Work Zone Data Exchange
Lessons Learned for NC-BPAID

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What is WZDx?
A simple specification for communicating work zone information

```
{
  "road_event_feed_info": {
    "publisher": "Iowa DOT",
    "version": "4.0",
    "data_sources": [
      {
        "data_source_id": "IowaDOT-WZDx",
        "organization_name": "Iowa DOT"
      }
    ],
    "update_date": "2024-09-25T20:41:40Z"
  },
  "type": "FeatureCollection",
  "features": [
    {
      "id": "OpenTMS-Event17727101",
      "type": "Feature",
      "properties": {
        "core_details": {
          "event_type": "work-zone",
          "data_source_id": "IowaDOT-WZDx",
          "road_names": [
            "IA-175"
          ],
          "direction": "eastbound",
          "description": "Between the Missouri River bridge and I-29 (3
          "update_date": "2021-03-23T21:43:11Z"
        },
        "start_date": "2021-01-18T22:15:45Z",
        "end_date": "2025-01-17T23:00:00Z",
        "start_date_accuracy": "estimated",
        "end_date_accuracy": "estimated",
        "beginning_accuracy": "estimated",
        "ending_accuracy": "estimated",
        "beginning_cross_street": "175E-0",
        "ending_cross_street": "175E-0.1",
        "beginning_milepost": 0.0,
        "ending_milepost": 0.1,
        "vehicle_impact": "all-lanes-open",
```
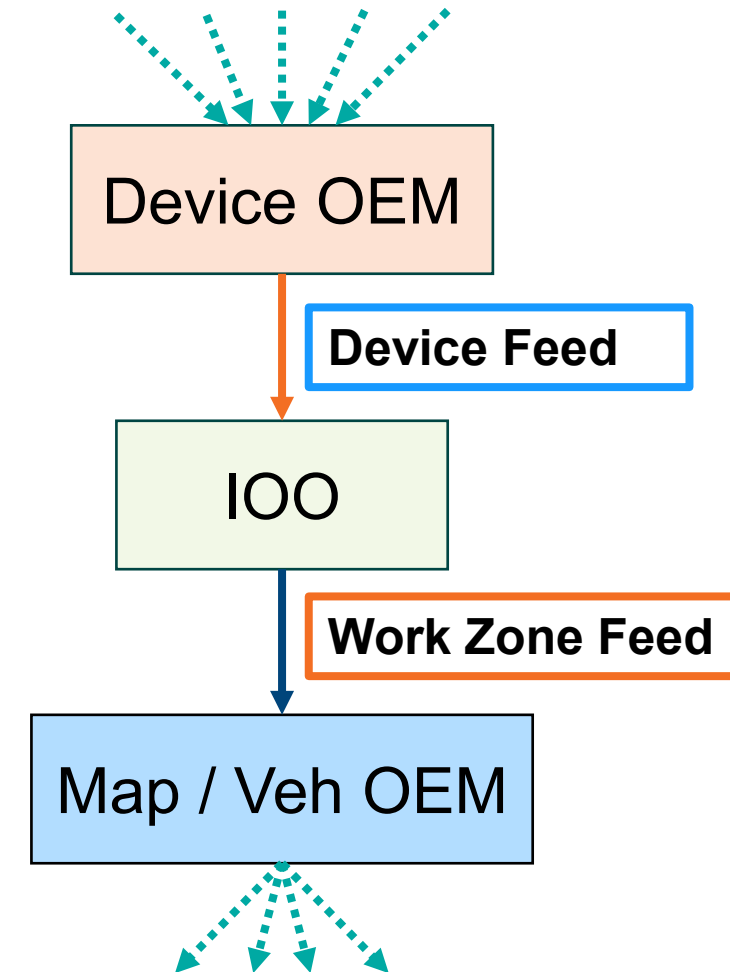
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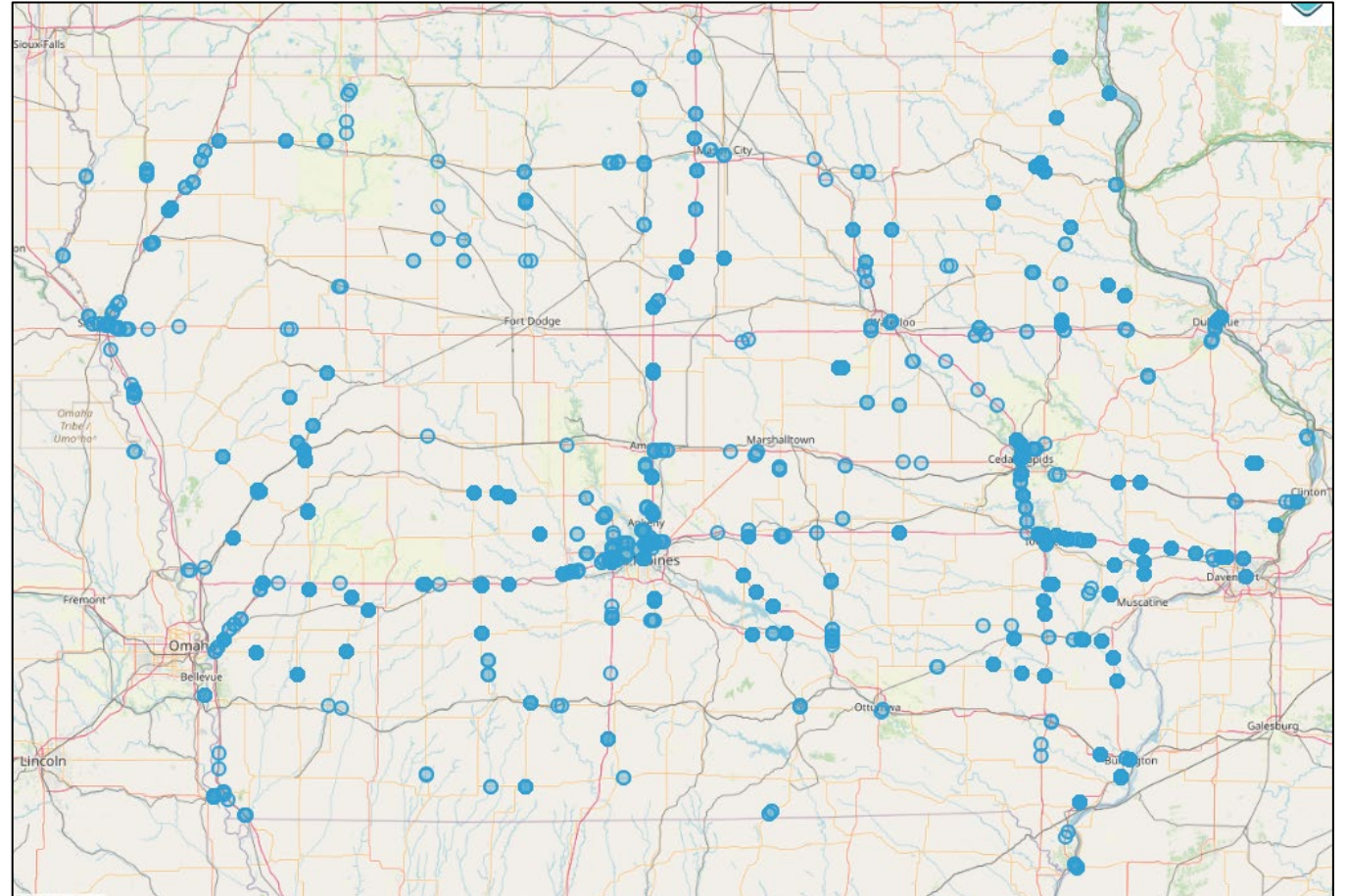
What is WZDx?
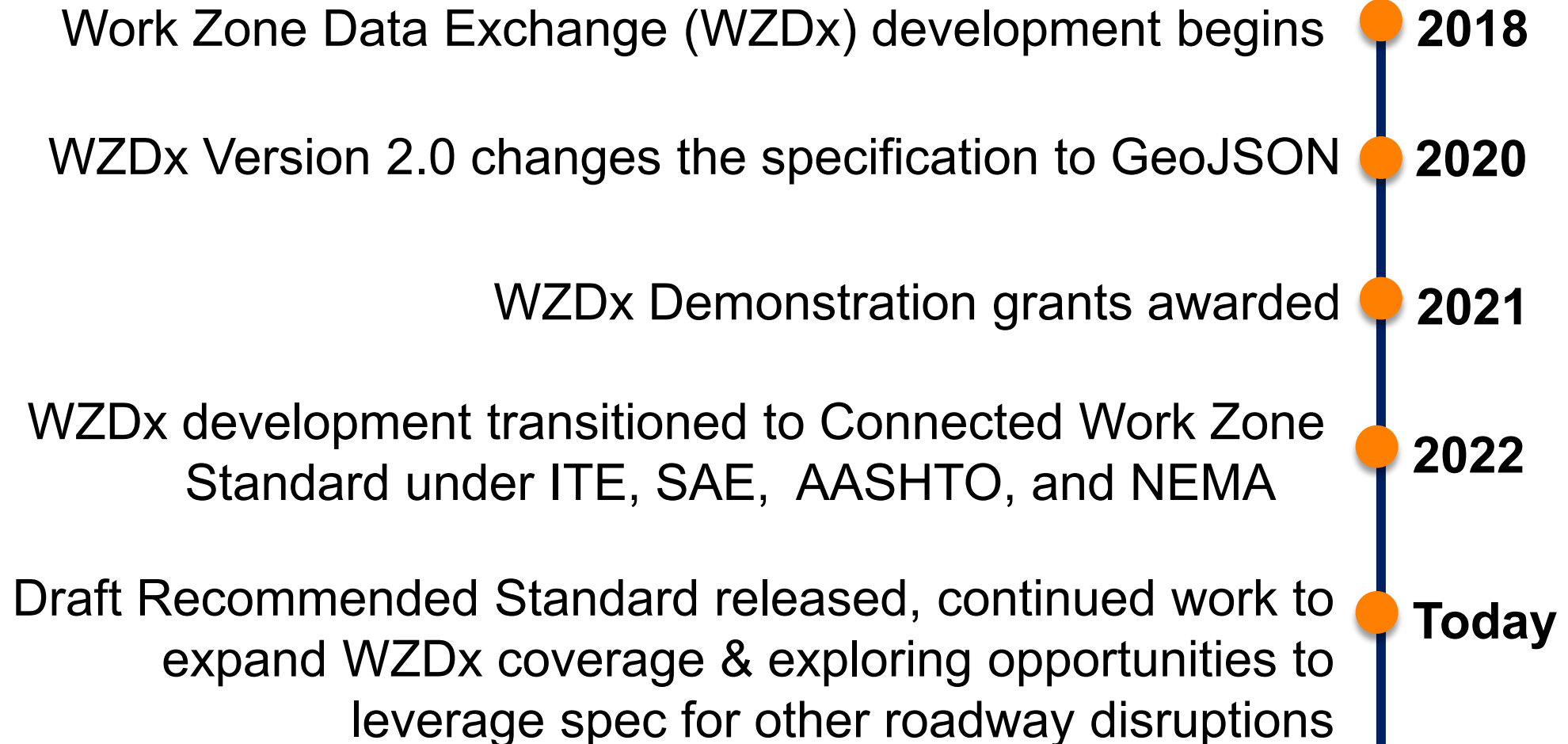## Data feed specifications for work zones and devices

