabar / Cedar route to increase travel choices and help make service more attractive for commuters. As noted in the recent operational review with RDN Transit staff, requests for increased service frequency have been particularly numerous from residents of these areas.
- **Medium Term Proposal M8: 7-Cinnabar/Cedar increased service frequency**
This option was proposed to build on the three trips added in Proposal S7 and was contingent on the implementation of the rapid transit spine. Proposal M8 would improve frequency in order to provide more consistent hourly service to Cinnabar and service every two hours to Cedar during the day. As this option would now require route 7 Cinnabar / Cedar passengers to transfer from local services to the rapid transit style spine at South Parkway Plaza, it also included provision for three commuter trips in both the morning and afternoon peak weekday periods to route directly to Downtown Nanaimo. It also increased Monday to Saturday evening service.

- **Proposal M14: 7-Cinnabar/Cedar 30-minute peak period and 60-minute evening service**
In concert with population growth, this proposal built on service implemented through proposal M8 to increase the peak period service frequencies to half-hourly service to Cinnabar and hourly service to Cedar. It also further increased evening service frequencies. (The original title to this Business Plan Proposal seems to be a misnomer as the Cinnabar area already has essentially hourly service and there are enough hours to increase Cedar evening service in Proposal M8).

The Transit Business Plan also mentions the potential to extend service to several areas south of Nanaimo without specific proposals. Consideration is given to the Cassidy / Nanaimo Regional Airport / Timberlands Road areas, noting a 2002 transit feasibility study and growing demand.

Ladysmith is also identified as a potential RDN transit destination, particularly to connect with Cowichan Valley Transit and facilitate connections between systems. Connecting service would require jurisdictional coordination with the Cowichan Valley Regional District (CVRD) and assumes provision of a Duncan to Ladysmith route within the Cowichan Valley Transit System.

4.0 Transit Service Option Review and Key Conclusions

Based on the Area 'A' service demand profile, current operational issues and projected land use and demographics from the revised Official Community Plan, the following conclusions are drawn from the review of the existing Transit Business Plan:

- In general, the existing Transit Business Plan proposals align with the direction of the proposed Area 'A' OCP, in particular the build up of service to Cedar village (in concert with increases to Cinnabar Valley service). Therefore, these options simply require updated cost information, provided in section 4.1 of this letter.
- Cassidy's importance in the Area 'A' OCP and the potential for new commercial / industrial uses at the Airport and South Wellington increase the need to specifically propose transit options for these areas. While it could perhaps have been more clearly expressed in the Transit Business Plan, it appears that the operational model proposed for the medium-term route 7 Cinnabar / Cedar services would actually have sufficient time to incorporate service to South Wellington, Cassidy, and the Airport. This is discussed further in section 4.1.
- This review also specifically looked at the feasibility of transit for other neighbourhoods currently unserved by transit, in particular Cedar by the Sea and Yellowpoint. Based on the new OCP, existing road network and area demographics, scheduled transit service is not recommended for these areas since it would be cost prohibitive for the relatively low number of potential passengers. However, costing for a rural transit service option using trip windows is provided in section 4.1 for information and for potential consideration in the long term after other priority service options have been implemented.
- A Nanaimo-Ladysmith transit service cost estimate is included for information as an alternative service option for the Nanaimo Airport and Cassidy. Decision makers should be aware that Ladysmith service is currently under review by BC Transit as part of the Cowichan Valley Transit Future Plan scheduled for completion in summer 2011. Therefore, that option would be contingent on Cowichan Valley plan findings as well as BC Transit long term approach to regional services connecting communities along Vancouver Island. Ladysmith also operates a trolley bus service locally, which should be considered in any future transit plans to the area.

4.1 Updated Transit Service Options

The following provides updated transit service options for RDN Electoral Area 'A'. Where existing Transit Business Plan options are still relevant, they are presented with updated cost information.

Costs provided are estimates based on projected 2011/12 budget information for the applicable conventional and handyDART portions of the Nanaimo Regional Transit System. Actual costs may vary depending on date of implementation and final operational plan. Revenue estimates are based on current Regional District of Nanaimo fares.

Vehicle costs reflect current use of asset charges for either standard-sized conventional vehicles or minibuses, as applicable. Minibuses are already in use on the handyDART portion of the Nanaimo Regional Transit system and BC Transit is in the process of evaluating additional smaller accessible vehicles for use in rural communities and small towns. In all cases, minibus vehicles are between 21 and 28 feet long and carry between 10 and 23 seated passengers with room for two to four passengers using wheelchairs and scooters.

Option 1 - Updated Transit Business Plan Proposal S7: 7-Cinnabar / Cedar Three Additional Trips per Day

- As outlined in the Transit Business Plan, this option would add three additional trips per day (Monday to Saturday) on the 7-Cinnabar / Cedar route to increase travel choices and help make service more attractive for commuters.
- Further discussion:
 - This option still makes sense as the priority improvement for Area 'A'.
 - This review also looked at the feasibility of implementing an additional evening trip to Cedar at around 8:00pm, the other priority residential request. While the cost to extend an additional existing 7-Cinnabar trip to Cedar is relatively modest (130 additional annual hours, \$9,000 total additional annual cost), it is not advisable to add this single evening trip due to its operational impact on other adjoining trip schedules. This negative impact is reduced when the full complement of evening trips is changed as proposed by the updated M8 option.

Summary Information - Estimated Annual Impacts

Option 1 - Updated Transit Business Plan Proposal S7: 7-Cinnabar / Cedar Three Additional Trips per Day

Service Hours: 700	Passenger Revenue: \$19,000
Annual Ridership: 14,000	Total Cost: \$60,000
Vehicles Required: 0	Net Local Share of Costs: \$17,000
	Provincial Share of Costs: \$24,000

Option 2 – Updated Transit Business Plan Proposal M8: 7-Cinnabar/Cedar Increased Service Frequency, Plus Service to South Wellington / Cassidy / Nanaimo Airport

- This option is contingent on the new rapid transit spine being implemented, as outlined in the Transit Business Plan.
- This option re-aligns Cinnabar / Cedar service to connect to that spine by transfer at South Parkway Plaza and improves service frequencies to hourly service to Cinnabar and every two hours to Cedar during the day. It also extends three commuter trips in both the morning and afternoon peak weekday periods to route directly to Downtown Nanaimo. These commuter trips bring frequencies in the commuter period closer to half-hourly for Cinnabar and hourly for Cedar.
- Further discussion:
 - The costs for this option also include provision to increase Cedar's evening trips to hourly service.

Given the service model described in the Transit Business Plan, there appears to be already enough time within this option to also enable extension of service to South Wellington, Cassidy (via Hwy 1 and Vowels, Halberg and Timberlands roads) and Nanaimo Airport. Initial service could be in the order of five trips per day.

- Another benefit to this service model is that, depending on passenger capacity requirements and available fleet types at the time of implementation, it appears that it would be feasible to operate it with a smaller minibus.
- As described earlier, the drawback to the service model proposed for this option is that it would now require Cedar and Cinnabar passengers to transfer from one bus to another at South Parkway Plaza. Given current schedule running times, the wait times between buses using this approach might not be optimal. The detailed scheduling and routing implications of a transfer at South Parkway Plaza should be confirmed as part of the upcoming update to the Transit Business Plan.

Updated Summary Information – Estimated Annual Impacts	
Option 2 - Updated Transit Business Plan Proposal M8: 7-Cinnabar/Cedar Increased Service Frequency, Plus Service to South Wellington / Cassidy / Nanaimo Airport	
Service Hours: 2,600	Passenger Revenue: \$72,000
Annual Ridership: 52,000	Total Cost: \$257,000
Vehicles Required: 1	Net Local Share of Costs: \$91,000
	Provincial Share of Costs: \$94,000

Option 3 – Updated Transit Business Plan Proposal M14: Further Frequency Improvements to the 7-Cinnabar/Cedar/ Cassidy / Airport Service

- As outlined in the Transit Business Plan, this proposal builds on service implemented in proposal M8. It would increase peak period service frequencies to at least half-hourly service to Cinnabar and hourly service to Cedar.
- Following from the discussion in Option 2 above, it also includes provision for further frequency improvements to Cassidy / Nanaimo Airport and evening service.

Updated Summary Information – Estimated Annual Impacts

Option 3 - Further Frequency Improvements to the 7-Cinnabar/Cedar/ Cassidy / Airport Service

Service Hours: 2,300	Passenger Revenue: \$63,000
Annual Ridership: 46,000	Total Cost: \$231,000
Vehicles Required: 1	Net Local Share of Costs: \$81,000
	Provincial Share of Costs: \$87,000

Option 4 – Rural handyDART Service Model

- The above conventional options would use an accessible vehicle and would therefore offer service to people with a disability at bus stops within the built up neighbourhoods of Area "A." However, other types of service should be considered since conventional trips will not meet the needs of people who have more extensive mobility or cognitive disabilities. Considering handyDART improvements also provides a way to ensure a basic level of mobility for people with a disability living in more rural and remote neighbourhoods of Area "A."
- The Transit Business Plan includes a number of short term and medium term options to improve handyDART service, including more service hours and increased tax supplement and Tax Saver Program budgets. The Business Plan states that these improvements would mainly be targeted within District 68 (Nanaimo) and District 69 (Oceanside).
- The purpose of this option, then, is to highlight a handyDART strategy that might work specifically for Area "A" as a way of balancing the positive community benefits of ensuring basic community mobility and the ability to 'age in place' with the area's overall rural nature and moderate population density.
- Further discussion:
 - This medium to long term option would more formally create a pair of handyDART 'trip windows' on two days per week. A published trip window indicates to potential users when the handyDART vehicle would be available for service in their area (say 10:00am to 11:00am, 2:00pm to 3:00pm, etc.) A more specific drop off or pick up time within that trip window is provided by the dispatcher when the handyDART client books his or her trip. Trip windows can be initially created around existing regularly booked handyDART trips to minimize disruption to current users.

- o By using stated trip windows, it can be easier to group a number of Area A passengers together on a handyDART loop through the community since passengers will book their appointments with the specified days and service times in mind. This in turn ensures that the handyDART service is as effectively used as possible.
- o The handyDART vehicle only travels to where it needs to and unused time within the window is absorbed into the larger system to accommodate other handyDART requests for travel elsewhere. The existing taxi supplement and Taxi Saver programs would provide Area A handyDART users with other back up means of travel if the trip windows do not work.
- o Over time, it is possible to evolve this service over additional times and days as well as open up trips to people without a disability living in specified areas depending on demand and need.
- o The Comox Valley Transit System uses this method to deliver service to disabled and non-disabled people in two rural electoral areas outside Comox. (www.transinc.com/regions/icom/schedules/community_bus.cfm)

Updated Summary Information – Estimated Annual Impacts	
Option 4 - Rural handyDART Service Model	
Service Hours: 360*	Passenger Revenue: \$3,000
Annual Ridership: 1,100	Total Cost: \$21,000*
Vehicles Required: 0*	Net Local Share of Costs: \$8,000
	Provincial Share of Costs: \$10,000
* Note that this option could be implemented by allocating a portion of future handyDART expansion to this service or by adding this amount of hours to that expansion. No vehicles shown since this option would only be able to be implemented in conjunction with further expansions to handyDART fleet and hours in the rest of the system.	

4.2 Additional Transit Service Considerations

This section details a number of considerations that arose out of this update but which did not fit into the above service options.

Cassidy Village Plan:

The Area A CCP vision for Cassidy is one of a rural village that would be developed to “become a local service centre complete with a mix of housing types.” It is proposed to conduct a village plan for Cassidy. The placement of the Cassidy village centre has a substantial impact on which form of transit is most suitable for this area, Nanaimo Airport and Ladysmith. In collaboration with RDN Transit staff, BC Transit would welcome the opportunity to provide comment on the Cassidy Village plan as it develops.

Ladysmith Service

Option 2 above details the likely ability to provide introductory service to South Wellington, Cassidy and Nanaimo Airport in conjunction with the changes to Cedar service and a regional rapid transit spine implemented at the same time.

While exact routing would be confirmed upon implementation, Option 2 service to Cassidy and the Airport is built on the idea of a loop at the end of the route: Trans-Canada Hwy/Vowels Rd.,

Halberg Rd., Timberlands Rd., Airport return on Trans-Canada Hwy. This routing allows better access to transit for residents living in the mobile home parks on Halberg Rd.

The alternative means of serving South Wellington, Cassidy and the Nanaimo Airport would be to include these on a connector route to Ladysmith. However, it would be advantageous for such a route to be as direct as possible, meaning that opportunity to deviate off the Trans-Canada Hwy would be limited and that in effect a choice would need to be made between offering good connection to the Airport Terminal building on one side of the highway or the Cassidy village on the other. This is why the proposed Cassidy Village Plan (and the Airport's strategic plan) are so important. As mentioned previously, connection in Ladysmith also depends on the outcome of the Cowichan Valley Transit Future Plan.

In light of these different processes, the proposed 2012 update to the Nanaimo Regional Transit Business Plan should include a more thorough study of this regional link and more discussion and involvement would be required from the Cowichan Valley Regional District. In the meantime, the following is meant to give decision makers a preliminary sense of scope of a connection that would operate from South Parkway Plaza (and connections to other RDN services) to Downtown Ladysmith via Trans Canada Highway.

Based on a preliminary schedule of five trips per weekday (two commuter trips in the morning and afternoon peak period plus a midday trip), four trips on Saturdays and three on Sundays and Holidays, such a service would require in the order of 2,100 service hours per year and have a total cost in the order of \$214,000. Based on annual ridership of 27,000 and annual passenger revenue of \$37,000, this would mean a provincial share of \$74,000 and local share of \$103,000.

Service to Oceanview / Duke Point:

No options are presented here for service to these areas because the development of the Oceanview site is still in flux. Also, since services to these areas would likely operate out of South Parkway Plaza, their possible impact on Area "A" service consists mainly of sharing the same vehicle to perform separate trips. Given build-out time frame and the current vision of land use for the Oceanview site – as well as potential ridership on a Duke Point route – the Area "A" Options 1-3 presented above are recommended as the priority.

Alternatively, linking Oceanview service through to Area "A" would depend on implementation of a connection to Barnes Road. While a transit link through here may make it easier for Cedar by the Sea residents to access transit, the current rural nature of the Barnes Road roadway and zoning are less supportive of a transit link. It would be wiser to enable good pedestrian and cycling linkages from Cedar by the Sea to Oceanview to enable residents to access transit there.

Cedar Main Street:

The draft Area "A" OCP recommends conducting a Cedar Village plan that would include confirming transit interface. In collaboration with RDN Transit staff, BC Transit would welcome the opportunity to provide comment on the Village plan. It may also be useful to include "Transit amenities" in Policy 6.2.7 of the plan for consideration of amenities to be provided in conjunction with rezoning applications in the Cedar Main Street area.

Park & Rides:

Both the current Area A CCP and the new draft (Map 3 – Active Transportation, Mobility Options Road Network Plan, Sand and Gravel Pits) show an “Area of Interest for Transit Service / Park & Ride” in the South Wellington area – centered in the vicinity of the Trans-Canada Hwy at Morden Road. Given the amount of service that Transit Business Plan proposes to be provided to South Parkway Plaza and the transfer model to be used, the South Parkway location (while out of Area “A”) may actually make better sense for a Park & Ride.

Secondarily, integrating transit-related parking capacity into the Cassidy or Cedar Villages could also be effective since most people like to “chain” their trips together, especially on the way home (e.g. stop to pick up groceries, perform errands, etc.). Locating a Park & Ride near these daily services can make them more attractive. The transit planning work proposed for 2012 will include a more comprehensive look at Park & Rides throughout the RDN.

4.3 Transit Service Option Summary

The following table summarizes the updated estimated impacts for the service options presented above. All figures are annual and are based on estimates that would require review based on actual date of implementation and confirmed service and operational details.

Service Option Summary				
	Option 1: Updated Proposal S1 / Cedar / Cedar Three Additional Trips per Day	Option 2: Updated Proposal WB-7- Cinnabar/Cedar Frequency, Plus Service to South Wellington / Cassidy / Nanaimo Airport	Option 3: Further Frequency Improvements to WB-7- Cinnabar/Cedar, Cassidy / Airport Service	Option 4: Rural HandyDART Service Mode
Vehicles Required	0	1	1	3*
Service Hours	700	2,600	2,500	360
Ridership	14,000	52,000	46,000	1,100
Total Revenue	\$18,000	\$72,000	\$63,000	\$3,000
Total Cost	\$80,000	\$257,000	\$232,000	\$21,000
Net Local Share of Costs*	\$17,000	\$94,000	\$88,000	\$8,000
Provincial Share of Costs	\$24,000	\$91,000	\$81,000	\$10,000
Rides per Hour	20.6	20.0	20.0	3.0
Cost per Ride**	\$4.29	\$4.94	\$5.04	\$15.00

* Note that this option could be implemented by allocating a portion of future HandyDART expansion to this service or by adding this amount of hours to that expansion. No vehicle is shown since this option would only be able to be implemented in conjunction with further expansions to HandyDART fleet and hours in the rest of the system.

5.0 Implementation Considerations

There are a number of issues related to next steps and implementation that should be highlighted. These have been developed in consultation with RDN staff.

- **Funding** – Under the BC Transit Act, funding for transit systems must be cost shared between BC Transit and the sponsoring local government at a prescribed rate, with passenger revenues used to offset the local share of costs. This funding arrangement means that both parties must come to the table with funding before service can be implemented. For instance, if a local municipality has funding for new transit services but the corresponding provincial share is not available, then service cannot be implemented.

BC Transit receives its funding on an annual basis from the provincial government. This annual funding arrangement means that BC Transit cannot confirm a timeframe for service implementations over the long term. Typically BC Transit receives more expansion requests than available expansion funding and as such BC Transit cannot accommodate all expansion requests. The current economic picture may also constrain the availability of provincial funding for transit over the next few years.

Similarly, any new service would also require provision within the RDN's budgets.

- **Prioritization** - BC Transit uses a number of transit service performance and land use criteria to prioritize available funding for service expansions between transit systems. Therefore, moving ahead on any of the options in this update would require both available provincial funding and sufficient ranking against other community requests for services. Also, implementation depends on how services are prioritized within the RDN and how it wishes to grow ridership on the Nanaimo Regional Transit System.
- **Coordination with Other Regions and Plans**– As discussed in Section 4.2 Additional Transit Service Considerations, further discussion and coordination is needed before a link could be created between the Nanaimo Regional and Cowichan Valley transit systems. This link is also contingent on the outcome of other transit and land use plans. The timing of the proposed 2012 Nanaimo Regional Transit Future Plan, updating the current Business Plan, presents a good opportunity to reconsider that link.
- **Detailed Implementation Plan** – Once funding is confirmed for any option, BC Transit will work with the RDN to create a detailed implementation plan. This plan will finalize routes, schedules, stop locations and processes and would outline a strategy to market the new service.

6.0 Conclusions

As requested, this letter has provided an update to transit service options for Electoral Area 'A' of the Regional District of Nanaimo. The option order as presented (Options 1 through 4) is also suggested as the most logical order of implementation, pending available funding and ranking against other regional priorities.

It is recommended that the Regional District of Nanaimo:

- **Receive this report as information and provide comment.**

Please feel free to contact me or Regional Transit Manager Myrna Moore if you have any further questions on this update.

Sincerely,

Tom Day
Manager of Strategic Planning

Cc. Daniel Pearce: Regional District of Nanaimo Transportation Services
Myrna Moore, BC Transit

APPENDIX A

RDN Electoral Area "H"
(Bowser and Area)
Transit Feasibility Study



March 2011

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BC Transit would like to thank those Regional District of Nanaimo residents, elected officials and staff who participated in this study and provided input. In particular:

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- Judith Koelman, Area "H" Recreation Programmer
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EXECUTIVE SUMMARY

1.0 Introduction

At the request of the Regional District of Nanaimo (RDN), this study was conducted by BC Transit staff, with the assistance of Boulevard Transportation Group, to examine the demand for transit service in Electoral Area "H" of the RDN and to create options for the provision of service. The community previously had handyDART service provided one day per week by the Nanaimo Regional Transit System but this was withdrawn several years ago due to lack of use. Area "H" was included in the April 2006 Nanaimo Regional Transit Business Plan study but no options for service were proposed at that time.

This report presents the findings of the study and outlines service options for consideration. The service option proposals are based on background statistics provided by Statistics Canada, Regional District of Nanaimo Transportation Services and Planning staff, a stakeholder workshop held in November 2010, a resident transportation survey, informal discussions with local residents, site visits by BC Transit staff, and comparisons of communities of similar size and density.

2.0 Community Profile

The study area is comprised of the Electoral Area "H" portion of the RDN. Area "H" is located approximately 66 km north of the City of Nanaimo along the Island Highway (Hwy 19).

The permanent population of RDN Electoral Area "H" was 3,474 in 2006.

- **Demographics:** In general, the Area "H"'s population is older than the Regional District as a whole and the B.C. average. Residences in Area "H" are predominantly single family dwellings. Population is concentrated on the northern end of Area "H" in the communities of Bowser, Deep Bay and Qualicum Bay.
- **Land use and form:** Land use planning in Area "H" is under the jurisdiction of the Regional District of Nanaimo. The last Official Community Plan was completed in 2003 and an addendum was completed in 2010 to add the Bowser Village Centre Plan. Roadways are under the jurisdiction of the BC Ministry of Transportation and Infrastructure.
- **Community Amenities and Potential Trip Generators:** Area "H"'s main cluster of services is located along the Old Island Highway in Bowser. This includes shopping, library, post office, museum, dental services, and banking.
 - Area "H" has an elementary school and a shellfish research centre associated with Vancouver Island University. However, most people from Area "H" travel outside Area "H" to access secondary schools, formal post-secondary education, and medical services in Nanaimo or the Comox Valley.
 - The Bowser Village area also serves as the closest source of basic amenities for residents of the Fanny Bay area of the Comox Valley Regional District (CVRD Area "A").

3.0 Existing Transportation Options

Existing transportation options serving Area "H" residents include:

- **Walking and cycling.** While there are some regional trails existing, cyclists and walkers often use rural roads.
- **Nanaimo Regional Transit** does not currently serve Area "H." However, some residents may access this service from stops in Qualicum Beach or Parksville.
- **Comox Valley Regional Transit** does not service Area "H", but residents may access this service from Fanny Bay in CVRD Area "A".
- **School District 69 (Qualicum) School Buses** provide transportation for most students in Area "H" to elementary school in Bowser and middle and secondary schools in Qualicum Beach, outside Area "H".
- **Taxis** serving Area "H" are based in Qualicum Beach, Parksville and the Comox Valley and operate as a normal taxi service. Other door-to-door services exist on a pre-booked basis for medical appointments and other needs.
- **Other transportation providers and assets.** Via Rail and Greyhound provide scheduled service through Area "H" both north- and southbound. The nearest ferries and airports are outside of Area "H".

4.0 Assessing Potential Markets for Transit

The study assesses the number of people, general service expectations and ridership potential for each distinct passenger market for transit: people with a disability, seniors, school students / youth, young adults / college students, and adults. Key conclusions are as follows.

- The priority for transit in Area "H" should be connecting to the Nanaimo system and providing door-to-door service. Connections to the Comox system should be a secondary priority.
- Seniors, youth and people with a disability represent the best potential markets for transit in Area "H." Midday services and later afternoon services should be priorities. The potential market for adults and young adults is low.
- An evening trip would better serve seniors, youth, and some adults. Evening service can be very expensive for relatively few riders. Trips integrating with the Friday night "movie bus" service provided by the Nanaimo system may be a good place to start.
- Overall the potential market for service in Area "H" is low based on potential usage and compared with other Nanaimo Regional Transit System services. However, a basic service is in keeping with the transit system's objective. Long term market potential for transit may increase as a result of density and land use guidelines in the Area "H" OCP and Bowser Village Centre Plan.
- 69% of area respondents to a residential transportation survey for this study stated they would support some level of taxation increase to implement transit.

5.0 General Service Design Concepts

The study outlines a number of **transit service concepts**, which represent the “box of tools” that are used when forming the options presented in section 6.0 Service Options. These include:

- **Taxi Supplement**, which uses a private carrier and private vehicles (usually those of a taxi company) to deliver scheduled service on routes or door-to-door services on an as needed basis
- **Taxi Saver**, which provides people with a disability who are registered with the transit system a 50% subsidy towards the cost of taxi rides.
- **Paratransit**, which uses a transit vehicle or vehicles—normally a smaller minibus in smaller towns or more rural settings—to provide service.
 - Encompassing a range of service types, paratransit services can include everything from door-to-door, demand responsive services for people with disabilities, to buses serving stops on fixed routes and schedules.
 - It may also include many other mixtures and hybrids of those, such as **flexible routing** (which enables schedule trips to deviate off route to provide door to door service to people with disabilities) or **trip windows** (which provides blocks of time during which any resident of a specified area may request a door to door transit pick up).
- **Conventional Transit**, which uses standard sized vehicles in more urban settings to serve fixed routes and schedules.

A number of **supplementary service concepts** are also included as examples of services that could be organized and implemented locally without Regional District of Nanaimo or BC Transit involvement. These supplementary concepts include ride sharing using the Jack Bell Foundation's free [ridematchin service at www.ride-share.com](http://www.ride-share.com), and a volunteer transportation network example from the Mt. Waddington Regional District on northern Vancouver Island.

6.0 Service Options

The study outlines a number of transit service options that address different aspects of the identified potential markets and destinations special considerations and existing transportation providers. The service description for each option outlines expected ridership, revenue, costs and vehicle requirements. The presented options include:

Service Option 1: Introductory Midday Paratransit - This option would implement two midday paratransit trips (one in the late morning and one in the early afternoon) on one day per week between Qualicum Beach and Gainsberg Road in Deep Bay. Service would be scheduled, but would use a minibus that would have time built into the schedule in order to provide door-to-door service for people with disabilities (including seniors with mobility difficulties) registered with handyDART.

Exact routing would need to be confirmed through additional community consultation but it is proposed to include service through Area "H" along the West Island Highway (Hwy 19A), plus specific stops at the Lighthouse Community

Centre and its adjacent senior's housing, Magnolia Court and loops in the Jameson Road and Gainsberg Road areas. This option could be fairly easily implemented on a trial or ongoing basis using an available vehicle and time adjacent to an existing handyDART driver's shift on Mondays.

Service Option 2: Weekday Midday Paratransit - This option is identical to Option 1 but provides two midday trips every weekday. The daily nature of this service would require a vehicle and so it would make sense to implement this option in conjunction with any improvements to transit service within Qualicum Beach. (Augmented Qualicum Beach service will be explored as part of the Nanaimo Regional Transit Future Plan proposed for 2012). Costs shown assume sharing the vehicle lease costs and time required to move the vehicle between Qualicum Beach and the RDN Transit facility near Woodgrove Centre.

Service Option 3: Weekday Commuter Trips Plus Saturday Service - This option would build on the schedules and routing of Option 2 to provide an additional two round trips per weekday during the commuter periods (one trip in the early morning and one in the late afternoon). These trips would connect with Nanaimo Regional Transit's route 90 Intercity Connector, which offers direct service to key destinations in Parksville and Nanaimo. This option would also provide three trips on Saturdays (mid morning, early afternoon and late afternoon). As it would use the same minibus vehicle as Option 2, no additional vehicle is required.

In response to resident requests, a discussion of evening service is provided which describes the kinds of tradeoffs to be considered and possible methods to provide such a service.

Service Option Summary

The following table summarizes the estimated impacts for all service options presented above. All figures are annual and are based on estimates that would require review based on actual date of implementation and confirmed service and operational details. Costs are also based on the service being operated under the umbrella of the Nanaimo Regional Custom system; it would not be feasible at this time to operate the service under the Nanaimo Regional Conventional system.

Service Option Summary

	Option 1: Introductory Midday Paratransit	Option 2: Weekday Midday Paratransit	Option 3: Weekday Commuter Trips Plus Saturday Service
Vehicles Required	0	0.5*	0**
Service Hours	170	960	1,130
Ridership	600	3,400	6,900
Total Revenue	\$800	\$4,700	\$9,200
Total Cost	\$11,100	\$72,100	\$68,100
Net Local Share of Costs*	\$4,900	\$38,700	\$25,800
Provincial Share of Costs	\$5,400	\$28,700	\$33,100
Rides per Hour	3.6	3.5	5.9
Cost per Ride***	\$18.50	\$21.21	\$10.16

* This option assumes ability to share with Qualicum Beach service the cost to position the vehicle each day and use of asset costs. If not shared, total costs for this option would increase by \$21,300 (or an additional local share of \$16,800)

** Assumes use of the vehicle provided in Option 2.

*** For comparison, cost per ride on the existing Nanaimo Regional Transit System is \$20.69 for handyDART service and \$4.15 for conventional service, based on provisional 2011/12 budget

Cost to extend trips to the Comox Valley Transit System at Fanny Bay—pending confirmed feasibility and agreement with the Comox Valley Regional District—would be approximately \$20,200 for Option 2 and \$26,100 for Option 3.

Service Option Conclusions

Based on the findings of this report, Service Option 1 "Introductory Midday Paratransit" is an appropriate starting level. This one day a week service would provide a basic mobility option to those who need it and would also ensure that a sufficient number of riders grouped together on trips to make the service successful. The fact that the service is scheduled and therefore easier to promote and attract riders—and that the population has continued to age—should make this service more effective than the provision of once per week handyDART-only service previously unsuccessfully implemented in the area. Option 2 and 3 could then be considered as ridership and the community developed, particularly in conjunction with any changes to Qualicum Beach service and the implementation of more transit-supportive growth around village centres as envisioned by the Area "H" OCP and Bowser Village Centre Plan.

The three options presented focus on connections south to Qualicum Beach, Parksville and Nanaimo rather than north to Fanny Bay and Comox Valley destinations because there are currently scheduling and service area coverage constraints to the existing Fanny Bay service that make connection unfeasible at this time. Since further long term transit planning work is scheduled to begin in the Nanaimo, Comox Valley and Campbell River regions in late 2011 / early 2012, it is recommended that regional connections form a piece of this work. The Area "H" options may further evolve based on the outcome of those plans.

7.0 Integration Considerations

There are a number of issues related to next steps and implementation that should be highlighted. These have been developed in consultation with RDN staff. The next steps and issues include:

- Confirming the support of the RDN Board and Area "H" residents for the introduction of transit service in Area "H".
- Confirming budget availability and timing for the RDN and BC Transit (including determining the project's priority ranking against other regional and provincial expansion requests).
- Conducting further long term regional transit planning and discussion with the Comox Valley Regional District
- Creating a detailed implementation plan to confirm routes, schedules and marketing strategy.

8.0 Recommendations

If the community wishes to pursue transit service, it is recommended that Service Option 1 "Introductory Midday Paratransit" would be an appropriate starting level. This one day a week service would provide a basic mobility option to those who need it and would also ensure that a sufficient number of riders grouped together on trips to make the service successful.

It is recommended that the Regional District of Nanaimo receive this report as information and provide comment.

1.0 INTRODUCTION

At the request of the Regional District of Nanaimo (RDN), this study was conducted by BC Transit staff, with the assistance of Boulevard Transportation Group, to examine the demand for transit service in Electoral Area "H" of the RDN and to create options for the provision of service. HandyDART service was previously provided one day per week by the Nanaimo Regional Transit System but this was withdrawn several years ago due to lack of use. Area "H" was included in the April 2008 Nanaimo Regional Transit Business Plan study, but no options for service were proposed at that time.

This report presents the findings of the study and outlines service options for consideration. The service option proposals are based on background statistics provided by Statistics Canada, Regional District of Nanaimo Transportation Services and Planning staff, a stakeholder workshop held in November 2010, a resident transportation survey, informal discussions with local residents, site visits by BC Transit staff, and comparisons of communities of similar size and density.

Study Objectives

Study objectives were developed in consultation with the RDN and include:

- Review existing transportation options within the community;
- Review demographic data to identify potential transit markets within the service area;
- Identify the transportation needs of the community;
- Develop service concepts and their associated costs. Service concepts will be consistent with the area's population and geographic area, based on experience in similar B.C. communities; and
- Consider all forms of transit including vanpools, taxis, buses, and subsidies for existing transportation networks.

Study Area

The study area includes all of the RDN's Electoral Area "H". Area "H" is situated on Vancouver Island midway between the major communities of Nanaimo and Courtenay/Comox. Bowser, Area "H"'s largest community, is located approximately 58 km north of Nanaimo and 40 km south of Courtenay.

Area "H" is approximately 28 km long and 25 km wide. Its most populous areas are concentrated on the east side, adjacent the Georgia Strait. Area "H" includes the communities of Bowser, Deep Bay, Dunsmuir, and Qualicum Bay, all of which are located along the Old Island Highway (Hwy 19a). See *Figure 1*. The less populated areas of Home Lake and Spider Lake are included in the residential survey, but are not the primary focus of this study due to their more rural location.

Area "H" is bordered to the north by Area "A" of the Comox Valley Regional District (CVRD), to the west by Areas "B" and "F" of the Alberni – Clayoquot Regional District (ACRD), and to the south by the Areas "G" and "F" of the RDN. The nearest adjacent communities to Area "H" are the Town of Qualicum Beach (22 km south of Bowser) and Fanny Bay (14km north) in the CVRD.

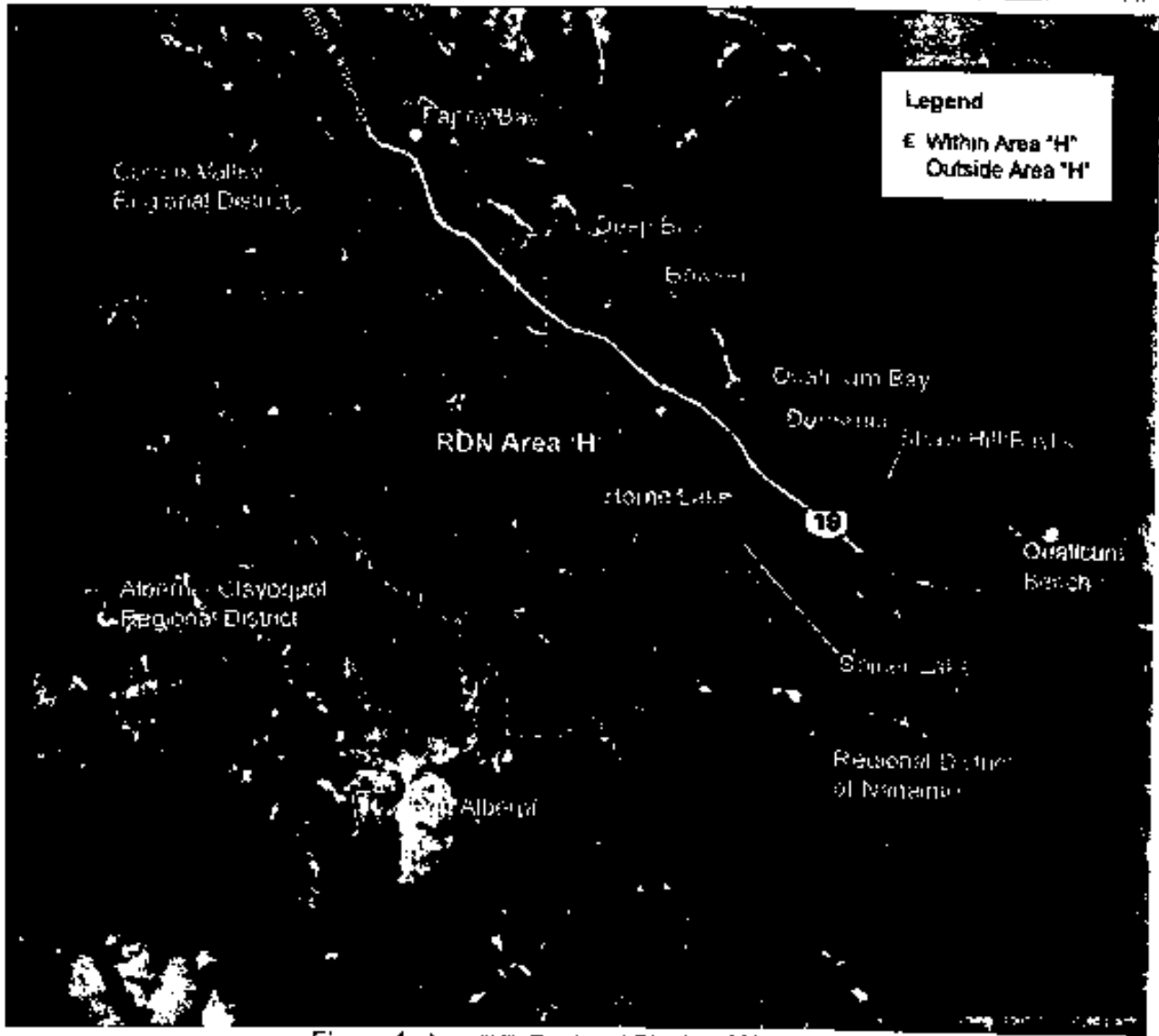


Figure 1. Area "H", Regional District of Nanaimo

2.0 COMMUNITY PROFILE

Community Overview

Area "H"'s permanent population is slightly less than 3,500 and is concentrated on the east side of the Area "H" along the Old Island Highway (Hwy 19a). The area is mainly rural in nature, characterized by rural areas and single-family homes on large lots. Commercial services are offered in Bowser, while the remainder of the area is comprised of outdoor recreation opportunities, vacation accommodations, and a strong aquaculture industry.

Population & Demographics

The following demographic information from the 2006 Canadian Census is of interest:

- RDN Electoral Area "H" has a population of 3,474.
- Area "H"'s population is growing faster than surrounding areas. From 2001 to 2006, population increased by 11.8%, compared to 7.8% for Nanaimo region¹ and 5.3% for the province.
- Area "H"'s population is older than average. In 2006, Area "H"'s median age was 54.3 years, compared to 43.3 for the Nanaimo region and 40.8 for the province. Area "H"'s population distribution consists of approximately 40% fewer young adults (age 15 to 24) and 85% more young seniors (age 55 to 74) than the provincial average.
- Area "H" homes are predominantly single-family dwellings. There are 2,023 dwellings in Area "H", with almost 90% of these detached homes. 1,573 of those dwellings are occupied full-time and almost 80% are owner occupied. Area "H" has an average of 2.5 residents per home, which is consistent with the provincial average.
- Population density for Electoral Area "H" is 12.5 persons per square kilometer, compared to 72.2/km² for the Nanaimo Region and 881.8/km² for the City of Nanaimo. In general, transit service is more feasible in higher density communities.
- The Qualicum First Nation is also located in Area "H". The Qualicum First Nation community is located immediately north of Home Lake Rd on the Old Island Hwy and has a population of 75.

Industries & Employment

- In the 2006 census², 865 Area "H" residents worked in a usual place of work outside the home. Of this group, 17% (150 individuals) work within Area "H", while 60% (515) work within another Area of the RDN, meaning that they commute to destinations south of Area "H." A further 21% (185) worked outside of the RDN, suggesting they work to the north or west in the Comox Valley, Campbell River or Port Alberni. A small group (2%) work outside the province. There were 255 individuals that reported to work from home and 330 individuals with no fixed work place. See *Table 1*.

¹ Based on Nanaimo Census Agglomeration Area.

² Data from 2006 Community Profile (Nanaimo H) from StatsCan.

Table 1. Area "H" residents location of employment

Work Outside the Home (fixed workplace)	865
Within Area "H"	150
Within RDN & associated municipalities*	515
In another Regional District	185
In a different province	15
Work from Home	255
No Fixed Workplace	330

* Include Qualicum Beach, Parksville, Nanaimo and Lantzville

- According to the 2006 Census, a higher portion of Area "H" residents drive themselves to work and a lower number of residents are passengers as compared to the provincial average.
- Area "H" has higher percentage of individuals employed in accommodation and food services than the province as a whole³. The number of Area "H" individuals working in construction trades is more than double the provincial average and there are more individuals working in the resource sector in Area "H" than the provincial average. In general, workers employed in the service industry and trades are the hardest to attract to commuter transit services due to irregular shift times, changing job locations or the need to carry tools. Area "H" has lower than average representation in industries that tend to make it easier to attract individuals to transit, like health care and social assistance, professional and technical services and education.

Community Land Use & Form

- Land use planning in Area "H" falls under RDN jurisdiction. The last Area "H" Official Community Plan was completed in 2003⁴, focusing on protecting rural character and identifying three village centers - Bowser, Qualicum Bay and Dunsmuir. Amendments were made in early 2010 to include the Bowser Village Centre Plan.
- The Area "H" OCP outlines provisions to maintain density growth within the boundaries of the village centre development areas to preserve the rural nature of Area "H". Any future residential and commercial development should occur within these areas.
- In general, increased density in village centres or along designated transit corridors increases the feasibility, efficiency and effectiveness of transit. The current land use pattern favours rural, dispersed residences that make it harder to access daily needs by walking, cycling and transit. The Bowser Village Centre Plan has set density targets which will help guide development towards higher density creating a complete Village Centre which will aid in increasing transit use, walking and cycling. The Village Plan identifies need for a VIA Rail stop in Bowser.

³ Data from: 2006 Community Profile (Nanaimo-H) from StatsCan

⁴ Area "H" OCP RDN Bylaw 1335, 2003

- There are strong preferences both for and against density and mixed land use zoning which would allow commercial and residential uses to coexist⁵.
- There are no major housing developments currently scheduled for completion. However, several smaller senior's developments are under consideration.

Community Amenities & Potential Trip Generators

The following lists Area "H"'s current amenities and services by sector and location.

Shopping & Service Destinations

Area "H"'s shopping and services are limited. Many residents indicate that their shopping needs are not met in Area "H" and they instead travel to Qualicum, Parksville, Courtenay, Bowser and Nanaimo (in descending order) to meet their needs⁶.

Below are some of the shopping/services available within Area "H":

- In Bowser, Magnolia Court (6996 Island Highway) is home to most of the shopping related services with a grocery store, coffee shop, other retail shops, and a library. Nearby there is a gas station with a small automotive repair shop, the Legion, and a few other services.
- Dunsmuir offers a small commercial centre with limited shopping services.
- A credit union provides the only banking services in the area.

Health Care

Area "H" residents meet the majority of their health care needs in communities outside the Electoral Area. There are a small number of Area "H" resident practitioners offering medical services from their homes, which are located throughout Area "H". Otherwise, Area "H" residents require access to the following:

- Area "H" residents rely primarily on two hospitals:
 - Nanaimo Regional Hospital (1200 Dufferin Cres) in Nanaimo, approximately 68 km south of Bowser.
 - St. Joseph's Regional Hospital (2137 Comox Ave) in Comox, approximately 44 km north of Bowser.
- A small portion of Area "H" residents also use the West Coast General Hospital (3949 Port Alberni Hwy) in Port Alberni, 61 km southwest of Bowser.
- Medical clinics are available in Qualicum Beach and the Comox Valley. Public health units, which provide support for individuals and families with services like vaccinations, counselling, care plans, are also located in the Comox Valley and Qualicum Beach.

⁵ Village Planning Project: RDN Area "H" Meeting Notes

⁶ Scoping Exercise notes from Jun. 2008, RDN Bowser Village Centre Plan Public Consultation

- There is a dental office located in Bowser, but patients seeking more extensive procedures generally travel to Qualicum or the Comox Valley.
- There is no pharmacy within Area "H", however the Medicine Shop pharmacy in Qualicum Beach delivers prescriptions to the Eye on BC gift shop on Thursdays.
- "Wheels for Wellness" is a transportation service to/from Comox. Additional information on the service is provided in Section 3.

Education

Public education is provided to Area "H" residents through School District 69 (Qualicum). The following schools are offered:

- *Elementary School:* Bowser Elementary School is located in Bowser and has 137 students in kindergarten to grade 5. School District 69 school bussing is offered to and from the school, with few options for after hours bussing.
- *Middle School:* Qualicum Beach Middle School is located in Qualicum Beach and offers grades 6 to 8. Bussing is provided for only regular school hours, meaning that students engaging in extra-curricular activities cannot rely on school bussing.
- *Secondary School:* Kwalikum Secondary School is located in Qualicum Beach and offers grades 9 to 12. As with the middle school, bussing is only provided during regular class times.
- Students attending schools outside SD 69 may travel on public school buses to Qualicum Beach as courtesy riders, after which they must rely on other options. Some elementary-aged children within the area also travel to the privately-operated Beachcombers Community School in Fanny Bay, which provides its own transportation.

Area "H" residents travel outside Area "H" for post-secondary education. The following options are available:

- Vancouver Island University (VIU) is a major university located in Nanaimo (Fifth Street at Wakesiah Avenue, adjacent the Island Highway). VIU offers a full range of post-secondary programs and courses.
- VIU's Centre for Shellfish Research Marine Field Station is located in Deep Bay (in Area "H"), which is linked to their core facility at the Nanaimo campus. The Shellfish Research centre also includes a culinary school and restaurant.
- North Island College (NIC) has campuses in Courtenay (2300 Ryan Rd) and Port Alberni (3699 Roger St). NIC is a community college offering a range of academic and trades programs.
- Community groups in Qualicum Beach, Parksville and Nanaimo offer personal growth courses on a variety of topics for all ages.

Facilities for Seniors and People with a Disability

- The largest concentrations of seniors services are located in Bowser, where the Legion offers 32 residential units with potential expansion for another 28 units of affordable housing. The Lighthouse Community Centre (240 Lions Way) in Qualicum Bay offers ten seniors housing units; this facility is proposed to double to twenty units in the future.
- Additional seniors housing is offered by the Lions Club in Qualicum Beach and The Gardens in Qualicum Beach (650 Berwick Rd North).
- Community groups, including the Bowser Seniors Housing Society (BSHS), the Lions, and Legion are working to increase seniors and affordable housing supply in Area "H".

