



Defining and Implementing Levels of Service for Winter Maintenance Operations

Thursday, October 23, 2025

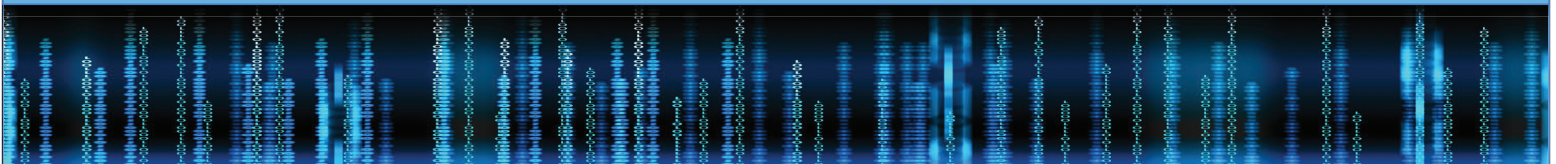
- 11:00 a.m. - 12:00 p.m. ET
- 10:00 a.m. - 11:00 p.m. CT
- 9:00 a.m. - 10:00 a.m. MT
- 8:00 a.m. - 9:00 a.m. PT

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A link to the program evaluation will be emailed to you after the program.

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APWA has been accredited as an Authorized Provider by the International Association for Continuing Education and Training (IACET), 1760 Old Meadow Road, Suite 500, McLean, VA 22102; (703) 506-3275.



RESOURCE CENTER

ONE PLACE where a member can access:

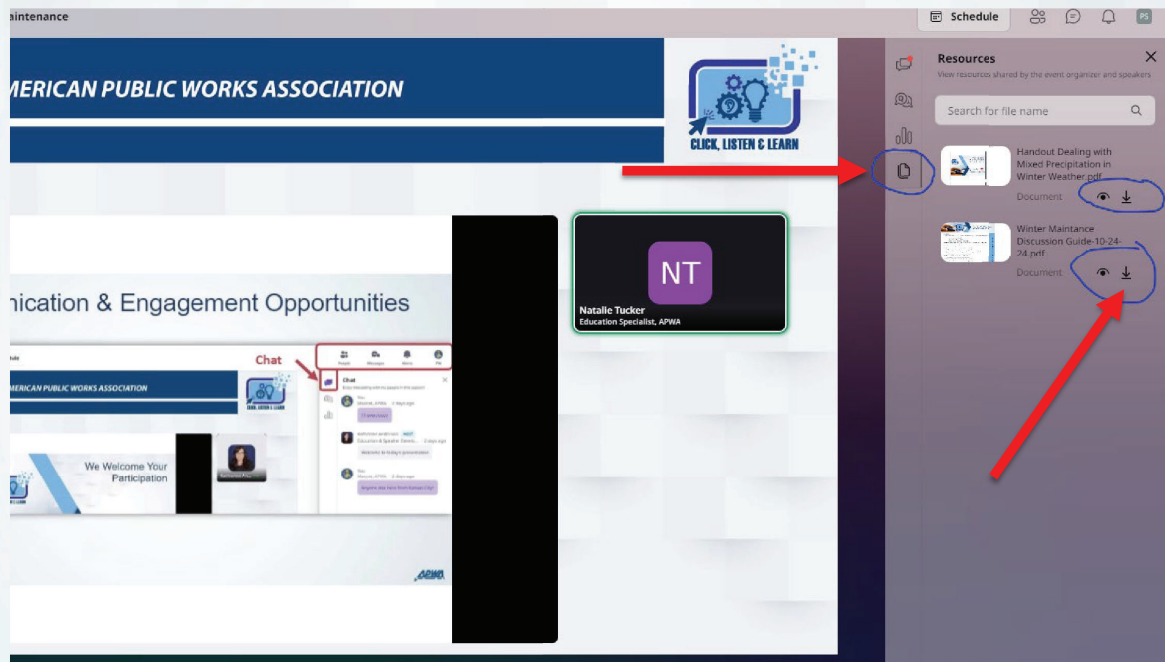
- Past Click, Listen & Learn (CLL) presentations
- Content from past conferences (PWX and Snow)

All searchable by topic. All without any extra fees beyond membership dues! No limits to how often you access or open the items in the Resource Center.

