



# Snow & Ice Surrey, BC Style

Proudly Presented by  
the City of Surrey

June 5 2018



# Agenda

About Surrey

Climate

Infrastructure

Operations Centre

Case Study

Public Outreach

Future

Questions

# About Surrey



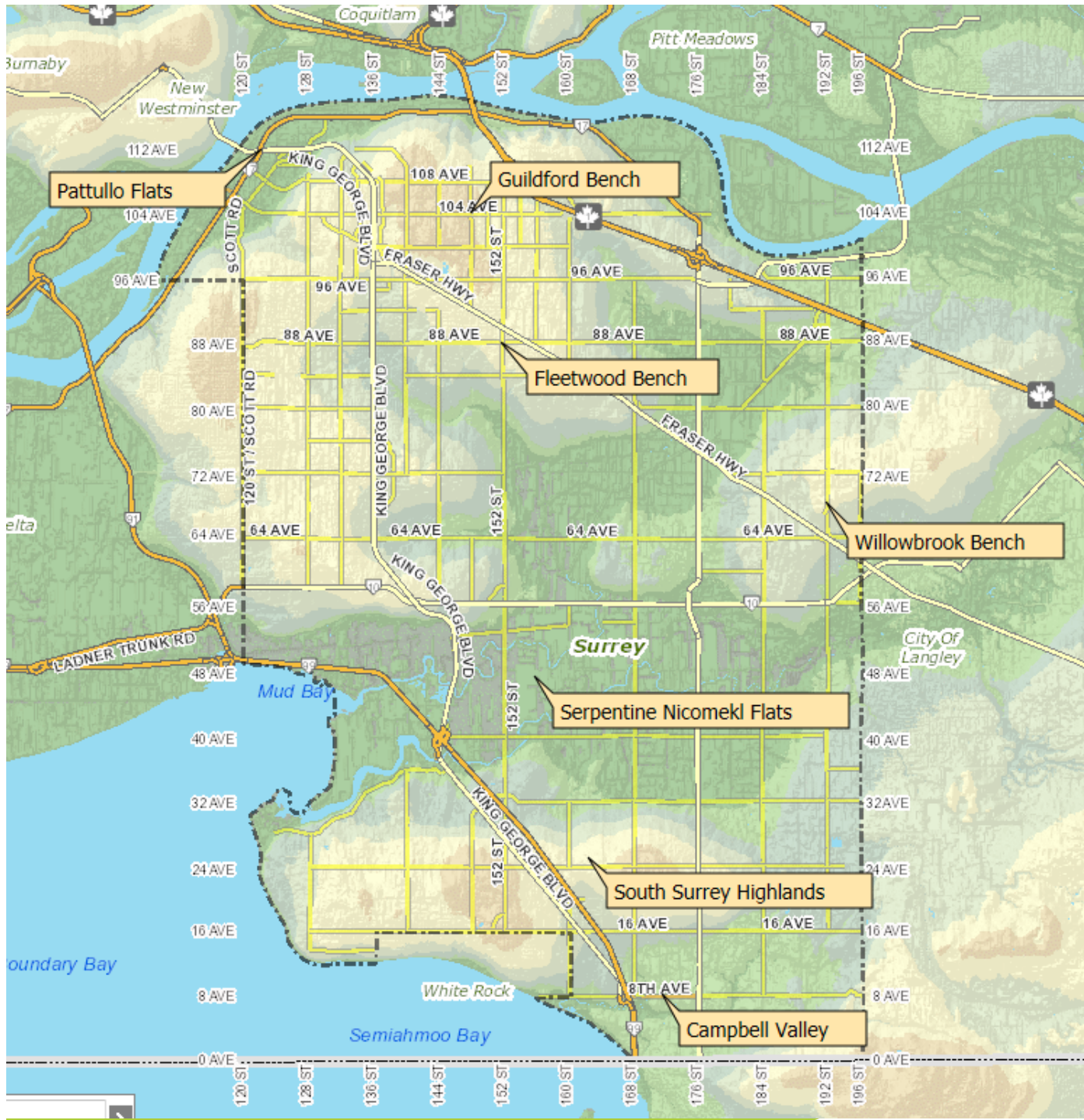
With the shortest transportation routes from Asia to North America, British Columbia (BC) has an up to 58 hour shipping transport lead over other West Coast ports. British Columbia also offers duty-free access to the United States for products and services included in the North American Free Trade Agreement (NAFTA). Other key Surrey advantages include:

- A gateway location to regional, national and international markets.
- Access to transportation networks that include close proximity to 2 international airports, major highways, rail access, 2 ports and 2 border crossings.
- Largest supply of available industrial land in the region.

Located along Canada's west coast in the province of British Columbia.

2nd largest city in BC and the 12th largest city in Canada with a growing population of over 525,000.

We're set to become the most populated city in British Columbia by 2020, as people from around the world continue to move to one of the youngest and most culturally diverse cities in Canada.