Recreation and Culture

The following are the recreation and cultural opportunities available to Area "H" residents:

- Lighthouse Community Centre (240 Lions Way, Qualicum Bay). The hall holds many local events, classes, and recreational opportunities.
- Qualicum Bay Lions Club (280 Lions Way, Qualicum Bay). Home to the Lions Club and Lioness Club, the facility is used for community events and private rentals.
- Bowser Elementary School is the site of Lighthouse Country Kids Place, offering child care and preschool programming. The school also hosts a number of adult recreation programs after school hours.
- Royal Canadian Legion Br 211 (7035 W Island Hwy, Bowser). Home to an active social group (460 members) with activities, meetings, community events and a Ladies Auxiliary of the Legion. It is estimated that over half of the Legion's members reside in Fanny Bay and other areas north of RDN Area "H."
- Ravensong Aquatic Centre is the closest community recreation centre, located in Qualicum Beach. It includes a pool, arena, and other fitness facilities. Mid-day classes are widely attended by Area "H" residents. Recreation centres are also available in Parksville and Courtenay/Comox.
- Other recreational opportunities:
 - Nanaimo Regional Transit operates a Friday night "Movie Bus" from Qualicum Beach to north Nanaimo. Bowser youth currently need to use other transportation to access this bus in Qualicum Beach.
 - Area "H" youth also frequently wish to travel to Parksville and Qualicum Beach to be with their school friends (who all attend high schools in that area) and to access youth-specific activities, such as those held at the Youth Action Market (YAM) in Parksville.
 - Seniors have other recreation activities in Parksville and Qualicum, such as activities through the Parksville Golden Oldies Senior's Association (PAGOSA).
 - Arrowsmith Golf and Country Club (2250 Fowler Rd)
 - Provincial and regional parks located in Area "H" (see map in *Appendix A*).
 - Horne Lake Regional Park
 - Horne Lake Caves Provincial Park

- Bowser Ecological Area
- Lighthouse Country Regional Trail
- Big Qualicum River Regional Trail
- Spider Lake Provincial park
- Wildwood Park

Community Events

- Deep Bay Harbour Festival held annually in May celebrating local seafood, art and music.
- Annual Lighthouse Country Fall Fair held in September is a long-standing tradition celebrating farming, arts and crafts.
- Qualicum Bay Veggie, Poultry & Small Animal Swap includes a swap, flea market, master gardener talks, and a pancake breakfast. Held second Sunday each month.
- Qualicum Beach, Parksville, and the Comox Valley offer a variety of markets and special events throughout the year, particularly weekend events in the summer.

3.0 EXISTING TRANSPORTATION OPTIONS

The following assesses existing transportation options available within and nearby RDN Electoral Area "H".

Roadways

- Roadways are under the BC Ministry of Transportation and Infrastructure's (MoTI) jurisdiction.
- No major roadway changes are planned for the foreseeable future.

Walking and Cycling

- Roads in Area "H" are rural in nature with varying paved shoulder widths for walking or cycling. MoTI design standards traditionally include limited bicycle and pedestrian facilities on roadways.
- There are paved shoulders on both the Inland Highway (Hwy 19) and the Old Island Highway (Hwy 19A) providing some space for cyclists and pedestrians. The Area "H" OCP encourages continued work with the MoTI to further develop these routes.
- There are several regional trails connecting parts of Area "H":
 - The Lighthouse Country Regional Trail, a recreational loops south of Bowser.
 - The Big Qualicum River Regional Trail, which is west toward Home Lake.
- In both the Area "H" OCP and the RDN Regional Parks & Trails Plan⁷ there are proposals to expand the trail system in Area "H", including an extension of the Lighthouse continuous trail between Qualicum Beach and Bowser.
- Some residents also use hitchhiking as a means of travel.

Greyhound

- **Based in:** Calgary, AB (Operating out of Nanaimo, BC (1 Terminal Ave North) and Courtenay BC (9-2663 Kitpatrick).
- **Provides:** Daily scheduled bus service between Nanaimo, Courtenay, and Bowser.
 - The trip from Nanaimo to Bowser is approximately one hour and makes multiple stops along in other small communities. Most stops are limited service bus stops, which do not offer ticketing, facilities or parcel service. See *Appendix B* for a list of stops.
 - The trip from Courtenay to Bowser is approximately 40 minutes, also with multiple stops along the way.
 - Through Area "H" there are two daily northbound trips (AM and PM) and two daily southbound trips (AM and PM). The combination of these two routes allows people to travel to other communities in the morning and return in the afternoon.
 - The usefulness of Greyhound as a service for errands is limited by the lack of opportunities to integrate with other travel modes at Greyhound stations.

⁷ RDN Regional Parks and Trails Plan 2005 - 2015

⁸ RDN Electoral Area "H" (Bowser and Area) Transit Feasibility Study – March 2011

- **Vehicle Used:** Greyhound runs several models of motor coaches seating an average of 55 passengers.
- **Passenger Cost:** Fares vary, rising slightly on the weekend. The current weekday adult fare from Nanaimo to Bowser is \$20, senior fares are \$18. Fares from Courtenay to Bowser are adults \$16 and seniors \$15. All fares are one way and do not include HST. Greyhound offers a variety of other ticket options.

VIA Rail

- **Based in:** Montreal, CQ (Operating between Victoria, BC (450 Pandora Ave) and Courtenay, BC (899 Cumberland Rd)).
- **Provides:** Daily rail service from Victoria to Courtenay, with one northbound in the morning and one southbound in the afternoon, with Sunday trips operating two hours later than those the rest of the week. See *Appendix C* for schedules.
 - Stop-by-request in Dunsmuir, with another in Union Bay (north of Area "H").
 - Most often used as a tourist/sightseeing service.
 - In the Bowser Village Centre Plan, residents have requested a stop in Bowser, identifying the intersection of the Old Island Highway and Coburn Road.
- **Vehicle Used:** RDC cars (Economy Class)
- **Passenger Cost:** Adult fares from Nanaimo or Comox to Dunsmuir (or Union Bay) start at \$20, seniors fares for the same trip starts \$18, fares are one-way and exclude HST.

Nanaimo Regional Transit System (Operated by RDN Transportation Services)

- **Based in:** Nanaimo, BC
- **Provides:** Daily transit service with limited Sunday and holiday service to areas on Vancouver Island stretching from Cedar in the south to Qualicum Beach in the north.
 - Services include conventional transit with scheduled trips, as well as demand-responsive handyDART services for people with a disability
 - Does not provide service into Area "H", but has two routes which are of interest.
 - Route 90 connects Qualicum Beach / Parksville to Nanaimo seven days a week. Four northbound buses end daily at Ravensong Aquatic Centre (737 Jones St, Qualicum Beach) and three additional buses end at the Wembley Mall (826 Island Hwy 19A, Parksville) Service is reduced on Saturday and further reduced on Sunday. See *Appendix D* for route details.
 - Route 89 connects Parksville and Qualicum Beach providing service four times daily (no Sunday service) between Wembley Mall and Ravensong Aquatic Centre.
 - The Nanaimo Regional Transit Business Plan (April 2008) includes three goals affecting transit in the areas nearest to Area "H":
 - 90 Intercity Connector - Increase peak period service by one additional AM and PM trip (Proposal S2, pg 34)

- Addition of another bus to increase local service from Parksville to Qualicum Beach (Proposal M3, pg 47)
- 90 Intercity Connector to provide in the long-term 60-minute service between Oceanside and Woodgrove and 30-minute service during peak periods (Proposal S20, pg 42; Proposal M11, pg 52)
- Due to demand for late evening service, one Friday night bus from north Nanaimo to the Aquatic Centre in Qualicum Beach has been successfully implemented.
- There has been recent interest expressed by Qualicum Beach decision makers to explore ways to increase transit coverage within Qualicum Beach, particularly to better enable Qualicum Beach seniors and people with a disability to access their town centre via transit. A midday community bus route will be evaluated as part of a 2012 update to the Nanaimo Regional Transit Business Plan.
- The Ravensong Aquatic Centre is identified as a park and ride. It is also expected that Area "H" residents informally park and ride at other locations.
- **Vehicles Used:** A range of fleet types and sizes. All are accessible to people using wheelchairs or scooters.
- **Passenger Cost:** One way cash fare is \$2.25 per trip for adults, \$2.00 for students and seniors with a range of ticket and pass options available.

Comox Valley Transit System (Sponsored by the CVRD, operated by Watson & Ash Transportation Services Ltd.)

- **Based in:** Comox, BC
- **Provides:** Daily transit service (except statutory holidays) to the Comox Valley and surrounding areas from Fanny Bay (south) to Oyster River (north). The Oyster River terminus provides connections to Campbell River Transit and facilitates travel between Campbell River and Comox Valley destinations.
 - Services include conventional transit that provides scheduled trips, demand-responsive handyDART services for people with a disability, and a Community Bus service for residents in rural areas.
 - The Comox Valley Transit system does not serve Area "H" but provides service to Fanny Bay 14 km north of Bowser via the Royston-Buckley Bay (no. 10) route. The service provides links to buses serving the Comox Valley, including North Island College, recreation facilities, and shopping.
 - Service to Fanny Bay runs five round trips per day: twice in the morning, once in the mid afternoon and twice in the evening, Monday to Friday. Saturday the service is the same without the earliest morning bus. Sunday there is a late morning bus and evening bus. See *Appendix E* for further details of this service.
 - HandyDART offers demand-responsive service in the Comox Valley for individuals with a disability. HandyDART is available 8am - 4pm Monday to Friday and 10 - 4pm Saturday. No service is available on Sunday or holidays. HandyDART services are supplemented with the Taxi Saver program.
 - There are no formal park and rides in the Comox Valley Transit System, but it is expected that Area "H" residents park and ride informally.

- **Vehicles Used:** A range of fleet types and sizes. All are accessible to people using wheelchairs or scooters.
- **Passenger Cost:** One way cash fare is \$1.50 per trip for adults, \$1.25 for students and seniors with a range of ticket and pass options also available. HandyDART trips are \$1.75 one way and the service offers a variety of trip packages and passes.

School District 69 (Qualicum) School Bussing

- **Based in:** Qualicum Beach, BC (Buses stored in Qualicum Beach bus yard).
- **Provides:** School bus service in Area "H" to/from Bowser Elementary, Qualicum Beach Middle School and Kwalikum Secondary School.
 - No additional service is provided to meet extra-curricular activities at any of the schools. Students wishing to stay after school must find their own way home.
 - Students attending private schools have no bus service offered.
 - Students attending the French Programme Cadre are bused directly to Nanaimo with one south and north bound service daily
 - Students attending French Emersion schools are no longer bused and must find their own way to school or apply as courtesy riders.
 - Bus service in SD 69 is based on collection points where students can gather to create efficient, direct routes to reduce cost and time spent on the bus. These collection points serve as bus stops and may represent a logical starting point for what routing might be considered for scheduled transit service.
 - *Appendix F* presents eligibility requirements for students taking the bus, the current schedule for bus routes, and maps of walk limits for the schools attended for the majority but students from Area "H".
- **Vehicle Used:** Standard non-accessible school buses, capacity of 88 or 72 passengers. This is complimented by one handi-bus.
- **Passenger Cost:** All bus users pay fees to ride the bus. Eligible riders pay \$40 a year and courtesy riders pay \$100 per year.

Taxi Providers

No taxi companies operate specifically within RDN Area "H". Several taxi companies offer service originating in other areas and provide service to Area "H" on request.

- **Alliance Taxi**
 - **Based in:** Qualicum Beach and Parksville
 - **Provides:** As-needed taxi service, cars drive from Qualicum or Parksville for each call. Advance booking is possible
 - **Vehicle Used:** 6 vehicles, variety of models
 - **Passenger Cost:** Qualicum Beach to Dunsmuir is approximately \$30.
- **Island Chauffeur**
 - **Based in:** Parksville

- o **Provides:** Pre-booked door-to-door chauffeur service. Provides service to airports, ferries and appointments.
 - o **Vehicle Used:** Honda Odyssey vans offering service for one to twelve people in one or two vans as needed.
 - o **Passenger Cost:** Rates vary dependant upon distance and passengers.
- o **Ambassador Shuttle Service**
 - o **Based in:** Comox
 - o **Provides:** Pre-booked door-to-door service for trips within in the Comox Valley. Provides service to airports, ferries, appointments. If there is a vehicle free they can provide same day service though pre-booking.
 - o **Vehicle Used:** Honda Odyssey vans, one with 6 seats and the second with 7 for a total of 13 people if needed. Can take folding wheelchairs and walkers, but cannot offer roll on service.
 - o **Passenger Cost:** Trips from the Comox Valley to Bowser start around \$75 with additional costs for additional passengers, there is no additional charge for the drivers coming to Area "H" for pick up.
 - o **Wheels for Wellness**
 - o **Based in:** Comox
 - o **Provides:** Pre-booked car service for out of town medical appointments. Has a minimum distance of 75 kilometers with flexibility if other passengers are booked
 - o **Vehicle Used:** Minivans are used and offer some options (with advance notice) for walkers, wheel chairs and scooters.
 - o **Passenger Cost:** The service relies on funding from the Vancouver Island Health Authority, donations and mileage allowances from clients who are registered with Social Services, and Department of Veterans Affairs.

Other Transportation

- o **Comox Airport** provides flights to Vancouver, Victoria, Alberta and Mexico.
- o **Nanaimo Airport** has daily flights connecting Nanaimo to Vancouver, Abbotsford, Comox and beyond.
- o **Nanaimo Harbour** offers flights via seaplane to Vancouver, Richmond and seasonally to Seattle.
- o **BC Ferries** provides ferry service to Powell River from Comox and to Vancouver from Departure Bay and Duke Point near Nanaimo.

4.0 ASSESSING POTENTIAL MARKETS FOR TRANSIT

The potential transit market was assessed for RDN Area "H". The following describes the passenger groups, their general service expectations, and the potential ridership market if service were offered. A resident transportation survey was administered to better understand the travel characteristics and preferences of Area "H" residents.

Resident Transportation Survey

With the assistance of RDN staff and the Area Director, BC Transit created a travel survey to learn more about current resident travel patterns and methods and gauge potential support for transit. The survey and a postage paid business reply envelope were distributed in an envelope by Canada Post to delivery routes covering all Area "H" addresses. As some Canada Post delivery routes also crossed into the Qualicum Beach area, the outer envelope asked residents outside of Area "H" to disregard the survey.

The survey was distributed in late-November with a request to respond by December 7, 2010. There were approximately 1,850 deliveries made and of these, 1,206 deliveries were made on postal routes primarily serving Area "H". Of these, 329 surveys were returned, approximately 18% of all surveys distributed. Survey responses were entered and tabulated by BC Transit staff, and further analyzed and summarized by Boulevard Transportation Group staff.

It is important to note that while this style of survey provides extremely helpful information to assist with developing transit options, its distribution method means it is not statistically valid. Full survey results are included in *Appendix G* and further analysis in *Appendix H*.

Travel Demand Periods

Respondents were asked to indicate the typical time of departure and return for their daily commute. The peak for morning departures begins at 7:30am, reaching its maximum at 8am and remaining high until 9am. A second peak occurs at 10am, though many indicated their morning departures occur outside the 5am to 10:30am window. In the afternoon, most people reported they return home between 3:30pm and 5:30pm with a significant drop in returns after 6pm. The largest group of respondents reported to return home outside of the window between 3:00pm and 7:30pm.

Current Travel Mode

For individuals who reported attending school full time the most common transportation option is school bus (35%), closely followed by passengers in private vehicles (33%), and then by driving themselves (14%). For respondents who work outside of the home, 77% commute to work as a vehicle driver, with a further 10% commuting regularly as vehicle passengers. Of the individuals who replied to being home during the day, 63% drive to their destinations, 20% are passengers and 9% walk. Throughout Area "H," 61% of households have one car per eligible driver (age 15+), while 27% have less than one vehicle per driver.

Location of Employment

Residents were asked the location of their usual place of work, 54% indicated that they working south of Area "H" in Qualicum Beach, Parksville or Nanaimo, 20% indicated that they work in Area "H", and 11% indicated that they work in Fanny Bay, Buckley Bay or the Comox Valley. Another 16% work outside any of these areas. These results are relatively consistent with place of work results from the 2006 Census, summarized in Section 2.

General Travel Patterns

Residents were asked where members of their household most commonly did their shopping, recreation, appointments and other errands. Approximately 11% indicated that they most commonly rely on services within Area "H". Almost two-thirds indicated that they travel south to Qualicum Beach (26%), Parksville (31%), or Nanaimo (25%), and 24% indicated they travel north to Courtenay and Comox.

Persons with Disabilities

10% of respondents indicated that a member of their household has a disability that requires door-to-door transportation service. Of those indicating they have a member of their household with a disability, 29% require no mobility aid, 51% require the assistance of a walker or cane, and just 12% need a manual or electric wheelchair or scooter to assist them.

Potential Transit Usage

Residents were asked how often they would use transit if it were offered in Area "H". Overall 19% of respondents indicated that they would not use transit if it were offered. Of the 81% suggesting they would use transit, 9% indicated they would use it every day, 8% indicated every work day, 38% indicated one to three times per week, and 27% indicated two to three times per month. It should be noted that typically people tend to overestimate their willingness to take transit on surveys such as this. However, the 81% is still on the high side compared with similar surveys undertaken in other communities.

Residents were asked the days of the week they would be most likely to use transit. Responses indicate that demand for transit services is consistent from Monday to Saturday (15 – 18%), with a slight peak on Friday and dip on Monday and Saturday.

Residents were asked how often transit service should run. Responses indicate strong support for service every two hours (38%) and morning/afternoon commute service (35%). 16% of responses show support for on-request service for those who need it, and only 1% support mid-day service. Responses were also analyzed by neighbourhood. Bowser responses show equal support for morning/afternoon commuter service and two-hour service. Qualicum Bay responses show preference for two-hour service, while Deep Bay responses show considerable support for on-request service.

Willingness to Fund Transit

Residents were also asked the level of property tax increase they would be prepared to support in order to implement transit service. This question usually acts as a more realistic measure of resident willingness to use transit, as it actually suggests a financial commitment is required. In total, 69% of responses indicate support for some level of increase in property taxes to support transit, 41% of responses indicated they are prepared to accept a small increase (\$1 – 24) in annual property tax to support transit, 20% indicated they are prepared to accept a moderate increase (\$25 - 49), and only 7% indicated they are prepared to accept an increase of \$50 or more. 31% of responses indicated no interest in increasing property taxes to fund transit.

Responses were also analyzed by neighbourhood. Bowser and Qualicum Bay residents indicated a greater willingness to increase taxes to support transit, with over 75% indicating support for an increase. Support for tax increases is lower in other areas of Area "H" with only 53% of responses from Shaw Hill/Baylis and 67% of responses from Deep Bay indicating support.

Other Comments

The survey also provided an opportunity for respondents to provide general feedback. Of the feedback received, some common themes emerged:

- For those who support a tax increase, common comments were either from parents who want to provide their teens with more options for independent travel and recreation, or from seniors who wish to continue living in the area but either do not drive or are cognizant of the fact that they may lose their ability to drive in the future.
- A number of transit supporters said that there was little chance that they would use the service, but want the service for others in their area for reasons of improving social connection or reducing hitchhiking or carbon emissions.
- Of those who said they would not support a tax increase for transit, the most common comments were that people moving into a rural area should not expect "city" services, that the system should be entirely user-pay, or that no one would use it.
- A number of comments were concerned with improving VIA Rail service and/or access.

Potential Market: People with a Disability

Outlook: People with disabilities fit into all passenger categories. They include students who need transportation to school, younger adults and adults who may need transportation to jobs or day program activities, and seniors.

- 10% of transportation survey respondents (32 people) indicated that someone in their household had a disability requiring door to door transportation.
- Of these, 20 respondents (63%) indicated that the person with a disability in their household requires the use of a mobility aid, such as a cane, walker, wheelchair or electric scooter.

General Service Expectations: In transportation terms, people with disabilities can be considered in two general categories:

- **Commuters:** Mainly student and adult passengers, commuting people with disabilities rely on transit for non-discretionary trips to work, school or adult day care programs on a regular, predictable basis. Commuters have much less flexible schedules and it is therefore harder for door-to-door style accessible service to meet their needs since only a limited number of daily trips can be scheduled in peak commuting times.
- **Discretionary Trip Makers:** Mainly adults and seniors and the more common type of need in Area "H," these passengers have schedules that are less regular than commuters. These passengers tend to use transit to go to medical, dental and therapy appointments, perform shopping and personal errands, and attend social and recreational functions. Transportation needs, then, are somewhat more flexible and often vary from day to day and from week to week.

Potential Market for Transit Service: In general, the potential market for people with disabilities for transit service is **low** (based on population) to **medium** (based on potential usage).

- Midday medical / dental appointments and shopping trips would be the prime reasons for transportation. While connections both south and north are desirable, there seemed to be a larger preference to travel south.
- Area "H"'s population is already older than the regional average: as the population ages, the number of residents with mobility challenges will increase.

Potential Market: Seniors

Outlook: People aged 65 and older make up approximately 26% of Electoral Area "H"'s population. This number rises to just under half the population (48%) when the 22% of people who may be early retirees (age 55 to 64) are included. Seniors age 75 or over—who tend to take transit more than their younger counterparts—make up 11% of the area's total population.

- Seniors tend to use transit to perform shopping and personal errands, go to medical and dental appointments and attend social and recreational functions. Trips, then, are of a discretionary nature and often fluctuate from day to day and week to week.

General Service Expectations: In general, seniors request consistent midday service that adequately serves shopping, social, recreational and medical / dental facilities. Services that offer some personal attention and a chance to socialize as part of the trip tend to be better used.

Potential Market for Transit Service: In general, the potential seniors market for transit service is **medium** based on a combination of population and potential usage

- Midday shopping and recreation trips and medical / dental appointments would be the prime reasons for transportation.
- Another reason for travel voiced by many area seniors is to visit spouses and other family members in care in Comox or Nanaimo. While a majority of travel tends to be to southern communities, a number of seniors noted that travel north is important for those with family members in care since St. Joseph's Regional Hospital in Comox tends to be the preferred location.
- Travel in the early evening is also a potential need due to declining eyesight and reluctance to drive at night for some seniors. However, this need can be harder to serve in a more rural area such as Area "H" since it has a higher transit cost and carries fewer passengers.
- Fanny Bay seniors who travel to shop and socialize in Bowser are another potential market but may be difficult to serve either due to scheduling constraints or lack of service coverage by the existing Comox Valley Transit System route serving the area.

Potential Market: School Students / Youth

Outlook: School-aged youth between the ages of 5 and 19 make up approximately 12% of Electoral Area "H"'s population. Of these, youth in the more independent ages of 15 to 19 make up 5% of the total area population (160 people).

- Youth tend to be a captive transit market with limited transportation alternatives. Cycling and various pedestrian activities (walking, skateboarding, etc.) represent the main means of autonomous transportation.

General Service Expectations:

- In general, the primary reason youth use transit is to commute to/from school. In more rural areas such as Area "H" where the School District provides school transportation, one of the more common transit uses is for travel to and from other activities before or after school, whether formal (school-based extracurricular activities) or informal (hanging out with friends, shopping, etc.)
- When not in school, the youth market group tends to use transit to go to part-time work or volunteer jobs, shopping, and social and recreational activities.
- In general, school students and youth have their needs best met by a transit system which offers direct trips between residential areas and schools, which aligns with school start and end times (in cases where no school bussing is provided), and which offers access to recreation and shopping facilities in the late afternoons and on Saturdays.

Potential Market for Transit Service: In general, the potential youth market for transit service is **low** (based on population) **to medium** (based on potential usage).

- The fact that most youth have friends in the Parksville and Qualicum Beach areas and that those communities currently have the most opportunities for recreation and after school jobs indicates a demand for transit.
- A late afternoon commuter trip between Qualicum Beach and Area "H" and some midday Saturday service would be an appropriate level to build independent youth travel.
- Similarly, implementing trips that line up with the Friday night "movie bus" service might be a good starting point for area youth. However, the service model for this needs to be carefully chosen and may be too costly to implement.

Potential Market: Younger Adults / College Students

Outlook: Approximately 3% of Electoral Area "H"'s population (110 people) are adults between the ages of 20 and 24, about half the provincial average. This group of younger adults may be working or looking for work, may have started families, and may be attending a post-secondary or technical institution ("college" should be taken as referring to both). Unlike youth, captive young adult riders have a greater tendency to take midday trips to perform personal errands or shop.

General Service Expectations:

- Service needs for college students are nearly identical to those of school students. Transit schedules need to correspond to the majority of class start and end times and transit must pass close to learning facilities. However, midday service to these facilities is also necessary since not all college students attend school full-time and not all courses have the same class schedules.
- Younger adults have similar needs to commuters in general, but they may also work part-time or in jobs without standard hours or shifts. This lack of regularity makes midday service more important. For reasons of better health and less insurance coverage, this passenger group tends to make fewer medical/dental related trips.

Potential Market for Transit Service: In general, the potential younger adult and youth market for transit service is **low** (based on population and usage).

- From a financial and time point of view, students who commute daily to/from Vancouver Island University in Nanaimo or North Island College in Courtenay likely either own a vehicle (if living at home in Area "H") or rent other accommodation closer to school. Varying class schedules and relative infrequency of existing connecting transit services at Qualicum Beach or Fanny Bay make transit travel from Bowser to post-secondary classes challenging.
- There are a small number of students attending studies at VIU's shellfish research facility but these would likely either use VIU-provided transportation (if living elsewhere in the RDN) or walk or cycle (if living nearby in Area "H") since it would be harder for transit to closely meet class times as well as the needs of other users.
- Other young adults not going to school may benefit from the same services targeted to meet the needs of seniors, youth and a limited number of commuters.

Potential Market: Adults

Outlook: People ages 25 to 64 make up approximately 55% of Area "H" population, similar to the provincial average (56%). When people between the ages of 55 and 64 are removed from this category (since they may be early retirees and are already discussed in the seniors category above), this number drops to 34% or 1,165 people.

In general, members of this group are more likely to be financially stable and most likely to own a private automobile. Transit passengers in this group are normally split into two:

- **Captive adult riders** are those who do not own or have regular access to a private vehicle, often for economic reasons. These passengers have similar transit needs to working young adults.
- **Choice adult riders** are those who have access to (or could have access to) a private automobile, but choose to use transit for economic, environmental, social or health reasons. Members of this group are typically regular commuters and expect service that rival the convenience and travel time of an automobile.

General Service Expectations:

- The commuters of this group expect direct service timed to meet key connections and common work start and end times.
- Adults with less rigid schedules require service similar to younger adult riders.

Potential Market for Transit Service: Typically throughout B.C., this population segment is the most likely to own private automobiles and the least likely to use transit. This is even more so in Area "H" given that the majority of people working outside the home are working in employment sectors very hard to serve by transit (see the discussion under "Industries and Employment" in section 2.0 Community Profile). At the same time, implementing transit services that would be frequent and direct enough to attract choice commuters would be prohibitively expensive for the relatively small population of Area "H." Therefore, the potential adult market for transit service is considered to be **low**.

Potential Markets: Conclusions

- The primary focus for any Area "H" transit service should be on connections with the Nanaimo Regional Transit System and enabling door-to-door service for those who need it. Connecting with the Comox Valley Transit System should be a secondary priority.
- Seniors, youth and people with a disability represent the best potential markets for transit in Area "H." Midday service and later afternoon service should be the priorities.
- The potential transit market for adults and young adults is low. One commuter trip in the morning and one in the afternoon would provide a basic level of service for those without other options and would broaden the flexibility of travel for other users. However, these trips should be considered a secondary priority.
- An evening trip would better enable seniors, youth and some adults to better participate in the community and access jobs and recreation. However, evening service can be very expensive for the relatively low number of people carried. Trips integrating with the existing Friday night "movie bus" service already provided by the Nanaimo Regional Transit System would be a good place to start, depending on the service model used.
- Overall the potential market for service within RDN Area "H" is low based on potential usage when compared with other Nanaimo Regional Transit System services. However, providing a basic level of service to the area would be consistent with one of the transit system's objectives of providing "a basic level of mobility for those who are dependent on transit."⁶ Over the long term, market potential for transit can be increased by following the density and land use guidelines outlined in the Area "H" OCP and the Bowser Village Centre Plan.
- 69% of area respondents to a residential transportation survey for this study stated they would support some level of taxation increase to implement transit.

⁶ Nanaimo Regional Transit Business Plan (April 2008), Page 2

5.0 GENERAL SERVICE CONCEPTS

The following outlines general transit service design concepts. These concepts represent the "box of tools" that will be used when forming the options presented in section 6.0 Service Options.

A number of supplementary service concepts are also included. These supplementary concepts provide examples of services that could be organized and implemented locally should the community wish to pursue other forms of transportation without Regional District of Nanaimo or BC Transit involvement.

Transit Service Design Concepts

Taxi Supplement

Taxi Supplement uses a private vehicle owner (normally a taxi operator) to provide transit services. These services may be stand-alone or may augment services provided by other transit vehicles.

In general, Taxi Supplement trips are dispatched to a taxi operator and are operated using the taxi company's private vehicle(s). Passengers using the service pay a standard transit fare (which covers a portion of costs), with the remaining portion paid by local transit funding partners. The cost of service may either be a metered amount (usually the case where taxi-dispatched trips are used to complement regular transit service as needed) or on a per-trip or per-hour amount (usually the case when scheduled trips are regularly operated by taxi).

Some examples from other locations of existing BC Transit services that are operated through Taxi Supplement include:

- **Nanaimo Regional Transit handyDART Services**, which has the ability to dispatch door-to-door trips for registered people with disabilities to local taxi operators when the regular handyDART vehicles are either over booked or otherwise unavailable. (See: www.transitbc.com/regions/nan/accessible/family_of_services.cfm)
- **Pemberton Paratransit**, where a taxi operator provides seven scheduled round trips per day between Lil'wat First Nation communities and the Village of Pemberton using private vehicles. (See: www.transitbc.com/regions/whi/schedules/schedule.cfm?line=100&)
- **Central Fraser Valley Transit**, where taxis are used to provide shared-ride service within Mission to transport pre-booked passengers to the train station to meet very early West Coast Express trips that occur prior to the start up of regular service on the transit system. (See: www.transitbc.com/regions/cfv/schedules/wce.cfm)

A key benefit of Taxi Supplement service is that funding partners are not directly responsible for funding vehicle leases, insurance, and maintenance. It can also be a more economical way of delivering service since funding partners do not have to pay for driver "down time" between trips.

On the other hand, depending on the operator, Taxi Supplement programs can be harder to monitor and control in terms of customer service and integration within a transit system. The

funding partners may have less control over the physical condition of vehicles used and whether or not they are accessible to people using wheelchairs and scooters. Also, at some point enough trips are carried that it is actually more feasible to pay a driver for a number of hours of work.

The term "Taxi Supplement" is used as a general description. The Taxi Supplement services proposed in the options below may be provided by an existing area taxi operator or may be provided by any other area transportation or taxi company that owns or acquires an accessible vehicle.

Taxi Saver

Taxi Saver programs normally complement handyDART services in larger communities. (HandyDART provides door-to-door pre-booked transportation for people with a disability). The Taxi Saver program provides people with a disability who are registered with the transit system a 50% subsidy towards the cost of taxi rides. Registered users would typically use subsidized Taxi Saver coupons to travel by taxi when handyDART cannot accommodate their needs.

In smaller towns and more rural communities, the Taxi Saver program can be implemented to provide for more flexible and spontaneous travel, either in the place of transit services or to complement them. Through the program, eligible individuals can purchase a \$60 package of Taxi Saver coupons at a cost of \$30. This package can be purchased once every three months. The coupons come in denominations of \$1, \$2 and \$3.

The registered client uses the coupons to pay the collar meter rate of taxi fare. For example, if a taxi fare is \$5.80, the passenger pays \$5.00 in coupons and 80 cents in change. (Taxi drivers do not give change on Taxi Saver coupons.) In the Nanaimo Regional Transit System, eligible handyDART clients must obtain a handyPASS from the system which allows them to purchase and use Taxi Saver coupons.

The key benefit to the Taxi Saver Program is that it offers flexibility for passengers to travel when they want and can help support taxi providers in a community, thereby assisting in keeping them viable to provide Taxi Supplement services.

One challenge with the program is that it is harder to monitor usage and that—particularly in smaller communities—it may undermine other transit services since some people will use Taxi Savers exclusively without supporting the shared-ride transit system.⁹ Also, the Taxi Saver program is typically misunderstood to be a subsidy program for any senior when it is actually only available for people with a disability who are unable to use the regular transit system (many of whom may be seniors) and are registered with the program.

⁹ For instance, the Nanaimo Regional Transit System has a policy that in order to be able to purchase taxi saver coupons, customers must ride at least once per month with HandyDART to retain their eligibility.

Paratransit

Unlike taxi-provided services, Paratransit uses a standard transit vehicle or vehicles to provide service. It is probably more typical to what people think of as "public transit" but it has better flexibility to meet the specific needs of smaller towns and more rural settings.

Encompassing a range of service types, paratransit services can include everything from door-to-door, demand responsive services for people with disabilities, to buses serving stops on fixed routes and schedules. It may also include many other mixtures and hybrids of these. In most cases, funding partners would be directly responsible for paratransit vehicle lease, insurance and maintenance costs. Within B.C., paratransit services typically use an accessible transit vehicle provided by BC Transit and are usually operated by contracted private operating companies or local governments contracted to provide that function.

Paratransit service can be divided into two basic types:

- **On-Demand Paratransit** operates only when passengers request service and provides door-to-door service. Dispatchers work to group similar trips together and have a specified number of service hours within each day to allocate trips.
- **Scheduled Paratransit** operates on a fixed schedule on a designated route with trips occurring at a predictable time each day. Trips operate regardless of the number of passengers on them. The service may use bus stops in more populated areas or may use flag stops¹⁶ in more rural areas.

Between these two basic types are some hybrid options that are useful to consider for Electoral Area "H":

- **Flexible Transit or Flex-Routed Transit** creates a hybrid between on-demand paratransit and scheduled paratransit by building extra time into scheduled trips. This extra time enables the bus to go off route to provide door-to-door pick up or drop off for people with disabilities who would not otherwise be able to walk to the route.

The benefit to this model is that it provides the predictability of scheduled service for the general population while also being able to provide a higher level of access and care to those who need it. A potential challenge is that it needs careful attention to schedule development and dispatching to work best. It is easier to do well on midday trips rather than mixed with peak-period commuter trips. Transit trips serving the rural areas north and south of Powell River show examples of this style of service done well. (See: http://www.transitbc.com/regions/pow/accessible/family_of_services.cfm#rural).

- **On-Demand Service Using Trip Windows** is another hybrid. In this case, trip window times (say 10:00am to 11:00am, 2:00pm to 3:00pm, etc.) are published for transit users rather than a fixed route and schedule. People wanting to use transit—including both people with disabilities and general users—call dispatch and indicate during which trip window they would like to travel. The dispatcher then provides the caller with an estimated pick up and drop off time. The bus provides door-to-door service for all pre-booked passengers during that trip window, shaping its route in the most efficient way.

¹⁶ A flag stop is when passengers wait on the bus route at safe pull off locations - such as group mail box areas - and wave at the approaching driver to stop. To get off the bus, passengers request a stop from their driver.

if no one requests service, the trip during that window does not operate and/or the transit vehicle can be allocated elsewhere.

The key benefit of this style of service is that it is the most efficient way of providing service to people with a disability and others in a rural setting. It groups similar trips together and ensures that the bus doesn't travel further than it needs to. The challenge is that it can be harder to mix with commuter needs and can provide less predictability and autonomy for general users. Transit services in two rural electoral areas outside of Comox use this style of service. (See: http://www.transitbc.com/regiens/com/schedules/community_bus.cfm).

Conventional Transit

Conventional transit operates mainly in urban areas and uses standard sized buses (35 feet long or more) or high capacity buses in dense urban areas. Trips operate on fixed routes and follow schedules. The majority of the scheduled portions of the Nanaimo Regional Transit System and Comox Valley Transit System operate on a conventional transit model.

One aspect of conventional transit services worth noting here is that this type of service facilitates the **timed connections between transit systems**, such as that which takes place between the Comox Valley and Campbell River Transit Systems at Oyster River. In that example, four trips of the Comox Valley Transit's route 12 North Valley (operating between Downtown Courtney and Oyster River) meet corresponding trips of Campbell River Transit's route 6 Oyster River (which routes from there to Downtown Campbell River).

Buses make the connection at a shared stop which enables passengers to transfer from one to the other. This design enables connection between the two systems.

A timed connection between transit systems or routes could also take place on paratransit systems. However, a timed connection places constraints on the ability to deviate off-route to provide door to door service for people with disabilities since a timed connection requires a fixed schedule that can be reliably adhered to.

Supplementary Service Concepts

In addition to the concepts presented above, the community may wish to consider supplementary service ideas that could be implemented independently without involvement or funding through the Regional District of Nanaimo or BC Transit. These could be used as interim measures until such time as formal transit is implemented or the community may decide that these are preferable over the longer term.

- **Ridesharing** or carpooling refers to cases where people coordinate trips together using a private vehicle owned by one of the participants. Likely a number of informal rideshares are already organized by Area "H" residents. The community could increase the incidence of ridesharing by promoting online tools like the Jack Bell Foundation's free matching service at: www.ride-share.org.

Easy to use, this tool helps match potential rideshare travelers based on time and location while also protecting user privacy. The benefit to this approach is that it is organized by participants themselves and has no community cost. A drawback is that it

is more useful for regular commuters rather than seniors and youth whose travel may vary each day

- **A Volunteer Transportation Network** is a transportation concept that has worked quite well in the Mt. Waddington Regional District in the Port Hardy / Port McNeil area (http://www.transitbc.com/regions/maw/accessible/family_of_services.cfm). Through the Network anyone who is a resident within the Regional District and does not own or have access to transportation (due to a permanent or temporary disability or socio-economic reasons) may register with or be referred to the program. Trips are booked by calling the Mount Waddington Community Services Society who coordinates the service. Volunteer drivers use their own private vehicles to deliver the service. Passengers using the service (or families or referring agencies on their behalf) provide a donation to the Network for each trip.

6.0 SERVICE OPTIONS

The following service options address different aspects of the potential markets listed in section 4.0. They take into account the identified special considerations and existing transportation providers. The service description for each option outlines expected ridership, revenue, costs and vehicle requirements.

Costs provided are estimates based on projected 2011/12 budget information for the applicable conventional and handyDART portions of the Nanaimo Regional Transit System. Actual costs may vary depending on date of implementation and final operational plan. Revenue estimates are based on current Regional District of Nanaimo fares.

Vehicle costs used in the paratransit options reflect the use of a minibus. Minibuses are already in use on the handyDART portion of the Nanaimo Regional Transit system and BC Transit is in the process of evaluating additional smaller accessible vehicles for use in rural communities and small towns. In all cases, minibus vehicles are between 21 and 28 feet long and carry between 10 and 23 seated passengers with room for two to four passengers using wheelchairs and scooters.

Note that all options presented in this section only connect to the Nanaimo Regional Transit System and not the Comox Valley Transit System. This is because there are currently scheduling and service area coverage constraints to the existing Fanny Bay service that make connection to the north unfeasible at this time. Approximate costs to extend north are noted where applicable.

It should be emphasized that the provision of service options does not guarantee implementation of service. Please also see the following section 7.0 Implementation Considerations for further information.

Service Option 1: Introductory Midday Paratransit

Description: This option would implement two midday paratransit trips on one day per week between Qualicum Beach and Gainsberg Road in Deep Bay. Service would be scheduled, but would use a minibus that would have time built into the schedule in order to provide door-to-door service for people with disabilities (including seniors with mobility difficulties) registered with handyDART.

Exact routing would need to be confirmed through additional community consultation, but it is proposed that it would route from the Civic Centre in Qualicum Beach to West Fern and Memorial (either using existing Nanaimo Transit routing or more direct routing via West Fern). It would then route via Memorial and West Island Highway (Hwy 19A) to Lighthouse Community Centre and its adjacent senior's housing and then via Hwy 19A to Magnolia Court in Bowser. It would then complete loops in the Jamieson Road and Gainsberg Road areas (at Longview Drive) before returning to Magnolia Court and the reverse route back to Qualicum Beach.

Serves: People with a disability, seniors, non-commuting young adults and adults.

Service Notes and Highlights:

- If budget were available, this service could be fairly easily implemented on a trial or ongoing basis by making use of an existing Nanaimo Regional Transit handyDART vehicle and current time available adjacent to a driver shift on Mondays. Costing for this option assumes this case. (Note that while a Monday schedule works well for existing Nanaimo Regional Transit resources, a number of merchants in Qualicum Beach and Parksville offer seniors' shopping discounts on Tuesdays).
- The routing described above enables Area H residents to access local destinations as well as those in Qualicum Beach. Connections to Nanaimo Regional Transit routes serving Parksville and Nanaimo would be available at the Qualicum Beach Civic Centre. There would also be time for door-to-door drop off within Qualicum Beach or connection to handyDART for people with disabilities.
- One morning round trip and one afternoon round trip are proposed. A morning trip that arrives in Qualicum Beach from Bowser at 10:50am would enable connections to a currently scheduled Nanaimo Regional Transit trip at 11:12am as well as access to 11:00am medical appointments and Ravensong Pool's physiotherapy schedule. The return trip would leave Qualicum Beach in the early afternoon (in the vicinity of 1:15pm – 1:30pm depending on further community consultation).
- This option ensures basic mobility for seniors and others who do not have access to other transportation or choose not to drive. By operating one day per week on an introductory basis it also better ensures that a sufficient number of riders will group together on the trip to make it worthwhile to operate.
- A connection to Fanny Bay is not included with this option since there is less scheduling flexibility to meet or adjust trips on the Comox Valley route serving that area.

Summary Information – Estimated Annual Impacts
Option 1: Introductory Midday Paratransit

Service Hours: 170	Passenger Revenue: \$800
Annual Ridership: 600	Total Cost: \$11,100
Vehicles Required: 0	Net Local Share of Costs: \$4,900
	Provincial Share of Costs: \$5,400

Service Option 2: Weekday Midday Paratransit

Description: This option is identical to Option 1 but provides service every weekday. The daily nature of this service would require a dedicated vehicle. Optimally, this vehicle could be shared with Qualicum Beach to provide augmented handyDART and midday local service for residents of that area. (Augmented Qualicum Beach service will be explored as part of the update to the Nanaimo Regional Transit Business Plan proposed for 2012). Costing for Option 2 assumes that the vehicle will be shared but the incremental cost if it is not shared is also presented.

Serves: People with a disability, seniors, youth (when school is not in session), non-commuting young adults and adults.

Service Notes and Highlights:

- While this option would still provide one morning and one afternoon trip like Option 1, it offers slightly more flexibility to adjust the proposed schedule times based on further consultation with area residents.
- Better scheduling flexibility may make it easier to connect to the Comox Valley Transit System at Fanny Bay. An estimated incremental cost for the Fanny Bay connection is outlined in the cost summary below. However it should be understood that such a connection would require discussion and coordination with the Comox Valley Regional District and in the end may not be feasible due to scheduling constraints.

Summary Information – Estimated Annual Impacts

Option 2: Weekday Midday Paratransit

Service Hours: 960	Passenger Revenue: \$4,700
Annual Ridership: 3,400	Total Cost: \$72,700
Vehicles Required: 0.5*	Net Local Share of Costs: \$38,700
	Provincial Share of Costs: \$28,700

*This option assumes ability to share with Qualicum Beach service the cost to position the vehicle each day and use of asset costs. If not shared, total costs for this option would increase by \$21,300 (at an additional local share of \$16,800)

Cost to extend the trips in this option to the Comox Valley Transit System at Fanny Bay—pending confirmed feasibility and agreement with the Comox Valley Regional District—would be approximately \$20,200

Service Option 3: Weekday Commuter Trips Plus Saturday Service

Description: This option would build on the schedules and routing of Option 2 to provide an additional two round trips per weekday during the commuter periods (one trip in the early morning and one in the late afternoon). It would also provide three trips on Saturdays (mid morning, early afternoon and late afternoon). As it would use the same minibus vehicle as Option 2, no additional vehicle is required.

Serves: All users.

Service Notes and Highlights:

- The two weekday commuter trips would connect to Nanaimo Regional Transit's route 90 Intercity Connector, which offers direct service to key destinations in Parksville and Nanaimo.
- In addition to providing basic commuting options for those without other transportation options, these trips would offer seniors and people with disabilities more travel choices and would better enable youth to participate in activities before and after school.
- An estimated incremental cost for a connection to the Comox Valley Transit System at Fanny Bay is also outlined in the cost summary below.

**Summary Information – Estimated Annual Impacts
Option 3: Weekday Commuter Trips Plus Saturday Service**

Service Hours: 1,130	Passenger Revenue: \$9,200
Annual Ridership: 1,130	Total Cost: \$68,100
Vehicles Required: 0*	Net Local Share of Costs: \$25,800
	Provincial Share of Costs: \$33,100

* Assumes use of the vehicle added in Option 2.

Cost to extend the trips in this option to the Comox Valley Transit System at Fanny Bay—pending confirmed feasibility and agreement with the Comox Valley Regional District—would be approximately \$26,100.

Discussion: Friday Night Connector

A recurring theme heard from Area "H" residents was the desire for transit to enable area youth to independently access recreation and friends in Qualicum Beach and Parksville. As part of the community consultation conducted for this report, there were multiple requests for evening service as well as specific requests to link Area "H" with the Friday night "Movie Bus" trips currently operated by Nanaimo Regional Transit's route 90 Intercity Connector. These Friday night trips provide service from Qualicum Beach to Parksville and Woodgrove Centre in the early evening (leaving Qualicum Beach at 5:10pm) with a return trip leaving Woodgrove Centre at 9:45pm.

This section provides more information for area decision makers on evening services and the kinds of tradeoffs to be considered. It also describes some possible methods to provide evening service should residents wish to pursue it.

- Evening transit service is usually among the costliest types of transit to provide. It tends to carry fewer passengers and may have a higher operating cost depending on driver shifts and available transit vehicles.
- While evening service can be expensive, where it is well used it delivers significant community benefits, especially for youth and lower income adults. This community benefit may also make it easier to attract third party funding for service from recreation budgets, community associations or service clubs.
- If the community is keen to implement evening service, there are a few different operational models that could be considered. Each of these models assumes the ability to use the weekday afternoon paratransit commuter trip proposed in Option 3. When this trip returned from Bowser to Qualicum Beach on Friday evenings, it could extend to Parksville and Woodgrove Centre, thus providing the early evening trip.¹¹ The return late evening trip to Area "H" could take a few different forms:
 - **Extend conventional services:** Under this model, the return late evening trip would be provided by extending the last Friday night trip from Qualicum Beach to Area "H". The trip would only operate if there were passengers on the bus bound for Area "H".
 - Operationally this is the easiest option but also likely the most expensive. As well, since the vehicle used on the return trip would be a standard transit bus, it may not be able to turn around in the Gansberg Road area and present other challenges (carrying few people on such a large vehicle, neighbourhood noise, etc.).
 - **Use a Taxi Supplement Model:** This model would use a taxi company vehicle to meet the Nanaimo Regional Transit bus at the Qualicum Beach Civic Centre when it arrived on its last Friday night trip. If there were passengers bound for Area "H", they would transfer to the taxi vehicle to be dropped off at their door. The trip would be a shared ride service and the transit system would pay the metered rate.

¹¹ Since the transit vehicle would have to travel back to the transit garage near Woodgrove Centre anyway, the additional cost to run this service would be marginal. This trip could also provide additional benefits to other Occar side residents.

