

Appendix G. Evaluation and Planning

Regularly measuring and reporting bicycle and pedestrian investment and activity allows individual municipalities, the CRD, and their residents to measure progress towards achieving stated goals for walking and bicycling. In addition, a quality data monitoring program can help the CRD and member municipalities to obtain funding for new projects. Most grant programs require awardees to monitor the results of funded projects, including a baseline count and monitoring usage over time. Cities with established bicycle and pedestrian monitoring programs have an advantage over other cities when pursuing funding.

In addition, the PCMP process has brought together planners, engineers, decision makers, and advocates from member municipalities and other regional partners such as BC Transit and the Ministry of Transportation and Infrastructure who play a role in regional transportation planning and implementation. The second half of this chapter describes how the CRD could continue this inter-jurisdictional communication to support implementation of the PCMP recommendations in the coming years.

Benchmarking and Measurement

The *TravelChoices Strategy* and several other regional and municipal planning documents include the goal of increasing active transportation participation. Without accurate and consistent demand and usage figures, it is difficult to measure the positive benefits of investments in these modes, particularly when compared to other transportation modes. This information can inform the design of pedestrian and cycling facilities, e.g. locations of under-served demand, support for trail widening or extension, walking speeds (for crossing signal timing), etc. Demands on similar facilities can be used to estimate potential demands on a proposed facility to support grant applications. Consistency of data collection would allow the CRD to use data collected by the member municipalities and integrate it into regional transportation modeling. The CRD's existing count program for cycling and walking is not sufficient for benchmarking purposes.

Consistency of data collection would allow the CRD to use data collected by the member municipalities and integrate it into regional transportation modeling. The CRD's existing count program for cycling and walking is not sufficient for benchmarking purposes. Appendix G. Evaluation and Planning contains detailed information about count and surveying methodologies and technologies. The CRD is well-positioned to accumulate the necessary additional data by building on the original 2006 pilot project using the National Bicycle and Pedestrian Documentation Project, and adopting the methodology into a standardized program. The program is suited to utilising the region's existing capacity amongst its community volunteers to conduct the manual counts. In addition to simply counting the number of bicyclists and pedestrians, the CRD may wish to expand the survey to include additional information such as whether cyclists are riding on the sidewalk and/or against the designated flow of traffic as well as tracking gender and helmet use.¹

This appendix provides an overview of previous and on-going count and survey efforts in the CRD, followed by a review of count and survey methodologies and technologies that have been used to count bicyclists and pedestrians throughout the world. Each section contains recommendations for how the CRD can use these strategies to count and survey pedestrians and bicyclists. A best practices review of bicycle and pedestrian report cards provides details of how other jurisdictions are presenting the results of counts and surveys to the

¹ While additional information is helpful for the report card and tracking purposes, additional information such as age may be difficult to collect via counts due to helmet use or numbers of cyclists being recorded and can be included in a survey.

public. Finally, the memorandum recommends strategies for the CRD to combine counts and surveys with existing information in order to develop a bicycle and pedestrian report card.

Existing Data

The PCMP Technical Advisory Committee and the Citizen's Advisory Committee provided information on municipalities and advocacy groups that conduct bicycle and/or pedestrian counts or surveys. Major sources for regional bicycle and pedestrian data in the CRD include:

- Origin and Destination Household Travel Survey (ODHTS)
- Manual Traffic Occupancy Counts (part of screenline motor vehicle traffic counts)
- National Bicycle and Pedestrian Documentation Count (NBPD; including Rider Survey)
- Automated Non-Motorized Transportation (NMT) Counts
- Canadian Census
- Regional Trail automated counters

Table 1 summarizes key elements of each data source, which are described in greater detail following.

Table 1. Existing Bicycle Data

	ODHTS	Manual Counts	NPBD Count	NPBD Survey	Census	Regional Trails Counts
Category	Sample of population	Manual count	Manual Count	Targeted survey	Sample of population	Trail counts
Years on record	2001, 2006*	1992, 2000, 2001, 2002, 2005, 2007, 2008, 2009	2006	2006	2006, every 5 years previously	2010, pending
Uses	Measure/ track changes in travel behaviour Input for modeling Assess travel demand	Background for major projects to determine average car occupancy at key intersections and number of trips by mode. [†]	Same as Occupancy Counts Target specific location	In-depth analysis of travel behaviour such as linked trips Community perceptions	Can be used to measure mode split at various levels of aggregation Only considers travel to work	Measure/ track level of use on regional trails General trends (e.g., time of day)
Benefits/ Challenges	Statistically accurate at the regional and municipal level only	Automated counts cannot collect bike/ped data, Some manual counts at key intersections are collected	Pilot project Comparable with other jurisdictions No comparison with other modes	Pilot project Comparable with U.S. jurisdictions if conducted annually	Statistically accurate to sub-municipal areas Comparable to jurisdictions across the country	Does not track mode, direction of travel Cannot provide overall use estimates Excel
Data format	Database file	Accessible through Regional Transportation Data Management System (RTDMS)	Excel	Excel	Excel	

* Also conducted in 1992, but the mapping format does not allow comparison.

[†] 1, 2, 3, 4+ person auto, light trucks, medium trucks, heavy trucks, buses and bicycles. Data used extensively for the Victoria Regional Rapid Transit Project.

Origin and Destination Household Travel Survey (ODHTS)

The ODHTS is a survey of travel behaviour that attempts to give an accurate, comprehensive view of all personal travel over a typical weekday/weekend 24-hour period in the CRD. The CRD has conducted this survey to assess the nature of personal travel in the CRD (demographic, mode, origins, destinations, timing, and purpose of trips). The data is a sample of the general population in the 13 CRD municipalities, Juan de Fuca Electoral Area, Saltspring Island, and the southern portion of the Cowichan Valley Regional District (Subdivision C south of Duncan). The survey provides baseline data for the Regional Transportation Model, which is used for transportation planning and evaluating progress toward the TravelChoices mode split goals.

Methodology

The first survey was conducted in 1992, with subsequent studies in 2001 and in 2006, timed to coincide with the Canadian Census. For reliable mode share statistics for the region, the survey aims for a 3,000 household sample size.

The 2001 ODHTS collected information on 24-hour weekly travel characteristics. Respondents (who were randomly selected and contacted by phone) submitted travel diaries via mail or online

A 2005 report recommended improvements for increased participation,² and differences between the 2001 and 2006 surveys include:

- Cash prizes were offered with a 30% chance of winning.
- Telephone reminders were used to encourage survey completion.
- An advance notification letter from the Chairman of the CRD board explained the importance of the survey, reassured confidentiality, and generally promoted the survey.
- Salt Spring Island was included.

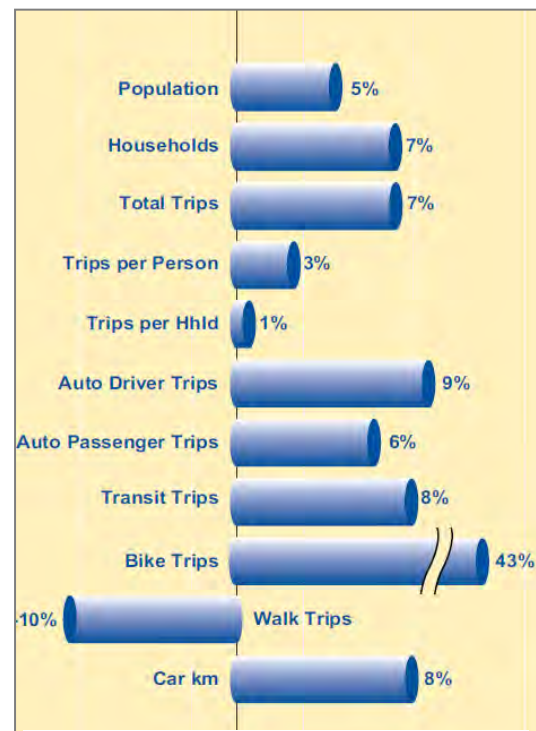


Figure 1. Changes in key weekday travel characteristics for CRD residents, 2001-2006
Source: 2006 ODHTS Highlights.

Results/Data Uses

The ODHTS survey provides information about the origins and destinations of trips for the entire region and various sub-areas. It also provides information about the timing, general purpose, and mode split of trips. The survey also includes demographic information on age and gender and vehicle ownership. In terms of bicycles specifically, it provides a very accurate region-wide picture of cycling trip flows, timing, and mode share. It also provides demographic information about cyclists (age and gender). The 2006 survey found a 43% increase in cycling since 2001, as well as a 7% increase in trips made by residents (Figure 1).

The results are used to understand overall regional travel patterns and to recalibrate the regional transportation model. They are published in a report which is available in hard copy and downloadable from

² CRD. (2005). 2006 CRD Origin-Destination Survey Preparation Study.

www.crd.bc.ca/reports/regionalplanning/generalreports/transportation/researchanddata/householdtravelsurve/2006/2006crdodprefinalr/2006crdodprefinalre.pdf

the CRD website.³ The system will be spatially enabled in the future, so that information can be accessed through maps.

Manual Traffic Occupancy Counts

The CRD hires a contractor to conduct manual counts for occupancy and non-motorized travel data. This information provides a picture of activity by mode at key intersections and background information for major projects. The manual counts were used extensively by the Victoria Regional Rapid Transit Project team to examine travel by mode at major intersections on the proposed alignment.

Methodology

Automated traffic counts use tube counters to measure vehicular traffic volumes at 374 locations throughout the region on a rotating basis, with each location counted at least once every few years. Manual occupancy counts supplement automatic counts placing staff alongside counters at 10-20 locations each year. Manual counts collect data that is not picked up by tube counters, primarily vehicle type and occupancy, but also the number of cyclists (note: pedestrians are not counted). Counts are conducted for the four afternoon hours between 2:30pm and 6:30pm. Table 2 summarizes the CRD's annual budget for these counts.

Results/Data Uses

Some of the count results are publicly available on the CRD website as a pilot project. They can be downloaded in a Google Earth format.⁴ The information provided includes:

- Average vehicle occupancy.
- Number of cyclists travelling past the count point by hour and direction of travel.
- Weather conditions on day of count.

The data is used to double-check automated counts; to develop adjustment factors for estimating all-day, all-year use; to track the impact of infrastructure improvements; to provide indicators of overall cycling activity levels. It may be possible in the future to calibrate the automatic tube counters to detect bicyclists, which would substantially add to this data set.

National Bicycle and Pedestrian Documentation Count (NBPDC)

A tandem data collection initiative, the NBPDC is a manual count of bicycle traffic paired with intercept surveys of cyclists at selected sites around the region. It is part of a larger effort being coordinated by Alta Planning in partnership with the Institute for Transportation Engineers (ITE) to accumulate reliable and consistent data for determining bicycle and pedestrian trip generation factors for various land uses across North America.

Table 2. The CRD's Annual Manual Count Budget

Item	Qtd./Cost
Number of locations	20
Number of staff per location	2
Count Hours	2
Hourly Wage	\$15.00
Labour cost per count	\$1,200.00
Counts per year	4
Annual labour cost per count	\$4,800.00
Printing & Copying	\$200.00
Annual Total (per count)	\$5,000.00

³ <http://www.crd.bc.ca/regionalplanning/transportation/origindestination.htm>

⁴ <http://www.crd.bc.ca/regionalplanning/transportation/studies/TrafficCounts.aspx>

Methodology

The CRD conducted this count with participation and support from municipalities and cycling advocates. NBPDC counts were conducted periodically throughout 2006. Volunteers stationed at various ‘count locations’ around the region counted passing bicycles for a two hour period on a typical weekday. Other volunteers in similar locations randomly selected passing cyclists to ask them survey questions about their trip purpose and reasons for cycling.

