RDN Area 'H' ATP Report
Appendices

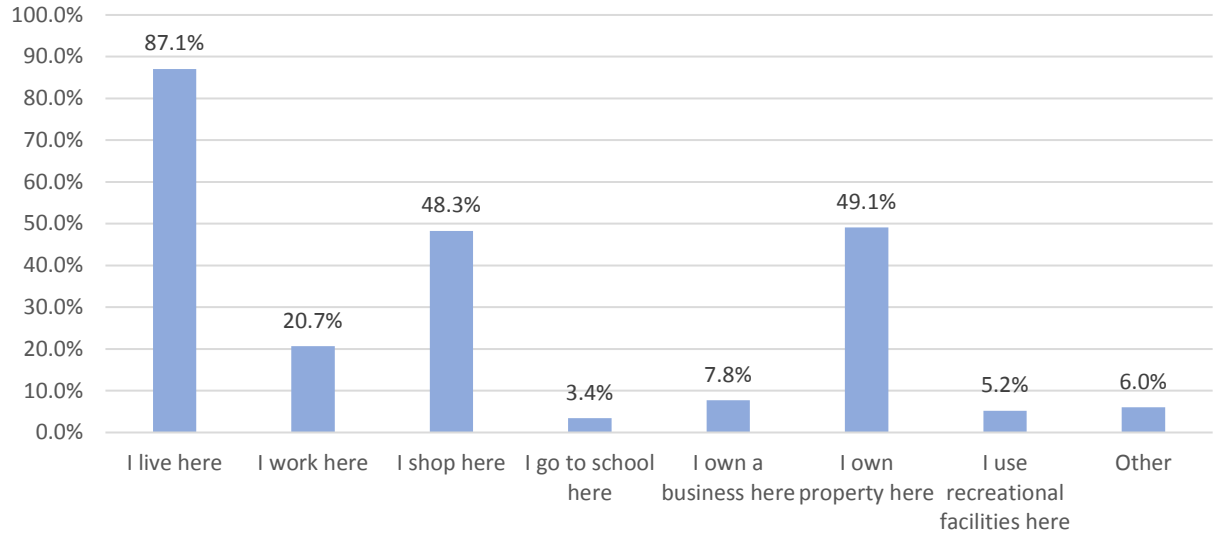
Contents

APPENDIX A: SURVEY RESULTS

The on-line survey was posted to RDN's website between June 24 and August 30, 2016. There were 116 respondents to the survey and the questions and responses are as follows:

Question 1: How are you connected to Regional District of Nanaimo's Electoral Area 'H'?

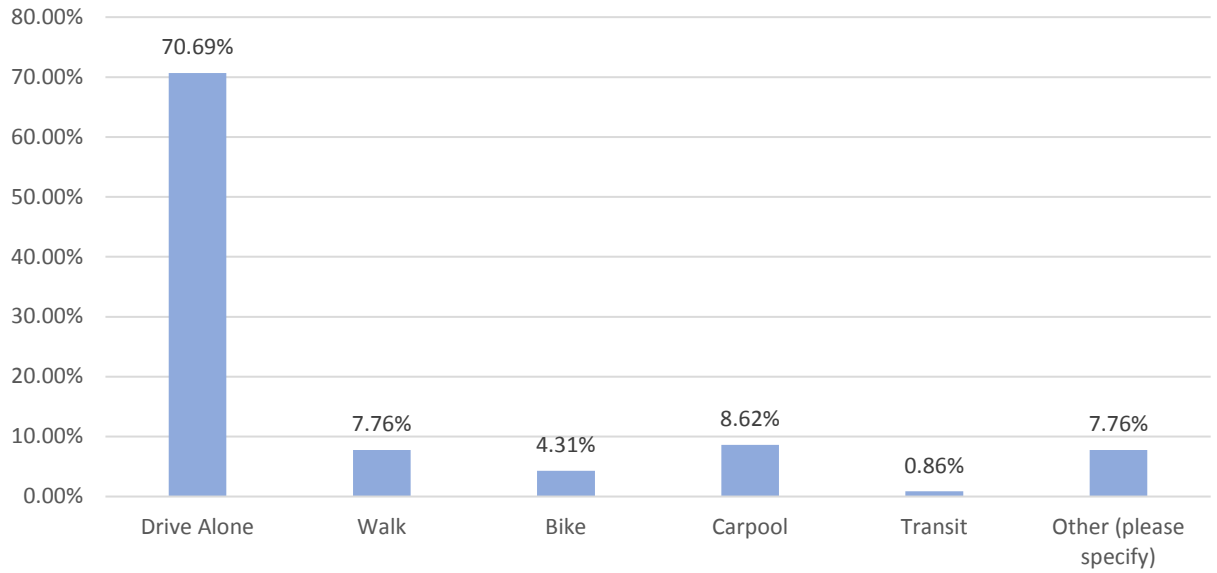
N = 116	Count	Percentage of Respondents
I live here	101	87.1%
I work here	24	20.7%
I shop here	56	48.3%
I go to school here	4	3.4%
I own a business here	9	7.8%
I own property here	57	49.1%
I use recreational facilities here	6	5.2%
Other	7	6.0%



Question 2: How do you primarily travel within Area 'H'?

N = 116	Count	Percentage
Drive Alone	82	70.69%
Walk	9	7.76%
Bike	5	4.31%
Carpool	10	8.62%
Transit	1	0.86%
Other (please specify)	9	7.76%

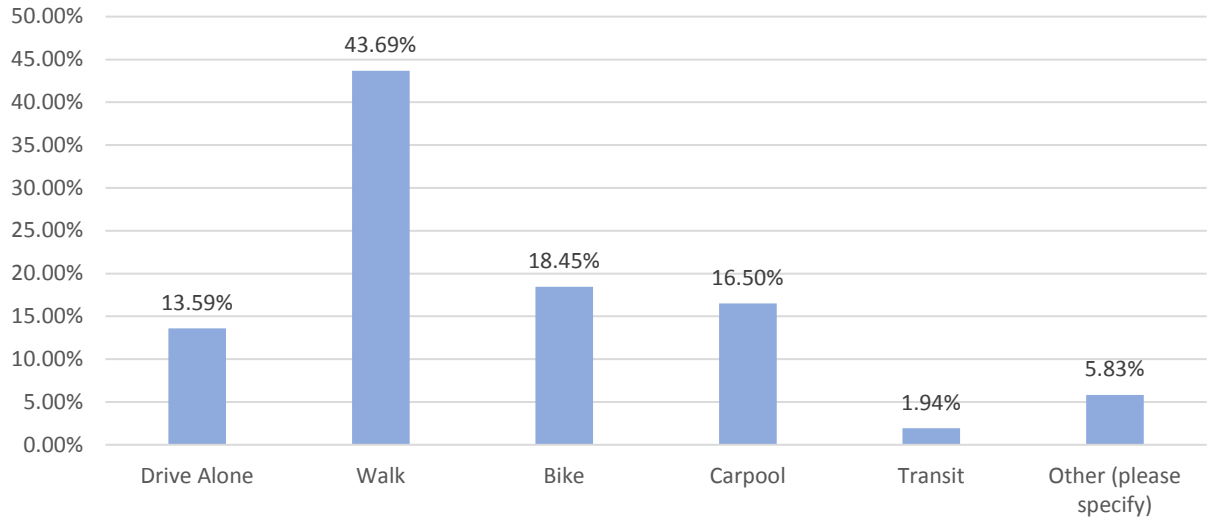
Other: Run, misunderstanding of drive alone/carpool (with kids, with spouse)



Question 3: If you sometimes use a different mode of transportation, what is it?

N = 103	Count	Percentage
Drive Alone	14	13.59%
Walk	45	43.69%
Bike	19	18.45%
Carpool	17	16.50%
Transit	2	1.94%
Other (please specify)	6	5.83%

Other: Run, misunderstanding of drive alone/carpool (with kids, with spouse)



Question 4: How many days a week do you walk to the following activities?

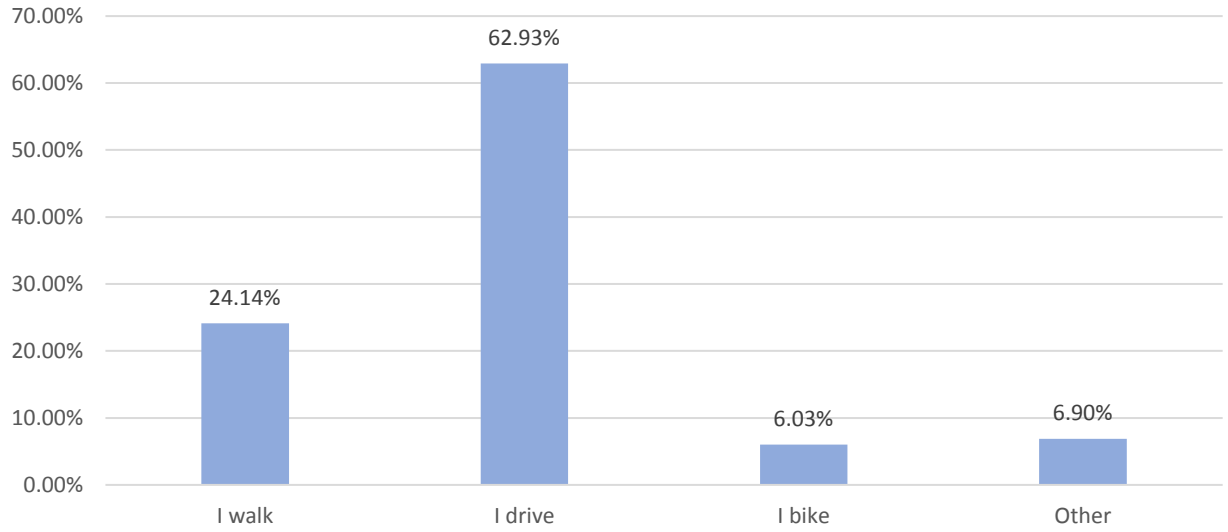
N = 116	0 Days	1	2	3	4	5	6	7	More than 7
Commute to work/school	81	2	3	1	4	4	1	1	1
Access transit	93	2	3	2	0	0	0	0	0
Errands	44	10	15	16	7	4	2	7	3
Drop Off/Pick Up	60	8	10	4	4	8	1	2	1
Recreation	10	2	15	18	13	17	4	19	15
Visit Friends/Relatives	91	4	2	1	1	0	0	0	0

Question 5: How many days a week do you bike to the following activities?