- o This option would be the much more cost effective than extending the conventional service and offers the ability to get passengers to their homes late at night without being neighbourhood intrusive. On the other hand, depending on the taxi provider, some parents may be reluctant to have their youth using the service. It also requires the taxi operator to be reliable, maintain good communication and coordination with Nanaimo Regional Transit and have a vehicle with sufficient capacity to meet need.
- **Use a Community Resource:** This model would operate identical to the Taxi Supplement option (and could be managed / funded through the Taxi Supplement model) but would use another community organization and vehicle to deliver service. An example of this is the youth bus previously operated by the Smither's Community Services Association to deliver Friday evening service in that community.
 - o This method may be more appealing to some parents than a taxi and may have fewer reliability risks. It may also provide the opportunity to be partially funded through other parties. However, no obvious community organization with a vehicle seems to be available at present and developing this solution would require a local "champion" to do the leg work. Also, since community organizations can change based on funding availability and mandates from their Boards, this option may not be sustainable over the long term.

SERVICE OPTION SUMMARY

The following table summarizes the estimated impacts for all service options presented above. All figures are annual and are based on estimates that would require review based on actual date of implementation and confirmed service and operational details. Costs are also based on the service being operated under the umbrella of the Nanaimo Regional Custom system; it would not be feasible at this time to operate the service under the Nanaimo Regional Conventional system.

Service Option Summary

	Option 1: Introductory Midday Paratransit	Option 2: Weekday Midday Paratransit	Option 3: Weekday Commuter Trips Plus Saturday Service
Vehicles Required	0	0.5*	0**
Service Hours	170	960	1,130
Ridership	600	3,400	6,900
Total Revenue	\$800	\$4,700	\$9,200
Total Cost	\$11,100	\$72,100	\$68,100
Net Local Share of Costs*	\$4,900	\$38,700	\$25,800
Provincial Share of Costs	\$5,400	\$28,700	\$33,100
Rides per Hour	3.6	3.5	5.9
Cost per Ride***	\$18.50	\$21.21	\$10.16

* This option assumes ability to share with Qualicum Beach service the cost to position the vehicle each day and use of asset costs. If not shared, total costs for this option would increase by \$21,300 (or an additional local share of \$16,800).

** Assumes use of the vehicle provided in Option 2.

*** For comparison, cost per ride on the existing Nanaimo Regional Transit System is \$20.69 for handyDART service and \$4.15 for conventional service, based on provisional 2011/12 budget.

Cost to extend trips to the Comox Valley Transit System at Fanny Bay—pending confirmed feasibility and agreement with the Comox Valley Regional District—would be approximately \$20,200 for Option 2 and \$26,100 for Option 3.

SERVICE OPTION CONCLUSIONS

Based on the findings of this report, Service Option 1 "Introductory Midday Paratransit" would be an appropriate starting level for the Area "H" community. This one day a week service would provide a basic mobility option to those who need it and would also ensure that a sufficient number of riders grouped together on trips to make the service successful. The fact that the service is scheduled and therefore easier to promote and attract riders—and that the population has continued to age—should make this service more effective than the provision of once per week handyDART-only service previously unsuccessfully implemented in the area.

Option 2 and 3 could then be considered as ridership and the community developed, particularly in conjunction with any changes to Qualicum Beach service and the implementation of more transit-supportive growth around village centres as envisioned by the Area "H" OCP and Bowser Village Centre Plan.

The three options presented focus on connections south to Qualicum Beach, Parksville and Nanaimo rather than north to Fanny Bay and Comox Valley destinations because there are currently scheduling and service area coverage constraints to the existing Fanny Bay service that make connection unfeasible at this time. Since further long term transit planning work is scheduled to begin in the Nanaimo, Comox Valley and Campbell River regions in late 2011 / early 2012, it is recommended that regional connections form a piece of this work. The Area "H" options may further evolve based on the outcome of those plans.

7.0 IMPLEMENTATION CONSIDERATIONS

There are a number of issues related to next steps and implementation that should be highlighted. These have been developed in consultation with RDN staff.

- **RDN support** – As this feasibility study was conducted on behalf of the RDN through that organization's existing transit partnership with BC Transit, this report must be formally received by the Regional District. The Transit Select Committee is the RDN body that would provide a recommendation to the Regional District Board on next steps. Board approval and direction would be required to move forward on any of the cost-shared proposals.
- **Resident support** – The resident transportation survey conducted for this study generally showed that the people who responded to the survey support the funding of transit through property tax increase. However, if the RDN Board is supportive of the transit options provided in this report and if implementation seems imminent, it would be useful to undertake further public consultation to gather resident feedback on service options, scheduling and routing details and their appetite to enter into the transit funding function.
- **Funding** – Under the BC Transit Act, funding for transit systems must be cost shared between BC Transit and the sponsoring local government at a prescribed rate, with passenger revenues used to offset the local share of costs. This funding arrangement means that both parties must come to the table with funding before service can be implemented. For instance, if a local municipality has funding for new transit services but the corresponding provincial share is not available, then service cannot be implemented.

BC Transit receives its funding on an annual basis from the provincial government. This annual funding arrangement means that BC Transit cannot confirm a timeframe for service implementations over the long term. Typically BC Transit receives more expansion requests than available expansion funding and as such BC transit cannot accommodate all expansion requests. The current economic picture may also constrain the availability of provincial funding for transit over the next few years.

Similarly, any new service would also require provision within the RDN's budgets.

- **Prioritization** – BC Transit uses a number of transit service performance and land use criteria to prioritize available funding for service expansions between transit systems. Therefore, moving ahead on any of the Area "H" transit services represented would require both available provincial funding and sufficient ranking against other community requests for services. Also, implementation of Area "H" transit service depends on how they are prioritized within the RDN and how it wishes to grow ridership on the Nanaimo Regional Transit System.
- **Coordination with Other Regions** – As discussed in Section 6.2 - Service Option Conclusions, further discussion and coordination is needed before a link could be created between the Nanaimo Regional and Comox Valley transit systems. Upcoming long term planning work to begin over the next year in these regions presents an excellent forum for that to begin.

- **Detailed Implementation Plan** – Once funding was confirmed, BC Transit would work with the RDN to create a detailed implementation plan. This plan would finalize routes, schedules, stop locations and processes and would outline a strategy to market the new service. Public education on the BC Bus Pass program—an annual transit pass program for lower income seniors and people with a disability—should be included as part of any marketing strategy.

8.0 RECOMMENDATIONS

If the community wishes to pursue transit service, it is recommended that Service Option 1 "Introductory Midday Paratransit" is an appropriate starting level. This one day a week service would provide a basic mobility option to those who need it and would also ensure that a sufficient number of riders are grouped together on trips to make the service successful.

It is recommended that the Regional District of Nanaimo:

- Receive this report as information and provide comment.

BC Transit
March 2011

APPENDIX B: GREYHOUND SCHEDULES, STOPS AND DEFINITIONS

Greyhound Schedule, Courtenay - Nanaimo

Location	Arrives	Departs	Operator	Company	Weekly Available	Service Code
(START) - COURTENAY, BC		8:40 AM		GLC		5107
HOYTON, BC	8:45 AM	8:45 AM		GLC		5107
UNION BAY, BC	8:55 AM	8:55 AM		GLC		5107
BUCKLEY BAY, BC	9:07 AM	9:07 AM		GLC		5107
FANNY BAY, BC	9:25 AM	9:25 AM		GLC		5107
BOWSER, BC	9:31 AM	9:31 AM		GLC		5107
HORNE LAKE ROAD, BC	9:37 AM	9:37 AM		GLC		5107
QUAILCUM BEACH, BC	9:39 AM	9:39 AM		GLC		5107
FRENCH CREEK, BC	9:42 AM	9:42 AM		GLC		5107
PARKSVILLE, BC	9:53 AM	9:53 AM		GLC		5107
CRAGS CROSSLING, BC	9:55 AM	9:55 AM		GLF		5107
HANKOBE BAY, BC	9:55 AM	9:55 AM		GLF		5107
WELLINGTON, BC	10:25 AM	10:25 AM		GLC		5107
(END) - NANAIMO, BC	11:40 AM	(END)		GLC		5101

Location	Arrives	Departs	Operator	Company	Weekly Available	Service Code
(START) - COURTENAY, BC		8:10 PM		GLC		5114
HOYTON, BC	8:15 PM	8:15 PM		GLC		5114
UNION BAY, BC	8:25 PM	8:25 PM		GLC		5114
BUCKLEY BAY, BC	8:37 PM	8:37 PM		GLF		5114
FANNY BAY, BC	8:55 PM	8:55 PM		GLL		5114
BOWSER, BC	9:01 PM	9:01 PM		GLC		5114
HORNE LAKE ROAD, BC	9:07 PM	9:07 PM		GLC		5114
QUAILCUM BEACH, BC	9:10 PM	9:10 PM		GLL		5114
FRENCH CREEK, BC	9:12 PM	9:12 PM		GLF		5114
PARKSVILLE, BC	9:23 PM	9:23 PM		GLC		5114
CRAGS CROSSLING, BC	9:25 PM	9:25 PM		GLC		5114
HANKOBE BAY, BC	9:25 PM	9:25 PM		GLC		5114
WELLINGTON, BC	9:55 PM	9:55 PM		GLC		5114
(END) - NANAIMO, BC	11:05 PM	(END)		GLC		5114

Greyhound Schedule, Nanaimo - Courtenay

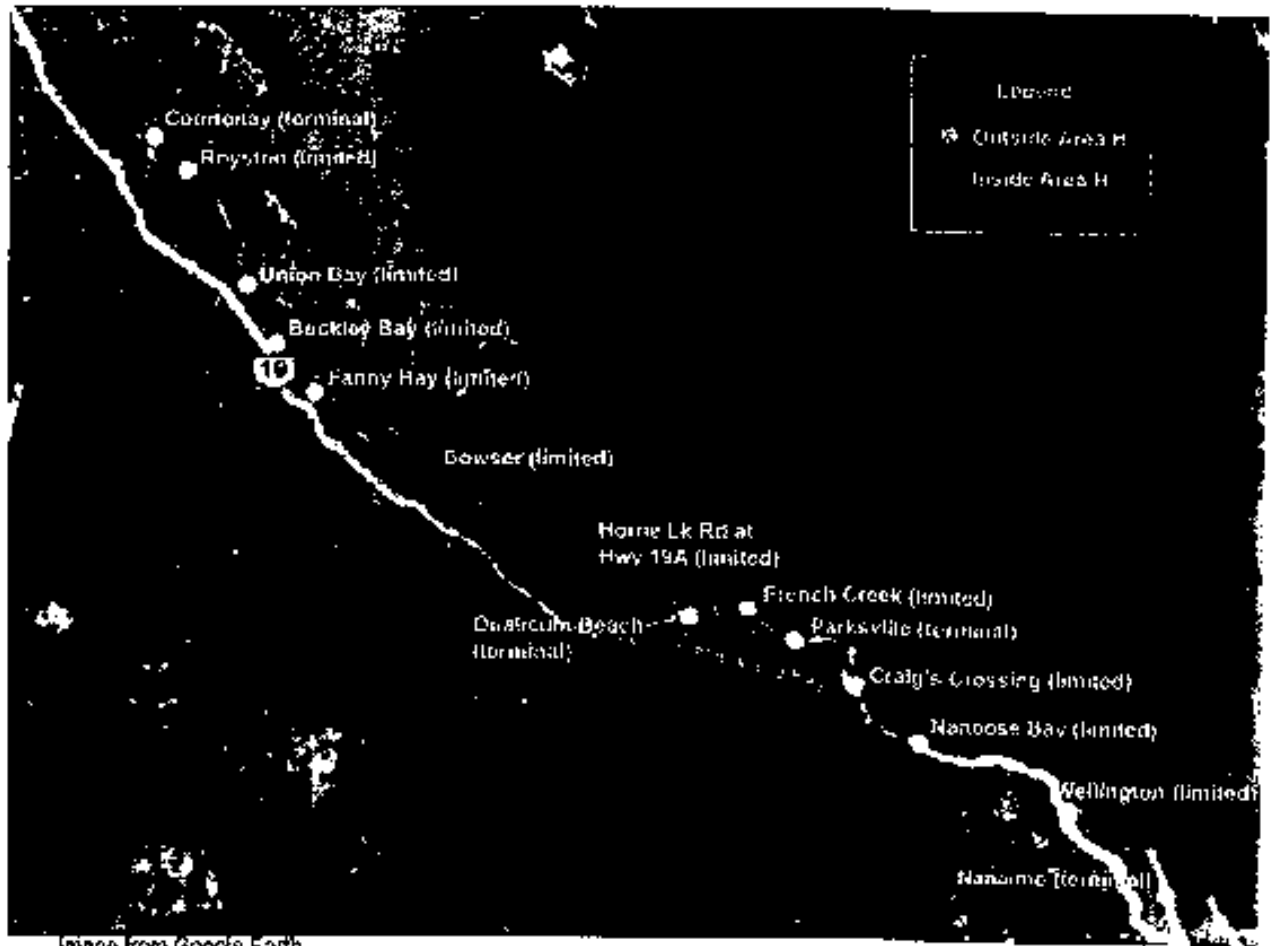
Location	Arrives	Departs	Operator	Company	Weekly Available	Service Code
(START) - NANAIMO, BC		10:00 AM		GLC		5102
WELLINGTON, BC	10:40 AM	10:40 AM		GLC		5102
HANKOBE BAY, BC	10:50 AM	10:50 AM		GLC		5102
CRAGS CROSSLING, BC	10:52 AM	10:52 AM		GLC		5102
PARKSVILLE, BC	11:03 AM	11:03 AM		GLC		5102
FRENCH CREEK, BC	11:12 AM	11:12 AM		GLC		5102
QUAILCUM BEACH, BC	11:14 AM	11:14 AM		GLC		5102
HORNE LAKE ROAD, BC	11:17 AM	11:17 AM		GLC		5102
BOWSER, BC	11:21 AM	11:21 AM		GLC		5102
FANNY BAY, BC	11:31 AM	11:31 AM		GLF		5102
BUCKLEY BAY, BC	11:43 AM	11:43 AM		GLC		5102
UNION BAY, BC	11:54 AM	11:54 AM		GLC		5102
HOYTON, BC	12:01 PM	12:01 PM		GLC		5102
(END) - COURTENAY, BC	12:50 PM	(END)		GLC		5102

Location	Arrives	Departs	Operator	Company	Weekly Available	Service Code
(START) - NANAIMO, BC		3:30 PM		GLC		5110
WELLINGTON, BC	3:50 PM	3:50 PM		GLF		5110
HANKOBE BAY, BC	3:55 PM	3:55 PM		GLL		5110
PARKSVILLE, BC	3:55 PM	3:55 PM		GLC		5110
FRENCH CREEK, BC	3:57 PM	3:57 PM		GLC		5110
QUAILCUM BEACH, BC	3:59 PM	3:59 PM		GLC		5110
HORNE LAKE ROAD, BC	4:01 PM	4:01 PM		GLC		5110
BOWSER, BC	4:03 PM	4:03 PM		GLC		5110
FANNY BAY, BC	4:13 PM	4:13 PM		GLF		5110
BUCKLEY BAY, BC	4:25 PM	4:25 PM		GLC		5110
UNION BAY, BC	4:34 PM	4:34 PM		GLC		5110
HOYTON, BC	4:37 PM	4:37 PM		GLF		5110
(END) - COURTENAY, BC	4:42 PM	(END)		GLC		5110

Greyhound Stop Locations

A limited service bus stop is defined by Greyhound as:

Bus stops provide limited schedule service for a large number of locations, which do not support a full-service terminal or agency. As a general rule, no ticketing, baggage, or package express service is offered at these locations. Some of these locations may be at a local airport or transit center, while others may simply be a stop along a highway route, without an enclosed waiting area. Passengers should be aware that no Greyhound ticketing facilities are available at bus stop locations.



APPENDIX C: VIA RAIL SCHEDULE

Victoria - Courtenay			
Your personal timetable Wednesday February 16th 2011			
TRAIN	KM	TR	
DAYS	x7		
DP	Victoria, BC (PT)	1	08:00
	Esquimalt	4	08:07
	Palmer	7	"
	Langford	12	08:18
	Maple	16	08:28
	Chilside	21	"
	Strathcona Lodge	26	"
	Shawnigan	31	08:38
	Cobble Hill	37	08:47
	Hillcrest	43	"
	Cowichan	49	08:57
	Duncan	56	09:05
	Hayward	63	"
	Chemainus	70	09:15
	Ladysmith	77	09:25
	Cowichan	84	09:35
	South Westport	91	"
	Starks	98	"
AR	Nanaimo	105	09:35 ^{NS}
DP	Nanaimo	112	09:50 ^{NS}
	Wellington	119	09:58
	Kinross Bay	126	"
	Parksville	133	10:07
	Quilcum Beach	140	10:15
	Dunsmuir	147	10:21
	Deep Bay	154	"
	Buckley Bay	161	"
	Union Bay	168	10:31
AR	Courtenay, BC (PT)	175	10:43

NS - Customers may purchase tickets for this stop at Nanaimo station.
 * Stop not required

Courtenay - Victoria			
Your personal timetable Wednesday February 16th 2011			
TRAIN	KM	TR	
DAYS	x7		
DP	Courtenay, BC (PT)	1	13:15
	Union Bay	18	13:25
	Buckley Bay	25	"
	Deep Bay	32	"
	Dunsmuir	39	14:05
	Quilcum Beach	46	14:27
	Parksville	53	14:39
	Kinross Bay	60	"
	Wellington	67	14:52
AR	Nanaimo	74	14:58 ^{NS}
DP	Nanaimo	81	15:25 ^{NS}
	Starks	88	"
	South Westport	95	"
	Cowichan	102	15:32
	Ladysmith	109	15:37
	Chemainus	116	15:44
	Hayward	123	"
	Duncan	130	15:55
	Cowichan	137	16:07
	Hillcrest	144	"
	Cobble Hill	151	16:15
	Shawnigan	158	16:27
	Strathcona Lodge	165	"
	Chilside	172	"
	Maple	179	16:32
	Langford	186	16:43
	Palmer	193	"
	Esquimalt	200	16:53
AR	Victoria, BC (PT)	207	17:00

NS - Customers may purchase tickets for this stop at Nanaimo station.
 * Stop not required

APPENDIX D: NANAIMO REGIONAL TRANSIT SCHEDULES / MAPS

APPENDIX E: COMOX VALLEY TRANSIT SYSTEM SCHEDULES / MAPS

APPENDIX F: SCHOOL DISTRICT 69 BUS RIDER INFORMATION

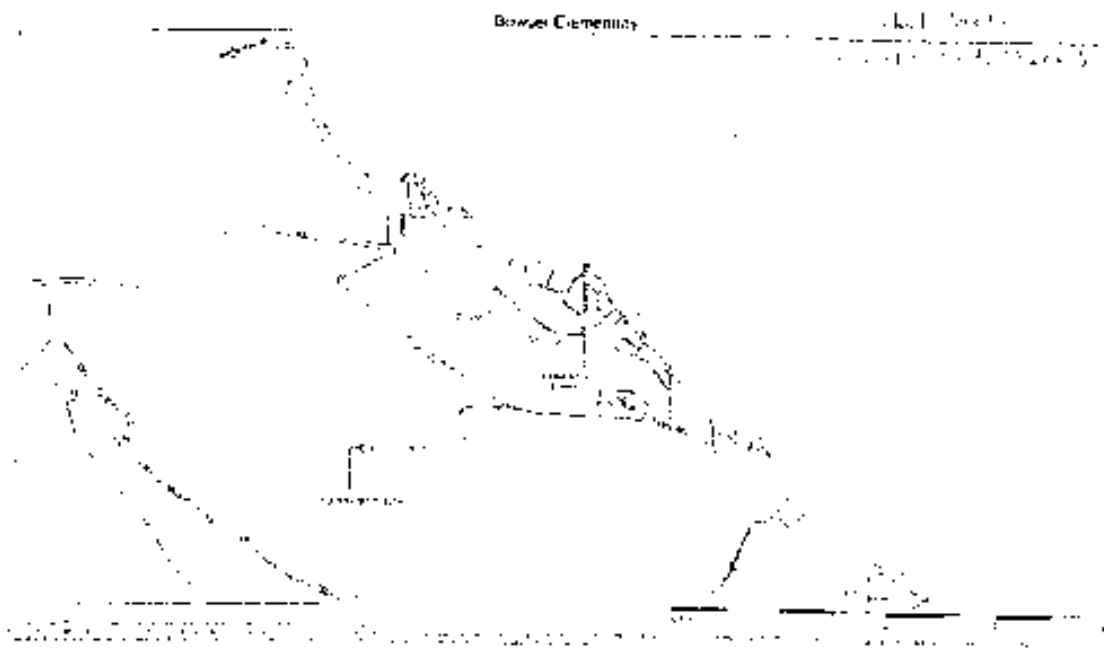
SD 69 School Bus Eligibility

	Elementary (K - 5)	Middle (6 - 8)	Senior (9 -12)	Fee
Eligible	Beyond 3.2km	Beyond 4.0 km	Beyond 4.8 km	\$40
Courtesy*	Within 3.2km*	Within 4.0 km*	Within 4.8 km*	\$100

* Courtesy riders are riders who live within their walk limits or are cross-boundary. Cross-boundary students are students attending a school other than their neighbourhood school.

*all courtesy rides are based on seat availability

Walk Limit to Bowser Elementary



Exceptions to walk limits:

Bowser Elementary and living at the following locations on the inland side of the island Highway; Anderson, Callow, Cowland, Crossley, Gainsberg. Students living in this area are within the walk limits but are eligible for bus service.

School Bus Schedules

Bus schedules for Bowser Elementary School, Qualicum Beach Middle School, and Kwalikum Secondary School are included. For bus schedule information for other School District 69 schools, visit: www.sd69.bc.ca/DistrictDepartments/Transportation

Kwalikum Secondary School (KSS)					
Bus #	AM	Drop Time	Collection Point	Bus # PM	Drop Time
R-1	7:45 AM		Bayle & Hwy	R-10	3:45 PM
R-2	7:51 AM		Barnes & Rupert	R-9	3:15 PM
R-3	8:05 AM		Boomer & Hwy	R-14	3:50 PM
R-4	7:15 AM		Bowser Rd & Hwy	R-6	3:57 PM
See Transit Map					
R-5	8:01 AM		Center & Tuxedo (PV 6000 only)	R-4	3:44 PM
R-6	8:03 AM		Chasworth & Albem	R-16	3:31 PM
R-7			Chasworth & Three	R-1E	3:29 PM
R-8	7:55-8:10		Clarke & Albem (water side drop off)	R-16	3:25-3:31
R-9	7:51 AM		Cochrane & Hwy	R-4	3:46 PM
R-10	7:57 AM		Colborne Blvd	R-4	3:20 PM
R-11	7:56 AM		Conner Ridge (Grosser)	R-3	3:51 PM
R-12	7:24 AM		Corcoran Rd	R-16	3:48 PM
R-13	7:41 AM		Corcum & Derrin	R-16	3:47 PM
R-14	7:36 AM		Corcum & Kookmo	R-16	3:56 PM
R-15	7:37 AM		Corcum & Nohmi	R-16	3:51 PM
R-16	7:22 AM		Cowford & Anderson	R-6	4:16 PM
R-17	7:42 AM		Crosby & Hwy	R-6	4:12 PM
R-18	8:10 AM		Evanson & Hwy	See Center/Tuxedo	
R-19	7:56 AM		FGCS to KSS	R-3	3:40 PM
R-20	7:52 AM		Fisher's & Hwy	R-6	3:46 PM
R-21	7:56 AM		Goodyear & Hwy	R-14	3:36 PM
R-22	7:26 AM		Griffin & Park	R-5	3:16 PM
R-23	7:40 AM		Driftoe & Wicksford	R-3	3:56 PM
R-24	8:10 AM		Grandon End	R-3	3:35 PM
R-25	8:15 AM		HG Hill & Park	R-5	3:29 PM
See School					
R-26	7:52 AM		Home Lake & Olympic	R-14	3:40 PM
R-27	7:54 AM		Home Lake & RR Road	R-14	3:50 PM
R-28	7:42 AM		Home Lake & Spicer Lake	R-14	3:46 PM
R-29	8:12 AM		Howard & Albem	R-16	3:38 PM
R-30	7:55 AM		Kerrville & Hwy	R-14	3:37 PM
R-31	8:12 AM		Krusade & Hwy	R-4	3:39 PM
R-32	7:57 AM		Kyrie Estate	R-6	4:07 PM
R-33	7:45 AM		Lycol & Hwy	R-5	3:56 PM
R-34	7:46 AM		McLean & Adams	R-16	3:17 PM
R-35	7:31 AM		Maplewood & Astley	R-12	3:58 PM
R-36	7:57 AM		McRae Place	R-16	3:23 PM
R-37	7:46 AM		McRae & Hwy	R-6	3:56 PM
R-38	8:08 AM		Paper & Hwy	R-16	3:31 PM
R-39	7:32 AM		Pratt & Albem	R-3	4:03 PM
R-40	7:23 AM		Pratt & Palmer	R-3	4:01 PM
See School					
R-41	8:15 AM		Seaton Farm (dot gate @ ODEP 400)	See Moor/Rodgers	
R-42	7:46 AM		Seaton's (Charter Drive)	R-6	3:54 PM
R-43	7:44 AM		Spicer Lake & Tumbul	R-14	3:48 PM
R-44	7:26 AM		Sunshine Farm (P&H & N. Lumley Anderson Farm)	R-3	4:06 PM
R-45	7:55 AM		Sunrise & Hwy	R-4	3:20 PM
R-46	8:08 AM		Talents & Hwy (S. Tempo Gas)	See Center/Tuxedo	
R-47	7:37 AM		Thompson Clarke & Jambor	R-6	4:01 PM
R-48	7:46 AM		Tumbul & Home Lake	R-14	3:52 PM
R-49	7:51 AM		Von Home & Jones	R-16	3:18 PM
R-50	8:00 AM		Wagner & Fowler	R-14	3:52 PM
R-51	7:41 AM		W. Webster & Palmer	R-5	3:54 PM
R-52	7:38 AM		Wooden Ridge	R-3	4:07 PM

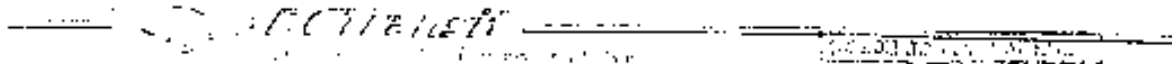
Qualicum Beach Middle School (QBMS)					
Bus #	AM	Drop Time	Collection Point	Bus # PM	Drop Time
R-1	8:38 AM		Berke & Hwy	R-1E	3:32 PM
R-2	8:30 AM		Boorman & Hwy	R-14	3:30 PM
R-3	7:56 AM		Bowser Rd & Hwy	R-7	3:27 PM
R-4	8:38 AM		Center & Evanson	R-16	3:26 PM
R-5	8:34 AM		Center & Tuxedo	R-16	3:25 PM
R-6	8:28 AM		Chasworth & Albem	R-5	3:40 PM
R-7	8:24 AM		Chasworth & Three	R-6	3:38 PM
R-8	8:15-8:31		Clarke & Albem (water side drop off)	R-6	3:25-3:31
R-9	8:25 AM		Cochrane & Hwy	R-7	3:21 PM
R-10	7:56 AM		Colborne Ridge Grounds to KSS	R-5	3:21 PM
R-11	8:54 AM		Corcum & Derrin	R-16	3:54 PM
R-12	8:28 AM		Corcum & Kookmo	R-16	3:45 PM
R-13	8:31 AM		Corcum & Nohmi	R-16	3:47 PM
R-14	8:11 AM		Corcum & Anderson	R-7	3:50 PM
R-15	8:18 AM		Crosby & Hwy	R-7	3:58 PM
R-16	7:58 AM		FGCS to QBMS	R-3	3:19 PM
R-17	8:27 AM		Fisher's & Hwy	R-7	3:18 PM
R-18	8:21 AM		Goodyear & Hwy	R-14	3:34 PM
R-19	8:11 AM		Griffin & Park	R-2	3:36 PM
R-20	8:16 AM		Griffin & Wynneford	R-2	3:38 PM
R-21	8:01 AM		Grandon End	R-2	3:18 PM
R-22	8:25 AM		Harris & Palmer	R-6	3:14 PM
R-23	8:25 AM		Home Lake & McRae (water side drop off)	R-14	3:26 PM
R-24	8:21 AM		Home Lake & RR Road	R-14	3:35 PM
R-25	8:20 AM		Home Lake & Olympic	R-14	3:43 PM
R-26	8:11 AM		Home Lake & Spicer Lake	R-14	3:46 PM
R-27	8:01 AM		Howard & Albem	R-6	3:46 PM
R-28	8:22 AM		Kerrville & Hwy	R-14	3:37 PM
R-29	8:06 AM		Krusade & Hwy	R-4	3:27-3:35
R-30	8:04 AM		Kyrie Estate	R-7	3:40 PM
R-31	8:22 AM		KSS to QBMS	R-14	3:15 PM
R-32	8:26 AM		Lycol & Hwy	R-7	3:26 PM
R-33	8:24 AM		Maplewood & Astley	R-16	3:41 PM
R-34	8:20 AM		McRae & Hwy (RR Road)	R-6	3:53 PM
R-35	8:16 AM		McRae Place	R-6	3:51 PM
R-36	8:21 AM		McRae & Hwy	R-7	3:28 PM
R-37	8:22 AM		McRae & Hwy	R-7	3:44 PM
R-38	8:11 AM		Pratt & Albem	R-3	3:34 PM
R-39	8:27 AM		QBMS to QBMS	R-2	3:10 PM
R-40	8:27 AM		Qualicum & Chester	R-7	3:16 PM
R-41	8:21 AM		Rupert & Blyssford	R-7	3:22 PM
R-42	8:27 AM		Seaton's & Hwy (dot gate)	R-7	3:23 PM
R-43	8:14 AM		Spicer Lake & Tumbul	R-14	3:48 PM
R-44	8:08 AM		Sunshine Farm (P&H & N. Lumley Anderson Farm)	R-3	3:59 PM
R-45	7:58 AM		Thompson Clarke & Jambor	R-7	3:24 PM
R-46	8:18 AM		Tumbul & Home Lake	R-14	3:52 PM
R-47	8:16 AM		Von Home & Jones	R-5	3:25 PM
R-48	8:28 AM		Wagner & Fowler	R-14	3:32 PM
R-49	8:17 AM		Wicksford & Palmer	R-2	3:36 PM
R-50	8:06 AM		Wooden Ridge	R-2	3:31 PM

Bowser Elementary School (BES)					
Bus #	AM	Pick Up Time	Collection Point	Bus #	Drop Time
R-19		8:13 AM	Baylis & Hwy	R-20	3:34 PM
R-19		8:18 AM	Beerman & Hwy	R-20	3:31 PM
R-7		8:47 AM	Bowser Road & Hwy	R-24	3:18 PM
R-19		8:22 AM	Cochrane & Hwy	R-24	3:24 PM
R-19		8:07 AM	Corcan & Dorman	R-20	3:35 PM
R-19		8:01 AM	Corcan & Kelmum	R-20	3:41 PM
R-19		8:04 AM	Corcan & Nishnee	R-20	3:50 PM
R-19		8:42 AM	Cowlans & Anderson	R-20	3:10 PM
R-19		8:47 AM	Crosby & Hwy	R-20	3:05 PM
R-19		8:21 AM	Faberick & Hwy	R-24	3:27 PM
R-19		8:18 AM	Goodyear & Hwy	R-20	3:24 PM
R-7		8:39 AM	Home Lake & Olympic	R-24	3:34 PM
R-7		8:41 AM	Home Lake & RR xing	R-24	3:31 PM
R-7		8:26 AM	Home Lake & Spider Lake	R-24	3:36 PM
R-7		8:43 AM	Kenmuir & Hwy	R-24	3:28 PM
R-7		8:42 AM	Kennel & Leach	R-24	3:29 PM
R-19		8:53 AM	Koppeh Salinas	R-24	3:10 PM
R-19		8:28 AM	McCot & Hwy	R-24	3:15 PM
R-19		7:58 AM	Meadowood & Ashing	R-20	3:43 PM
R-19		8:26 AM	Nee & Hwy	R-24	3:22 PM
R-19		8:27 AM	Nimbley & Hwy	R-24	3:21 PM
R-19		8:25 AM	Seafair & Hwy (Clarton Dr)	R-24	3:23 PM
R-7		8:31 AM	Spider Lake & Tumbal	R-24	3:37 PM
R-7		8:34 AM	Tumbal & Home Lake	R-24	3:39 PM
R-19		8:14 AM	Walter & Fowler	R-20	3:29 PM

APPENDIX G: TRANSPORTATION SURVEY RESULTS

APPENDIX H: SURVEY ANALYSIS BASED ON LOCATION

APPENDIX 1



March 31, 2011
 File: NAK 23

Dennis Trudeau,
 Manager of Transportation Services
 Regional District of Nanaimo
 6300 Hammond Bay Road
 Nanaimo BC V9T 6N2

Dear Mr. Trudeau:

SUBJECT: Nanaimo 2011/12 Annual Operating Agreement

Further to our draft 2011-2012 budget sent to you in November 2010 and subsequent discussions, please find enclosed your 2011-2012 Annual Operating Agreement (AOA) for approval.

This AOA and the previously approved Master Operating Agreement, constitute the operating agreements for your transit system. The AOA includes costs associated with your base (existing) transit services - annualizes service expansion that was implemented in January, 2011. With regard to 2011-12 expansions further information will be forthcoming shortly once the allocation of fall (September) and winter (January) expansion hours are finalized.

The following bulleted provide you with information on the items in Schedule C that are covers for notable changes for the Conventions/Transit Service in your 2011-2012 AOA budgeted costs from last year's 2010-2011 AOA.

- Increase in the operator's fixed costs of 3%. Operator's fixed costs represent all of the operator's overhead (non driver) costs to deliver service such as supervision, dispatching, training, bus interior cleaning & washing, fueling and administration.
- Variable Hourly Costs (drivers wages & benefits) increase slightly resulting from the annualized service expansion and the allowable 2.5% increase in the fringe benefit rates for the operator's labour force.
- Variable Distance Costs (fuel and tires) increased based on budgeted fuel price increasing to \$1.10 per litre and an inflationary increase of 2.0% on the costs of tires and additional hours from expansion.
- An increase in the maintenance budget to better reflect actual activity during the current year' maintenance for the new GFI fare boxes and anticipated inflationary lifts in the costs for parts and additional service hours and kilometers due to expansion.
- An increase in ICBC insurance which reflects the most current operating company premiums plus a 3% cost increase at date of renewal.
- Use of Asset (Debt) Service; budgeted costs reflect the following:

- d. new fare box technology improvements that are covered by the PTIP credit
- e. scheduled major propulsion system capital repairs being done to your system's fleet (such as scheduled transmission, engine and differential replacements);
- f. estimated costs for sidewall repairs on Now Flyer vehicles
- g. Existing vehicle maintenance costs
- h. PTIP credit applied to debt service of farebox project and 2 Novas (B2R8 & 9299)

The vehicle use of asset charge (debt service) also includes estimated costs for fleet contingencies. There are two components of this. The first component is the cost of providing a province wide contingency fleet. When vehicles are removed from your system for major repairs, breakdowns or accidents, a replacement vehicle may be provided from the contingency fleet to ensure service can continue to be met given ongoing revenue service and preventative maintenance requirements of your system. The use of contingency vehicle in your system will not impact the vehicle use of asset charge for your system. Without the contingency fleet, transit systems across the province would be required to have additional spare vehicles in their fleet and the pooled contingency fleet provision is a lower cost option than permanently assigning additional spare vehicles. The second component is the cost of removing a vehicle from service before it has reached the end of its useful life. This is only done when it is more economical than repairing it to return to service for the remainder of its useful life. This component is allocated across all transit systems based on conventional fleet service hours.

The following buffers provide you with information on the items in Schedule C that are drivers for notable changes for the Custom Transit Service within your 2011-2012 AOA budgeted costs from last year's 2010-2011 AOA:

- Increase in the operator's fixed costs of 3%. Operator's fixed costs represent all of the operator's overhead (non driver) costs to deliver service such as supervision, dispatching, training, bus interior cleaning & washing, fueling and administration.
- Variable Hourly Costs (drivers wages & benefits) increase slightly resulting from the allowable 2.5% increase in the fringe benefit rates for the operator's labour force.
- Variable Distance Costs (fuel and tires) increased based on budgeted fuel price increasing to \$1.10 per litre and an inflationary increase of 2.0% on the costs of tires.
- An increase in the maintenance budget to better reflect actual activity during the current year.
- An increase in CBC insurance which reflects the most current operating company premiums plus a 3% cost increase at date of renewal.
- Debt service decreased due to the expiry of CSE9 this summer which will subsequently not be replaced.

Over a 6-year period, the average operating cost per hour for semi-public transit systems throughout the rest of Canada has increased annually at 6%. During this same period, BC Transit has been successful in holding its overall increase in the average operating cost per hour to 3.9% annually through sound fleet management and a shared services model.

For the 2011-2012 operating year, BC Transit is committed to continuing to manage operational hourly cost increases below the national average and our goal is to hold them equal to or less than our average. We have also held the change in BCT shared services costs for the 2011-2012 year equal to or less than inflation.

For your information there is a copy of the Information and Performance Summary included which provides performance measures for the transit system.

Once the agreements have received signature(s) from the Regional District please return all originals to the undersigned for execution by BC Transit.

Please make every effort to have these agreements returned to BC Transit within twenty-one days of receipt.

Additionally, as discussed at UBCO this year, BC Transit is providing you with 3 year budget projections to help you forecast your future transit costs. Year 1 of the projection was provided to you in November 2010 in draft and is now finalized as Schedule C to your 2011-2012 AOA attached hereto. Year 2 (2012-2013) and Year 3 (2013-2014) projected budgets will be sent to you in the next 2 weeks.

Through the summer and fall of 2011 we will work with you to further refine the Year 2 projected budget to form the basis of your 2012-2013 AOA budget.

Should you have any questions related to your budget or concerns please do not hesitate to contact me.

Yours truly,



Myra Moore
Regional Transit Manager
Vancouver Island Coastal
BC Transit

Enclosed: Annual Operating Agreement, Information and Performance Summary

Information & Performance Summary
 Nanaimo Regional Conventionals

Official AOA
 Amendment # 1
 2010/2011
 Official AOA
 2011/2012

ANNUAL OPERATING AGREEMENT		Variance	%
		\$ / #	
BUDGET SUMMARY			
Total Costs	\$10,023,367	\$10,710,561	6.7%
Total Revenue	\$3,401,781	\$141,568	4.1%
RCT Share of Costs	\$3,824,919	\$4,097,850	7.1%
Net Municipal Share	\$2,551,944	\$2,559,401	10.2%

PERFORMANCE SUMMARY

Level of Service			
Population Served	98,518	98,500	0.0%
Total Number of Vehicles	42	42	0.0%
Revenue Hours of Service	101,826	103,070	1.2%
Effectiveness			
Annual Revenue Passengers	2,495,912	2,597,360	4.1%
Conventional	2,495,912	2,587,360	4.1%
Total Revenue Passengers per Capita	25.3	26.4	4.1%
Total Passengers per Hour	25	25	2.8%
Total Cost per Passenger	\$4.02	\$4.12	2.6%
Cost Recovery	34.81%	33.92%	-2.5%
Efficiency			
Total Operating Cost of Service per Revenue Hour	\$89.08	\$93.67	5.2%
Total Cost of Service per Revenue Hour	\$99.53	\$103.02	5.5%

Information & Performance Summary
 Nanaimo Custom Transit

ANNUAL OPERATING AGREEMENT	Official AOA 2010/2011	Official AOA 2011/2012	Variance \$ / #	%
BUDGET SUMMARY				
Total Costs	\$1,630,504	\$1,652,956	\$13,452	0.8%
Total Revenue	\$231,260	\$227,020	(\$4,280)	-1.9%
BC* Share of Costs	\$912,517	\$925,041	\$12,124	1.3%
Net Municipal Share	\$468,063	\$473,551	\$5,488	1.2%
PERFORMANCE SUMMARY				
Level of Service				
Population Served	135,800	135,800	0	0%
Total Number of Vehicles	15	14	(1)	-6.7%
Revenue Hours of Service	23,316	23,312	(4)	-0.0%
Effectiveness				
Annual Revenue Passengers	80,000	68,010	(11,990)	-15.0%
CustomBam - Vans	73,400	64,070	(9,330)	-12.7%
CustomBam - Taxi Supplement	3,700	2,310	(1,390)	-37.6%
Taxi Saver	2,900	1,630	(1,270)	-43.8%
Van Passengers per Revenue Hour	3.1	2.7	(0)	-12.7%
Total Cost per Passenger	\$20.40	\$24.30	\$3.87	18.0%
Van Cost per Van Passenger	\$21.06	\$25.02	\$3.96	18.8%
Taxi Cost per Taxi Passenger	\$7.94	\$12.69	\$5.11	67.5%
Cost Recovery	14.41%	13.73%	(0.00)	-2.6%
Efficiency				
Total Operating Cost of Service per Revenue Hour	\$61.80	\$62.57	\$0.77	1.3%
Total Cost of Service per Revenue Hour	\$69.7	\$66.76	\$0.59	-0.9%

* Rates exclude any taxi saver and taxi supplement costs

NANAIMO

ANNUAL OPERATING AGREEMENT

Between

THE REGIONAL DISTRICT OF NANAIMO

And

BRITISH COLUMBIA TRANSIT

APRIL 1, 2011 TO MARCH 31, 2012

INFORMATION CONTAINED IN SCHEDULE "C" - BUDGET AND SCHEDULE "D" - PAYMENT SCHEDULE IS SUBJECT TO FREEDOM OF INFORMATION & PROTECTION OF PRIVACY ACT.
CONSULT WITH BC TRANSIT PRIOR TO RELEASING INFORMATION IN THESE SCHEDULES TO INDIVIDUALS OR COMPANIES OTHER THAN THOSE WHO ARE PARTY TO THIS AGREEMENT.

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ANNUAL OPERATING AGREEMENT

BETWEEN THE REGIONAL DISTRICT OF NANAIMO
(the "Municipality" and the "Operating Company")
AND BRITISH COLUMBIA TRANSIT
(the "Authority")

WHEREAS the Municipality and the Authority are authorized to share in the costs of providing a Public Passenger Transportation System pursuant to the British Columbia Transit Act;

WHEREAS the Municipality is authorized to operate, manage and maintain a Public Passenger Transportation System within the Nanaimo Regional Transit Service Area;

WHEREAS the parties hereto have entered into a Master Operating Agreement effective which sets out the general rights and responsibilities of the parties hereto;

AND WHEREAS the parties hereto wish to enter into an Annual Operating Agreement which sets out, together with the Master Agreement, the specific terms and conditions for the operation of the Public Passenger Transportation System for the upcoming term;

NOW THEREFORE THIS AGREEMENT WITNESSETH that in consideration of the promises and of the covenants herein contained, the parties covenant and agree with each other as follows:

SECTION 1 - DEFINITION OF TERMS

- 1.1 **Definitions:** Unless agreed otherwise in the Annual Operating Agreement, the definitions set out in the Master Agreement shall apply to this Annual Operating Agreement, including:
 - (a) "Annual Operating Agreement" shall mean this Annual Operating Agreement and any Annual Operating Agreement Amendment negotiated and entered into by the parties subsequent hereto;
 - (b) "Master Agreement" shall mean the Master Joint Operating Agreement, including any amendments made thereto.

SECTION 2 - INCORPORATION OF MASTER AGREEMENT

- 2.1 **Incorporation of Master Agreement into Annual Operating Agreement:** Upon execution of this Annual Operating Agreement shall be deemed integrated into the Master Agreement and thereafter the Master Agreement and the current Annual Operating Agreement shall be read together as a single integrated document and shall be deemed to be the Annual Operating Agreement for the purposes of the British Columbia Transit Act, as amended from time to time.

SECTION 3 - TERM AND RENEWAL

- 3.1 **Term and Renewal:** The term of this agreement shall be from April 1, 2011 to March 31, 2012 except as otherwise provided herein. It is acknowledged by the parties that in the event of termination or non-renewal of the Annual Operating Agreement, the Master Agreement shall likewise be terminated or not renewed, as the case may be.

SECTION 4 – SCHEDULES

4.1 Schedules The schedules attached hereto shall form part of the Annual Operating Agreement and be binding upon the parties hereto as though they were incorporated into the body of this Agreement.

- a) Schedule "A" - Transit Service Area
- b) Schedule "B" - Service Specifications
- c) Schedule "C" - Budget
- d) Schedule "D" - Payment Schedule
- e) Schedule "E" - Tariff/Fares

SECTION 5 – MISCELLANEOUS PROVISIONS

5.1 Amendment The Annual Operating Agreement and the Schedules attached hereto may be amended only with the prior written consent of all parties.

5.2 Assignment This Annual Operating Agreement shall not be assigned without the prior written consent of the other parties.

5.3 Enurement The Annual Operating Agreement shall be binding upon and enure to the benefit of the parties hereto and their respective successors.

5.4 Stop of Buses Notwithstanding the provisions of Section 9.7 of the Master Joint Operating Agreement, stops of buses are permitted under guidelines agreed to by the parties to this agreement.

5.5 For Conventional service, for the period beginning on April 1, 2011 and ending on March 31, 2012, as authorized under section 18 of the British Columbia Transit Regulation, B.C. Reg. 30/91, the municipality shall contribute a percentage equal to 53.31% (municipal share) plus \$878,000 and the authority shall contribute a percentage equal to 46.69% (provincial share) minus \$878,000 of the amounts required to defray the classes of expenses prescribed in Section 8 (1) (a) (i), (ii) and (iv) of that regulation.

For Custom/Paratransit service, for the period beginning on April 1, 2011 and ending on March 31, 2012, as authorized under section 18 of the British Columbia Transit Regulation, B.C. Reg. 30/91, the municipality shall contribute a percentage equal to 33.31% (municipal share) plus \$123,984 and the authority shall contribute a percentage equal to 66.69% (provincial share) minus \$123,984 of the amounts required to defray the classes of expenses prescribed in Section 8 (1) (a) (i), (ii) and (iv) of that regulation.

SECTION 6 - Notices and Communication

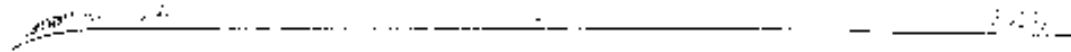
All notices, claims and communications required or permitted to be given hereunder shall be in writing and shall be sufficiently given if personally delivered to a responsible officer of the party hereto to whom it is addressed or if mailed by prepaid registered mail, to:

Regional District of Nanaimo
c/o Manager of Transportation Services
6300 Hammond Bay Road
Nanaimo, BC V9T 5N2

and to

BC Transit
c/o Chief Operating Officer
520 Gorge Road East
Victoria, BC V8W 2P8

and, if so mailed during regular mail service, shall be deemed to have been received five (5) days following the date of such mailing.