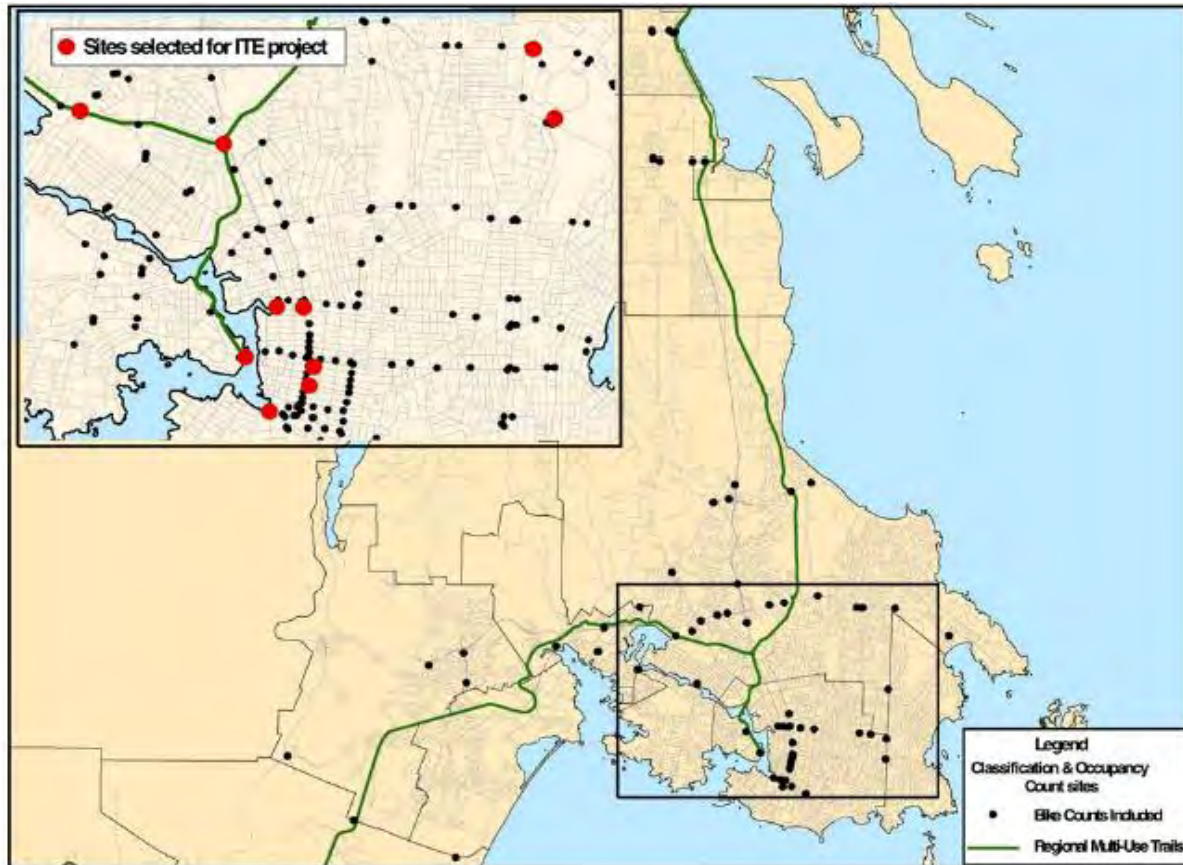


Figure 2. Bike count locations for NBPDC.

Count locations included a downtown Victoria screenline, suburban major road/highway locations, major bicycle and pedestrian trails, and specific bicycle and pedestrian generators, such as the University of Victoria and a recreation centre/movie theatre/shopping centre complex (see Figure 2). Ideally, this count should happen at the same time as the nationwide counts in September, always at the same locations. If possible, counting four times a year would provide seasonal differences.

This count provides a macro-level snapshot of how much cycling traffic is present along particular routes and pieces of infrastructure. The intercept survey provides a route-specific picture of people’s trip purposes and attitudes towards personal travel. It is also possible that the intercept survey may provide a better understanding of linked trips and travel preferences than a travel diary survey such as the ODHTS. One limitation of this methodology is that there is no comparison to other modes or people taking other modes; for example, the survey does not identify why non-participants are not participating.

Census

The Census is a national survey of the Canadian population conducted by Statistics Canada. Journey to work data is based on a 20% sample. The Census is conducted every five years, most recently in 2006, using mail in and web-based surveys. In many jurisdictions the Census is the only community-wide information available on modal split. However, the Census long-form, which reports on trip length and other important information, is no longer being collected.

The Census provides a general demographic portrait of the CRD at various levels of aggregation. Most specifically, it provides mode split information for the journey to work, and place of work information. Cycling and walking are bundled in the community profiles published on the national website ⁵, so cycling data must be tracked down specifically. Note that there is a widely-held belief that the Census under-reports cycling activity, because it misses people who cycle only some of the time and for purposes other than work. However, the Census data shows a bike mode share of 5% which is higher than the bike mode share of 3.2% of all trip purposes, established in the CRD ODHTS, which suggests that the Census data might actually be over-reporting bike mode share.

CRD Regional Parks

CRD Regional Parks currently counts bicyclists and pedestrians both manually and automatically. In 2010, Parks purchased 18 permanent automatic path counters (infrared TRAFX machines as well as loop detectors) for use on the regional trails. Count locations include:

- Cooper's Cove: the Galloping Goose Regional Trail on the south side of the Sooke in advance of the Sooke Highway crossing.
- Luxton Fairgrounds: the Galloping Goose Regional Trail at the Luton Fairgrounds parking lot at the intersection of Marwood Avenue and Hazelwood Road in Langford.
- Galloping Goose Regional at the intersection with Talcott Road in View Royal.
- Switch Bridge: the Galloping Goose Regional Trail on the north side of the intersection with Crease Avenue in Saanich.
- Selkirk Trestle: the Galloping Goose Regional Trail on the east side of Selkirk Trestle.
- Switch Bridge: the Lochside Regional Trail on the south side of the intersection with Darwin Avenue in Saanich.
- Blenkinsop Trestle: the Lochside Regional Trail on the north end of the Blenkinsop Trestle.
- Heritage Farms: the Lochside Regional Trail at the end of Lochside Dr. near the entrance of Saanich Heritage Center in Central Saanich.

The data provides point specific data (i.e. there is no indication of direction, of distance of travel and in some cases mode of travel). In addition, the automated counters do not provide clear numbers as to the total number of trail users in a day, month, or year. They can be used to indicate general trends (i.e. times of travel, etc.). Additional verification through manual counts would be valuable to determine error factors and to calibrate the machines.

Greater Victoria Cycling Coalition

The Greater Victoria Cycling Coalition (GVCC) counts **B** bicyclists, pedestrians, and automobiles to support bicycle advocacy in the region. The manual counts are conducted by volunteers who are trained annually to collect afternoon peak-hour counts. Count locations are determined by current GVCC advocacy efforts, and counts have included information about use of lights and visibility vests, helmet compliance, gender, and other

⁵ <http://www.statcan.gc.ca/start-debut-eng.html>

information. GVCC also conducts intercept surveys of cyclists on the regional trails and of members, to support the findings from the counts.

In 2010, the GVCC used these counts, in combination with a member survey, to advocate for cycling facilities. For example, the GVCC recently published a report entitled: *The Johnson Street Bridge & Cycling*.^{6[1]} See inset for a summary of their analysis.

The analysis of cycling trips over the Johnson Street Bridge from 1998 to 2010 found that the number of cycling trips in the region has been growing steadily, and an increasing share of the trips over the bridge are made by bicycle. The report also predicts that in 2026, half of all trips over the bridge could be made via active transportation, which would be 8,000 bicycle trips per day, 16,000 by active transportation. GVCC used the bridge counts and member surveys to advocate for improvements to the bridge and bridgehead.

Capital Bike and Walk

In 2009, the Capital Bike and Walk advocacy group partnered with GVCC to conduct counts. Funded by a community grant from Vancity Savings, the effort involved volunteers from Capital Bike and Walk, GVCC, and the Vancouver Island Tourism Alliance. The counts were conducted on Bike to Work Day in October and focused on the E&N Rail Trail project, using locations on the Galloping Goose Regional Trail that would integrate into the proposed trail alignment and in Langford, to establish baseline numbers. The report notes that, “Counts on the adjacent road segments establish a baseline of on-road cycling data that will help in the assessment of both potential markets for trail cycling and the possible impacts of new trails on growing participation across nearby neighbourhoods.”

The analysis uses a “k” factor multiplier to estimate daily volumes using afternoon peak hour counts, and recommends that future counts should be conducted where bicycle projects are scheduled or have been completed.

Municipalities

Most municipalities count cyclists and pedestrians as part of counts conducted for specific projects. In addition, several count automobiles with technologies such as loop detectors or manual counts, which also count cyclists and pedestrians. In addition, several municipalities also specifically count cyclists and pedestrians on shared-use trails.

Central Saanich

Central Saanich has conducted bicycle and pedestrian counts manually with consultant assistance. Bicyclists and pedestrians are counted in association with a specific road project or for a grant application. Counts are not usually taken after the facility has been built. Central Saanich counts motor vehicles with automatic counters.

^{6[1]} <http://www.gvcc.bc.ca/jsb/JSB%20report%20to%20CoV%20June%2010%202010.pdf>

Colwood

The City of Colwood has been counting bicycle and pedestrian traffic over the past ten years. The City uses staff time and consultants to conduct manual counts. The number of count locations changes each year, based on facilities that are being observed. The data that are collected are used to apply for grants for bicycle and pedestrian facilities.

Juan de Fuca

The electoral area of Juan de Fuca has not counted bicyclists or pedestrians in recent years.

Saanich

Saanich has counted bicyclists and pedestrians since 1988, usually counting before and after installation of new facilities, as well as 60-90 manual and 60-80 automatic counts for automobiles. The District uses automatic hose counts for automobile counts but has not specifically counted or analyzed bicycle/pedestrian use.

Victoria

Victoria has counted bicycle and pedestrian traffic for at least 30 years. The program conducts counts at every signalized intersection every five years. In addition, the City counts screenline locations and locations based on special requests. Until 2005, the Victoria Real Estate Board also collected downtown pedestrian counts annually.

The City employs summer students to conduct manual turning movement counts at signalized intersections. Where possible, they count pedestrians, cyclists, and classify trucks; however, gathering that quantity of data can prove challenging. In addition, counts are only completed in the summer, due to student availability.

Automatic counts include motor vehicle speed studies and are completed annually at screenline locations and where the City has received a request for additional data. Data is collected using Jamar Petra and Traxpro technology, and is used to determine traffic signal timings, capital resource allocation, collision analysis, sidewalk café reviews, sidewalk width design, pavement maintenance and design, traffic calming installations, and crosswalk analysis.

Ministry of Transportation and Infrastructure (MoTI)

MoTI does not conduct manual bicycle and pedestrian traffic counts in the CRD. In other communities, these counts are used to plan for specific transportation projects. MoTI also has permanent automatic counters for counting motor vehicles throughout the CRD and has temporary stations to use as needed.

Best Practices for Counting Bicyclists and Pedestrians

There are two types of counts that can be used to measure bicycling and walking. *Screenline Counts* monitor the number of cyclists or pedestrians crossing a theoretical line across a roadway or trail. They are primarily used to identify general trends in volumes. *Intersection Counts* are used to monitor the number of cyclists passing through or turning at an intersection. They also provide information about volumes, as well as indicating bicyclist and pedestrian exposure to turning motor vehicles for a safety analysis. Depending on the volumes of bicyclists, intersection counts may be more complicated and require additional counters because they record two streets as well as turning movements. Pedestrian counts should be conducted at high crash locations and where safety studies are desired.

Annual counts can assist the CRD with understanding existing bicycling patterns, planning for future bikeways, and measuring the success of programs and facilities. The CRD can provide regional standards and

guidelines for data collection and analysis, assist electoral areas with data collection, and compile data from all municipalities to provide a regional analysis. The regional data can be made available online, so that anyone who applies for a user account can access the survey database.⁷ Currently, the CRD conducts motor vehicle counts along regionally significant roads and manual traffic occupancy counts, which collect data on bicyclists and pedestrians.

Counting Methods

Counts can be automated, using several different methods to continuously count in a particular location, or they can be manually recorded by a group of staff or volunteers. This section summarizes counting technologies and strategies.

As has previously occurred in the CRD, count efforts can be incorporated with the National Bicycle and Pedestrian Documentation Project, an annual bicycle and pedestrian count and survey effort sponsored by the Institute of Transportation Engineers Pedestrian and Bicycle Council.⁸ Additional bicycle and pedestrian data collection opportunities include: collecting before-and-after pedestrian, bicycle, and vehicle data for roadway projects, counting bicyclists and pedestrians in all traffic studies.

