Leveraging Relationship Classes in the Geodatabase

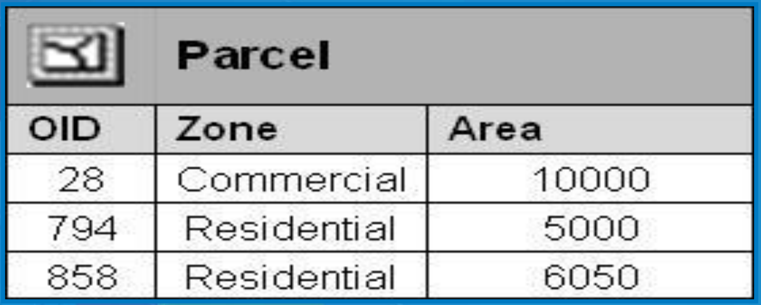
Jill Penney

Presentation Outline

- What is a relationship class?
- How to create a relationship class
- Navigating between related objects
- Editing with a relationship class

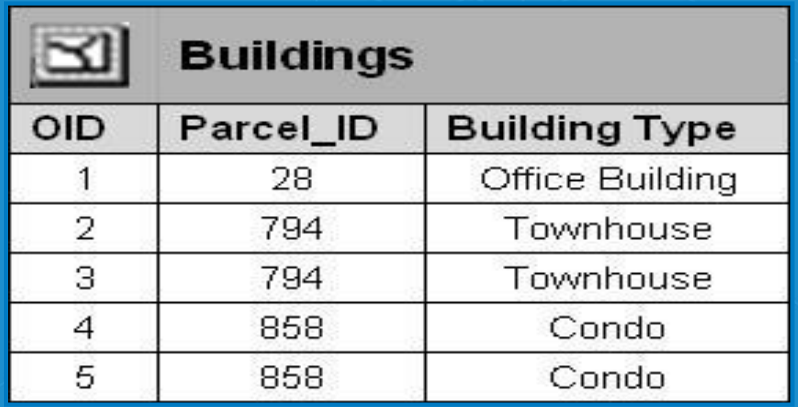
What is a Relationship Class?

- An item in the Geodatabase that stores information about a relationship between two feature classes and/or tables.
- Example:



Parcel

OID	Zone	Area
28	Commercial	10000
794	Residential	5000
858	Residential	6050



Buildings

OID	Parcel_ID	Building Type
1	28	Office Building
2	794	Townhouse
3	794	Townhouse
4	858	Condo
5	858	Condo

What is a Relationship Class?

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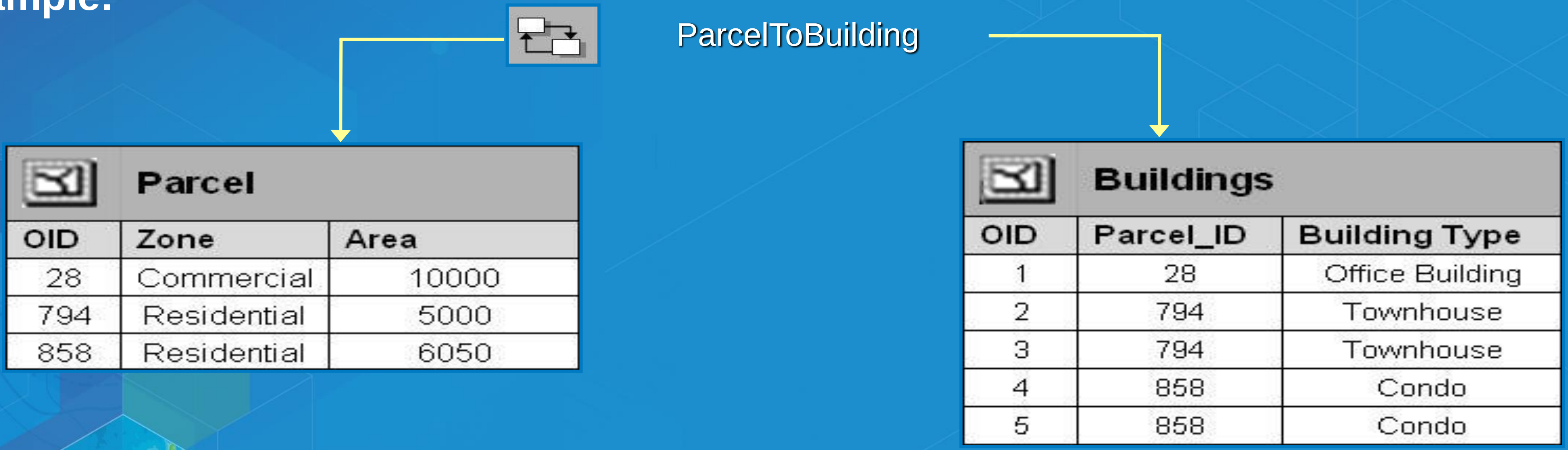