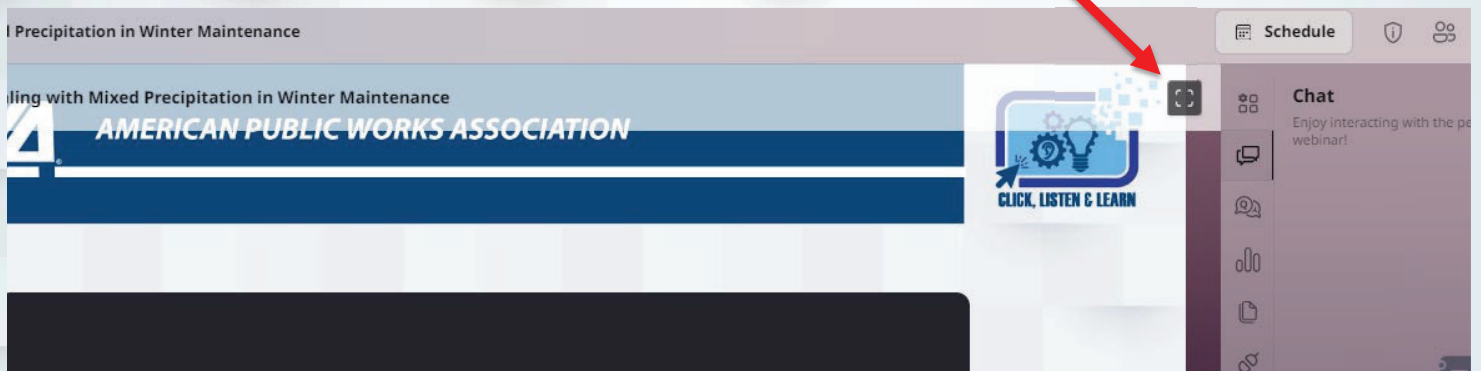
No travel. No scheduling hassles. No delays while waiting for someone else's approval. No waiting for registration payment to be processed.

For more information go online to
www.apwa.org/resources/resource-center.

Handout for Today's Program can be download from the right-hand chat panel.



Viewing the Presentation



Communication & Engagement Opportunities



AMERICAN PUBLIC WORKS ASSOCIATION



CLICK, LISTEN & LEARN

We Welcome Your Participation



Katherine An...

Chat

People

Messages

Alerts

PW

Chat

Enjoy interacting with the people in this session!

 You Mascot, APWA · 2 days ago

Hi everybody

 Katherine Anderson **HOST**

Education & Speaker Develo... · 2 days ago

Welcome to today's presentation

 You Mascot, APWA · 2 days ago

Anyone else here from Kansas City?

Reactions





Katherine Anderson
eLearning Spec
Kansas City, USA

LIVE 04:10 2



no Facing problems?

What would you like to share?





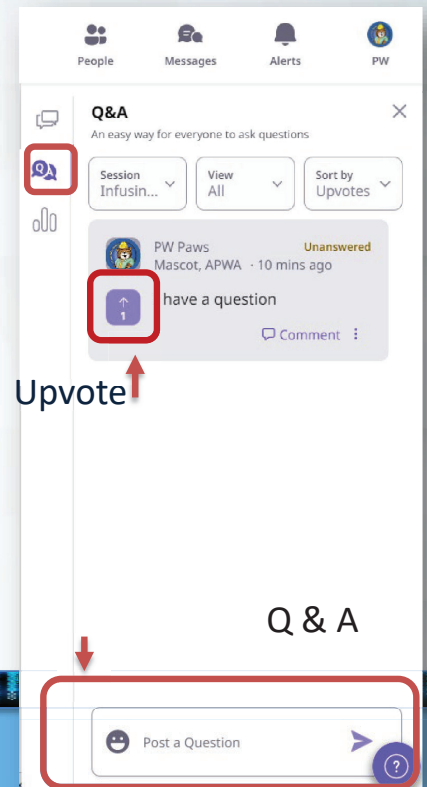
CLICK, LISTEN & LEARN



Program Questions

1. If you have questions for our speakers, you may ask them using the Q&A feature.

2. Choose to Upvote a question that is the same as your question.



Nominations to join an APWA knowledge team or subcommittee are considered year-round. Share your interest via the QR code below.



