2023 NWPMA CONFERENCE

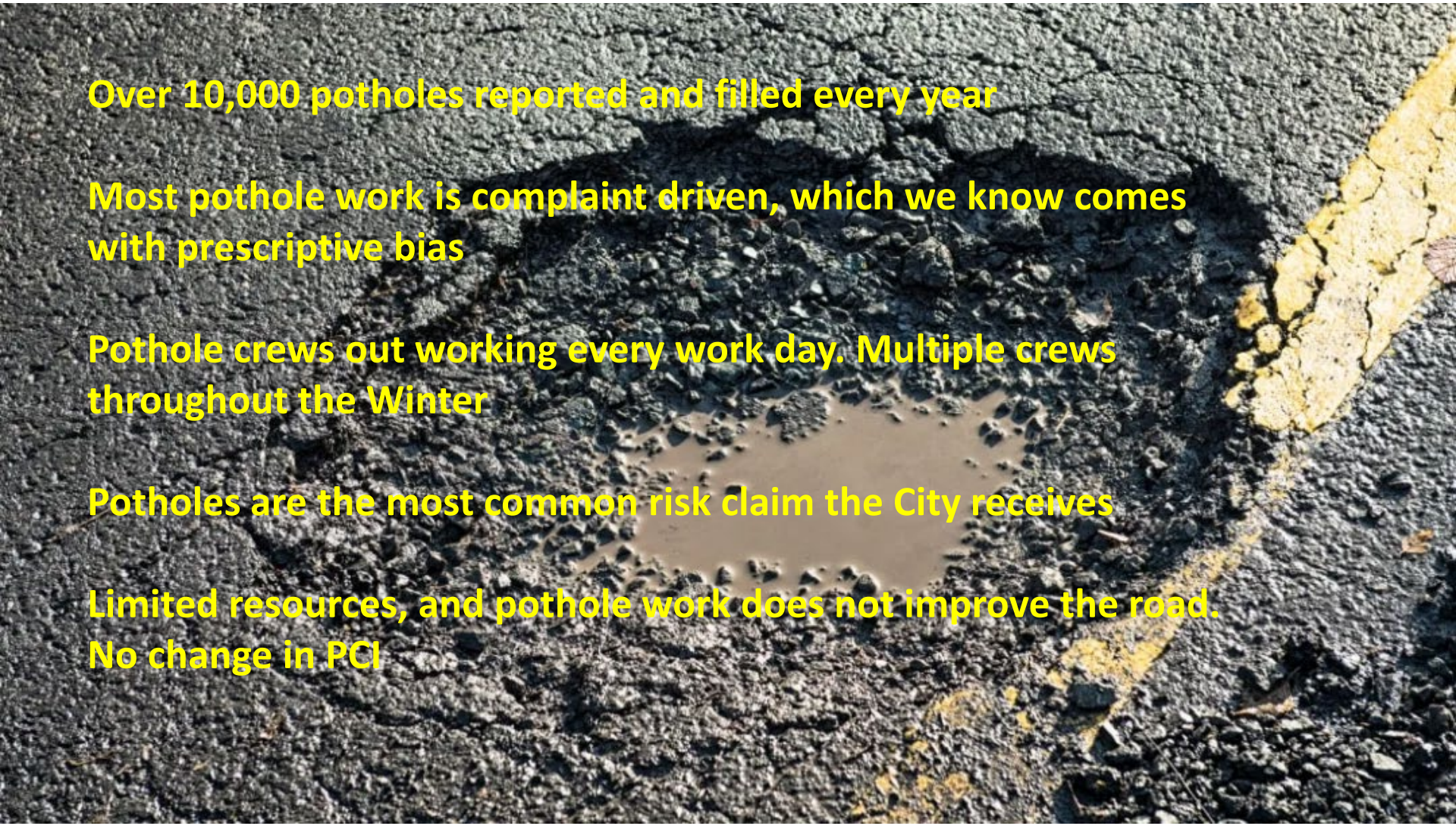
PBOT Pothole Dashboard – Oct 27th, 2023

PBOT
PORTLAND BUREAU OF TRANSPORTATION

Agenda

- Welcome and Introductions
  - Michael Magee – PBOT Street Systems Division Manager
  - Nicholas LaRue – PBOT GIS Technician III
- Background of the Pothole Repair Program
- Getting Out of the Pothole Business
- Pothole Dashboard Overview
- Dashboard Enhancements
- Keep Moving the Needle
- Q & A

