

National Collaboration

Bicycle, Pedestrian, and Accessibility Infrastructure Data

May 29, 2025



U.S. Department of Transportation
Office of the Secretary of Transportation

Bureau of Transportation Statistics

FGDC.GOV
FEDERAL GEOGRAPHIC DATA COMMITTEE

Facilitators

Co-Chairs

- **Anat Caspi**, University of Washington
- **Bahar Dadashova**, Texas A&M Transportation Institute
- **Jeff Whitfield**, Centers for Disease Control and Prevention

Bureau of Transportation Statistics Admin Team

- **Jay Davis**, Presidential Innovation Fellow
- **Carl Fredlund**, MobilityData
- **Justyna Goworowska**, Spatial Transportation Data Analyst
- **Reid Passmore**, Active Transportation Data Fellow
- **Sara Secunda**, Volpe Center

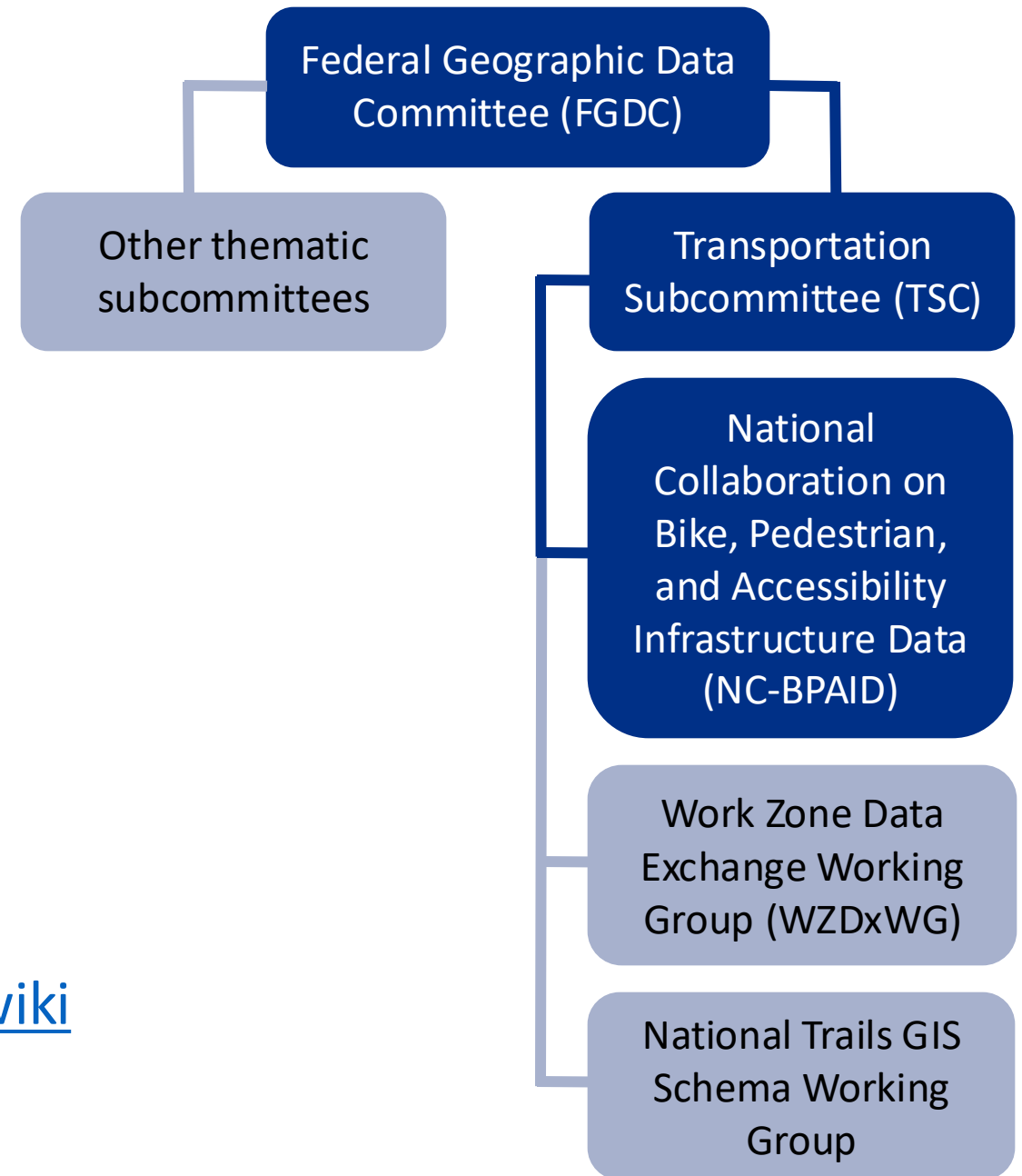
Housekeeping

- Please stay muted to reduce background noise. If you would like to speak or ask a question, please raise your hand and unmute when acknowledged.
- Type any questions you have into the chat. We will be monitoring the chat and will respond or raise your questions.
- Please type your affiliation in the chat.
- Post-meeting content will be available within about a week at: <https://github.com/dotbts/BPA/wiki>

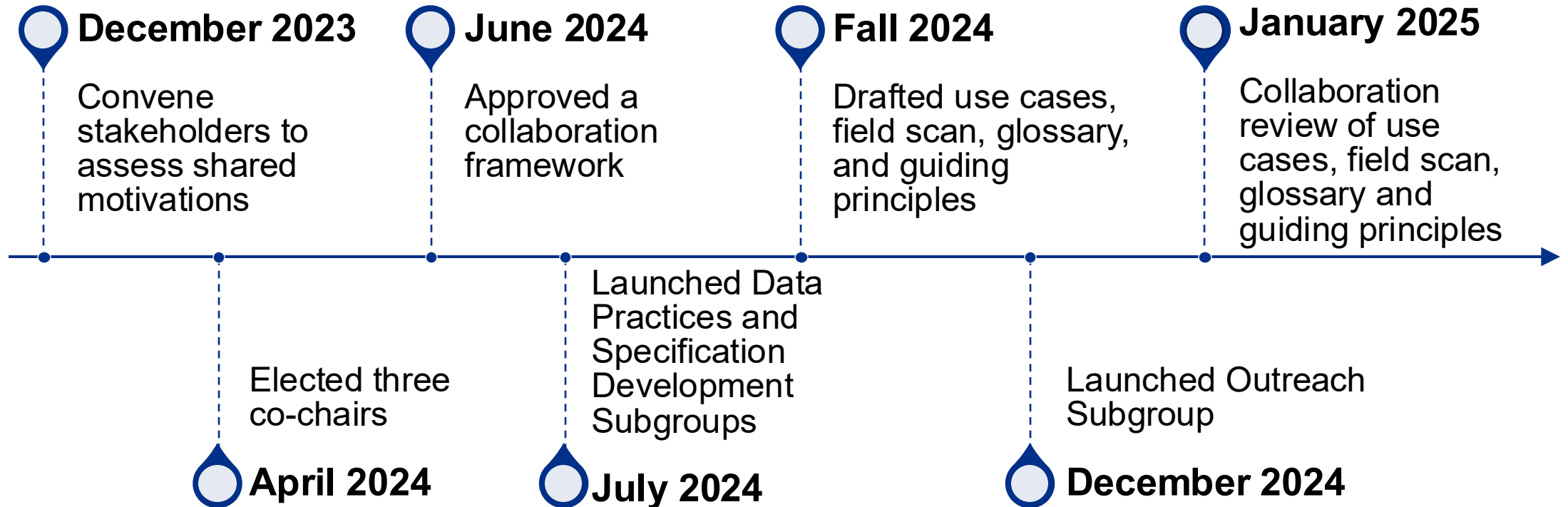
Context

- Why are we here?
- Why is the Bureau of Transportation Statistics (BTS) facilitating?
- What happened at the last meeting?