Feed	Device Feed	Work Zone Feed
Features	Devices	Road Events
Feature types	Arrow boards, cameras, dynamic message signs, flashing beacons, hybrid signs, location markers, traffic sensors, traffic signals	Work zones and detours
Producer	Work zone equipment manufacturers or vendors.	Transportation Authorities like Tribal, Local, County, State, or Federal Agencies.
Consumer	Transportation agencies. Mapping & Navigation companies and CAVs may also be interested.	Traveling public via third parties such as mapping and navigation applications and CAVs.

Device OEM

Device Feed

IOO

Work Zone Feed

Map / Veh OEM

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What is WZDx?
Project timeline

Work Zone Data Exchange (WZDx) development begins — **2018**

WZDx Version 2.0 changes the specification to GeoJSON — **2020**

WZDx Demonstration grants awarded — **2021**

WZDx development transitioned to Connected Work Zone Standard under ITE, SAE, AASHTO, and NEMA — **2022**

Draft Recommended Standard released, continued work to expand WZDx coverage & exploring opportunities to leverage spec for other roadway disruptions — **Today**

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What is WZDx?
Current deployment of Work Zone Feeds

As of August 2024

Feed Registry can be accessed at: https://datahub.transportation.gov/Roadways-and-Bridges/Work-Zone-Data-Exchange-WZDx-Feed-Registry/69qe-yiui

