

SNOW MANAGEMENT CASE STUDIES



MEEKER, COLORADO

Population: 2,295

Average annual snowfall: 56"

A snow event may be declared any time during the year at the discretion of the Street Department Superintendent when two or more inches of snow or ice have covered or drifted over the street.

Snow Clearing Priorities:

- 1) Streets that provide access for emergency fire, police, and medical services.
- 2) Streets providing access to schools and east-west thoroughfares.
- 3) Low volume residential streets.
- 4) Snow removal and sidewalks.

Sidewalk clearing:

The town only maintains sidewalks in front of public buildings

Parking restrictions:

Restricted snow parking shall be in effect when existing weather conditions could severely impede vehicular traffic or snow and ice removal operations in the Town.

It is unlawful for any person to place snow or ice upon public property, including public streets. Furthermore, cleared snow shall be piled and accumulated in a manner, which does not block visibility of drivers on public streets and alleys or cause other hazardous conditions.

More information:

www.townofmeeker.org/snow-removal-policy/

GRAND COUNTY, COLORADO

Population: 15,321

Average annual snowfall: 130"

Snow clearing priorities:

- 1) Priority is given to school and transit bus routes and the most heavily traveled roads (at least 450 average daily trips)
- 2) Lower volume roads and local access roads (fewer than 450 average daily trips) are plowed once major roads are open.
- 3) Local Access Roads, or low volume roads, will be plowed after all primary and secondary roads have been cleared.

Detailed snow plow routes are available by district.

Parking restrictions:

Parking on Grand County roads during winter is prohibited where posted with signs designating "Snow Route, NO Parking."

Communication with community:

Email, phone numbers, and names listed for the local district foreman and superintendent.

The county [Winter Code of Conduct](#) clearly defines roles and expectations of the County and residents.

More information:

www.co.grand.co.us/337/Snow-Removal

PARK COUNTY, COLORADO

Population: 17,905

Average annual snowfall: 106"

Snow removal operations will begin in force when snow depths are 4 inches or greater.

Snow clearing priorities:

- 1) Main arterial roads that provide for high traffic volume, connecting neighborhoods to major transportation corridors
- 2) Collector roads usually within a subdivision that connect to arterial roads, school zones and school bus routes.
- 3) Residential or other local roads that carry moderate to low traffic volume.
- 4) Cul-de-sacs or other dead-end roads carrying very low traffic volume.

Parking restrictions:

Parking is prohibited in the right-of-way during winter

Communication with community:

Phone number and email listed for public works department staff

More information:

www.parkco.us/DocumentCenter/View/3219/Snow-Removal-Policy?bidId=



Photo: Leadville Today

MINTURN, COLORADO

Population: 1,056

Average annual snowfall: 130"

Parking restrictions:

- Parking on some streets is prohibited from November 1st to April 1st of each year.
- Over night parking is prohibited year-round on some streets.
- Alternate parking in effect on some streets on Monday-Thursday.
- More information:
www.minturn.org/residents/pages/parking

Sidewalk clearing:

Property owners are responsible for clearing sidewalks adjacent to or in front of their property within 24 hours of the last accretion of snow

Snow disposal:

Residents can deposit snow at a designated location. There is no fee but they must call in advance to book an appointment.

Communication with community:

A phone number is listed to communicate with town staff.

More information:

www.minturn.org/residents/pages/snow-removal



Photo: Lake County Road & Bridge

KENORA, ONTARIO

Population: 15,096

Average annual snowfall: 62"

Winter maintenance crews are responsible for plowing, sanding, salting and clearing 400 lane/miles of roadways in the City along with 93 miles of sidewalk.

Snow clearing priorities:

- 1) These roads are cleared first and will be cleared within 36 hours of a snowfall event
- 2) These roads will be cleared AFTER priority 1 roads but these roads will also be cleared within 36 hours of a snowfall event
- 3) These roads will be cleared AFTER priority 1 and 2 roads are cleared and within 72 hours of a snowfall event

Parking restrictions:

It is prohibited to park a car:

- For more than three consecutive hours except between 7 p.m. and 11 p.m.
- On streets designated as snow routes between the hours of 2 a.m. and 6 a.m.
- Overnight in the downtown area during winter

Sidewalk clearing:

The City clears sidewalks on arterial and collector roads and certain local roads near schools first. The City provides sidewalk snow removal when the snow accumulated on the sidewalk surface is 50 millimeters.