Get Involved with APWA

Today's Moderator:



Shane Mark
Assistant Director of
Public Works
Needham, Massachusetts



Learning Objectives

After completing this course, participants will be better able to:

- Determine different LoS areas
- Identify key players in your organization that should be included when establishing service levels.
- Utilize the Snow and Ice Control Manual as a reference to clearly document and communicate LoS for winter maintenance operations.



Today's Speakers



Neeraj Saroj
Senior Operations Engineer and Projects Manager
Regina, Saskatchewan



Joe Fornaro
Public Works Director
Kirtland, Ohio



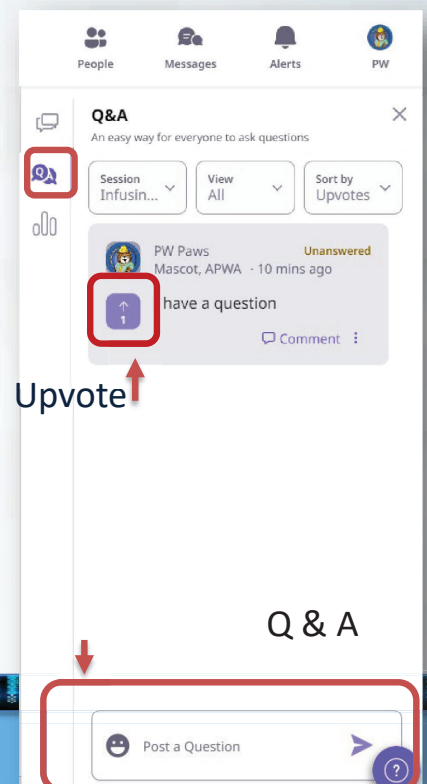
Scott Lucas
Infrastructure Operations Coordinator
Columbus, Ohio



Q & A

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**Please join us in
the virtual lounge
for continued
discussion**



Planning Winter Maintenance Policy

**Determining Levels of Service
&
Identifying Key Stakeholders**



Neeraj Saroj
City of Regina, Saskatchewan, Canada
Region IX, CPWA-Sask Chapter

Objectives of this section of presentation:

- Significance of having a Winter Maintenance Policy
- Types of LoS
- Planning/ Determining LoS standards for different winter maintenance activities
- Engagement with Key Stakeholders in the planning process



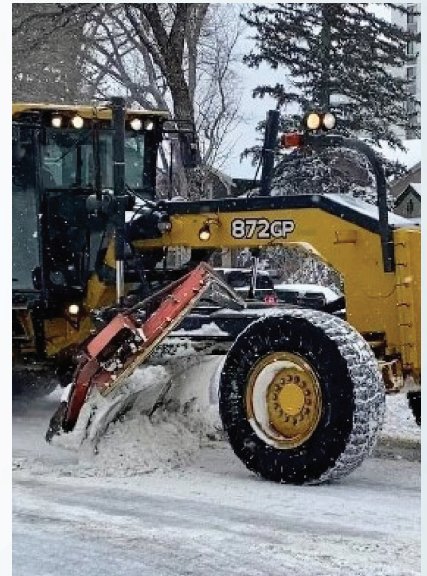
Winter Maintenance Policy

- Sets clear expectations & provides transparency
- Builds public trust & confidence through consistency
- Year-round mobility & public safety
- Aligns strategic goals & services with changing weather trends & community needs
- Ensures operational sustainability
- Ensures environmental stewardship & responsibility
- Facilitates budget & resource planning
- Legal contract



Key Winter Road Maintenance Program Activities Covered in the Policy

- snow plowing of streets, roads, alleys, bicycles only lanes and sidewalks
- ice control of streets, roads, bicycles only lanes and sidewalks
- snow removal
- snow storage
- open catch basins
- success indicators, monitoring, documentation and reporting



Level of Service

Levels of Service (LoS) are the defined services thresholds that are supplied to customers.