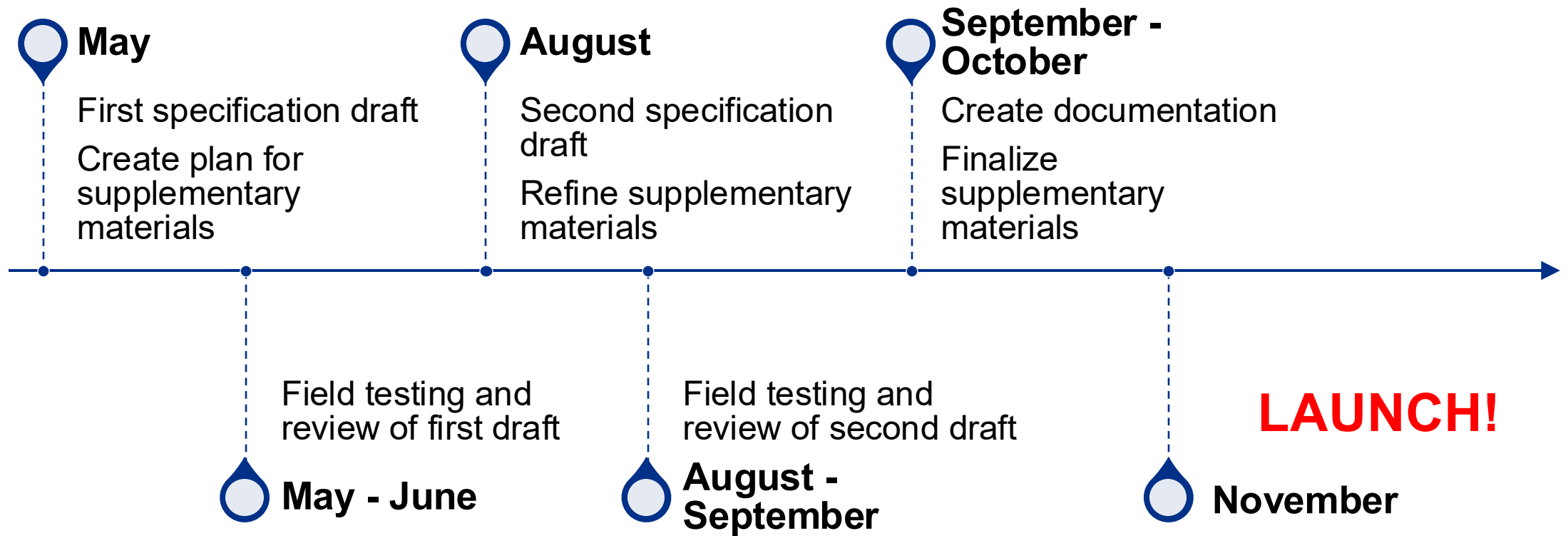
Details: <https://github.com/dotbts/BPA/wiki>



Milestones



Plans for 2025



Objectives of Today's Meeting

1. Vote results for guiding principles and co-chairs
2. Invite the Collaboration to vote on a Co-chair
3. Provide subgroup updates
4. Learn about automated mapping of pedestrian infrastructure through aerial imagery

Agenda

Welcome	5 minutes
NC-BPAID status updates and actions	5 minutes
Open floor for announcements	5 minutes
Co-chair and guiding principles vote results	5 minutes
Co-chair election and voting process	5 minutes
Subgroup updates	10 minutes
Specification Discussion: Tier Model	20 minutes
Automated mapping of pedestrian infrastructure through Tile2Net and Madina, Dr. Andres Sevtsuk, MIT	34 minutes
Closing	<1 minutes