Resident responsibilities: A bylaw restricts residents from depositing snow onto the public right-of-way

Communication with community:

Map of priority streets available online: www.kenora.ca/living/roads-and-traffic/winter-road-maintenance/

Snow Removal Q & A online: www.kenora.ca/living/roads-and-traffic/winter-road-maintenance/snow-removal-q-a/

More information:

www.kenora.ca/living/roads-and-traffic/winter-road-maintenance/snow-removal-policy/

NELSON, BRITISH COLUMBIA

Population: 10,664

Average annual snowfall: 173"

Snow clearing priorities:

- 1) Emergency routes, major access routes and streets in the downtown area
- 2) Subsequent priorities: Bus routes, major hills, cross-streets and any other streets that are not already cleared, designated sidewalk routes and stairs, intersection crosswalks, bus stops, and handicapped parking in the downtown area.

Parking restrictions:

- In effect November 1 – April 30
- Vehicles parked on the street must be moved every 72 hours
- In residential areas, vehicles must be parked on the even numbered side of street on even numbered days of the month, and on odd numbered side of the street on odd numbered days

Sidewalk clearing:

Designated, high-traffic sidewalks are plowed by the City. On these streets, the sidewalk on one side of the street only will be cleared, including steps. This covers 12.5 miles of the 35 miles of sidewalk in the city.

For sidewalks outside the designated route it is the responsibility of the property owner or occupier to clear the snow and enable safe passage for pedestrians.

The Traffic Bylaw states that: "Every owner or occupier of residential premises shall remove accumulation of snow or ice upon any constructed means of access including but not limited to sidewalks, stairs or driveways adjacent to the land or premises owned or occupied no later than 11:00 am of any day."

Communication with community:

The City maintains a website with all snow and ice removal policies: www.nelson.ca/369/Winter-Snow-Ice-Management

FERNIE, BRITISH COLUMBIA

Population: 5,249

Average annual snowfall: 344"

The City maintains approximately 30 miles of roadway, 16 miles of sidewalk, and 8 miles of gravel trails

Snow clearing priorities:

- No available information on snow routes
- Priority sanding areas include hills, intersections, and areas adjacent to schools

Parking restrictions:

- In effect from November 1 to April 15
- Alternate parking schedule in all areas where parking is not controlled by posted signage.
- No one can park a vehicle between the hours of 4:00 am – 4:00 pm on Monday, Wednesday, Friday, Sunday on the South or East side of a highway
- No one can park a vehicle between the hours of 4:00 am – 4:00 pm on Tuesday, Thursday, Saturday on the North or West side of a highway
- Residents refer to online maps for parking restrictions in their neighborhood (see Appendix A)

Sidewalk clearing:

Business property owners, apartment/condominium complex owners, and homeowners are responsible for keeping sidewalks free of snow and ice, and for the removal of any overhanging ice, icicles or snow which may fall and cause personal injury or property damage. Sidewalks and footpaths adjacent to personal properties must be cleared before 9:00 am each day.

Penalties: Maximum fines of up to \$2,000 and two months imprisonment

More information:

Snow and Ice Removal Bylaw: <https://fernie.civicweb.net/document/594>

KELOWNA, BRITISH COLUMBIA

Population: 127,380

Average annual snowfall: 35"

The City of Kelowna clears and de-ices approximately 1,000 miles of road lanes every snowfall. The City has 26 snow plow trucks and 8 sidewalk plows.

Snow clearing priorities:

Snow and ice Control Policy:

Road clearing: https://www.kelowna.ca/sites/files/1/docs/city-hall/policies/snow_and_ice_control_-_policy_332.pdf

- 1) Arterial roads and major roads plowed/sanded within 8 hours of a snowstorm
- 2) Collector roads, busy/steep roads, bus routes plowed/sanded within 12 hours of a snowstorm
- 3 and 4) Residential streets plowed/sanded within 48 hours of a snowstorm

Sidewalk clearing:

- Residents are responsible for clearing snow from driveways and the sidewalk fronting property within 24 hours (Traffic Bylaw #8120)
 - The City is responsible for clearing snow from sidewalks that are on City property.
 - Bus stops are cleared after road plowing
- City runs a Snow Angels program, which acknowledges one person each year that help keep the community clear of snow:

www.kelowna.ca/roads-transportation/roads/snow-removal-ice-control/snow-angels

Communication with community:

The City maintains an interactive online map showing priority status of roads: www.maps.kelowna.ca/public/

More information:

www.kelowna.ca/sites/files/1/docs/city-hall/policies/snow_and_ice_control_-_policy_332.pdf

DULUTH, MINNESOTA

Population: 120,378

Average annual snowfall: 86"

The City of Duluth is responsible for clearing 100 miles of sidewalks and 500 miles of roads.

