



Snow & Ice Operations Overview

Concord Public Works

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CONCORD PUBLIC WORKS COMMISSION
WEDNESDAY, NOVEMBER 13, 2019

Snow & Ice Program

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- CPW & PWC Policy
 - To maintain a level of service that keeps Concord's street system, which includes sidewalks and parking lots, passable and safe for pedestrian and vehicular traffic; especially for emergency vehicles such as Fire, Police, Ambulance or any other vital service as much of the time as possible within the limitations imposed by the extremes of nature and the resources available.
- Division Priorities
 - Public Safety, Employee Safety, Efficiency, Fiscal Responsibility.
- Maintained Public Right-of-ways
 - Public roadways – 107 miles
 - Private roadways – 4 miles
 - Sidewalks – 44 miles
 - Parking Lots – 12 lots



Winter Season in Review

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- 2018-2019 Winter Season Overview
 - 42.5 inches of total snow
 - 46 responses from the Concord Snow & Ice Operations Team
 - First Snow & Ice Event - November 15th, 2018
 - ✦ 15 hour duration storm
 - ✦ 8.5 inches of snow
 - ✦ Salt treatment and plowing operation
 - ✦ Full deployment of operations team
 - Largest Accumulation Event – March 3, 2019
 - ✦ 19 hour duration storm
 - ✦ 10.5 inches of snow accumulation
 - ✦ Salt treatment and plowing operation
 - ✦ Full staff deployment
 - Longest Duration Event – January 19, 2019
 - ✦ 28.5 hour duration storm
 - ✦ 7 inches of snow accumulation
 - ✦ Salt treatment and plowing operation
 - ✦ Full staff deployment



Winter Season in Review

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- FY2019 Winter Maintenance Budget Review

Snow Budget Status - FY19

	budget	accounting records payroll as of 6/27/19	in process as of 6/27/2019	estimated commitments 6/27/2019	Total at 5/10/2019	% of budget line	% of total budget
Personnel Services							
Regular	\$ 108,945	\$ 97,014			\$ 97,014	89%	16%
OT	170,708	173,824			173,824	102%	28%
Police Details	1,600	-			-	0%	0%
Expenses							
Fuel	24,250	10,922			10,922	45%	1.8%
Contractors	149,580	83,677		611	84,288	56%	14%
Salt	220,896	181,452	(0) (delivered)	0	181,452	75%	27%
Other Salt Expenditures					-		
Salt billed to School Dept.		(15,009)	-		(15,009)		
Sand	2,600	587			587	23%	0%
					-		
Tree Removal					-		
					-		
Other (blades, veh. & equipt maint.)	105,516	78,322	161	1,431	79,914	76%	13%
(Contingent Overrun)	(174,094)	-	-	21,000	21,000		
Totals	610,001	610,787	161	23,042	\$ 633,991	104%	



Snow & Ice Program Overview

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- Planning
 - Employee training, procurement, communication, safety
- Fleet Maintenance
 - Vehicles, equipment, inspections
- Operations Management
 - Route optimization, tracking, forecasting, response strategies
- Treatment & Plowing Techniques
 - Pre-treatment, plowing, removal, deicing



Snow & Ice Program - Planning

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- Planning starts during the summer season
- Procurement
 - Contracted Services – Operators, equipment, vehicles, forecasting
 - Supplies – Road salt, plow blades, vehicle/equipment parts
- Route Review
 - Optimization, efficiency
 - Labor - Vehicle/equipment assignment
 - Changes – construction, development, roadway acceptance
- Multi-Department Coordination
 - Town Facilities Department
 - School Facilities Department
 - Chamber of Commerce
- Employee Training
 - CPW H&G and W/S, CMLP, Facilities Department
 - Snow & Ice Operations Team Meeting – November 6th
 - Route & vehicle assignments, discuss expectations



Snow & Ice Program – Fleet Maintenance

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- Winter Fleet
 - 28 plow vehicles/equipment
 - ✦ 6 wing plows
 - ✦ 5 underbody scrapers
 - ✦ 10 spreaders – ground speed controllers
 - 5 sidewalk plows
- Cleaning equipment regularly
 - Corrosion prevention
- Fleet Service and Inspections
 - Spreaders, brine tank, sidewalk machines, plows, snow blowers
- Circle check inspections – before and after each operation
- Calibrating spreaders during the season
- Mechanic on duty during all snow & ice operations



Snow & Ice Program – Operations

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- Continuous monitoring of forecasted conditions
 - Monitoring weather forecast throughout the season
 - Hometown Weather Services
- Pre-storm assessment - develop response strategies
 - Adjust as storm nears and more accurate forecasts becomes available
- Communication with employees – before and during operations
- Town-wide inspections
 - Monitor ground surface and air temperature
 - Visual inspections of roadways
- Allocating resources, equipment tracking, accountability
 - Adjusting response as needed – breakdowns, vacancies
- Communications
 - Constant communication between operators, snow desk and supervisor
 - Monitoring Public Safety radios
 - Communications with Facilities Departments
 - Customer service response



Snow & Ice Program – Treatment & Plowing

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- Storm response techniques will depend on forecasted and actual conditions.
- Pretreatment is critical to prevent snow/ice from bonding to roadway
 - Prevent hard-pack
 - Road salt – Used at the start of a weather event, during event as needed and post storm to prevent refreeze
 - Treated road salt (magnesium chloride) – Applied when temperatures are below 25 degrees
 - Liquid Brine – manufactured in-house with road salt and water - applied days in advance of storm event
 - One brine route (Main Roadways) – Nine salting routes (All Public Roadways) – One sidewalk treating route
- Plowing operations – for ~2” plus of accumulation
 - 18 Roadway plowing routes, 3 sidewalk plowing routes, 1 walking route
 - Sidewalk plowing is started at the same time as roadway plowing
 - Plowing continues until snow fall is complete
 - Additional road widening, intersection opening and clearing work completed after last snowfall
 - ✦ Final pushback



Snow & Ice Program – Snow Removal

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- Snow removal from parking lots is completed when accumulation reaches 3”
- Snow is removed from intersections, crosswalks and cul-de-sacs to improve visibility and traffic flow
- Hydrant accessibility is important and will be completed with coordination with other departments
- Snow is removed from sidewalks and roadsides in commercial areas as needed following a large accumulation event
 - Snow accumulation
 - Future forecast
 - Time of year
- Two options for snow removal operations:
 - CPW staff over multiple nights/days
 - Contracted/CPW operations completed in one night
- Snow Storage
 - Walden Street Landfill site
 - Commonwealth Avenue MCI property



Snow & Ice Operations Team

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- Operations Team
 - 23 Equipment Operators - Employees
 - 10 Equipment Operators – Contractors
 - 1 Snow Desk Dispatcher
 - 1 Fleet Supervisor/Master Mechanic
 - 2 Inspectors/Supervisors





Questions?

Thank you for your time

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