N= 116	0 Days	1	2	3	4	5	6	7	More than 7
Commute to work/school	91	4	2	1	1	0	0	0	0
Access transit	99	2	0	0	0	0	0	0	0
Errands	93	4	9	4	2	1	1	3	0
Drop Off/Pick Up	93	2	0	2	0	5	0	0	0
Recreation	53	11	15	1	6	9	1	5	0
Visit Friends/Relatives	74	10	9	5	3	1	1	1	0

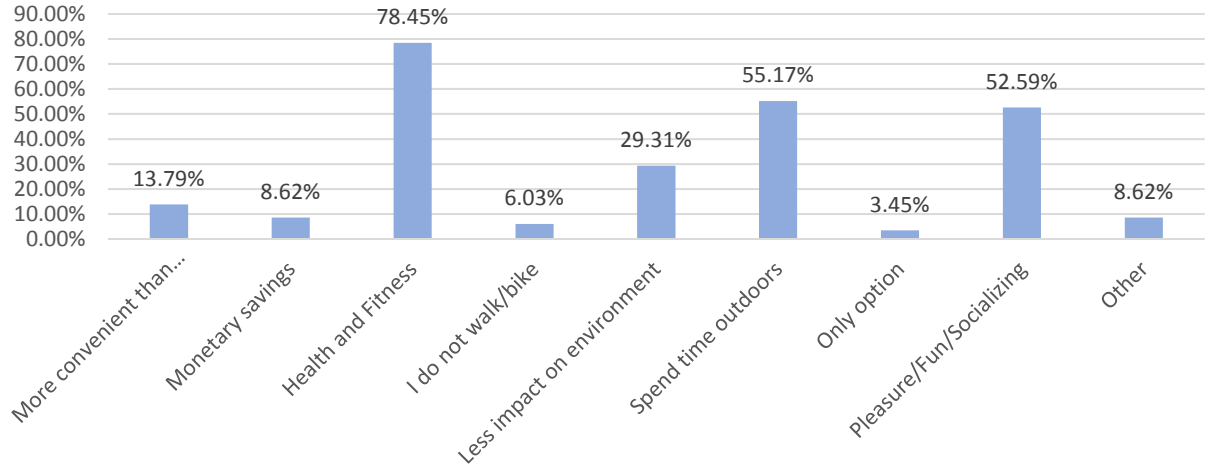
Question 6: How do you primarily get to and from the park or trail?

N = 116	Count	Percentage
I walk	28	24.14%
I drive	73	62.93%
I bike	7	6.03%
Other	8	6.90%



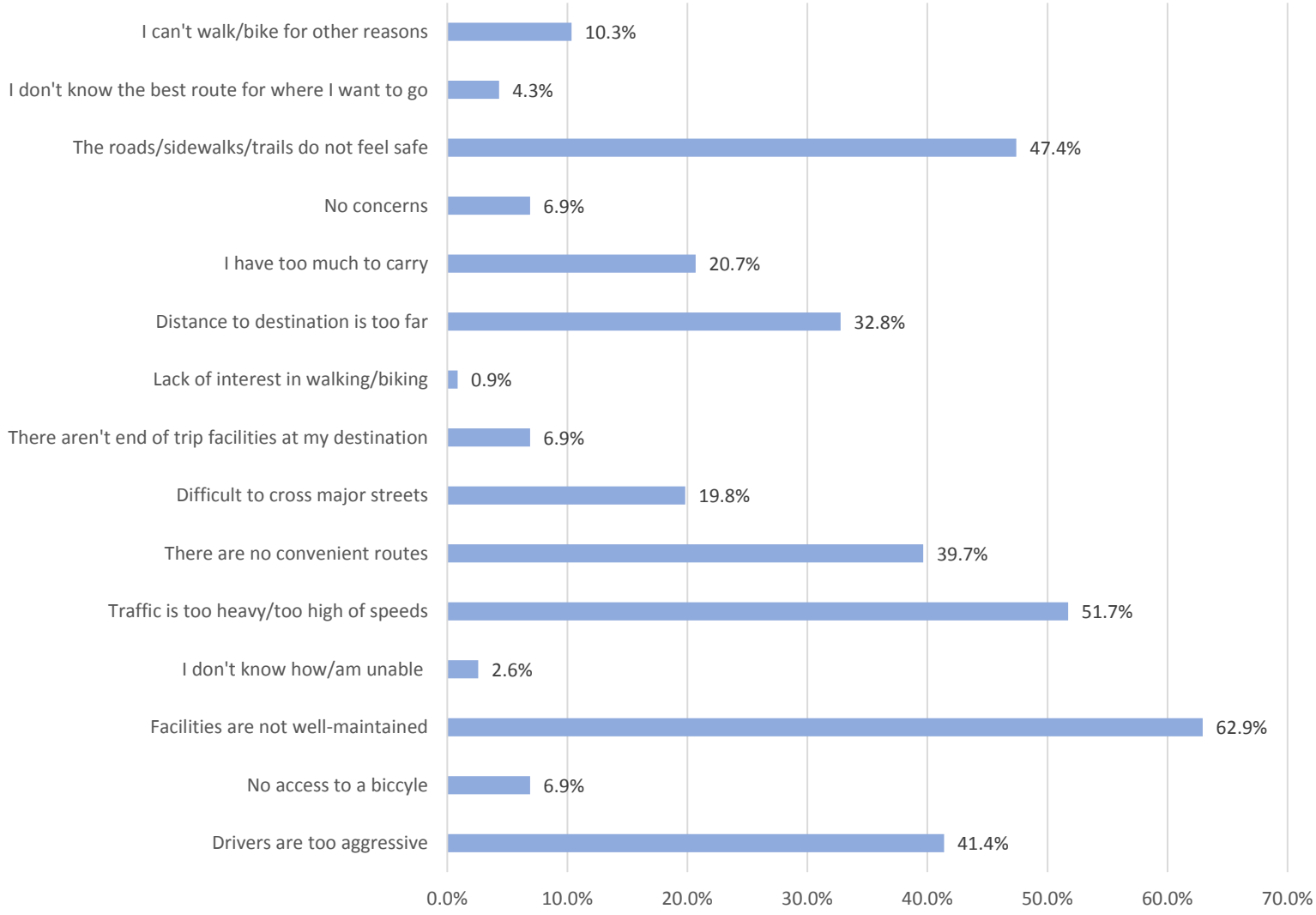
Question 7: Why do you walk or bike? Check all that apply.

N = 116	Count	Percentage
More convenient than driving	16	13.79%
Monetary savings	10	8.62%
Health and Fitness	91	78.45%
I do not walk/bike	7	6.03%
Less impact on environment	34	29.31%
Spend time outdoors	64	55.17%
Only option	4	3.45%
Pleasure/Fun/Socializing	61	52.59%
Other	10	8.62%



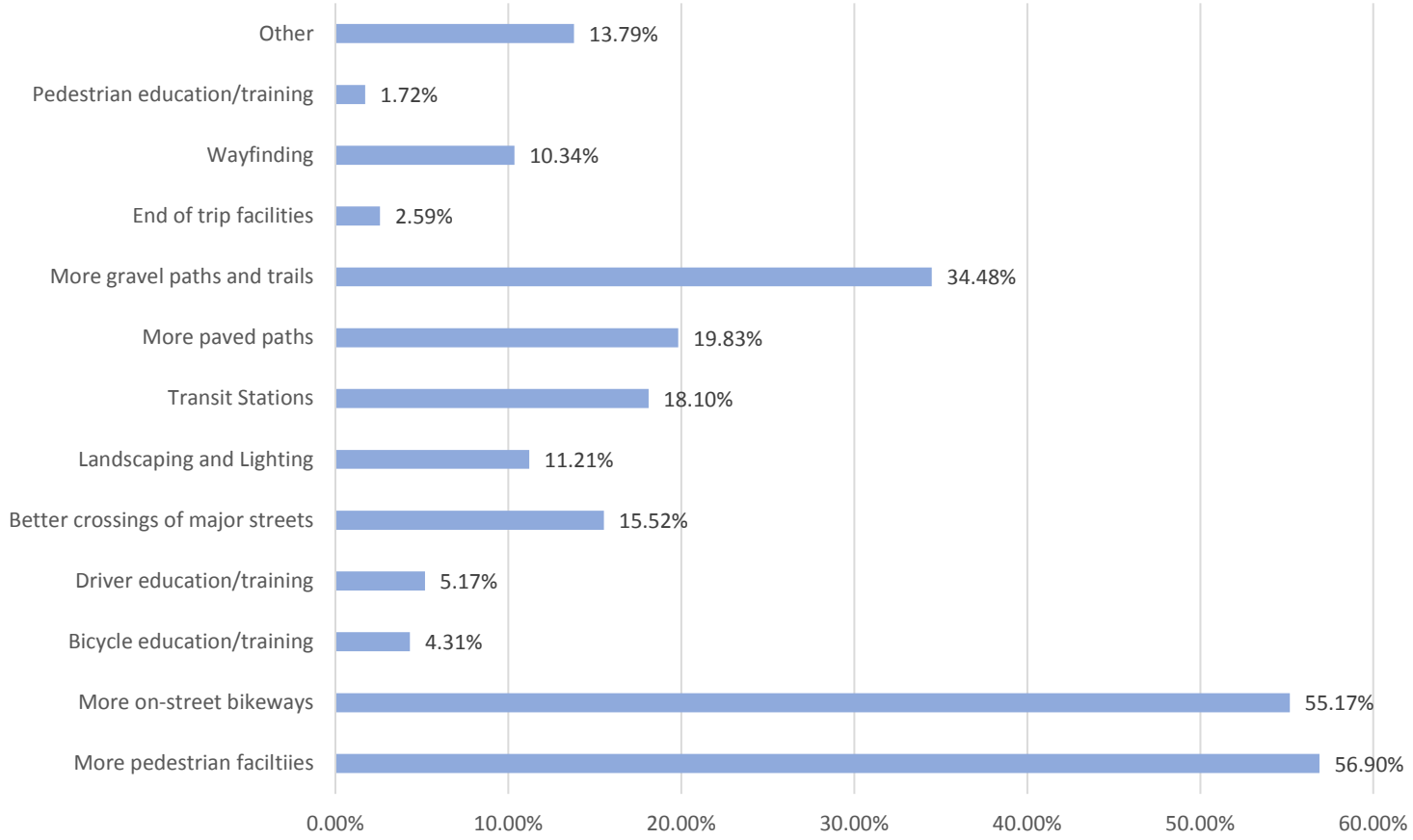
Question 8: What are the top five obstacles or concerns that may prevent you from walking/biking more?

