

# **FGDC Address Subcommittee**

**July 8, 2020**

**11:00 pm– 12:30 pm Eastern**



# Meeting Agenda

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1. **Welcome and Introductions/Roll Call – 3 min**
2. **NAD Updates – Steve Lewis – 4 min**
3. **NAD Strategy Working Group Update – Steve Lewis – 4 min**
4. **Address Workflow Subgroup Update – Matt Zimolzak – 4 min**
5. **Puerto Rico Civic Address Vulnerability Evaluation (PRCAVE) Update – Raul Rios-Diaz – 4 min**
6. **ISO 19160: Addressing Projects and Standards – Sean Uhl – 30 min**
7. **Content Recommendations for the National Address Database (NAD) – 40 min**
8. **Action Item Review – Dave Cackowski – 1 min**
9. **Adjourn**

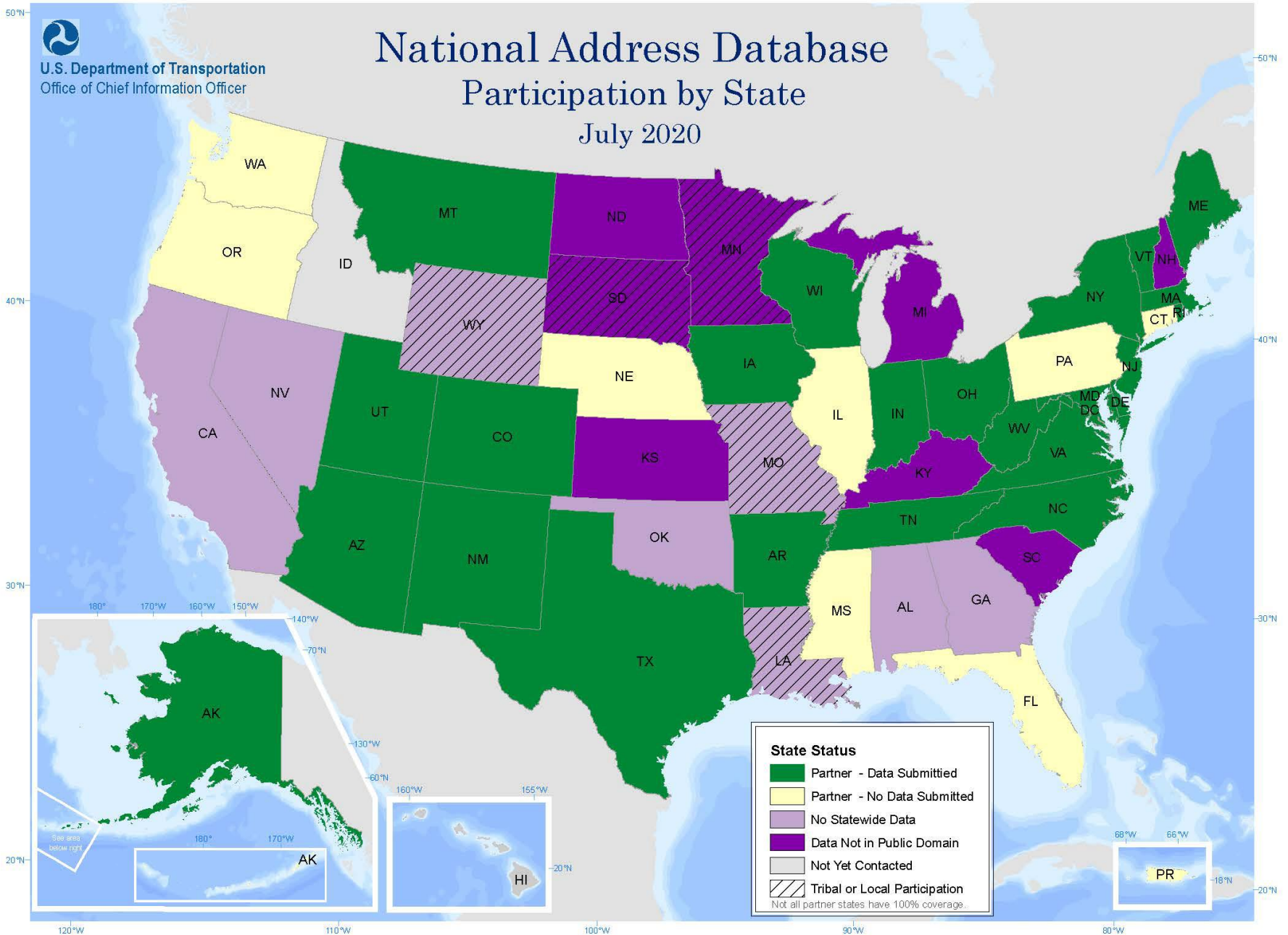
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# NAD Updates