Automated or Continuous Counts

Automatic count technologies are useful in conducting longer-term counts, establishing daily, weekly, or monthly variations and almost always require fewer person-hours. The most common technologies used for automatic bicycle and pedestrian counts are:

- Passive infrared (detects a change in thermal contrast) - best suited for locations where there is little grouping, however it cannot distinguish between bicycles and pedestrians.⁹
- Active infrared (detects an obstruction in the beam) - can distinguish between bicyclists and pedestrians, and is therefore appropriate for shared use pathways.
- Video imaging/playback (either analyzes pixel changes or data are played back in high speed and analyzed by a person) - can provide information concerning user type, behaviour, and demographics, in addition to count data.
- Piezometric (senses pressure on a material either tube or underground sensor) - most appropriate for counting bicycles on-street in a shared-use environment.
- In-pavement magnetic loop (senses change in magnetic field as metal passes over it) - best for detecting bicyclists traveling along bike lanes or pathways.
- Ultrasonic (emits ultrasonic wave and listens for an echo).
- Doppler radar (emits radio wave and listens for a change in frequency).

The choice of an automatic count technology primarily depends on the type of data that is required, the project budget, and the number of staff available. All automatic count technologies require calibration. The physical installation of the counting device is another important consideration. Some infrared technology requires sensors to be installed on both sides of the pathway, while other devices can be effectively installed in locations with poles/street lights on just one side of the pathway or sidewalk, such as in an urban setting.

All automated count technologies have an error factor, meaning that they will fail to detect a certain percentage of passing bicycles or pedestrians. Depending on the technology and model, 'no-detection rates'

⁷ See City of Toronto data https://www.jpint.utoronto.ca/drs/new_index.html

⁸ <http://bikepeddocumentation.org/>

⁹ Schneider R.J., L.S. Arnold, and D.R. Ragland. *A Pilot Model for Estimating Pedestrian Intersection Crossing Volumes*. UC-Berkeley Traffic Safety Center.

vary from 1% to 48%. Correction factors can be developed by comparing automated counts with manual counts. For example, if comparisons with manual counts indicate that an automatic counter has a 5% no-detection rate, the jurisdiction can factor up its automated counts by 5%. To date, there is a limited amount of peer reviewed literature on the subject of automatic count technology reliability. The infrared sensors tend to undercount pedestrians most likely because they do not detect pedestrians when they are walking exactly side-by-side. Table 3 outlines count technologies most adaptable to bicycle and pedestrian counts.

Table 3. Automated Count Technologies*

Technology	How it Works	Bike/ped differentiation?	Where	Can it be moved?	Notes	Cost
Passive infrared	Detects a change in thermal contrast	No	Sidewalk, path	Easily		\$,2000-3,000
Active infrared	Detects an obstruction in the beam	Yes	Sidewalk, path	Easily		\$800-7,000
Video imaging	Analyzes pixel changes	Unknown	Intended for indoor use	Yes	Difficult detection outdoors, no bike/ped application yet	\$1,200-8,000
Video playback	Video analyzed by a person	Yes	Anywhere	Yes	Difficult detection at night, in bad weather. Considerable staff time	\$7,000
Piezometric tube	Senses pressure on tube	No	Path, on street	Easily	Bicycles only. Potential tripping hazard	\$1,600
Piezometric pad	Senses pressure	No	Sidewalk, path	No		\$2,000-3,000
In-pavement magnetic loop detectors	Senses magnetic field change as metal passes	No	Path, on street	No	Requires cutting into pavement or into ground to install	\$2,000-3,000

* Additional information on these technologies can be found on the NBPD Website: <http://bikepeddocumentation.org/> and the New Zealand Transport Agency published a comprehensive review: <http://www.nzta.govt.nz/resources/sustainable-transport/cycle-counting-in-nz/>

Manual Counts

The CRD's existing count program for cycling and walking is not sufficient for benchmarking purposes. The CRD is well positioned to accumulate the necessary additional data by building on the original 2006 pilot project using the National Bicycle and Pedestrian Documentation Project, and adopting the methodology into a standardized program. The program is suited to utilizing the region's existing capacity amongst its community volunteers to conduct the manual counts. In addition to simply counting the number of bicyclists and pedestrians, the CRD may wish to expand the survey to include additional information such as whether cyclists are riding on the sidewalk and/or against the designated flow of traffic as well as gender and helmet use.¹⁰

When to Count

Bicycle counts should be conducted mid-week for on-street facilities, with additional counts performed on the weekend to capture recreational riders:

- Weekday (Tuesday, Wednesday or Thursday), 7:00 to 9:00 am and either 4:00 to 6:00 or 5:00 to 7:00 pm.
- Saturday, 12 noon – 2:00 pm.

Ideally, counts should be taken four times per year to account for seasonal variations. Alternatively, counting during the late spring and early fall provides yearly benchmarks to track changes in mode split. Counts should not be conducted during prime vacation times or on other atypical days such as national holidays or large sports games. For comparison with other data, it is recommended that the CRD conduct counts along with the NBPD effort, which counts in January, May, July, and September.

Where to Count

Count locations should be places where there is a presence of bicyclists and pedestrians either existing numbers or an expected increase after improvements have been made. There is little point in conducting counts in locations where pedestrians and bicyclists are almost non-existent. While traffic counts are traditionally conducted along major roads, bicycle and pedestrians are less likely to use those roadways. To get an accurate baseline and tracking of bicycling and walking in the region, the CRD should count on lower-speed streets where bicyclists and pedestrians are more likely to be.

The CRD should aim to count at approximately 40 locations region wide. They can be prioritized with the actual number of counts dependent on volunteer participation. As the program grows, the CRD may be able to increase the number of count locations. Counting bicycle and pedestrian movements through intersections is particularly challenging and often requires more than one counter.

- General count locations should be selected based on the following considerations and suggested criteria: Pedestrian and bicycle activity areas or corridors (downtowns, near schools, parks, etc.).
- Locations near proposed major future bicycle/pedestrian improvements.
- Representative locations in urban, suburban, and rural locations.
- Key corridors that can be used to gauge the impacts of future improvements.
- Locations where counts have been conducted historically.
- Locations where bicycle and pedestrian collision numbers are high.

¹⁰ While additional information is helpful for the report card and tracking purposes, additional information such as age may be difficult to collect via counts due to helmet use or numbers of cyclists being recorded. This information can be included in a survey.

- Locations where there are on-going counts being conducted by other agencies through a variety of means, including videotaping.
- Gaps and pinch points for bicyclists and pedestrians.
- For multi-use paths and parks, locations near the major access points are best.
- For on-street bikeways, count both sides of the street at locations where there are few if any alternative parallel routes are best.
- For traditional downtown areas, a mid-block location near the center of the downtown is best. Count all pedestrians and bicycles on one side of the street on the sidewalk and adjacent travel lane/bike lane.
- For shopping malls, a location near the main entrance and transit stop is best. Count everyone in both directions at one access point, typically a sidewalk and street.
- For employment areas, either on the main access roadway or near off-street multiuse paths is best. Count everyone in both directions at one access point, typically a sidewalk and street.
- For residential areas, locations near higher density developments or near parks and schools are the best. Count everyone in both directions at one access point, typically a sidewalk and street.

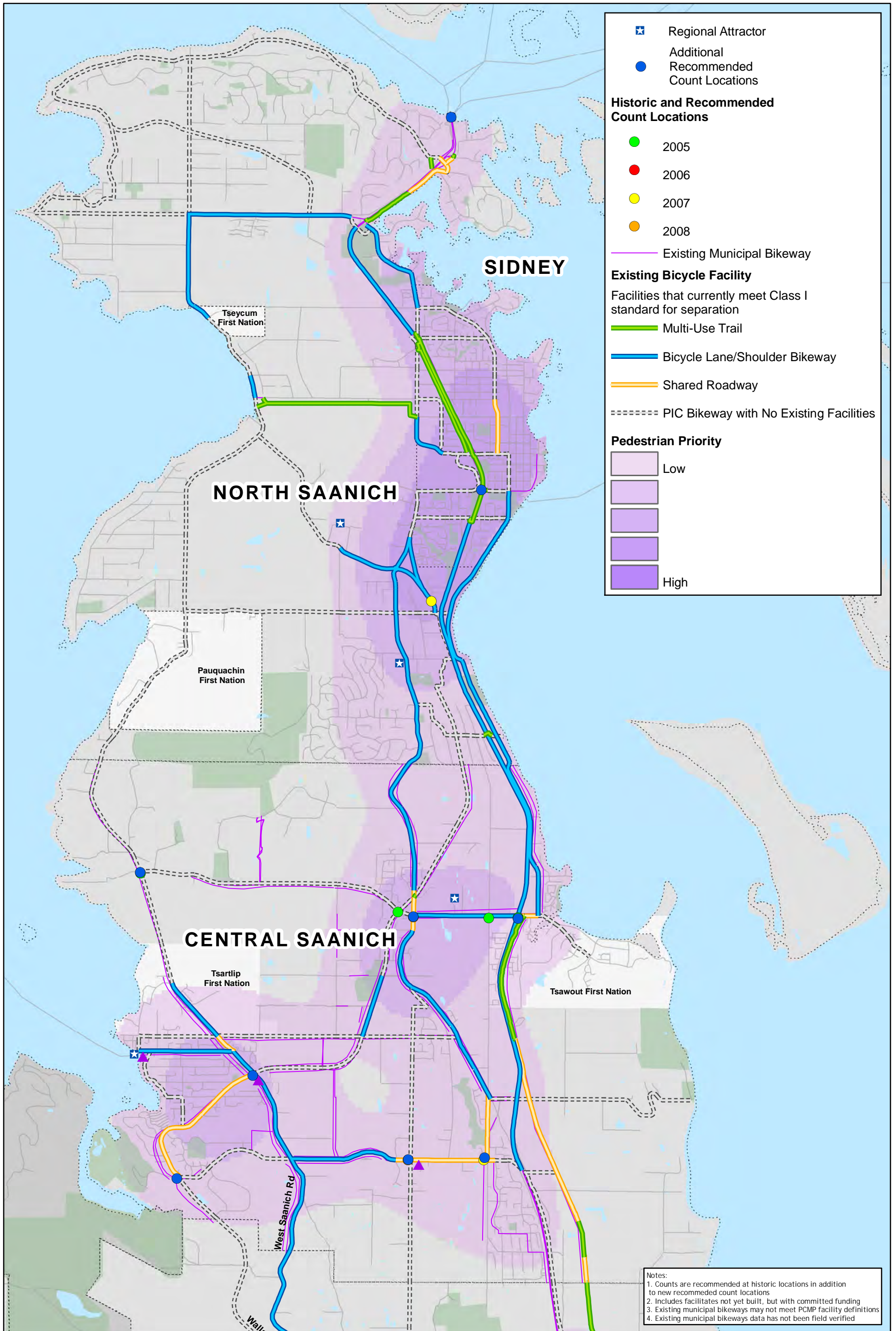
Select locations that meet as many of the criteria as possible. Counters will need to be in a safe, visible location and should be on public property in a location that does not block pedestrians or bicyclists. The CRD or managing authority must receive written permission from property owners if you will be on private property. Map 1 through Map 5 show locations of historic counts and additional recommended count locations. Locations were chosen on the basis of density of bicyclist-attractive destinations (from the Pedestrian Priority Areas analysis developed through the PCMP process) and the recommended Priority Corridor network. Count locations should be additionally chosen on the basis of planned or anticipated transportation improvements, as well as all the factors provided above.

