

BEHIND THE STORM - THE CRUCIAL ROLE OF PUBLIC WORKS IN WINTER STORM FIGHTING

What agencies respond during Winter Storm Emergencies?

When winter storms occur, the local Public Works Departments and State/ Provincial Departments of Transportation (DOTs) in the U.S. and Canada are the primary government agencies responsible for snow and ice control.

They must plan and prepare year-round, and anticipate storms in order to provide safety and mobility on highways, roads and streets. Snow and ice storms severely disrupt surface travel and create hazardous conditions that cause thousands of accidents annually. The toll from fatalities, injuries, property and vehicle damage and disruptions to commerce is in the billions of dollars each year. Other routine activities, such as work, medical, educational, religious, social and sporting events and appointments are affected by cancellations due to the weather. Therefore, winter weather snow and ice control operations are one of the most vital functions of Public Works.

How do public works agencies plan for Winter Storm Emergencies?

While most of Canada and the U.S. routinely experience winter storms to some degree, even the southern regions have been hit with winter events that overwhelm the limited capabilities of those agencies. In many towns, cities, counties and states/provinces throughout most of North America, what seems to be increasingly severe winters has focused the attention of officials on snow equipment, material stockpiles, and keeping a well-trained and ready workforce of snow fighters. Most people don't think about snow removal until a storm hits. When it does, agencies struggle to meet expected levels of service, which often leads to the public's criticism of winter operations. Winter weather road operations have always had to contend with other functions and services for funding. Often winter maintenance related items seem to be one of their first to be reduced in times of budgetary cutbacks, especially when warmer weather has prevailed.

The foundation of an effective Winter Operations Plan is the establishment of Levels of Service, which are typically based on a jurisdiction's classification of roads and streets. This prioritizes every highway,

road and street primarily by traffic volumes, patterns and criticality. Of course, the heavily traveled arterials will rank higher than a much lower traffic volume residential street or alley. Streets that provide access to major commercial and industrial areas, transportation hubs such as train stations and airports, hospitals and fire stations, and schools may be ranked higher because of their criticality.

How are Levels of Service involved in snow and ice control?

Levels of service are defined to help determine what resources will need to be allocated to meet the agency's winter maintenance goals. For instance, nearly all agencies will attempt to obtain bare pavement in every throughway and turn lane of a major highway or arterial street within hours of a "typical" snowfall. For collector streets and minor arterials, the time period to obtain the same standard may be longer. Residential streets, alleys and limited service roads (such as in parks) may not be plowed at all unless the snow exceeds a certain threshold. Plowing may be minimal or just a track in the center. All jurisdictions – towns, cities, counties, special road districts and tollway authorities, tribal, states, provinces, at risk of snow and ice should have a Winter Maintenance Policy or Operations Plan. This will address priorities, Levels of Service, tiered response strategies depending on type and intensity of storms, handling special emergency situations selection and use of materials, composition (type and number) of equipment fleet organizational structure and roles, staffing, training, communications and tracking, weather forecasts and current conditions reports, as well as documentation, risk management and public information. This includes declaring a snow emergency and enacting parking restrictions and vehicle requirements. It should also clearly state what it is not responsible for (sidewalks and private streets for example, and roads maintained by others). A sound Winter Operations Policy and Plan is the blueprint for providing this vital service in the most efficient, effective and equitable manner.

How do public works agencies prepare winter storm strategies and tactics?

The preparation for and commencement of snow and ice control operations, as well as overall practices

and methods, is contingent upon varying conditions. For instance, the Snow Operations Manager will determine when to begin preparation for an anticipated storm based on contracted weather service reports. Weather is quite changeable as storms approach and Snow Managers often adjust their tentative plans. Still, most tend to take a proactive approach as considerable time is needed to have crews ready. Public Works personnel are notified of when to report for duty, and the public is typically informed of issues such as parking bans, road conditions, and cancellations through a variety of sources. When feasible, the public works crews will pre-treat bridges, overpasses and hills with salt brine or other materials prior to when the snowfall is expected. The types and application rates of the materials selected depends on several factors: present and forecasted pavement temperatures, wind direction and speed, type and amount of precipitation, current pavement conditions, priority classification, availability of materials and equipment and environmental considerations. Advances in material science and application technology have provided snow fighters with a more current and versatile "toolbox."

Public Works snow fighters – including operators, dispatchers, mechanics, clerks and supervisors and auxiliary personnel from other divisions and departments – work long hours in often hazardous conditions and severe weather to keep roads safe and streets safely passable for the public. No matter the duration of winter storms, whether shorter or longer, public works agencies are in essence partners with the public. Area citizens can work during the winter storms to help the public works crews by restricting trips to those that are truly necessary, and allowing more time. Also, drivers can aid Public Works Storm fighters by going slowly, and creating greater gaps between cars on snow and ice-covered roads.

For more information about public works and winter stormfighting, visit the American Public Works Association (APWA) 2014 North American Snow Conference – "The Show for Snow" website area at www.apwa.net/snow. Media are invited to attend the 2014 Snow Conference by registering with APWA Media Relations Manager, Laura Bynum at: lbynum@apwa.net.