SCHEDULE "A" - Transit Service Area Boundaries

The boundaries of the Municipal Transit Service Area shall be defined as follows:

The boundaries of the Nanaimo Regional Transit Service Area shall include the corporate boundaries of the City of Nanaimo, the City of Parksville, the Town of Qualicum Beach and the District of Lantzville and Electoral Areas A, C, E, G and H of the Regional District of Nanaimo.

SCHEDULE "B" - Service Specifications

Nanaimo Custom Base Budget Official AOA 2011/2012

Schedule "B"
 Revised Apr 27, 2011

Scheduled Revenue Service

	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Wkly	80.00	82.00	80.00	82.00	82.00	82.00	82.00	82.00	82.00	800.00
Ann/Day	2.00	2.00	2.60	2.60	2.60	2.60	2.60	2.60	2.60	26.00

Flexible Hours

	Apr 2011	May 2011	Jun 2011	Jul 2011	Aug 2011	Sep 2011	Oct 2011	Nov 2011	Dec 2011	Jan 2012	Feb 2012	Mar 2012
	38.00	38.00	38.00	38.00	38.00	38.00	38.00	38.00	38.00	38.00	38.00	38.00

Other Revenue Service

	Apr 2011	May 2011	Jun 2011	Jul 2011	Aug 2011	Sep 2011	Oct 2011	Nov 2011	Dec 2011	Jan 2012	Feb 2012	Mar 2012

Adjusted Revenue Service

	Apr 2011	May 2011	Jun 2011	Jul 2011	Aug 2011	Sep 2011	Oct 2011	Nov 2011	Dec 2011	Jan 2012	Feb 2012	Mar 2012

2011/2012 Calendar Specification

Period	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Exclosures	Total	Exclosure Desc
Apr 01 2011 to Apr 30 2011	4	4	4	4	4	4	4	0	28	Apr 22 2011 Good Friday 2011 Sat
May 01 2011 to May 31 2011	5	5	5	5	5	5	5	0	30	Apr 25 2011 Easter Monday 2011 Sat
Jun 01 2011 to Jun 30 2011	4	4	4	4	4	4	4	0	30	May 29 2011 Victoria Day 2011 Mon
Jul 01 2011 to Jul 31 2011	4	4	4	4	4	4	4	0	31	Jul 01 2011 Canada Day 2011 Mon
Aug 01 2011 to Aug 31 2011	4	4	4	4	4	4	4	0	31	Aug 07 2011 BC Day 2011 Mon
Sep 01 2011 to Sep 30 2011	4	4	4	4	4	4	4	0	30	Sep 05 2011 Labour Day 2011 Mon
Oct 01 2011 to Oct 31 2011	4	4	4	4	4	4	4	0	31	Oct 10 2011 Thanksgiving Day 2011 Fri
Nov 01 2011 to Nov 30 2011	4	4	4	4	4	4	4	0	30	Nov 01 2011 Remembrance Day 2011 Fri
Dec 01 2011 to Dec 31 2011	4	4	4	4	4	4	4	0	31	Dec 25 2011 Christmas Day 2011 Sat
Jan 01 2012 to Jan 31 2012	4	4	4	4	4	4	4	0	31	Jan 02 2012 New Year's Day 2012 Sat
Feb 01 2012 to Feb 29 2012	4	4	4	4	4	4	4	0	29	
Mar 01 2012 to Mar 31 2012	4	4	4	4	4	4	4	0	31	
Total	48	48	48	48	48	48	48	0	360	Exclosures

Monthly Summary

Month	Custom Budget						Revenue Revisions		
	Scheduled	Total	Revenue Hours Fixed	Adjusted	Total	Scheduled	Fixed	Adjusted	Total
Apr 2011	1,740.00	1,740.00	58.00	1,740.00	1,740.00	0.00	0.00	0.00	0.00
May 2011	1,740.00	1,740.00	58.00	1,740.00	1,740.00	0.00	0.00	0.00	0.00
June 2011	1,800.00	1,800.00	58.00	1,800.00	1,800.00	0.00	0.00	0.00	0.00
July 2011	1,800.00	1,800.00	58.00	1,800.00	1,800.00	0.00	0.00	0.00	0.00
August 2011	1,800.00	1,800.00	58.00	1,800.00	1,800.00	0.00	0.00	0.00	0.00
September 2011	1,800.00	1,800.00	58.00	1,800.00	1,800.00	0.00	0.00	0.00	0.00
October 2011	1,800.00	1,800.00	58.00	1,800.00	1,800.00	0.00	0.00	0.00	0.00
November 2011	1,800.00	1,800.00	58.00	1,800.00	1,800.00	0.00	0.00	0.00	0.00
December 2011	1,800.00	1,800.00	58.00	1,800.00	1,800.00	0.00	0.00	0.00	0.00
January 2012	1,800.00	1,800.00	58.00	1,800.00	1,800.00	0.00	0.00	0.00	0.00
February 2012	1,800.00	1,800.00	58.00	1,800.00	1,800.00	0.00	0.00	0.00	0.00
March 2012	2,000.00	2,000.00	65.00	2,000.00	2,000.00	0.00	0.00	0.00	0.00
Total	22,800.00	22,800.00	650.00	22,800.00	22,800.00	0.00	0.00	0.00	0.00

AOA 11/12 - Schedule C

Schedule C

Nanaimo Regional Conventional Transit

	Official AOA 2011/2012
TRANSIT REVENUE	
Farebox Cash	\$1,210,208
Tickets & Passes	\$1,540,265
BC Bus Pass	\$835,884
Advertising	\$48,992
TOTAL REVENUE	\$3,633,349
EXPENDITURES	
Fixed Costs	\$878,098
Variable Hourly Costs - Scheduled Service	\$4,867,351
Variable Hourly Costs - Extra Service	\$5,470
Variable Distance Costs - Scheduled Service	\$1,581,237
Variable Distance Costs - Extra Service	\$1,404
Fleet Maintenance	\$1,704,594
Accident Repairs	\$33,000
ICBC Insurance	\$114,553
Fleet Insurance	\$31,470
Information Systems	\$24,465
H.S.T.	\$122,872
TOTAL DIRECT OPERATING COSTS	\$8,764,512
Training (Education & Seminars)	\$31,018
Marketing	\$77,250
Municipal Administration	\$168,018
BCT Management Services	\$613,920
TOTAL OPERATING COSTS	\$9,654,718
Debt Service - Vehicles (Local Share)	\$1,109,804
Debt Service - Equipment (Local Share)	\$61,464
Debt Service - P3/P (Local Share)	-\$115,425
TOTAL DEBT SERVICE - LOCAL SHARE	\$1,055,843
TOTAL COSTS	\$10,710,561
COST SHARING	
Municipal Share of Costs	\$5,734,711
Municipal Flex Funded Amount	\$678,000
Less Total Revenue	\$3,633,349
Less Municipal Administration	168,018.00
Net Municipal Share of Costs	\$2,811,345
Authority Share of Costs	\$4,097,850
STATISTICS	
Scheduled Revenue Hours	102,954.20
Extra Revenue Hours	115.65
Scheduled Revenue Kilometres	2,271,269.58
Extra Revenue Kilometres	2,016.24
Total Passengers	2,597,350
Conventional Passengers	2,597,360

Schedule C

Nanaimo Custom Transit

**Official AOA
2011/2012**

TRANSIT REVENUE	
Paradebox Cash	\$227,020
TOTAL REVENUE	\$227,020
EXPENDITURES	
Fixed Costs	\$195,406
Variable Hourly Costs - Scheduled Service	\$837,720
Variable Distance Costs - Scheduled Service	\$133,831
Fleet Maintenance	\$81,000
Major Repairs	\$15,000
Accident Repairs	\$2,500
Taxi Supplement	\$40,000
Taxi Saver Program	\$20,000
Taxi Saver Recoveries	-\$10,000
ICBC Insurance	\$17,201
Fleet Insurance	\$3,320
H.S.T.	\$21,023
TOTAL DIRECT OPERATING COSTS	\$1,367,200
Training (Education & Seminars)	\$4,556
Marketing	\$5,150
Municipal Administration	\$27,344
BCT Management Services	\$106,810
TOTAL OPERATING COSTS	\$1,511,060
Debt Service - Vehicles (Local Share)	\$138,172
Debt Service - Equipment (Local Share)	\$3,724
TOTAL DEBT SERVICE - LOCAL SHARE	\$141,896
TOTAL COSTS	\$1,652,956
COST SHARING	
Municipal Share of Costs	\$603,931
Municipal Flex Funded Amount	\$123,984
Less: Total Revenue	\$227,020
Less: Municipal Administration	\$27,344.00
Net Municipal Share of Costs	\$473,551
Authority Share of Costs	\$925,041
STATISTICS	
Scheduled Revenue Hours	23,212.00
Total Passengers	66,310
Custom/Fare Passengers - Vans	64,670
Custom/Fare Passengers - Taxi Supplement	2,310
Taxi Saver Passengers	1,630

Schedule "D" - Payment Schedule

**Nanaimo Regional Conventional Transit and Custom Transit
 2011/2012 AOA BUDGET**

1) Payment Schedule

The Authority agrees to pay the Operating Company a monthly payment on the following basis:

a) for Specified Service in Schedule "B":

- i) \$89,458.51 for Fixed Monthly Payment, plus
- ii) \$47.28 per Revenue Hour for conventional transit service; plus
- iii) \$35.74 per Revenue Hour for custom transit service; plus
- iv) \$0.6714 per Revenue Kilometre for fuel for conventional transit service
- v) \$0.0243 per Revenue Kilometre for tires for conventional transit service

b) for Deleted Fixed Costs as outlined in Section 6 (2), an amount equal to 1056 of the Fixed Monthly Costs amount contained in Schedule "C" shall be deducted for each day or part day

c) for Added Service or Deleted Service within the regular hours of system operation specified in Schedule "B"

- i) \$47.28 per Revenue Hour for conventional transit service; plus
- ii) \$35.94 per Revenue Hour for custom transit service; plus
- iii) \$0.6714 per Revenue Kilometre for fuel for conventional transit service
- iv) \$0.0243 per Revenue Kilometre for tires for conventional transit service
- v) with allowance for wage premium payments (up to 1.5 times the regular Revenue Hour payments, if applicable) when service is added beyond the regular hours of operation.

d) for Maintenance

- i) \$47.28 per hour for labour by a licensed mechanic for the maintenance of transit vehicles

e) for Fuel costs, in the event diesel fuel costs should exceed \$1,000 a fire payment will be made in accordance with Section 6 (3) of this agreement to compensate the Operating Company for the actual cost of all diesel fuel consumed to a maximum of 1,355,352.44 litres for Scheduled Revenue Kilometres in Schedule "E". This maximum number of litres will be adjusted in proportion to Extra or Deleted Revenue Service Kilometres

f) Prior to conducting a Special Group Trip, the Operating Company must apply for and receive from BC Transit a pre-approval to conduct the trip, the cost recovery rates to be charged and the method of payment

Information contained in Schedule "C" - Budget, and Schedule "D" - Payment Schedule is subject to the Freedom of Information and Protection of Privacy Act, (Access to Information Act) and the Access to Information Act, (Access to Information Act) with BC Transit prior to releasing information in these Schedules to individuals or companies other than those who are party to the Agreement.

2011-2012 _____ 1 _____ 2011-12

SCHEDULE "E" – Tariff-Fares

Fare Zones:

The boundaries of fare zones for this tariff are described as follows:

- Zone 1 – Regional District of Nanaimo*
 *This zone encompasses that area within the existing transit service area

Fares:

Conventional Transit Service

Effective as of December 30, 2007

a:	Single Cash Fares	Zone 1
	i. Adult	\$2.25
	ii. Senior	\$2.00
	iii. Youth (6-18 yrs)	\$2.00
	iv. University Student	\$2.25
	v. Child under 6 years	Free when accompanied by an adult
	vi. Accessible Transit Attendant	Free
b:	Tickets	
	i. 10 x \$2.25 fares, sold for	\$20.25
	ii. 10 x \$2.00 fares, sold for	\$18.00
c:	BC Bus Pass valid for the current calendar year and available through the Government of British Columbia BC Bus Pass Program	
d:	GNIB Identification Card available from the local office of the CNIB	
e:	BC Transit Employed Bus Pass	
e):	One-Day Pass*	
	i. Adult	\$5.75
	ii. University Student**	\$4.50
	iii. Senior/Youth	\$4.50
f:	Monthly Pass	
	i. Adult	\$60.75
	ii. University Student**	\$49.50
	iii. Senior/Youth	\$37.00
g:	University Student Semester Pass	\$138.50
	**Passed and available on Vancouver only	

Custom Transit Service

Effective April 1, 2007

Registered User and Companion

a:	5 Prepaid Tickets	\$16.25
b:	20 Prepaid Tickets	\$60.00
	Attendant accompanying registered user	Free

Note: Visitors may register for temporary handyDART service. Proof of registration in another jurisdiction or proof of eligibility is required.

Appendix I

Moorecroft Regional Park

Terms of Reference

Regional District of Nanaimo

Moorecroft Regional Park Management Plan Request for Proposal

TERMS OF REFERENCE

June, 2011

1. INTRODUCTION
2. MANAGEMENT PLAN
3. CONSULTANT PROPOSALS



TERMS OF REFERENCE

1. INTRODUCTION

The Regional District of Nanaimo (RDN) is seeking proposals from qualified consultants interested in preparing a Management Plan for Moorecroft Regional Park, an 85-acre, oceanfront property located in Nanoose Bay on Vancouver Island. This will be the Regional Park's first management plan. It will guide the operations, development, and stewardship of the property based on a comprehensive analysis of property values and public and stakeholder consultation. The plan will confirm the long-term vision and goals for Moorecroft Regional Park and identify shorter term management policies and actions for the period 2013-2022. The plan is to be reviewed after five years (2018) by a management steering committee and updated formally at ten-year intervals.

Partners

The Regional District of Nanaimo is partners with The Nature Trust of B.C. (TNT) to manage this new regional park. The management plan will be steered by a committee with representatives from this group and the RDN to ensure an agreeable and successful outcome. The Nature Trust of B.C. has been a leading land conservation organization headquartered in BC since 1971. TNT acquires land through purchase, donation, covenant and lease. TNT then manages the lands in order to protect the natural diversity of wildlife and plants and their critical habitats. TNT is a non-profit, non-advocacy group that seeks a balance between sustaining the environment and economy.

Park Acquisition

The RDN, in partnership with TNT, acquired the Moorecroft property on March 2, 2011 from the BC Conference of the United Church of Canada at a cost of \$4.8 million. As part of the purchase agreement with the RDN, TNT is currently running a fund raising campaign in order to contribute up to \$500,000 towards the purchase cost. The property was identified by the RDN in 1995, during the development of the RDN's first Park Master Plan, as a priority site for acquisition as a regional park due to its rare conservation and recreation value.

Site History and Description

Formerly known as Camp Moorecroft, the park property was first developed at the beginning of the 20th century and operated as an all-girls camp. In 1955 the United Church of Canada bought the property and ran it first as a summer camp, then as a year-round camp rentable for retreats and field courses by schools and community groups. Summer children's camp activities included kayaking, hiking, campfires, performances, field sports, arts and crafts. During the off season, local residents were welcome to enjoy the site for hiking, dog walking, biking and nature appreciation. There is a great sense of nostalgia and community attachment associated with the Moorecroft property and local residents have been very supportive and enthusiastic about its new designation as a Regional Park.

Site Facilities

Facilities on the Moorecroft site include 27 buildings (a dining + kitchen hall, a main lodge, a caretaker's house, a first aid cabin, two Splash Houses containing showers and bathrooms, seventeen cabins, and amenity buildings), as well as a playground, a playing field and a network of trails. Public utilities provide water and power to the site. Based on a pre-acquisition Building Conditions Assessment completed by RDN staff in 2010, most site facilities are in poor overall condition and will require either significant renovation or removal. The report provides photos and detailed description of all buildings, including recommendations on renovation or removal and associated costs and can be found on the RDN website at www.rdn.bc.ca.

Current Park Uses

Moorecroft Regional Park is currently open for day use from 7am - 9pm. One washroom facility has been open for public use, but all other park buildings will be closed until a strategic plan for the removal and renovation of site building can be determined through Management Plan development. The Moorecroft property continues to be a popular site for hiking, dog walking, running, biking, kayaking, scuba diving, nature appreciation, sketching and photography. From May - September 2011, the RDN Recreation and Parks department is offering guided tours of the site due to community request. Many local residents are eager to learn more about the new park property and want to be involved with future park development. An Official Park Opening was held on June 18, 2011, and featured a variety of events and activities including a picnic, an eagle release, musical performances, and educational talks and displays by local biologists.

Conservation Value

The picturesque site includes close to 2,900 feet of ocean front including three bays, 3/4 of an outer bay and a foreshore lease for one cove. There are approximately 79 acres of natural forest featuring tree species such as Western Red Cedar, Douglas Fir, Arbutus, Big leaf Maple, Red Alder and Garry Oak. The trees range in age from 60 to 120 years. Two intermittent creeks run through the property, and two eagle nesting sites have been identified. The land also contains wetland know as Skipsey Lake. As a condition of sale by the BC Conference of the United Church, a conservation covenant was registered on title at the time of acquisition and will be maintained by the Nature Conservancy of Canada (NCC). The covenant protects over 50 per cent of the land base, helping to conserve the ecological values of Moorecroft Regional Park in perpetuity. A synopsis of the park's ecological profile produced by the NCC shows that the majority of its forested lands and wetlands are listed as endangered or vulnerable. Both the Conservation Covenant and the ecological assessment completed by NCC are available for reference on the RDN website at www.rdn.bc.ca.

Land Use / Nanoose Bay Official Community Plan

The Moorecroft site is composed of two parcels that are both zoned Recreation 1 (RC1) with 'V' subdivision district. The zoning permits Campground, Outdoor Recreation and Residential Use. Campground is limited to a maximum of 66 camping spaces per parcel and the Residential Use is limited to one dwelling per parcel. Outdoor Recreation is defined as "a recreational activity undertaken where the outdoor setting and landscape is a significant element in the activity, and the density of recreational users is not a significant element and includes playing field, botanical garden, arboretum, outdoor exhibit, golf course, driving range and mini golf where the course structures do not exceed 1 m in height". The minimum parcel size for subdivision under 'V' subdivision district is 50 ha. The Nanoose Bay Official Community Plan is available for reference on the RDN website at www.rdn.bc.ca.

RDN Public Consultation Policy

The Regional District of Nanaimo's Public Consultation/Communication Framework Policy No.A1.23 measures a successful project as one that provides for meaningful and on going public involvement. The success of the public process component of the Moorecroft Regional Park Management Plan will be achieved through meeting the following goals:

- Anyone likely to be affected by a decision shall have opportunities for input into that decision;
- The consultation process shall allow for a meaningful level of involvement;
- All positions and input received will be considered; not all input can and will be accommodated;
- The process shall recognize and take into account the different characteristics and abilities of the community;
- The process shall recognize interdepartmental issues and concerns, and shall involve and coordinate internal staff resources as necessary or appropriate.
- The integrity of broad public involvement must be paramount to the process and must not be superseded by any individual or interest group;
- The RDN shall provide feedback, in a timely manner, about how public input has been utilized in Board decisions, and how the public will be affected;
- An evaluation component shall be built in to the process to allow those involved to learn from past experiences and to ensure the proper use of resources.

A key role of the Consultant in compiling the MRPMP is to develop, lead and interpret a region-wide community input process that contributes to the project's objectives. The public input process must use a varied approach to obtaining input in order to maximize participation (interviews with community organizations, other government and corporate organizations, public surveys, design charrettes and Open Houses to solicit views, comments and opinions on the MRPMP, etc).

Preliminary List of Stakeholders

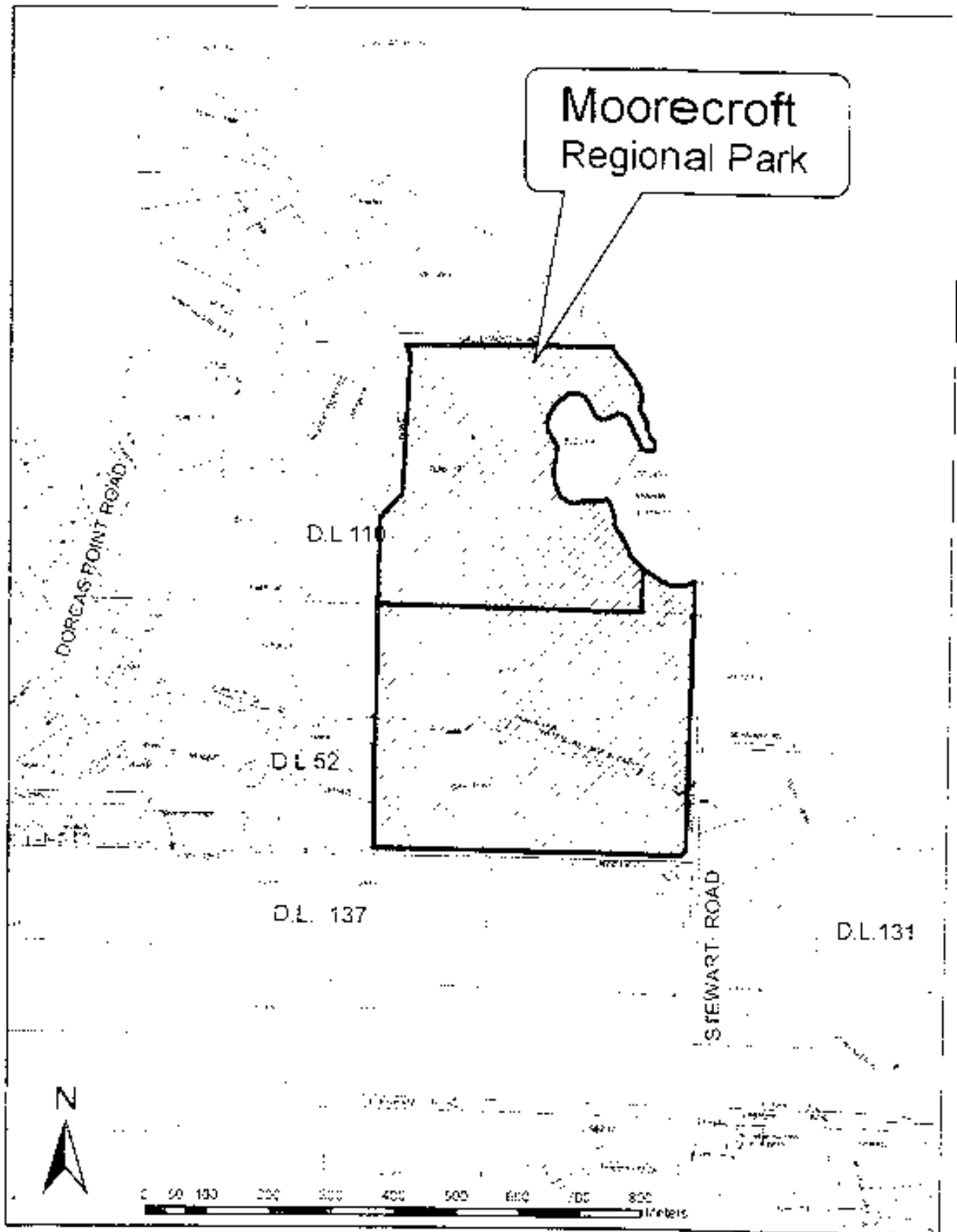
Partner Organizations:	The Nature Trust of British Columbia, The Nature Conservancy of Canada
Community Groups:	Nanoose Bay Recreation and Activities Society, District 69 Historical Society, Nanoose Naturalists, Moorecrofters, Probus Club of Nanoose, Lions Club, Bareed to Broadway Theatre Society, PGOSA Hiking Clubs, Scouts Canada
Government Agencies:	Snawawas (Nanoose) First Nation, City of Nanaimo, City of Parksville, District of Langville, Town of Qualicum Beach, Ministry of the Environment, Ministry of Forests, Department of Fisheries and Oceans
Other Organizations:	School District 69, Nanoose Fire Department, United Church of Canada, Vancouver Island University, Milner Gardens and Woodlands, Nanaimo and Area Land Trust,

Regional Context

The Regional District of Nanaimo (RDN) manages 2026 hectares of regional park, trail, and conservation lands in the mid-Vancouver Island area along with another 584 hectares of neighbourhood or community park and trail. A Regional Parks and Trails Plan completed in 2005 sets out the goals of the RDN in respect to land management, stewardship and recreational use of regionally significant properties. As is the case with Moorecroft Regional Park, when managing such properties the RDN is often acting in partnership with first nations, conservation groups, recreation organizations, and the Province. Together, the RDN and its partners aim to protect and steward the lands while at the same time provide for rewarding and educational outdoor recreational experiences. A primary management goal for these lands will always be to strike a sustainable balance between protection and human use.

Summary of Available Reference Documents and Reports:

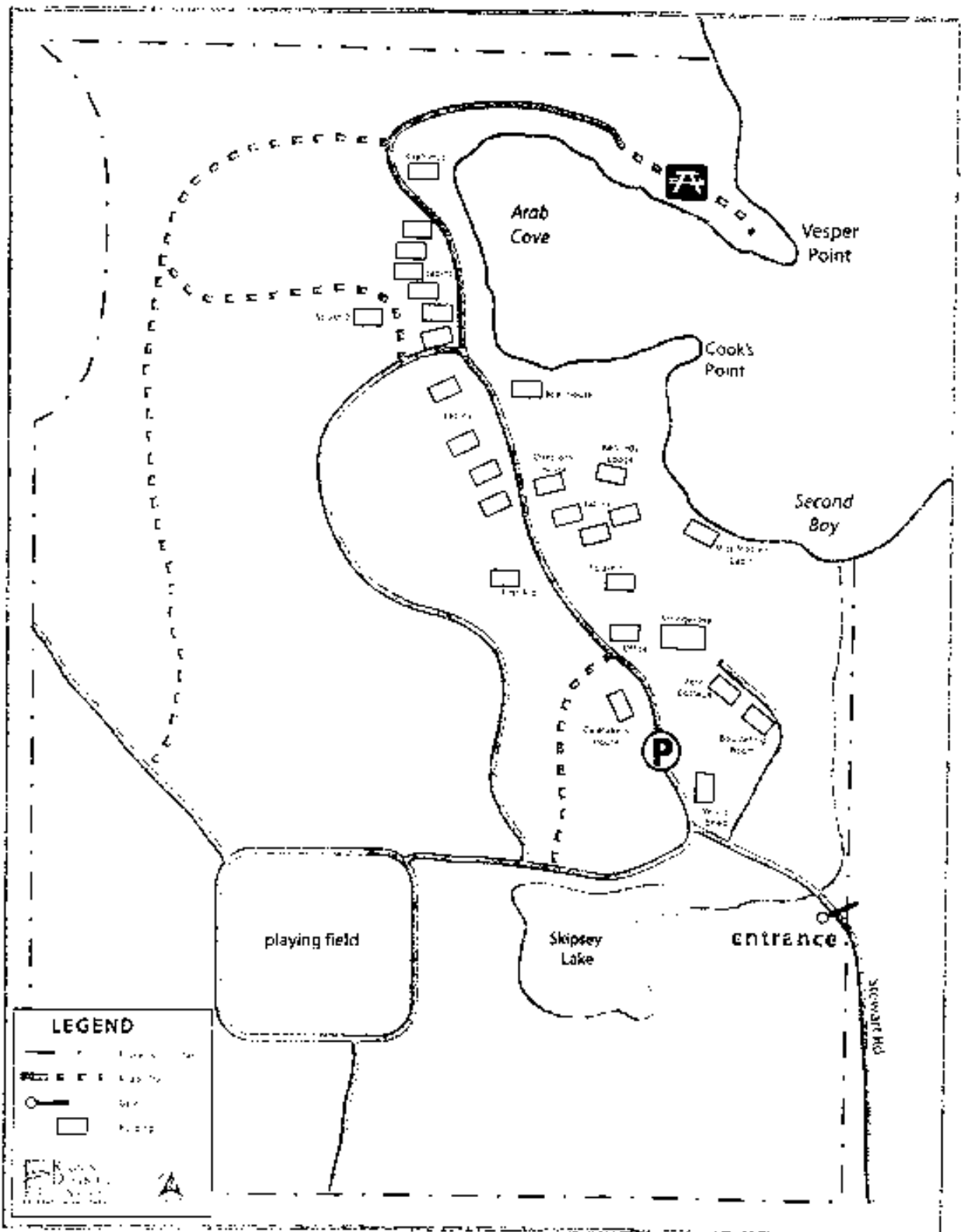
Moorecroft Camp: A Look Back (History of Camp Moorecroft), Marilyn Huffman, 1994
Nanoose Bay Official Community Plan, RDN, 2001 (available at www.rdn.bc.ca)
Baseline Bio-Inventory and Conservation Assessment, NAIT, 2007
Building Condition Report, RDN, 2010 (available at www.rdn.bc.ca)
Baseline Documentation: Report of the Moorecroft Covenant, NCC, 2011 (available at www.rdn.bc.ca)
Conservation Covenant, RDN and NCC, 2011 (available at www.rdn.bc.ca)
Level 1 and 2 Environmental Site Assessment, RDN, 2011 (available at www.rdn.bc.ca)
Archaeological Overview Assessment, RDN, 2011 (available at www.rdn.bc.ca)



BCGIS MAPSHEET 537-041.1

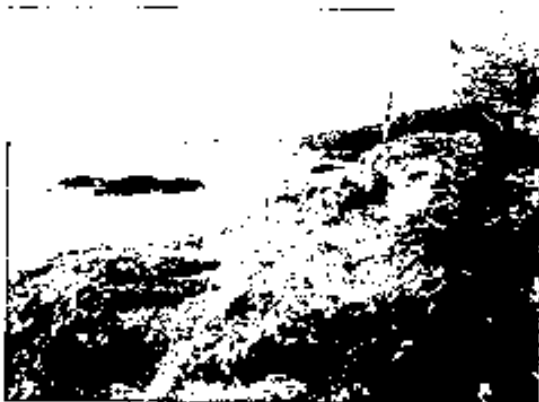
Park Location

MOORECROFT REGIONAL PARK



Park Map

MOORECROFT REGIONAL PARK
 1000 MOORECROFT ROAD
 MOORECROFT, NSW 2225



Looking southeast from Vesper Point towards Second Bay.



At Second Bay looking northwest at Vesper Point at low tide.



Looking east towards Arab Cove at low tide.



Beaver dam and trail flooding at outflow of wetland known as Skipsey Lake.



Playing field in southwest portion of park property.



Typical interpretive signage along forest trails installed by United Church.



Stringer Hall: main dining hall with commercial kitchen and washrooms.



Kennedy Lodge: gathering hall with fireplace, previously used for indoor church services and events.



First Aid cabin: electricity, washrooms, showers, two bedrooms.



Caretaker's House



Playground: tower, slide, climbing wall, swings.



Two of 17 total cabins: most are without electricity and heat

2. MANAGEMENT PLAN

Development of the Moorecroft Regional Park Management Plan will begin in the fall of 2011, and will be overseen by RDN Recreation and Parks staff in partnership with The Nature Trust of BC and the Nature Conservancy of Canada for completion by fall of 2012.

Issues and Opportunities

The Management Plan will guide the operations, development and stewardship of the park for a ten-year period from 2013-2022 and must address the following issues and opportunities:

- Protection and enhancement of the property's unique natural ecosystems including freshwater wetland, Douglas-fir forest, Garry Oak meadow, coastal bluffs and intertidal zone
- Adherence to parameters of the registered Conservation Covenant
- Identification of current park uses by local residents and visitors
- Identification of recreational and cultural opportunities
- Programmed recreational activities versus unstructured activities
- Balancing recreational and cultural opportunities with environmental protection
- Facility upgrades required to facilitate programmed recreational and cultural opportunities
- Managing the site either for overnight camping or day use, or both
- Opportunities for facility rental or lease including assessment of revenue potential and expenditures
- Removal of obsolete buildings and planned rehabilitation of others
- Assessment of all long term buildings and structures including fire safety analysis, capital expenditure and major asset maintenance plans
- Alternatives to providing "hard" structures in the park for seasonal use
- Educational values of the site, including past and continuing research activities, and future research opportunities
- Identification of historical values, including traditional use by the Snawrawas First Nations
- Public and stakeholder consultation and opportunities for ongoing partnerships
- Ongoing site stewardship and maintenance strategy

Objectives

The completed Management Plan will provide RDN management and staff with a summary of public and stakeholder consultation results, management direction for environmental conservation, options for recreational programming, options for park facility development, conceptual park design for each programming and development option, timeline for each programming and development option, and a business plan for each programming and development option.

The Plan will be guided by a long-term vision and set of broad goals, and will describe policies and targeted actions to guide decision-making and provide direction on key park issues.

Content and Standards

Although no specific document layout or design is specified, the following information or sections are to be included in the completed Management Plan document: Introduction, Baseline Inventory Summary, Public Consultation Summary, Outline of Management Issues, Vision Statement, Management Goals, Management Policies, Park Development Schedule, Park Development Costs, Conceptual Park Design. A clear and succinct writing style is requested. The use of tables, matrices, charts, maps and photographs is encouraged. Previous park management plans completed for the RDN Recreation and Parks department are available for reference on the RDN website at www.rdn.bc.ca, on the Recreation and Parks page under "Parks and Trails Plans". All final documents presented by the contractor must be submitted in triplicate hard copy as well as in suitable digital format.

Project Management

The development of the Management Plan will be overseen and guided by a Moorecroft Management Plan Advisory Sub-Committee made up of two representatives from the RDN Regional Parks and Trail Advisory Committee (RPTAC), one representative from the Snawnavas (Nanoose) First Nation, one representative from The Nature Trust of BC, one representative from the Nature Conservancy of Canada (NCC), and the Area Director for Nanoose Bay (Electoral Area 16). This committee will:

- review project plan;
- confirm vision statement and goals;
- review research & public consultation;
- review issues, trends, and public sentiment resulting from the open house;
- review and discuss management policies;
- review draft plan before it goes to public review;
- review issues & feedback from public input of draft plan;
- review changes to the draft plan; and
- confirm the terms of the conservation covenant.

In addition, the Consultant will meet on a regular basis with a RDN, TNT Staff Working Group to discuss progress on the Plan. Administrative assistance, technical support, liaison and communication will be coordinated by RDN Parks staff, and involve other staff as required.

Project Budget

The budget for this work is \$50,000 and is expected to cover all fees, expenses, sub-contractor services, consultation and applicable taxes. Expenditure of the budget should reflect the following priorities:

Data collection	20%
Consultation	40%
Development of strategies and action plan	40%
	100%

Given the proposed project schedule, equal payments by the RDN will be made as follows: (a) October 2011, (b) January 2012, (c) April 2012, (d) July 2012, (e) October 2012.

Schedule and Process

<i>2011</i>	28 June	Registration for mandatory site visit by 3:00pm.
	29 June	Mandatory site visit with proponents at 1:00pm.
	13 July	Proposals due by 4:00pm.
	20 July	Proponents contacted by 4:00pm.
	27 July	RDN staff interviews with select proponents.
	29 July	Successful proponents contacted by 4:00pm.
	3 Aug.	First meeting between successful contractor, RDN and TNT staff.
	Aug - Sept.	Data review, stakeholder consultation, confirmation of project strategy.
	Oct. - Dec	Public consultation, Open House #1 and design charrette.
<i>2012</i>	Jan. - March.	Develop draft Management Plan.
	April	Draft Management Plan review by staff and advisory committee.
	May-July	Public consultation, circulate draft Plan and hold Open House #2.
	August	Submit revised draft Plan for staff and advisory committee review.
	September	Undertake final changes.
	October	Submit final Management Plan to RDN and TNT.

3. CONSULTANT PROPOSALS

Requested Proposal Documents:

- A proposed methodology and table of contents for the Regional Parks Plan; a work program detailing stages, deliverables and timing; (This work program will detail all phases, including research, public involvement and plan development);
- an outline of a proposed comprehensive consultation process that:
 - will not direct or control the scope of the project.
 - will facilitate a broad range of input through a continuum of questioning from very general matters to very detailed issues.
 - will account for different stakeholder knowledge levels in regards to Regional Park policies and goals
 - will utilize a varied approach to obtain input from a wide range of Regional District residents.
 - will obtain detailed and accurate input that will yield data that can be analyzed.
- information as to the qualifications, ability and past experience of the company with similar projects, including references of other Park Plan projects the consultant has completed, preferably in a Regional District setting;
- a list of the personnel who will work on the project, their individual experience specifically related to Park Planning and what their role will be;
- a list of sub-consultants, including their company and staff experience specifically related to their role; and
- a schedule that includes the fee structure and the upper limits of the project cost. This fee structure must include an outline of fees for at least the following:
 - sub-consultants
 - draft plan
 - all disbursements
 - hourly rate schedule of personnel assigned to the project and man-hour requirements for each
 - Harmonized Sales Tax
 - all other fees associated with the project.

Mandatory Site Visit

A mandatory site visit for interested consultants will be held at Moorecroft Regional Park on June 20, 2011 from 1pm-3pm. The tour will begin in the parking area. Consultants wishing to submit a proposal in response to this request for consultant services must attend the site visit and pre-register with Lesya Fesiak, RDN Parks Planner, by phone or email by 3:00 p.m. on June 28.

Submission Deadline and Procedure

Consultant proposals are to be received by the RDN Recreation and Parks Department by 4pm on Wednesday, July 13, 2011. Proposals may be submitted by email to Lesya Fesiak, Parks Planner at lfesiak@rdn.bc.ca, or in hard copy to RDN Recreation and Parks, Seaside Place, 830 West Island Highway, Parksville BC, V9P 2X4.

Evaluation

Proposals will be reviewed and evaluated by RDN and ENT staff and rated as follows:

Max. Score	Criteria
2	• credentials and references are strong;
2	• experience is relevant and extensive;
2	• the draft work program presented: reflects the objectives detailed in section 3 above;
2	• presents an appropriate mix of team members and sub-consultants;
2	• involves a clear plan to review baseline information and develop policies and actions;
2	• presents a comprehensive public consultation strategy based on the RDN's Public Consultation/Communication Framework Policy No. A1-23;
2	• fee breakdown supports the work program presented & the total fee provides good value.
2	• presents a clear method for analyzing revenue potential
16	Total

Project Commencement

All proponents will be notified of selection results by telephone and mail. Select proponents will be contacted for an interview with RDN and TNT staff no later than 4pm, Wednesday, 20 July, 2011. Following interviews on July 27, 2011, the successful proponent will be notified no later than 4pm, Friday, July 29. A first meeting with the chosen consultant will be held Wednesday, August 3, 2011 at the RDN Recreation and Parks Offices in Parksville. Both this Request for Proposals and the chosen consultant's proposal will form part of the project contract.

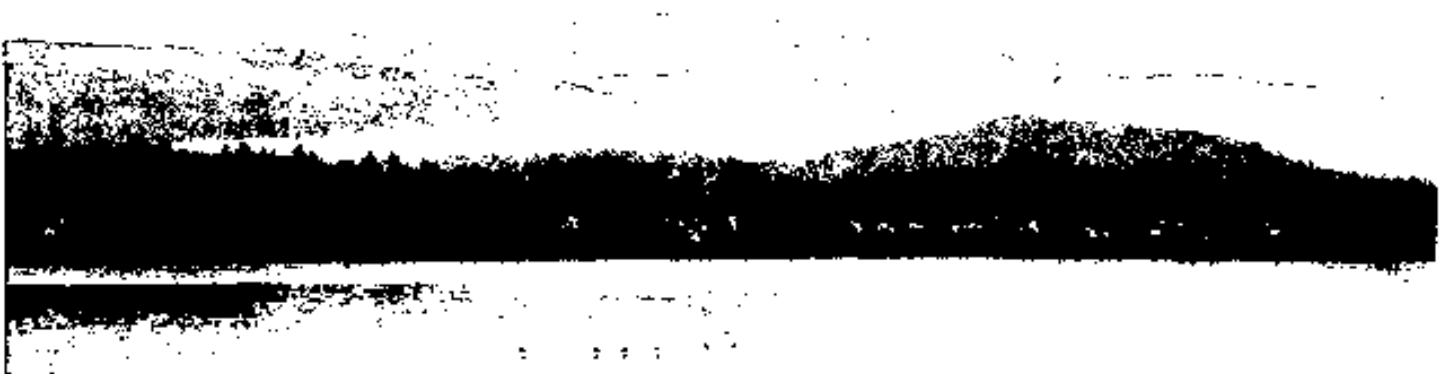
Contacts

For all information about this request for consultant services, contact Lesya Fesiak, RDN Park Planner, 250-248-3252 or 1-888-828-2069 or lfesiak@rdn.bc.ca.



Mount Arrowsmith Massif Regional Park Management Plan

FINAL PLAN
May 2011



ACKNOWLEDGEMENTS

This plan was prepared under the guidance of the Mount Arrowsmith Massif Regional Park Staff Working Group:

Lesya Fesiak, Parks Planner, RDN

Graham Gidden, Parks Planner, RDN

Wendy Marshall, Parks Manager, RDN

Peter Rothermel, Representative, Federation of Mountain Clubs of BC and Alpine Clubs of Canada

Steve Taroosh, Councillor, Hupacasath First Nation

A management plan sub committee made up of members from the Staff Working Group and the RDN Regional Parks & Trails Advisory Committee oversaw the project:

Frank Van Eynde, RPTAC

Greg Young, RPTAC

The support, commitment and vision provided by the members of these committees were central to the successful completion of the plan.

Joe Materl, R.P. Bio., of Ursus Environmental Consulting, provided valuable sub consulting services and was instrumental in providing the ecological expertise needed to develop the plan.

Harriet Rueggeberg completed key reviews and provided guiding advice to assist in the successful completion of the plan.

To the many community members, organizations and their representatives who provided input into the management plan through the surveys, public sessions, stakeholder consultations, emails and discussions – thank you for your insight, time and resources. We hope we have done your ideas justice in the plan.

A special recognition to the groups and individuals who have, over many years, made tireless efforts to securing Mount Arrowsmith Massif as a protected park. Without your time and energy, this Regional Park may not yet exist.

A special thank you to Harriet Rueggeberg and Peter Rothermel for their leadership on our mountain explorations. Your experience and knowledge and making sure we made it up the mountain and back without us getting lost, was most appreciated.

The HBCanare Team

Jana Zienski, Project Manager

David Bold, Principal Planner

Kelsey Crane, Project Support

Kate Evans, Project Support



View from the Judges Route (Photo: G. Ruggelberg)

EXECUTIVE SUMMARY

Mount Arrowsmith Massif Regional Park (MAMRP), recently acquired by the Regional District of Nanaimo (RDN) is a predominant landscape feature on Central Vancouver Island. The park is valued for its recreational, environmental, scenic, cultural and historical values. The mountain peaks are prominent landscape features seen from both Port Alberni and the communities of east central Vancouver Island. At 1,817m, the peak of Mount Arrowsmith is the highest peak south of Strathcona Provincial Park on Vancouver Island. The high elevations support unique alpine and sub-alpine zones and the park is home to a significant area of these ecosystems.

The management plan is intended to guide the operations, development and stewardship of the park for a ten-year period from 2010 - 2020. The plan is guided by a long-term vision and goals, and describes policies and targeted actions to guide decision-making and provide direction on key park issues. An implementation summary delineates priorities and projected budgets, timelines and responsibilities.

The development of the Management Plan was guided by the Regional District of Nanaimo and partners: the Hupacasath First Nation, the Alpine Clubs of Canada and the Federation of Mountain Clubs of BC. In addition, to help gain insights and develop a plan that responds to the public, stakeholders and neighbours of the mountain, several consultations were completed.

MAMRP includes a myriad of natural and recreational values. This plan documents known ecology and habitat of the mountain based on previous field studies and reviews how the park is currently being used for recreation.

The following vision statement sets the tone for the long term management of MAMRP and defines the context within which short-term management actions are made:

Mount Arrowsmith Massif Regional Park is a significant landmark in Central Vancouver Island. Its familiar peaks continue to be accessible for low-impact wilderness recreation in sub-alpine and alpine environments. Recreational and ecological values are balanced through stewardship so that important ecosystems and habitats are protected. First Nations stories and other historical accounts of the mountain are recorded and celebrated and research activities are supported and encouraged.

Mount Arrowsmith Massif remains an important ecological, recreational, spiritual and visual resource for its neighbours, friends and visitors.

Building on the vision, management goals set the framework for policies and actions for Mount Arrowsmith Massif Regional Park. The goals are developed from stakeholder and public input.

- D Goal 1: Ecosystem Conservation
- E Goal 2: Wilderness Recreation
- F Goal 3: Partners in Stewardship
- G Goal 4: Access
- H Goal 5: Education
- I Goal 6: Celebration of Heritage

Within the context of the above vision and goals, the plan lays out a series of management policies, organized under 9 key issues to be addressed in the Mount Arrowsmith Massif Regional Park Management Plan. The key issues were identified through the management planning process:

- D Balanced Management
- E ACRD Mount Arrowsmith Regional Park
- F Park Access
- G Recreational Use
- H Habitat & Environmental Protection
- I Education & Research
- J Interpretation & Tourism
- K Safety & Emergency Planning
- L Park Expansion

The policies are supported by implementable actions intended to guide management of the park over the next 5 years and beyond.

"If one were to go into the fastness of Vancouver Island and find a great deposit of coal or ore, the discovery would be hailed as a real achievement of tremendous benefit to this section of British Columbia, and as another big addition to its assets. By the same process of reasoning, when one considers the benefits accruing from tourist travel, it will have to be admitted that the 'discovery' of Mt. Arrowsmith is also a great achievement, and that it will prove an asset of incalculable value."

(Excerpt from the 1912 Victoria Day Commemoration)

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Addenda

Addendum A: Hupacasath-Regional District of Nanaimo Memorandum of Understanding for Mount Arrowsmith Massif

Appendices

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INTRODUCTION

1.1 Park Overview

Mount Arrowsmith Massif Regional Park (MAMRP), recently acquired by the Regional District of Nanaimo (RDN) is a predominant landscape feature on Central Vancouver Island.