Who to Count

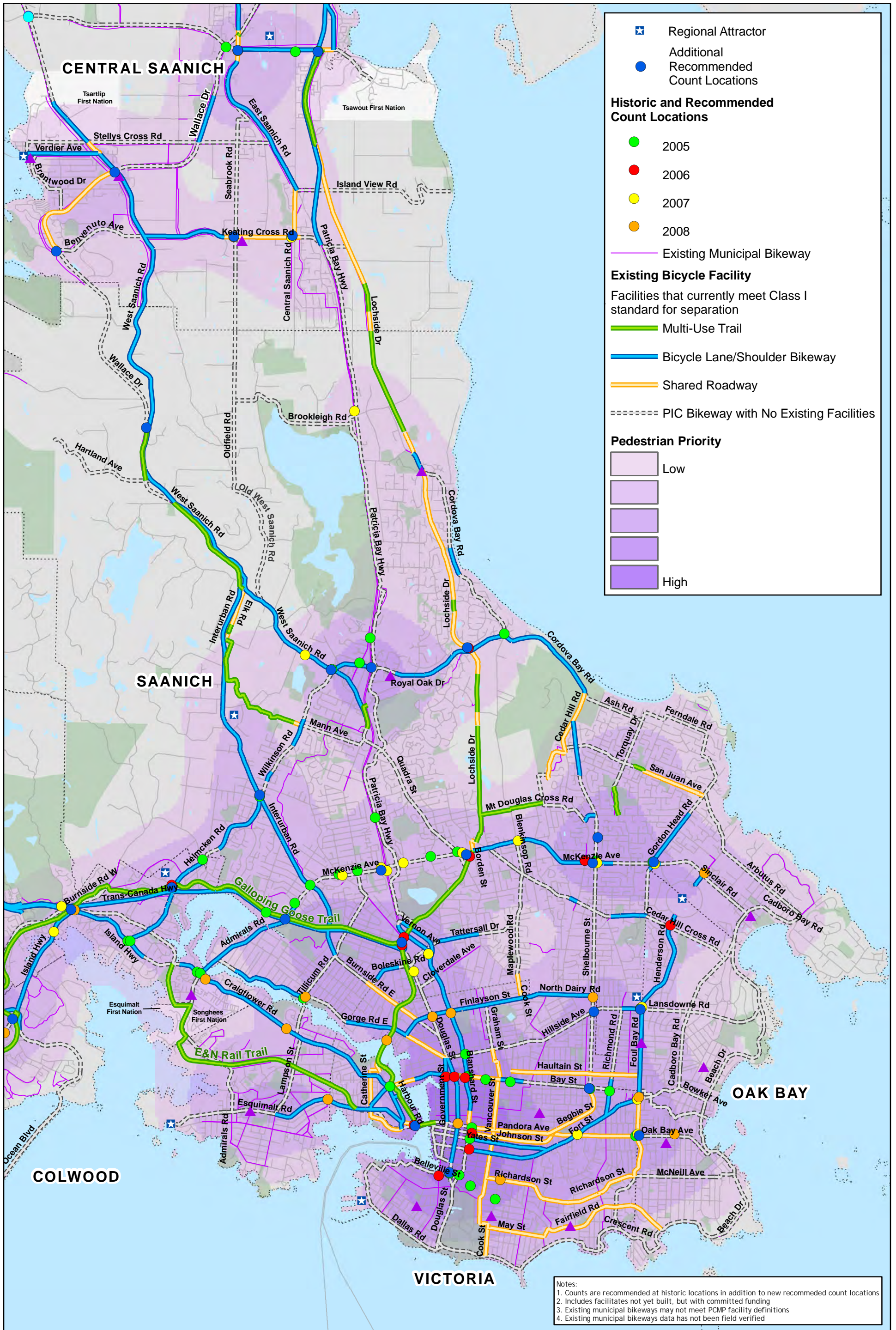
Count efforts require considerable coordination to identify sufficient numbers of volunteers to regularly count. All counters should be trained – the National Bicycle and Pedestrian Documentation Project provides training materials online. Counters should be trained for interaction with the public, the count process, and use of the form. They should also be trained as to how to count nonstandard bicycles such as tandems or trail-a-bikes, as well as strollers.

The CRD should coordinate with advocacy groups such as the GVCC, Capital Walk and Bike, as well as the University of Victoria and other groups who are likely to participate. Pizza or snacks can be offered at the training to increase participation. Software such as doodle¹¹ can help reduce staff time coordinating scheduling of volunteers.