Types of LoS:

- Customer Levels of Service
- Technical Levels of Service



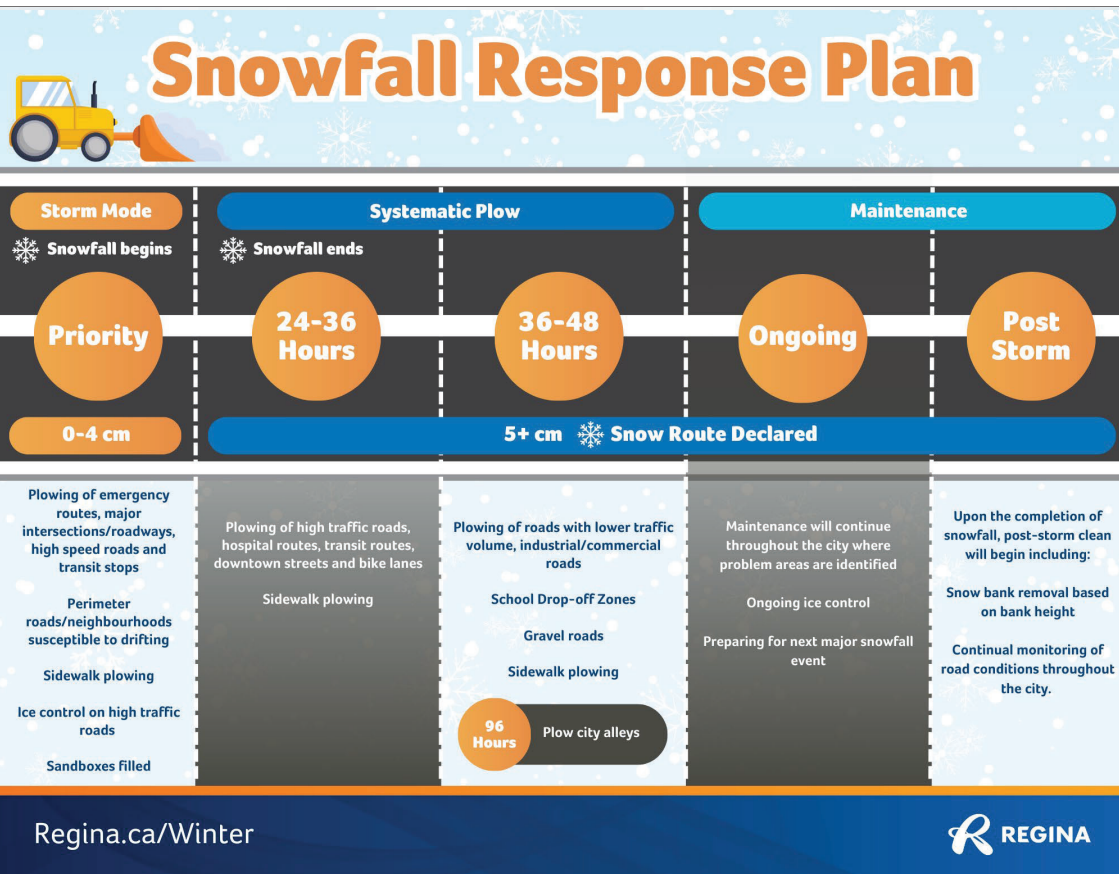
Determining LoS – Key Influencing Factors