NC-BPAID Updates

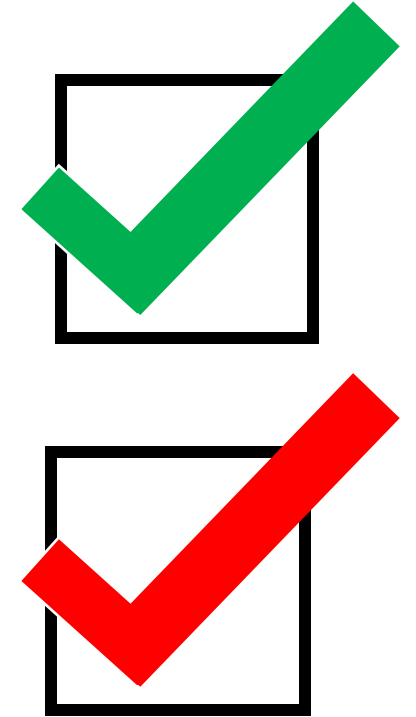
- Staff updates:
 - Allison Liu and Kristina Wallace have departed BTS :(
- Join a subgroup and bring a friend! Fill out the [subgroup form](#)
 - Outreach
 - First Thursday of each month, 4-5p ET
 - Specification Development
 - Every other Wednesday, 4-5p ET (next meeting June 11)
 - Data Practices
 - First Thursday of each month, 3-4p ET

Open Floor for Announcements

Co-chairs and guiding principles vote results

Co-Chairs and guiding principles vote results

- Congratulations to Anat Caspi and Jeff Whitfield on their re-election!
 - 29 votes
- Guiding principles adopted!
 - 27 votes



Co-Chairs vote

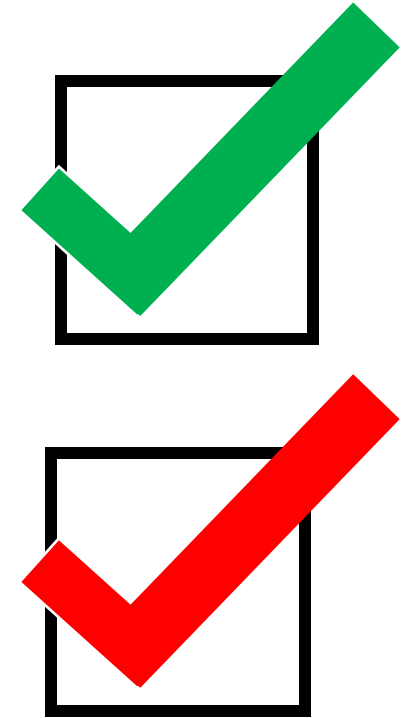
Co-Chair candidates

- Bahar Dadashova has completed her one-year term
- Bahar is running for re-election; write-ins are an option.



Co-Chairs voting process

- Vote is open from now through June 12th, 11:59p PT.
- Online asynchronous vote, decided by simple majority of voters.
- Voting form in the chat; will be sent out by email today.
- You must be a voting member.
 - Not sure if you are? Check the list on Github.
 - Or vote anyway and we will work it out.
- Candidate statements are linked on the voting form.



Update from Data Practices Subgroup

Update from Outreach Subgroup

Update from Specification Development Subgroup

Specification Development: Tier Model

Spec Compliance Tiers: Why?

- Existing datasets and processes will be varied
 - We want the spec to be a roadmap to help everyone reach the same point(s)
- Even with new collection efforts: funding and expertise will vary
 - We want to help people maximize the value of their efforts, whatever that effort is
- Technology will evolve over time
 - Want to leverage its full capabilities as the world changes
- Resource prioritization will be different across orgs, e.g. for accessibility attributes or inventory attributes
 - Leverage every org and person's expertise and lived experience to generate a fuller picture of the on-the-ground experience

Spec Compliance Tiers: How Tiers Help

- Provide guidance on what can be accomplished with what one has now
- Provide a roadmap of where one can go “from here” to enhance their data or do more
- **Not** intended to be any kind of assessment--one can be at different levels across different dimensions of a dataset, for example
- Four levels in total

Spec Compliance Tiers: To Be Tested

- We have a better sense of the two anchor points: but how do attribute tiers get defined in the middle, e.g. at levels 2 and 3?
 - Frontload requirements? More linear? Defer requirements to higher tiers?
- Additional resources to help orgs advance to where they choose: best practices, templates, tools, etc.