N = 116	Count	Percentage
Drivers are too aggressive	48	41.4%
No access to a biccyle	8	6.9%
Facilities are not well-maintained	73	62.9%
I don't know how/am unable	3	2.6%
Traffic is too heavy/too high of speeds	60	51.7%
There are no convenient routes	46	39.7%
Difficult to cross major streets	23	19.8%
There aren't end of trip facilities at my destination	8	6.9%
Lack of interest in walking/biking	1	0.9%
Distance to destination is too far	38	32.8%
I have too much to carry	24	20.7%
No concerns	8	6.9%
The roads/sidewalks/trails do not feel safe	55	47.4%
I don't know the best route for where I want to go	5	4.3%
I can't walk/bike for other reasons	12	10.3%


I can't walk/bike for other reasons
10.3%
I don't know the best route for where I want to go
4.3%
The roads/sidewalks/trails do not feel safe
47.4%
No concerns
6.9%
I have too much to carry
20.7%
Distance to destination is too far
32.8%
Lack of interest in walking/biking
0.9%
There aren't end of trip facilities at my destination
6.9%
Difficult to cross major streets
19.8%
There are no convenient routes
39.7%
Traffic is too heavy/too high of speeds
51.7%
I don't know how/am unable
2.6%
Facilities are not well-maintained
62.9%
No access to a biccyle
6.9%
Drivers are too aggressive
41.4%
0.0%
10.0%
20.0%
30.0%
40.0%
50.0%
60.0%
70.0%

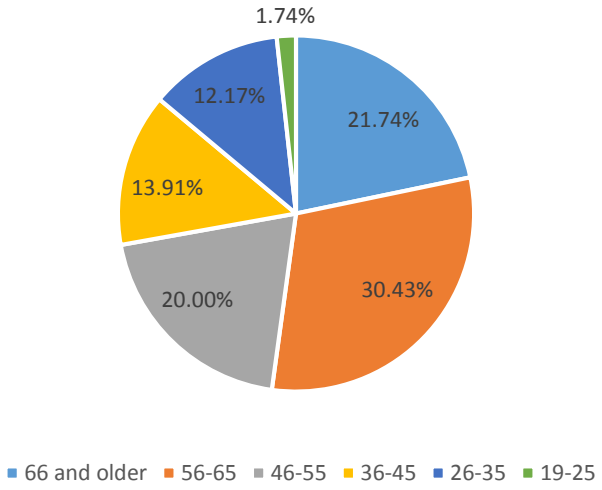
Question 9: Select your top three priorities for future transportation investment

N = 116	Count	Percentage
More pedestrian faciltiies	66	56.90%
More on-street bikeways	64	55.17%
Bicycle education/training	5	4.31%
Driver education/training	6	5.17%
Better crossings of major streets	18	15.52%
Landscaping and Lighting	13	11.21%
Transit Stations	21	18.10%
More paved paths	23	19.83%
More gravel paths and trails	40	34.48%
End of trip facilities	3	2.59%
Wayfinding	12	10.34%
Pedestrian education/training	2	1.72%
Other	16	13.79%


Other
13.79%
Pedestrian education/training
1.72%
Wayfinding
10.34%
End of trip facilities
2.59%
More gravel paths and trails
34.48%
More paved paths
19.83%
Transit Stations
18.10%
Landscaping and Lighting
11.21%
Better crossings of major streets
15.52%
Driver education/training
5.17%
Bicycle education/training
4.31%
More on-street bikeways
55.17%
More pedestrian faciltiies
56.90%
0.00%
10.00%
20.00%
30.00%
40.00%
50.00%
60.00%

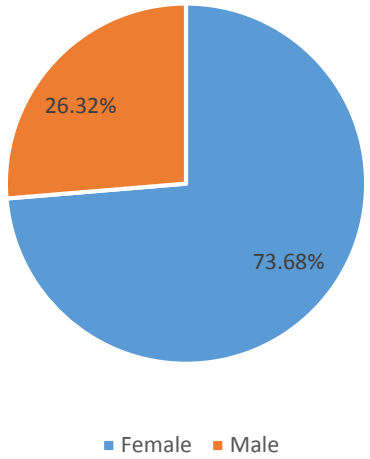
Question 10: What is your age?

N = 115	Count	Percentage
66 and older	25	21.74%
56-65	35	30.43%
46-55	23	20.00%
36-45	16	13.91%
26-35	14	12.17%
19-25	2	1.74%



Question 11: What is your gender?

N = 114	Count	Percent
Female	84	73.68%
Male	30	26.32%



APPENDIX B: WIKIMAP AND COMMENTS

An interactive Wikimap was launched on June 21st, 2016 to collect feedback from community members regarding barriers to active transportation and route preferences. The Wikimap was available until August 31st, 2016. Results of the exercise are summarized in this section. For access to detailed results in an interactive format, please reference the project Wikimap.[1]

Barriers to Walking and Cycling

Community members identified four locations as barriers to walking and seven locations as barriers to bicycling (Wikimap Results – Barriers to Walking and Cycling). Each of these locations was subsequently voted upon, with 61 votes cast in total. All of the locations identified in this first figure had net "likes" (likes minus dislikes) of zero or greater – meaning that the locations suggested were generally supported by other community members. Detailed comments concerning barriers to walking and cycling are as follows (The ID numbers shown in each image match the ID numbered comments in the tables that follow each Figure).

Barriers to Walking

[1] wikimapping.com/wikimap/Electoral-Area-H-Active-Transportation-Plan.html

Barriers to Walking Comments

ID	Category	Initial Comment	Creator ID	Comment ID	Comment	Net Like	Like	Dislike
196901	Barrier to Walking	Add a pedestrian crosswalk at this location (include rapid flashing beacon to make crossing more apparent)	95021	98245	This is a great hub of retail yet very hard to cross from one side to the other. Crossing lights and perhaps a lower speed limit would be a bit improvement.	4	5	1
196901	Barrier to Walking	Add a pedestrian crosswalk at this location (include rapid flashing beacon to make crossing more apparent)	95021	97906	I Agree	4	5	1
196901	Barrier to Walking	Add a pedestrian crosswalk at this location (include rapid flashing beacon to make crossing more apparent)	95021	97990	I Agree. Many cross at this area, including school kids "de-bussing".	4	5	1
196901	Barrier to Walking	Add a pedestrian crosswalk at this location (include rapid flashing beacon to make crossing more apparent)	95021	99438	I Agree	4	5	1
196902	Barrier to Walking	Recreate view point and beach access	95021	97650	We would like to see the speed limit reduced along North Qualicum Bay to 60 k/hour. Also, wider shoulders along North QBay for walking and biking.	3	3	0
196902	Barrier to Walking	Recreate view point and beach access	95021	97690	I Agree. This area has changed from the time of highway speed limits being set. This is obvious to any of us who have watched new homes being built on both sides of the road over the last 15 years. Many driveway accesses have been added and many of the driveways are blind to oncoming traffic, therefore hazardous - especially to speeding traffic. The local traffic has increased due to the new businesses in Qualicum Bay (we love the additions) and businesses in the Bowser area (we love them too). Highway 19a is considered the scenic route of Lighthouse Country and brings tourists to the area. If we slow the whole route down, people can safely enjoy the views and businesses by car, bicycle, or on foot. Wider shoulders would increase that safety.	3	3	0

196902	Walking	access	95021	97690	shoulders would increase that safety.	3	3	0
196902	Barrier to Walking	Recreate view point and beach access	95021	97706	We want to have the opportunity to walk and bike along this stretch of road for exercise and to connect with area shopping. Current route design makes this risky from a traffic safety perspective. Locals would benefit greatly as would our tourism opportunities given the growing group of touring bike riders. Be green, be safe. Thanks.	3	3	0
197175	Barrier to Walking	80km/h speed limit from this point south - consider reducing the speed limit to 60km/h from this point south to at least Charleton Drive (Lynne Murray comment)	95491	98244	Charlestown drive isn't far enough south. The 60 zone should extend from Bowser to Qualicum Bay inclusively. There are lots of blind driveways and added traffic with the new food available along this route.	1	1	0
197175	Barrier to Walking	80km/h speed limit from this point south - consider reducing the speed limit to 60km/h from this point south to at least Charleton Drive (Lynne Murray comment)	95491	99439	I Agree	1	1	0
197224	Barrier to Walking	Existing trail can feel unsafe (creepy) and closed in, in one stretch. Trail is not stroller friendly for parents to walk to Henry Morgan Park (must lift stroller over roots). Children's bikes also have a hard time on trail near the playground (roots etc)	94856					

Barriers to Cycling

Barriers to Cycling Comments

ID	Category	Initial Comment	Comment	Net Like	Like	Dislike
196905	Barrier to Bicycling	This route could function as a route for pedestrians, cyclists and electric carts (and as access and exit for emergency response).	I Agree	0	1	1
197017	Barrier to Bicycling	Recent insertion of concrete barrier block to stop recreational vehicles from accessing recent cut block on Chef Creek FSR. Bicycles must be carried around or over block.	I Agree	4	4	0
197017	Barrier to Bicycling	Recent insertion of concrete barrier block to stop recreational vehicles from accessing recent cut block on Chef Creek FSR. Bicycles must be carried around or over block.	I Agree	4	4	0
197017	Barrier to Bicycling	Recent insertion of concrete barrier block to stop recreational vehicles from accessing recent cut block on Chef Creek FSR. Bicycles must be carried around or over block.	I Agree	4	4	0
197017	Barrier to Bicycling	Recent insertion of concrete barrier block to stop recreational vehicles from accessing recent cut block on Chef Creek FSR. Bicycles must be carried around or over block.	I Agree	4	4	0
197019	Barrier to Bicycling	Barrier to motorized vehicles requires dismounting to execute dogleg entrance to ravine separating Thompson Clark W. from near Ocean Trail.				
197020	Barrier to Bicycling	Same situation (dogleg entrance, stair steps into/out of ravine with creek).				
197630	Barrier to Bicycling	Bridges without a shoulder are dangerous for cyclists & pedestrians. Prefer a vehicle bridge with a safe, separated walk/bike way.	I Agree	2	2	0

197631	Barrier to Bicycling	Bridges without a shoulder are dangerous to active transportation options. Prefer a vehicle bridge with separated bike/walk way.	I Agree	2	2	0
197631	Barrier to Bicycling	Bridges without a shoulder are dangerous to active transportation options. Prefer a vehicle bridge with separated bike/walk way.	I Agree	2	2	0
197631	Barrier to Bicycling	Bridges without a shoulder are dangerous to active transportation options. Prefer a vehicle bridge with separated bike/walk way.	I Agree	2	2	0
205240	Barrier to Bicycling	This crossing is dangerous for bikes because the trail is too close to the creek. A guard rail to keep people and bikes from falling into the creek may be advisable.				

Line

Users(*): comments: 0 Point comments: 9

Note: * when allow anonymous users, the data won't be precise as multiple users may use the same computer to input

Comfortable Walking and Cycling Routes

Community members identified two locations as comfortable cycling routes.