Snow clearing priorities:

- 1) Main arterials and high volume streets that provide access for emergency services and public transit are cleared within 36 hours
- 2) Residential streets are cleared within 48 hours
- 3) Alleys are cleared within 56 hours

Parking restrictions:

- The City maintains an alternate side parking system throughout the entire year. The purpose is to expedite snow plowing and summer road clean-ups.
- The system takes effect every week on Sunday between 4 pm and 8 pm whereby vehicles must be switched over to the other side.
- All vehicles parked on the street must be moved every 24 hours.
- The parking schedule is available online: www.duluthmn.gov/media/1118/parking-cards-2018-2019-for-web.pdf

Sidewalk clearing:

- Residents are responsible for clearing snow and ice from sidewalks abutting their property within 24 hours after a snowfall event.
- The City sidewalk priorities are: 1) safe routes to school sidewalks, 2) high pedestrian traffic areas, 3) sidewalks along public transit routes, 4) mid-level pedestrian traffic areas, and 5) park facilities.

Communication with community:

- Residents can call a Winter Watch Hotline or submit a request for service through an online form or email.
- The City maintains a detailed FAQ section on its website to explain road and sidewalk clearing procedures.
- The City maintains online maps showing street and sidewalk clearing priorities: www.duluthmn.maps.arcgis.com/apps/PublicInformation/index.

BANFF, ALBERTA

Population: 7,847

Average annual snowfall: 75"

Snow clearing priorities:

- 1) All major arterial streets, the roads in the downtown core, bus routes and access to emergency services
- 2) Intersections, corners, hills, school zones, and known problem areas
- 3 and 4) Assigned based on gradient and volume

Parking restrictions:

- The Town posts temporary 'no parking' signs on streets to work on snow removal. Cars parked in temporary no parking zones will be removed after 24 hours at the expense of the owner. If cars were parked there prior to the no parking signs going up, it would be at the expense of the Town.
- No overnight (2:00-7:00 am) parking in the downtown core during winter.

Sidewalk clearing:

- The Town maintains sidewalks adjacent to municipal property, trails, municipal stairways, and areas around public washrooms on a priority system.
- Property owners are responsible for clearing public sidewalks along their property lines.
- The Town runs a Snow Angels program to connect volunteers with people who are unable to clear sidewalks along their property lines

Communication with community:

- One-pager on the Snow Management Plan: www.banff.ca/DocumentCenter/View/3859/Snow-Clearing-Information?bidId=
- The City maintains a map with real-time locations of snow management equipment: www.banffmaps.ca/banffsnow/
- Residents can email or call the Street Operations branch, or follow @BanffStreets on Twitter for updates

More information:

Snow and Ice Management Policy:

www.banff.ca/DocumentCenter/View/346/Snow-and-Ice-Policy-C108-1?bidId=

RECOMMENDED NEXT STEPS

The first phase of community engagement for the Wintermission Leadville project is complete, and the community has spoken loud and clear: the abundance of snow makes it challenging to access public spaces, walk or bike, and visit friends and family in winter. Residents also recognize that snow is an asset. It creates unique opportunities for outdoor activities and creates beautiful winter landscapes. To empower the Leadville community to get the most out of winter, the City, County, and residents need to work together to improve snow removal, storage, and management on streets and sidewalks.