Legend:
- Feed available on WZDx Registry
- Feed under development
- Denotes grant awardee
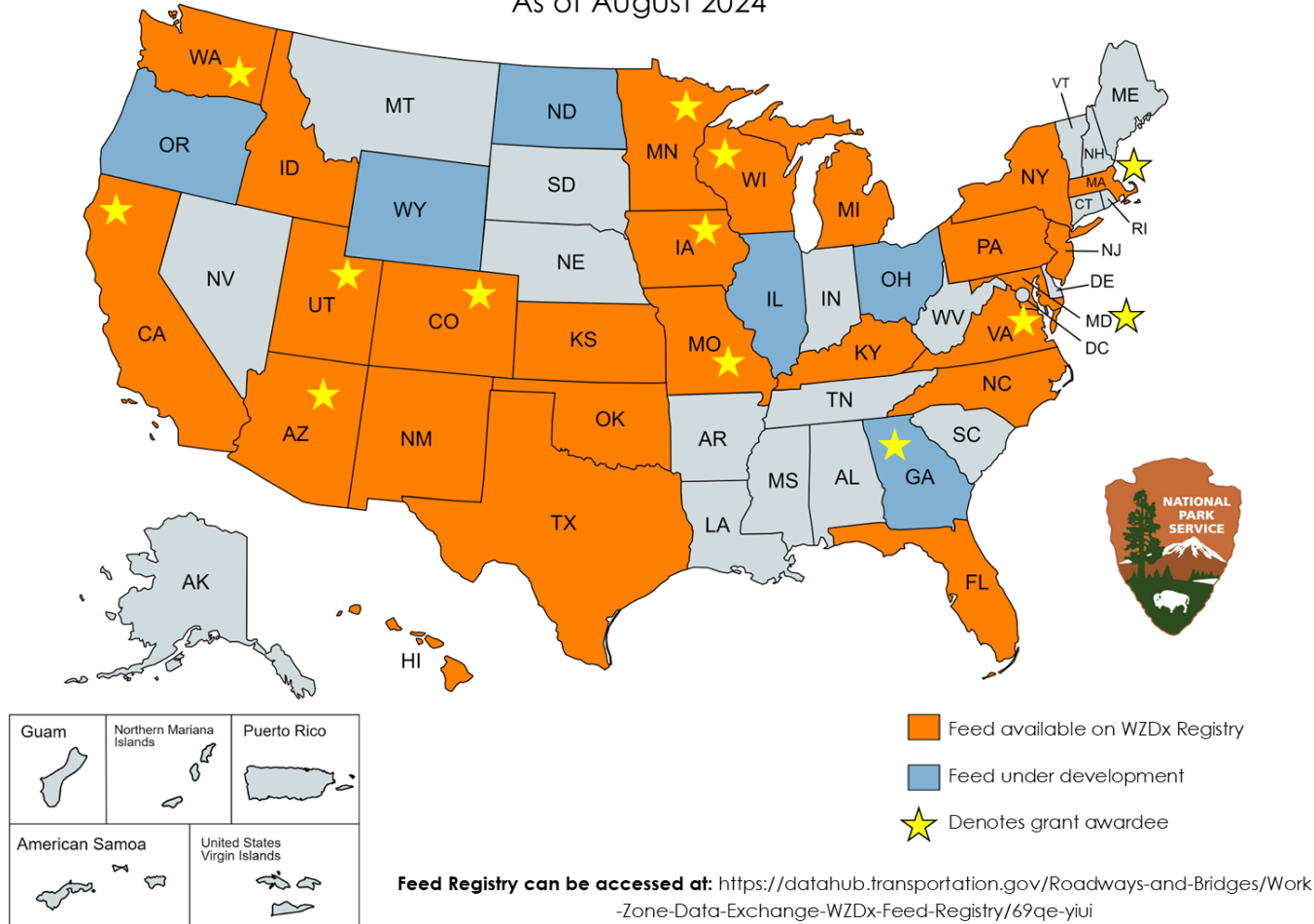
WZDx Statistics