Comfortable Cycling Routes

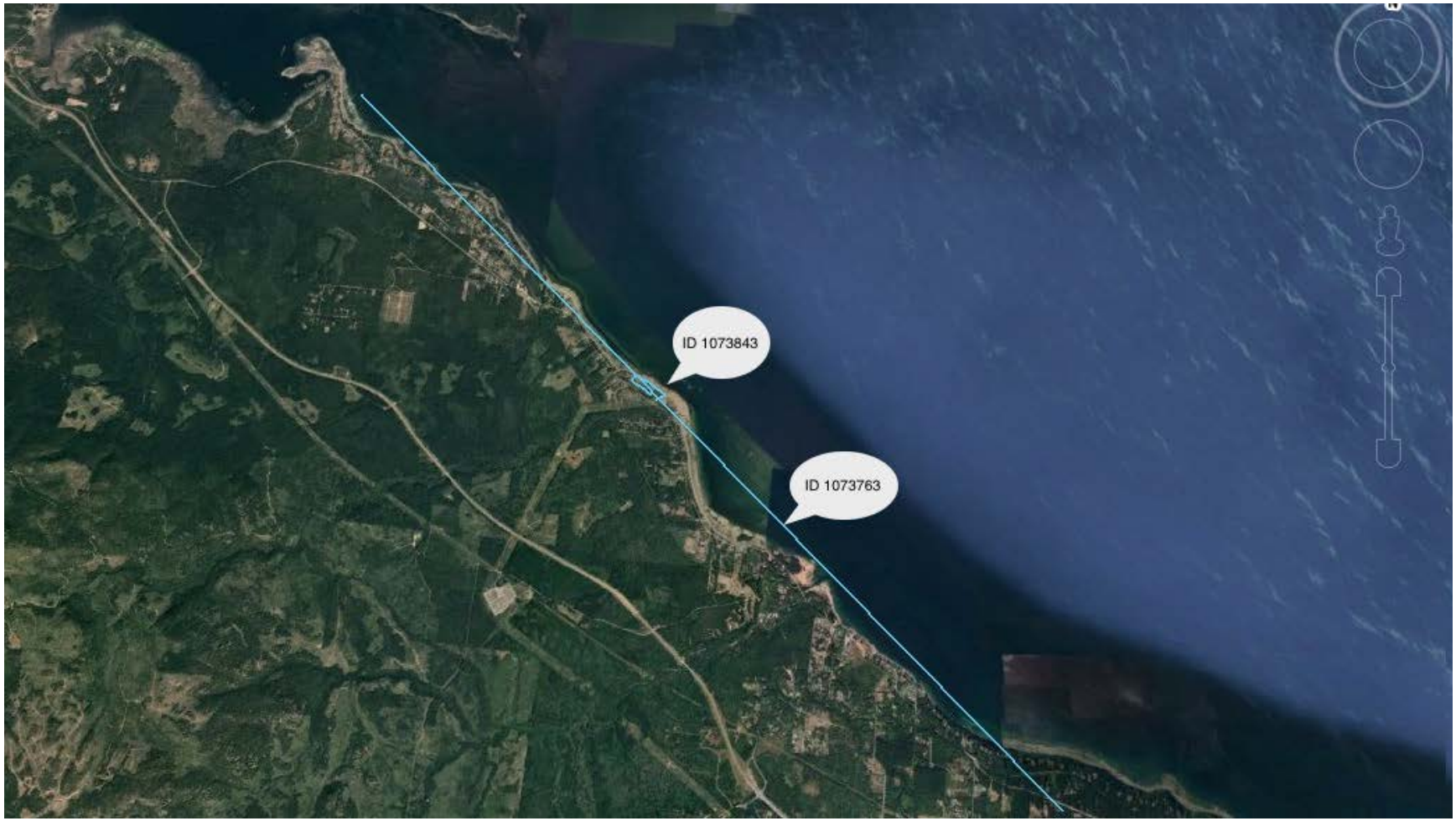
Comfortable Cycling Routes Comments

ID	Category ID	Category	Initial Comment	Net Like	Like	Dislike
1073830	7624	Comfortable Bicycle Route	Return to DBID office (original starting point to get to Bowser Seed Farm).			
1073831	7624	Comfortable Bicycle Route	Alternate route to Bowser from DBID-Bowser Seed Farm-Hwy 19 loop. Note Chef and Cook Cr. FSR's are "comfortable" bike routes only needing signage.	1	1	0

Users(*): Points: 11 Line comments: 0 Point comments: 0

Note: * when allow anonymous users, the data won't be precise as multiple users may use the same computer to input

Comfortable Walking Routes



Comfortable Walking Route Comments

ID	Category	Initial Comment	Net Like	Like	Dislike
1073763	Comfortable Walking Route	A nice beach walk loop in our neighbourhood that stays off the highway.			
1073843	Comfortable Walking Route Line	Wider shoulders both sides of Island Highway for walking. Lower speed limit. Most vehicles travel 10 to 20 km above posted speed limit already. Take out all dotted lines so no passing since then they do 30 to 40 km above posted limit. DANGEROUS walking and many of us live along here now!	1	1	0
Users(*): 136	comments: 0	Point comments: 0			

Note: * when allow anonymous users, the data won't be precise as multiple users may use the same computer to input

Improvements Needed to Support Walking and Cycling

Community members identified 10 cycling routes that they would like to see improved. Each of these locations was subsequently voted upon, with general support for the recommended improvements, with the notable exception of several dissenting voices, suggesting that the locations suggested were generally supported by other community members.

Improved Bicycle Routes Desired

Improved Bicycle Routes Desired Comments

ID	Category	Initial Comment	Comment	Net Like	Like	Dislike
1073730	Improved Bicycle Route Desired	Very narrow/poor quality shoulders - 1m wide shoulder desirable for walking/cycling	Wider shoulders would make walking safer from Cochrane Road to where double lane begins near legion	1	1	0
1073731	Improved Bicycle Route Desired	Make this section of roadway one lane in each direction and reduce the speed limit to 70 km/h. Utilize extra paved roadway for cycling and walking	I Disagree. Roads are for cars. They always have been. If you are talking about a dedicated walkway like Tofino area residents have, beside the road, then put the plan together. Then show us what you mean.	-1	0	1
1073732	Improved Bicycle Route Desired	Excessive speed limits - should be lowered from 80 to 60 - feels unsafe to walk or bicycle. More and more destinations in town with strong desire to walk/bike to visit				
1073735	Improved Bicycle Route Desired	Excessive speed limit - 80 zone should be reduced to 60. Unsafe for walking or bicycling. More and more destinations in communities that people want to bike and walk to.	I Disagree	-1	0	1
1073822	Improved Bicycle Route Desired	Gainsberg swamp to Crosley Rd. around Bowser Seed Farm back to Crosley to Gainsberg (loop)				
1073823	Improved Bicycle Route Desired	Correction: First reference to Crosley should have been Cowland. This is continuation of previous trail.				
1073824	Improved Bicycle Route Desired	Completion of loop Gainsberg Swamp - Bowser Seed Farm and back.		1	1	0
1073825	Improved Bicycle Route Desired	DBID office on Gainsberg->Crosley->Hwy 19A->Bowser Ecological Reserve Rd, right onto S. branch->rough path to back of farm->to Anderson Rd.->back on path around Sandy Creek headwaters, right onto descent to Crosley->home via Gainsberg to DBID office.		1	1	0
1073826	Improved Bicycle Route Desired	Bowser Seed Farm branch right, right again to Hwy 19, S to McColl Rd. where one can either return to Bowser via McColl or head uphill to Chef Creek Forest Service Road and thence back to 19A and return to DBID office.				
1073827	Improved Bicycle Route Desired	Uphill from Hwy 19 to Chef Cr. FSR (running off map).				
	Improved Bicycle	Continuation of Hwy Bowser Seed Farm to Chef				

1073827	Route Desired	map).				
	Improved Bicycle	Continuation of Hwy Bowser Seed Farm to Chef				
1073828	Route Desired	Cr. FSR.				
	Improved Bicycle					
1073829	Route Desired	Returning via Cook Cr. Rd. to Hwy 19A.				
			I Disagree. Along that narrow 2 lane highway barely wide enough for cars. You must be joking. "Mostly through Bowser village" -- driving a car is much safer.			
	Improved Bicycle	safe bike path Shaws Hill to Fanny Bay.... MOSTLY	Show the details. Show the costs. Your map shows			
1073840	Route Desired	through Bowser village.	little.	-1	0	1
		at a minimum, Increase the shoulder width into				
	Improved Bicycle	Qualicum Beach. Prefer a physical separation,				
1074188	Route Desired	such as a raised shoulder or otherwise.				

Users(*): 136 Line comments: 4 Point comments: 0

Note: * when allow anonymous users, the data won't be precise as multiple users may use the same computer to input

Community members identified 8 walking routes that they would like to see improved. Each of these locations was subsequently voted upon, with support expressed for each of the recommended improvements, suggesting that the improvements identified were generally supported by other community members.

Improved Walking Routes Desired

Improved Walking Routes Desired Comments

ID	Category	Initial Comment	Comment	Net Like	Like	Dislike
1073733	Improved Walking Route Desired	Widen road to make it safe for pedestrians and cyclists to get through this constrained area. (Trees also need to be cut back to improve sight lines)				
1073734	Improved Walking Route Desired	Safe walking route needed separate from roadway	There also needs to be an improved facility for cycling here	2	2	0
1073734	Improved Walking Route Desired	Safe walking route needed separate from roadway	Widen road to accommodate pedestrians and cyclists	2	2	0
1073736	Improved Walking Route Desired	Connection Needed for Bicycling/Walking				
1073737	Improved Walking Route Desired	Connection needed from regional park to the village		1	1	0
1074189	Improved Walking Route Desired	The two primary nodes of "downtown" Bowser need to be linked by a safe, fairly direct walking route, ideally smooth enough for a mother with a stroller & young child to easily move between the two areas. Also, in the same area there need to be safer crossings on 19A.				
1075691	Improved Walking Route Desired	A walking trail from the end of Jamieson to the beach would be very nice.				
1078296	Improved Walking Route Desired	To walk from my home to Magnolia Court means walking on a varying shoulder of a highway with a speed limit of 80km/h. This could be a wonderful walking/biking route but instead it is nerve racking! Just turning into your own driveway in a car can be a harrowing affair. The speed limit should be 60 from the "Cone Zone" all the way to Magnolia Court. This is a residential area for which 80km/h is just too fast.				
1078297	Improved Walking Route Desired	Bowser is our village centre, and most of us do errands there. Some of us prefer to walk rather than drive. Some residents use the RR tracks to walk to town, but walking there alone can mean meeting bears and other large animals en route so is unsafe. The highway is the only real option and itâ€™s dangerous. Moreover when returning from Bowser, crossing the highway to get back to Gainsberg is a nightmare. At a bare minimum the speed limit between Bowser and Gainsberg Road should be drastically reduced, this is a populated area. In similar areas 60 km/hr is common and would be helpful and relatively easy to put into practice. I donâ€™t know whether walking lanes or parallel walking paths (on both sides of the highway) are feasible, either would be an improvement but still not safe given the heavy traffic and high speeds encouraged.				