# CLIMATE

# Infrastructure

Sanitary Sewer	Units
Main	1,500 km
Service Connections	81,000
Manholes	24,000
Lift Stations	30

Water	Units
Main	1,835 km
Service Connections	90,046
Manholes	24,000
Water Meters	61,196
Lift Stations	10

Drainage	Units
Main	1,900 km
Service Connections	130,000
Manholes	28,000
Open Streams	1,500 km
Lift Stations	28

Roads	Units
Roads	2,000 km
Sidewalks	1,400 km
Signs	77,000
Vehicle Bridges	40

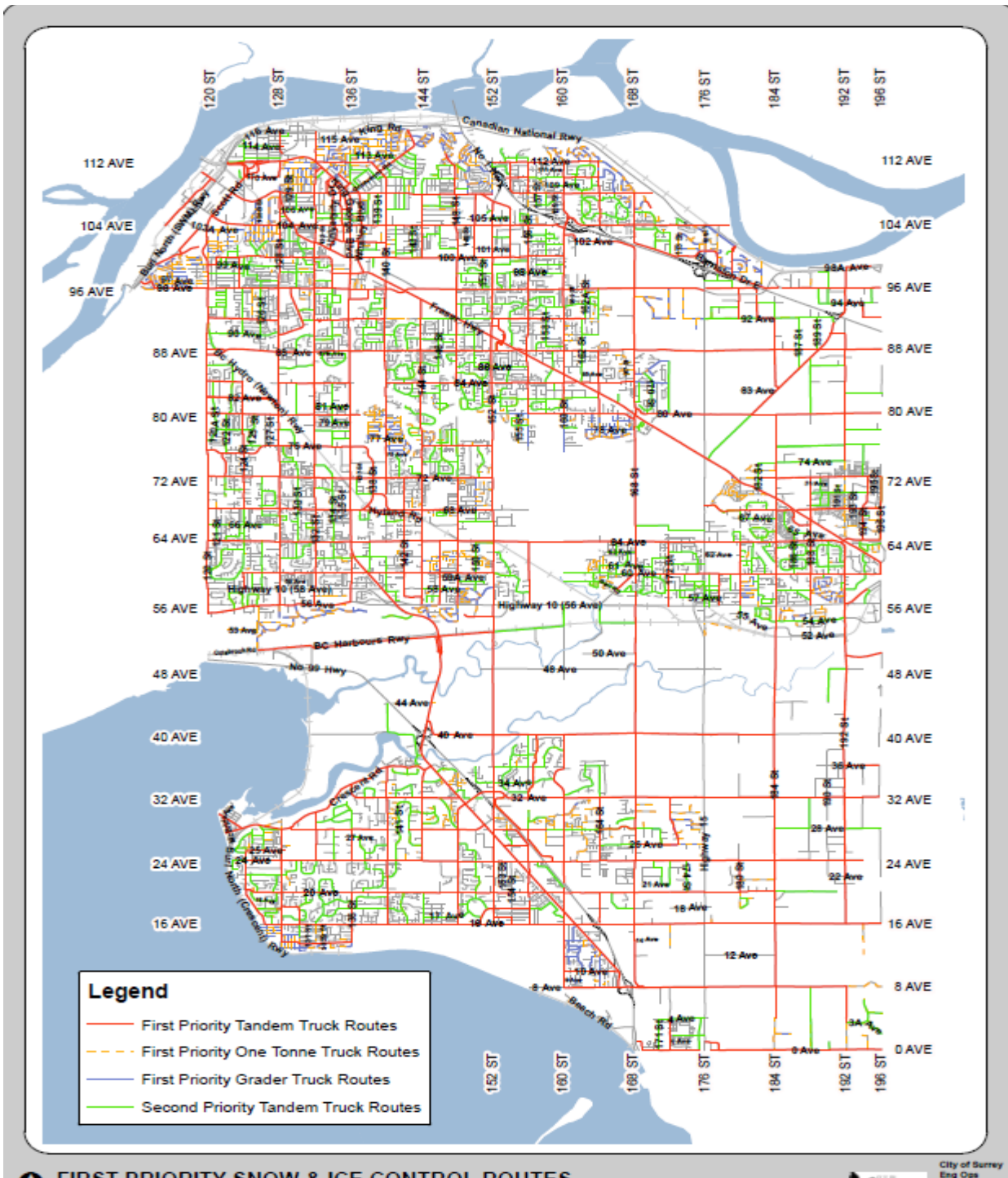
# *Infrastructure*

## **Surrey Snow & Ice Priority and “Lane” Kilometres:**

- Priority 1: 1,500 lane km
- Priority 2: 1,200 lane km
- Priority 3: 1,800 lane km