375+
Working Group Membership

25
Active Feeds

185
Unique Organizations

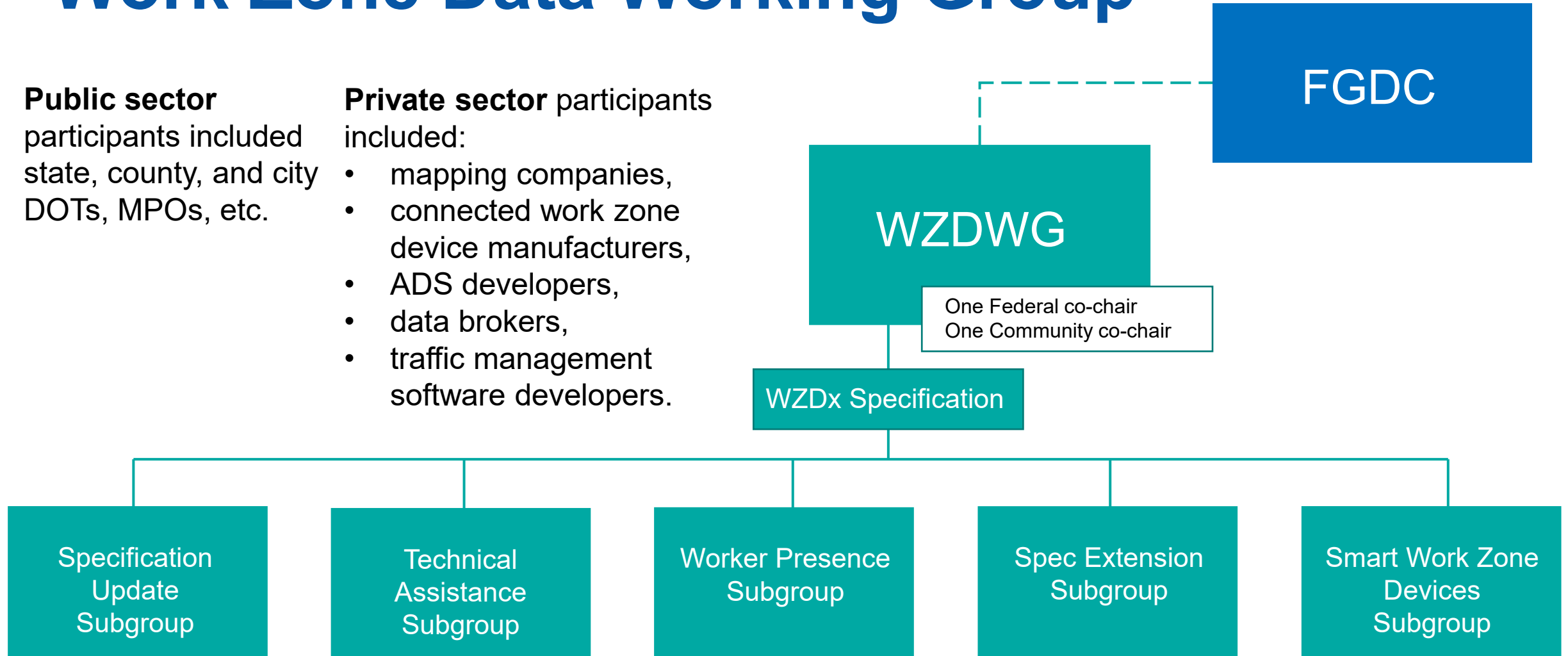U.S. Department of Transportation
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Work Zone Data Working Group

Public sector participants included state, county, and city DOTs, MPOs, etc.

Private sector participants included:
- mapping companies,
- connected work zone device manufacturers,
- ADS developers,
- data brokers,
- traffic management software developers.

FGDC

WZDWG

One Federal co-chair
One Community co-chair

WZDx Specification

| Specification Update Subgroup | Technical Assistance Subgroup | Worker Presence Subgroup | Spec Extension Subgroup | Smart Work Zone Devices Subgroup |

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Work Process
Collaboration and roles