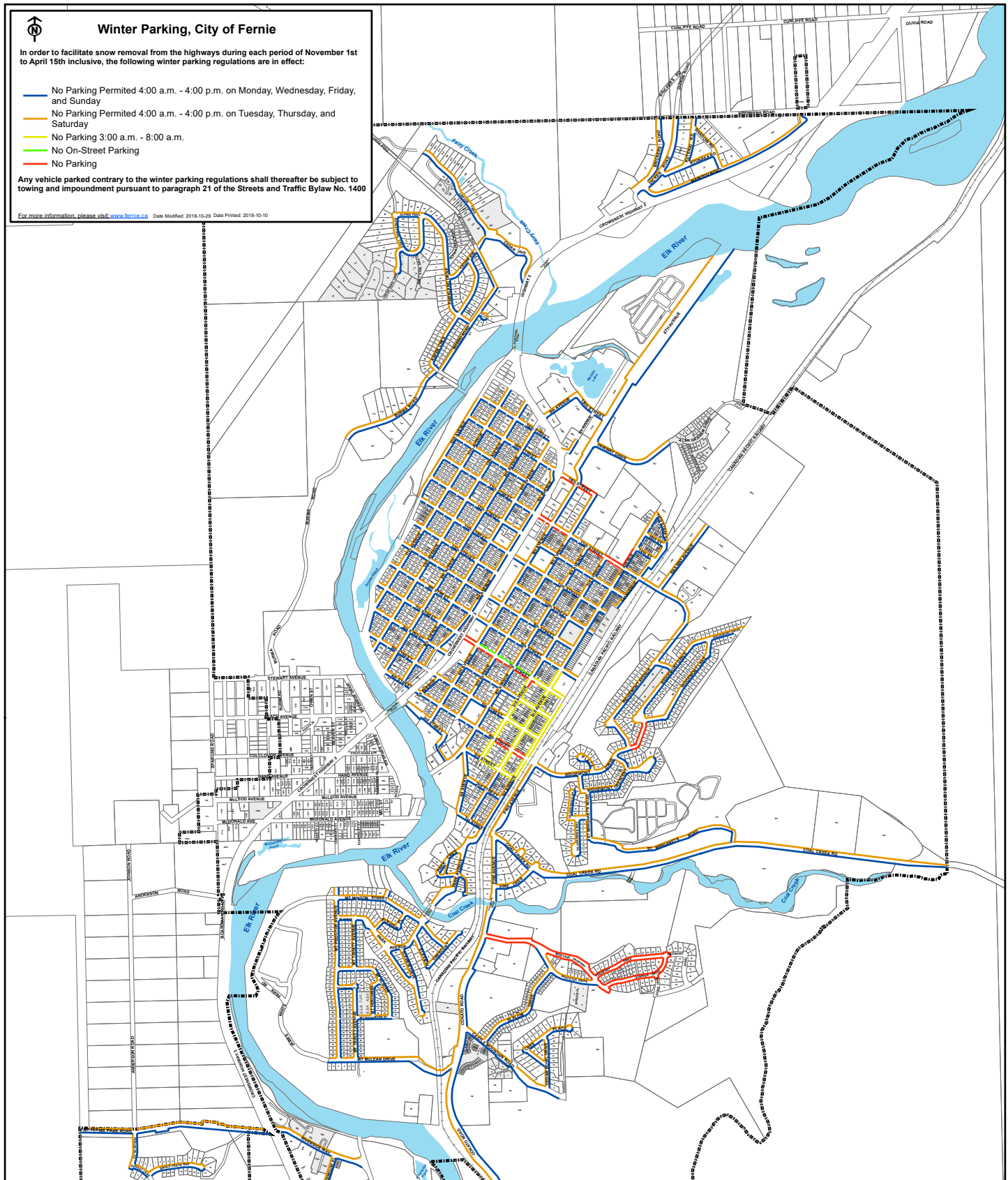
The City of Leadville and Lake County can take immediate actions to increase the efficiency and transparency of its snow management policies and procedures. Based on best practices and examples from cities of a similar size and winter climate, it is recommended that the City and County implement the following steps:

1. Adopt a winter parking bylaw or ordinance that restricts parking on alternate sides of local roads and streets between November 1 to March 1 each year.
 - Establish simple rules that are easy to understand and remember (ie. No parking on the north side of east/west-bound streets and the east side of north/south-bound streets on Monday, Wednesday, Friday. No parking on the south side of east/west-bound streets and the west side of north/south-bound streets on Tuesday, Thursday, Saturday.
 - Create a map that clearly defines when and where parking restrictions are in effect. Make this map publicly available online and in print format.
 - Launch a communications campaign to inform residents and visitors about new parking restrictions. Deliver flyers to homeowners and post notices in local media outlets.
2. Establish a Winter Code of Conduct to define the roles, responsibilities, and expectations of all stakeholders in Lake County (ie. City, county, residents, business owners, etc.).
3. Define snow plowing priorities and make them available to the public on government websites. Main arterial roads, school zones, and bus routes should be the top priority.
4. Define snow removal procedures and make them available to the public on government websites.
5. Publish the name, phone number, and email address of city or county staff that residents can contact with questions, concerns, or requests related to snow management.
6. Create a 'Snow Angels' program to help connect volunteers and residents who need assistance with snow clearing and shoveling.