**Total: 4,500 lane km**

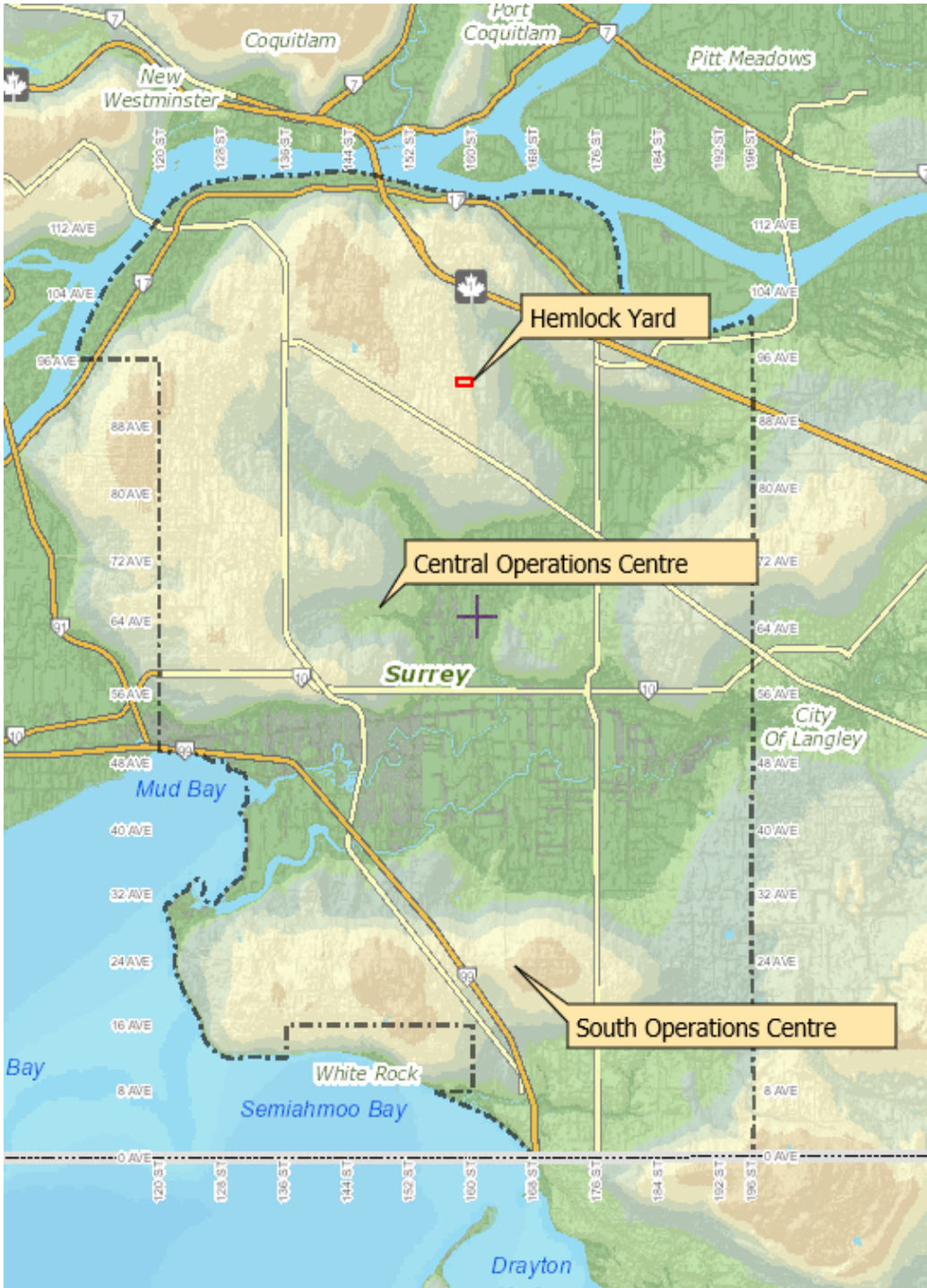




## Equipment Type

- Dump Trucks: 21
- One-Ton Trucks: 22
- Graders: 5
- Brining Units: 10
- One-Ton Brining Units : 3

**Total Snow Clearing Equipment: 61**



# ***Snow Fighter Assets***

**Three Facilities Strategically Located with salt and brine storage**

- Hemlock Yard
- Central Operations Centre & Fleet Centre
- South Operations Centre



# Snow Fighter Assets

## Hemlock Yard

- 5 Acre facility ;
- Salt Capacity of 250 tonnes;
- Staff amenities include a drying room, individual lockers, showers, washer and dryer, and lunch room
- Gantry and monorail for salter and plow installing. This reduces injuries and increases efficiency



# *Snow Fighter Assets*

## **Surrey Operations Centre**

- 114,000 sqft Operations Facility;
- 14,000 sqft warehouse;
- Staff amenities include a drying room, individual lockers, showers, washer and dryer, lunch room, bike storage and fitness centre;
- In addition, we have an outdoor atrium area to host staff appreciation events as well as a staff training centre with the latest technology.



# *Snow Fighter Assets*

## **Fleet Operations Centre**

- 54,000 sqft fleet building;
- Our Fleet Centre was designed and constructed to be completely operational in post disaster conditions. It has its own water system, generators and communications system; with the ability to be an Emergency Operations Centre.
- Automated wash bay with salinity deactivator solution, increasing the service life of our equipment and decreasing environmental tracking.