Background

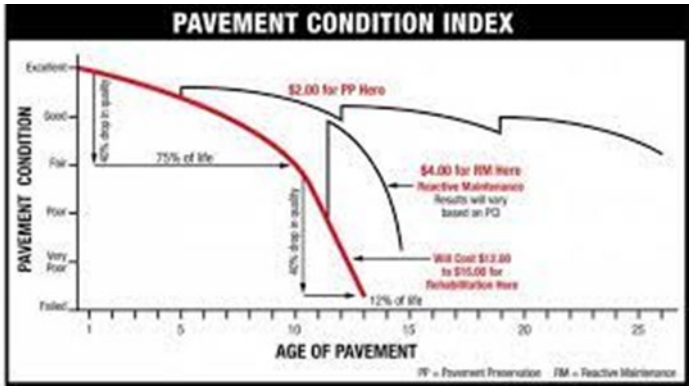

Over 10,000 potholes reported and filled every year
Most pothole work is complaint driven, which we know comes with prescriptive bias
Pothole crews out working every work day. Multiple crews throughout the Winter
Potholes are the most common risk claim the City receives
Limited resources, and pothole work does not improve the road. No change in PCI

Getting out of the Pothole Business

PORTLANDERS SAY: FIX ROADS AND SCHOOL SYSTEM

January 14, 1998 | Oregonian, The (Portland, OR)
Author/Byline: MICHELE PARENTE of the Oregonian Staff | Page: D02 | Section: PORTLAND ZONER

In answer to an open-ended question, 24 percent of those surveyed for a poll done by the city said reducing traffic congestion and increasing road repairs should be the No. 1 focus of the council over the next two years.



Road repair costs overwhelm budget

March 2, 2013 | Oregonian, The (Portland, OR)
Author/Byline: Ryan Kost Ryan Kost | Section: Metro Portland Neighbors: In Portland

Interim bureau Director Toby Widmer rattled off startling statistics on the condition of the city's roads, including that only a little more than half are in fair or better condition.

City road repair budget could be slashed to fill $32 million shortfall

July 14, 2023 | Oregonian, The (Portland, OR)
Author/Byline: Jayati Ramakrishnan - The Oregonian/OregonLive | Page: 002 | Section: A

"These are dollars Portlanders see and experience on a daily basis," Mapps said. "They're used to fix potholes and do other basic maintenance. It's a profound and frankly visible problem."

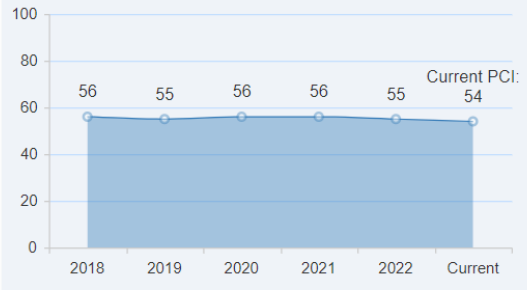
Getting out of the Pothole Business

Executive Dashboard

Show KPI

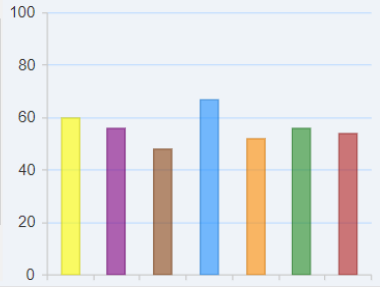
Pavement Area (square miles): **11.96** | Centerline Miles: **1996.75** | Lane Miles: **4210.97** | Sections: **28512**

Historical Pavement Condition Trends

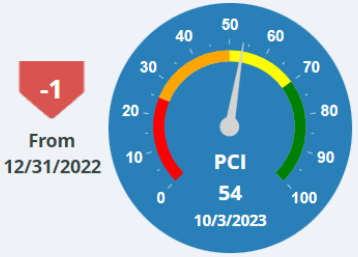


Current PCI by: Functional Class

CATEGORY	PCI
Minor Collector (6)	60
Urban Collector (5)	56
Urban Fwy or Expwy - Other (2)	48
Urban Interstate (1)	67
Urban Local (7)	52
Urban Minor Arterial (4)	56
Urban Principal Arterial-	54