Users(*): 136 Line comments: 2 Point comments: 0

Note: * when allow anonymous users, the data won't be precise as multiple users may use the same computer to input

APPENDIX C: STAKEHOLDER FEEDBACK (JUNE 22)

Nanaimo Regional District Electoral Area 'H' Active Transportation (AT) Plan Stakeholder Meeting

Date: June 22, 2016

Present:
Alta: Gavin Davidson, Kevin Fraser
RDN: Paul Thompson (Manager of Long Range Planning) Courtney Simpson (Senior Planner, Long Range Planning), Jamai Schile (Planner), Bill Veenhof (Electoral Area 'H' Director), Wendy Marshall (Parks), Brandon Miller (Transit)
Bowser Elementary Parents Advisory Council
Lori Chesley
Lighthouse Country Business Association
Lori Chesley
OCP Working Group: Don Milburn, Dave Simpson (casual walking group)
Greater Nanaimo Cycling Coalition: Leo Boon
Resident and Friday Walking Group: Sherry Gallagher

Note that comments are associated with individuals; issues are roughly in chronological order

Individual	Comments
Bill Veenhof	Importance of aesthetics, holistic thinking, "storefront to the street" Need to be pragmatic and face challenges head on Deeply important to involve MoTI – conflicts between two parties noted in Gabriola work Community Works Funds for Area H will total $600,000 by end of year
Leo Boon	Advocates/pessimists in MoTI – doesn't matter, need to influence decision makers within agency
Lori Chesley	Important connections for kids, alternatives to bussing, particularly between elementary school and Magnolia Court
Bill Veenhof	Question to Leo: Lighthouse Trail viable for bike tourism?
Leo Boon	Response, could be if connected to destinations such as Deep Bay and Qualicum Beach Surface needs to be smooth and easy to ride on, but not necessarily paved Cowichan Valley Trail narrow but suitable for road bikes You want people (in cars) to slow down to spend tourist dollars, boost

	local economies Lighthouse, E&N great option for trail Important to also consider mobility scooters (tours currently taking place in Nanaimo)
Wendy Marshall	Trails should be of material that compacts for wheelchairs Meandering (Lighthouse) vs. direct routes (E&N rail line and road right of ways), important distinction between commuting and recreation-oriented trails
Leo Boon	Shoulders are way too narrow E-bikes important future consideration (growing popularity in Holland + elsewhere), conducive to longer commutes by bike, converts former drivers
Bill Veenhof	Lakeview Road, Spider Lake are dangerous Faye Road + Gainsberg are good candidates for advisory lanes
Wendy Marshall	Importance of E&N Corridor Doing first connector right now, opportunity Serves as "spine," but access points are needed along the spine Consider horseback riding
Leo Boon	Greater Nanaimo Cycling Coalition and BC Cycling Coalition will distribute information on project, including from WikiMap and website. Feedback from contacts/members/associated members, in addition to data collected, should provide good idea of popular walking and cycling routes Employ varied strategies to complete contiguous route – i.e. to travel through the area might mean using a combination of existing quiet residential roads, packed trails, and widened shoulders Getting people to embrace active transportation means looking at ways to make roads and trails 'safe.' Can be accomplished by changing behaviour with road users – e.g. improve road crossing for wheelchair and pedestrians at important community areas such as business nodes, thereby reducing speeds of motorized road users

APPENDIX D: OPEN HOUSE ATTENDEE FEEDBACK

Information Boards https://apd.box.com/s/o90edzper90bwxu5sdvql3p54vym2cbh
Date: June 22, 2016

Nanaimo Regional District Electoral Area 'H' Active Transportation (AT) Plan Open House

Present:
Alta: Gavin Davidson, Kevin Fraser
RDN: Paul Thompson (Manager of Long Range Planning) Courtney Simpson (Senior Planner, Long Range Planning), Jamai Schile (Planner), Bill Veenhof (Electoral Area 'H' Director)

Note that comments are representative of common themes, not attributed to individuals

Comments/Notes
Paved shoulders needed
Four lane highway start should be shifted away from community
Qualicum Bay to Nile Creek Ridge – 80km/h speed limit is too fast
Blind corner @ Thames Creek/Georgia Park
Private property/no trespassing signs posted along rail corridor where trails cross – began two months ago?
Horne Lake Rd. realignment needed
Many local trails that are unmapped
Want to see 50 km/h zone for Island Highway 19A
Many people excited by the prospect of rail corridor trail (rails to trails!)
19A repaving – presents opportunity for introducing wider shoulders (1.5m width desirable)
Approx. 50-75 bike touring cyclists (estimate from resident) pass through Bowser each day in summer
"Thursday Crew" – informal trail building group
Sensor solar lights in Qualicum Reserve: stay on, but reduce to 20% light levels during winter. Their cost is high and they tend to flicker in winter/cold weather
Converting the rail line into a multi-use path. It runs right near the elementary school and into the village.
Highway maintenance – need to keep gravel off of the paved shoulders (no room for bikes). Higher visibility of trail signs and accessible maps.
Transportation ideas: turning lanes in village, cross walks for safe access to shops and services, electric car plug in please, potential for car sharing in Village and other higher density residential areas.
Bike/Walk lanes needed from Qualicum Bay to Deep Bay
Reduce speed limit and the extent of passing lanes between Qualicum Bay and Deep Bay.

APPENDIX E: PUBLIC MEETING PRESENTATION

Healthy Built Environment Linkages Toolkit

Collected, analyzed & summarized the evidence

1. **Consultation with experts**
   - Advisory groups – planners and content experts
2. **Evidence review methodology**
   - Literature reviews of the physical features:
     - Neighbourhood design
     - Transportation Networks
     - Natural environments
     - Food systems
     - Housing
3. **Created a Grading system**
   - Systematic clustering of findings

HEALTHY BUILT ENVIRONMENT LINKAGES
A TOOLKIT FOR DESIGN • PLANNING • HEALTH

Health Evidence shows us:

Provincial Health Services Authority
Province-wide solutions. Better health.

VERSION 1.1 - October 2014

HEALTHY TRANSPORTATION NETWORKS FACT SHEET

Planning Principle:

2. Make active transportation convenient and safe

Encourage the decision to cycle, walk, or use transit through smart infrastructure and engineering choices.

- Separated bike lanes alongside major city routes, quiet residential bikeways, off-street bike paths and traffic signage have all been shown to be effective ways to encourage bike use.
- Providing easy access to trails and paths can encourage walking and cycling for active transport. Trails and paths should be located within residential areas to improve accessibility.
- Numerous studies have found that on-road marked bike lanes reduce rates of injury and collision while cycling.

Planning Principle:

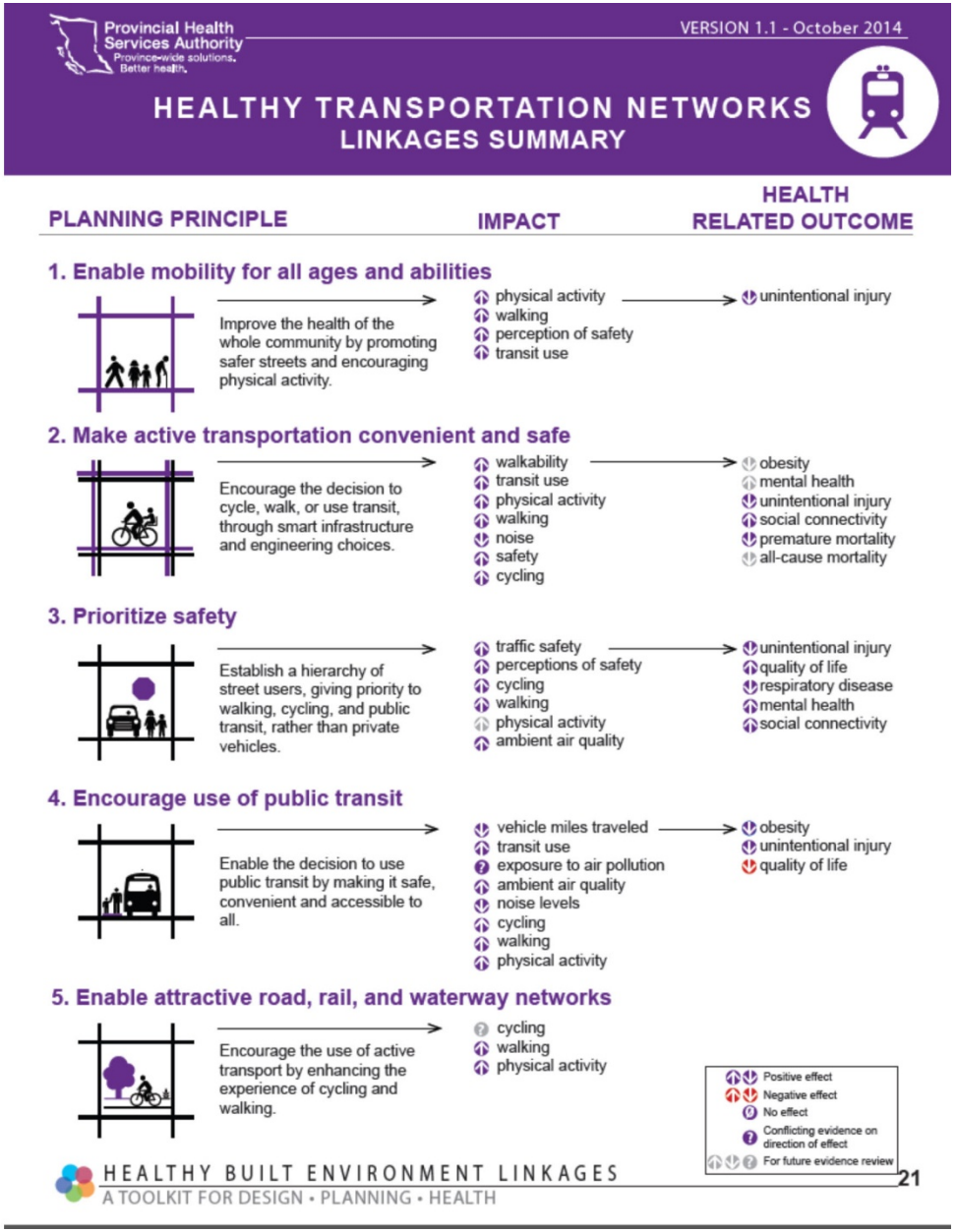
3. Prioritize safety

Establish a hierarchy of street users, giving priority to walking, cycling, and public transit, rather than private vehicles.