# *Snow Fighter Asse*

## Surrey Operations Centre – Salt Shed

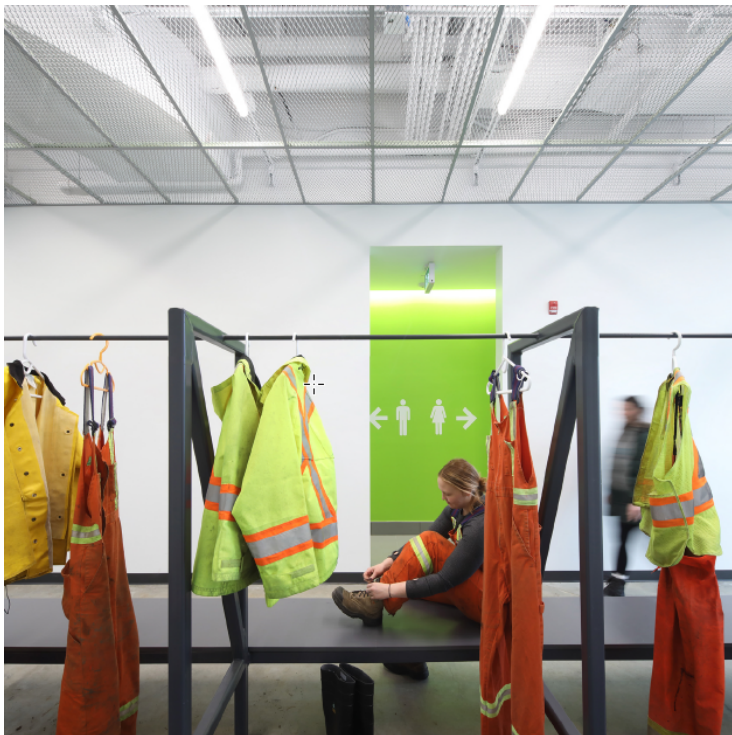
- Henderson brine maker
- Fully automated filling with low level alerts
- Capacity of 17,000 metric tonnes



# ***Snow Fighter Assets***

## **South Surrey Operations Centre**

- 5 acres facility
- 250 tonne salt capacity
- 10,000 sqft Operations Facility;
- 20,000 sqft warehouse;
- Staff amenities include a drying room, individual lockers, showers, washer and dryer, lunch room and bike storage;



# ***Snow Fighter Assets***

## **Brine**

- Strategically located at our three Operation Centres in Surrey for efficiency ;
- Total capacity of **84,000 gallons.**



# Operations Centre



# Original Operations Centre

The original Operation Centre was located in Cloverdale near the current Library(177 Street and 56 Avenue). It remained in Cloverdale until 1963 when the new Operations Centre was built.



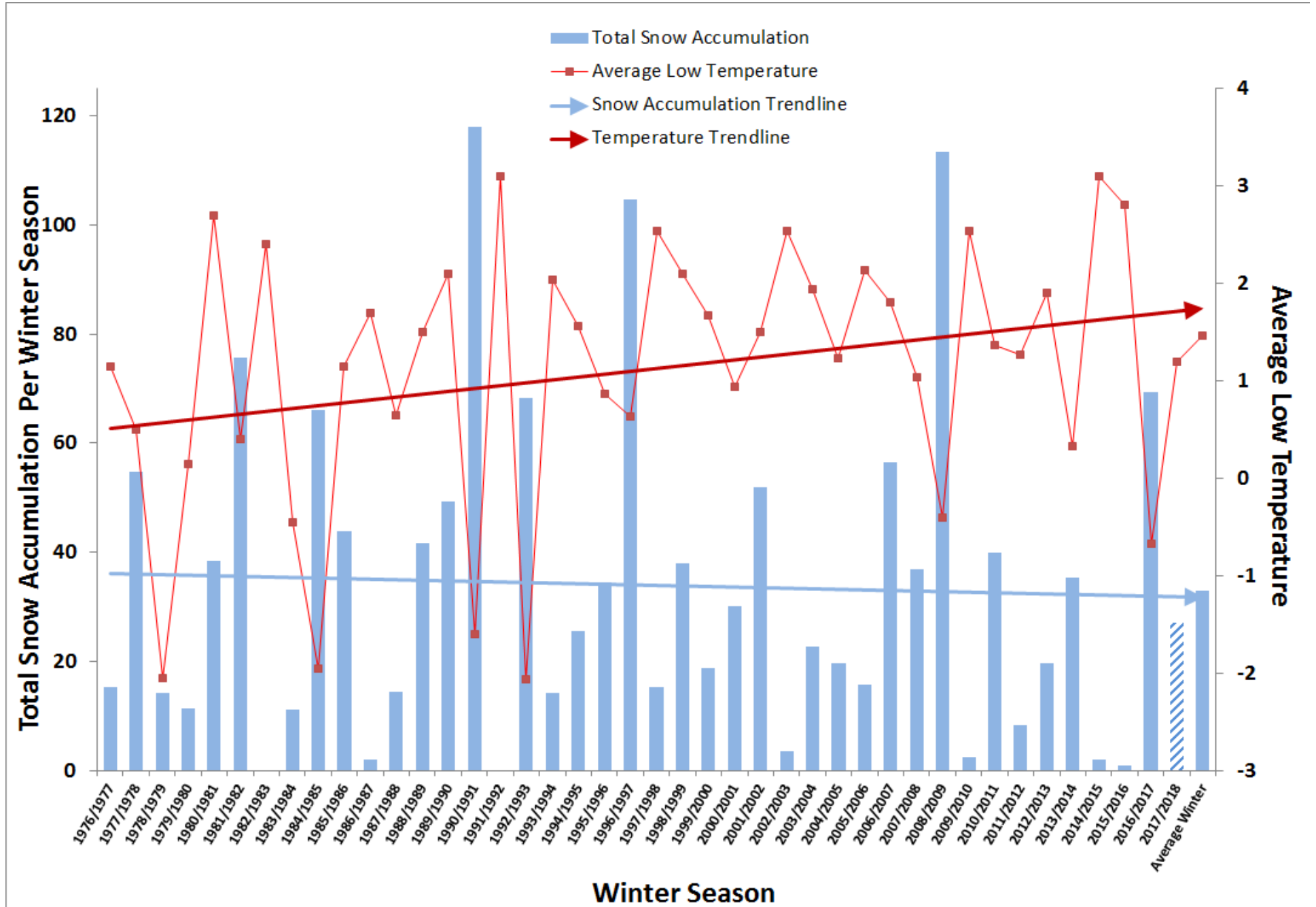
1963 – Photo courtesy of Surrey Archives