- Work was conducted in **6–8-month development "sprints"**, each resulting in a major or minor specification release
- **Co-chairs led** and largely executed each group's work
- **Meetings:** co-chairs met bi-weekly and led monthly subgroup meetings with the larger community
- ITS JPO funded Volpe and BAH to provide support and logistics to the working groups
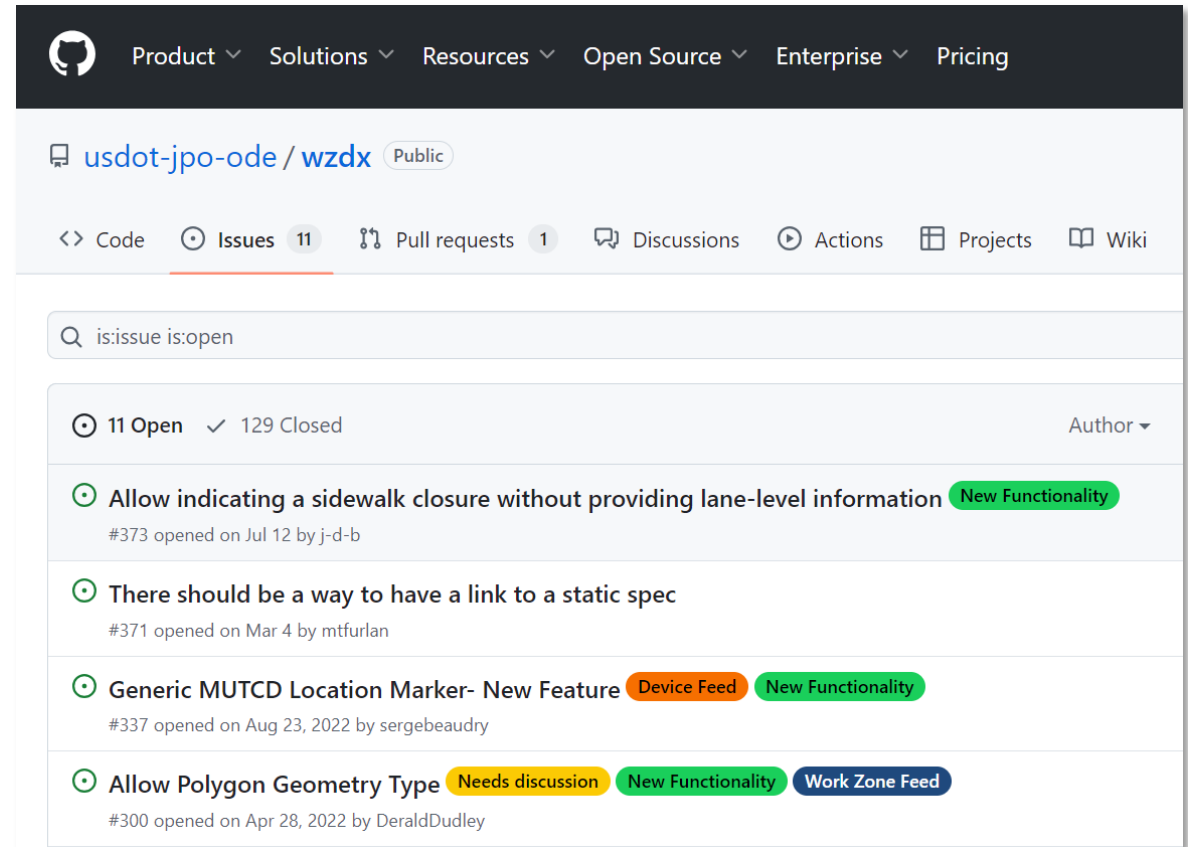
GitHub site was hub for all things WZDWG – for creating items to work on, collaborating on spec changes, and sharing meeting materials.

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Work Process
Sample Development timeline from WZDx v4.1

Activity	Subgroup Meetings	Deadline
Start-up – Introductions, charter review, backlog grooming	January 27	N/A
Review and Prioritize Issues	January 27 February 23 April 4 May 5	**Cut off for new issues:** before *early May* meeting
Modify Specification Through PRs	April 4 May 5 **June 7**	**All PRs finished:** June 3
Review and Finalize Next Version	*Mid-June (if needed)*	**All PRs through QA/QC:** July 1
Present and Vote on Changes	July 25 (WZDWG)	**Voting period:** July 26 – August 8
Release New Version of Specification		**Specification released:** End of August

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Development Questions

- Versions & iteration timeline –
  - What is the right development pace?
  - Should there be more of a break between development cycles?
- When is the specification complete and the working group done?
- Is this a perpetual group or do we just build version one?
  - If not perpetual, where does the spec live "after"?
- Who takes responsibility for validating compliance and accuracy?

Questions?

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