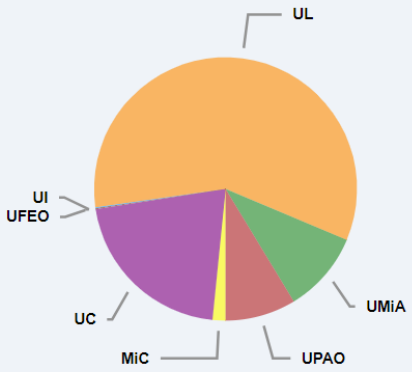


*Current PCI

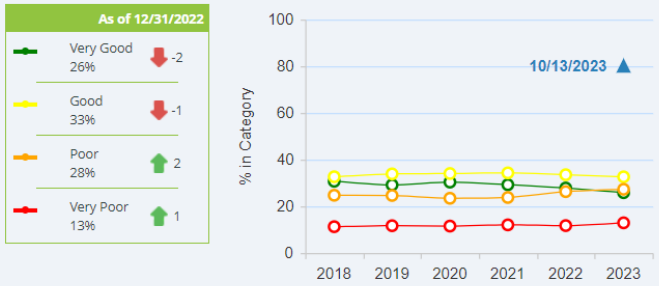


Percent of Area by: Functional Class

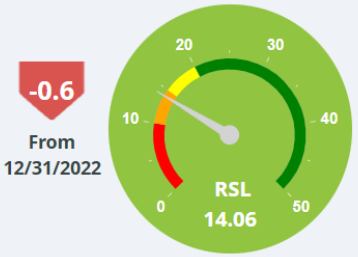
Show Legend



Historical Network Condition Trends



Remaining Service Life (years)



*DISCLAIMER: For display purposes only, graphs with an asterisk (*) show Condition Category colors based on default PCI Breakpoint values of 70, 50 and 25. Please Note: Historical PCI values are calculated as of 12/31 of the year shown.

Overview of Maintenance Operations

Maintenance Operations Strategic Plan

- MO Strategic Plan (sharepoint.com)

Pothole Dashboard

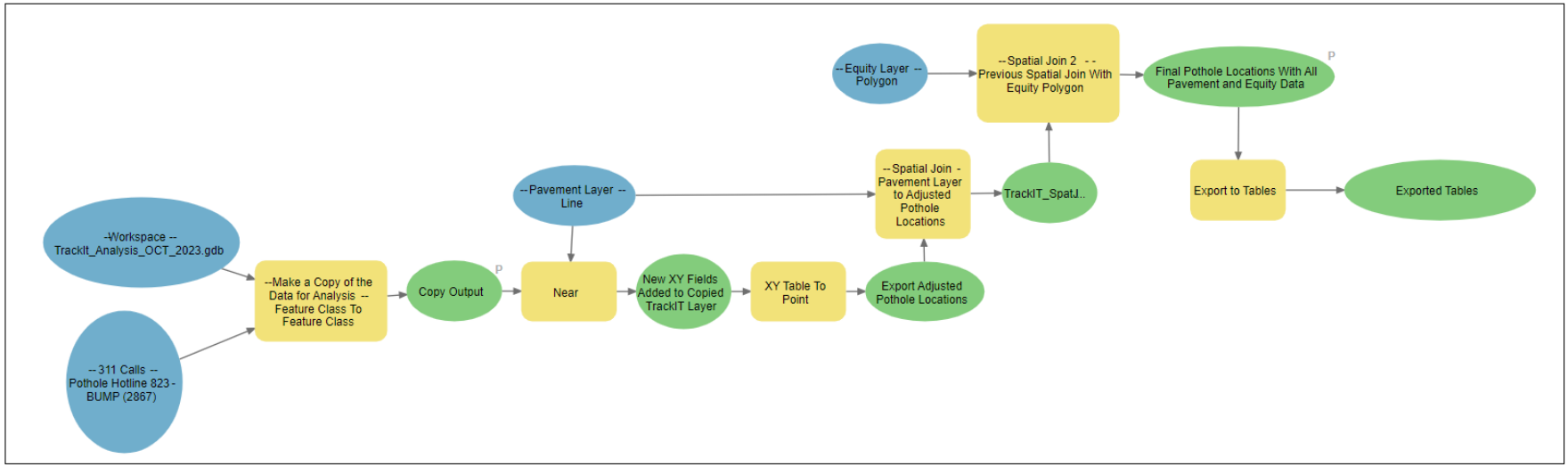
- **Existing Pothole Hotline Dashboard**
  - Where is the pothole?
  - Map/GIS Data (for those willing to find it)
- **Enhanced Pothole Hotline Dashboard**
  - Where is the pothole? & Map/GIS data (For All)
  - Types of Map data?
    - Ownership, Maintenance, PCI, High Crash Network, Equity Index, and more
  - How? Arcade scripting language on ArcGIS Online/ArcGIS Portal

Exisiting Pothole Dashboard Demo

Enhanced Pothole Dashboard Demo

Further GIS Analysis

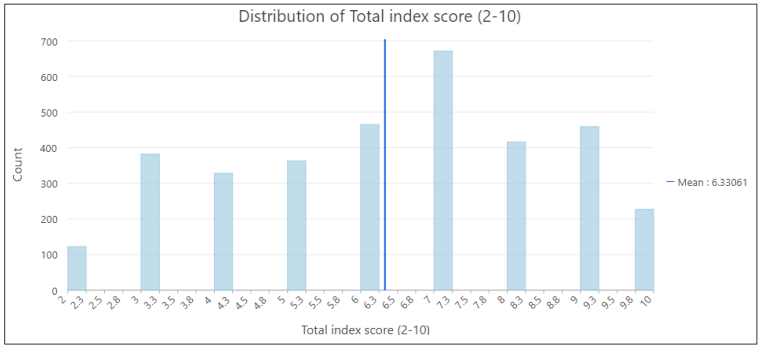
- **Pothole Call Desktop Analysis**
  - Why Desktop?
  - ArcGIS Pro Model Builder & Geoprocessing tools for Proximity, Overlay and Summary analysis and Frequency of Pothole/311 Calls per Segment
  - More Data?