# Video

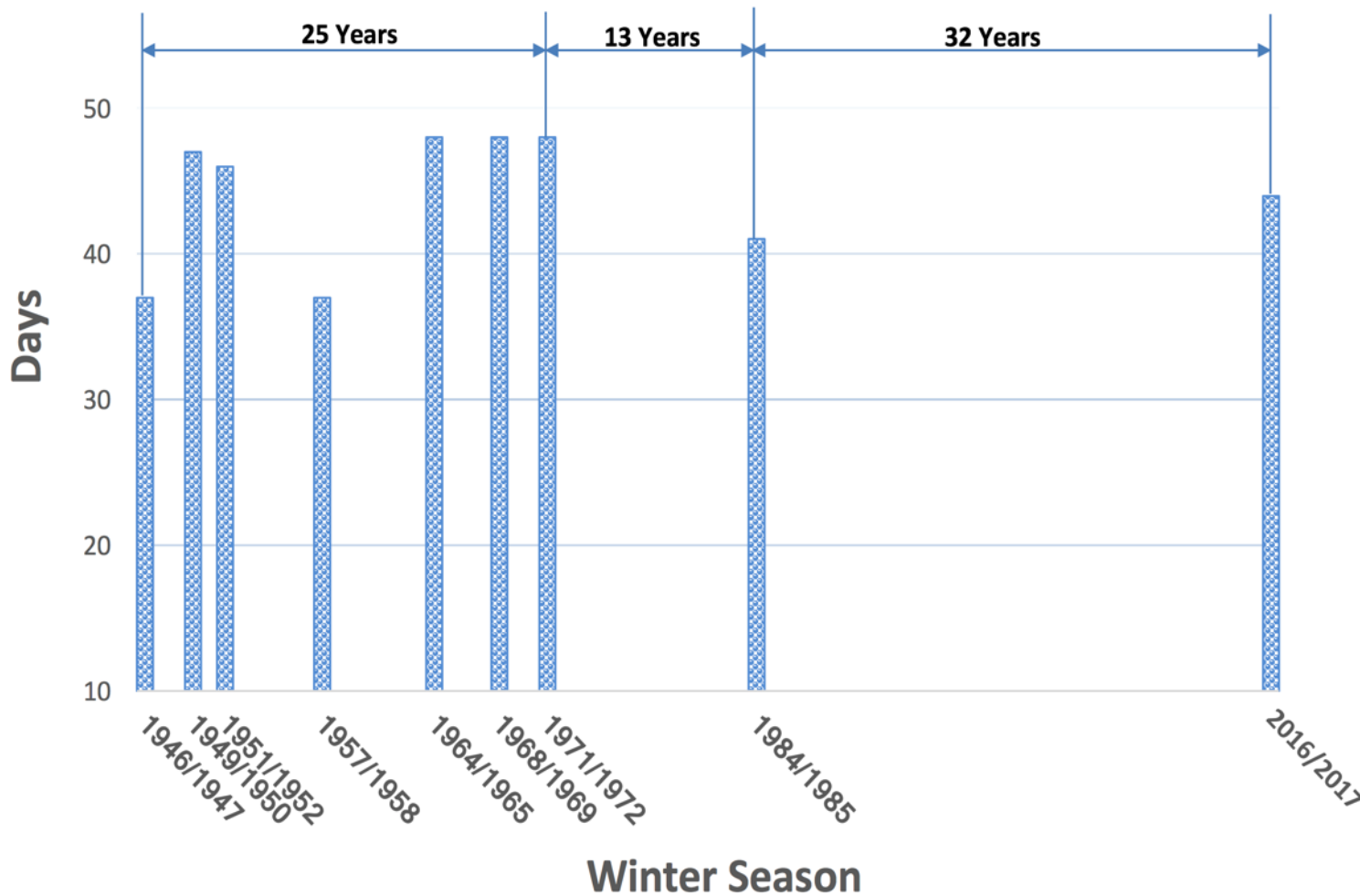


# Review of Winter Weather Trends



# Review of Winter Weather Trends

## Winters with Record Cold Snaps - Past 70 Years



The frequency of winters with record cold snaps has dropped significantly since the early 1970's

Long cold snaps with snow accumulation typically generate high demands for snow clearing



# Review of Winter Weather Trends

- ❖ Coverage was provided 24/7 for **54 Days** versus average of 9 days in typical winters.
- ❖ **22,500 Hours** of OT versus average of 4,000 hours in typical winters
- ❖ Over **5,000 snow & ice related Services Requests** were handled versus average of 300 service requests in typical winters



# Future Actions

1. Local roads: immediate service to local roads post storm event and completion of other priorities
2. Develop/implement proactive steps to educating customers
3. Establish communication links with CMB
4. Establish key sidewalk linkages and providing assistance to Parks where required
5. Implement technology improvements
6. Develop an overall City plan for the facilities.

# 1. Local roads: immediate service to local roads post storm event and completion of other priorities



# 1. Local roads: immediate service to local roads post storm event and completion of other priorities

Cityworks

Inbox SRs WOs Inspections Management Recent COSMOS GIS

Search...

RDS-FOREMAN, 14B151 RDS-CHRGHAND, 11B479 RDS-ASPHALT, 086675 RDS-CHIPPER, 166069 RDS-FLAIL, 08J520 RDS-FLAIL, 16J514

RDS-MAINT, 01B151 RDS-MAINT, 176076 RDS-MAINT, 056106 RDS-MAINT, 086032 RDS-MAINT, 086034 RDS-MAINT, 086036 RDS-MAINT, 116653

RDS-MAINT, RENTAL 1 RDS-MAINT, RENTAL 2 RDS-MAINT, RENTAL 3 RDS-MAINT, 04B157 RDS-SERVICE, 09C503 RDS-CHRGHAND, 11B465 Matt Brown