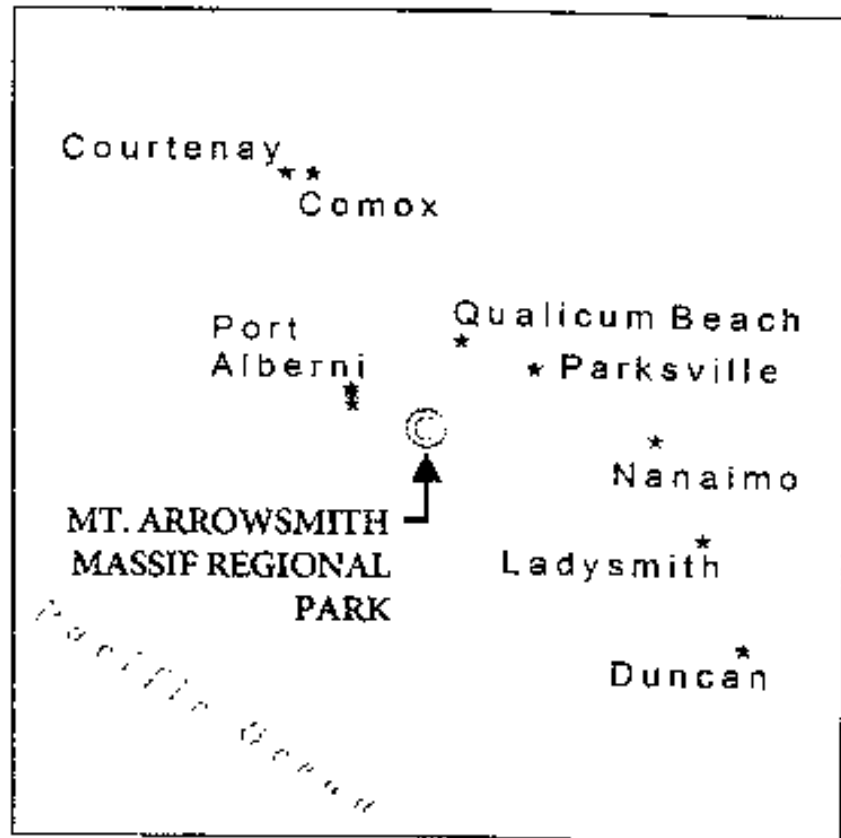


Figure 1.1. Approximate location of MAMRP on Vancouver Island.

The park is valued for its recreational, environmental, scenic, cultural and historical values. The mountain peaks are prominent landscape features seen from both Port Alberni and the communities of east central Vancouver Island.

At 1,817 m, the peak of Mount Arrowsmith is the highest peak south of Strathcona Provincial Park on Vancouver Island. The high elevations support unique alpine and sub-alpine zones and the park is home to a significant area of these ecosystems.



Mount Arrowsmith Massif from Beachraucher Park near Parksville (Photo: RDN)

Park Facts:

Legal Description:

- Block 1380, Cameron Land District, PID 008739668

Park Size:

- 1,300 ha (3,212 acres)

Location:

- Mid-western edge of RDN Electoral Area 'C'
- Approximately 40 km west of Qualicum Beach
- Approximately 30 km east of Port Alberni

Peaks:

- Mount Arrowsmith - 1,817 m (5,962 ft)
- Mount Cakely - 1,631 m (5,384 ft)

Lakes:

- Fishtail Lake
- Hidden Lake
- Jewel or Emerald Lake (unofficial names)
- Lost Lake (unofficial name)

Elevations:

- Lower Elevation: ~900 m (varies at park boundary)
- Upper Elevation: ~1,817 m

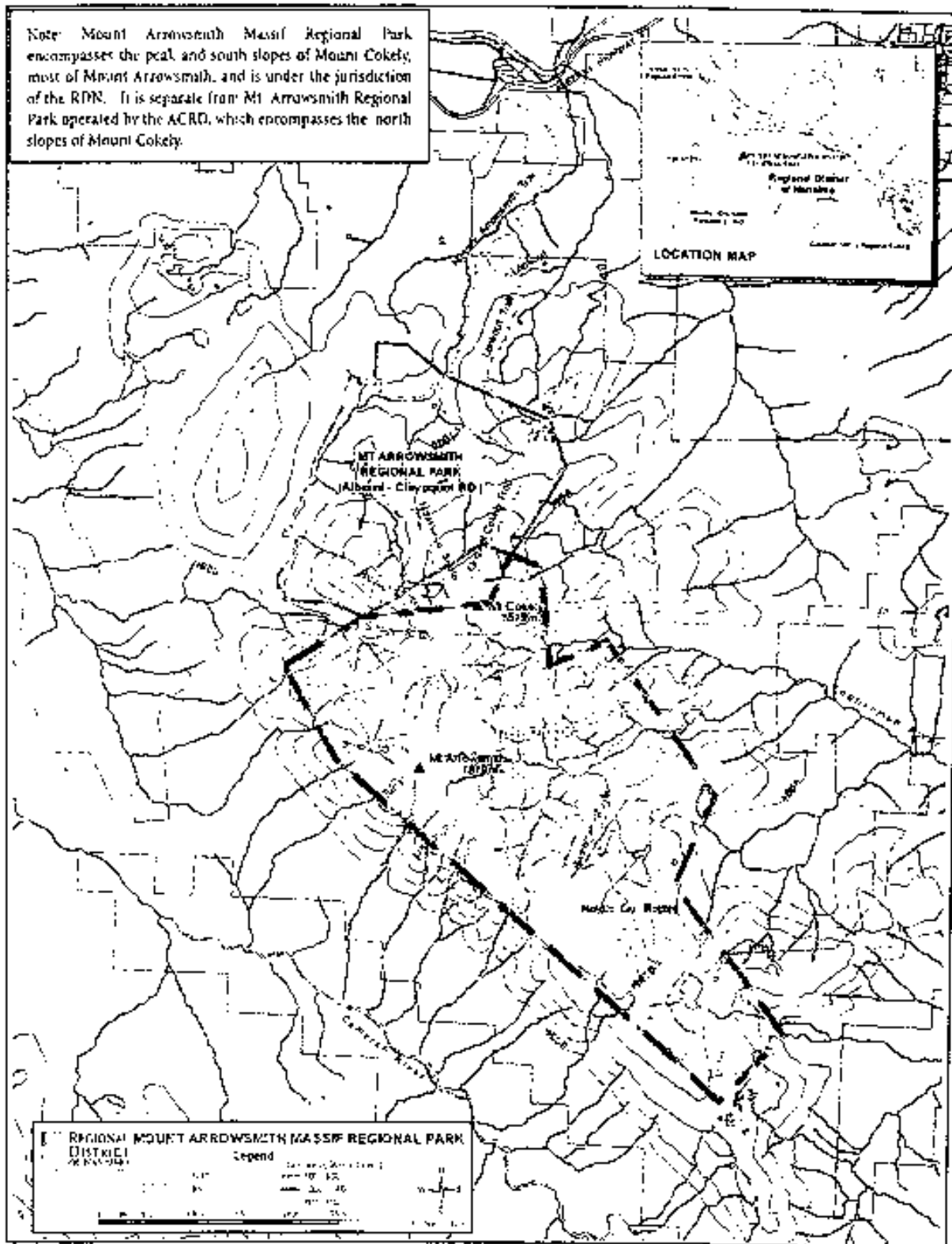


Figure 2 Extent of Mount Arrowsmith Massif Regional Park

1.2 Park Acquisition

For decades, park users and local supporters advocated for the permanent protection of Mount Arrowsmith – both for its recreational and ecological values. The recreation community wanted to ensure protection of the recreational values of the mountain presented by its accessible location and its range of recreation activities that appeal to a wide range of user interests and abilities. The environmental community saw the alpine and sub-alpine areas as particularly valuable ecosystems that support a range of species, including multiple rare species.

Volunteers, advocates, user groups and individuals spent many years advocating for the area (see *Acquisition Highlights*, p.13). It was finally in 2008, through a partnership between the RDN, Hupacasath First Nation, EMCBC and ACC that Mount Arrowsmith's official designation as park occurred. Formerly Crown Forest Reserve, Mount Arrowsmith Massif Regional Park was officially established on November 25th, 2008 through a 30-year licence of occupation with the Province of British Columbia. The licence permits the RDN to develop and manage a Regional Park on the site.



*Official Opening of MAMRP
(Photo: RDN).*

1.3 Purpose of the Management Plan

The management plan is intended to guide the operations, development and stewardship of the park for a ten-year period from 2010 – 2020. The plan is guided by a long-term vision and goals, and describes policies and targeted actions to guide decision-making and provide direction on key park issues. An implementation summary delineates priorities and projected budgets, timelines and responsibilities.

The plan considers:

- E. Protection and enhancement of unique natural ecosystems;
- F. Balancing recreational opportunities in the park with environmental protection;
- G. Historical and cultural significance of the mountains and surrounding areas;
- H. Access to the park over the next 10 years and beyond;
- I. Educational values of the site, including research opportunities;
- J. Safety and emergency planning; and
- K. Stewardship and park management.

1.4 Role of Regional Parks in the RDN

The Regional District of Nanaimo established a regional park function in 1989. Regional parks in the RDN are created for the benefit of the entire region. The system is financially supported by all electoral areas and municipalities within the RDN. The regional park function allows larger land areas to be secured than can typically be provided by individual municipalities. RDN Regional Parks tend to be larger parcels of land, located outside urban cores, with an emphasis on environmental protection and/or outdoor recreation in natural settings.

A *Regional Parks & Trails Plan*, updated in 2005, outlines the RDN's overall goals with respect to land management, stewardship and recreational use of regionally significant properties. The 2005 Regional Parks & Trails Plan establishes a vision for Regional Parks that "secures, protects and stewards lands and water features of environmental significance and wildlife habitat value." The acquisition of Mount Arrowsmith Massif clearly met this vision.

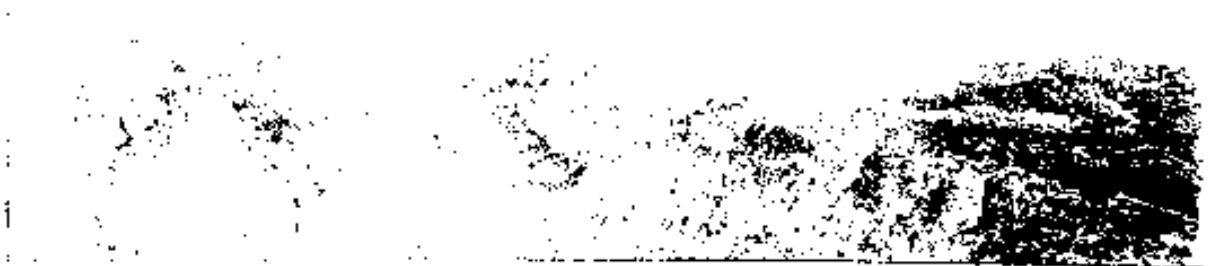
Currently the RDN manages approximately 2,026 ha of Regional Park and over 60 km of Regional Trail.

1.5 Plan Organization

The MAMRP management plan is organized into the following sections.

- 1** **Introduction:** Provides a basic overview of MAMRP and background about Regional Parks in the RDN.
- 2** **Management Planning Process:** Summarizes the process used in the development of the plan.
- 3** **Defining the Park Values:** Provides an overview of land status and natural, recreational, educational and cultural values.
- 4** **Vision, Goals & Principles:** Defines the vision and goals for the park and outlines key principles that affect its planning and operation.
- 5** **Management Policies & Actions:** Addresses issues identified for the park through recommended policies and actions.
- 6** **Implementation Plan:** Summarizes the recommended actions, with associated budgets, timelines and responsibilities.

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Panorama looking east from the peak of Mount Arrowsmith (Photo: JJB Linnard)

2 PLANNING PROCESS

2.1 The Approach

A consulting team, led by HB Larac Consultants Ltd. with support from Uxus Environmental, guided the planning process for the development of the management plan. The consulting team was overseen by a Staff Working Group consisting of representatives from the RDN Recreation and Parks Department, the Federation of Mountain Clubs of BC and Hupacasath First Nation. A Management Plan Sub-Committee, made up of members of the RDN Regional Parks & Trails Advisory Committee and Staff Working Group, provided review and input at key points in the planning process.

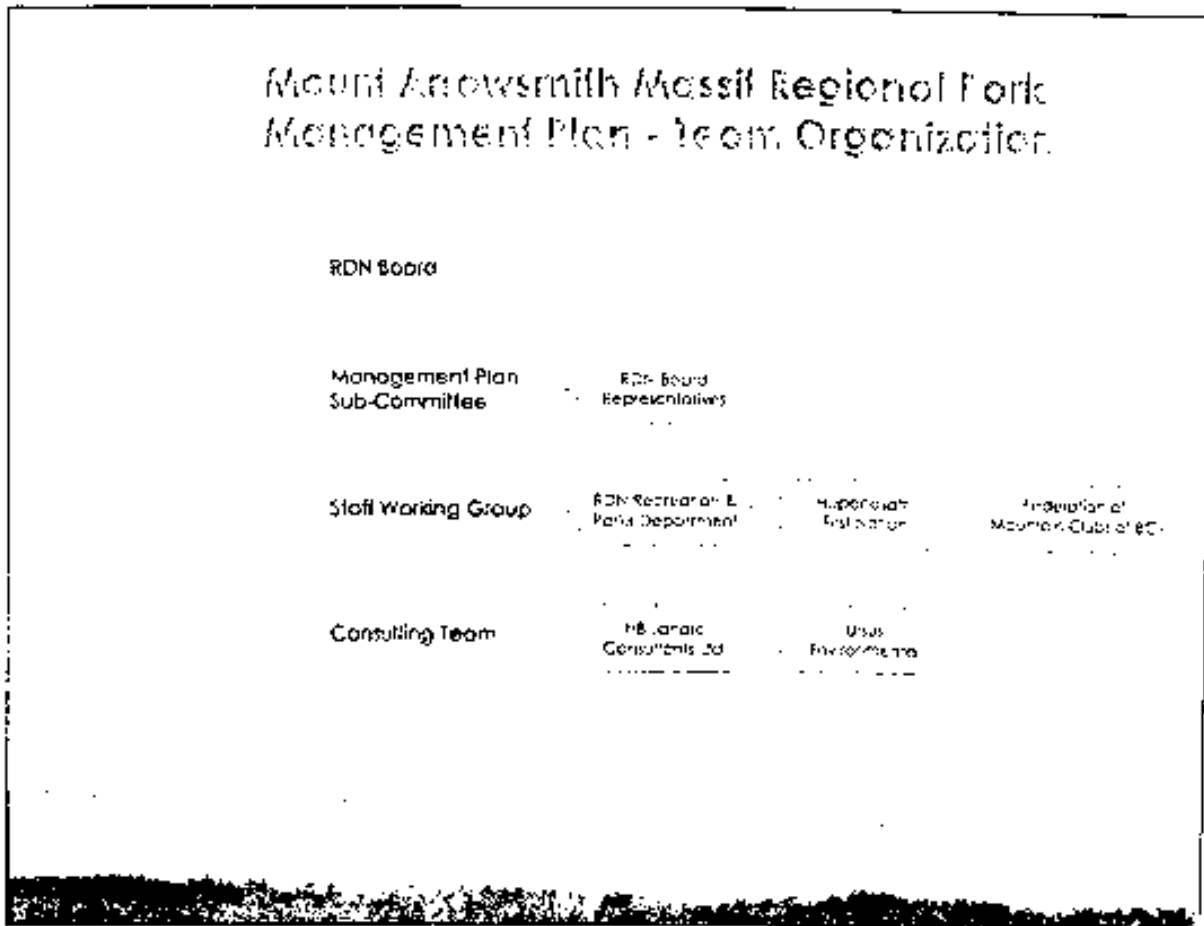


Figure 2.1 Team Organization Diagram

The management plan was developed in five phases, beginning in April 2010 and concluding in December 2010:

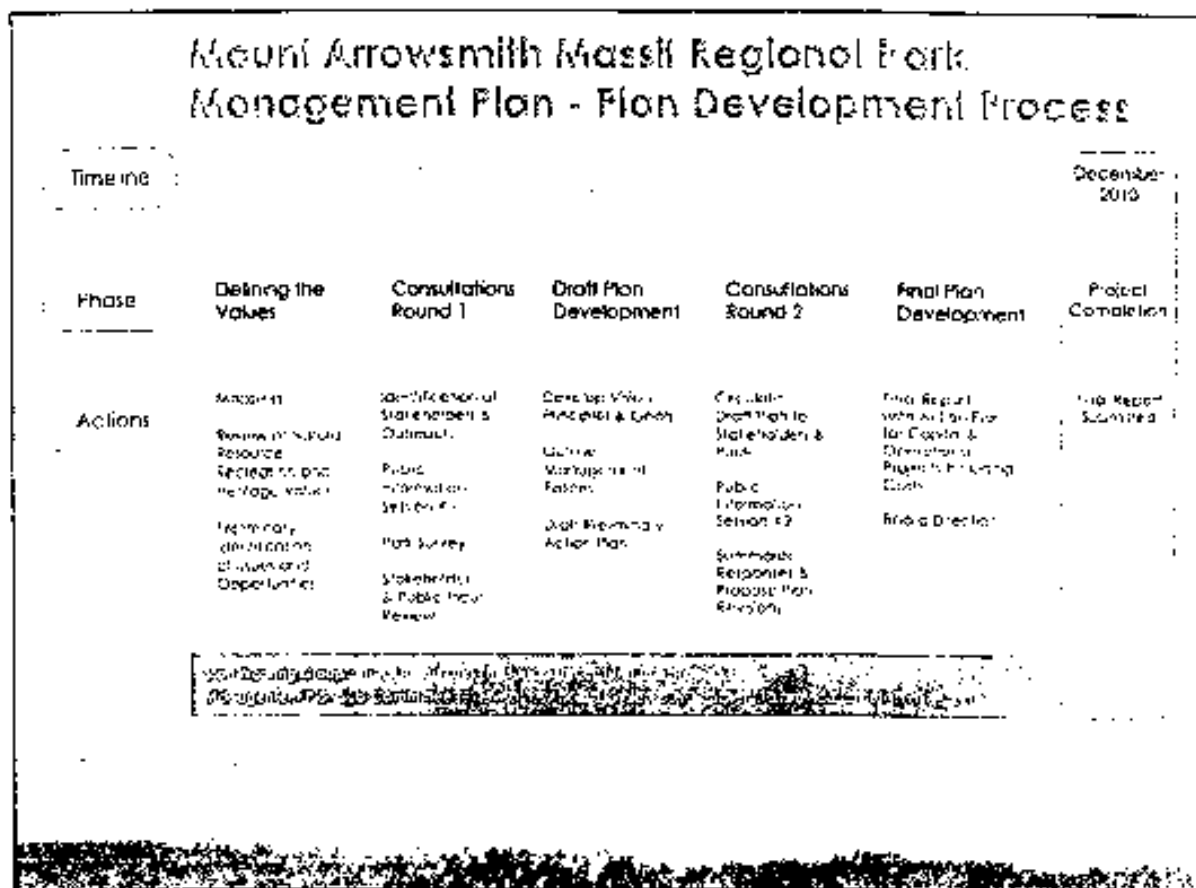


Figure 2.2. Process Diagram

1

Defining the Values:

Phase one reviewed and analyzed current park values. Steps included:

- Project start-up and process review;
- Compilation and review of relevant background documents and digital GIS data;
- Review of natural resource values;
- Review of recreation values;
- Review of local demographics and user trends;
- Development of mapping resources to identify park resources and document preliminary park information; and
- Preliminary identification of management issues and opportunities.



Consultations Round 1:

The second phase focused on the future of MAMRP through the eyes of the public, stakeholders, staff and board members. Steps included:

- Meetings with the Staff Working Group and Management Plan Sub-Committee to verify gathered information and review the consultation process;
- Identification of stakeholders to be invited to provide direct input into the plan;
- Consultation with identified stakeholders to compile a list of relevant issues;
- Facilitation of two public sessions in which local residents were invited to articulate concerns and issues, share their special knowledge and experiences and identify improvement ideas for Mount Arrowsmith Massif Regional Park; and
- A comprehensive public survey to present background information and gather public views about the park.



Draft Plan Development:

The third phase went through the process of developing a draft management plan for review and discussion:

- Development of a preliminary vision and goals to guide development of the management plan;
- Development of preliminary policies for planning, development and management of the park;
- Development of a preliminary action plan to achieve park vision, goals and policies;
- Review and refinement of preliminary vision, goals, policies and actions with the Staff Working Group;
- Review and consultation with key stakeholders on relevant portions of the draft plan;
- Presentation and review of the draft with the Management Plan Sub-Committee; and
- Revisions and dissemination of the draft plan and feedback forms to stakeholders and the public.



Consultations Round 2:

Phase four provided opportunity for the public and stakeholders to review the draft plan and point out areas where revisions could be considered:

- Consultation with identified stakeholders to receive comments on the draft plan;
- Facilitation of two public sessions in which local residents were invited to review the draft plan and provide comments;
- A response form to collect public feedback about the draft management plan; and
- Summarization of input received from stakeholders and the public.



Final Plan Development:

The final phase guided the plan to completion:

- Detailed discussions and reviews of the final plan with key stakeholders.
- Completion of the final plan in consultation with the Staff Working Group and the Management Plan Sub-Committee.
- Completion of the capital and operational implementation summary and timeline; and
- Submission of the plan to the RDN Board.

2.2 Public & Stakeholder Consultations

The development of the Management Plan was guided by the Regional District of Nanaimo and partners, the Hupacasath First Nation, the Alpine Clubs of Canada and the Federation of Mountain Clubs of BC. In addition, to help gain insights and develop a plan that responds to the public and stakeholders of the mountain, several consultations were completed.

Stakeholder Consultations

A variety of organizations, neighbours, agencies and individuals were identified as having direct interests in the development of a Management Plan for MAMRP. See **Appendix A: Stakeholders** for a list of stakeholders identified in this process. Stakeholders were contacted to inform them about the management plan process, invite them to the

public sessions, distribute background information and invite their ideas, concerns and feedback.

These groups and individuals were provided with the draft management plan and were asked to provide direct feedback on the draft.

Public Survey

A public survey was developed to gather preliminary public input and opinions about the future of the park. The survey was made available online and in hard copy at the RDN offices and through email lists. The survey was available from May to June 2010. A total of 142 responses were received. See **Appendix B: Public Survey** for a copy of the survey.

The compiled survey results can be viewed in **Appendix C: Public Survey Results**. The results were used to inform the development of the draft vision, goals, policies and actions.

Public Session #1

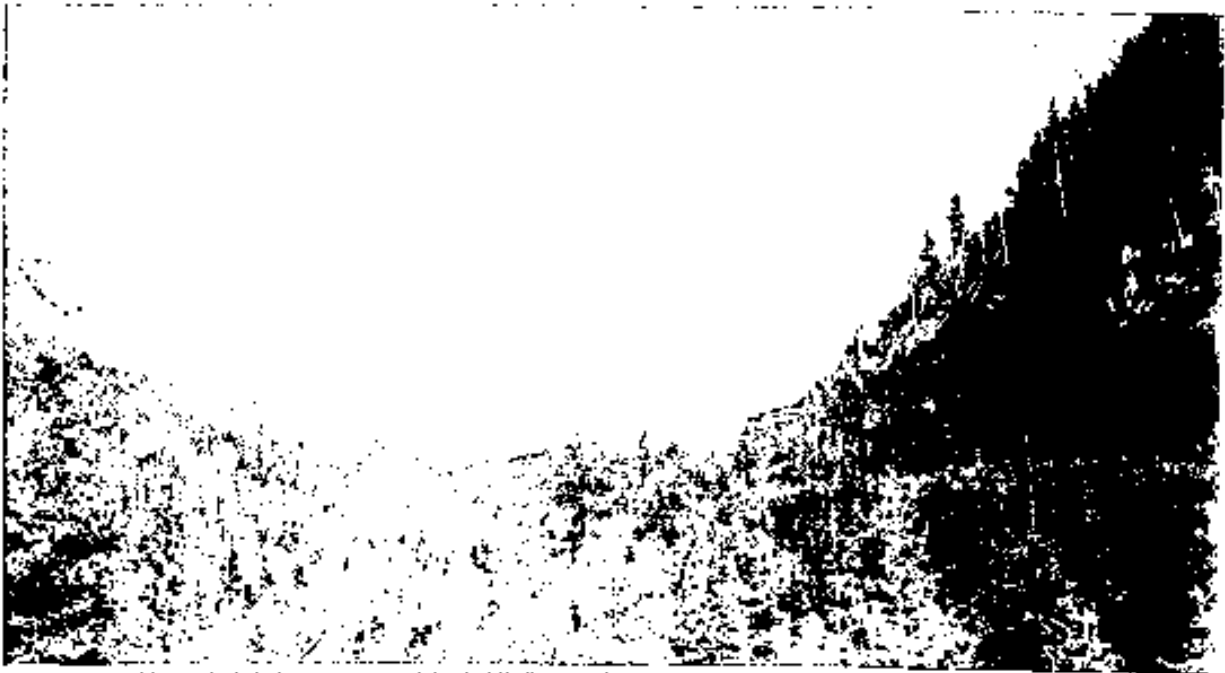
The first public sessions for the Management Plan were held on Tuesday, June 22nd, 2010 in Parksville/Qualicum Beach and on Thursday, June 24th, 2010 in Port Alberni. Attendees were introduced to the project and asked to provide input on issues, ask questions about the project and maintain, map their knowledge, share their experiences and provide their ideas for the future of the park. Approximately 50 people attended the sessions. See **Appendix D: Public Session #1 Summary** for a summary of the information received.

Public Session #2

The second public sessions were held on Tuesday, October 26th, 2010 in Port Alberni and on Thursday, October 28th, 2010 in Parksville/Qualicum Beach. The sessions focused on presenting policies and actions developed in response to the key issues and opportunities identified through the first round of consultations. Participants were encouraged to document their feedback on response forms. Approximately 30 people attended the sessions. See **Appendix E: Public Response Form for Draft Management Plan** for a copy of the Response Form.

The completed feedback results are in **Appendix F: Response Form Summary**. The results were used to propose changes to the Draft Plan.

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Looking up at Mount Cokely from the start of the Saddle Route (Photo: EH Lane).

3 DEFINING THE PARK VALUES

3.1 Property & Land Status

3.1.1 Property Description

Mount Arrowsmith Massif Regional Park encompasses 1300 ha of alpine and sub-alpine land mass encompassing the summits of Mount Arrowsmith and Mount Cokely and the surrounding range. The park is comprised of one parcel, legally described as Block 1380, Cameron Land District, PID 008739668. See **Figure 2: Extents of Mount Arrowsmith Massif Regional Park** (p.7).

3.1.2 Park Acquisition

Members of hiking clubs, including the Federation of Mountain Clubs of BC (FMCBC) and the Alpine Club of Canada (ACC), along with numerous individuals, have been climbing Mount Arrowsmith and Mount Cokely for decades. Club members, along with the general public, advocated for the protection of the area for many years.

Acquisition Highlights of Mount Arrowsmith



Looking up a MAMRP (Photo: ITH
Landscape)

1992: The Commission on Resources and Environment (CORE) consider Mount Arrowsmith Massif for Class A Provincial Park Status, but opt to secure more threatened lowland areas, due to the adjacent existing ACRD Regional Park and Mount Arrowsmith's similarities to the already established Strathcona Provincial Park.

1995: The RDN's 1995 Regional Park Plan identifies Mount Arrowsmith as an area of interest for regional park acquisition.

1998: The Public Access Resolution Committee (PARC) garners support from over thirty clubs, societies, federations and outdoor groups to obtain Block 1380 as a regional park. The park is identified by the RDN's 1998 Acquisition Program as one of nine regionally significant acquisition priorities.

1999: The RDN appoints a local citizen committee to provide direction on the potential future of Mount Arrowsmith Massif as a

2001: A BC Parks Land Evaluation and Acquisition Framework (LEAF) form is completed for Mount Arrowsmith to document the values of the property as a potential provincial park. The park is pursued for Provincial Park.

2005: The updated RDN Regional Park Plan identifies Mount Arrowsmith Massif as a short term (1 to 3 year) acquisition priority either as a provincial park or regional park.

October 2006: RDN Board members meet with the Minister of the Environment at the UBCM convention to discuss the designation of Mount Arrowsmith as a park. At this meeting it is recommended that the RDN pursue Regional Park status through the Province of BC's Nominal Rent Tenure process.

February 2007: The RDN Board passes a resolution to begin the Nominal Rent Tenure process.

October 2008: A MoU is signed between the RDN and Hupacasath First Nation to ensure key objectives are captured in planning for the future park.

November 12th, 2008: An offer for a 30 year licence of occupation of Block 1380 is received, permitting RDN use of the land for Regional Park purposes.

3.1.3 Neighbouring Properties

MAMRP is surrounded to the east, south and west by privately managed forest lands owned by Island Timberlands Ltd. The area is an active forestry area. To the north is the Alberni-Clayoquot Regional District's (ACRD) Mount Arrowsmith Regional Park which encompasses the north face of Mount Cokely and was formerly a ski hill site. Since the ski resort was closed in 1999, the site has continued to be heavily used as a recreation site by hikers, mountain bikers and motorized recreation enthusiasts. See **Figure 3.1: Neighbouring Lands Map** (next page).



*The ACRD Mount Arrowsmith Ski Hill and lounge during busy times
(Photo: P. Rothman)*

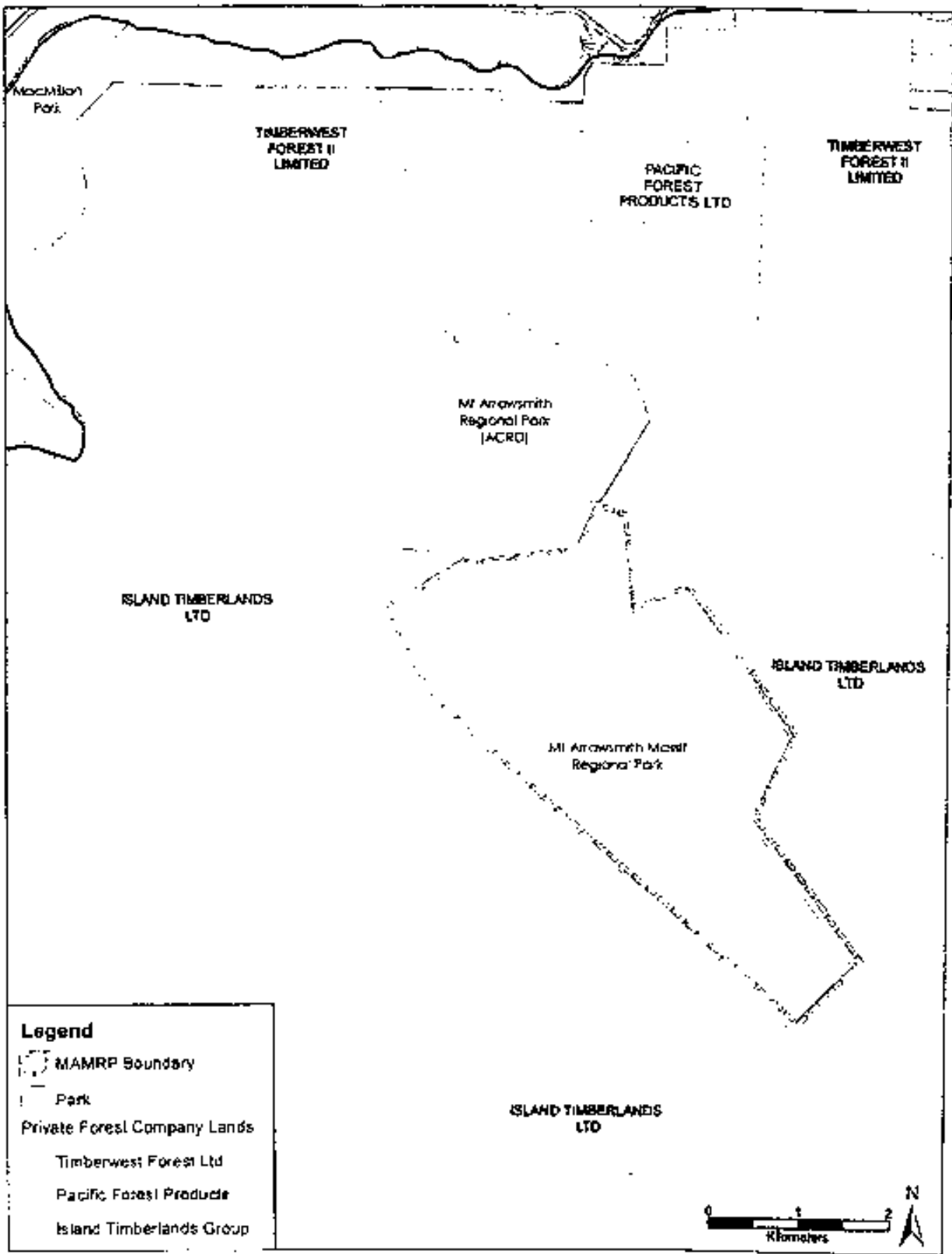


Figure 4-1: Neighboring Lands Map

3.1.4 Park Access

Currently, the only authorized public access route to the park is the Old Arrowsmith Trail/CPR Trail route from Cameron Lake. This is a trail route only and does not support vehicle access.

- f. **North Access - Old Arrowsmith Trail/CPR Trail from Cameron Lake:** 48% of respondents to the public survey said they have used the Old Arrowsmith Trail/CPR Trail to access the mountain. This is a historic route that has been in use for the past century. This route is accessed off the Alberni Highway at the east end of Cameron Lake. The route is well-established and a comfortable, but lengthy climb with gentle switchbacks and two alternative trail routes. The route meets up with the ACRD Mount Arrowsmith Regional Park parking lot, and hikers can ascend Mount Cokely from that point. The Mount Arrowsmith Massif is only accessible by technical climbs from this route, and is difficult to complete within a day-hike. The RIDN maintains trail licences with Island Timberlands and TimberWest for this route to permit trail use and undertake maintenance on the existing trails.

There is currently no public road access to MAMRP. While many people who responded to the survey noted that they have accessed the park by vehicle using private roads, at the time of this plan, public vehicle access is not authorized on neighbouring Island Timberlands properties due to the health, safety and environmental implications of public use of private roads.

This process identified two unauthorized vehicle routes that have historically been used by the public to access the park.

- g. **West from Alberni Highway - Private Forestry Roads:** 93% of people who responded to the survey said they have accessed the park using private forestry roads from the Alberni Highway (Hwy 4). This is the route that was used to access the former ACRD ski facility on Mount Cokely and has been used to access trails on the west side of Mount Arrowsmith. *Public vehicle access on this route is currently not authorized.*
- h. **East from Highway 19 - Private Forestry Roads:** 19% of survey respondents said they have visited the park using the forestry roads on the eastern side of the mountain, to access the lakes on the east side of the park. *Public vehicle access on this route is currently not authorized.*

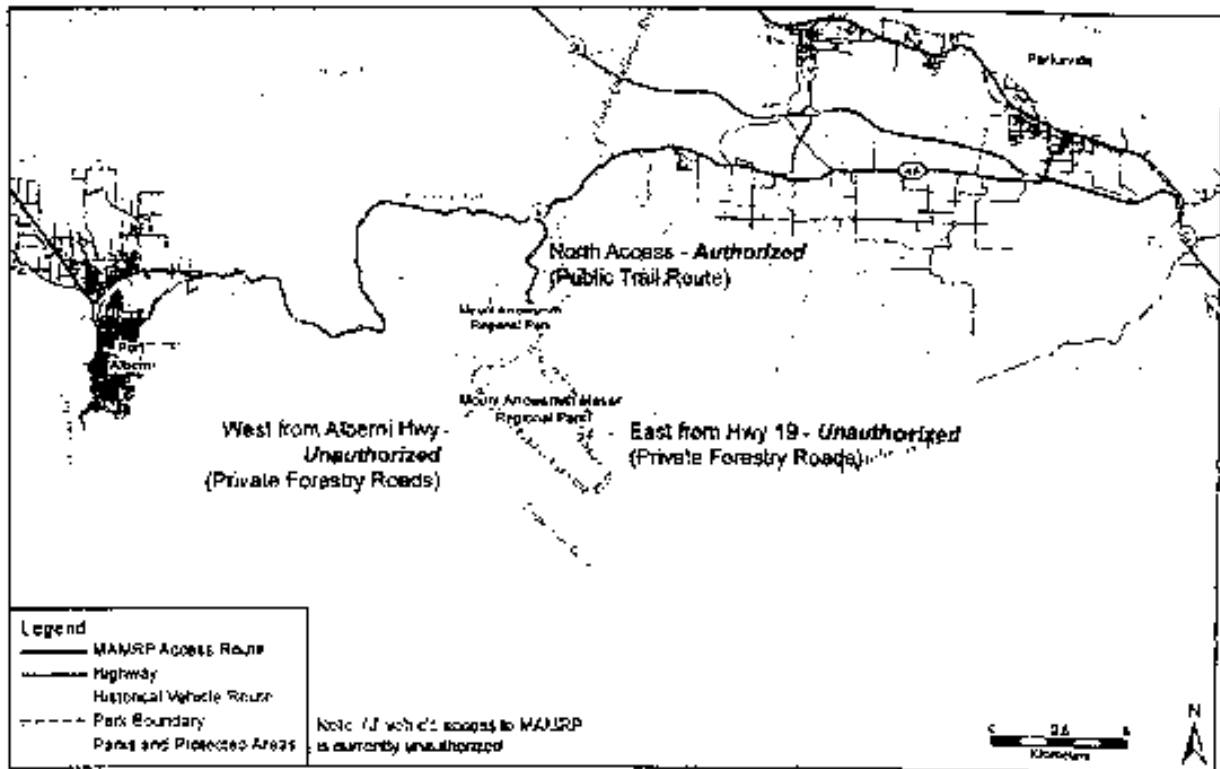


Figure 2. Park Access Points Map

3.1.5 Existing Encumbrances

Communications Towers

Several communications towers are located at the summits of Mount Cokely and Mount Arrowsmith.

- Cercomin Communications has a communications tower at the summit of Mount Cokely, complete with a maintenance shed. The tower is accessed by helicopter or through hike in from the ACRD Mount Arrowsmith Regional Park parking lot. The tower has been on this site for approximately 40 years. Consultation with Cercomin suggests there are no changes planned for the future and no issues were identified.
- Three repeater stations sit atop Mount Arrowsmith and are operated by Island Timberlands GP.



Repeater stations atop Mount Arrowsmith (Photo: RDN)

Mineral Claims

Under the Mineral Tenure Act (RSBC 1996), individuals are able to secure sub-surface mineral claims. The Mineral Titles Online map shows one Cell Claim Tenure with a small area that overlaps into the southeast corner of the park. The claim (603347) was made following designation of the Regional Park and as such, is subject to Section 21 of the Mineral Tenure Act which states that *"Despite any Act, agreement, free mineral certificate or mineral title, a person must not locate a mineral title, carry out exploration and development of produce minerals or placer minerals in a park created under an Act of British Columbia..."* As a result, exploration activity by the tenure holder must be conducted outside the park boundary.

3.1.6 Official Community Plan

Mount Arrowsmith Massif Regional Park is within RDN Electoral Area 'C'. Electoral Area 'C' is the RDN's largest and most rural electoral area encompassing 53% of the RDN, stretching from the Alherti Highway at its northern extents down to the Cowichan Valley Regional District border in the south end. This electoral area is comprised largely of forestry and agriculture lands, with a few small populated areas.

MAMRP sits at the top of the Englishman River Watershed Water Supply Area, which is identified by the OCP as one of Vancouver Island's most important freshwater sources. In addition, the OCP identifies the Mount Arrowsmith area as an important ecological habitat area.



Alpine vegetation in the park
(Photo: RDN)

Several key objectives from the OCP are directly applicable to MAMRP:

- D. To preserve and protect environmentally sensitive ecosystems and the nesting trees of protected species.
- E. Recognize the contribution of Mount Arrowsmith Alpine Recreation Area to the tourist/recreational service sector. (The OCP was developed prior to the acquisition of MAMRP, but it can be assumed it applies to the entire Mount Arrowsmith area.)
- F. Facilitate the protection and provision of public access to regionally significant, natural landscapes and corridors.
- G. Protect the quantity and quality of surface and groundwater.

3.2 Natural Values

A multitude of natural values have been identified within MAMRP. Ursus Environmental compiled and reviewed existing records and consulted with stakeholders to develop a consolidated summary of environmental data related to the park's natural values. Stakeholders supplemented existing records with personal knowledge and documentation.

3.2.1 Environmental Setting

Elevations within MAMRP range from about 900 m to 1,800 m above sea level. Two main Biogeoclimatic Subzones are represented in the park. The lower Subzone, termed the Windward Moist Maritime Mountain Hemlock Subzone (or MHmm), extends from 900 m elevation to between 1,100 m and 1,350 m elevation, depending on aspect. The MHmm subzone covers approximately 55% of the park. The Coastal Alpine Tundra Subzone (or ATc) occurs immediately above the MHmm Subzone and accounts for about 45% of the park's total area. Exposed to moist Pacific air masses for much of the autumn and winter, these Subzones experience long, wet winters, with high snowfall. Total annual snowfall averages around 800 cm in the MHmm Subzone, and over 1,000 cm in the ATc Subzone. It is not unusual for snow cover to persist into July within both Subzones (Green and Klinka 1994).

The domed cluster of peaks (or massif) at MAMRP is relatively isolated from other sub-ranges comprising the Vancouver Island Ranges. The nearest mountain chain, the Beaufort Range, occurs about 10 km to the northeast. The mountains are comprised mostly of volcanic rock formed 250 million years ago. They are part of the Karmutsen Formation. The characteristic black basalts of this formation had their origin in undersea lava. The Karmutsen Formation reaches a thickness of approximately 3,000 m around MAMRP (Yorath and Nasmitz 2001).



Hiking through July snow in
MAMRP (Photo: RDN)



The Massif (Photo: RDN)

A number of glacial episodes, the latest occurring between 30,000 and 12,000 years ago, have left their mark on the landscape of MAMRP. Mount Arrowsmith's valley slopes and peaks were steepened by the tongues of advancing glaciers and growing cirques. Subdued terrain in the southern part of MAMRP was likely the result of a broader glacial advance. Two prominent peaks were left within MAMRP after the glaciers receded. There is some evidence suggesting parts of Mount Arrowsmith may not have been completely covered by glaciers, possibly providing refuge for some endemic flora of the region.

3.2.2 Watercourses

Mount Arrowsmith Massif Regional Park encompasses the headwaters of the Englishman River, a major Vancouver Island stream draining northeast into the Strait of Georgia. The Englishman River has a large falls presenting a barrier to salmonid migration about 12 km east of MAMRP and 15 km from the river's mouth. Significant salmonid fisheries values are associated with reaches below the falls, and considerable effort has been expended in enhancing habitats and fish populations there. Reaches above the falls support populations of Rainbow Trout and Coastal Cutthroat Trout.

Streams along the eastern flanks of Mount Arrowsmith drain into the Englishman River system through five small lakes that range from about 2 ha to 15 ha in size. Jewel (also unofficially known as Emerald) Lake, the smallest within MAMRP, drains east into the mainstem of the Englishman River. Fishtail Lake, the largest lake in the park, drains to the northeast to the mainstem via a short tributary stream. Water from Hidden Lake drains to the east into Arrowsmith Lake and then courses northeast for about 1.2 km before joining the Englishman River mainstem. A small unnamed basin (sometimes referred to as Lost Lake) located in the southern part of MAMRP flows eastward through a tributary for roughly 6 km before its confluence with the Englishman River. Fishtail and Hidden Lakes have occasionally been stocked with Rainbow Trout.

The western and northern flanks of Mount Arrowsmith make a small contribution to the Cameron River catchment area. The latter drains northward into the west end of Cameron Lake. Runoff and snowmelt from the northeast part of MAMRP, near the peak of Mt. Cokely, makes its way into Lockwood Creek, which is tributary to the Little Qualicum River.



Fishtail Lake from Mount Arrowsmith peak (photo: HB Langan).



Jewel (Emerald) Lake (photo: RPN).

3.2.3 Vascular Plants & Plant Communities

Although several plant surveys have been conducted at MAMRP in recent years, no detailed vegetation mapping has yet been completed. The area was not included in the mapping area for the 1997 Sensitive Ecosystems Inventory of Southeast Vancouver Island. No records of rare or threatened plant communities within MAMRP are indicated in the Conservation Data Centre (CDC) Rare Element Database. However, it should be noted that until recently, alpine ecosystems have received little attention from researchers and land managers (Meidinger and Poyar 1991). Research scientists with the B.C. Ministry of Forests and Range are currently developing classification schemes for use within alpine and subalpine ecosystems.

The CDC's Plant Ecologist, Adolph Ceska, has suggested that at least four Red-listed and two Blue-listed¹ alpine communities occur on Vancouver Island. These communities are typically described as plant pairings. Of these six communities, only the Red-listed *Lewisia columbiana* - *Allium cretatum* and Blue-listed *Phlox diffusa* - *Selaginella wallacea* communities have had both of the key species documented within the MAMRP boundaries. Several plant communities containing the sedge *Carex scopaioides*, which has been documented within MAMRP, may be considered for the CDC's Provincial Red-list.

Based on orthophoto coverage, background review and a limited amount of field reconnaissance, five general types of terrestrial plant communities have been identified within MAMRP's boundaries. These are Subalpine Forest, Subalpine Parkland, Alpine Scrubland, Alpine Meadow and Sparsely Vegetated Areas. Brief descriptions are provided for each plant community in Figure 3.4 below.

Plant Community	Description	Characteristic Plants	Distribution within MAMRP
Subalpine Forest	Generally continuous cover of conifers 8 m to 15 m in height; canopy dominated by Subalpine Fir & Mountain Hemlock	Subalpine Fir; Yellow Cedar; Amabilis Fir; Mt. Hemlock; Alaskan/ Oval-leaved Blueberry False Azalea	Occurs below 1,500 m elev.; includes slopes around Fishtail Lake & N of the unnamed lake (East Lake).

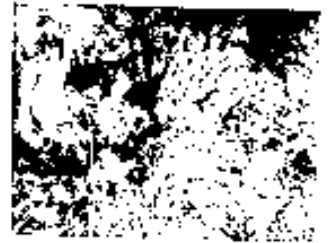
¹ In BC, species and ecological communities are assigned to one of three lists, based on their provincial Conservation Status Rank. Red-listed species and ecological communities are threatened or endangered. Blue-listed species and ecological communities are of Special Concern, normally vulnerable and Yellow-listed species and ecological communities are of Concern. The Data Centre: www.gov.bc.ca/cdc/



Alpine meadow on the slopes of Mount Arrowsmith (Photo: R. & J. Arns)



Oval-leaved blueberry in MAMRP (Photo: D. Harman)



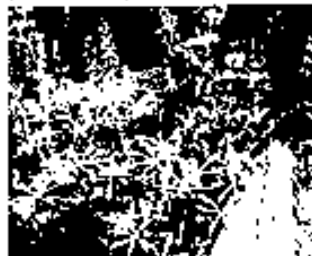
Pink mountain heather in MAMRP (Photo: JDN)



Partridgefoot in MAMRP (Photo: RDN)



Mountain arnica in MAMRP (Photo: RDN)



Arctic lupine in MAMRP (Photo: RDN)



Sickle-top Lousewort in MAMRP (Photo: RDN)



Endangered Allium crumatum (Olympic Onion) (Photo: Central Washington Native Plants Database)

Subalpine Parkland	Irregular patches of stunted & windswept conifers 1 m to 5 m in height; tree patches are often connected by thick shrub cover.	Shore Pine; Subalpine Fir; Yellow Cedar; Pink & White Mtn Heathers; Dwarf blueberry; Partridgefoot	Bands distributed at elevations of 1,300 m to 1,500 m, depending on aspect.
Alpine Scrubland	Treeless areas dominated by low-growing shrubs. Occurs across the lower and middle parts of the Alpine Tundra Zone.	Pink & White Mountain Heathers, Kinnickinick; Crowberry	Broadly distributed above Subalpine Parkland communities.
Alpine Meadow	Located in seepage areas at the base of steep slopes, possess pockets of deep soil.	Mt. Arrowsmith Red Columbine; Subalpine Daisy; Arctic Lupine; Red Partridgefoot	Areas of pocket meadows on NW flank of Mt. Arrowsmith.
Sparsely Vegetated	Areas of thin, nutrient-poor soils, and frost-broken rock, found on peaks, cliff faces, talus fields, and around edges of snowfields.	Kinnickinick Villous Cinqufoil, Kosov Pussytoes Yarrow, Sickle-top Lousewort	Present on peaks of Mt. Arrowsmith & Mt. Coker and along associated ridge crests.