¹¹ <http://www.doodle.com/>

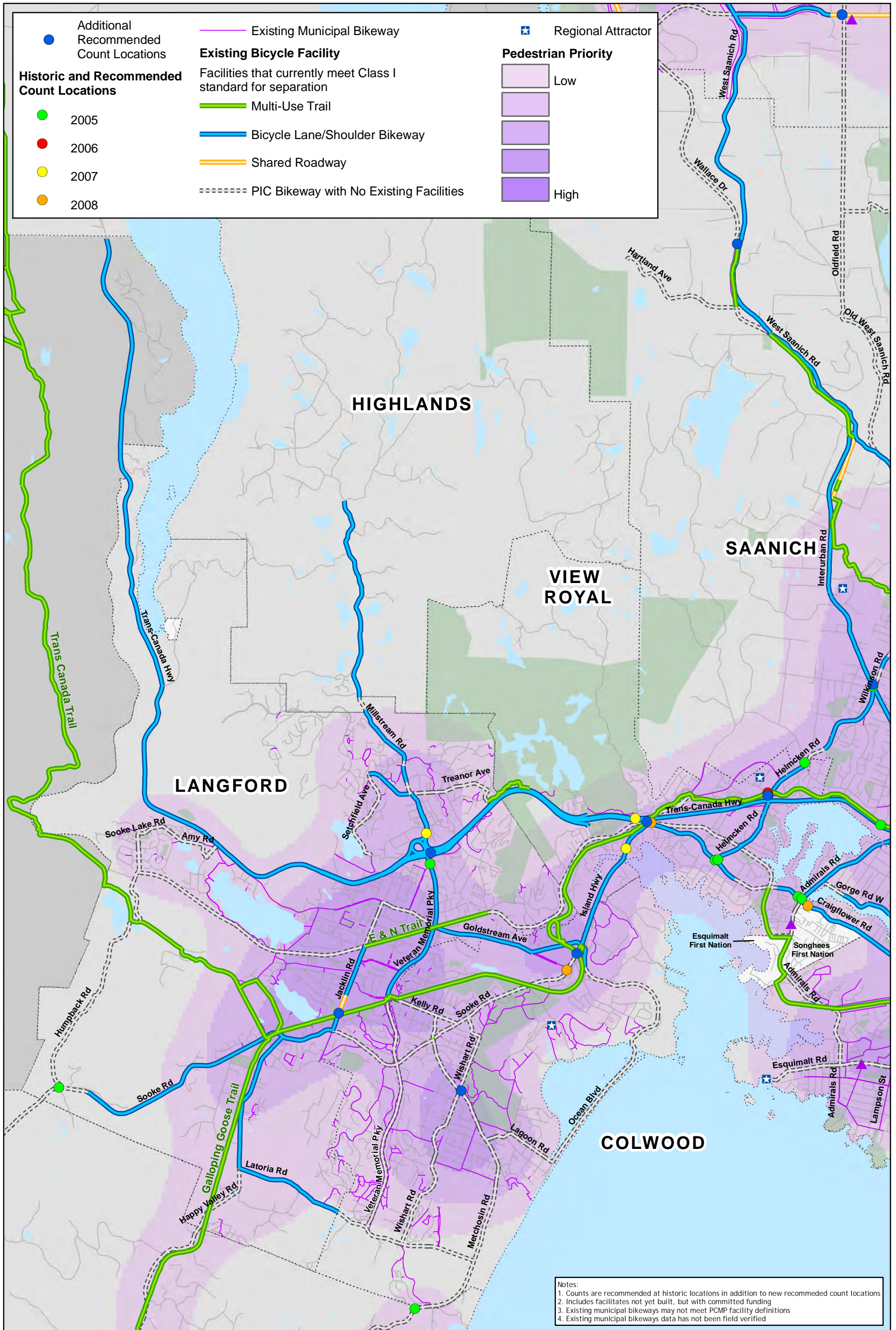


Map 1. Previous and Recommended Count Locations - Peninsula

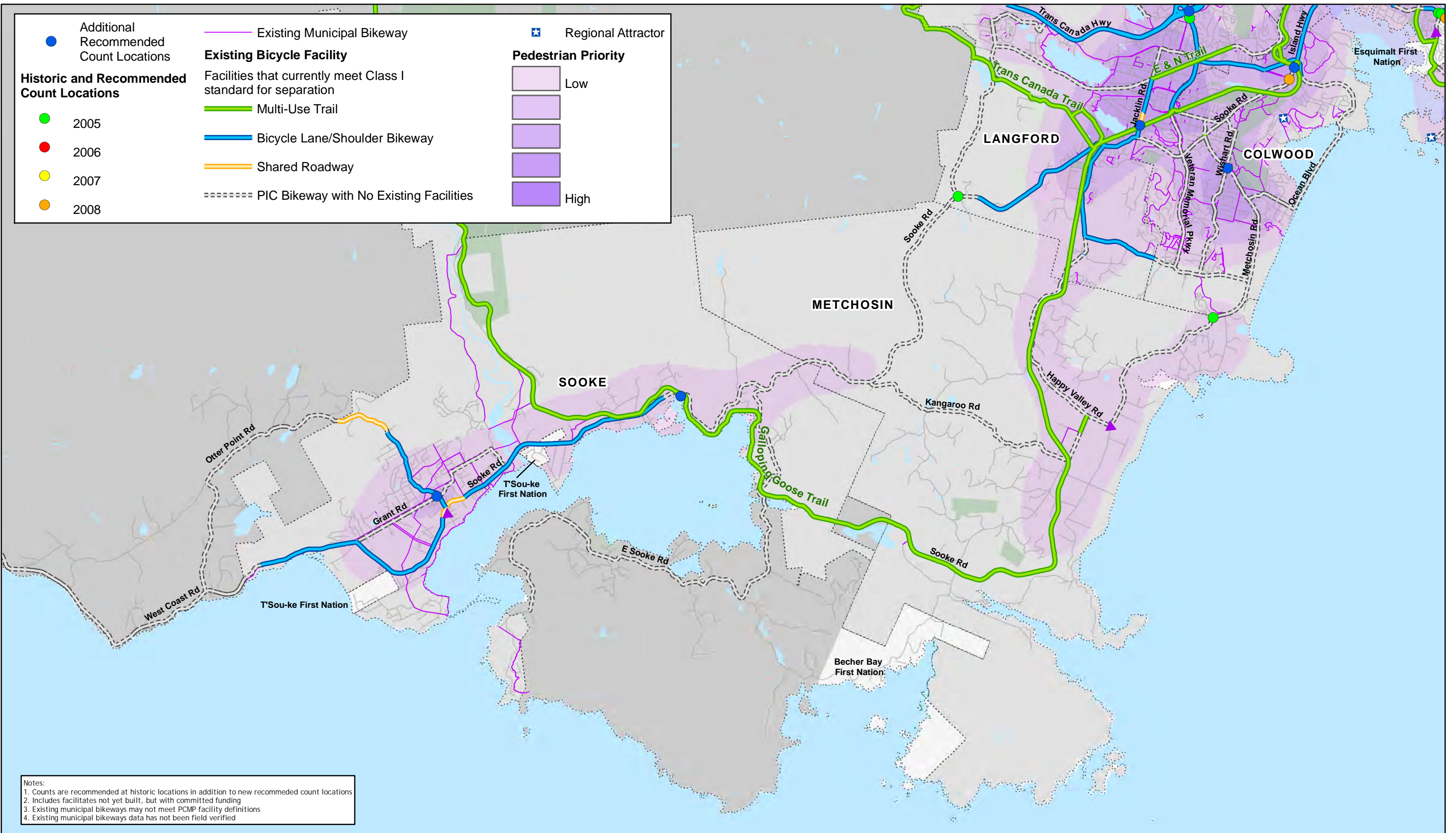


Map 2. Previous and Recommended Count Locations - Core





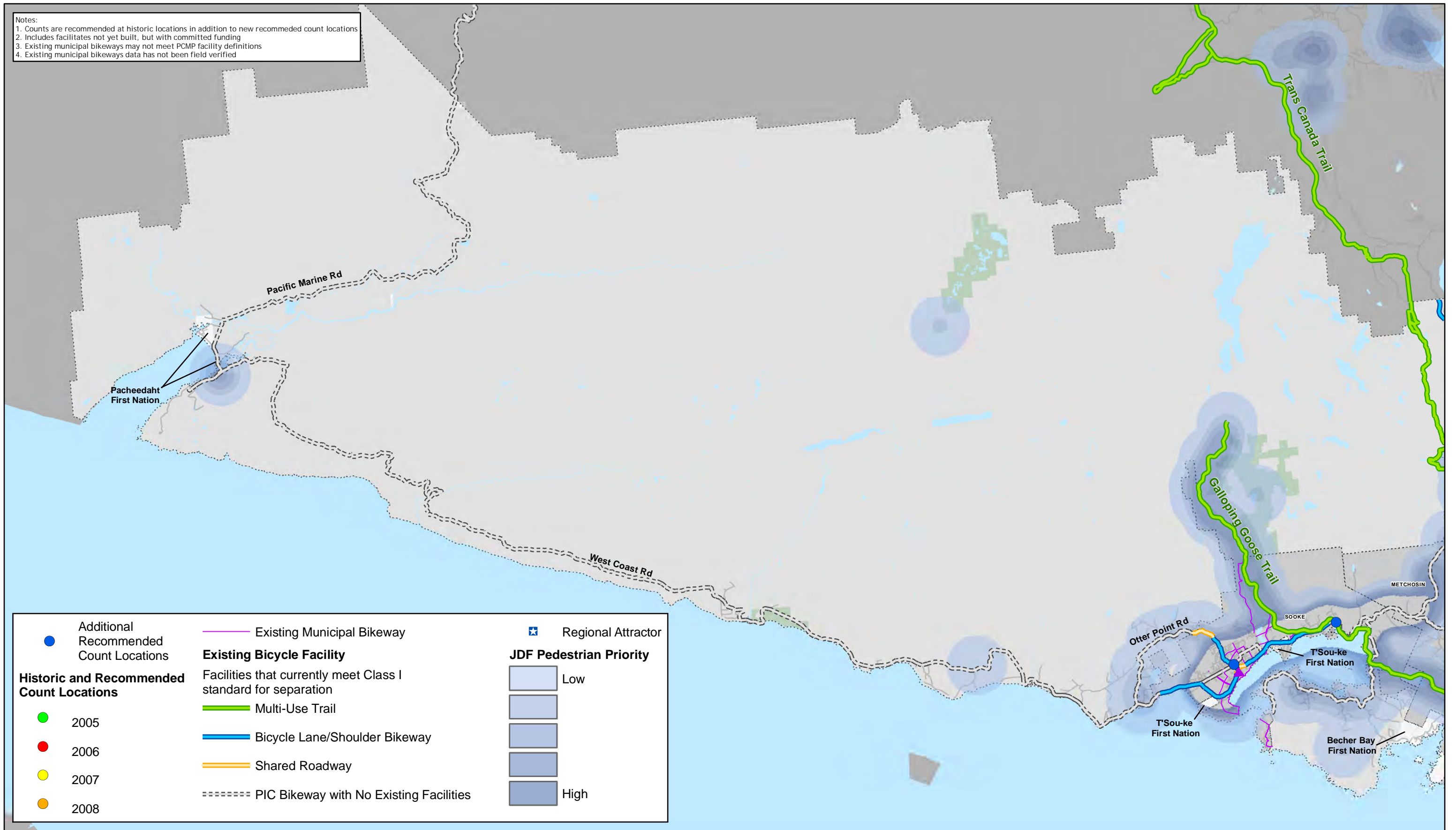
Map 3. Previous and Recommended Count Locations - West Shore One



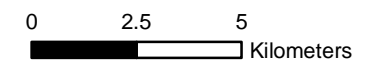
Notes:
 1. Counts are recommended at historic locations in addition to new recommended count locations
 2. Includes facilities not yet built, but with committed funding
 3. Existing municipal bikeways may not meet PCMP facility definitions
 4. Existing municipal bikeways data has not been field verified

Map 4. Previous and Recommended Count Locations - West Shore Two

Notes:
 1. Counts are recommended at historic locations in addition to new recommended count locations
 2. Includes facilities not yet built, but with committed funding
 3. Existing municipal bikeways may not meet PCMP facility definitions
 4. Existing municipal bikeways data has not been field verified



Map 5. Previous and Recommended Count Locations - Juan de Fuca



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Origin-Destination Surveys

Origin-destination counts provide information about where people are traveling as well as trip distance and total mileage. Usually collected in the form of household travel surveys, origin-destination surveys ask participants to log every trip they take over a day or week. These surveys usually collect information on trip purpose, mode or travel, travel time, and similar information. Because of the amount of information collected, the forms can be complicated for participants, and survey analysis and interpretation can represent a major effort.

Recent innovations in GPS technology represent an opportunity to simplify data gathering efforts. A number of studies have utilized GPS devices such as cell phones to track participants' trips. These studies also gather information about route choices, which can be used to determine where additional bicycle facilities would be beneficial, and where participants use an alternate route to a designated bicycle route.¹² This type of technology has recently been applied in the Region of Waterloo in Southern Ontario; Portland, Oregon; San Francisco, California. However, these efforts can be technologically demanding and require substantial staff time. As these technologies improve, GPS-based origin-destination surveys may be appropriate for the CRD in the future.

Development of a Regional Estimate

Once counts have been taken throughout the region, there are several strategies and best practices for developing a regional estimate for pedestrians and bicyclists. Some best practices include:

- A core set of locations are used to create a single annual count reporting figure.
- To adjust for the annual volatility of one day counts, the three-year rolling average should be reported (i.e., the indicator value for 2010 is based on the average of the counts from 2009, 2010 and 2011).
- The year 2000 should be used as a baseline which allows for simple comparisons between years and makes it clear that the indicator is not a count of all pedestrians and cyclists in the region, but is the best estimate of trends in walking and cycling levels over time.¹³
- Seasonal adjustment factors have been developed through the National Bicycle and Pedestrian Documentation Project (NBPD), which can be applied to determine an annual estimate.¹⁴

Count data offers the opportunity to research how demographics, land use, and other factors influence bicycling. This is true for both screenline and intersection counts (although intersection counts will need to be converted into approach and departure volumes).

Surveying Bicyclists and Pedestrians

International best practices have established that both quantitative and qualitative data are important in program monitoring. A set of key figures can be used to identify trends in walking/cycling, miles of pedestrian and bicycle facilities, safety, etc. It is important to supplement this quantitative data with surveys aimed at identifying user characteristics (e.g. trip purpose, walking and biking habits, etc.) and gauging resident perceptions of the bicycle and pedestrian network. Questions can also be tailored to inform the location and design of future facilities.

¹² Oregon Transportation Research and Education Consortium. (2008). *Understanding and Measuring Bicycling Behavior: A Focus on Travel Time and Route Choice*. http://www.ibpi.usp.pdx.edu/media/OTREC_Dill_BikeGPS_Report.pdf

¹³ Counts should be indexed to Base 100.

¹⁴ National Bicycle and Pedestrian Documentation Project. (2009). *Count Adjustment Factors*. Available at: <http://bikepeddocumentation.org/>

Surveys can be directed at particular groups of potential bicyclists and pedestrians. Some examples include:

- Employer surveys – presence of bicycle parking, end-of-trip facilities or incentives
- Employee surveys – which transportation demand management (TDM) strategies are most effective/desirable
- School surveys – how do (elementary, high school, or university) students get to school? What are the barriers parents perceived to walking or bicycling to school?

Survey Content

The survey should gather information on resident and employee travel patterns in the CRD, opinions and suggestions on opportunities, challenges and potential facilities and programs from a large and diverse population of residents in the CRD. The survey will ask specific questions such as, “how often do you/ would you bike or walk,” “what are your chief concerns,” and “what types of improvements would you like to see.” The survey will also include questions about encouragement and outreach, as well as transit integration. The purpose of the survey is to help inform the development of bicycle facilities and programs as well as to serve as a benchmark for travel patterns.

One concept that is relatively easy to present and intuitive for people to understand is to simply ask respondents to rate different aspects of bicycling and walking on a scale from 0 to 10, where 0 = strongly disagree and 10 = strongly agree.¹⁵ The report card can then report the average response value in a concise way that allows for easy comparison of perceptions of bicycling and walking over time. The average rating of cyclists can be depicted as one red bicycle, so the top rating would be ten red bicycles.

Other questions that the survey could ask, which could be incorporated into the report card include:

- How frequently do you walk or bicycle? (Two times or more weekly = frequent walker/cyclist)
- Why do you walk/bike? (Shopping, work, school, leisure, fitness/exercise, etc.)
- What motivates you to walk/cycle? (Exercise, environment/air quality, enjoy time outdoors, cheaper than driving/transit, faster than transit, identify as a bicyclist, enjoy the alone time/downtime.)
- What are the barriers to walking/bicycling? (Not enough bike lanes/sidewalks, not comfortable walking/biking with cars, too difficult to cross major streets, not enough light at night, I have things to carry, places are too far away, I need to travel with small children, hills/don't want to get sweaty before work, not enough time for walking/biking, I am worried about crime, work hours change/are too early/late.)
- Are you aware of CRD & partner organizations' walking and bicycling resources?
- How satisfied are you with the region's walking/bicycling infrastructure?
- What are the perceptions regarding pedestrian, cyclist and motorist road manners?
- What are common unsafe walking, cycling, or driving behaviours?
- Demographics (gender, age, ethnicity, etc.)

¹⁵ Alternatively, respondents can be asked if they are satisfied with a given aspect of bicycling or walking, as is done in Copenhagen's Bicycle Account report.

Survey Distribution Methods

There are numerous ways to conduct surveys or questionnaires, including phone interviews, inserting questionnaires into utility bills and pay cheques, newsletters, web sites, on-line questionnaires, and field interviews. Random intercept interviews in the field, supplemented by post card surveys often yields the best cross section of a community and higher quality information than any other approach. Phone interviews and other approaches may be good supplemental efforts but also may have a significant bias in the sampling group, since entire ethnic and income groups may be under represented. In-person interviews will also provide details on the person being interviewed that other approaches will not allow.

Intercept Surveys

Intercept survey efforts focus on capturing respondents who have arrived at key generators and attractors using a variety of transportation modes. Intercept surveys can be performed at the same time as annual counts. However, depending on the number of counts performed, this may result in a very low sample size. It is common for intercept survey respondents to be given the option of mailing in their survey response (so that they can complete it later) or completing it online.

Intercept surveys could be collected from the following locations:

- Multi-use trails (e.g., the Galloping Goose, Lochside, E&N and Trans-Canada Trails)
- Ferry terminals and other major transit exchanges
- Regional shopping centres and employers
- Regional recreational or community centres
- Regional growth centers and urban villages

Agencies may wish to add extra surveyors to locations where major non-motorized transportation programs and/or projects are expected to be developed within the next several years.

There is no specific requirement for the number of surveys per location, although they will likely reflect the overall level of activity in each location. The balance between bicycle and pedestrian surveys should also generally reflect the relative activity levels of each mode. Where volumes of people are low, surveyors should count every third person, and also be sure to interview a true random sampling of people. General survey locations should be selected based on the following considerations and suggested criteria:

- Pedestrian and bicycle activity areas or corridors.
- Non-motorized program areas (such as Safe Routes to School, Personal Travel Planning).
- Locations near proposed major future non-motorized program areas and other bicycle/pedestrian improvements.
- Representative locations in urban, suburban, and rural locations.
- Key corridors that can be used to gauge the impacts of future improvements.
- Locations where surveys have been conducted historically.
- Locations where bicycle and pedestrian collision numbers are high.
- Locations where there are on-going surveys being conducted by other agencies.
- Gaps and pinch points for bicyclists and pedestrians.

Additional considerations for bikeway survey locations include:

- For multi-use paths, locations near the major access points are best.
- For on-street bikeways, locations at signalized intersections or bicycle parking areas are best.
- The other option is to interview bicyclists and their end points, such as work, shopping, or other areas.

Sidewalk survey locations should include the following considerations:

- For traditional downtown areas, a location near the center of the downtown is best.
- For shopping malls, a location near the main entrance and transit stop is best.
- For employment areas, either on the main access roadway or near an off-street multi use paths is best.
- For residential areas, locations near higher density developments or near parks and schools are the best.

Surveyors will need to be in a safe, visible location and on public property. Surveys on private property such as a mall or major employer require permission.

Web-Based Survey Instrument

Internet/mail-in surveys can be distributed by local bicycling groups to their member base and contact list – although this will limit the survey sample to those that currently ride and will not inform the CRD of barriers for non-participation. Using this methodology, the City of Melbourne (Australia) had more than 4,000 cyclists participate in their 2008 survey. A pedestrian survey can be distributed to the general population in a similar fashion.

The CRD could post the survey on their web site and solicit appropriate organizations to provide links. Groups such as the Greater Victoria Cycling Coalition (GVCC) and Capital Bike and Walk could post the survey link and solicit participation. Informational cards with the survey URL can also encourage people to fill out the web-based survey. Cards can be distributed in civic locations, local bicycle shops, health clubs, gyms and fitness studios including at Bike to Work Week events.

Bicycle Account

Cities around the world have begun monitoring their bicycle and pedestrian programs in order to track the number of non-motorized users, gauge user perceptions of the bicycle and pedestrian networks and identify trends in safety. Results are published in a periodic bicycle and pedestrian account or report card, which can be distributed to the public as a means of publicizing the region's commitment to improving walking and bicycling conditions. These performance measures track progress towards achieving stated objectives related to bicycles and pedestrians.