### Service Requests & Work Requests

#### Pending (6 records)

Id	Problem Code	Date Initiated	Priority	Address	Work Flow Status	Initiated By	Map Page	Attachments	Details
<a href="#">1117376</a>	RDS-Grass or Weeds	2018-06-01 2:42 PM	3	144 ST AND 24 AVE	PENDING	VAN MEER, GEORGE W	122	N	
<a href="#">1117335</a>	RDS-Sidewalk & Curb	2018-06-01 1:37 PM	3	14812 17 AVE	PENDING	SRAPP,		Y	Sidewalk or walkway issue
<a href="#">1117124</a>	RDS-Other	2018-06-01 8:50 AM	3	3730 155 ST	PENDING	CAMPBELL, KATHRYN	104	Y	
<a href="#">1116893</a>	RDS-Grass or Weeds	2018-05-31 1:41 PM	3	1500 129 ST	PENDING	WEBSITE,	131	Y	Roadside or Boulevard Issues
<a href="#">1101070</a>	RDS-Other	2018-04-13 12:47 PM	3	12768 25 AVE	PENDING	WEBSITE,		Y	
<a href="#">920492</a>	DRN-Manhole	2016-07-29 11:32 AM	4	2941 176 ST	PENDING	STIGUM, MARY-BARBARA C	116	Y	

#### Monitored Incomplete (167 records)

Id	Problem Code	Date Initiated	Priority	Address	Work Flow Status	Crew	Chargehand	Initiated By	Map P
<a href="#">1062422</a>	RDS-Other	2017-11-23 12:15 PM	3	1983 138 ST	SCHEDULED	RDS-SERVICE, 09C503	RDS-CHRGHAND-11B479	KARWAL, ESHWIR	122
<a href="#">1067819</a>	RDS-Sidewalk & Curb	2017-12-13 2:47 PM	3	15342 24 AVE	SCHEDULED	RDS-SERVICE, 09C503	NONE	LANKI, JAKE	124
<a href="#">1068128</a>	RDS-Grading	2017-12-14 2:47 PM	3	157 ST AND CRANLEY DR	SCHEDULED	RDS-SERVICE, 09C503	NONE	VAN MEER, GEORGE W	124



## 2. Develop/implement proactive steps to educating customers

- a) Newspaper Ads
- b) School Programs
- c) Snow Plow Painting Contest
- d) Colouring contest
- e) Social media
- f) New web page



### 3. Establish communication links with CMB

- Facilitated direct communication between CMB and our Central Dispatch ;
- Provided CMB access to City intersection cameras;
- CMB equipped buses with new traction technology;
- CMB worked to clear bus shelters of snow.