At Earlier Tiers

- Data collection processes are more **focused around creating an inventory of assets** that is exhaustive, but not necessarily complete across each data attribute
 - More advanced: capture what isn't there by capturing the extent of a survey
- Data is likely used in conjunction with existing qualitative processes for things like project prioritization; data is not likely routable, or is only routable within small “islands” (= no/little network analysis)
- Data makes more simplifications and generalizations:
 - Geometry is related to the road; not necessarily reflective of actual infrastructure path (e.g. around obstructions)
 - Attributes may not capture the full variability of an attribute—e.g. Width
 - Observations may be old or out-of-date
- Dataset is focused on one primary infrastructure type: e.g. bike paths *or* sidewalks
- Linking to other data sets is possible, but only spatially and inferentially. Routing, if possible, requires assumptions by the data user.
- Data may only be partly vetted by infrastructure owner, or only vetted by third-parties
- Data is only a snapshot of a system of record, i.e. newer data may exist somewhere
- There is no easy way to make any corrections or suggestions as a data consumer when one notices an error.

At Later Tiers

- Data collection processes are more **focused around the completeness of data** for each asset
 - More advanced: a “digital twin”
- Data collection and processes of use are more mature:
 - Collectors likely received training and/or QA/QC processes ensure minimal variance and maximum consistency across individual collectors/sources.
 - Collection technology may be highly accurate, e.g. LIDAR
 - Data lives within a single-source-of-truth database; analysis or reporting efforts within the org pull from that single source
- Data is routable via metadata or spatial attributes or both, allowing network-level analysis for things like a gap analysis or sidewalk project prioritization.
- Data is more precise and accurate:
 - Geometries reflect actual infrastructure alignment, especially when they vary from the roadway.
 - Edges are segmented when attribute values change “significantly”, e.g. width
 - More complete preference-based attributes, e.g. around accessibility, LoS
 - Obstructions
- Dataset includes multiple complementary networks for routing: e.g. bike facilities **and** streets **and** multi-use paths **and** transit, etc.
 - Data may be a synthesis or “fusion” of multiple data sources to create a more complete picture
- Linking to other datasets possible via common identifiers stored within the data
- Recent data is readily available from systems of record; APIs or other facilities exist to make suggested corrections when users discover errors
- Data is vetted by infrastructure owner, ideally on a periodic basis

On Routing...

Data Aspect	Tier 1	Tier 2 (more TBD)	Tier 3 (more TBD)	Tier 4
Routable via Spatial Topology (e.g. edge-to-edge overlap)	Optional; likely inconsistently and incompletely	More complete spatial coverage; guidelines for data users on tolerances?	Required; consistently and completely	
Routable via Graph Metadata (e.g. from/to node values on edge)	Optional, but encouraged	Ideally (e.g. as part of a QA/QC process)	More complete spatial coverage	Required; consistently and completely
Conflation (i.e. linkability to other networks)	Optional; likely only spatially	Optional; with ID values to a public dataset like OSM		Optional; with ID values to a system of record
Accessibility and LoS Attributes	Only basic	Basic+	Crossing edges for dedicated infrastructure; more complete	Very complete; crossing edges for dedicated infrastructure; turn movement-level data
Geometric Representation	Tied to road centerlines, presence via “left” or “right” attributes		Dedicated network features when deviated from the roadway	Dedicated network features (except when part of roadway); crossing edges; connections to other networks, e.g. trails, transit
Segmentation Level	Low/none; obstructions may need to be spatially joined	Medium		High—for changes in attributes and obstructions

Automated mapping of pedestrian infrastructure through aerial imagery

Thank you!

Next full meeting: Thursday, June 26th @ 3pm ET



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