This section proposes a methodology for the CRD to integrate existing data collection efforts and target future efforts for an attractive document that can be shared with the public. Appendix G provides best practices for bicycle and pedestrian accounts. Both system usage and system expansion should be tracked through the bicycling/walking account. The baselines were established during the PCMP planning process. Data used in the account should be available over time and can be used for year-to-year comparisons.

Establishing a System Usage Baseline

System usage includes not only numbers of bicyclists and pedestrians, but also user perceptions of the network and safety. Specific data that can be collected related to system usage include:

- Number of bicyclists and pedestrians
- Bicycle and pedestrian trip lengths
- Kilometres bicycled and walked
- Bicycle and pedestrian trip purposes
- Bicyclist and pedestrian demographics
- Bicycle ownership
- Bicycle sales/ownership
- Bicycle theft rate
- Number of crashes, injuries, locations.
- Helmet use
- Transit boardings, bikes on buses, bike rack usage

User perceptions can include sense of safety; satisfaction with amount, design, and maintenance of bikeways; satisfaction with general road maintenance, satisfaction with bicycle parking, and ease of combining cycling with public transit. Many groups provide short surveys after education and encouragement programs or events, which could provide stories to add human interest to the account.

Establishing a System Extent Baseline

The system usage baseline is generally more easily quantified, as it measures the existing bikeways and walkways. However, not all municipalities track this information, and establishing a baseline of existing facilities allows tracking of future investments. The change in system usage can then be tracked by implemented improvements. Data that establish the extent of the system include:

- Kilometres of bicycle facilities/shared roadways by type
- Bicycle network coverage (as a proportion of overall road network).
- Kilometres of sidewalks.
- Multi-modal connections.
- Bicycle parking – quantity and location.
- Number of education or encouragement programs

The bicycle and pedestrian account would evaluate the region's movement toward accomplishing the goals related to walking and bicycling. The PCMP goals and actions can be objectively evaluated as part of this process.

Report Card Best Practices

Several cities currently publish report cards on a regular basis. Some cities monitor bicycling in multiple reports, which are sometimes created by different agencies (e.g., Portland, San Francisco, and New York City). Copenhagen and Melbourne bring metrics of the bicycle network and cycling rates together with survey results of cyclists' perceptions in bi-annual Bicycle Account reports.

Parking is a critical component of a bicycle program which some cities monitor by creating an online map and giving residents the opportunity to write in corrections or request new locations (such as in New York City, Portland, and San Francisco). Several agencies (including the City of Boston, MA and the State of Victoria, Australia) make count and/or parking data available online¹⁶. Making data available to the public opens up the opportunity to develop consumers of the bicycle data, such as other public agencies or university researchers. In theory, more people actively utilizing the bicycle data would serve to make the data collection program indispensable and should increase its chance of receiving sustained funding.

¹⁶ A product of Barack Obama's Open Government Initiative, Data.gov is a citizen-friendly platform launched on May 21, 2009 to provide access to Federal datasets. With a searchable data catalogue, Data.gov helps the public find, access, and download non-sensitive Government data and tools in a variety of formats.

San Francisco

The San Francisco *Report Card on Bicycling* (2008) is developed by the San Francisco Bicycle Coalition. The Report Card is a complement to the 2008 *State of Cycling* report, which provides the baseline analysis of bicycling in San Francisco, based on bicycle counts and surveys conducted from 2006 to 2008.

The biannual report summarizes results of counts and surveys conducted in San Francisco to “provide a portrait by the numbers” of the city. For each category, the city was given a grade, which is then explained using examples from count and survey data. The previous report card from 2006 is held as a baseline, and the 2008 numbers compared through the categories. Many informational graphics are used throughout the Report Card to convey the information, such as a map of count locations and the change over time.



Figure 3. The San Francisco Report Card on Bicycling (2008) provides an overview of cyclist attitudes from an annual survey.

The report ends with the following caveat, recognizing the difficulty of capturing all the important information:

We recognize that the 2008 Report Card of Bicycling in San Francisco is an imperfect analysis of the state of cycling in San Francisco, due to missing and/or unreliable information from official sources and our own limitations in gathering cyclist opinions, but nonetheless feel it provides an authentic and useful account of bicyclist sentiment and opinion. We continue to look forward to a fuller and more reliable process of evaluation and analysis by official agencies in the City as we go forward towards 2010.

Copenhagen¹⁷

Beginning in 1995, The *Copenhagen: City of Cyclists Bicycle Account* was most recently published in 2008, and evaluates city cycling conditions, new initiatives as well as the way in which the Copenhageners themselves perceive cycling facilities. Each *Bicycle Account* contains:

- **Key Figures** - A list of key metrics that cyclists regard as the most essential. Initially defined in collaboration with cyclist focus groups, a couple of key figures have been replaced by others over the years.
- **What Cyclists Think** - Presents cyclist attitudes based on a representative telephone interview survey carried out by a consulting firm. These responses assist the City to identify where it should focus future improvements
- **Current Issues** - Each report contains current events that impact bicyclists, such as combining cycling with public transport or the socio-economic benefits of cycling.

¹⁷ http://www.sfbike.org/download/copenhagen/bicycle_account_2004.pdf

The report also shows target goals and figures for the City to determine whether they are accomplishing their goals. In addition to the quantifiable results of the counts and surveys, the report emphasizes new and on-going strategies for increasing ridership, such as highlighting improvements on a particular bridge, or an engineering technique of synchronizing traffic signals to benefit cyclists traveling at 20 km/h. The report notes new trends in cycling, such as the popularity of cargo bicycles, which impact perceptions of bicycling and bicycle infrastructure.

Another section of the report highlights the socioeconomic benefits of cycling, including health and life expectancy benefits, mortality rates, and cost to users.

New York¹⁸

Developed by Transportation Alternatives, the *New York City Bicycle Report Card* was based on government efforts to improve cycling, the organizations assessment of the ‘reality on the street,’ and an online public opinion questionnaire. The grading system is as follows:

- A. Top Effort/Top Condition
- B. Good Effort/Good Condition
- C. OK Effort/Acceptable Condition
- D. Poor Effort/Unacceptable Condition
- E. No Effort/Life Threatening Condition

A simple two-page document without complicated graphics or many pictures, the Report Card provides quite a bit of information about the state of cycling in New York City.



Figure 4. The Copenhagen: City of Cyclists Bicycle Account (2008) uses informational graphics to inform the public about the state of cycling.



Figure 5. The New York City Bicycle Report Card evaluates cycling on the basis of three information sources.

¹⁸ <http://www.transalt.org/files/newsroom/magazine/2006/winter/4-5.pdf>

Recommendations for Counting and Surveying Bicyclists and Pedestrians

The CRD is well-positioned to accumulate the necessary additional data by building on the original 2006 pilot project using the National Bicycle and Pedestrian Documentation Project, and adopting the methodology into a standardized program. The program is suited to utilising the region's existing capacity amongst its community volunteers to conduct the manual counts. In addition to simply counting the number of bicyclists and pedestrians, the CRD may wish to expand the survey to include additional information such as whether cyclists are riding on the sidewalk and/or against the designated flow of traffic as well as tracking gender and helmet use.¹⁹

Surveys should gather information on resident and employee travel patterns in the CRD, opinions and suggestions on opportunities, challenges and potential facilities and programs from a large and diverse population of residents in the CRD. The purpose of the survey is to help inform the development of bicycle facilities and programs as well as to serve as a benchmark for travel patterns.

Facilities Update Process

Keeping-up-to date digital information to represent the regional bikeway and pedestrian network construction allows the region to report its progress towards completing the bicycle and pedestrian networks. Documenting facility construction provides updates about the region's progress towards completion of the bicycle and pedestrian network and can indicate areas where additional resources could be applied. Information about facility construction can be used in conjunction with bicycle and pedestrian counts and evaluation of encouragement, promotional or educational programs to examine usage trends. This information can be tracked over time to gauge the region's progress toward regional transportation goals. Identifying funding sources that are commonly used to pay for bicycle and pedestrian infrastructure provides a valuable resource for other municipalities seeking funding. Finally, funding levels can be compared to facility updates to increase efficiency of existing revenue streams and to leverage existing efforts to substantially increase funding for bicycle and pedestrian infrastructure.

This memorandum provides a synopsis of existing efforts to update bicycle and trail networks in GIS and proposes a strategy for a consistent and regular network update process.

The PCMP will recommend a regional bikeway network that includes existing and proposed facilities. While many network links have been constructed, additional links will be added to the network over the coming years as new facilities are constructed or existing streets are retrofitted with bikeway facilities. This network will continue to evolve and should be reviewed and updated regularly to ensure that it continues to effectively meet the needs of the CRD's residents and visitors. This update framework should include two processes:

- **Facilities Update:** a frequent and regular process that documents the construction of facilities that are already included in the proposed regional bikeway network. The product of this process is an up-to-date digital map of existing and proposed regional bikeways.
- **Network Update:** a less-frequent process that adds network links to the regional system. This process does update digital data, but should also include a discussion about the role the additional network links play in terms of augmenting or enhancing the regional system. Before an update to the network is undertaken, a number of questions should be asked, such as:

¹⁹ While additional information is helpful for the report card and tracking purposes, additional information such as age may be difficult to collect via counts due to helmet use or numbers of cyclists being recorded and can be included in a survey.

- Does the proposed link provide a connection to a new school or another regional attractor?
- Does it serve a new regional center or village center?
- Will it provide a connection to an area currently underserved by regional connections?

Whereas the *facilities update* is a regular house-keeping process that can be handled through regular staff communication on an annual or bi-annual schedule, the *network update* process should be more collaborative in nature and may require convening of a formal process to assess the potential additions. The facilities update process is discussed here while the network update process will be covered in more detail in the forthcoming implementation plan.

Existing Update Processes

One outcome of the *2001 Transportation Choices Bicycle Strategy* (a working paper associated with the *2002 Travel Choices Strategy*) process was a recommended regional network that included nearly 550 km of on- and off-street facilities as well as a dataset containing information about the location and type of existing bikeway facilities. This network has been updated by CRD staff periodically over the last eight years through informal conversations with municipal partners.

Phase I PCMP Bicycle Network Update

During Phase I of the PCMP planning process, the existing bikeway network maintained by the CRD and the local network datasets were updated to reflect existing spring 2009 conditions. The most recent update to the CRD's data occurred in 2008, while the age of data from other local bikeway networks varied by as much as one to three or more years. Based on the digital data received, draft maps were provided to each municipality for comment, and then were integrated into a file showing all existing bikeways within the region. This process revealed the following potential barriers to regional data collection:

- **Variations in data format and delivery methods.** Files were submitted in a wide variety of formats ranging from marked-up paper maps to digital PDF maps and files for use with Geographic Information Systems (GIS) files. Some files were delivered via email or FTP site while others were received as hard copy files which were, in turn, digitized.
- **Variations in data attributes that are collected.** Datasets may track the same type of information (e.g., bikeways) but may not include the same information about these facilities (e.g., the width of bike lanes). It is useful to know the location of bikeways and the inclusion of similar attributes allows more robust and detailed analysis.
- **Variations in the definitions of data attributes that are collected.** For example, a facility some municipalities define as a multi-use trail must be paved, while another municipality may not share this requirement. This variation in the definition of the data attributes can create challenges when the data is used for some applications (e.g., a region wide route planner for mobility-impaired pedestrians).

This data process can be simplified through the development of a standardized update process facilitated by the CRD.