ParcelToBuilding

Parcel

OID	Zone	Area
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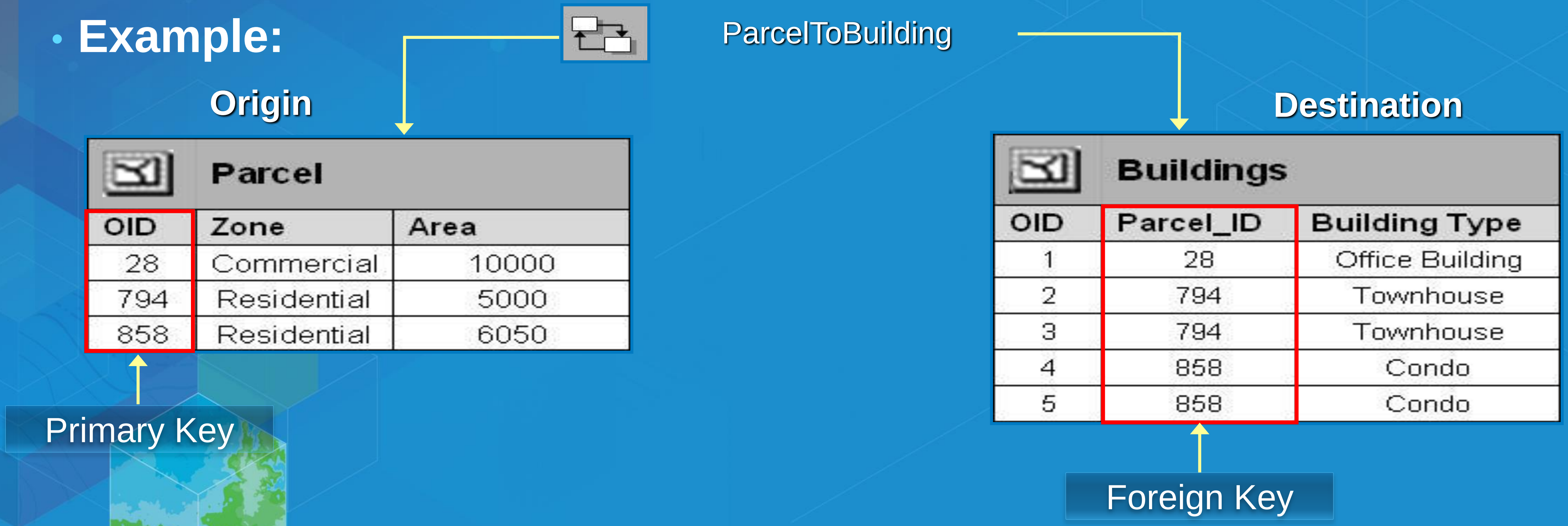

ParcelToBuilding

Origin

Parcel

OID	Zone	Area
28	Commercial	10000
794	Residential	5000
858	Residential	6050

Primary Key

Destination

Buildings

OID	Parcel_ID	Building Type
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Foreign Key