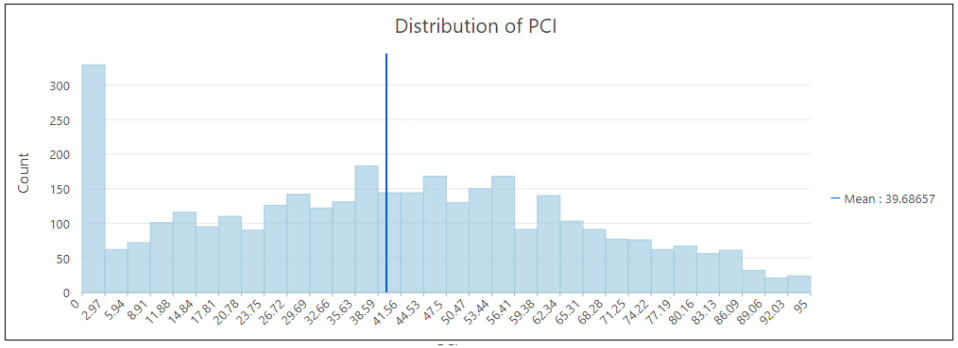
Further GIS Analysis

- **Sharing the results**
  - Pavement Mangers, Asset Managers, Data Analysts to work towards a data driven asset management program that serves all Portlanders equitably
  - Possible visualization and further Analysis tools Jupyter Notebooks, ArcGIS Insights, Tableau, ???

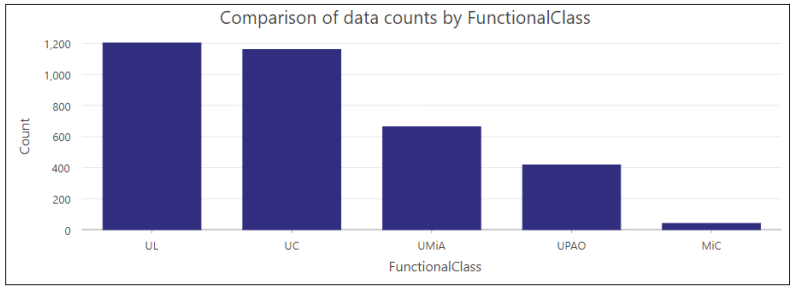
311 Pothole Ticket Equity Score Distribution



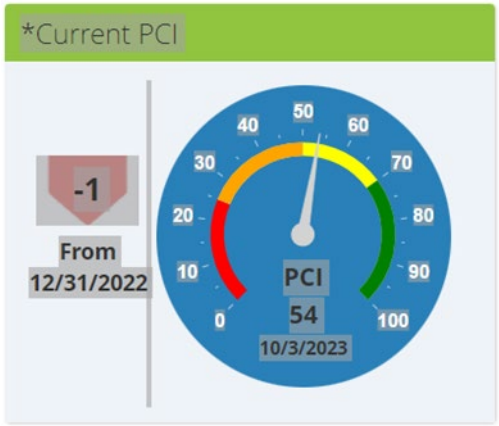
311 Pothole Ticket PCI Score Distribution (0-100)



311 Pothole Ticket Function Class Distribution



Keep Moving The Needle



- We will continue to have challenges moving the PCI

- We can still move the needle with the Strategic Plan as our North Star
  - ASSETS – PCI, posted speed, travel modes
  - PEOPLE – crews feel valued when we do work which makes sense
  - COMMUNITY – equity matrix, vulnerable users
  - SAFETY – high crash network, risk claims
  - DATA – data driven instead of customer complaint

Statement of Purpose: We maintain and repair our transportation and environmental infrastructure

ASSETS	PEOPLE	COMMUNITY	SAFETY & ENVIRONMENT	DATA & PROCESSES
Goal 1 Excel in asset maintenance and operations	**Goal 2** Invest in our people and work culture	**Goal 3** Serve critical needs of all Portlanders	**Goal 4** Integrate safety and sustainability into daily operations	**Goal 5** Modernize asset management systems and work processes

QUESTIONS

REPORTING A POTHOLE OR OTHER ROADWAY HAZARD

- https://pdxreporter.org/
- pdxroads@portlandoregon.gov
- 311
  - 311@portlandoregon.gov

- Michael.Magee@portlandoregon.gov
- Nicholas.LaRue@portlandoregon.gov