Best Practices of Regional Network Update Processes

Regional Districts and Metropolitan Planning Organizations (MPOs) work closely with member jurisdictions, overseeing the development of bicycle and pedestrian networks and maintaining data about regional networks. A review of bikeway network update protocols at several MPOs throughout North

America was undertaken to help formulate recommendations for the CRD. These findings are summarized in Table 4. Aspects of the update process to be considered include:

- Frequency of update
- Data attributes and definitions
- Responsible party
- Update mechanism

Interviews with jurisdictional data managers revealed the following commonalities:

- Regional data managers typically maintain both regional bikeway networks with data received from local municipalities. Several locations did not differentiate between regional and local networks, but expressed interest in identifying a 'regional' network to emphasize the importance of the connections and to highlight these key corridors as funding priorities.
- Data updates tend to occur irregularly, generally in conjunction with plan updates every three to four years. Three of four agencies indicated the desire to update data more frequently as the data can be used for multiple applications (e.g., multi-modal trip planners and demand modeling).
- Ad hoc updates result in varying levels of detail and accuracy within the region or study area.
- At a minimum, most datasets include name and facility types. Additional facility quality information is desirable but is more challenging to collect for a variety of reasons (e.g., limited staff capacity, the relative level of effort and access to technology).
- There is an increasing trend of tying data to the roadway or transportation network through a unique identifier and paying increased attention to the spatial data attributes (facility information such as roadway name and bicycle facility type) and topological correctness (line segments used to represent bikeway networks are digitally connected so continuous travel along the 'facility' is possible). The addition of a unique identifier allows the data to be used in a multi-modal transportation network. Spatial data attributes and topological correctness are also necessary for the data to be used in routing applications.
- Data managers in most agencies reported a call for updated bikeways facility information typically resulted in marked-up hard copy maps. In several instances, the results were collected as digital files. This can reduce the staff time required to maintain the data, but staff time will still be required to input the digital data into the format maintained by the CRD if the dataset if attributes such as topological correctness are to be maintained.

Table 4 provides an overview of how other regional governments treat and update digital data.

Table 4. Case Study Summary of Digital Bicycle and Pedestrian Assets

Agency	Digital data assets	Frequency of Update	Data Attributes & Definitions	Usage and data properties	Party Responsible for Data Updates	Update Mechanism	Comments
Metro - Portland Oregon	Bikeways and multi-use trails Corridors of regional significance All local and regional bikeways Sidewalk data is not regularly collected	Corridors of regional significance: every 4 years, (with the <i>Regional Transportation Plan</i>) All local and regional bikeways: every 3 years (with updates to the regional bikeway map)	Street name Type of bicycle facility (bike lane, trail, and low or high traffic through street). Digital data maintained by the regional government includes routes of both local and regional significance.	Data is topologically correct; can be used in network routing applications	Metro in partnership with member jurisdictions who are responsible for submitting facility updates. The public can contact with updates on facilities that have been constructed.	Corridors of regional significance are updated at each municipality via a PDF form (Appendix A) asking for facility extents attributes and rationale for inclusion in the regional network. Potential additions are reviewed by Metro staff.	Metro is interested in developing a process that would allow more frequent updates to the regional bikeway datasets.
TransLink – Vancouver, British Columbia	All local bikeways and multi-use trails Sidewalk data is not regularly collected	No formal update process. Municipalities submit updates ad hoc. Annual update recommended	Route and street name Facility type Attribute information: surface type, wayfinding signage, traffic calming features	Data is topologically correct; can be used in network routing applications	TransLink compiles data while member municipalities are responsible for submitting updates	An annual update was recommended in the 2010 <i>Regional Cycling Network</i> study. Ideally the update would include updates to attribute data shown in Appendix B. This system has not yet been adopted.	There was discussion of developing a regional bikeway network though no action has been taken to formally develop and designate a system. The complexity of the data schema has resulted in spotty attribute data for network links added after construction of the initial data set.

Agency	Digital data assets	Frequency of Update	Data Attributes & Definitions	Usage and data properties	Party Responsible for Data Updates	Update Mechanism	Comments
Puget Sound Regional Consortium	Does not maintain a regional bikeway network.	N/A	N/A	N/A	N/A	N/A	N/A

Recommended Strategies for Bikeway Data Updates

The CRD should initiate a process to regularly update the regional dataset with existing and proposed regional network facilities. Regular updates will reduce the time and burden on parties that perform the updates, which can require hours of field work for verification and comparison with digital datasets. Regular updates can also be used as an opportunity to collect information about facility cost and funding mechanisms that can be used in regional benchmarking and evaluation. The benefits of having a regularly updated data file extend beyond planning to cyclists by applying the network on-line tools such as a multi-modal trip planner.

Bikeway Network Update Approach

There are several potential update scenarios that the CRD can consider when selecting a facilities update approach.

Scenario 1. Facilities Update as a Regular Item at a Committee Meeting

In this scenario, the CRD could add a call for recently constructed bikeway links as a regular agenda item to a standing committee. Potential committees include a bicycle and pedestrian advisory committee recommended as part of this planning process or the already-established Inter-jurisdictional Transportation Advisory Committee (See Memo 19 – Inter-jurisdictional Harmonization Process). Committee members could provide updates that would be recorded on a paper map or digital map and fill in required information. This scenario may limit the attribute data that could be collected at the time each network link is added as the committee member may not know construction or funding details (e.g., bike lane width).

Scenario 2. Facilities Update as a Digital Process

In this scenario a designated staff person or community member would be responsible for providing digital data updates to the CRD. The CRD could send a call for facilities updates on a semi-annual basis. Data could be submitted through a medium such as Google Earth KML file or other web mapping interface. This method could standardize the data inputs received by the CRD and could allow the capture of more complete attribute data through entry into a digital form at the user's convenience. This mechanism could be developed in partnership with the CRD Department of Information Technology & GIS Services.

Frequency of Update

The bikeway network should be updated at least annually, in conjunction with other benchmarking measurements, or quarterly, in conjunction with the meeting of a bicycle and pedestrian advisory committee.

Recommended Bikeway Network Attributes

Bikeway data collected by the CRD about should include the following attributes:

- Roadway Name
- Regional bicycle facility type
- Local bicycle facility type (if different than the regional designation)
- Facility extent
- Facility cost
- Funding sources
- Date of completion
- Any notes or comments
- Signing
- Surface
- Jurisdiction

Additional attributes that would make the data set compatible with the trip planning application developed by the University of British Columbia are included in Appendix A. The Appendix also provides recommendations about how these attributes could be generated.

The CRD Department of Information Technology & GIS Services should develop a metadata specification and include standard field types and definitions for inclusion in their *GIS Data Standards for External Agencies*.

Inclusion in Larger Regional Datasets

There is also potential for the regional bikeway network dataset to be integrated into the Digital Roadway Atlas of BC (DRA) network dataset created and maintained by GIS Innovations. This would require that on-street bikeways be topologically corrected to DRA data wherever possible and attributes be included that allow easy transfer of attributes between datasets. This would allow the CRD member municipalities regular access to the regional bikeway network as part of the roadway dataset. This conversation should be discussed in further detail in conjunction with GIS Innovations and the CRD Department of Information Technology & GIS Services.

Updates to Regional and Local Bikeway Data

The CRD and member municipalities could consider simultaneous updates to both regional and local bikeway networks where the CRD is responsible for maintenance of all bicycle facilities data for the region. Creating a mechanism that updates all datasets simultaneously could increase the comprehensiveness of bicycle facilities data within the region and provide a standardized data format that would facilitate data exchange and allow local bikeway networks to be integrated into a multi-modal trip finder. This data could also be integrated into the Road Atlas of BC data. This partnership may require funding contributions from member municipalities.

Collection of Sidewalk and Facility Data

Developing a database of existing sidewalks would allow the CRD and member municipalities to prioritize improvements in the pedestrian network. The PCMP process has identified a prioritization system to determine areas of regional pedestrian importance; if sidewalk data were available region-wide, the criteria could be applied to determine priorities. This information can be used to leverage funding for priority projects, or to identify projects that could be built in conjunction with a roadway or development project, or if funding for projects in a particular location becomes available. Attribute data for a sidewalk file could include:

- Width
- Presence of obstructions
- Surface quality
- Year built

Additional pedestrian network data that would be beneficial to collect include curb ramps and marked or mid-block crossings.

Data Needs for University of British Columbia Bicycle Trip Planning Application

- **Length:** Length values in metres will be maintained by default but an extra field may be necessary in order to calculate the values for the purposes of other calculations, analysis or routing applications.
- **Speed:** Approximate cyclist travel times will be calculated for each segment. This could be as simple as assigning an average travel speed of 10 miles per hour to each segment, or refining the metric to account for variations in slope and travel surface. For example, most people are going to travel faster on flat, paved surfaces compared to trail surfaces or hilly terrain.
- **Time:** This attribute can be calculated based on the length and speed fields.
- **Direction:** Notation of direction is already available, provided that the GIS Innovations ID is available and the road related features can be joined and this attribute pulled from the DRA. For non-road segments, this attribute should be in keeping with the DRA attribute for consistency.
- **Category:** These attributes are used to classify all segments of the network according to cycling or road class. Value examples are 1=designated cycling route, 2=alternate cycling route 3=major road, 4=highway
- **NO2:** Nitrogen Dioxide concentration attributes can be assigned per segment depending on road type. As per the UBC Google Routing documentation the values are in Table 5.

Table 5. Nitrogen Dioxide Concentration Attributes by Street Classification

Category	NO2 (ug/m3)	Category	NO2 (ug/m3)
Highway	30	Resource	18
Freeway and Ramp	27	Lane, Local and Strata	15
Arterial	22	Recreation	13
Service	20	Trail	10
Collector	17		

- **Elevation Data.** As per the UBC Google Routing documentation – The cycling route planner contains an option which selectively routes the user based on the path with the least elevation gain, or restricted to segments below a percent slope threshold. This is calculated using the elevation at the TO and FROM node for each line segment. Accurate elevation data in raster format at the finest spatial resolution is recommended in order to utilize this feature fully. Elevation values should be in metres.
- **Green Route Index.** The UBC Google Routing planner can calculate a route based on a route’s “green” value. The green value is based on a percentage of area within 50 metres of a node that is classified as “green” (trees, shrubs, vegetation etc.). These attributes can be generated from analyzing the 2005 land cover analysis data produced for the CRD and Habitat Acquisition Trust.

Interjurisdictional Communication Process

The PCMP process brings together planners, engineers and decision makers from member municipalities and other regional partners such as BC Transit and the Ministry of Transportation and Infrastructure who play a role in regional transportation planning and implementation. The feedback and comments received through this process have guided the development of all aspects of this project. This section discusses the benefits of continued inter-jurisdictional communication and recommends strategies to continue and expand this communication in coming years.

Cycling and Pedestrian Advisory Committee (CPAC)

In order to facilitate coordination and momentum on pedestrian and cycling issues, the CRD should convene a Cycling and Pedestrian Advisory Committee (CPAC) consisting of municipal staff, the public, and staff from partner agencies such as BC Transit, MoTI or the Vancouver Island Health Authority. The group should meet bimonthly following completion of the PCMP with the goal of working energetically towards implementing the plan recommendations.

This group could be a subcommittee of the existing Inter-jurisdictional Transportation Advisory Committee in order to ensure coordination with regional transportation planning initiatives and issues. After two years, the group may choose to meet less regularly to coordinate efforts and work together on common goals. Major task areas include:

- Implementing PCMP recommendations
- Coordinating regional walking and bicycling efforts
- Leveraging funding and seeking new funding sources
- Representing active transportation projects in the *TravelChoices*
- Implementation and Investment Plan process
- Working together on cross-jurisdictional efforts (such as Sunday Parkways, SmartTrips and the like).

Additional roles could include:

- Developing technical expertise/design guidelines
- Working with law enforcement officials
- Evaluating the impact of new laws or policies
- Meeting/interfaces with the general public
- Coordinating public outreach
- Encouraging volunteer efforts
- Responding to advisory requests from the CRD Board

Subcommittees could be formed to address specific tasks such as: Education and Encouragement, Bikeways, and Planning, and Pedestrian Accessibility Issues. This committee can take several forms, as outlined in Appendix G. Additional considerations include:

- **Funding and Staff Support:** Ideally, a staff person would be assigned to oversee the administrative details associated with managing a committee: scheduling meetings, developing agendas, facilitating

meetings, recording the minutes, bringing agency issues to the committee, and reporting back to the agency about recommendations and findings.

- **Size and Membership:** Typical successful advisory committees have 10-15 members. Organizations can appoint members through open or solicited applications.
- **Member Selection:** The CPAC should develop a list of desired members from specific areas or organizations (see Table 3).

Table 3. Typical Committee Membership

Public Members	Municipal Members
A member at large representing the region’s key geographic areas (core, peninsula and west shore)	A planner or engineer from each municipality with an interest in bicycle and pedestrian issues
A member with specific interests and expertise in public health and fitness issues	CRD Parks director and/or their designee
A committee member or advocate with knowledge of universal design	Capital Regional District Board Chair and/or their designee
Representatives of related advocacy groups	

CAC Best Practices

Regional governments²⁰ throughout North America are responsible for coordinating complex transportation projects and developing networks that provide service to both visitors and residents. Several interviews on the subject of regional coordination were conducted to help develop recommendations for the CRD.