U.S. Department of Transportation  
Office of Chief Information Officer

# National Address Database Participation by State July 2020



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# NAD Strategy Working Group Update

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# Address Workflow Subgroup Update

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# Puerto Rico Civic Address Vulnerability Evaluation (PRCAVE) Update

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# ISO 19160: Addressing Projects and Standards



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# Content Recommendations for the National Address Database (NAD)

# Table 1

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## Recommended NAD Data Items, and Corresponding NAD Pilot Schema Items

- **Recommended Content Item**
- **M/C/O** - M = Mandatory (minimum content); C = Conditional (depending on the address class— see Table 2); O = Optional.
- **NAD Pilot Schema Item**
- **Same?** –
  - **“Same”** = Item definitions have no substantive difference.
  - **“New”** = Item is recommended for addition to the NAD.
  - **“Redefined”** = Item definitions are substantively different.
  - **“Dropped”** = NAD Pilot Project item was excluded from the recommended NAD content.
- **Difference** - For redefined items, this column states how the new definition differs from the NAD Pilot Project Schema item definition.

# Table 1

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## Recommended NAD Data Items, and Corresponding NAD Pilot Schema Items

**KEY:** Green - Same; Blue - New; Yellow - Redefined; Red – Dropped

### Address Number Elements

- Address Number Prefix - C
- Address Number - C
- Address Number Suffix - C
- Complete Address Number – C

### Street Name Elements

- Street Name Pre Modifier – C
- Street Name Pre Directional – C
- Street Name Pre Type – C
- Separator – C
- Street Name – C
- Street Name Post Type – C
- Street Name Post Directional – C
- Street Name Post Modifier – C
- Complete Street Name - C

# Table 1 (Cont.)

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## Recommended NAD Data Items, and Corresponding NAD Pilot Schema Items

**KEY: Green - Same; Blue - New; Yellow - Redefined; Red – Dropped**

### Subaddress Elements

- Subaddress Type – C
- Subaddress Identifier – C
- Subaddress Element – C
- Complete Subaddress – C

### Landmark Name Elements

- Landmark Name – C

# Table 1 (Cont.)

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## Recommended NAD Data Items, and Corresponding NAD Pilot Schema Items

**KEY: Green - Same; Blue - New; Yellow - Redefined; Red – Dropped**

### Place and State Name Elements

- County Name – M
- Municipality Name – M
- Postal City Name – M
- Census Designated Place Name – O
- Unincorporated Community Name – O
- Neighborhood Name – O
- Native American Area Name – O
- Native American Tribal Subdivision Area Name – O
- Urbanizacion Name (PR) – O
- Other Place Name – O
- State Name – M
- ZIP Code – O
- Zip Plus 4 - O

# Table 1 (Cont.)

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## Recommended NAD Data Items, and Corresponding NAD Pilot Schema Items

**KEY: Green - Same; Blue - New; Yellow - Redefined; Red – Dropped**

### Address ID, Address Authority, and Address Reference System Area Name Attributes

- Address UUID – M
- Address Authority – M
- Address Reference System Name – O

### Address Coordinates, Address Placement, and Address Point Attributes

- Address Longitude -M
- Address Latitude - M
- US National Grid Coordinate - M
- Address Elevation - O
- Address Placement - M
- Address Point - M

# Table 1 (Cont.)

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## Recommended NAD Data Items, and Corresponding NAD Pilot Schema Items

**KEY: Green - Same; Blue - New; Yellow - Redefined; Red – Dropped**

### Address-to-Address Relationship Attributes

- Related Address ID - O
- Address Relation Type - O

### Address-to-Parcel Relationship Attributes

- Address Parcel Identifier Source - O
- Address Parcel Identifier - O

# Table 1 (Cont.)

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## Recommended NAD Data Items, and Corresponding NAD Pilot Schema Items

**KEY:** Green - Same; Blue - New; Yellow - Redefined; Red – Dropped

### Additional Address Documentation Attributes

- Address Classification – M
- Address Lifecycle Status – O
- Address Start Date – O
- Address End Date – O
- Address Last Revision Date – M
- Address Anomaly Status – O
- Location Description – O
- Address Feature Type – O
- CLDXFv1 Subaddress Type – O
- CLDXFv2 Named Location Type – O
- Subaddress Component Order – O
- Element Sequence Number – O
- Place Name Type – O
- Delivery Address Type - O



# Table 1 (Cont.)

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## Recommended NAD Data Items, and Corresponding NAD Pilot Schema Items

**KEY: Green - Same; Blue - New; Yellow - Redefined; Red – Dropped**

### Additional Lineage Attributes

- NAD Data Provider – M
- Data Set ID – M

### Pilot Project Elements That Were Merged, Deferred, or Dropped

- Milepost – Incorporated into the address number elements
- Complete Landmark Name – May be included as a complex element
- Bulk Delivery ZIP Code – Excluded from recommended content
- Bulk Delivery ZIP Plus 4 Addition – Excluded from recommended content