Photo: Brennan Ruegg, *Leadville Today*

APPENDIX A: WINTER PARKING PLAN IN FERNIE, BC



APPENDIX B: WINTER PARKING SIGNAGE AND PROMOTION

SIGNAGE

Visible signage is important to notify residents and visitors about on-street parking restrictions. For a pilot project, temporary signs could be printed on coroplast and affixed to existing utility poles using nylon cable ties. Signage should be prioritized on downtown and commercial streets where visitors are most likely to park.



Rochester, NY



Orangeville, ON



Bruderheim, AB



Chicago, IL

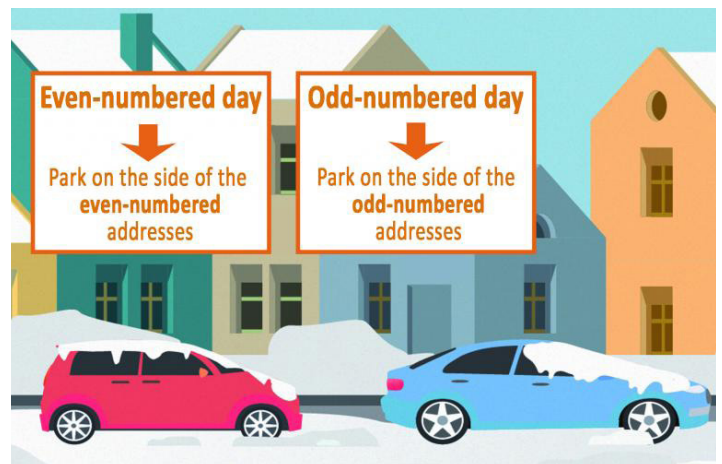
COMMUNICATION

In addition to street signage, it is crucial to launch a broader communications and awareness-building campaign to inform all residents about new parking restrictions. This should be done through a variety of channels and methods, including:

- Flyer deliveries to homes
- Updates to Lake County and City of Leadville website
- Social media channels
- Advertisements in local media outlets



Cary, IL



Saint-Lambert, AB

APPENDIX C: ST. JOHN WINTER MANAGEMENT INFOGRAPHICS

CITY OF SAINT JOHN WINTER MANAGEMENT PLAN

The City of Saint John Winter Management Plan aims to maintain accessibility of streets and sidewalks vital to the safe movement of people, vehicles and goods throughout the winter season.

2019 WINTER OPERATIONS BUDGET

SNOW & ICE CONTROL FOR STREETS:

\$5,781,383

SNOW & ICE CONTROL FOR SIDEWALKS:

\$1,102,170

WINTER ROAD MAINTENANCE

The City of Saint John services **1,160 lane kilometers** of road. This includes snow clearing and the application of sand, salt and brine.

Did you know? 1,160 lane kilometers is the approximate distance from Saint John, NB to Ottawa, ON!

WINTER EQUIPMENT



82 pieces of equipment are used during the winter months to service roads and sidewalks as well as arenas, fire stations, depots, and other City facilities.

THIS INCLUDES

- tandem trucks
- 6 yard trucks
- one-tons
- loaders and graders
- sidewalk plows

SIDEWALK MAINTENANCE



The City of Saint John services **240 kilometers** of sidewalk. That's **61%** of the City's sidewalks.

Did you know? 240 kilometers is the approximate distance from Saint John, NB to Springhill, NS!

SAND, SALT & BRINE

In an average year, the City consumes **13,000 tonnes** of road salt and **3,000 tonnes** of sand.

Crews use a special truck equipped with liquid brine to spray onto the road surface in advance of a storm. This can reduce snow and ice buildup on roads.



Parking Bans

On-street parking bans may be called to allow for more effective and efficient snow plowing. If a parking ban is called, vehicles cannot be parked on the streets overnight.

THE CITY HAS 2 DIFFERENT PARKING BANS:

- North-East-West (NEW)
- South Central Peninsula (SCP)

Parking Ban information is available at saintjohn.ca or 658-4040.