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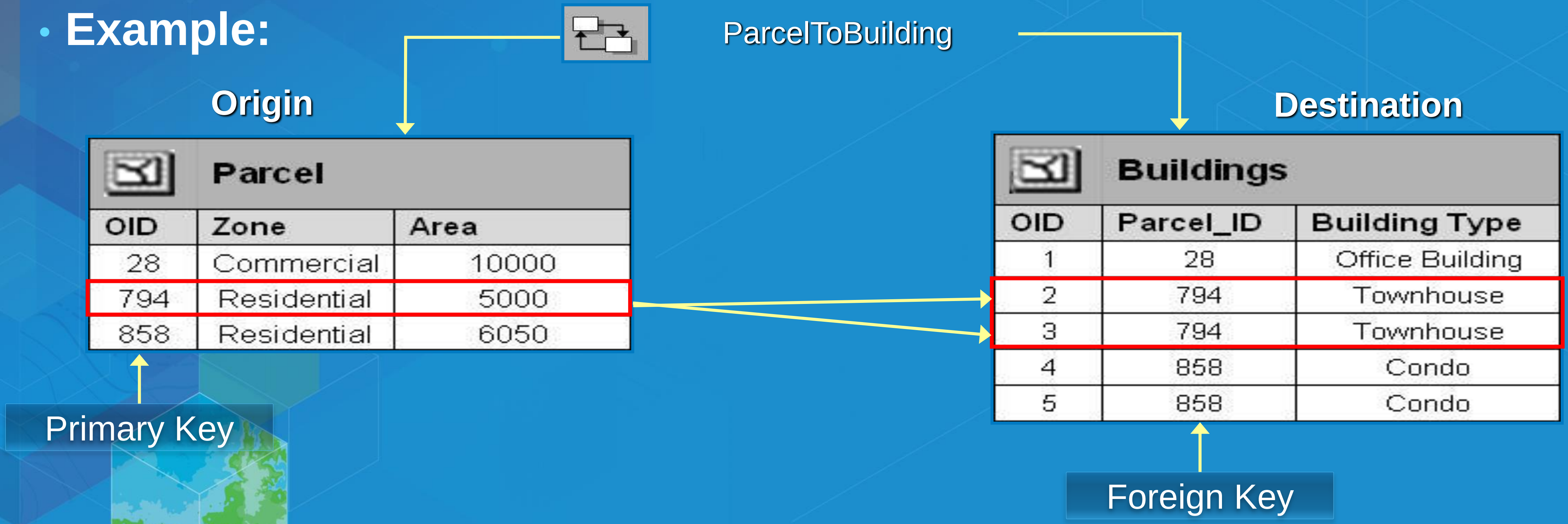

ParcelToBuilding

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Foreign Key

Why use a Relationship Class?

- Navigating
  - Identify related objects
- Editing
  - Enforces referential integrity
  - Facilitate editing with automatic updates
  - Rules define and control how objects relate
  - Rules can be enforced through Validation
- Versioning
  - Participate in versioning

Relationship Classes vs. Relates and Joins

	Relationship classes	On-the-fly relates	Joins
Scope	Geodatabase	Cross database or data source	Cross database or data source
Typical uses	Ensuring data integrity	Editing with low overhead	Labeling, symbology
Composite objects	Yes	No	No
Attributes	Yes	No	No
Relationship rules	Yes	No	No

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How to create a Relationship Class?

- Catalog
  - Relationship Class Wizard

- Geoprocessing Tools
  - Located in the Data Management toolbox
    - Create Relationship Class
    - Table to Relationship Class

Creation and Navigation

Create a Relationship Class

Navigate between related features

Editing with a Relationship Class

- Behavior is dependent on the type of relationship class

- Simple
  - Objects are independent of one another
  - Ex. Parcels and Owners
- Composite
  - Destination objects are dependent on the related origin objects
  - Ex. Utility Poles and Transformers

Editing Origin Objects with a Relationship Class

	Simple	Composite
Delete	Foreign key set to Null in objects related to deleted object	Objects related to deleted object are deleted
Merge	Foreign key set to Null in objects related to deleted object	Objects related to deleted object are deleted
Split	Larger part of the split maintains the relationships	Larger part of the split maintains the relationships
Move/ Rotate	No effect on related objects	If messaging is set to Forward the related objects will also move

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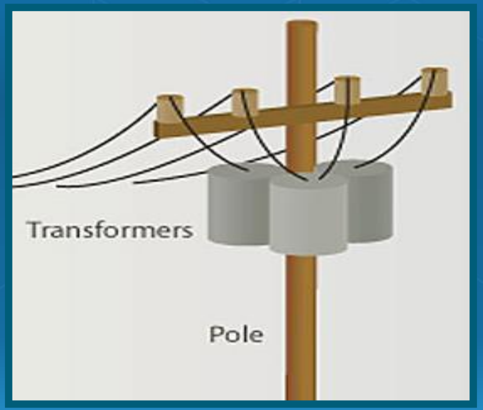
Relationship Class Rules