# Address Classes in the NAD

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## NAD Scope Statement

The National Address Database shall provide, in a single, authoritative, publicly-available spatial database, all United States addresses, along with their coordinate locations, metadata, and other attributes, for the following address classes (as those classes are defined in the FGDC address data standard):

### Thoroughfare Classes

- Numbered thoroughfare addresses (e.g., “123 Main Street”)(FGDC 3.1.1.1)
- Intersection addresses (e.g., “Boardwalk and Park Place”) (FGDC 3.1.1.2)
- Two-number address ranges (e.g., “4641-4651 Tanglewood Drive”) (FGDC 3.1.1.3)
- Unnumbered thoroughfare addresses (e.g., “Ili-Ili Airport Road”) (FGDC 3.1.1.5)

### Landmark Classes

- Landmark addresses (e.g. “United States Capitol Building”) (FGDC 3.2.2.1)
- Community addresses (e.g. “23B Edgewater Park”) (FGDC 3.2.2.1)

# FGDC Standards Reference Model

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- **Types of FGDC Standards:** Data, Processes, Organizations, Technology
- **Types of Data Standards**
  - **Data Content** – *“... provide semantic definitions of a set of objects.”*
  - **Data Classification** – *“...provide groups or categories of data that serve an application.”*
  - **Data Useability** – *“... describe how to express the applicability or essence of a data set or data element and include data quality, assessment, accuracy, and reporting or documentation standards.”*
  - **Data Transfer** – *“...facilitate moving data among systems, without prior specification of the intended end use of the data.”*
  - **Data Symbology or Presentation** – *“... define graphic symbols. They standardize the language for describing those symbols.”*
- FDGC address standard has four parts: Content, Classification, Quality, Exchange
- <https://www.fgdc.gov/standards/process/FGDC-standards-reference-model> See pp. 6-10.

# Addresses and Address Classes

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**Definition:** “An address specifies a location by reference to a thoroughfare or a landmark; or it specifies a point of postal delivery.”

**Classification:** Addresses are classified by their syntax:

1. The address elements (mandatory and optional) needed or permitted in constructing the complete address, and
  2. The order in which the elements are arranged.
- Each class syntax defines the record structure need to store and exchange all addresses of that class.
  - Ten classes suffice for all U.S. addresses. Six are recommended for the NAD.
  - Classification is independent of anything found at the location specified by the address.

# Types of Address Classes

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1. **\*Thoroughfare classes** – refer to a thoroughfare
2. **\*Landmark classes** – refer to a named landmark (or community name)
3. **Postal delivery classes** – specify a point of postal delivery that has no definite relation to the location of the recipient
4. **General class** – for addresses that do not conform to any defined class, or whose classification has not been determined, or for files with multiple classes mixed together.

Classes differ in the elements that precede the place, state and ZIP.

All classes include the same set of place, state, and ZIP Code elements

- { **Complete Place Name \*** } + { **State Name \*** }  
+ { Zip Code } + { Zip Plus 4 }

# Numbered Thoroughfare Class

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**Example:** “123 Main Street, Kearney KS 67898”

## **Syntax:**

{ Complete Landmark Name or Complete Place Name } +  
{ **Complete Address Number \*** } + { **Complete Street Name \*** } +  
{ Complete Subaddress }

**Defining Characteristics:** Addresses of this class must include a Complete Address Number and a Complete Street Name.

**Note:** Most business and residential addresses are numbered thoroughfare addresses.

# Intersection Addresses

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**Example:** “Boardwalk and Park Place, Atlantic City NJ”

## **Syntax:**

{ Complete Landmark Name or Complete Place Name }  
+ { **Complete Street Name \* { Separator Element \* }** } (2..n)

## **Defining Characteristics:**

1. An address of this class must include two or more Complete Street Names, each separated by a Separator Element.
2. Complete Address Numbers are omitted.

**Notes:** Most useful for infrastructure and events within intersections

# Two-number Address Ranges

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**Example:** “5941-5951 Inglewood Drive, Edmondson MD 20781”

## Syntax:

{ Complete Landmark Name or Complete Place Name } +

{ **Complete Address Number (low) \*** } + { **Separator Element \*** } + { **Complete Address Number (high)\*** } + { **Complete Street Name \*** }

## Defining characteristics:

- Addresses of this class must include two Complete Address Numbers separated by a hyphen. The first Complete Address Number must be less than or equal to the second.
- A Complete Street Name must follow the two Complete Address Numbers.