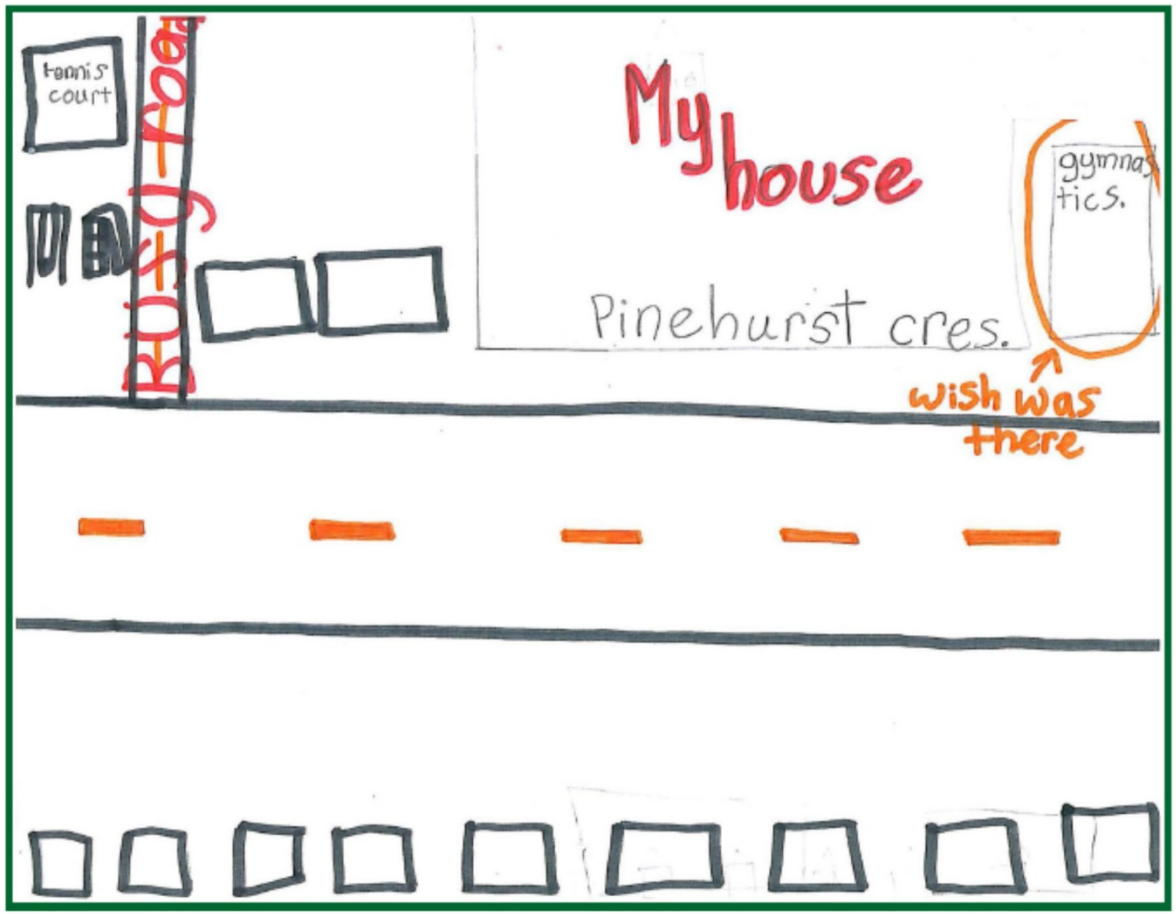
- Traffic calming features such as narrow lanes and street trees are associated with an increase in walking.
- Street safety improvements such as red-light cameras, left turn lanes and separated cycle routes have been shown to greatly decrease the occurrence of traffic collisions and injuries among all road users.
- Interventions to reduce neighbourhood crime rates could potentially improve physical activity levels, especially among older adults.

HEALTHY BUILT ENVIRONMENT LINKAGES
A TOOLKIT FOR DESIGN • PLANNING • HEALTH

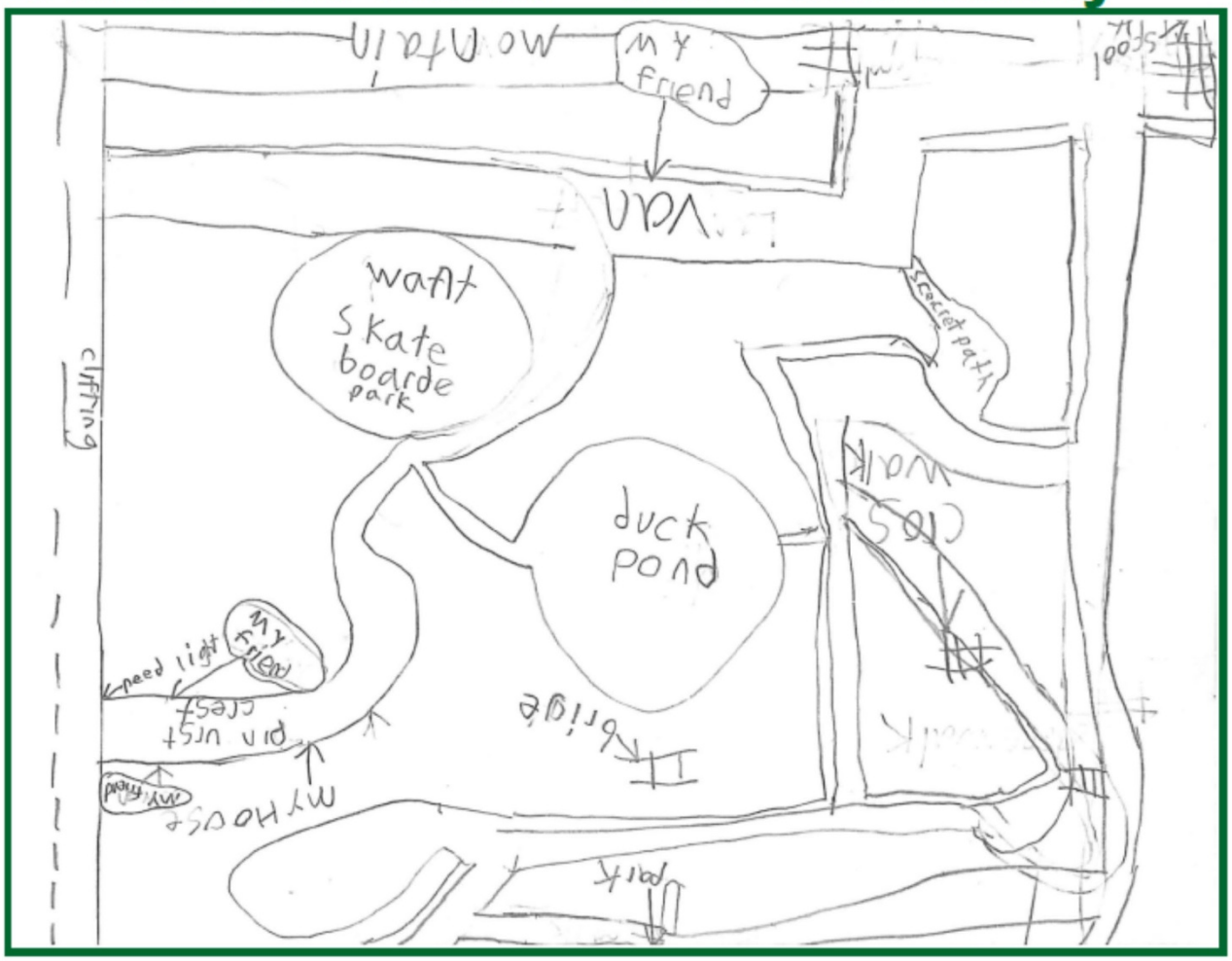
Health Evidence shows us:



A child who is Driven- Their Community



A Child who Walks – Their Community



Information

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Island Health Healthy Built Environment:
http://www.viha.ca/mho/about/hpes/hbe.htm

APPENDIX F: STAKEHOLDER FEEDBACK (OCTOBER 12)

Nanaimo Regional District Electoral Area 'H' Active Transportation (AT) Plan Community Meeting and Open House

Date: October 12, 2016

The second Area 'H' Active Transportation Plan Stakeholder Meeting was attended by 40 to 50 participants. The project team made a presentation[2] to the group that summarized progress to date and introduced a draft project list for consideration.

The presentation elicited a number of comments and questions from the audience as follows:

- Lower speed limit to 50 in Bowser and Qualicum Bay.
- Bridges need to be taken into account, esp on Hwy 19A, a real pinch point for travel both pedestrian and cyclists and more expensive to improve. Nile Creek bridge is especially dangerous. Sidewalk is only on one side and is not wide enough for mobility scooters.
- Question re integration of transit into the Active Transportation Plan – answer: Courtney explained expansion of service of 99 and potential for stops and shelters, potentially in coordination with the school bus route.
- When 19A is due for repavment, what is the standard for a paved shoulder and would it automatically be done or do we need to fight for that.
    - A: Not automatic, and varies as to how much it costs. Case by case. Important decisions because repaving may only be once every 20 years. Will be good to have this ATP because they look to processes like this to help tell MoTI what the community is looking for, where and why, and how does it fit in the overall priorities.
- What about narrower roads to slow people down?
    - Dave Edgar: depends on the situation, and different classifications of road. More choices with local roads.
    - Gavin: Transportation Association of Canada is working on issue of lane widths and there will be recommendations in new Guide for reduced lane widths. We are seeing the industry go in this direction.
- Road diets have been used in Asia for a long time, and there is no reason why we can't do this in Canada. A wise way to go, especially for the tax payers. Just a little bit of paint. Feel strongly that the ATP should make this a strong recommendation.
- Will gates have trails to prevent motorized use?
    - Gavin: Alta's recommendation would be to not use gates until there is a problem that is recurring.
    - Leo: if you do use them, make sure scooters and e-bikes can get through.

The group then engaged in an interactive ranking exercise focused on potential projects. Each participant was given three groups of three coloured stickers (nine total). These groups of dots represented high, medium and low priorities, respectively. Participants used these dots to identify their priority projects, with high priority projects scoring a "3," medium priority projects "2," and low priority projects "1." Results were combined with a concurrent online exercise for those who could not attend the meeting.