Agencies were asked about the format and structure of any groups that consider bicycle and pedestrian issues, membership requirements of these groups, typical duties and perceived benefits of participation. Most agencies reported that regular communication and coordination was handled by a bicycle and pedestrian advisory or implementation committee comprised of municipal staff members, with some participation by the public and elected officials. Additionally, several jurisdictions have a venue or forum that allows citizens and advocates to regularly come together and provide feedback on bicycle and pedestrian issues.

A scan of other regional governments in the Pacific Northwest is included in Table 6 below. Detailed case studies of TransLink in Metro Vancouver and Portland Metro in Oregon are also presented. This is followed by recommendations of how the CRD would best instigate inter-jurisdictional coordination beyond the PCMP process.

²⁰ The structure of regional governments varies significantly throughout North America. In British Columbia, regional governments are known as Regional Districts, while in the United States regional governments are referred to as Metropolitan Planning Organizations, or MPOS.

Table 6. Summary of Intergovernmental Coordination Case Studies

Agency	Communication Structure	Roles and Duties of Advisory or Implementation Committee	Communication Strategies and Challenges	Comments or Recommendations
Metro - Portland Oregon	<ul style="list-style-type: none"> • A well developed system of advisory committees provides forums for decision making and discourse on transportation issues. Two bodies are specific to transportation: • Joint Policy Advisory Committee on Transportation (JPACT) is a 17-member committee of elected officials and representatives of agencies involved in transportation that make recommendations to the Metro Council on transportation needs in this region. • The Transportation Policy Alternatives Committee provides technical input to the JPACT on transportation planning and funding priorities for the Portland metropolitan region. Several members representing the public are included as members. • A quarterly trails forum open to everyone provides information on regional trail planning projects. 	<ul style="list-style-type: none"> • The primary duty of JPACT and TPAC include distribution of federal funding dollars. • Secondary duties include technical advice on transportation issues. • 	<ul style="list-style-type: none"> • The Active Transportation Partnership aims to increase the region’s effectiveness in securing funding to complete the active transportation network. See case study, for more information. 	<ul style="list-style-type: none"> • A staff level group that met regularly would be beneficial as a location to trade information about funding, design strategies and coordination of projects on municipal boundaries.
TransLink – Vancouver, British Columbia	<ul style="list-style-type: none"> • The Major Roads and Transportation Advisory Committee (MRTAC) is comprised of senior engineers and staff from each municipality. TransLink staff provides administrative and technical support. • The Bicycle Sub-Committee reports to the Major Roads and Transportation Advisory Committee. 	<ul style="list-style-type: none"> • MRTAC is responsible for management of the Major Road Network, a series of arterial roadways in Metro Vancouver. • The Bicycle Sub-Committee administers the Bicycle Capital Cost Sharing Program (BIICS) and discusses issues of regional significance (e.g., innovative bikeway treatments). 	<ul style="list-style-type: none"> • Smaller jurisdictions do not always attend, but are invited via email. One communication strategy is to see that all attendees see the benefits of meeting attendance (e.g., members view the meetings as a place to ask questions and learn about new bicycle or pedestrian treatments.) 	<ul style="list-style-type: none"> • Encourages development of common implementation standards to provide a single standard for each municipality, regardless of staff capacity. • Does not have a pedestrian advisory committee, but is considering this need carefully.

Agency	Communication Structure	Roles and Duties of Advisory or Implementation Committee	Communication Strategies and Challenges	Comments or Recommendations
Lane County Council of Governments	<ul style="list-style-type: none"> A bicycle advisory committee comprised of jurisdictional members and the transit agency staff meet weekly to trade information and coordinate on bicycle related projects. A committee of staff members that manage digital data meet quarterly to discuss data integration and management. 	<ul style="list-style-type: none"> The primary duty of the bicycle advisory committee is to review projects that have a bicycling component and make recommendations on the distribution of federal funding dollars. The primary role of the data management committee is to handle integration of regional data sets. Most recently the group is meeting to discuss the integration of traffic controls into the bikeway network data. 	<ul style="list-style-type: none"> Working to ensure that committee members see the benefit of regular meetings in terms of information exchange and opportunities for collaboration. 	<ul style="list-style-type: none">
Puget Sound Regional Consortium	<ul style="list-style-type: none"> The Bicycle/Pedestrian Advisory Committee that meets bi-monthly. Organization is fluid and occasionally ad-hoc subcommittees are convened to address specific projects. Several non-motorized transportation advocates sit on the council. 	<ul style="list-style-type: none"> The Bicycle/Pedestrian Advisory Committee coordinates with and advises PSRC staff, policy boards, and other advisory committees on a variety of bicycle and pedestrian-related planning issues. Topics and issues include best practices and design guidelines, plan implementation and performance monitoring, comprehensive plan certification, and policy framework the selection of projects receiving federal funding. 	<ul style="list-style-type: none"> Smaller municipalities are invited to attend but are often absent, perhaps due to travel time to meetings, the level of development in the nonmotorized network in the municipality and level of political support. The group is closely allied with the Washington State bicycle/pedestrian coordinator who is a frequent meeting attendee. Support from multiple levels of government provides additional support when advocating for pedestrian and bicycle supportive policies. 	<ul style="list-style-type: none"> This group provides a voice to advocate for the needs of cyclists and pedestrians that is embedded in the government and can complement existing advocate groups.

Communication and Coordination Case Study: TransLink, Lower Mainland, British Columbia

Background

Among other duties, TransLink, in partnership with the municipalities manages, the Major Road Network (MRN), which consists of a series of arterial roads throughout Metro Vancouver. Oversight of MRN programs is the responsibility of the Major Roads and Transportation Advisory Committee (MRTAC) composed of senior engineers and senior staff from each municipality in the region. TransLink staff provides administrative and technical support to MRTAC. At the next level is the Bicycle Sub-Committee (also referred to as the Bicycle Working Group), which reports directly to MRTAC. Until recently, the Bicycle Working Group reported to MRTAC indirectly through the MRTAC Planning Sub-Committee, which was recently disbanded. This restructuring removes an extra layer of effort, which was not seen as being particularly useful or necessary.

Committee Purpose/Role

The Bicycle Sub-Committee has several purposes:

- To administer the Bicycle Infrastructure Capital Cost Sharing (BICCS) Program. The BICCS program consists of two funding streams: 1) Allocated Funding, which is distributed to all municipalities based on proportion of regional population; and 2) Regional Needs, which is application based funding. Municipalities submit applications for the Regional Needs funding for specific projects, and also participate in the evaluation process. After submitting an application, each municipality will make a presentation to the committee describing the project, and each municipality evaluates the project using established criteria.
- To discuss issues of regional significance, such as the Regional Cycling Strategy and discussing new/innovative bikeway treatments and developing standards for regional consistency (an example is the region's discussion on the use of green as the colour to be used for coloured bike lanes).
- Awareness raising / Information sharing. The committee helps municipalities by providing an information sharing forum to ask questions and provide advice either at meetings or via e-mail. This also helps raise awareness of what others in the region are doing.

Committee Structure

The Bicycle Sub-Committee consists of:

- Staff from all 22 municipalities (designated staff member primarily responsible for cycling)
- Metro Vancouver (the regional government)
- Provincial Government
- University of British Columbia
- TransLink

All of the above municipalities and agencies are invited to participate, and are included on an e-mail distribution list. Some of the very small municipalities (i.e. Anmore, Belcarra, and Bowen Island) do not participate but are included in communications and invited to participate. Many other municipalities participate only occasionally. The highest level of participation occurs when funding decisions for the BICCS program are being made. The committee includes a Chair and a Vice-Chair, who are both municipal representatives. The TransLink staff member is a liaison member.

The committee typically meets once every 4-6 weeks throughout the year, but the schedule is flexible (dates are not pre-determined and fixed).

Additional Information and Lessons Learned

Based on their existing Bicycle Working Group structure, TransLink provided additional information on public involvement and lessons learned:

- **Participation:** They ensure municipal involvement by having municipal representatives act as the Chair/Vice-Chair, which helps provide ownership in the process. The Committee has also recently decided that the Chair/Vice-Chair will be rotated on an annual basis to allow all municipalities to participate, which helps to keep them engaged in the process. They also try to ensure that the suburban municipalities are provided this role as much as possible.
- **Funding:** TransLink's role as a funding agent is the biggest "carrot" to fostering strong participation. When funding decisions are on the table, participation is much stronger and if there was no funding available, many municipalities would likely not participate. Because TransLink offers its own funding program, there is generally relatively little discussion about other funding opportunities (i.e., provincial, federal grants) and not much discussion about working together regionally to leverage other funding sources. However, that role could be beneficial to the CRD.
- **Information sharing / best practices:** One of the key enticements to participate is information sharing, particularly regarding innovative treatments or best practices, since TAC provides little guidance for many innovative facilities (e.g., separated bicycle lanes or neighbourhood bikeway treatments). Many municipalities do not have large engineering or planning departments and do not have a lot of expertise in bicycle planning and design, so this provides a useful forum to discuss ideas and ask questions. The group also shares information about bicycle parking standards (for example, a review was recently completed of all the bicycle parking requirements in the region so everyone is aware of what others are doing).
- **Working with advocates:** Cycling advocates are not part of the committee, but on occasion advocates are invited to participate in meetings, for example to promote bike month or bike to work week.
- **Pedestrians:** There is no committee structure for pedestrians, although TransLink is increasingly realizing that there may be a role for them to play in this area.

Communication and Coordination Case Study: Metro, Portland, Oregon

Background

Among other duties, the Portland Metro-area regional government, Metro, is primarily responsible for allocation of federal transportation dollars and coordination of regional transportation and networks, including multi-use trails. A number of advisory standing advisory committees serve as forums for discussion and decision making on transportation-related issues. Key committees that have a transportation related focus are:

- ***The Joint Policy Advisory Committee on Transportation (JPACT):*** a 17-member committee of elected officials and representatives of agencies involved in transportation that make recommendations to the Metro Council on transportation needs in this region.

- *The Transportation Policy Alternatives Committee provides* technical input to the JPACT on Transportation on transportation planning and funding priorities for the Portland metropolitan region.

In addition to Metro's standing transportation committees the region has developed an Active Transportation Partnership (ATP) dedicated to increasing the region's effectiveness in securing funding to complete the active transportation network. The ATP was developed to implement recommendations of the Blue Ribbon Committee for Trails. Implementation focuses on the development of Active Transportation Corridors that are a "set of routes, facilities and programs that achieve a particular transportation objective."

Active Transportation Partnership's Communication Structure

The ATP coordinator is responsible for outreach to local jurisdictions and developing local support for the completion of region-wide active transportation projects. To create a successful program it is necessary to develop a support base at multiple levels, including the public, advocates, staff and elected officials. Strategies range from developing a website that contains information on the benefits of active transportation, to maintaining an email list that can be used to advertise upcoming events, to finding a high-level elected official that can champion active transportation. Key lessons learned and strategies for success include:

- Using groups that already exist as the basic building blocks of a communication network.
- Providing each local jurisdiction with background information and a clear picture of how they will benefit from active transportation projects.
- Soliciting project ideas from local jurisdictions that should be considered for funding under the ATP.
- Working with small staff level advisory groups to generate support during the planning efforts.
- Forming an Active Transportation Executive Council comprised of prominent community leaders, advocates and other important parties; providing this group with key speaking points and allowing them to act as the public face of active transportation.
- Developing a list of community members that are interested in active transportation; using this group for crowd sourcing (e.g., mapping of local trails) and dissemination of information.
- Providing a source of information that is readily accessible to everyone (i.e., a webpage).

Additional Communication Recommendations

The CRD should consider additional strategies that will complement the CPAC and that could result in increased communication and cooperation on cycling and pedestrian issues.

- **Focus communication efforts on shared resources**, for example development of consistent evaluation methods or providing workshops on the Bicycle and Pedestrian Design Guidelines.
- **Consider the creation of an active transportation web portal** by either enhancing the existing CRD cycling and walking webpage or creating a separate site that functions as a clearinghouse for information and key resources for all things relating to cycling and walking.
- **Consider creating a high level council**, such as a blue ribbon committee of elected officials and community leaders charged with championing active transportation objectives in the region.
- **Develop a list of community members** who are interested in region wide bicycle and pedestrian issues and who can disseminate information on events and provide other support.