- Weather conditions & trends
- Community needs & accessibility
- Expectations & demands
- Asset classification, Usage/ Purpose, Traffic volumes
- Nearness to schools, hospitals, commercial establishments etc.
- Critical City services –transit, solid waste collection, parks, City facilities
- Accessibility
- Corporate strategic goals, Council vision, Risk tolerance
- Available resources
- Best practices



Example: Plowing LOS for Road network

Road Classification	Timeline Hours	Snowfall trigger-cm
Category 1: • freeways/expressways • major arterials • Roads on a designated hospital route	24	5
Category 2: • Minor arterial roads, major collector roads with traffic volumes greater than 5,000 vehicles per day (VPD) • transit routes • all roads in Downtown • all bicycles only lanes (bicycles only lanes)	36	5
Category 3: • Major collector roads with traffic volumes less than 5,000 VPD, minor collector roads • industrial/commercial roads • residential/local roads with traffic volume greater than 1,500 VPD • roads adjacent to School Drop-off Zones	48	5
Category 4: All gravel roads	60	5
Category 5: All local/ residential with traffic volume less than 1500 VPD	No	15



Sidewalks LoS (Example)

- Within Downtown –plowed in 24 hours
- Outside downtown- plowed in 48 hours
- Plowed to the pavement
- Entire width of the sidewalk cleared
- Width of Snow ridges along the curb should not exceed 2.5 feet



Key Stakeholders

Internal

- Winter Maintenance Operations staff
- Other City departments like Transit, Fleet services, Solid Waste, Sewer & Drainage, Bylaw, Parking enforcement, Parks, legal, Communications, Finance, Planning & Development, Real Estate, Fire department
- Council and Senior Leadership Team

External

- Contractors
- Schools
- Downtown/ Business districts
- Local police department
- Hospitals/ Health Authority
- Entertainment district



Summary

- Winter maintenance policy should be frequently reviewed and updated
- Policy is a high level- strategic document NOT a procedural document
- Extensive planning essential for determining Policy LoS
- Stakeholder and Public Engagement are critical when determining Policy LoS





Defining and Implementing Levels of Service for Winter Maintenance Operations

Joe Fornaro
Public Works Director
City of Kirtland



During this section we are going to:

- Discuss using your snow and ice manual as a reference.
- Show how to document, evaluate, and refine your Levels of Service (LoS).
- Define to whom you need to communicate your LoS .
- Discuss methods of how to share your LoS with internal and external users.



Intro

- Today we're diving into how we define and deliver winter maintenance through LoS. This framework helps us keep roads safe, manage resources, and meet public expectations.
- Winter maintenance isn't just about plowing snow—it's about ensuring safety, mobility, and economic continuity. Levels of Service, or LoS, give us a structured way to measure and manage our response.



Examples of Winter Maintenance LoS

- Defines the expected condition of roads, sidewalks, bike paths, and facilities during and after weather event, along with the timeframe and methods to achieve those conditions.
- These are the core metrics we use to define LoS: how quickly we respond, how much snow triggers action, how long it takes to clear roads, and what condition we aim for.

Bare pavement

Snow packed

Mostly cleared / Passable



Unimproved Street

Plowed Only – Minimal Bare Pavement



Residential Street

(Streets will have residual snow – minimal bare pavement)
(Deicers will primarily be utilized on steep hills and intersections)



Collector Street

(Some Bare Pavement – Focus on Wheel Paths)



Major Arterial Street

(Significant Portion of Pavement is Bare)



LoS Classifications

- Roads are classified based on their importance. Highways and emergency routes get top priority, while residential streets may take longer. This helps manage expectations and resources.
- LoS isn't one-size-fits-all. It's influenced by traffic volume, storm severity, available equipment and staff, and budget. These factors help us tailor our response





LoS summary

- Winter maintenance faces challenges: unpredictable weather, environmental concerns, staffing shortages, and aging equipment.
- LoS gives us a framework for consistent, efficient winter maintenance. It guides operations, improves communication, and helps us continuously improve.
- Remember to only promise what your agency can achieve after the storm event