[2] https://apd.app.box.com/s/uliabubom4lvbjosgzshwpu5izbezxn4

The final results were tallied and are summarized below. Final community scores, ranging from zero to 53, were translated into a ranking of zero to five for inclusion in the project prioritization exercise described in this plan.

Table 1: Community Scoring for Proposed Projects

Project #	On	From	To	Community Score	Community Rank
1	Burne Road and Gainsberg Road	19A	Deep Bay Harbour	6	2
1A	Burne Road and Gainsberg Road	19A	Deep Bay Harbour	53	5
2	Hwy 19A	Gainsberg Road	6161 Island Hwy West (19A)	30	5
2A	Hwy 19A	Gainsberg Road	Crosley Road	23	5
3	Hwy 19A (south side)	Crosley Road	Coburn Road	13	4
4	Alignment parallel Gainsberg/Crosley Road	Gainsberg Road @ Hwy 19A	Crosley @ Hwy 19A	3	1
5	Rail ROW	Gainsberg Road	North to Area H Boundary	4	2
6	Rail ROW	Coburn Road @ Hwy 19A	McColl Road (following rail alignment)	5	2
7	Lighthouse Country Regional Trail Alignment	LCRT North Loop	LCRT South Loop	14	4
8	Whistler Road Alignment	LCRT South Loop	Big Qualicum River Trail	6	2
9	Whistler/Boorman Road Alignment	Big Qualicum River Trail	Widgeon Road	4	2
9A	Rail ROW	Big Qualicum River Trail	Boorman @ Widgeon Road	6	2
10	Widgeon Road	Larkdown Road	Boorman Road	5	2
11	Faye Road	Jamieson Road	Bowser Elementary/North Extent of Faye Road	8	3
12	Thompson Clark Drive	Gainsberg Road	Thompson Clark Ocean Community Trail North End	0	0
13	Rail ROW	Thompson Clark Ocean Community Trail South End	Hwy 19A @ Coburn Road	8	3
14	Hwy 19A	6161 Island Hwy West (19A)	Driftwood Road	16	4
15	Magnolia Court @ Hwy			30	5

Project #	On	From	To	Community Score	Community Rank
	19A				
16	Coburn Road @ Hwy 19A			11	4
17	Gainsberg Road @ Hwy 19A			7	3
18	Jamieson Road	Faye Road	Jamieson Road @ Hwy 19A	5	2
19	Jamieson Road/Thompson Clark Drive East	Henry Morgan Community Park	Faye Road	5	2
20	Sundry Road Alignment	Henry Morgan Community Park	19A	8	3
21	Crome Point Road	Gainsberg Road	VIA Shellfish Research Centre	4	2
22	Ocean Trail Road Alignment	Bowser Elementary	Thompson Clark Ocean Community Trail	7	3
23	Rail ROW	Big Qualicum River Trail	Lions Park	5	2
24	19A	Fisheries Road	Franksea/Sunnybeach Road	3	1
25	Horne Lake Road	Berkshire Road	Whistler Road	7	3
26	Oakdowne Road Alignment	Grand Rose Road	Widgeon Road	7	3
26	Corcan Road	Grand Rose Road	Dorman Road	7	3
27	Spider Lake Road/Horne Lake Road	Spider Lake	Whistler Road	7	3
28	Hydro ROW	Nile Road	Lighthouse Country Regional Trail South Loop	11	4
29	19A @ Nile Road			11	4
30	Lions Way @ 19A			6	2
31	Jamieson Road @ 19A			2	1
32	Fisheries Road @ 19A			0	0
33	Franksea/Sunnybeach @ 19A			6	2
34	Oakdowne Road (Extension) @ 19A			3	1
35	Hwy 19A	400 m south of Cook Creek Road	transition to 4 lane cross section	14	4
36	Hwy 19A	Crosley Road	Just north of Fisheries Road	25	5
37	Hwy 19A	Just north of Fisheries	Driftwood Road	6	2

Project #	On	From	To	Community Score	Community Rank
		Road			
38	Hwy 19A	Polgate Rd	500 m south of Polgate Road	2	1
39	Nile Bridge	at Crane Road	On Hwy 19A	22	5

APPENDIX G: SUMMARY OF TRAFFIC CALMING TREATMENTS

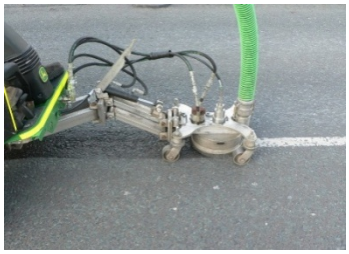
The following is a list of traffic calming measures that are appropriate for use on rural roads. The analysis considers their potential impact on travel behaviour, ongoing maintenance needs, appropriate locations for their application, and design details that should be considered, particularly with regard to their impact on vulnerable road users. Each of the columns provides the following information:

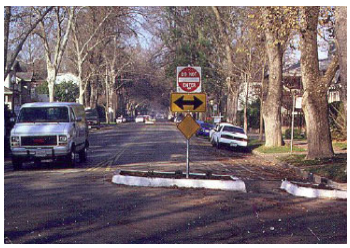
- *Treatment Image* – shows an image of a typical example of each traffic calming treatment
- *Treatment* – briefly describes each traffic calming treatment
- *Change in 85th percentile speed (km/h) and volume* – describes the impact on the typical volume of motor vehicles using a route that is subject to traffic calming and the impact on typical travel speeds for 85 percent of drivers. This approach to speed calculation diminishes the impact of outliers, drivers that tend to drive more slowly or more quickly than the vast majority of other users.
- *Maintenance* – describes the level of maintenance that would be required for each treatment
- *Application* – describes the circumstances in which such a treatment would be appropriate
- *Appropriate for Area 'H'* – identifies whether the measure is expected to be appropriate for use in Area 'H'

Table 2: Potential Traffic Calming Measures for Rural Roads

Treatment Image	Treatment	Change in 85th percentile speed (km/h) and volume	Maintenance	Application	Appropriate for Area 'H'
Low cost measures – under $5,000					
	Standard signage (information, regulatory, warning)	Varies, minimal	Minimal	Everywhere	Yes
	Pavement markings - Lane narrowing using painted centre island and edge marking	+ to -5, minimal	Regular painting	Entrance or within community	In developed areas

Treatment Image	Treatment	Change in 85th percentile speed (km/h) and volume	Maintenance	Application	Appropriate for Area 'H'
	Pavement markings - "Slow" pavement legend	+ to -3, minimal	Regular painting	Within community	At entrance or within community
	Pavement markings - "35 mph" pavement legend w/ red background	0 to -14, minimal	Accelerated painting cycle	Entrance or within community	Recommended for use in areas where there continues to be speeding despite reductions in speed limits

Treatment Image	Treatment	Change in 85th percentile speed (km/h) and volume	Maintenance	Application	Appropriate for Area 'H'
Medium cost measures - $5,000 to $10,000					
	Removal of all signage and pavement markings	Varies, minimal	Significant cost reduction	Along a specified roadway or in a particular area	Minimal
	Surface treatment (those that produce a sound or vibration or both)	Varies, minimal	Minimal maintenance depending on material used	At the approach to an area of caution	Some potential - consultation is needed
	Electronic speed feedback sign	Up to -11	Troubleshooting electronics	Entrance or within community	Within village, near schools, parks or in residential areas
	Surface treatment - Speed hump	-6 to -8, minor	Regular painting	Within community	Within village, near schools, parks or in residential areas

Treatment Image	Treatment	Change in 85th percentile speed (km/h) and volume	Maintenance	Application	Appropriate for Area 'H'
Higher cost measures - over $10,000					
	Gateways	-8 average minimal impact on volume	Gateway features can be struck, causing injury and requiring repairs to gateway	Entrance to a village or residential area	Strong potential
	Road narrowing (chicanes, central islands, curb build outs, reduced pavement width)	Up to -19, minimal, significant reduction in collisions	Dependent upon design elements	Most effective in areas with higher levels of active travel	Strong potential
	Access restrictions (gated roads, physical closures)	High impact on volume, varying impact on speed	Prone to vandalism	Access to a neighbourhood or special management area such as a park	Minimal

APPENDIX H: COST ANALYSIS

Table 3 presents planning-level costs for the pedestrian and bicycle improvement projects proposed for Area 'H.' Costing for these measures is from MOTI, Construction and Rehabilitation Cost Guide (July 2012) and from RDN projects undertaken in recent years. Where MOTI and RDN costing was unavailable, costs were drawn from a variety of implementation projects undertaken in recent years by Alta Planning + Design. It is acknowledged that when planning to implement these projects in more detail, their existing conditions may influence the actual to be different than estimated. For example, when a cost per metre is provided, it represents an average cost for the length of a project where some sections may be straightforward and much less expensive and others may be more challenging and require more costly construction. Costs included in Table 3 tend to be conservative assuming that projects are likely to be more challenging and require more costly construction.

Table 3: Cost Analysis for Proposed Projects

#	On	From	To	Description	Assumptions/ Notes	Length (m)	Quantity	Unit	Unit Cost	Removal Cost	Cost ($)
1	Burne Road and Gainsberg Road	19A	Deep Bay Harbour	Remove centre lane line and implement traffic calming (speed humps and chicanes) to reduce the speed of motor vehicle traffic	Traffic calming involving 3 devices per km	2,068	2.068	KM	$39,300.00	$17,577	$98,850
1A	Burne Road and Gainsberg Road	19A	Deep Bay Harbour	Widen road to include shoulders to better accommodate pedestrians and bikes	2 m of widening (1 m per side). Includes shoulder buildup, but not grading, wall works, property acquisition and utility relocation	2,068	2,068	LM	$3,269.90	N/A	$6,761,941
2	Hwy 19A	Gainsberg	6161 Island Hwy West	Gainsberg to	Replacement	7,600	20	EA	$393.00	$17,620	$25,480