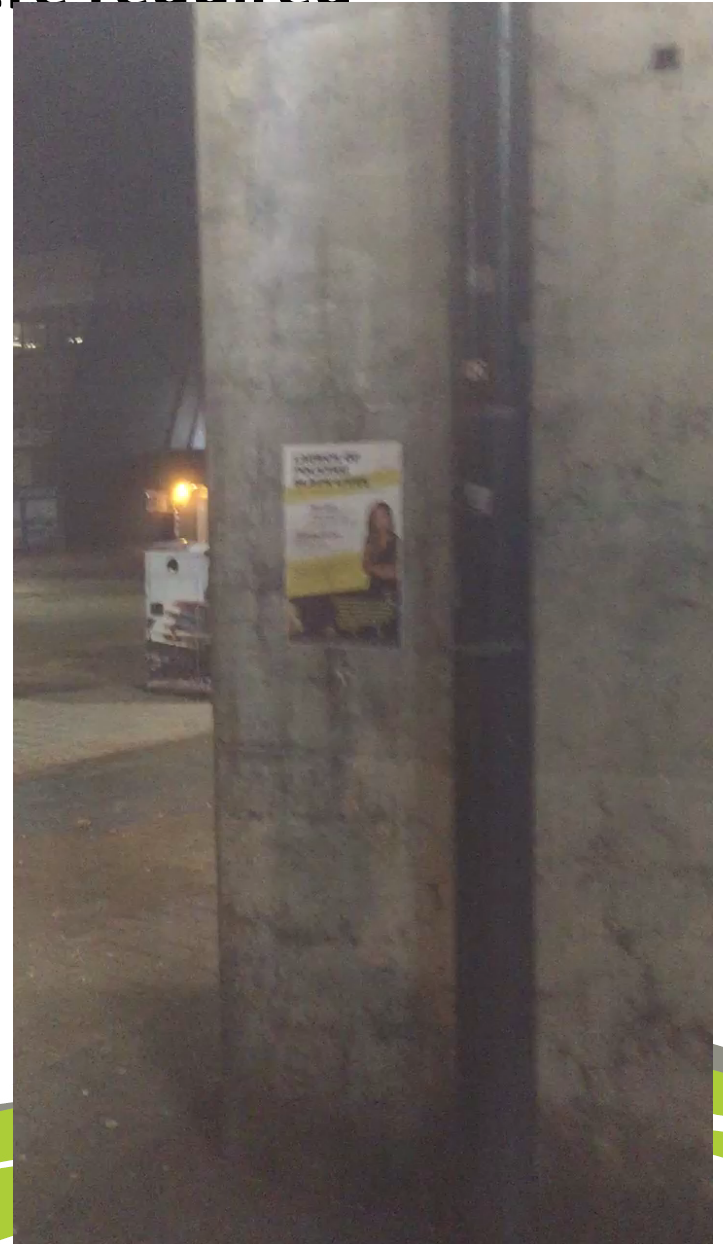
## 4. Establish key sidewalk linkages and providing assistance to Parks where required

- Piloted key sidewalk linkages that requiring clearing
- Early notification of property owner responsibilities required in commercial areas