Figure 4. General ecosystem types occurring within MAMRP.

To date, plant surveys have been carried out in MAMRP by Swerhun *et al.* in 2009 and by local botanist Rick Avis and alpine expert Hans Roemer in 2008. The results of these surveys indicate that, despite its high elevations, MAMRP possesses a diverse flora. As indicated in Appendix G-1, at least 167 species of plants have been identified in the park, including 6 tree species, 21 shrub species and 140 non-woody plants. The non-woody plant assemblage of the park includes strong representation by grammoid plants (25 species), ferns (9 species), saxifrages (9 species), blueberries (6 species) and arnicas (5 species).

Recently observed rare plants in the park include the Red-listed Olympic Onion (*Allium crumatum*) and Blue-listed Olympic Mountain Aster (*Eucephalus paucicapitatus*). Both species have their main range located outside Canada, along Washington's Olympic Peninsula. The Blue-listed Columbia Lewisia (*Lewisia columbiana* var. *rupicola*) is also shared with the Olympic Peninsula and occurs mostly between Shastanema Park and the Nanaimo Valley. It is a different variety from that occurring in the

Mounting Park Area in BC's Southern Interior.¹ The Blue-listed Sand Dwelling Wallflower (*Erysium aeneicolum* var. *torulosum*) has also been recently observed in abundance within MAMRP. There are historical records for two other Blue listed plants in MAMRP. These plants are the Lance-fruited Draba (*Draba lanceolata* var. *vestita*) and the White Wintergreen (*Pyrola elliptica*). Neither of these plants has been recorded in the park area for at least two decades.

In addition to above listed plants, there are several disjunct species of conservation interest on Mount Arrowsmith whose main range occurs away from Vancouver Island. Field Lacoweed (*Oxytropis campestris*) is mainly distributed to the east of BC's Coast Mountain Range and along the Alaskan Panhandle. Silky Phacelia (*Phacelia sericea*) is widely distributed across BC's Southern Interior, but uncommon elsewhere. With a few exceptions, virtually all Alpine Lewisia (*Lewisia pygmaea*) records are from BC's Okanagan and Saqit Valley regions. Only one recent record exists for the latter species on Vancouver Island, and it is located within MAMRP. The single occurrence record for this species within MAMRP suggests it could be highly vulnerable to disturbance.



Lewisia pygmaea in MAMRP
(Photo: R. & T. Aziz)

Other occurrences on Mount Arrowsmith that are disjunct from their main distributions are those of Fairy Candleabra (*Androsace septentrionalis*) and Arctic Willow (*Salix arctica*).² Occurrences of Mountain Sandwort (*Mimantia biflora*) have also been recently recorded on the mountain.³

3.2.4 Lichens and Fungi

An inventory of lichens occurring at Mount Arrowsmith was prepared in the autumn of 2006 by noted BC lichenologist Trevor Goward at the GEORCA research site, a small area within the park. The results of that inventory are presented in **Appendix G-4**. Over 50 different forms of lichens were identified at that time. Cup lichens of the genus *Cladonia* are the most diverse group occurring at Mount Arrowsmith, with 13 different forms. Rocktrapes (genus *Umbilicaria*) are also well represented, with eight different forms recorded. Other lichen groups with three or more representatives include Reindeer Lichens (*Cladonia* spp.), Map Lichens (*Rhizocarpon* spp.) and Snow Lichens (*Stereocaulon* spp.). None of the lichens appearing in **Appendix G-4** are considered rare or threatened in the South Island Forest District.

¹ Brown, Dale. *Diurnal Observations*, October 1979.

² Brown, Dale. *Diurnal Observations*, October 1979.

³ Victor, Hans. *Diurnal Observations*, October 1979.

Information about fungi within MAMRP was not available during this process. Local naturalists and experts were not aware of any studies or park-specific records that have been completed to date.

3.2.5 Wildlife Occurrence

Mammals

No systematic mammal inventory has been completed within MAMRP. As a result, site-specific information about mammal occurrence is largely lacking. In the absence of such information, potential mammal occurrence has been predicted using published habitat preferences and range maps.

Historically, several colonies of the Red-listed Vancouver Island Marmot (*Marmota vancouverensis*) existed within and near Mount Arrowsmith. However, over the past three decades their numbers in the Mount Arrowsmith area had declined to zero, as in many other locations across on Vancouver Island. In the summer of 2009, six marmots from the Vancouver Island Marmot Recovery Facility on Mt. Washington were reintroduced to the west side of Mount Arrowsmith. Five of these apparently remained at the release site and survived their first winter in the wild (D. Doyle, Ministry of Environment, personal communication). Before 2008, the nearest known active marmot site had been on Mount Norrarity, about 10 km to the southeast of Mount Arrowsmith (Vancouver Island Marmot Recovery Team 2008). Marmot sites have been associated with small (0.5–80 ha) subalpine meadows between 900 m and 1,450 m elevation, possessing moderately steep slopes and a south- to west-aspect (Bryant and Janz 1996). Radio-telemetry work has revealed that a large proportion of second-year marmots can move up to 20 km to new habitats (Bryant and Janz 1996).

Two large carnivores, the Black Bear (*Ursus americanus*) and Cougar (*Felis concolor*), have been reported within MAMRP in recent years. Black bear use of the park is likely highest over the mid-to-late summer period, when a variety of berry-producing shrubs normally provide an abundance of food. Cougars are wide-ranging predators with large home ranges, in the vicinity of 25 km² to 65 km² in this part of Vancouver Island (Hatter 1982). They can be expected in the park in all seasons, but their main prey, the Black-tailed Deer (*Odocoileus hemionus columbianus*), inhabits the high country mainly in summer. Wolves (*Canis lupus*) occur at low densities across this part of Vancouver Island, and generally restrict their activities to valley bottom habitats of the larger river valleys.

Small numbers of Roosevelt Elk (*Cervus elaphus roosevelti*) occupying the adjacent Cameron River and Englishman River Valleys likely range up



V.I. Marmot (Photo: The Vancouver Island Marmot Recovery Foundation).



Black Bear (Photo: D. Gordon, F. Robertson).



Roosevelt Elk (Photo: p.romano.com).

into MAMRP in summer. Elk use within the park would be concentrated within riparian habitats along lake and wetland margins. Vegetated slide tracks, found along the western margins of the park are considered highly attractive elk summer and fall habitats (Nyberg and Janz 1990).

Preferred habitats of the Marten in Western North America include stands of Subalpine Fir and Amabilis Fir (Powell *et al.* 2003), both of which are found at lower elevations within MAMRP. Marten generally occur at low densities across Vancouver Island, as the abundance and diversity of their prey (small mammals), is very limited in comparison to the adjacent Mainland.

At higher elevations on Vancouver Island, the small mammal assemblage is comprised mainly of the Deer Mouse (*Peromyscus maniculatus*), with an infrequent occurrence of the Dusky Shrew (*Sorex musticolus*) (Nagersen 1996). Moist, herb-dominated habitats in the subalpine may support populations of Townsend's Voles (*Microtus townsendii*), which often fluctuate widely from year to year.

Birds

The avifauna of the Mount Arrowsmith area has been well documented by the region's birding community. As shown in Appendix G-2, local naturalists have recorded a total of 42 bird species over 2008 and 2009. The assemblage from the high elevation forest supports the greatest diversity of bird species, with 29 species or about two thirds of all those recorded. Typical birds of high-elevation forests within MAMRP include: Hammond's Flycatcher (*Empidonax hammondi*), Hermit Thrush (*Catharus guttatus*), Gray Jay (*Perisoreus Canadensis*), Three-toed Woodpecker (*Picoides tridactylus*) and Sooty Grouse (*Dendrogeopus obscurus*). Two Blue-listed birds associated with snags and conifer forests have been noted at Mount Arrowsmith, the Northern Pygmy-owl (*Glaucidium gnoma swarthi*) and Band tailed Pigeon (*Columba fasciata*). The former is a cavity nester with an apparent preference for mature stands, while the latter builds loose stick nests in mixed conifer stands, often perching near the tops of dead trees (CIOC 2010).

Approximately one-fifth of the recorded bird assemblage at Mount Arrowsmith are associated with open alpine and subalpine parkland habitats (eight species). Representative birds within Mount Arrowsmith's alpine and subalpine zones include Townsend's Solitaire (*Dendroica townsendi*), American Pipit (*Anthus rubescens*), Common Raven (*Corvus corax*) and Golden Eagle (*Aquila chrysaetos*). Due to its cryptic plumage, the Blue-listed Vancouver Island White-tailed Ptarmigan (*Lagopus leucurus saxatilis*) is seldom seen, but sightings are frequent enough to consider them a resident species. This subspecies occupies a wider elevational range than Mainland ptarmigan, wintering



Curious Whiskey Jack (Photo: P. Kothermel)



Sooty Grouse (Photo: BHN)



Camouflaged White-tailed Ptarmigan (Photo: P. Kothermel)

in lower subalpine parkland and montane forests. Due to this subspecies restricted range on central Vancouver Island, the Mount Arrowsmith area has been designated a nationally significant 'Important Bird Area'.

Five bird species associated with water occur in the Mount Arrowsmith area. The Common Loon (*Gavia immer*) and Common Goldeneye (*Bucephala islandica*) frequent open water lake habitats, while the Spotted Sandpiper (*Actitis macularia*) and Song Sparrow (*Melospiza melodia*) are associated with lake and wetland margins. The American Dipper (*Cinclus mexicanus*) is seldom seen outside of stream reaches with a combination of riffle and pool habitats.

Though not documented, there is a reasonable probability that MAMRP supports use by three other listed species. A Red-Listed raptor, the Queen Charlotte Goshawk (*Accipiter gentilis langi*), is associated with mature stands possessing relatively open understories. The nearest known goshawk nest is located roughly 6 km to the southwest, in the upper part of the China Creek Valley. The Blue-listed Marbled Murrelet (*Brachyramphus marmorata*) feeds mainly in the marine environment, but typically nests on mossy pads within old-growth forest (Fraser *et al.* 1999). Records from Bird Studies Canada indicate the presence of Olive-sided Flycatchers (*Contopus cooperi*) on the northern flank of Mount Cokely, east beyond the MAMRP boundary. This Blue-listed bird forages and sings from the tops of tall snags, particularly along forest edges.

Herptiles

Only a few amphibians, and no reptiles, can tolerate the harsh environmental conditions associated with alpine and near alpine habitats. The Western Toad (*Bufo boreas*) is adapted to cold temperatures, breeding in subalpine lakes over 1,000 m in elevation and inhabiting the northern limits of British Columbia. The Northwestern Salamander (*Ambystoma gracile*) is widely distributed in coastal BC and regularly breeds at higher elevations (up to 1,700 m). Usually the earliest breeding amphibian on Vancouver Island, the Long-toed Salamander (*Ambystoma macrodactylum*) is often present at ponds before the ice has completely melted (Matsuda *et al.* 2006). This species is reported to breed at elevations above 1,500 m where suitable ponds are present (Alberta Sustainable Resource Development 2010).

Invertebrates

Efforts by the Arrowsmith Naturalist Club to inventory butterflies in the region have so far focused on areas outside of MAMRP. The CDC Rare

¹ Important Bird Areas (IBAs) are specific sites that support specific groups of birds that are birds help preserve threatened birds and other species of birds (http://www.birdlife.org).

Element Database contains historic records for two Red-listed butterflies in areas adjacent to the park. Blackmore's Blue (*Gaeaulis scaroides blackmorei*) and Bremner's Silverspot (*Speyeria zerene bremneri*). As indicated in **Appendix G-3**, the Arrowsmith Naturalist Club has identified 10 species of butterflies from high elevation sites near MAMRP. One site is located near the headwaters of McBey Creek, just north of the park, and the other is near St. Mary's Lake, about 4 km to the northwest. In general, multi-species wildflower meadows and shallow warm-water puddles are considered attractive butterfly habitats.

3.3 Recreational Values

In addition to extensive natural values, MAMRP has a lengthy history of recreation. To this day it is one of the most popular wilderness recreation destinations on Vancouver Island.

3.3.1 Regional Tourism Trends

The 2008 Vancouver Island Visitor Exit Survey was conducted to discover, among other input, the motivation of people visiting Vancouver Island. When asked their primary motivation for visiting the Vancouver Island Region, 28% said they were visiting because of the Scenic Beauty of the region, second only to Friends and Family being the reason for a visit (32%). People also noted the Environment (4%), Outdoor Activities (1%) and Wildlife (1%) as primary reasons to visit Vancouver Island (see **Figure 3.4: Primary Trip Motivation**).

Survey respondents also indicated that Scenic Beauty (66%), the Environment (30%), Outdoor Activities (20%) and Wildlife (15%) were among what they like most about the Vancouver Island region (see **Figure 3.5: The Visitor Experience**).

The value of natural areas to tourism on Vancouver Island is apparent. MAMRP represents an opportunity to encourage tourism within the region, by providing true wilderness experiences, within easy reach of visitors to all parts of the island.

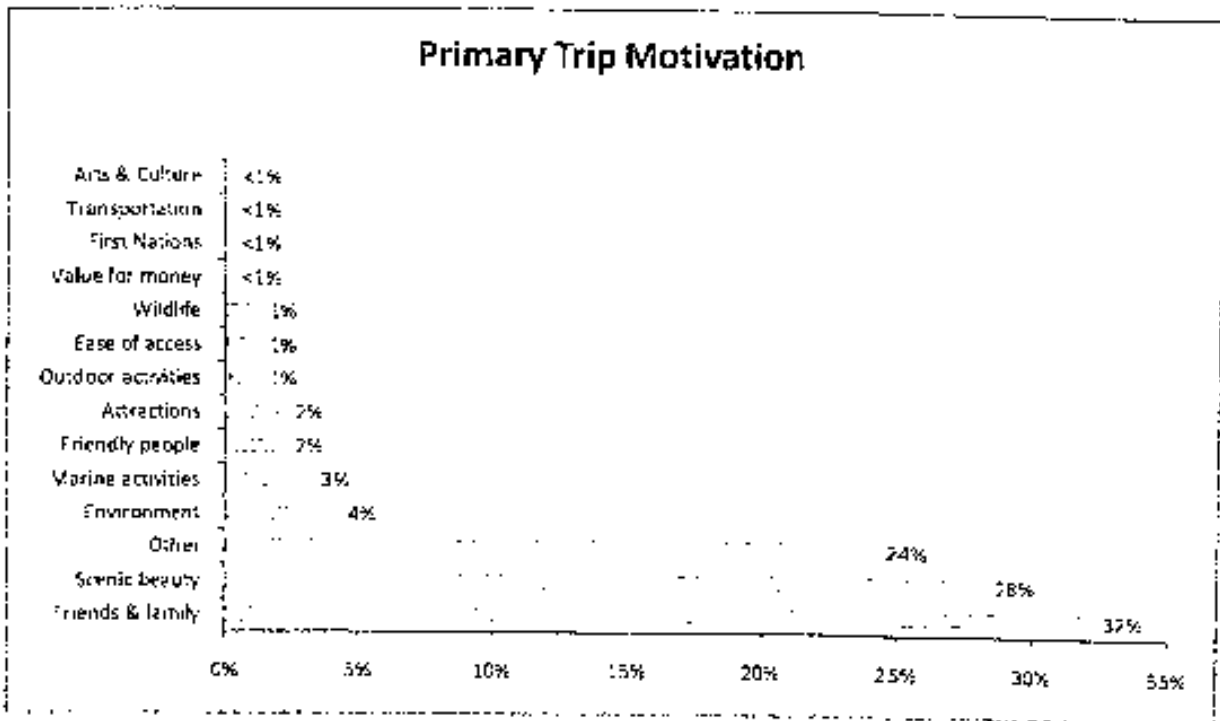


Figure 2.5 Primary Trip Motivation. Source: 2008 Vancouver Island Visitor Exit Survey, Gairloch Vancouver Island

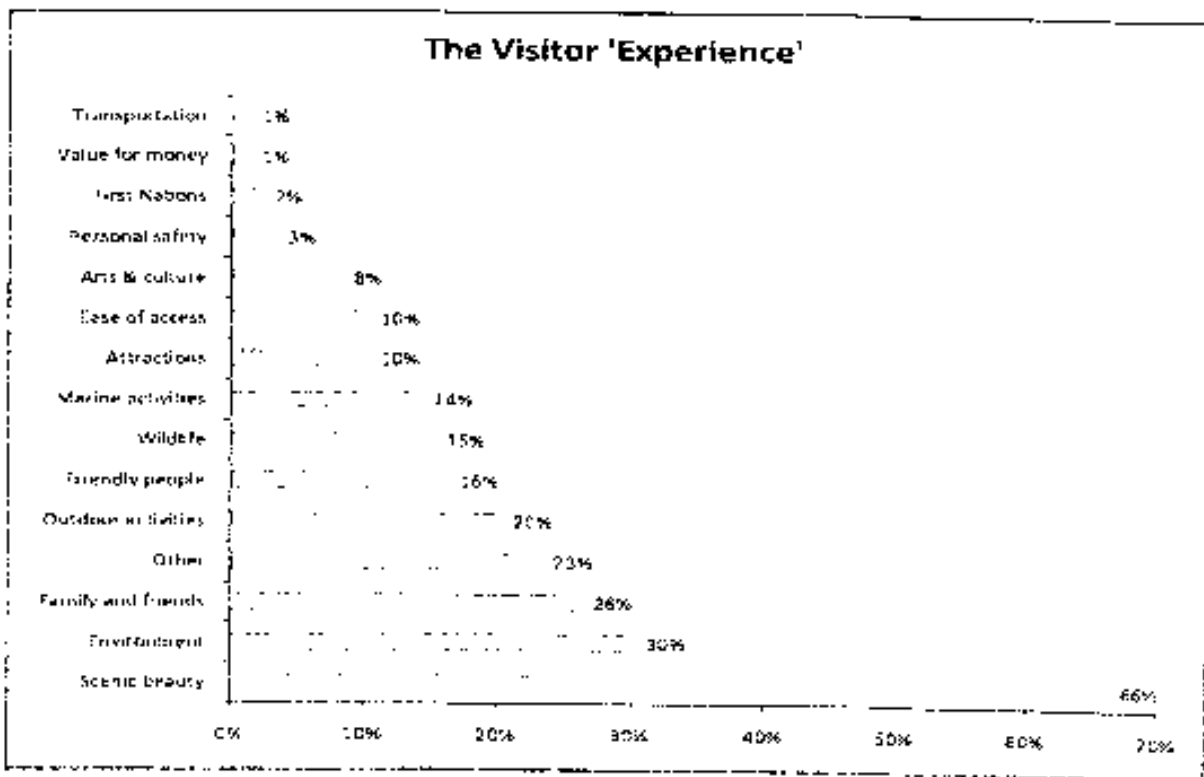
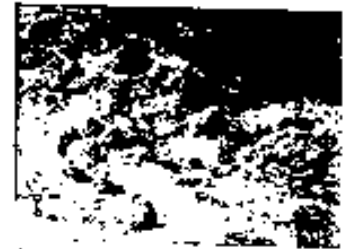


Figure 2.6 The Visitor 'Experience'. Source: 2008 Vancouver Island Visitor Exit Survey, Gairloch Vancouver Island

3.3.2 Regional Recreation Trends

Trends affect the use of parks and recreation throughout the RDN, BC and beyond. Identification of trends helps ensure decisions about planning and management are logical for the future of parks and recreation. Key national and provincial recreation trends related to the recreation opportunities at MAMRP include:

- E. Less Structured Activities:** Non-traditional work schedules, home-based offices and double-income families are becoming more common which make it more difficult for people to make long-term commitments to team or on-going activities; as a result, unstructured activities such as hiking and climbing are gaining popularity.
- C. Changing Preferences and Expectations:** Interests in participation in activities that offer challenges, both physically and mentally, are increasing throughout the province and nation.
- I. Environmental Connection:** People are becoming increasingly aware of the natural environment and are seeking opportunities to experience, protect and steward important areas. People are seeking wilderness activities as a way to connect with their environment.¹



Mountain visitors in the Saddle
(Photo: RDN)

3.3.3 Mount Arrowsmith Recreation Trends

“Mt. Arrowsmith is arguably the most popular mountain on Vancouver Island and is the highest point on the southern half of the Island.” Tourism resources identify Mount Arrowsmith as a very important recreational resource on Vancouver Island.

One of the reasons the mountain is a popular recreation destination is its accessibility. MAMRP can be easily reached in a few hours from most populated areas on Vancouver Island, close to 600,000 people live within a three-hour drive of the mountain.² The range of activities available at the mountain, from moderate day-hikes to technical rock and ice-climbing, draw a wide variety of outdoor recreation enthusiasts.

The Arrowsmith Summit Register sits at the peak of Mount Arrowsmith Massif and is monitored by the Alpine Club of Canada. Records from the mid-90s through mid-2000s show an increasing number of visitors to the summit. In 1993, 162 visits were recorded in the register, in 2004, 530 visits and counting.³ While the register records only Mount Arrowsmith summit visits on a voluntary basis and therefore is not an



People visit Mount Arrowsmith year-round to enjoy a range of experiences (Photo: P. Rathemel)

¹ Trends from 2009 BCREP – Trends in the Cities, Recreation & Culture field. Excerpt from the Strategic Plan for the Parks and Recreation Sector 2010-11.

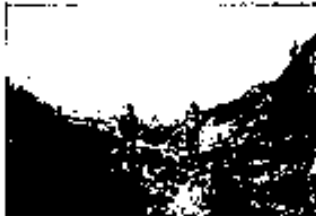
² Mount Arrowsmith 2007. *Mount Arrowsmith: A Guide to the Mountain*. Mount Arrowsmith Regional Park and Visitor Centre.

³ Mount Arrowsmith website: www.mountarrowsmith.org (2009-10) <http://mountarrowsmith.com/>

⁴ *Arrowsmith Summit Register*. Alpine Club of Canada 2008.



Mount Arrowsmith summit entry and register location (Photo: RDN)



Family Hike



Climbing



Paragliding



Ice Climbing

Trail routes provide a variety of experiences from moderate hiking to extreme climbing (Photo: P. Hoffmann & M. Hoffmann)

accurate description of all people visiting the area, it is a good indicator for the growing popularity of the mountain. The ACC maintains summit records in their archive.

3.3.4 Recreation Use

Mount Arrowsmith Massif Regional Park is considered one of the most popular recreation destinations of Vancouver Island. One of the reasons for this is because it accommodates a wide variety of outdoor recreation activities.

- E Hiking:** The trails within the park provide a number of hiking experiences from family hikes to more challenging routes that are used both in summer and in winter.
- C Climbing:** The park is a popular destination for climbers with numerous popular climbing routes, including ice climbs used during the winter months.
- S Skiing:** People use the park for cross country and hike-in downhill skiing.
- N Nature Study & Observation:** The unique ecosystems and wildlife habitat make the park a popular destination for nature appreciation, study and research.
- P Paragliding:** The park has been known to be used as a launch point for paragliders.

The steep terrain found in Mount Arrowsmith Massif Regional Park also limits some recreation uses. Within the MAMRP boundary, the grades are too steep for motorized recreation use, as well as mountain biking and other recreational uses that require gentler terrain. While these uses, notably motorized recreation use, are present in the adjacent ACRD Mount Arrowsmith Massif Regional Park, motorized vehicles are not able to access MAMRP. The steep terrain also limits park use by people who are unable to navigate the difficult conditions.

3.3.5 Existing Trails

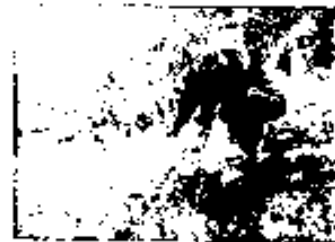
Mount Arrowsmith has at least 10 well-documented and historically used routes that are used for recreation (see **Figure 3.5: Popular Existing Trail Routes**). Portions of some historical routes traverse the park boundaries onto neighbouring properties and public use of portions of trails on private property is currently unauthorized, except where formal licences have been secured.

- S Saddle Route:** This is the area's most popular trail route. The route includes the valley between Mount Arrowsmith and Mount Cokely and traverses alpine meadows within the gully. From the gully,

visitors may also ascend to the Cokely summit via a scramble or to the Mount Arrowsmith summit via a technical climb. Users may also choose to hike down to Jewel (Emerald) Lake.

- **Judge's Route:** The Judge's route is a very steep and at times rocky route up to the peak of Mount Arrowsmith, but does not require technical climbing and is considered the shortest and easiest way to the summit.
- **Snow Gully:** The Snow Gully follows alongside a creek through several couloirs to the summit of Mount Arrowsmith. This includes technical climbs and is a popular route for ice climbing.
- **Un-Judge's Route:** The Un-Judge's route heads up a ridge to the right of the Judge's Route. The ridge is bluffy and exposed with technical climbing. The route ascends at the south summit of Mount Arrowsmith and follows the ridge to the Mount Arrowsmith peak.
- **Lost Gully Route:** This route leads up an open slope and two steep gullies to the South summit of Mount Arrowsmith, then requires a traverse over to the Mount Arrowsmith main summit.
- **Rosseau Trail:** This route includes a moderate trail leading up Mount Cokely and is often used to form a loop with the Saddle Route.
- **Original Cokely Trail:** This trail begins at the ACRD Mount Arrowsmith Regional Park parking lot and ascends Mount Cokely via a well-graded route through former ski hill terrain.
- **Old Arrowsmith Trail/CPR Trail/Lookout Trail:** The Old Arrowsmith Trail originates at the east end of Cameron Lake off Highway 4. The trail gently switchbacks up Mount Cokely to the ACRD Mount Arrowsmith Regional Park, dividing about a third of the way up into the CPR Trail (right fork) and the Lookout Trail (left fork) before rejoining at the ACRD Mount Arrowsmith Regional Park parking lot. The RIDN has secured non-exclusive licences for public use of portions of this trail that traverse private property.
- **Rambler's Route:** The trail circles the south area of the park and connects to Hidden Lake and down to Fishtail Lake, via several climbs.
- **Judy's Meadows:** This route follows the southern ridgeline and connects with the Nordic Ski Routes and Ramblers Route.

Multiple websites and guidebooks provide detailed information about existing MANRP trail routes. Additional routes likely exist within the park, but are not as well-used or documented.



Hiking the Saddle Route (Photo: Hil Lavers).



Hiking the Judge's Route (Photo: H. Kneggeberg).



Figure 3.5. Popular Existing Trail Routes.

3.4 Education & Research Values

3.4.1 Education

The mountain is used as a training site for rock and ice climbing, guiding and alpine leadership uses, due to its ideal conditions and accessible location. While not accurately documented, park users indicate that clubs and organizations, such as school groups, scouts, hiking clubs and others use the mountain for recreational and educational programs.

Multiple opportunities exist to utilize Mount Arrowsmith Massif Regional Park as an educational venue. Park information and documents could help increase public knowledge about a range of topics, including alpine ecosystems and habitats, area forestry practices, first nations history and culture and more. See **Section 5.6: Education & Research** for potential educational opportunities.

3.4.2 Research

The unique environments and habitats within MAMRP have inspired many research activities, formal and informal, on the mountain. Key documented activities include:

- I. **GLORIA Project:** *"The purpose of GLORIA (Global Observation Research Initiative in Alpine Environments) is to establish and maintain a world-wide long-term observation network in alpine environments."* The data collected during observations will be used to assess and predict losses in biodiversity and other threats to alpine ecosystems due to climate change. Monitoring was established in 2006 on Mount Arrowsmith. The study suggests that resurveying should occur at five-year intervals.
- F. **Vancouver Island Marmot Recovery:** Mount Arrowsmith has habitat that is suitable to the Vancouver Island Marmot (*Marmota vancouverensis*), a marmot subspecies that exists only on Vancouver Island. Historical records indicate sightings of marmot colonies in the vicinity, although numbers dwindled to near extinction. Recent recolonization activities by the Vancouver Island Marmot Recovery Foundation have resulted in the relocation of several marmots to the



Installation of the weather station for GLORIA monitoring (Photo: KDN)

¹ GLORIA website: <http://gloria.org/>

² Seeley, S. G., James, D., Seal, and S. Turner. "Establishing GLORIA Long-term Alpine Monitoring in British Columbia, Canada." *Nature* 442 (1): 85-87, 2006. DOI: 10.1038/442085a

mountain in 2008/2009. Tracking indicates that some continue to reside on the mountain.

- F Mount Arrowsmith IBA:** The Mount Arrowsmith area includes alpine, sub-alpine and upper montane forest areas that support significant numbers of Vancouver Island White-tailed Ptarmigan (*Lagopus leucurus saxatilis*). As such, it has been identified as an important bird area (IBA) and is a popular location for bird research. The IBA program works to assess status and trends of bird populations, champion conservation efforts and help ensure the safeguarding of Canadian bird populations.

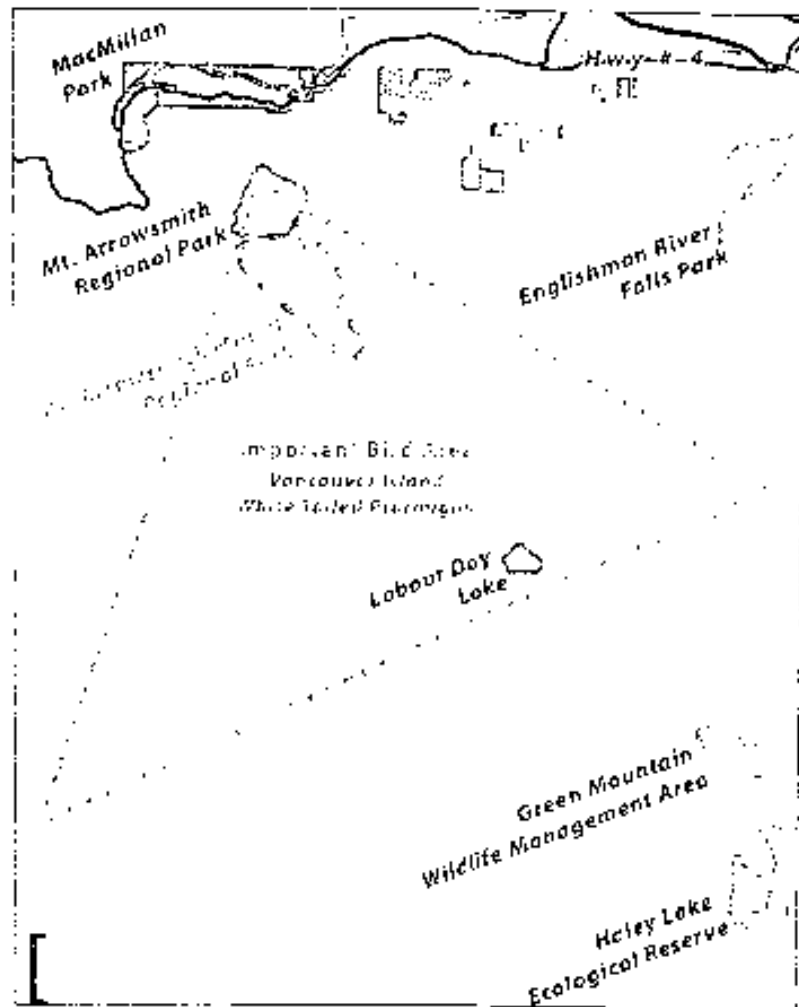


Figure 2.8 Extent of Vancouver Island White-tailed Ptarmigan IBA

¹PA Canada.com, 2009/09/09

²Ed Stuebs (Canada) and Sarah Curran (USA) Bird Conservation Unit Bird Areas of a Very Different Kind: British Columbia Bird Status Canada, 2009/08/10. Available at: <http://www.birdstatus.ca>

- F **Ongoing Volunteer Studies:** Mount Arrowsmith inspires much interest from local expert plant and wildlife researchers. Naturalist organizations, including the Arrowsmith Naturalists Club, and local experts have documented flora and fauna sightings and continue to develop records and species lists.

3.5 Historical and Cultural Values

The area that is now MAMRP has a long history. In addition to recorded cultural and historical references, MAMRP has spiritual, experiential and personal values to local residents.

3.5.1 Hupacasath First Nation

The native people from the Alberni area call the mountain “Kuth Kah-Chulth” which translates to “that which has sharp pointed faces”.

The Hupacasath First Nation has strong cultural connections with Mount Arrowsmith and Mount Cokely. The mountains sit within their traditional territory along the southeast boundary. The mountain range provides a visual border between traditional Hupacasath, Qualicum and Nanoose territories.

MAMRP is within the Hupacasath’s Cameron Use Area.¹ The Cameron Use Area is identified in the Hupacasath Territory Land Use Plan as a Resource Development Area in which, “*resource development, such as timber harvesting, mining, tourism and other development can take place while respecting Hupacasath rights and title, and being sensitive to fish, wildlife, culture and other environmental values.*”² As traditional territory, some activities including hunting, trapping and gathering may take place near the park. No concerns or conflicts were noted during the plan development process.

Mount Cokely and Mount Arrowsmith have a long history within Hupacasath stories. There are numerous oral legends about the mountain that continue to be passed down today. The Vancouver Island Marmots of Mount Arrowsmith are a particularly important part of Hupacasath history - the Marmots were an important food source for the Hupacasath and have a role in their stories and histories.

3.5.2 Recreational History

Mount Arrowsmith has been a recreation destination for mountain climbing and exploration for decades.

¹ CMA 2007, Territory Land Use Plan, Hupacasath First Nation

² CMA 2007, Territory Land Use Plan, Hupacasath First Nation, p. 26



CPR tourist chalet at Cameron Lake, c. 1920 (Photo: BC Archives).



Historical Melley Creek Bridge along Arrowsmith Trail (Photo: BC Archives).



Don Munday and Tom Ingram on the peak of Mount Arrowsmith (Photo: BC Archives).



Lodge on ridge of Mount Cokely (Photo: P. Rothstein).

Historical Highlights of Mount Arrowsmith²⁶:

Mid-1800s: The English name the mountain Mount Arrowsmith after cartographers, Aaron Arrowsmith and nephew John Arrowsmith.

1887: Written documentation of an ascent is recorded by John Macoun, Naturalist to Geological Survey, his son James Macoun, Quailman Tom and his son Jim.

1901: Dr. James Fletcher, Canada's first Dominion Entomologist and Botanist, J.R. Anderson, Deputy Minister of Agriculture, Reverend G.W. Taylor, John Clutesi and Rob McKinley record a four day journey up Mount Arrowsmith.

1910: CPR builds a tourist chalet at the eastern edge of Cameron Lake along the railline.

1912: A pack trail is established from the tourist chalet to an overnight hut at 2,280 m (4,200 feet) on Mount Cokely. The pack trail, named Old Arrowsmith Trail is still used today.

1925: Don & Phyllis Munday record the visual discovery of Mount Waddington (unexplored at that time), the highest mountain peak within BC, from the peak of Mount Arrowsmith.

1926/27: Mount Cokely is unofficially named after Leroy Sterling Cokely, a Dominion & BC land surveyor. (Name is officially adopted in 1973.)

1940s/50s: New cabins are built on the massif and the area becomes a winter and summer outdoor destination.

1960s: Logging roads push up the mountain, facilitating day access to the mountain and increasing the popularity of hiking trails.

1972: 607 ha on the north slope of Mount Cokely is sold to the Alberni-Clayoquot Regional District by private forestry company for operation as a regional park and a downhill ski operation is opened.

1999: After years of struggling with financial viability, the Mount Arrowsmith Ski Hill is closed after record snow fall proves too much cost for snow-clearing on the access road.

2001: The RDN and timber companies develop non-exclusive licence agreements for public use of Old Arrowsmith Trail from Cameron Lake to the ACRD Mount Arrowsmith Regional Park.

2005: The ski lift towers on Mount Cokely (in the ACRD Mount Arrowsmith Regional Park) are decommissioned.

2008: Block 1380 is declared a RDN Regional Park on November 25.

²⁶ Retrieved from http://www2.gov.bc.ca/gov/content/speical_areas/mount_arrowsmith.html

3.6 Community Identity & Sense of Place

The peaks of Mount Arrowsmith and Mount Cokely are prominent visual features on Central Vancouver Island. The snow-topped peaks of the mountains can be seen from several communities year-round and are a powerful visual representation of the notion of sea to sky.



Mount Arrowsmith from Leon Lake (Photo: P. Rothermel).

3.6.1 Mount Arrowsmith Biosphere Reserve (MABR)

"Biosphere Reserves are areas of terrestrial and coastal/marine ecosystems, or a combination thereof, which are internationally recognized..." There are 553 biosphere reserves in 107 countries throughout the world.¹ MABR is one of 15 reserves in the Canadian Biosphere Reserve Network.

The reserves are established *"to promote and demonstrate a balanced relationship between humans and the biosphere"* and must *"encompass a mosaic of ecological systems."* The Mount Arrowsmith Biosphere Reserve is *"envisioned as an area where biological diversity is sustained in functioning ecosystems and where healthy communities enjoy an ecologically sustainable economy."*

The Mount Arrowsmith Biosphere Reserve encompasses the entire watershed of Mount Arrowsmith and its borders are determined by the watershed boundaries. Virtually, all precipitation that falls on Mount Arrowsmith ends up in the Little Quachem or Englishman Rivers and the reach of these watersheds make up the boundaries of the Mount Arrowsmith Biosphere Reserve.²

The Mount Arrowsmith Biosphere Reserve Foundation (MABRF) is engaged in supporting the future ecological, social and cultural health of the MABR. The foundation advocates for "a balance of natural ecosystem health and sustainable human activity, with a view to preserving the biodiversity of the region."³

¹ Mount Arrowsmith Biosphere Reserve website: www.mabr.ca

² Mount Arrowsmith Biosphere Reserve website: www.mabr.ca

³ Mount Arrowsmith Biosphere Reserve website: www.mabr.ca

⁴ The Federal Park Reserves Commemorative Act Sept. 2007

⁵ Canada, Scientist. *Introducing the 15th Biosphere Mount Arrowsmith Biosphere Reserve 2010*

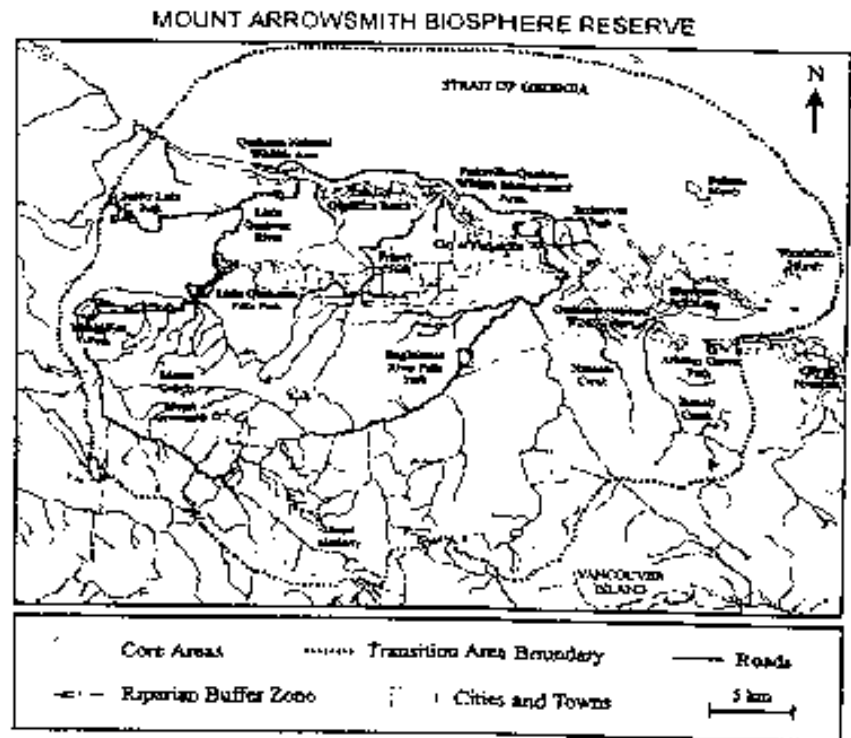


Figure 1-9 Mount Arrowsmith Biosphere Reserve. From the MABR website www.mabr.ca

The hope of the MABRE is to locate funding and attract researchers to do future work in the area. Currently, the MABRE supports the GLORIA project, and provides indirect support for activities on Mount Arrowsmith, including ptarmigan research, tree ring research, repeat photography and geography, alpine restoration, weather monitoring, snow surveys and marionist recovery.



Opening ceremonies in MABRE. Photo: BDN

the day after they left back.



Photo P. Rotterred



VISION, GOALS & PRINCIPLES

4.1 Vision Statement

A vision statement sets the tone for the long-term management of MAMRP and defines the context within which short term management actions are made.

Public and stakeholder input identified several key themes that are integrated into a vision for MAMRP:

Mount Arrowsmith Massif Regional Park is a significant landmark in Central Vancouver Island. Its familiar peaks continue to be accessible for low-impact wilderness recreation in sub-alpine and alpine environments. Recreational and ecological values are balanced through stewardship so that important ecosystems and habitats are protected. First Nations stories and other historical accounts of the mountain are recorded and celebrated and research activities are supported and encouraged.

Mount Arrowsmith Massif remains an important ecological, recreational, spiritual and visual resource for its neighbours, friends and visitors.

4.2 Management Goals

Management goals set the framework for policies and actions for Mount Arrowsmith Massif Regional Park. The goals are developed from stakeholder and public input.

Goal 1: Ecosystem Conservation

Manage the park to maintain its unique natural habitats. Monitor existing ecosystems to minimize impacts as recreational use of the mountain increases and undertake appropriate restoration activities. Encourage the study of the sub-alpine and alpine environments to increase knowledge of the area's unique flora and fauna.

Goal 2: Wilderness Recreation

Continue low-impact recreation use in the park, with the goal of balancing our recreational footprint with the sensitive ecology of the mountain. Encourage recognition and respect of the mountain's wilderness conditions by park users, stewards and maintenance providers.

Goal 3: Partners in Stewardship

Work with the Mount Arrowsmith community – including Hupacasath First Nation, the Federation of Mountain Clubs of BC, the Alpine Club of Canada, the Alberni Clayoquot Regional District, Island Timberlands, local user groups and volunteers – to steward and maintain the park.

Goal 4: Access

In cooperation with neighbouring landowners, ensure that Mount Arrowsmith Massif remains accessible for public use and enjoyment for generations to come.

Goal 5: Education

Support and encourage a wide range of research and education activities within the park. Collaborate with partners and neighbours to develop and share educational information. Permit alpine training activities that fit with the area's wilderness context.

Goal 6: Celebration of Heritage

Work with First Nations, historians and volunteers to learn more about the unique history and culture of the mountain and share information with the public so the significance of the area can be appreciated.

4.3 Management Principles

The following principles represent the basic 'rules' that must be observed by the policies and actions in the Management Plan.

Province of BC Licence of Occupation

MAMRP has been acquired by the RDN through a Nominal Rent Tenure agreement with the Province of BC that grants Licence of Occupation of Block 1380 to the RDN for a 30-year period. The agreement requires the RDN to complete proof of insurance and management planning for the park in collaboration with Hupacasath First Nation, the Federation of Mountain Clubs of BC and the Alpine Club of Canada.

Hupacasath – Regional District of Nanaimo Memorandum of Understanding for Mount Arrowsmith Massif

The RDN and Hupacasath First Nation established the MoU in 2008 to establish a co-operative relationship in managing Mount Arrowsmith Massif Regional Park. The agreement creates a working relationship between the parties to ensure that the park is planned and managed to the satisfaction and benefit of both parties. See **Addendum A:**

Hupacasath-Regional District of Nanaimo Memorandum of Understanding for Mount Arrowsmith Massif for a copy.

RDN Regional Parks & Trails Plan 2005-2015

The RDN's *Regional Parks and Trails Plan 2005-2015* sets out direction, policies, priorities and actions for RDN regional parks and trails. The vision outlined in this plan is for a system that *protects and stewards natural values while providing rewarding recreational opportunities; fostering education and appreciation of the natural environment; and enhancing the livability of the Region.*¹⁷ Management Decisions for MAMRP are made within the context of this larger vision.

RDN Park Use Regulations Bylaw

The RDN's *Park Use Regulations Bylaw No. 1395 (2004)* regulates park use in RDN community and regional parks. Mount Arrowsmith Massif will be considered a Level 4 Park – "Undeveloped Park, Trail and Other Open Space" and will be governed by the bylaw policies for this level.

Hupacasath First Nation Territory Land Use Plan (2003) & Hupacasath Land Use Plan Phase 2 (2004)

The Land Use Plans are strategic plans that define the Hupacasath First Nation's land and forest values and management objectives at the territorial level. The plans describe cultural and resource values with standards that define how objectives can be met. Management of MAMRP will aim to follow the objectives outlined in these plans.

Cercomm Electronics Ltd. & Timberlands GP Ltd. Licences

Cercomm Electronics and Timberlands GP have existing licences for communication towers at the summits of Mount Cokely and Mount Arrowsmith that were in place with the Province prior to the declaration of Regional Park. Management activities in the park are required to respect the prior rights of the licence holders.

Trail Licences. Old Arrowsmith Trail/CPR Trail

The RDN currently maintains trail licences with Island Timberlands Ltd and TimberWest for use and management of the Old Arrowsmith Trail/CPR Trail routes that connect Cameron Lake and the ACRD Mount Arrowsmith Regional Park.

¹⁷RDN, *Regional Parks and Trails Plan 2005-2015*, 2005.

Park Access

Several of the hiking trails on Mount Arrowsmith are accessible only through the use of private forestry roads held by Island Timberlands Ltd. Cooperation between the RDN and these neighbours will be essential to providing long-term access to the Park.

Neighbouring Properties

MAMRP is bordered by other land uses, including private forestry property owned by Island Timberlands Ltd, and a Regional Park owned by the ACRD. The RDN will endeavour to promote respect for neighbouring property activities and property rights.