**Note:** The range may specify a single site, or an entire thoroughfare, or some portion of it.



# Unnumbered Thoroughfare Addresses

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**Example:** “Ili-Ili Airport Road, Ili-Ili AS”

**Syntax:** { Complete Landmark Name or Complete Place Name } + { **Complete Street Name \*** } + { Complete Subaddress } + { Complete Place Name \* } + { State Name \* } + { Zip Code } + { Zip Plus 4 } + { Country Name }

**Defining characteristics:** Addresses of this class must contain a Complete Street Name with no Complete Address Number preceding it.

**Notes:** Used only where no address numbers have been assigned along a named thoroughfare.

# Landmark Addresses

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**Example:** “United States Capitol Building, Washington DC”

**Syntax:**

**{ Complete Landmark Name \* } (1..n) + { Complete Subaddress }**

**Defining characteristics:** Addresses of this class must include a Complete Landmark Name, with no Complete Address Number preceding it and no Complete Street Name following it.

# Community Addresses

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**Example:** “2321B Edgewater Park, New York, NY 10465”

## **Syntax:**

**{ Complete Address Number \* } + { Complete Landmark Name or Complete Place Name \* } + { Complete Subaddress }**

**Defining characteristics:** Addresses of this class must include a Complete Address Number followed by a Complete Landmark Name or a Complete Place Name, and they must not include a Complete Street Name.

# The Other Classes

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**Excluded:** Four-number Address Ranges (no suitable nationwide road centerline dataset is available at this time).

**Deferred:** Postal Delivery Classes

- USPS Postal Delivery Box (“PO BOX 16943”)
- USPS Postal Delivery Route (“RR 2, BOX 152”)
- USPS General Delivery Office (“General Delivery”)

**Excluded:** General Class (class unknown; or addresses of different classes mixed together). Potentially useful as a default value within staging tables when addresses have not been classified previously.

# Why Include Address Classes in a Content Recommendation?

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- Classes determine elements: mandatory, optional, excluded.
- Classes provide a record structure for which data tables can be designed
- If address records also include an Address Classification attribute, the records can be QC'd to verify that they in fact have all required elements and no prohibited elements.

# Address Elements

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## **Address elements vs. address attributes**

- Address elements are used to construct the complete address.
- Address attributes describe the complete address or an address element, but they are not part of the address.

## **Complex elements vs simple elements.**

- Complex elements are formed from two or more simple or other complex elements.
- Simple elements are defined independently of all other elements.

# Address Number Elements

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## Simple elements:

- **Address Number Prefix** (optional)
- **Address Number** (required; integer)
- **Address Number Suffix** (optional)

## Complex Element: Complete Address Number =

*{Address Number Prefix + **Address Number**\* + Address Number Suffix }*

## Mandatory in:

Numbered Thoroughfare, Two-number Address Range (2), and Community Addresses

## Prohibited in:

Intersection, Unnumbered Thoroughfare, and Landmark Addresses

# Street Name Elements

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## Simple Elements:

- Pre Modifier, Pre Directional, Pre Type, Separator
- **Street Name (required)**
- Post Type, Post Directional, Post Modifier

## Complex Element: Complete Street Name

### Mandatory in:

Numbered Thoroughfare, Intersection (2+), Two-number Address Range, Unnumbered Thoroughfare Addresses

### Prohibited in:

Landmark, Community Addresses



# Subaddresses

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## Simple Elements

Subaddress Type (e.g., *Room* in “Room 536”)

**Subaddress ID (required)** (e.g., *536* in “Room 536”)

## Complex Elements

Subaddress Element (e.g., “Fifth floor”; or “Room 536”)

= { Subaddress Type + **Subaddress ID\*** }

Complete Subaddress (“Fifth floor, Room 536”)

= A series of one or more Subaddress Elements

## Optional in:

Numbered Thoroughfare, Unnumbered Thoroughfare, Landmark, Community addresses.

## Prohibited in:

Intersection, Two-number Address Range addresses

# Landmark Names

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## Simple Elements

Landmark Name

## Complex Element *[NAD recommendation deferred]*

*Complete Landmark Name*

*= A series of one or more Landmark Names*

## Mandatory in:

Landmark and Community addresses

## Optional in:

Numbered Thoroughfare, Intersection, Two-number Address Range, and Unnumbered Thoroughfare addresses

# Why Include Complex Elements in the NAD?

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- Complex elements, along with address classes, simplify the discussion of how complete addresses are formed from simple elements.
- Complex elements and simple elements together allow for inputs with multiple levels of parsing.
- This lowers the barriers to entry, by accommodating practices common among data providers that do not parse their addresses completely into simple elements.

# Questions?

## Address Content Subgroup

David Cackowski, Chair

Florinda Balfour

Christian Jacqz

Ed Wells

Matt Zimolzak



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# Action Items

# Thank You



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