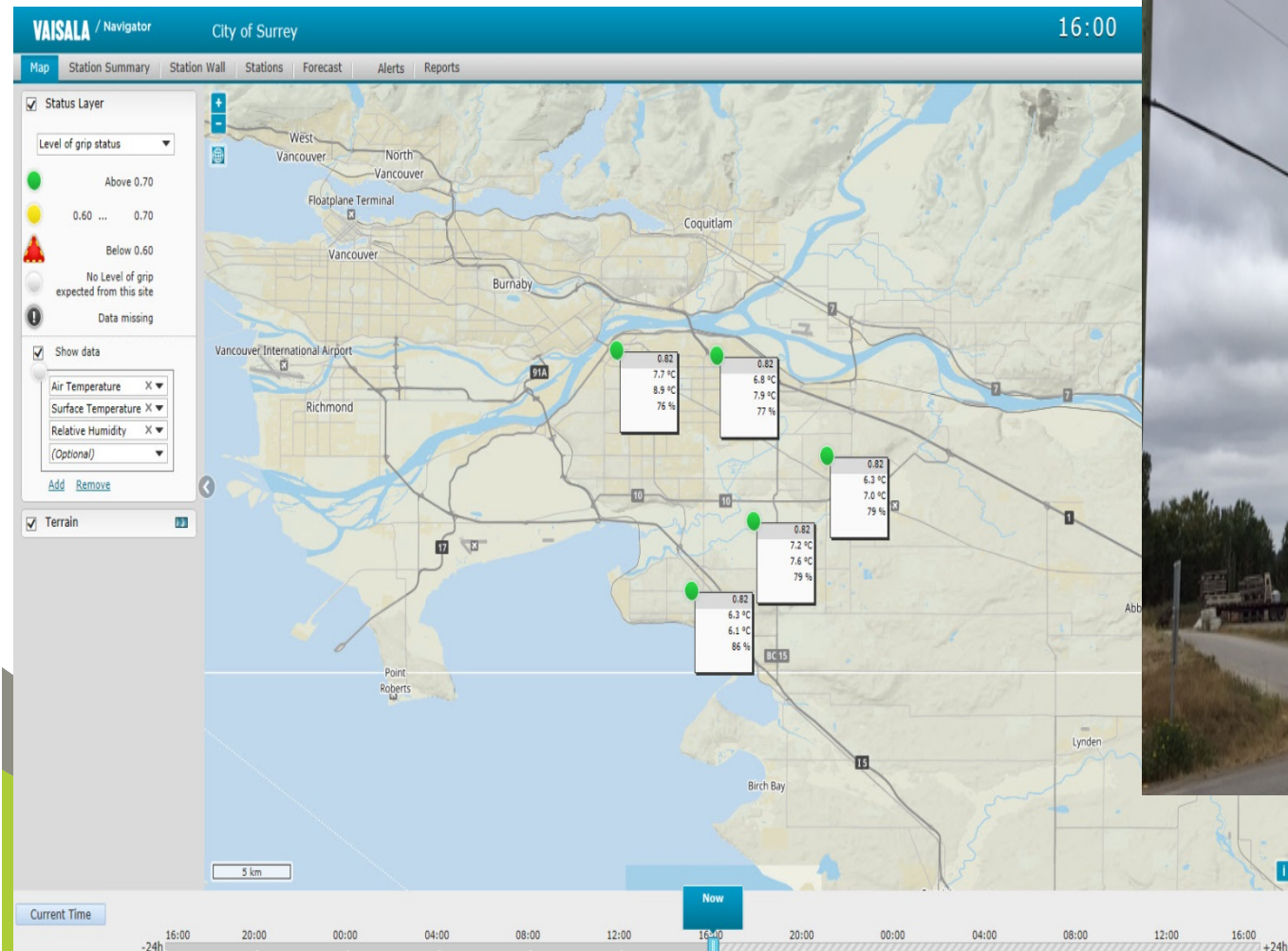
## 4. Establish key sidewalk linkages and providing assistance to Parks where required

- Investment in dual purpose equipment



# 5. Implement technology improvements

Installed 5 new stations for its Road Weather Information System(RWIS).



# 5. Implement technology improvements

With the success of the Automated Vehicle Locator (AVL) in the 2017, Surrey expanded AVL to its entire fleet, which is more than 300 pieces of equipment.

The screenshot displays the 'fleet center' web application interface. At the top, a blue header contains the text 'fleet center' on the left and user information 'Matt Brown MKBrown | BSM & Webtech University | Log out' on the right. Below the header, a grey bar shows the date range '06/02/2018 00:00 ⇒ 06/03/2018 00:00 PST8PDT | Vehicles: All | Drivers: 0'. The main content area is divided into a left sidebar and a central map. The sidebar includes sections for 'Time & Resources' (with a dropdown for 'Today' and 'Time Zone: (GMT-7:00) PST8PDT'), a list of navigation options (Dashboards, Advanced Reporting, Mapping, Administration, Device Management, Preferences), and a 'Vehicle Status' section at the bottom. The central map shows a street grid in White Rock, BC, with several vehicle locations marked by icons and labels: '168991', '118479', and '118465'. The map also shows 'King George Blvd', 'Redwood Park', and 'White Rock Pier'. A 'Tools' panel is visible on the left side of the map, and a 'Dynamic Maps' / 'Base Maps' dropdown is on the right. The bottom of the map area includes a Google logo, 'Map data ©2018 Google', a scale bar (1 km), and links for 'Terms of Use' and 'Report a map error'.

# Video



# Public Outreach And Education

At the City of Surrey, we recognize that ongoing public outreach and education are fundamental to raising awareness of public works related services that we provide to our community on a day-to-day basis.



# Public Outreach And Education

**School Tours:** Students from grades 3 to 7 received tours of our new state-of-the-art Operations Facility and received presentations on public works as a career choice. In total, our tours reached over 750 students from 24 classes and 8 different schools. With inclusion being fundamental to us, we included schools with lower economic strength and paid for the busing.



# Public Outreach And Education

**Snow Plow Painting:**  
Elementary grade students  
from across Surrey  
participated in snow plow  
painting...



...Kids were taught about the  
importance of snow removal  
and how the City carries out  
its snow & ice operations.

# Public Outreach And Education

**Popsicle Stick Bridge Building and Annual Colouring Contest:** Raises awareness of public works as a career choice with fun activities to make it easier to understand the process of building and maintaining engineering infrastructure. The prize for the colouring contest was a one year family recreation pass, prompting public works facilitates and healthy lifestyle's.



# Staff Engagement

Public Works Staff at all levels are both involved and enthusiastic at staff events. Examples are:



- Operations Center Cup
- Hockey tournaments
- Base Ball tournaments

We have consistently have a 20% increase in participation year over year.

# Thank You

- Questions