Park Access

Continued collaboration between the RDN and neighbouring landowners will be essential to maintaining long-term access to Mount Arrowsmith Massif Regional Park.



View to Mount Arrowsmith from Mount Colahy (Photo: H. Brueggelsg)

5. POLICIES & ACTIONS

Through input from staff working group and committee members, stakeholders and the public, a list of key issues and concerns were generated for MAMRP.

Key Issues List:

- 1. Balanced Management
- 2. ACRD Mount Arrowsmith Regional Park
- 3. Park Access
- 4. Recreational Use
- 5. Habitat & Environmental Protection
- 6. Education & Research
- 7. Interpretation & Tourism
- 8. Safety & Emergency Planning
- 9. Park Expansion

The policies and action of this plan endeavour to address these fundamental issues. The management policies and actions are organized around the key issue topics. Each topic area provides:

- 1. A brief summary of the issue;
- 2. Management policies that provide direction on how the issue will be addressed; and
- 3. Detailed actions to be completed.

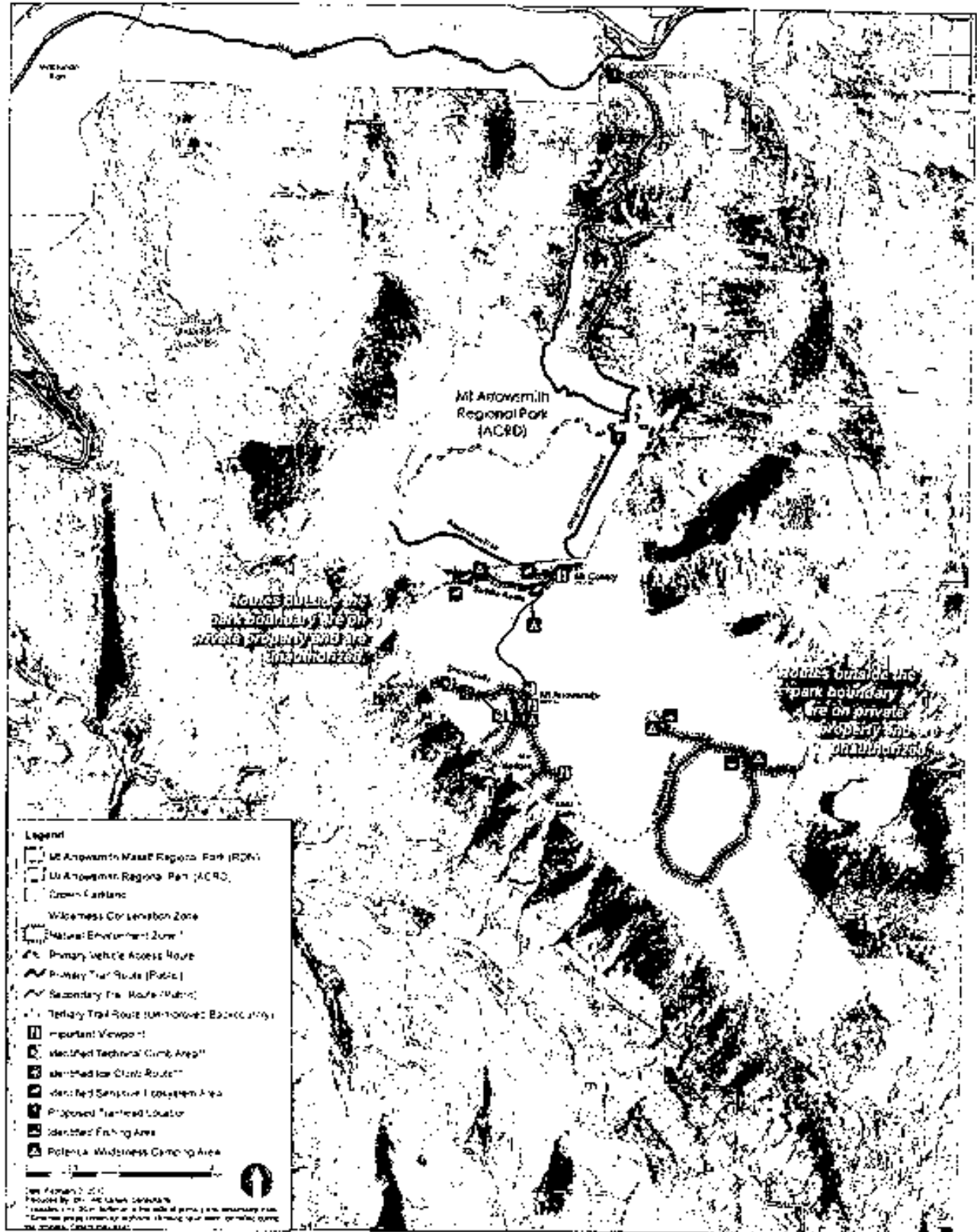
Section 6: Implementation Summary provides timelines, estimates and potential partner information for the actions.

Figure 5.1: Proposed Park Plan Map provides a graphic plan of the park management plan policies and actions.

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Figure 4-1 Proposed Park Plan Map

Mount Arrowsmith Massif Regional Park Management Plan



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Hiking, a major recreational use in Mount Arrowsmith, must respect the wilderness aspect of the park. (Photo: RDN)

BC Parks has developed a series of park zones to reflect different balances of recreation and conservation within the parks. These zones typically act as a consultant for Mount Arrowsmith Massif Regional Park.

5.1 Balanced Management

Within Mount Arrowsmith Massif Regional Park, two main park functions must be balanced: natural ecosystem protection and wilderness-based recreation. While compatible, it is important to use a balanced approach to managing the park so both functions can flourish. Park zoning is a common method for managing park use and maintenance. The zones are used to divide the park into typical park areas that will have the general management objectives. Because Mount Arrowsmith Massif is a wilderness park with limited recreation, the recommended zones protect the wilderness values of the area. This plan recommends two park zones:

- 1. **Wilderness Conservation Zone:** The purpose of the zone is, “to protect a remote, undisturbed natural landscape to provide unassisted backcountry recreation opportunities dependent on a pristine environment where no motorized activities will be allowed.” The conservation of natural assets is the top priority in these zones. Typically there are no human-based facilities or improvements in these areas and it is expected that recreation uses in these areas are very low impact. In MAMRP, about 95% of the park area falls within the Wilderness Conservation Zone.
- 2. **Natural Environment Zone:** This zone is designated to, “protect scenic values and to provide for backcountry recreation opportunities in a largely undisturbed natural environment.” Typically these areas are low use, but can include key nodes of activity and access. In MAMRP, the high-use areas including hiking trails, trailheads, viewpoints, camping areas, climbing areas and trail buffers are included in this zone, totalling about 5% of the MAMRP area.

Policy:

Utilize park use zones to manage Mount Arrowsmith Massif Regional Park for both conservation and recreation.

Actions:

- 1. Manage park areas in accordance with the following park use zones.
 - a. **Wilderness Conservation Zone:** Maintenance and improvements in these areas are limited to habitat protection or enhancement. New trail development, aside from required trail re-routing, is not supported in this zone.

¹ BC Parks Strategy

² BC Parks Strategy

- **Natural Environment Zone:** Improvements in these areas are limited to trail maintenance, rerouting, improvements and signage. Trail improvements are limited to facilitate recreation uses supported in this plan. Improvements to facilitate motorized recreation, biking and horses are not supported.

5.2 ACRD Mount Arrowsmith Regional Park

Since 1972 the Alberni-Clayoquot Regional District (ACRD) has owned 607 ha of Regional Park on the north slope of Mount Cokely. The property was obtained through an agreement with private forestry owners and includes several conditions of use (see sidebar). While this park sits within the RDN, ownership and operation of the park is under the jurisdiction of the ACRD. For several years, the park was operated as a ski hill, complete with ski lifts and lodges; however, the operation of the facility proved to not be viable due in part to the long drive, unreliable snow conditions, poor winter road conditions and popularity of larger, more accessible ski hill facilities at Mount Washington, est. 1979.

After ski resort operations closed in the winter of 1998-99 during a period of record snowfall that hindered road clearing, the area continued to be used for backcountry skiing, hiking, cycling and motorized recreation. In 2005, the ACRD decommissioned all remaining infrastructure on the site, including the ski lifts, lift stations, lodges and storage tanks to alleviate vandalism and environmental contamination concerns. Today, the park continues to be used for a variety of recreation types. In comparison to the RDN MAMRP, the ACRD Mount Arrowsmith Regional Park has more open space and more gradual slopes, which makes it a preferred destination for motorized recreation enthusiasts.

The two parks share common access routes, trails and ecosystem values that warrant consideration for cooperative management.

Policies:

Work cooperatively with the ACRD to manage mutual resources/responsibilities related to the adjacent parks and support and encourage ACRD initiatives for the adjacent park.

Encourage communication to ensure that improvements or changes in both parks are completed in consultation with the neighbouring regional district.

A key condition of use with the ACRD Mount Arrowsmith Regional Park, agreement with Maclean's Woodlot Inc. and Timberlands, indicates that the area must be operated as a Regional Park. If the Regional Park function of the ACRD Regional Park were to cease the land could revert to private forestry ownership.



Record snowfall in the 1998-99 season contributed to the closure of the Mount Arrowsmith Ski Hill (Photo: P. Rothermel)



Today, the parking lot at the ACRD park is a convergence point for many key trails (Photo: J.B. Jones)

Actions:

- Establish regular lines of communication between the ACRD and RDN by identifying key staff members and developing a cooperative, ongoing communication plan.
- Establish a regular meeting schedule (e.g. once/year) to facilitate discussions on cooperative management and planning for both parks. Key topics for discussion could include:
 - The continuation and management of recreation activities.
 - The future of continued vehicle access via logging roads (see Section 5.3.2: Vehicle Access).
 - Stewardship activities (see Section 5.4.5: Volunteer Stewardship).
 - Information and communication initiatives (see Section 5.4.6: Signage & Information).
 - Cooperative ecosystem management planning and documentation (see Section 5.5: Habitat & Environmental Protection).

5.3 Park Access

MAMRP is surrounded by privately-owned forestry property to the east, south and west. It abuts the ACRD Mount Arrowsmith Regional Park to the north. Currently, the only authorized public access route to the park is the Old Arrowsmith Trail/CPR Trail route from Cameron Lake. This is a trail route only and does not support vehicle access. See Section 3.1.4: Park Access for a detailed description of the route.

5.3.1 Vehicle Access

At the time of this project, vehicle access to MAMRP is not authorized through neighbouring Island Timberlands properties due to the health, safety and environmental implications of public use of private roads.

While vehicle routes are unauthorized, public input suggested that two unauthorized routes have historically been used to access the park. For more information see Section 3.1.4: Park Access.

Through the consultation process, an additional potential access route was identified to the north that is worthy of feasibility study to determine its potential as a future vehicle access point. This northern access route was anticipated at the time of establishing the ACRD Mount Arrowsmith Regional Park.

Policy:

Endeavour to secure authorized public vehicle access to Mount Arrowsmith Massif Regional Park.

Island Timberlands owns neighbouring property adjacent to MAMRP, which abuts Mount Arrowsmith Regional Park property and road routes through the interior of Mount Arrowsmith Massif.

Actions:

- E** Work cooperatively with Island Timberlands and other adjacent landowners to develop a long term solution to public vehicle access to MAMRP.
- E** Complete a feasibility study of the north access route for vehicle conveyance, that includes:
 - a.** Consultation with all landowners, the ACRD and BC Parks;
 - b.** Consultation with the Ministry of Transportation and Infrastructure to identify transportation and highway concerns; andA preliminary road engineering reconnaissance during non-snow conditions to determine physical constraints and prepare proposed road and bridge standards and order of magnitude cost estimating.
- E** If the feasibility study determines that the northern route is a reasonable alternative vehicle route, secure funding and necessary agreements to develop a vehicle access route to MAMRP. Ensure route planning includes considerations for future road maintenance.
- E** Where road agreements or licences are secured, maintain for long term public road access.

5.3.2 Trail Access

In many cases, trail routes cross over private property. The Arrowsmith Trail/CPR route has public access secured through non-exclusive licence agreements with private landowners. Other routes on private property are unauthorized at the time of this plan. Ensuring that people continue to have access to the park was identified as a priority by survey respondents and public session participants.

Policy:

Work cooperatively with neighbouring landowners to provide authorized key trail routes for public access.

Actions:

- E** Continue to renew the existing non-exclusive licence with Island Timberlands Ltd. for the Old Arrowsmith/CPR Trail routes (next renewal March 2015).
- E** Continue to renew the existing licence with Timberwest for the Old Arrowsmith/CPR Trail routes (next renewal Dec. 2011).
- E** Coordinate Island Timberlands and Timberwest trail licence timeliness to streamline future licence renewals.



Typically, trails in MAMRP originate outside the park boundaries (Photo: ADN)

- F. Work with the ACRD to develop use/access agreements for trails and facilities (e.g. parking and roads) that originate within the ACRD Park and facilitate ongoing access to MAMRP.
- E. Work cooperatively with Island Timberlands to negotiate future trail access agreements for authorized public use of routes on Island Timberlands private property adjacent to MAMRP.
- I. If successfully obtained, maintain agreements for trail routes that originate on neighbouring private property.

5.3.3 Winter Access

While the ski resort is no longer there, people continue to participate in winter activities in the Mount Arrowsmith/Mount Cokely area. Skiing, snowshoeing, winter hiking and ice climbing are popular winter activities. Snowmobiling occurs within the ACRD park.

Policy:

Recognizing the limitations associated with snow removal, develop information strategies to increase safety and minimize rescue efforts associated with winter road conditions.

Actions:

- F. Post general winter hazard information on the RDN website to advise people of the conditions to expect when accessing MAMRP during winter months.

5.3.4 Parking

Currently, parking at MAMRP is typically informal. Consultations with stakeholders and the public indicate that parking has not been identified as a conflict to date. However, if park use continues to increase, parking may become a future concern.

Public parking is available in the ACRD Mount Arrowsmith Regional Park. Generally this lot is used by people using the Original Cokely Trail or participating in other activities within the ACRD park.

Public parking is also available at Cameron Lake for the Old Arrowsmith Trail/CPR Trail routes. Challenges in this area include the barrier presented by Highway 4 between the parking area and trailhead and potential crowding of the Cameron Lake lot. In many cases, people using the Old Arrowsmith Trail park informally along the highway or at the beginning of the trail.

Parking on Island Timberlands property is currently unauthorized.



Winter recreation currently occurs in MAMRP (Photo J. Jankowski).

Policy:

Ensure that appropriate parking for MAMRP is available to meet user volume, demand and safety.

Actions:

- Include parking information in park documents.
- In the long-term, develop a parking strategy for the park to address all authorized public access points, and complete improvements to provide safe public parking for MAMRP.

5.4 Recreational Use

5.4.1 Barrier-Free Access

MAMRP is the RDN's most remote regional park. Currently, the peaks of Mount Arrowsmith and Mount Cokely are accessible only by foot due to steep terrain. The trail routes within the park are very steep and rugged, limiting use by physically challenged, elderly, very young or those otherwise unable to climb. While certain routes are less difficult, no routes could be considered barrier free at this time. Generally, public feedback acknowledged that MAMRP is rugged wilderness and responses showed limited interest in substantially increasing accessibility at this time.

Public feedback indicated that MAMRP trails are typically too steep for the use of mountain bikes, horses or motorized vehicles. Motorized vehicle users are present only in the adjacent ACRD Mount Arrowsmith Regional Park where topography is gentler.

At no point in area's history has an accessible route to the summit of Mount Arrowsmith or Mount Cokely been available.

Policies:

Maintain current levels of accessibility on park trail routes.

Increase public information about the range of difficulty levels of park routes.

Do not permit motorized vehicle use within Mount Arrowsmith Massif Regional Park, as per *RDN Park Use Regulation Bylaw 1399*.

Actions:

- Identify through park information materials the varying levels of route difficulty and provide descriptions of the level of fitness needed for particular trail routes. Ensure descriptions are accurate and easy to understand.



The challenging terrain in MAMRP is a limitation for accessibility (Photo: RDN)

A potential issue associated with climbing within the park is general public use of trails that lead to climbing sites. Some rock climbs are where inexperienced climbers become stranded in routes that lack any of their abilities.



*Rappelling the cliff in MAMRP
(Photo: P. Rothermel)*



Ice climbing in MAMRP (Photo: P. Rothermel)

5.4.2 Climbing

Rock and ice climbing are current activities within MAMRP. There are multiple rock faces and ice walls within the park that are popular destinations for the climbing community. Climbing is a relatively common activity in public parks throughout BC. This plan acknowledges the dedicated interests in these activities and it is expected that this recreational use will continue within MAMRP. Safety and environmental impacts are two key considerations for climbing in MAMRP:

- **Safety:** It is the responsibility of climbers to rely on themselves and other climbers for safety. It is expected that safety will continue to be the responsibility of climbers.
- **Environmental Impacts:** If the popularity of this activity significantly increases over time, there could be impacts on sensitive ecosystems that are found on rocky bluffs.

Policy:

Continue climbing as a permitted park use within MAMRP, while working with local climbing associations to encourage safe and environmentally sensitive use of the mountain.

Actions:

- Identify and connect with local climbing groups and associations using Mount Arrowsmith Massif Regional Park.
- Work with local climbing groups and seek legal advice as needed to ensure the RDN does not incur liability related to climbing use.
- Work with local climbing groups such as the Climbers Access Society of BC²⁷ to document popular climbing locations within MAMRP and where permanent climbing protection (e.g. bolts) has been installed.
- Work with local climbing groups to monitor climbing locations for safety and to monitor environmental impacts related to increasing use of the mountain. Where concerns are noted, take management actions to mitigate, through improvements, removals or, if required, closures.
- General public use of trail routes that include 'climbs' should either be passively discouraged by not providing public information about these routes, or where 'climbs' exist along previously identified public routes, care should be taken to inform people of the technical

²⁷ The Access Society represents a group who supports public access to the alpine and mountain areas of BC and other jurisdictions. The group website is www.accessociety.ca/

nature of the route and discourage use of the area by inexperienced hikers.

5.4.3 Wilderness Camping

While limited, wilderness camping is a recognized use in MAMRP. Currently, the RDN *Regional Park Bylaw No. 1399* does not permit camping within regional parks, except in designated camping areas. There are currently no designated wilderness camping areas in the RDN. The primary reason for this bylaw is that wilderness camping can overwhelm the capacity of the backcountry to absorb camping impacts, destroying habitat and undermining wilderness experiences. In addition, campfires can be a wildfire hazard.

Wilderness camping is effectively monitored in other BC parks through the use of Wilderness Camping Permits and/or Registration which are used to track the number of visitors to different areas of the park to limit overcrowding, overuse and damage. Registration can also aid in locating overdue or lost parties.

Policies:

Recognizing that wilderness camping is a desirable activity within MAMRP, the RDN will consider wilderness camping a viable recreation use, as long as it is conducted sensitively and safely.

Campfires associated with wilderness camping will not be permitted in MAMRP.

Actions:

- Amend RDN *Regional Park Bylaw No. 1399* to allow wilderness camping in MAMRP.
- Identify appropriate locations for wilderness camping and direct campers to these locations to afford greater protection of park ecosystems and, in case of emergency, facilitate rescue operations.
- Develop a process for Wilderness Camping Registration in MAMRP. Registration should be simple and straightforward, possibly through on-line or in-park registration.
- Monitor environmental impacts of camping at designated sites. If extensive damage is observed, consider setting daily maximum numbers for wilderness camping registration.
- Provide appropriate information with wilderness camping registration, including locations of camping areas, code-of-conduct information, restrictions (e.g. no fires) and emergency contact information.



*Camping near the Saddle (Photo
N. Steiner)*



*Erosion on the Judge's Route
(Photo: H. Jaegerberg)*

5.4.4 Trail Maintenance

The trails within MAMRP are typically steep, rocky and difficult. Generally, public response indicated:

- a. 63% of respondents were satisfied or very satisfied with the trail conditions and maintenance;
- b. 60% were satisfied or very satisfied with the trail safety;
- c. 54% were satisfied or very satisfied with the ease of navigation; and
- d. 48% were satisfied or very satisfied with the technical climbing areas.

This feedback indicates that most people using the trail routes in the park understand and respect that they are participating in a wilderness recreation experience.

Two key maintenance concerns were identified in the public responses:

- a. Erosion and environmental damage on popular trail routes
- b. Loss of route identification markers.

Maintenance has an important role in defining trail route locations and encouraging people to stay on trails. If a route is well-defined, people generally will follow trails, helping to reduce environmental impacts.

Policy:

Trail maintenance activities and park improvements will continue to respect the wilderness nature of the park.

Actions:

- 1. Develop and maintain a project list of potential trail improvements within MAMRP. Prioritize and complete potential projects based on:
 - a. **Priority One:** Trail improvements where significant safety concerns have been identified.
 - b. **Priority Two:** Trail improvements to keep main trail routes operational.
 - c. **Priority Three:** Projects to improve conditions where environmental impacts are problematic. This process identified trail encroachment on sensitive ecosystems and erosion issues as significant concerns.
 - d. **Priority Four:** Other projects identified by users or staff that would improve the experience of the trail routes.
- 2. Identify and map locations of human installed aids (e.g. ropes) on trail routes. Prepare a plan to regularly monitor, and where needed, remove or replace these aids.
- 3. Create a user input system that encourages park users to identify trail maintenance issues and recommend potential improvement projects.
- 4. Coordinate with the ACC to obtain annual registry numbers of people accessing the summit Mount Arrowsmith. Track incremental

increases. Consider placing a register at the summit of Mount Cokely or at key trailheads to help monitor ascents.

5.4.5 Volunteer Stewardship

The years of effort by stakeholders and the public to protect Mount Arrowsmith as a park attests to the level of commitment park users have to the area. Due to the size and remote nature of MAMRP, the RDN will need to seek feedback and assistance from local user groups to maintain and steward the mountain.

Currently, the majority of maintenance on existing trails is completed on a volunteer basis by the FMCBC, ACC and other trail users. Groups and individuals undertake minor maintenance activities such as:

- **Trail debris removal** where fallen trees or other debris are significant barriers on routes;
- **Trail reinforcement and cribbing** where erosion or safety concerns are identified;
- **Trail relocation** where trail braiding has occurred or existing trails are disrupting important ecosystems, species or habitats; and
- **Trail marking** where routes are identified by tree markers by trail users (see Section 5.4.6, Signage & Information)

The majority of these tasks are completed ad hoc and on a volunteer basis, typically using on-site materials and resources. Any improvements to trail routes must be accomplished without the need for vehicle or machine support.

While trail maintenance will form the largest portion of park maintenance, other stewardship activities, such as sign posting, flagging, litter removal and park observation may also be required.

Policy:

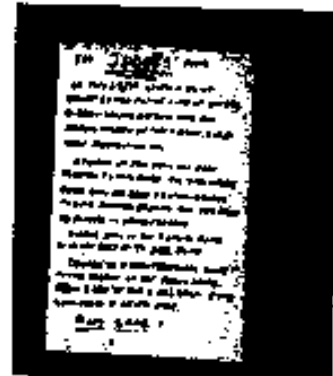
Seek to continue trail maintenance activities on a volunteer basis, by coordinating with partners, existing user groups, organizations and individuals that can provide volunteer support for trail improvements and general park stewardship.

Actions:

- Carry on with the establishment and training of volunteer park wardens for MAMRP through the Park Warden Program.



Volunteer maintenance crews at work (Photo: F. Rothemel).



Temporary signage regarding maintenance activities (Photo: RDN).



Protein control measures (Photo: P. Nathaniel).

- Develop a general standards document for trails maintenance that can be shared with all groups completing maintenance activities in the park.¹⁷
- Coordinate with Hupacasath First Nation, and members of the FMCBC, ACC and other organizations to undertake potential maintenance projects within MAMRP.
- Work with Hupacasath First Nation to monitor, identify and secure grants and funding to facilitate cooperative maintenance and stewardship work in MAMRP.
- Consider the implementation of a Park Watchman Program, potentially in partnership with the Hupacasath, to undertake regular monitoring of trailheads and park facilities during high-use months.
- Maintain a record of trail improvements and dates work is completed.

5.4.6 Signage & Information

Currently, signage in MAMRP is very limited and without local experience and knowledge, some trail routes can be difficult to identify. Typically, signage within the park is limited to trail flagging. When asked what limits their use of Mount Arrowsmith Regional Park, 20% of respondents said there was not enough information available about the park. Several types of information warrant consideration for the park:



Flags marking a trail (Photo: Bill Laney).

Because Mount Arrowsmith Massif has been a popular hiking area for years, a wealth of information is currently available.

- **Trail Marking:** When asked what limits use of Mount Arrowsmith Massif Regional Park, 15% of respondents said that they do not know how to navigate within the park. In a remote, wilderness setting, getting lost is a possibility. Reports from Search-and-Rescue indicate that they are regularly called to search for people lost in the area. Generally, public survey responses indicated strong support (83%) for having more directional trail signage within the park.
- **Trailhead Signage:** All trailheads to MAMRP start outside the park boundary, a large portion originating on private forestry property. Currently, trailheads are not well marked, so users must rely mainly on local knowledge, maps and guidebooks for trailhead locations.
- **Park Regulatory and Use Information:** Consultations with stakeholders suggest that information about emergency contacts, appropriate park behaviour, restrictions, park hazards, private property information, wilderness park preparedness and other informative material would be valuable assets for the park. Public

¹⁷ <http://www.mamrp.ca/management/standards> Last accessed on 10/11/2011 by consultants for Mount Arrowsmith and Massif Regional Park, Inc. starting point is updated trailhead standards.

responses also recorded a public interest in more detailed information about the park and its recreational trails - e.g. trail distances, level of difficulty, travel time, etc. In addition to on site signage, information about parks can be obtained via websites, brochures, maps, guidebooks and more.

- F **Interpretive Information:** Interpretive information can heighten the experience of a site by providing information about its history, culture, environment, visual experience, neighbouring forestry practices, and more. Generally, public response supported interpretive information being available for the park (71% support for natural information; 69% for historical & cultural information). However, public input also indicated that new signage should not be overly extensive. Park interpretive information can be delivered successfully through brochures and website information which people can carry during park visits.

Consultations with neighbouring landowners determined that issues such as liability, land use conflicts and safety are of concern, notably when information about unauthorized trails on private lands is provided. It is important to recognize that licenced trails over private land must respect private property rights.

Policy:

Develop a strategic information strategy that combines signage within the park and information available remotely, including website, brochures and publications, to increase the accurate information readily available to park users.

The RDN Trails Canada Trail is cited as an example of a successful trail agreement on private property. Signage notifies people when they are on private forestry land and trail information recognizes that trails may be closed and/or relocated to respond to private land activities. The RDN has posted signage to indicate to users when activities are happening that may affect trail use of the trail.

Actions:

Best practices in trailhead signage include locating signs up the trail away from major road junctions to minimize car debris and designing signs to be durable and easy to read.



Trailhead signage at the start of the Old Arrowsmith Trail, outside MAMRP (Photo: P. Hoffmann).

In-Park Signage	Potential Partners			
	Island Timberlands	ACRD	Hupacasath	Volunteers
<p>☐ Consider posting signs on trails at private/public boundaries to indicate to park users when they are on private property.</p>	✓			
<p>☐ Post trailhead signage at public trail route starting points. See Figure 5.1: Proposed Park Plan Map for recommended trailhead locations.</p>	✓	✓		
<p>☐ Consult with Island Timberlands about posting/improving directional signage along private roads to help people access the park.</p>	✓	✓		
<p>☐ Consult with the ACRD to determine how a unified signage strategy could be developed.</p>		✓		
<p>☐ Consider using small markers to indicate appropriate trail routes in sensitive areas and discourage trail braiding and ecosystem damage.</p>				✓
<p>☐ Provide unobtrusive, durable trail markers along main mapped trail routes from start to finish for user safety. Develop trail marker standards and colours to aid in the identification of routes. Do not provide extensive marking on less well-used routes.</p>				✓
<p>☐ Develop a plan to routinely check all mapped trail routes to inspect signage and trail markers and add new markers as needed.</p>				✓

	Distri- bution		Potential Partners			
	Online	Hardcopy	Island Timberlands	ACRID	Hupacasath	Volunteers
Remote (On-line/Hardcopy) Information						
F Investigate utilizing a system of trail monuments that may be linked to GPS coordinates on main trail routes to record and map trail locations. These monuments could be simple numbered markers that people could use to report trail maintenance issues, record trail maintenance activities, report emergencies, etc.	✓					✓
F Consider using digital technologies (e.g. GPS mapping, digital applications, etc.) to share digital recreation information about the park. This could be considered part of a larger regional parks initiative.	✓					
F Develop website and brochure information that provides:						
i. A map of public trail routes	✓	✓		✓		
ii. Information, developed in consultation with private land owners, about trail route use on private lands.	✓	✓	✓			
iii. Information about park features, including viewpoints, geological formations, ecological and cultural features, etc.	✓	✓			✓	✓
iv. Route information to summarize level of difficulty, route distances, anticipated time allowances, etc.	✓	✓				✓
v. Safety and hazard information including wilderness hiking guidelines, fire prevention information, cell phone coverage limitations, emergency contact information, etc.	✓	✓				
vi. Code of conduct information and park regulations, including permitted uses, trail conduct, pet information, garbage disposal, etc.	✓	✓				
F Work with volunteers to develop interpretive materials about the park, including historical, cultural and ecological information.	✓	✓		✓	✓	✓
F Where appropriate, provide partners, stakeholders and neighbouring landowners opportunities to review draft information materials prior to public distribution.	✓	✓	✓	✓	✓	✓
F Produce and distribute hard copy materials about the park through the RDN offices, Hupacasath First Nation, RDN member municipalities, local tourism agencies, local clubs and organizations and other avenues identified		✓	✓	✓	✓	✓

5.4.7 Park Amenities

Generally, public response indicated a desire to retain a wilderness experience and there was little support for the introduction of benches, garbage receptacles, shelters or other man-made amenities into the wilderness setting. Some public input suggested that toilets may be a desirable amenity, but given the remoteness of the park, and the fact that trailheads are located on private property, these facilities are not feasible at this time.

Policy

Beyond limited signage, the RDN will not introduce additional user amenities to the park in the short-term.

5.4.8 Code of Conduct

Currently, user facilities within MAMRP are minimal and this plan does not recommend introducing extensive amenities (see Section 5.4.7, *Park Amenities*). In the absence of extensive park amenities, appropriate wilderness conduct is particularly important. Human tread in wilderness areas must be minimized to protect sensitive ecosystems and habitat.

Key topics related to park conduct include:

- **Garbage & Human Waste:** General observation and public feedback indicated that most park users practice responsible wilderness recreation techniques. Garbage receptacles and toilets are not available within the park. To ensure that people continue to use their park responsibly, park information should be provided through the park information strategy about proper waste management and "Leave no Trace" use of the park (see www.lnt.org for more information).
- **Vandalism:** Park users reported incidents of vehicle vandalism and theft while using trails in MAMRP. This particular issue is difficult to monitor in remote settings, but may need to be addressed if incidences increase.
- **Pets:** The public survey results show that about 30% of respondents visit MAMRP with their pet. Public comment showed a split opinion on whether pets should be permitted in the park. Potential conflicts of pets in the park include wildlife interaction, habitat damage and conflicts with other park users. The RDN *Park Use Bylaw 1396* requires pets in regional parks to be under control of their owner at all times, either being on-leash or responding to owner commands. In a wilderness setting, control is essential, and pets who would not respond immediately to commands must either be leashed or not taken into the park. Pet waste removal must also be completed by owners.



broken glass at a popular parking area (Photo: GB Laman)

Policy:

The RDN will provide information to support and promote respectful use of the park.

Actions:

- Ensure that park information includes details about appropriate garbage and waste management techniques.
- Encourage park users to report incidences of vandalism and theft, including information on where and how to make reports. If vandalism and theft continues to increase, consider park monitoring through volunteer programs.
- Provide within park information, details about personal property protection, including removing valuables from vehicles.
- Provide code-of-conduct information about pets in the park. Ensure people understand the sensitivity of the park and require owners to maintain control within the park and remove pet waste.

One of the top reasons for establishing a Regional Park on this site was to ensure that the area's ecology would remain protected.

5.5 Habitat & Environment Protection

5.5.1 Ecosystem Monitoring & Protection

MAMRP is well-recognized for its unique flora and fauna (see Section 3.2: *Natural Values for a summary*). As park use increases, it will be important to maintain a balance of conservation and recreation, ensuring increases in recreation use do not result in irreparable damage to natural ecosystems. The more that is known about ecological features, conditions and processes, the more effective park management can be in protecting them.

Policies:

Work with partners and volunteers to continue to increase the volume and detail of natural ecosystem information about the park.

Plan and manage the park to minimize negative impacts on identified ecological resources.

Actions:

- Consider additional inventory efforts within MAMRP to determine if the Red-tailed bird species Queen Charlotte Goshawk and Marbled Murrelet occur in the park. Goshawks respond to call-playbacks, while Marbled Murrelets require dawn surveys.
- Prior to completing trail improvements within MAMRP, attempt to verify that rare/unusual plants and plant communities will not be



Alpine meadows (Photo: P. Rothwell).



Saxifraga pygmaea growing on a trail (Photo: K. G. L. Asst.)

affected. UTM coordinates already exist for Red and Blue listed plants in CDC Database, but detailed locations for disjunct species and uncommon lichen communities are needed as well.

- F Where recreation uses are identified as substantially conflicting with sensitive ecosystems, consider re-routing or closing areas to recreational use. Where such action is necessary, erect signage explaining the need to help promote compliance.
- F Where recreation and ecology can safely overlap, encourage public education and interests in ecological resources (e.g. providing information about the Mount Arrowsmith Marmots to promote education about the species).
- C Work with the research community to undertake vegetation mapping within MAMRP for use in long-term planning. Initial focus should be on delineating and classifying communities containing elements of potential Red- or Blue- listed communities (i.e. *Lewisia Columbiana*, *Allium crenulatum*, *Phlox diffusa*, *Scluginella wallacei*, *Carex scirpoides* and *Carex sitchensis*). Map remaining areas when Alpine ecosystem classification guidelines become available.
- I Recognize MAMRP as an Important Bird Area and support the IBA Program in monitoring and research of bird activities in the park.
- E Maintain GIS mapping of rare/unusual flora and fauna occurrences within MAMRP. Continue to update the data when new information becomes available. Consult with local naturalist organizations and individuals to seek assistance in gathering data and input for the mapping. Do not publicly advertise locations of rare/unusual flora and fauna that would be negatively affected by increased traffic.
- I Include environmental monitoring as a component of park maintenance and stewardship programs (see Section 5.4.5: *Maintenance & Stewardship*). Work with local ecologists to determine monitoring procedures and indicators within MAMRP.
- E Maintain a record of research and studies completed within MAMRP (see Section 5.6: *Education & Research*).

5.5.2 Vancouver Island Marmot

MAMRP is important habitat for the Vancouver Island Marmot. These animals are a red-listed species and are celebrated in Hupacasath stories and Vancouver Island's natural history.

Discussions with stakeholders indicate that human presence in marmot colony areas is not expected to be detrimental to the species and could, in

some cases, provide the positive effect of reducing the presence of natural predators in their habitats. It is not anticipated that recreational trail use will negatively impact marmot recolonization efforts on Mount Arrowsmith.

Policy:

Support the habitat needs of the Vancouver Island Marmot and recolonization efforts of this species to Mount Arrowsmith.

Actions:

- ☐ Request that the Vancouver Island Marmot Recovery Project communicate with the RDN on marmot colonization activities planned for MAMRP.
- ☐ If the RDN plans to undertake any major projects that could impact the V.I. Marmot, notably in the Saddle Route area, consultation should be undertaken with the Vancouver Island Marmot Recovery Project to ensure animals and habitat will not be jeopardized.
- ☐ Provide public information about the species and provide a link to the Vancouver Island Marmot Recovery Project webpage from the RDN website and in other publications where appropriate.

Consultation with the Vancouver Island Marmot Recovery Project has indicated that two transplants of captive marmots to Mount Arrowsmith in 2009 have shown signs of success, with at least five of six marmots remaining on site through the winter.



Vancouver Island Marmot (Photo Unknown)

5.6 Education & Research

Past research activities within MAMRP and surrounding area have provided a wealth of information about the areas habitats and ecosystems. Multiple opportunities exist to expand community knowledge about the Mount Arrowsmith area, including its ecosystems, history, neighbouring forestry practises, and more.

Policy:

Support and encourage the continued use of MAMRP as a site for environmental research.

Work cooperatively with neighbouring landowners and partners to increase access to public education information about the area.

Actions

- ☐ Support efforts for ongoing GLORIA research conducted on the mountain. Support the completion of the 2011 monitoring for the project.
- ☐ Work cooperatively with Island Timberlands to share educational information about forestry activities and practices on lands neighbouring Mount Arrowsmith Massif Regional Park. Recognize

- the significant role MAMRP's vistas play in effectively communicating forestry roles and practices.
- E. Coordinate with the Mount Arrowsmith Biosphere Reserve Foundation to support their continuing efforts to increase research on Mount Arrowsmith.
 - F. Coordinate with the IBA Program to determine opportunities to develop educational and/or interpretive opportunities for the Mount Arrowsmith IBA.
 - G. Encourage Hupacasath educational programs to continue to utilize MAMRP.
 - H. Encourage local educational institutions, including VUW, UVic and others to utilize MAMRP for educational and research programs (inventory, mapping, monitoring, restoration, etc)
 - I. Maintain a record of research and studies completed on the mountain. Request people conducting research in the area to share with the RDN with information documented.
 - J. Ensure that research parties complete the appropriate park permit process, as laid out in the *Park Use Regulation Bylaw 1399*.

5.7 Interpretation & Tourism

5.7.1 First Nations History & Culture

Hupacasath First Nation has very strong historical and cultural ties to Mount Arrowsmith and Mount Cokely. As part of Hupacasath traditional territory, MAMRP will continue to play an important role in the future. See *Addendum A: Hupacasath-Regional District of Nanaimo Memorandum of Understanding for Mount Arrowsmith Massif*.

Policies:

Help residents and visitors learn more about the unique First Nations' history and culture of the area.

Ensure identified cultural and historical resources, artefacts and areas within MAMRP are protected.

Actions:

- I. Continue to work with the Hupacasath First Nation to ensure that any identified culturally significant sites are not impacted by activities within the park.

- Ensure policies of the existing MoU are reviewed and addressed when initiating park projects.
- Together with Hupacasath First Nation, consider developing interpretive materials that share stories and facts about the mountain's history.
- Work with Hupacasath First Nation to identify how Mount Arrowsmith Massif Regional Park can be incorporated into their tourism and business initiatives.
- Work with Hupacasath First Nation to identify information sharing opportunities to maximize information available to the public about Mount Arrowsmith.

5.7.2 Recent History

The work of volunteers has helped to increase historical knowledge of the Mount Arrowsmith area. Photos and accounts have been collected, dating back to the 19th century. The information helps to paint a vibrant picture of the mountain's recent history.

Policy:

Encourage and support the collection and distribution of the area's recent history through interpretive materials.

Actions:

- Support volunteer efforts to obtain historical and cultural information about the area.
- Consider developing historical interpretive materials as a component of the larger information strategy for the mountain (see Section 5.4.6, *Signage & Information*).

5.7.3 Volunteer Tourism

The remote wilderness of MAMRP can be a barrier for both visitors and residents wanting to access the park. The park can be difficult to find, and once there, difficult to navigate.

Guided hikes to the mountain can introduce people to MAMRP in a way that is safe and enjoyable. Hikes may be offered through RDN Leisure Services or provided by user groups willing lead introductory hikes up the mountain. Guided hikes also have the advantage of demonstrating to first-time park visitors appropriate park conduct, user preparedness and may be an opportunity to share interesting environmental, historical or cultural information.



*Group hike up Mount Arrowsmith
(Photo: P. Rothman).*

Policy:

Encourage public use of MAMRP by providing opportunities to visit with an experienced guide.

Actions:

- Continue to offer regular guided hikes on public trails, led by experienced volunteer guides, on an annual/semi-annual basis through the RDN's leisure services.
- Investigate opportunities for First Nations cultural hikes to support cultural tourism.
- Encourage existing hiking clubs to offer introductory hikes to the mountain. Consult with clubs to determine if the RDN can direct potential hikers to contacts within the clubs.

5.7.4 Commercial Tourism

Commercial guiding programs use Mount Arrowsmith for tourism and training activities. The 2005 *Regional Parks and Trails Plan* policy for commercial activities in regional parks is to "allow commercial services that are program-oriented, personal services, such as guided programs or outdoor recreation activity training." Commercial tourism applications are evaluated by the RDN to determine their compatibility with the Regional Park proposed for use. It is important that any commercial activities proposed for MAMRP be compatible with the wilderness nature of the park.

Commercial guides using RDN Regional Parks are required to obtain a permit issued under the *Park Use Regulation Bylaw 1399*.

In addition to obtaining a permit from the RDN, commercial operators must obtain appropriate permits from neighbouring landowners if the proposed activity will traverse the park boundary.

Policies:

Commercial guiding, training and interpretive programs that are compatible with the MAMRP's wilderness setting will be permitted, subject to the provisions of a permit issued under the *Park Use Regulation Bylaw 1399*.

Activities perceived to negatively impact the wilderness character of the park through introduction of new infrastructure or high-impact activities, will not be permitted in the park.

Actions:

- Ensure that existing commercial operations are aware of the regional park status and proper permits are obtained under the *Park Use Regulation Bylaw 1399*.
- Work cooperatively with Island Timberlands to assess any proposed commercial tourism applications that would utilize both MAMRP and Island Timberlands properties. Advise commercial operators that permits must be obtained from all property owners.

5.8 Emergency Services

5.8.1 Fire Management

Much of MAMRP Park is comprised of alpine and sub-alpine environments that have lower fuel sources, and therefore lower fire risk, than more densely forested areas. Consultations with stakeholders indicated that there have been no recent responses to fire in MAMRP. The types of park uses, hiking, climbing, snowshoeing, etc., performed in MAMRP are not typically considered high-risk fire hazards. Higher-risk activities such as motorized vehicle use are not permitted within the park. Consultations also revealed that lightning strikes are not as common in this area as other areas.

Currently, the RDN is undertaking a study that assesses fire risks in all RDN Regional Parks. The RDN maintains cost-sharing agreements for fire protection on multiple Regional Parks. This arrangement is negotiated annually to provide fire protection. The fee is based on risk and start-potential.

Policy:

The RDN will reduce fire risk through hazard management and information in MAMRP.

Actions:

- Continue to include MAMRP in the cost-sharing agreement with the Coastal Fire Centre
- Implement recommendations provided in the RDN Fire Risk Study.
- Consult with the ACRD to determine how fire hazard mitigation is performed in Mount Arrowsmith Regional Park
- Include fire safety information in park information materials (see *Section 5.4.6: Signage & Information*)

5.8.2 Search & Rescue

Emergency response to Mount Arrowsmith Massif Regional Park is often provided by local Search & Rescue (SAR) organizations. The park is considered within the jurisdiction of both the Alberni Valley and Arrowsmith Search & Rescue. SAR organizations have responded to numerous calls to Mount Arrowsmith over the years.

Consultations with the SAR organizations revealed concerns about the ability of the organizations to respond to snow-based rescues. WorkSafe BC does not permit the SARs to put their volunteers in high-risk situations such as avalanche terrain due to liability issues. This makes them unable to respond to avalanche-based rescues. The nearest avalanche rescue squad is located in Squamish.

Policy:

The RDN will provide information to local SAR organizations as needed to support effective emergency responses.

Actions:

- 1 Provide, where appropriate, mapping and other park information to SAR organizations for their use in planning and executing activities.
- 2 Provide opportunities for SAR volunteers to participate in guided hikes of the area to share local knowledge.
- 3 Post emergency contact information on the RDN website and other park brochures at key locations within/near the park.
- 4 Identify a response plan and contacts for avalanche emergencies.

5.9 Future Park Expansion

Future acquisitions, while not identified as a priority through the public input process, should still be a consideration if desirable opportunities or conditions arise. Generally, input on future acquisition centred around expanding the park to include existing trails and key natural features.

Policy:

The RDN will not actively pursue acquisition of adjunct lands at this time. However, the RDN should consider opportunities that arise to acquire properties that would enhance the recreational aspects of the park, protect identified cultural features or protect important environmental features.

*As of the 2011
Regional Park plans
surrounding Mount
Arrowsmith Massif Regional
Park are presently being*

Actions:

- f. Develop a list of desirable recreational, cultural and environmental features that would be considered assets to Mount Arrowsmith Regional Park. Potential considerations could include:
 1. Expansion of the park to encompass existing trail routes and trailheads within the park boundaries.
 - Sites that would facilitate opportunities to secure public vehicle access to the park.
 2. Expanded, continuous corridor from Cameron Lake to the ACSO Mount Arrowsmith Regional Park (encompassing the Old Arrowsmith Trail) that would facilitate protection of a wildlife corridor.
 - Inclusion of the existing cabin sites or other identified cultural features outside the park boundaries.
 - Other sites identified by the RDN, stakeholders or the public.
- g. Consult with neighbouring landowners to request that RDN be provided opportunity to acquire, through lease, licence, purchase, donation or other means, adjunct land areas, should the land owner wish to remove the land from their landbase.



Sunrise over Mount Arrowsmith (Photo: P. Reitermeier)

6 IMPLEMENTATION SUMMARY

The implementation summary is a series of summarizing tables that provide a recommended approach to completing the actions developed during this management planning process (outlined in Section 5: Policies & Actions). The suggested project timelines, priorities and estimates are provided for consideration within the context of annual planning and budget considerations. Each Management Action is summarized with the following information:

- ▢ **Action Type:** Three types of actions are provided for management of MAMRP.
- ▢ **Capital Actions:** These actions will require investment of capital, through Regional District funding or other funding strategies, to maintain or improve the park.
- ▢ **Operational Actions:** These actions include the efforts required for the ongoing operation of the park. Some of these actions may require investment related to agreements, negotiations or legal fees and all operational actions will require staff time for completion.
- ▢ **Suggested Timeline:** General timelines are provided to help prioritize the implementation of actions. Suggested timelines are divided into four categories:
 - ▢ **Short:** 2011 - 2015 year timeframe
 - ▢ **Medium:** 2016 - 2020 year timeframe
 - ▢ **Long:** Beyond 2020 year timeframe
 - ▢ **Ongoing:** No defined timeframe
- ▢ **Type of Costs:** This section defines the types of costs that may be associated with the implementation of each action.
- ▢ **Staff Time:** All actions will require some staff time to complete. Staff time is specified where it is the only anticipated cost for an action.
- ▢ **Legal Fees:** Fees associated with getting legal advice and documentation. *Note: These are estimates only and actual costs will be based on legal requirements.*
- ▢ **Agreement Fee:** Costs associated with obtaining user and access agreements. *Note: These are estimates only and actual costs will be based on negotiated agreement terms.*
- ▢ **Agreement Renewal:** Costs associated with maintaining user and access agreements. *Note: These are estimates only and actual costs will be based on negotiated agreement terms.*
- ▢ **Materials & Labour:** Class 'D' estimates of costs associated with designing, building and installing improvements within the park. Some of these costs may be offset by volunteer efforts.