#	On	From	To	Description	Assumptions/ Notes	Length (m)	Quantity	Unit	Unit Cost	Removal Cost	Cost ($)
		Road	(19A)	Northdowne (60km/h) Northdowne to McColl Rd (6828 Hwy 19A) (50km/h) McColl to 6161 Hwy 19A (Sunnybeach Rd) (60km/h)	of 2 signs per km and addition of pavement marking						
2A	Hwy 19A	Gainsberg Road	Crosley Road	Increase width of shoulders by eliminating the painted median and/or reducing the number of traffic lanes	Remove 6 lane lines and replace with 5 lane lines.	5,490	27,450	LM	$3.00	$279,994	$362,345
3	Hwy 19A (south side)	Crosley Road	Coburn Road	Add/Improve Unpaved Multi-use Trail	Standard unpaved 3 m path	599	599	LM	$450.00		$269,359
4	Alignment parallel Gainsberg/Crosley Road	Gainsberg Road @ Hwy 19A	Crosley @ Hwy 19A	Add/Improve Unpaved Multi-use Trail and Traffic Calming at the southeast end of Crosley	Standard unpaved 3 m path and traffic calming	3,159	3,159	LM	$450.00	$29,475 (for traffic calming)	$1,451,092
5	Rail ROW	Gainsberg Road	North to Area H Boundary	Add/Improve Unpaved Multi-use Trail	Standard unpaved 3 m path	3,891	3,891	LM	$450.00		$1,751,162
6	Rail ROW	Coburn Road @	McColl Road (following rail alignment)	Add/Improve Unpaved Multi-	Standard unpaved 3 m	831	831	LM	$450.00	$371,350 (for bridge)	$745,262

#	On	From	To	Description	Assumptions/ Notes	Length (m)	Quantity	Unit	Unit Cost	Removal Cost	Cost ($)
		Hwy 19A		use Trail and bridge crossing of Thames Creek	path						
7	Lighthouse Country Regional Trail Alignment	LCRT North Loop	LCRT South Loop	Add/Improve Unpaved Multi-use Trail and bridge	Standard unpaved 3 m path	537	537	LM	$450.00	$159,150 (for bridge)	$400,681
8	Whistler Road Alignment	LCRT South Loop	Big Qualicum River Trail	Add/Improve Unpaved Multi-use Trail	Standard unpaved 3 m path	1,631	1,631	LM	$450.00		$733,908
9	Whistler/Boorman Road Alignment	Big Qualicum River Trail	Widgeon Road	Add/Improve Unpaved Multi-use Trail	Standard unpaved 3 m path	4,195	4,195	LM	$450.00		$1,887,761
9A	Rail ROW	Big Qualicum River Trail	Boorman @ Widgeon Road	Add/Improve Unpaved Multi-use Trail	Standard unpaved 3 m path	3,981	3,981	LM	$450.00		$1,791,557
10	Widgeon Road	Larkdown Road	Boorman Road	Local Neighbourhood Street Bikeway	Traffic calming involving 3 devices per km	3,078	3.078	KM	$39,300.00		$120,965
11	Faye Road	Jamieson Road	Bowser Elementary/North Extent of Faye Road	Add advisory lane	Remove centre lane line and add dashed shoulders	968	0.968	KM	$16,560	$12,000 (lane line removals)	$28,560
12	Thompson Clark Drive	Gainsberg Road	Thompson Clark Ocean Community Trail North End	Add/Improve Local Street Greenway	Traffic calming involving 3 devices per km	890	0.890	KM	$39,300.00		$34,977
13	Rail ROW	Thompson Clark Ocean Community	Hwy 19A @ Coburn Road	Add/Improve Unpaved Multi-use Trail	Standard unpaved 3 m path	2,497	2,497	LM	$450.00		$1,123,745

#	On	From	To	Description	Assumptions/ Notes	Length (m)	Quantity	Unit	Unit Cost	Removal Cost	Cost ($)
		Trail South End									
14	Hwy 19A	6161 Island Hwy West (19A)	Driftwood Road	Hwy 19A (Sunnybeach Rd) to Cochrane Rd (5941 Hwy 19A) (50km/h) Cochrane Rd (5941 Hwy 19A) to Driftwood Rd (60 km/h)	Replacement of 2 signs per km.	5,400	6	EA	$393	$15,786 (for pavement markings)	$18,114
15	Magnolia Court @ Hwy 19A			Add Improved Pedestrian Crossing	Xwalk, signage x2, beacons x2, refuge islands/transit stop x2	--	1	EA	$25,000	$25,000 (for addition of refuge/ transit stop)	$50,000
16	Coburn Road @ Hwy 19A			Add Improved Pedestrian Crossing	Xwalk, signage x2, beacons x2, refuge islands x2	--	1	EA	$25,000	$20,000 (for refuge islands)	$45,000
17	Gainsberg Road @ Hwy 19A			Add Improved Pedestrian Crossing	Xwalk, signage x2, beacons x2, refuge islands x2	--	1	EA	$25,000	$20,000 (for refuge islands)	$45,000
18	Jamieson Road	Faye Road	Jamieson Road @ Hwy 19A	Implement Traffic Calming Measures	Traffic calming involving 3 devices per	342	0.342	KM	$39,300		$13,441

#	On	From	To	Description	Assumptions/ Notes	Length (m)	Quantity	Unit	Unit Cost	Removal Cost	Cost ($)
					km						
19	Jamieson Road/Thompson Clark Drive East	Henry Morgan Community Park	Faye Road	Implement Traffic Calming Measures	Traffic calming involving 3 devices per km	1,245	1.245	KM	$39,300.00		$48,929
20	Sundry Road Alignment	Henry Morgan Community Park	19A	Add Trail/Local Street Calming/Level Rail Crossing	50% of this project involves traffic calming, 50% involves adding a trail, and one rail crossing	302	0.302	LM	$39,300.00	$77,045 (for trail and level rail crossing)	$82,979
21	Crome Point Road	Gainsberg Road	VIA Shellfish Research Centre	Add/Improve Unpaved Multi-use Trail	Standard unpaved 3 m path	879	879	LM	$450.00		$395,595
22	Ocean Trail Road Alignment	Bowser Elementary	Thompson Clark Ocean Community Trail	Add/Improve Unpaved Multi-use Trail, level Rail crossing and Bridge over Creek	Standard unpaved 3 m path	206	206	LM	$450.00	$380,850 (for bridge crossing)	$473,550
23	Rail ROW	Big Qualicum River Trail	Lions Park	Add/Improve Unpaved Multi-use Trail	Standard unpaved 3 m path	1,794	1,794	LM	$450.00		$807,370
24	19A	Fisheries Road	Franksea/Sunnybeach Road	Add/Improve Unpaved Multi-use Trail	Standard unpaved 3 m path	2,606	2,606	LM	$450.00		$1,172,492

#	On	From	To	Description	Assumptions/ Notes	Length (m)	Quantity	Unit	Unit Cost	Removal Cost	Cost ($)
25	Horne Lake Road	Berkshire Road	Whistler Road	Implement Traffic Calming Measures and shoulder widening	W. traffic calming @ 3 devices per km	561	0.561	KM	$39,300.00	$112,110 (for shoulder widening)	$134,157
26	Corcan Road	Grand Rose Road	Dorman Road	Add shoulders and traffic calming	Add Shoulders and Traffic Calming	550	550	LM	$100.00	$21,615 (for traffic calming)	$76,615
27	Spider Lake Road/Horne Lake Road	Spider Lake	Whistler Road	Add/Improve Unpaved Multi-use Trail	Standard unpaved 3 m path	5,649	5,649	LM	$450.00		$2,541,830
28	Hydro ROW	Nile Road	Lighthouse Country Regional Trail South Loop	Add/Improve Unpaved Multi-use Trail and Rail Crossing	Standard unpaved 3 m path	1,093	1,093	LM	$450.00	$9,500 (for rail crossing)	$501,562
29	19A @ Nile Road			Add Improved Pedestrian Crossing	Xwalk, signage x2, beacons x2, refuge islands x2	--	1	EA	$25,000	$20,000 (for refuge islands)	$45,000
30	Lions Way @ 19A			Add Improved Pedestrian Crossing	Xwalk, signage x2, beacons x2, refuge islands x2. BC Transit Bus stop at the Lighthouse Community Centre	--	1	EA	$25,000	$20,000 (for refuge islands)	$45,000
31	Jamieson Road @ 19A			Add Improved Pedestrian Crossing	Xwalk, signage x2, beacons x2,	--	1	EA	$25,000	$20,000 (for refuge islands)	$45,000

#	On	From	To	Description	Assumptions/ Notes	Length (m)	Quantity	Unit	Unit Cost	Removal Cost	Cost ($)
					refuge islands x2						
32	Fisheries Road @ 19A			Add Improved Pedestrian Crossing	Xwalk, signage x2, beacons x2, refuge islands x2	--	1	EA	$25,000	$20,000 (for refuge islands)	$45,000
33	Franksea/Sunnybeach @ 19A			Add Improved Pedestrian Crossing	Xwalk, signage x2, beacons x2, refuge islands x2	--	1	EA	$25,000	$20,000 (for refuge islands)	$45,000
34	Baylis Road @ 19A			Add Improved Pedestrian Crossing	Xwalk, signage x2, beacons x2, refuge islands x2	--	1	EA	$25,000	$20,000 (for refuge islands)	$45,000
35	Hwy 19A	400 m south of Cook Creek Road	Transition to 4 lane cross section	Widen road to include shoulders to better accommodate peds and bikes	2 m of widening (1 m per side). Includes minor shoulder buildup, but not grading, wall works, property acquisition and utility relocation	300	600	LM	$100		$60,000
36	Hwy 19A	Crosley Road	Just north of Fisheries Road	Shoulders, both sides -	2 m of widening (1 m	6,900	13,800	LM	$100	$25,263 (for	$1,427,956

#	On	From	To	Description	Assumptions/ Notes	Length (m)	Quantity	Unit	Unit Cost	Removal Cost	Cost ($)
				Shoulders, both sides (including minor upgrades to Big Qualicum River Bridge including improved access by paving around barriers at each end (4X1.5m wideX4 m long) and by adding a fence to protect those on the sidewalk from falling into the roadway.	per side). Includes minor shoulder buildup, but not grading, wall works, property acquisition and utility relocation					pedestrian railing and access around jersey barriers at each end of the bridge)	
37	Hwy 19A	Just north of Fisheries Road	Driftwood Road	Shoulders, 1 side	1 m of widening (1 side only). Includes minor shoulder buildup, but not grading, wall works, property acquisition and utility relocation	3,000	3,000	LM	$100		$300,000
38	Hwy 19A	Polgate Rd	500 m south of	Shoulders, 1	1 m of	500	500	LM	$100		$50,000

#	On	From	To	Description	Assumptions/ Notes	Length (m)	Quantity	Unit	Unit Cost	Removal Cost	Cost ($)
			Polgate Road	side	widening (1 side only). Includes minor shoulder buildup, but not grading, wall works, property acquisition and utility relocation						
39	Nile Bridge	at Crane Road	On Hwy 19A	Add sidewalk on east side (2 m wide), widen sidewalk on west side (.5 m) and improve access by paving around barriers (2X1.5m wideX4 m long)	widen sidewalk by .5m and add a 2m sidewalk	28	70	LM	$3,300	$22,693 (to add paving around each jersey barrier and connecting to sidewalks on each side)	$253,693
											$26,355,571