Defining and Implementing Levels of Service for Winter Maintenance Operations

Scott Lucas
Infrastructure Operations Coordinator
City of Columbus, Ohio



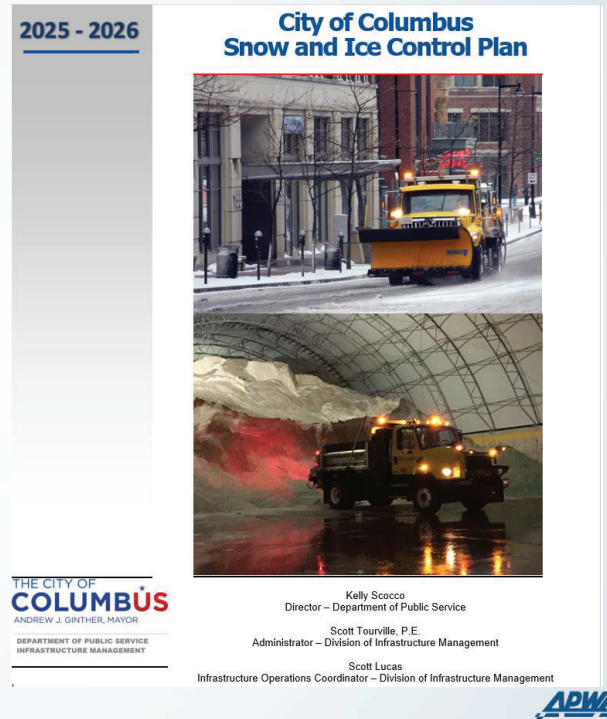
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Using your snow and ice manual as a reference

- You need an internal and external snow and ice plan.
- Internal plans are more detailed for leadership and employees.
- External plans tell the media and citizens what they can expect.
- Remember, set goals you can meet!



Documenting, evaluating, and refining your Levels of Service (LoS)



- Documenting your LoS for various roads and assets
 - If you don't write it down, how can it be consistently shared?
- Evaluating and modifying your LoS keeps it current
 - Is your current LoS sustainable?
 - COVID, need I say more?
- Refining your LoS is possible. It is a living document.
 - As leadership changes, you must be ready to modify your LoS.
 - New assets to manage forces you to reevaluate your LoS, i.e., protected bike lanes, parking lots, sidewalks, Shared Use Paths...



Who needs to know about your LoS?

Identify who needs to know internally

- Everyone from the Mayor to your newest driver.
- Public Information Officers.
- Auxiliary staff and contractors.



Identify who needs to know externally

- Local media.
- Other departments within your organization.
- Public safety, (Sherrif's Office, Fire, EMS).
- Schools and businesses.



Methods of sharing your LoS

Communicating your LoS internally

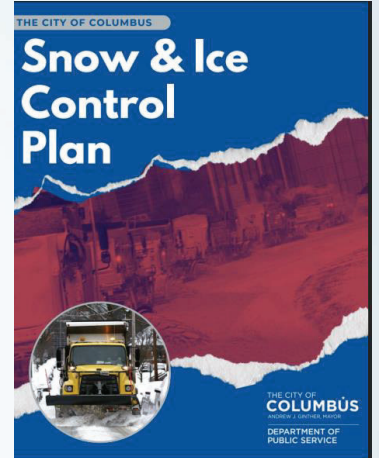
- Put together a briefing and executive summary for leadership.
- Snow and ice training schools for managers, supervisors, operators, auxiliary staff, and contractors.



Methods of sharing your LoS

Communicating your LoS externally

- Invite the media to a snow and ice roadeo event.
- Share information on our Warrior Watch program.
- Brief the public on what they should expect during specific snow level emergencies.
- Share your public snow and ice control plan.



Methods of sharing your LoS

A picture is worth a thousand words...



We covered:

- Using your snow and ice manual as a reference.
- Documenting, evaluating, and refining your Levels of Service (LoS).
- To whom do you need to communicate your LoS.
- Methods of how to share your LoS with internal and external users.