- l. **Consulting:** Where efforts beyond regular Staff Time may be required outside consulting costs estimates are provided. *Note: These are estimates only and actual costs would be based on negotiated work terms.*
- l. **Labour:** Where efforts beyond scope of typical staff or volunteer labour may be required, estimates are provided for additional costs. *Note: These are estimates only and actual costs would be based on negotiated work terms.*
- l. **Print Materials:** Costs associated with producing print information for distribution.
- l. **Estimated Costs:** Class 'D' cost estimates are provided for each of the capital and operational action items that have associated costs. As yearly projects are undertaken, detailed planning, negotiations and/or design will be required to refine actual costs.
- l. **Potential Partners:** Partnerships will be essential for the successful management of MAMRP. Potential partners for consideration are suggested for each action item.

Five summary tables are provided in this report:

- l. **Table 6.1: All Actions Summarized by Management Topic** – A complete summary of all the actions developed in the management plan. They are organized based on the corresponding Management Plan Topic Area (as organized in Section 5: Policies & Actions).
- l. **Table 6.2: Short-Term Investment Estimates** – A summary of Capital and Operational Actions recommended for the short-term (2011-2015) that would require investment in addition to Staff Time.
- l. **Table 6.3: Medium-Term Investment Estimates** – A summary of Capital and Operational Actions recommended for the medium-term (2016-2020) that would require investment in addition to Staff Time.
- l. **Table 6.4: Long Term Investment Estimates** – A summary of the Capital and Operational Actions recommended for the long term (Beyond 2020) that would require investment in addition to Staff Time. *Note: It is anticipated that this management plan will be updated before the long-term and additional actions for the long term may be developed at that time.*
- l. **Table 6.5: Operational Actions Requiring Staff Time** – A summary of the operational actions that are not anticipated to require additional investment beyond Staff Time. They are organized based on timeline to help prioritize the order in which actions are completed.

All actions will be provided in Excel Format from which additional summary tables and implementation guides may be produced.

Table 6.1. All Actions Summarized by Management Topics

Management Topics	Management Topics	Action	System Type	Timber			Potential Partners
				Short (2011-2013)	Medium (2014-2020)	Long (Beyond 2020)	
1. Forest Management	Management Topics	Actions include: developing a forest management plan, conducting a forest inventory, and implementing a forest management plan.	Operational	Short (2011-2013)	Medium (2014-2020)	Long (Beyond 2020)	Timberland Inland Timberlands Timberland Proprietary FACRD FHCB/ACC (Timber Group) MABF USA Local Nurseries Voluntary/Beaver Other
2. Silviculture	Management Topics	Actions include: developing a silviculture plan, conducting a silviculture inventory, and implementing a silviculture plan.	Operational	Short (2011-2013)	Medium (2014-2020)	Long (Beyond 2020)	Timberland Inland Timberlands Timberland Proprietary FACRD FHCB/ACC (Timber Group) MABF USA Local Nurseries Voluntary/Beaver Other
3. Forest Access	Management Topics	Actions include: developing a forest access plan, conducting a forest access inventory, and implementing a forest access plan.	Operational	Short (2011-2013)	Medium (2014-2020)	Long (Beyond 2020)	Timberland Inland Timberlands Timberland Proprietary FACRD FHCB/ACC (Timber Group) MABF USA Local Nurseries Voluntary/Beaver Other
4. Forest Management	Management Topics	Actions include: developing a forest management plan, conducting a forest inventory, and implementing a forest management plan.	Operational	Short (2011-2013)	Medium (2014-2020)	Long (Beyond 2020)	Timberland Inland Timberlands Timberland Proprietary FACRD FHCB/ACC (Timber Group) MABF USA Local Nurseries Voluntary/Beaver Other
5. Forest Management	Management Topics	Actions include: developing a forest management plan, conducting a forest inventory, and implementing a forest management plan.	Operational	Short (2011-2013)	Medium (2014-2020)	Long (Beyond 2020)	Timberland Inland Timberlands Timberland Proprietary FACRD FHCB/ACC (Timber Group) MABF USA Local Nurseries Voluntary/Beaver Other
6. Forest Management	Management Topics	Actions include: developing a forest management plan, conducting a forest inventory, and implementing a forest management plan.	Operational	Short (2011-2013)	Medium (2014-2020)	Long (Beyond 2020)	Timberland Inland Timberlands Timberland Proprietary FACRD FHCB/ACC (Timber Group) MABF USA Local Nurseries Voluntary/Beaver Other
7. Forest Management	Management Topics	Actions include: developing a forest management plan, conducting a forest inventory, and implementing a forest management plan.	Operational	Short (2011-2013)	Medium (2014-2020)	Long (Beyond 2020)	Timberland Inland Timberlands Timberland Proprietary FACRD FHCB/ACC (Timber Group) MABF USA Local Nurseries Voluntary/Beaver Other
8. Forest Management	Management Topics	Actions include: developing a forest management plan, conducting a forest inventory, and implementing a forest management plan.	Operational	Short (2011-2013)	Medium (2014-2020)	Long (Beyond 2020)	Timberland Inland Timberlands Timberland Proprietary FACRD FHCB/ACC (Timber Group) MABF USA Local Nurseries Voluntary/Beaver Other
9. Forest Management	Management Topics	Actions include: developing a forest management plan, conducting a forest inventory, and implementing a forest management plan.	Operational	Short (2011-2013)	Medium (2014-2020)	Long (Beyond 2020)	Timberland Inland Timberlands Timberland Proprietary FACRD FHCB/ACC (Timber Group) MABF USA Local Nurseries Voluntary/Beaver Other
10. Forest Management	Management Topics	Actions include: developing a forest management plan, conducting a forest inventory, and implementing a forest management plan.	Operational	Short (2011-2013)	Medium (2014-2020)	Long (Beyond 2020)	Timberland Inland Timberlands Timberland Proprietary FACRD FHCB/ACC (Timber Group) MABF USA Local Nurseries Voluntary/Beaver Other

Management		Management		Timeline		Potential Partners	
Priority	Subcategory	Action	Account Type	Short (2013-2015)	Medium (2016-2020)	Long (Beyond 2020)	Accounting
1	1.1	Conduct a comprehensive review of the current business plan and financial statements.	Operating	Short	Medium	Long	Accounting
2	1.2	Develop a strategic plan for the next five years, including financial projections and a marketing strategy.	Operating	Short	Medium	Long	Accounting
3	1.3	Implement a new financial reporting system to improve accuracy and efficiency.	Operating	Short	Medium	Long	Accounting
4	1.4	Conduct a thorough audit of the company's financial records to identify any discrepancies.	Operating	Short	Medium	Long	Accounting
5	1.5	Develop a risk management plan to identify and mitigate potential financial risks.	Operating	Short	Medium	Long	Accounting
6	1.6	Implement a new budgeting process to better track and control expenses.	Operating	Short	Medium	Long	Accounting
7	1.7	Conduct a regular review of the company's financial performance against the budget.	Operating	Short	Medium	Long	Accounting
8	1.8	Develop a contingency plan for potential financial emergencies.	Operating	Short	Medium	Long	Accounting
9	1.9	Implement a new financial reporting system to improve accuracy and efficiency.	Operating	Short	Medium	Long	Accounting
10	1.10	Conduct a thorough audit of the company's financial records to identify any discrepancies.	Operating	Short	Medium	Long	Accounting
11	1.11	Develop a risk management plan to identify and mitigate potential financial risks.	Operating	Short	Medium	Long	Accounting
12	1.12	Implement a new budgeting process to better track and control expenses.	Operating	Short	Medium	Long	Accounting
13	1.13	Conduct a regular review of the company's financial performance against the budget.	Operating	Short	Medium	Long	Accounting
14	1.14	Develop a contingency plan for potential financial emergencies.	Operating	Short	Medium	Long	Accounting
15	1.15	Implement a new financial reporting system to improve accuracy and efficiency.	Operating	Short	Medium	Long	Accounting
16	1.16	Conduct a thorough audit of the company's financial records to identify any discrepancies.	Operating	Short	Medium	Long	Accounting
17	1.17	Develop a risk management plan to identify and mitigate potential financial risks.	Operating	Short	Medium	Long	Accounting
18	1.18	Implement a new budgeting process to better track and control expenses.	Operating	Short	Medium	Long	Accounting
19	1.19	Conduct a regular review of the company's financial performance against the budget.	Operating	Short	Medium	Long	Accounting
20	1.20	Develop a contingency plan for potential financial emergencies.	Operating	Short	Medium	Long	Accounting

Management Topic		Management Topic Sub-heading		Account	Action Type	Timeline	Potential Partners
4	Management Topic	4.1	4.1.1	What are the funding gaps in water and climate adaptation for the state? How much water and climate adaptation funding is needed? What are the funding gaps? What are the funding gaps? What are the funding gaps?	Water and Climate Adaptation	Short Term (2018-2019)	Hand Timberland, Timberwest, Supersouth, ACORN, PNCB/CAC, Climbing Groups, MABF, IBA, Local Naturalists, V.I. Marine Reserve
5	Management Topic	5.1	5.1.1	How can we better coordinate and integrate water and climate adaptation efforts? How can we better coordinate and integrate water and climate adaptation efforts? How can we better coordinate and integrate water and climate adaptation efforts?	Water and Climate Adaptation	Medium Term (2019-2020)	
6	Management Topic	6.1	6.1.1	How can we better coordinate and integrate water and climate adaptation efforts? How can we better coordinate and integrate water and climate adaptation efforts? How can we better coordinate and integrate water and climate adaptation efforts?	Water and Climate Adaptation	Long Term (2020-2021)	
7	Management Topic	7.1	7.1.1	How can we better coordinate and integrate water and climate adaptation efforts? How can we better coordinate and integrate water and climate adaptation efforts? How can we better coordinate and integrate water and climate adaptation efforts?	Water and Climate Adaptation		
8	Management Topic	8.1	8.1.1	How can we better coordinate and integrate water and climate adaptation efforts? How can we better coordinate and integrate water and climate adaptation efforts? How can we better coordinate and integrate water and climate adaptation efforts?	Water and Climate Adaptation		
9	Management Topic	9.1	9.1.1	How can we better coordinate and integrate water and climate adaptation efforts? How can we better coordinate and integrate water and climate adaptation efforts? How can we better coordinate and integrate water and climate adaptation efforts?	Water and Climate Adaptation		
10	Management Topic	10.1	10.1.1	How can we better coordinate and integrate water and climate adaptation efforts? How can we better coordinate and integrate water and climate adaptation efforts? How can we better coordinate and integrate water and climate adaptation efforts?	Water and Climate Adaptation		
11	Management Topic	11.1	11.1.1	How can we better coordinate and integrate water and climate adaptation efforts? How can we better coordinate and integrate water and climate adaptation efforts? How can we better coordinate and integrate water and climate adaptation efforts?	Water and Climate Adaptation		
12	Management Topic	12.1	12.1.1	How can we better coordinate and integrate water and climate adaptation efforts? How can we better coordinate and integrate water and climate adaptation efforts? How can we better coordinate and integrate water and climate adaptation efforts?	Water and Climate Adaptation		
13	Management Topic	13.1	13.1.1	How can we better coordinate and integrate water and climate adaptation efforts? How can we better coordinate and integrate water and climate adaptation efforts? How can we better coordinate and integrate water and climate adaptation efforts?	Water and Climate Adaptation		
14	Management Topic	14.1	14.1.1	How can we better coordinate and integrate water and climate adaptation efforts? How can we better coordinate and integrate water and climate adaptation efforts? How can we better coordinate and integrate water and climate adaptation efforts?	Water and Climate Adaptation		
15	Management Topic	15.1	15.1.1	How can we better coordinate and integrate water and climate adaptation efforts? How can we better coordinate and integrate water and climate adaptation efforts? How can we better coordinate and integrate water and climate adaptation efforts?	Water and Climate Adaptation		
16	Management Topic	16.1	16.1.1	How can we better coordinate and integrate water and climate adaptation efforts? How can we better coordinate and integrate water and climate adaptation efforts? How can we better coordinate and integrate water and climate adaptation efforts?	Water and Climate Adaptation		
17	Management Topic	17.1	17.1.1	How can we better coordinate and integrate water and climate adaptation efforts? How can we better coordinate and integrate water and climate adaptation efforts? How can we better coordinate and integrate water and climate adaptation efforts?	Water and Climate Adaptation		
18	Management Topic	18.1	18.1.1	How can we better coordinate and integrate water and climate adaptation efforts? How can we better coordinate and integrate water and climate adaptation efforts? How can we better coordinate and integrate water and climate adaptation efforts?	Water and Climate Adaptation		
19	Management Topic	19.1	19.1.1	How can we better coordinate and integrate water and climate adaptation efforts? How can we better coordinate and integrate water and climate adaptation efforts? How can we better coordinate and integrate water and climate adaptation efforts?	Water and Climate Adaptation		
20	Management Topic	20.1	20.1.1	How can we better coordinate and integrate water and climate adaptation efforts? How can we better coordinate and integrate water and climate adaptation efforts? How can we better coordinate and integrate water and climate adaptation efforts?	Water and Climate Adaptation		

Management		Management		Timeline		Potential Partners															
Prop	Prop	Subheading	Action	Type	System	Short (2011-2015)	Medium (2016-2020)	Long (Beyond 2020)	Type of Traps	Estimated Costs	Island Timberlands	Teaherwen	Hopokasah	ASCU	PMDC/CAAC	Climbing Groups	MABF	UBA	Local Naturalists	Other	
1	1.1	1.1.1	1.1.1.1	1.1.1.1.1	1.1.1.1.1	1.1.1.1.1	1.1.1.1.1	1.1.1.1.1	1.1.1.1.1	1.1.1.1.1	1.1.1.1.1	1.1.1.1.1	1.1.1.1.1	1.1.1.1.1	1.1.1.1.1	1.1.1.1.1	1.1.1.1.1	1.1.1.1.1	1.1.1.1.1	1.1.1.1.1	1.1.1.1.1
2	2.1	2.1.1	2.1.1.1	2.1.1.1.1	2.1.1.1.1	2.1.1.1.1	2.1.1.1.1	2.1.1.1.1	2.1.1.1.1	2.1.1.1.1	2.1.1.1.1	2.1.1.1.1	2.1.1.1.1	2.1.1.1.1	2.1.1.1.1	2.1.1.1.1	2.1.1.1.1	2.1.1.1.1	2.1.1.1.1	2.1.1.1.1	2.1.1.1.1
3	3.1	3.1.1	3.1.1.1	3.1.1.1.1	3.1.1.1.1	3.1.1.1.1	3.1.1.1.1	3.1.1.1.1	3.1.1.1.1	3.1.1.1.1	3.1.1.1.1	3.1.1.1.1	3.1.1.1.1	3.1.1.1.1	3.1.1.1.1	3.1.1.1.1	3.1.1.1.1	3.1.1.1.1	3.1.1.1.1	3.1.1.1.1	3.1.1.1.1
4	4.1	4.1.1	4.1.1.1	4.1.1.1.1	4.1.1.1.1	4.1.1.1.1	4.1.1.1.1	4.1.1.1.1	4.1.1.1.1	4.1.1.1.1	4.1.1.1.1	4.1.1.1.1	4.1.1.1.1	4.1.1.1.1	4.1.1.1.1	4.1.1.1.1	4.1.1.1.1	4.1.1.1.1	4.1.1.1.1	4.1.1.1.1	4.1.1.1.1
5	5.1	5.1.1	5.1.1.1	5.1.1.1.1	5.1.1.1.1	5.1.1.1.1	5.1.1.1.1	5.1.1.1.1	5.1.1.1.1	5.1.1.1.1	5.1.1.1.1	5.1.1.1.1	5.1.1.1.1	5.1.1.1.1	5.1.1.1.1	5.1.1.1.1	5.1.1.1.1	5.1.1.1.1	5.1.1.1.1	5.1.1.1.1	5.1.1.1.1
6	6.1	6.1.1	6.1.1.1	6.1.1.1.1	6.1.1.1.1	6.1.1.1.1	6.1.1.1.1	6.1.1.1.1	6.1.1.1.1	6.1.1.1.1	6.1.1.1.1	6.1.1.1.1	6.1.1.1.1	6.1.1.1.1	6.1.1.1.1	6.1.1.1.1	6.1.1.1.1	6.1.1.1.1	6.1.1.1.1	6.1.1.1.1	6.1.1.1.1
7	7.1	7.1.1	7.1.1.1	7.1.1.1.1	7.1.1.1.1	7.1.1.1.1	7.1.1.1.1	7.1.1.1.1	7.1.1.1.1	7.1.1.1.1	7.1.1.1.1	7.1.1.1.1	7.1.1.1.1	7.1.1.1.1	7.1.1.1.1	7.1.1.1.1	7.1.1.1.1	7.1.1.1.1	7.1.1.1.1	7.1.1.1.1	7.1.1.1.1
8	8.1	8.1.1	8.1.1.1	8.1.1.1.1	8.1.1.1.1	8.1.1.1.1	8.1.1.1.1	8.1.1.1.1	8.1.1.1.1	8.1.1.1.1	8.1.1.1.1	8.1.1.1.1	8.1.1.1.1	8.1.1.1.1	8.1.1.1.1	8.1.1.1.1	8.1.1.1.1	8.1.1.1.1	8.1.1.1.1	8.1.1.1.1	8.1.1.1.1
9	9.1	9.1.1	9.1.1.1	9.1.1.1.1	9.1.1.1.1	9.1.1.1.1	9.1.1.1.1	9.1.1.1.1	9.1.1.1.1	9.1.1.1.1	9.1.1.1.1	9.1.1.1.1	9.1.1.1.1	9.1.1.1.1	9.1.1.1.1	9.1.1.1.1	9.1.1.1.1	9.1.1.1.1	9.1.1.1.1	9.1.1.1.1	9.1.1.1.1
10	10.1	10.1.1	10.1.1.1	10.1.1.1.1	10.1.1.1.1	10.1.1.1.1	10.1.1.1.1	10.1.1.1.1	10.1.1.1.1	10.1.1.1.1	10.1.1.1.1	10.1.1.1.1	10.1.1.1.1	10.1.1.1.1	10.1.1.1.1	10.1.1.1.1	10.1.1.1.1	10.1.1.1.1	10.1.1.1.1	10.1.1.1.1	10.1.1.1.1

Management Topic		Management Topic		Action		Timeline		Potential Partners	
Topic	Subtopic	Topic	Subtopic	Topic	Subtopic	Timeline	Timeline	Topic	Subtopic
5.1	5.1.1	5.1.1.1	5.1.1.1.1	5.1.1.1.1	5.1.1.1.1	5.1.1.1.1	5.1.1.1.1	5.1.1.1.1	5.1.1.1.1
5.2	5.2.1	5.2.1.1	5.2.1.1.1	5.2.1.1.1	5.2.1.1.1	5.2.1.1.1	5.2.1.1.1	5.2.1.1.1	5.2.1.1.1
5.3	5.3.1	5.3.1.1	5.3.1.1.1	5.3.1.1.1	5.3.1.1.1	5.3.1.1.1	5.3.1.1.1	5.3.1.1.1	5.3.1.1.1
5.4	5.4.1	5.4.1.1	5.4.1.1.1	5.4.1.1.1	5.4.1.1.1	5.4.1.1.1	5.4.1.1.1	5.4.1.1.1	5.4.1.1.1
5.5	5.5.1	5.5.1.1	5.5.1.1.1	5.5.1.1.1	5.5.1.1.1	5.5.1.1.1	5.5.1.1.1	5.5.1.1.1	5.5.1.1.1
5.6	5.6.1	5.6.1.1	5.6.1.1.1	5.6.1.1.1	5.6.1.1.1	5.6.1.1.1	5.6.1.1.1	5.6.1.1.1	5.6.1.1.1
5.7	5.7.1	5.7.1.1	5.7.1.1.1	5.7.1.1.1	5.7.1.1.1	5.7.1.1.1	5.7.1.1.1	5.7.1.1.1	5.7.1.1.1
5.8	5.8.1	5.8.1.1	5.8.1.1.1	5.8.1.1.1	5.8.1.1.1	5.8.1.1.1	5.8.1.1.1	5.8.1.1.1	5.8.1.1.1
5.9	5.9.1	5.9.1.1	5.9.1.1.1	5.9.1.1.1	5.9.1.1.1	5.9.1.1.1	5.9.1.1.1	5.9.1.1.1	5.9.1.1.1
5.10	5.10.1	5.10.1.1	5.10.1.1.1	5.10.1.1.1	5.10.1.1.1	5.10.1.1.1	5.10.1.1.1	5.10.1.1.1	5.10.1.1.1
5.11	5.11.1	5.11.1.1	5.11.1.1.1	5.11.1.1.1	5.11.1.1.1	5.11.1.1.1	5.11.1.1.1	5.11.1.1.1	5.11.1.1.1
5.12	5.12.1	5.12.1.1	5.12.1.1.1	5.12.1.1.1	5.12.1.1.1	5.12.1.1.1	5.12.1.1.1	5.12.1.1.1	5.12.1.1.1
5.13	5.13.1	5.13.1.1	5.13.1.1.1	5.13.1.1.1	5.13.1.1.1	5.13.1.1.1	5.13.1.1.1	5.13.1.1.1	5.13.1.1.1
5.14	5.14.1	5.14.1.1	5.14.1.1.1	5.14.1.1.1	5.14.1.1.1	5.14.1.1.1	5.14.1.1.1	5.14.1.1.1	5.14.1.1.1
5.15	5.15.1	5.15.1.1	5.15.1.1.1	5.15.1.1.1	5.15.1.1.1	5.15.1.1.1	5.15.1.1.1	5.15.1.1.1	5.15.1.1.1
5.16	5.16.1	5.16.1.1	5.16.1.1.1	5.16.1.1.1	5.16.1.1.1	5.16.1.1.1	5.16.1.1.1	5.16.1.1.1	5.16.1.1.1
5.17	5.17.1	5.17.1.1	5.17.1.1.1	5.17.1.1.1	5.17.1.1.1	5.17.1.1.1	5.17.1.1.1	5.17.1.1.1	5.17.1.1.1
5.18	5.18.1	5.18.1.1	5.18.1.1.1	5.18.1.1.1	5.18.1.1.1	5.18.1.1.1	5.18.1.1.1	5.18.1.1.1	5.18.1.1.1
5.19	5.19.1	5.19.1.1	5.19.1.1.1	5.19.1.1.1	5.19.1.1.1	5.19.1.1.1	5.19.1.1.1	5.19.1.1.1	5.19.1.1.1
5.20	5.20.1	5.20.1.1	5.20.1.1.1	5.20.1.1.1	5.20.1.1.1	5.20.1.1.1	5.20.1.1.1	5.20.1.1.1	5.20.1.1.1
5.21	5.21.1	5.21.1.1	5.21.1.1.1	5.21.1.1.1	5.21.1.1.1	5.21.1.1.1	5.21.1.1.1	5.21.1.1.1	5.21.1.1.1
5.22	5.22.1	5.22.1.1	5.22.1.1.1	5.22.1.1.1	5.22.1.1.1	5.22.1.1.1	5.22.1.1.1	5.22.1.1.1	5.22.1.1.1
5.23	5.23.1	5.23.1.1	5.23.1.1.1	5.23.1.1.1	5.23.1.1.1	5.23.1.1.1	5.23.1.1.1	5.23.1.1.1	5.23.1.1.1
5.24	5.24.1	5.24.1.1	5.24.1.1.1	5.24.1.1.1	5.24.1.1.1	5.24.1.1.1	5.24.1.1.1	5.24.1.1.1	5.24.1.1.1
5.25	5.25.1	5.25.1.1	5.25.1.1.1	5.25.1.1.1	5.25.1.1.1	5.25.1.1.1	5.25.1.1.1	5.25.1.1.1	5.25.1.1.1
5.26	5.26.1	5.26.1.1	5.26.1.1.1	5.26.1.1.1	5.26.1.1.1	5.26.1.1.1	5.26.1.1.1	5.26.1.1.1	5.26.1.1.1
5.27	5.27.1	5.27.1.1	5.27.1.1.1	5.27.1.1.1	5.27.1.1.1	5.27.1.1.1	5.27.1.1.1	5.27.1.1.1	5.27.1.1.1
5.28	5.28.1	5.28.1.1	5.28.1.1.1	5.28.1.1.1	5.28.1.1.1	5.28.1.1.1	5.28.1.1.1	5.28.1.1.1	5.28.1.1.1
5.29	5.29.1	5.29.1.1	5.29.1.1.1	5.29.1.1.1	5.29.1.1.1	5.29.1.1.1	5.29.1.1.1	5.29.1.1.1	5.29.1.1.1
5.30	5.30.1	5.30.1.1	5.30.1.1.1	5.30.1.1.1	5.30.1.1.1	5.30.1.1.1	5.30.1.1.1	5.30.1.1.1	5.30.1.1.1
5.31	5.31.1	5.31.1.1	5.31.1.1.1	5.31.1.1.1	5.31.1.1.1	5.31.1.1.1	5.31.1.1.1	5.31.1.1.1	5.31.1.1.1

Management Topic	Management Subtopic	Action	Action Type	Timeline		Estimated Costs	Potential Partners	
				Short (2011-2015)	Medium (2015-2020)		Long (beyond 2020)	Ongoing
7.1	7.1.1	Conduct a survey of existing and potential park users to identify their needs and preferences.	Operational	✓	✓	40	ACORN	Other
7.1	7.1.2	Develop a park management plan that includes a budget and a timeline for implementation.	Operational	✓	✓	50	ACORN	Other
7.1	7.1.3	Implement a park management plan that includes a budget and a timeline for implementation.	Operational	✓	✓	50	ACORN	Other
7.2	7.2.1	Develop a park management plan that includes a budget and a timeline for implementation.	Operational	✓	✓	50	ACORN	Other
7.2	7.2.2	Implement a park management plan that includes a budget and a timeline for implementation.	Operational	✓	✓	50	ACORN	Other
7.3	7.3.1	Develop a park management plan that includes a budget and a timeline for implementation.	Operational	✓	✓	50	ACORN	Other
7.3	7.3.2	Implement a park management plan that includes a budget and a timeline for implementation.	Operational	✓	✓	50	ACORN	Other
7.4	7.4.1	Develop a park management plan that includes a budget and a timeline for implementation.	Operational	✓	✓	50	ACORN	Other
7.4	7.4.2	Implement a park management plan that includes a budget and a timeline for implementation.	Operational	✓	✓	50	ACORN	Other
7.5	7.5.1	Develop a park management plan that includes a budget and a timeline for implementation.	Operational	✓	✓	50	ACORN	Other
7.5	7.5.2	Implement a park management plan that includes a budget and a timeline for implementation.	Operational	✓	✓	50	ACORN	Other
7.6	7.6.1	Develop a park management plan that includes a budget and a timeline for implementation.	Operational	✓	✓	50	ACORN	Other
7.6	7.6.2	Implement a park management plan that includes a budget and a timeline for implementation.	Operational	✓	✓	50	ACORN	Other
7.7	7.7.1	Develop a park management plan that includes a budget and a timeline for implementation.	Operational	✓	✓	50	ACORN	Other
7.7	7.7.2	Implement a park management plan that includes a budget and a timeline for implementation.	Operational	✓	✓	50	ACORN	Other
7.8	7.8.1	Develop a park management plan that includes a budget and a timeline for implementation.	Operational	✓	✓	50	ACORN	Other
7.8	7.8.2	Implement a park management plan that includes a budget and a timeline for implementation.	Operational	✓	✓	50	ACORN	Other
7.9	7.9.1	Develop a park management plan that includes a budget and a timeline for implementation.	Operational	✓	✓	50	ACORN	Other
7.9	7.9.2	Implement a park management plan that includes a budget and a timeline for implementation.	Operational	✓	✓	50	ACORN	Other
7.10	7.10.1	Develop a park management plan that includes a budget and a timeline for implementation.	Operational	✓	✓	50	ACORN	Other
7.10	7.10.2	Implement a park management plan that includes a budget and a timeline for implementation.	Operational	✓	✓	50	ACORN	Other

Table 6-3: Medium-Term Investment Estimate (2016-2020):

		Furniture		Potential Partners	
Management Topic	Management Topic Subsetting	Action	Action Type	Suggested Timeline	Estimated Costs
Trail Access	Trail Access	Trail route study determines that the proposed riparian zone is not suitable to allow for development. Access agreements to develop a vehicle access route to MAMHP. Funding and planning are in progress for way to trail to road by late 2016. Note: If the determination of riparian zone is not developed, riparian zone will be developed by 2016. This will allow the riparian zone to be developed and will be used to develop riparian zone management and development plans.	Operational	Short	Trail
Trail Access	Trail Access	When trail agreements are secured, procedures to begin trail development.	Operational	Short	\$2,500
Trail Access	Trail Access	Continue to review the existing riparian zone management plan and riparian zone management plan. Address riparian zone management plan. Note: If the riparian zone management plan is not developed, riparian zone will be developed by 2016. This will allow the riparian zone to be developed and will be used to develop riparian zone management and development plans.	Operational	Short	\$100
Trail Access	Trail Access	Continue to review the existing riparian zone management plan and riparian zone management plan. Address riparian zone management plan. Note: If the riparian zone management plan is not developed, riparian zone will be developed by 2016. This will allow the riparian zone to be developed and will be used to develop riparian zone management and development plans.	Operational	Short	\$500
Trail Access	Trail Access	If successfully obtained, management agreements for riparian zone management plan. Note: If the riparian zone management plan is not developed, riparian zone will be developed by 2016. This will allow the riparian zone to be developed and will be used to develop riparian zone management and development plans.	Operational	Short	\$1,200
Trail Access	Trail Access	Work with riparian zone management plan. Note: If the riparian zone management plan is not developed, riparian zone will be developed by 2016. This will allow the riparian zone to be developed and will be used to develop riparian zone management and development plans.	Operational	Short	\$500
Trail Access	Trail Access	Develop riparian zone management plan. Note: If the riparian zone management plan is not developed, riparian zone will be developed by 2016. This will allow the riparian zone to be developed and will be used to develop riparian zone management and development plans.	Operational	Medium	\$4,000

Management Topic	Management Topic Subheading	Action	Action Type	Suggested Timeline	Timeline	Value	Potential Partners
					Short (2018-2019)	Medium (2020-2030)	Long (Beyond 2030)
							Island Timberlands Timberwest Tropicana ACORN EMORCIAFC Climate Change MABT BSA Local Naturalists U.S. Forest Service Other
						Capital Investment Portfolio 56,000 52,000	

Note: This table includes the project's capital costs related to road development listed above. It is not meant to be a complete list of all available capital investments. Other investments are not included.

Table 6.3: Long Term Investment Estimate (Beyond 2020)

Management Topic	Management Topic Subheading	Action	Action Type	Suggested Timeline	Timeline			Potential Partners	
					Short (2011-2015)	Medium (2016-2020)	Long (Beyond 2020)	Estimated Costs	Other
Forest Access	Forest Access	In the leadership roles opportunities for the leadership to able to coordinate, coordinate and head regional executive agencies to develop local business in the MAMHR. These agencies will be responsible for the removal of forest and development of parks and forest areas and to support employment and to be in the forest areas. This includes the following elements:	Capital	Short	Short (2011-2015)	Medium (2016-2020)	Long (Beyond 2020)	Local National MAMHR Private Groups PANI/BCC/ACC WALIS Disproach Institution Inland Timberlands	Other
Forest Access	Forest Access	When local MAMHR members are ready, continue to be a good partner in the forest areas.	Operational	Short	Short (2011-2015)	Medium (2016-2020)	Long (Beyond 2020)	Local National MAMHR Private Groups PANI/BCC/ACC WALIS Disproach Institution Inland Timberlands	Other
Forest Access	Forest Access	Continue to remove the existing forest areas in the forest areas and to be in the forest areas.	Operational	Short	Short (2011-2015)	Medium (2016-2020)	Long (Beyond 2020)	Local National MAMHR Private Groups PANI/BCC/ACC WALIS Disproach Institution Inland Timberlands	Other
Forest Access	Forest Access	Continue to remove the existing forest areas in the forest areas and to be in the forest areas.	Operational	Short	Short (2011-2015)	Medium (2016-2020)	Long (Beyond 2020)	Local National MAMHR Private Groups PANI/BCC/ACC WALIS Disproach Institution Inland Timberlands	Other
Forest Access	Forest Access	Continue to remove the existing forest areas in the forest areas and to be in the forest areas.	Operational	Short	Short (2011-2015)	Medium (2016-2020)	Long (Beyond 2020)	Local National MAMHR Private Groups PANI/BCC/ACC WALIS Disproach Institution Inland Timberlands	Other
Forest Access	Forest Access	Continue to remove the existing forest areas in the forest areas and to be in the forest areas.	Operational	Short	Short (2011-2015)	Medium (2016-2020)	Long (Beyond 2020)	Local National MAMHR Private Groups PANI/BCC/ACC WALIS Disproach Institution Inland Timberlands	Other
Forest Access	Forest Access	Continue to remove the existing forest areas in the forest areas and to be in the forest areas.	Operational	Short	Short (2011-2015)	Medium (2016-2020)	Long (Beyond 2020)	Local National MAMHR Private Groups PANI/BCC/ACC WALIS Disproach Institution Inland Timberlands	Other
Forest Access	Forest Access	Continue to remove the existing forest areas in the forest areas and to be in the forest areas.	Operational	Short	Short (2011-2015)	Medium (2016-2020)	Long (Beyond 2020)	Local National MAMHR Private Groups PANI/BCC/ACC WALIS Disproach Institution Inland Timberlands	Other
Forest Access	Forest Access	Continue to remove the existing forest areas in the forest areas and to be in the forest areas.	Operational	Short	Short (2011-2015)	Medium (2016-2020)	Long (Beyond 2020)	Local National MAMHR Private Groups PANI/BCC/ACC WALIS Disproach Institution Inland Timberlands	Other
Forest Access	Forest Access	Continue to remove the existing forest areas in the forest areas and to be in the forest areas.	Operational	Short	Short (2011-2015)	Medium (2016-2020)	Long (Beyond 2020)	Local National MAMHR Private Groups PANI/BCC/ACC WALIS Disproach Institution Inland Timberlands	Other

Table 4-3: Operational Staff Time Estimate

Management Topic	Management Topic Subheading	Action	Action Type	Timeline		Type of Costs	Estimated Costs	Potential Partners
				Short (2011-2015)	Long (Beyond 2020)			
Management Topic	Management Topic Subheading	Manages park area, as well as other parks in same area of the city	Operational	Ongoing		Staff Time	\$0	Local Municipalities MARRP City of Fort Worth DORC/OWAC VITA Texas State Parks
		Establishes and maintains a maintenance program for MRRP and RVS by allocating city staff to address and developing an operational management maintenance plan	Operational	Short		Staff Time	\$0	
Management Topic	Management Topic Subheading	Establish a budget tracking schedule for maintenance by budgeting the current and projected management and planning for both parks	Operational	Short		Staff Time	\$0	
		Post budget to city budget materials in the RVS website so all people of the city can be kept informed on existing MARRP budget materials	Operational	Short		Staff Time	\$0	
Management Topic	Operative Access	Included parking equipment in park displays	Operational	Short		Staff Time	\$0	
Management Topic	Operative Access	Identify, design, and install signage, markers, and surveillance cameras to identify and possible development of the local access routes for both parks and create a list of development and address to analyze	Operational	Short		Staff Time	\$0	
		Identify and create trail with local trail groups and other groups in the Mount Airy area in MRRP	Operational	Short		Staff Time	\$0	
Management Topic	Operative Access	Begin use of Park	Operational	Short		Staff Time	\$0	
Management Topic	Operative Access	Work with local groups, groups such as the U. of Texas Access Society and RVS to develop program and materials with MARRP and other groups to utilize during park display and other park displays	Operational	Short		Staff Time	\$0	
			Operational	Short		Staff Time	\$0	

Management Topic # & Subheading	Action	Action Type	Suggested Timeline	Timeline		Potential Partners	
				Shore (2013-2015)	Long (Beyond 2020)	Type of Costs	Estimated Costs
Management Topic #26 (in brief)	General public outreach on the beach. If only shore-based, please volunteer as a "beach clean-up" volunteer in 2014. If you are unable to do so, please contact the beach cleanup coordinator for more information. Outreach should be done in the summer months of the year, and should be done in the fall and winter months of the year.	Operational	Ongoing	Staff Time	See Separate & Fabrication	Local Nurseries BIA MABR Cherry Grove EMUBC/ACC ACND Hypocath Cherry Grove Tand Timberlands	Other
Management Topic #27 (in brief)	Apply for RIN Right of Entry for the site. If you are unable to do so, please contact the RIN coordinator for more information.	Operational	Short	Staff Time	\$0		
Management Topic #28 (in brief)	Apply for RIN Right of Entry for the site. If you are unable to do so, please contact the RIN coordinator for more information.	Operational	Medium	Staff Time	\$0		
Management Topic #29 (in brief)	Monitor current status of the site. If you are unable to do so, please contact the RIN coordinator for more information.	Operational	Ongoing	Staff Time	\$0		
Management Topic #30 (in brief)	Coordinate with the RIN to obtain permits for the site. If you are unable to do so, please contact the RIN coordinator for more information.	Operational	Short	Staff Time	\$0		
Management Topic #31 (in brief)	Coordinate with the RIN to obtain permits for the site. If you are unable to do so, please contact the RIN coordinator for more information.	Operational	Short	Staff Time	\$0		
Management Topic #32 (in brief)	Coordinate with the RIN to obtain permits for the site. If you are unable to do so, please contact the RIN coordinator for more information.	Operational	Short	Staff Time	\$0		
Management Topic #33 (in brief)	Coordinate with the RIN to obtain permits for the site. If you are unable to do so, please contact the RIN coordinator for more information.	Operational	Short	Staff Time	\$0		
Management Topic #34 (in brief)	Coordinate with the RIN to obtain permits for the site. If you are unable to do so, please contact the RIN coordinator for more information.	Operational	Short	Staff Time	\$0		
Management Topic #35 (in brief)	Coordinate with the RIN to obtain permits for the site. If you are unable to do so, please contact the RIN coordinator for more information.	Operational	Short	Staff Time	\$0		
Management Topic #36 (in brief)	Coordinate with the RIN to obtain permits for the site. If you are unable to do so, please contact the RIN coordinator for more information.	Operational	Short	Staff Time	\$0		
Management Topic #37 (in brief)	Coordinate with the RIN to obtain permits for the site. If you are unable to do so, please contact the RIN coordinator for more information.	Operational	Short	Staff Time	\$0		
Management Topic #38 (in brief)	Coordinate with the RIN to obtain permits for the site. If you are unable to do so, please contact the RIN coordinator for more information.	Operational	Short	Staff Time	\$0		
Management Topic #39 (in brief)	Coordinate with the RIN to obtain permits for the site. If you are unable to do so, please contact the RIN coordinator for more information.	Operational	Short	Staff Time	\$0		
Management Topic #40 (in brief)	Coordinate with the RIN to obtain permits for the site. If you are unable to do so, please contact the RIN coordinator for more information.	Operational	Short	Staff Time	\$0		

Management Type	Management Plans		Action	Action Type	Suggested Timeline	Timeline		Potential Partners		
	Group	Subgroup				Short (2011-2015)	Medium (2016-2020)	Long (Beyond 2020)	Types of Costs	Estimated Costs
1. Outreach	1. Outreach	1. Outreach	Manage a network of outreach and support groups. Coordinate with the VAMRP and Network of Outreach and Support groups.	Operational	Ongoing	Short Term	Short Term	Operational	Local/National	Other
2. Outreach	2. Outreach	2. Outreach	Manage a network of outreach and support groups. Coordinate with the VAMRP and Network of Outreach and Support groups.	Operational	Ongoing	Short Term	Short Term	Operational	Local/National	Other
3. Outreach	3. Outreach	3. Outreach	Manage a network of outreach and support groups. Coordinate with the VAMRP and Network of Outreach and Support groups.	Operational	Ongoing	Short Term	Short Term	Operational	Local/National	Other
4. Outreach	4. Outreach	4. Outreach	Manage a network of outreach and support groups. Coordinate with the VAMRP and Network of Outreach and Support groups.	Operational	Ongoing	Short Term	Short Term	Operational	Local/National	Other
5. Outreach	5. Outreach	5. Outreach	Manage a network of outreach and support groups. Coordinate with the VAMRP and Network of Outreach and Support groups.	Operational	Ongoing	Short Term	Short Term	Operational	Local/National	Other
6. Outreach	6. Outreach	6. Outreach	Manage a network of outreach and support groups. Coordinate with the VAMRP and Network of Outreach and Support groups.	Operational	Ongoing	Short Term	Short Term	Operational	Local/National	Other
7. Outreach	7. Outreach	7. Outreach	Manage a network of outreach and support groups. Coordinate with the VAMRP and Network of Outreach and Support groups.	Operational	Ongoing	Short Term	Short Term	Operational	Local/National	Other
8. Outreach	8. Outreach	8. Outreach	Manage a network of outreach and support groups. Coordinate with the VAMRP and Network of Outreach and Support groups.	Operational	Ongoing	Short Term	Short Term	Operational	Local/National	Other
9. Outreach	9. Outreach	9. Outreach	Manage a network of outreach and support groups. Coordinate with the VAMRP and Network of Outreach and Support groups.	Operational	Ongoing	Short Term	Short Term	Operational	Local/National	Other
10. Outreach	10. Outreach	10. Outreach	Manage a network of outreach and support groups. Coordinate with the VAMRP and Network of Outreach and Support groups.	Operational	Ongoing	Short Term	Short Term	Operational	Local/National	Other

Management Topics	Management Topics Subcategorizing	Action	Action Type	Suggested Timeline	Timeline	Potential Partners
2. Infrastructure & Operations	2.1. Operations	Continue to build on the experience gained in the 2018-2020 period to ensure that all animal health programs are fully operational.	Operational	2020-2021	Short (2021-2025) Medium (2016-2020) Long (Beyond 2020)	Hand Timberlands Timberland Hypack WMA MIGRAC Wildlife Group BLM Local Nurseries US Forest Service
2. Infrastructure & Operations	2.2. Wildlife	Establish a wildlife management plan for the Island Park Wildlife Refuge.	Operational	Ongoing	Staff Time	60
2. Infrastructure & Operations	2.3. Wildlife	Establish a wildlife management plan for the Island Park Wildlife Refuge.	Operational	Ongoing	Staff Time	60
2. Infrastructure & Operations	2.4. Wildlife	Establish a wildlife management plan for the Island Park Wildlife Refuge.	Operational	Ongoing	Staff Time	60
2. Infrastructure & Operations	2.5. Wildlife	Establish a wildlife management plan for the Island Park Wildlife Refuge.	Operational	Ongoing	Staff Time	60
2. Infrastructure & Operations	2.6. Wildlife	Establish a wildlife management plan for the Island Park Wildlife Refuge.	Operational	Ongoing	Staff Time	60
2. Infrastructure & Operations	2.7. Wildlife	Establish a wildlife management plan for the Island Park Wildlife Refuge.	Operational	Ongoing	Staff Time	60
2. Infrastructure & Operations	2.8. Wildlife	Establish a wildlife management plan for the Island Park Wildlife Refuge.	Operational	Ongoing	Staff Time	60
2. Infrastructure & Operations	2.9. Wildlife	Establish a wildlife management plan for the Island Park Wildlife Refuge.	Operational	Ongoing	Staff Time	60
2. Infrastructure & Operations	2.10. Wildlife	Establish a wildlife management plan for the Island Park Wildlife Refuge.	Operational	Ongoing	Staff Time	60
2. Infrastructure & Operations	2.11. Wildlife	Establish a wildlife management plan for the Island Park Wildlife Refuge.	Operational	Ongoing	Staff Time	60
2. Infrastructure & Operations	2.12. Wildlife	Establish a wildlife management plan for the Island Park Wildlife Refuge.	Operational	Ongoing	Staff Time	60
2. Infrastructure & Operations	2.13. Wildlife	Establish a wildlife management plan for the Island Park Wildlife Refuge.	Operational	Ongoing	Staff Time	60
2. Infrastructure & Operations	2.14. Wildlife	Establish a wildlife management plan for the Island Park Wildlife Refuge.	Operational	Ongoing	Staff Time	60
2. Infrastructure & Operations	2.15. Wildlife	Establish a wildlife management plan for the Island Park Wildlife Refuge.	Operational	Ongoing	Staff Time	60
2. Infrastructure & Operations	2.16. Wildlife	Establish a wildlife management plan for the Island Park Wildlife Refuge.	Operational	Ongoing	Staff Time	60
2. Infrastructure & Operations	2.17. Wildlife	Establish a wildlife management plan for the Island Park Wildlife Refuge.	Operational	Ongoing	Staff Time	60
2. Infrastructure & Operations	2.18. Wildlife	Establish a wildlife management plan for the Island Park Wildlife Refuge.	Operational	Ongoing	Staff Time	60
2. Infrastructure & Operations	2.19. Wildlife	Establish a wildlife management plan for the Island Park Wildlife Refuge.	Operational	Ongoing	Staff Time	60
2. Infrastructure & Operations	2.20. Wildlife	Establish a wildlife management plan for the Island Park Wildlife Refuge.	Operational	Ongoing	Staff Time	60

		Timeline		Potential Partners	
Management Topic	Management Action	Action Type	Suggested Timeline	Type of Crisis	Estimated Costs
<p>8. Emergency Response</p> <p>8.1. Emergency Response</p> <p>8.2. Emergency Response</p>	<p>8.1. Emergency Response: Not emergency, but information on the BDN website and other peak forecasts at key locations will be used for P&I.</p> <p>8.2. Emergency Response: Emergency response, but not emergency, but information on the BDN website and other peak forecasts at key locations will be used for P&I.</p>	Operational	Ongoing	<p>Long (Beyond 2020)</p> <p>Medium (2016-2020)</p> <p>Short (201-2015)</p>	<p>See Agency & Information</p>
<p>9. Emergency Response</p> <p>9.1. Emergency Response</p>	<p>9.1. Emergency Response: This is a list of available resources, but not emergency, but information on the BDN website and other peak forecasts at key locations will be used for P&I.</p>	Operational	Start	Start	50
<p>10. Emergency Response</p> <p>10.1. Emergency Response</p>	<p>10.1. Emergency Response: This is a list of available resources, but not emergency, but information on the BDN website and other peak forecasts at key locations will be used for P&I.</p>	Operational	Ongoing	Start	50

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