- Restrict how objects in the origin and destination classes can be related
- Set the minimum and maximum number of relatable objects
- Set rules based on subtypes to constrain the types of objects that can be related
- Validate the rules in an edit session

Relationship Class Rule Example

- Utility Pole - Transformer
- Pole Subtypes: Wood or Steel
- Transformers must be related to 1 pole
- Wood poles can support 1 to 2 transformers
- Steel poles can support 1 to 3 transformers



Editing

Editing with Relationship Classes

Relationship Classes Summary

- Relates two object classes
- Stored in a feature dataset or stand alone
- Created in Catalog with the wizard or a GP tool
- Navigate between related objects
- Enforces referential integrity

Unsupported

- Recursive relationships
- Composite keys
  - (complex primary and foreign keys)

Things to consider with composite

- If a composite relationship class exists between two classes, no other relationship class can be created between the same two classes.
- An object class cannot be the destination in more then one composite relationship class.
- It is not recommended to use composite relationship classes with feature classes that are participating in a geometric network

Geodatabase ArcObjects API

- To create a relationship class
  - IFeatureWorkspace.CreateRelationshipClass
  - IRelationshipClassContainer.CreateRelationshipClass

- To get and set relationship class properties
  - IRelClassSchemaEdit
  - IRelationshipClass
  - IRelationshipRule
  - IRelationship

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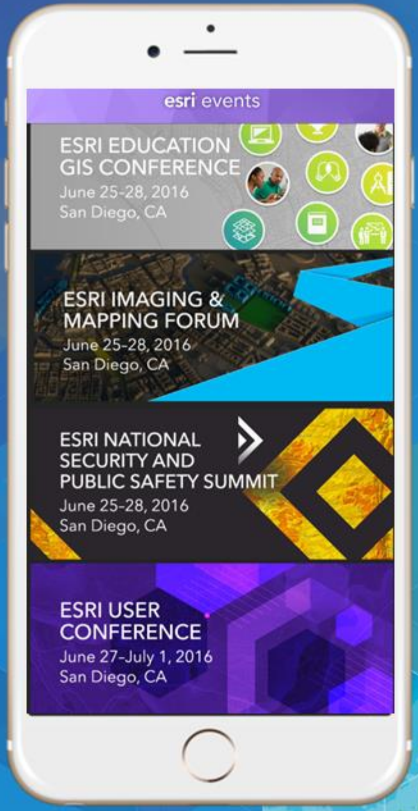

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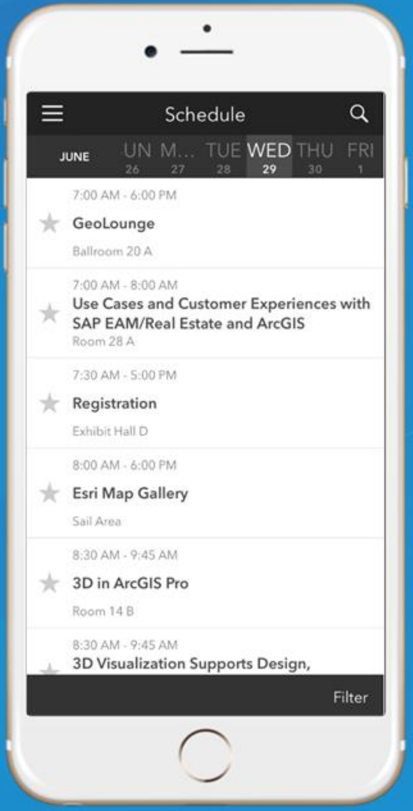

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JUNE | UN 26 | M... 27 | TUE 28 | WED 29 | THU 30 | FRI 1

7:00 AM - 6:00 PM
GeoLounge
Ballroom 20 A

7:00 AM - 8:00 AM
Use Cases and Customer Experiences with SAP EAM/Real Estate and ArcGIS
Room 28 A

7:30 AM - 5:00 PM
Registration
Exhibit Hall D

8:00 AM - 6:00 PM
Esri Map Gallery
Sail Area

8:30 AM - 9:45 AM
3D in ArcGIS Pro
Room 14 B

8:30 AM - 9:45 AM
3D Visualization Supports Design,

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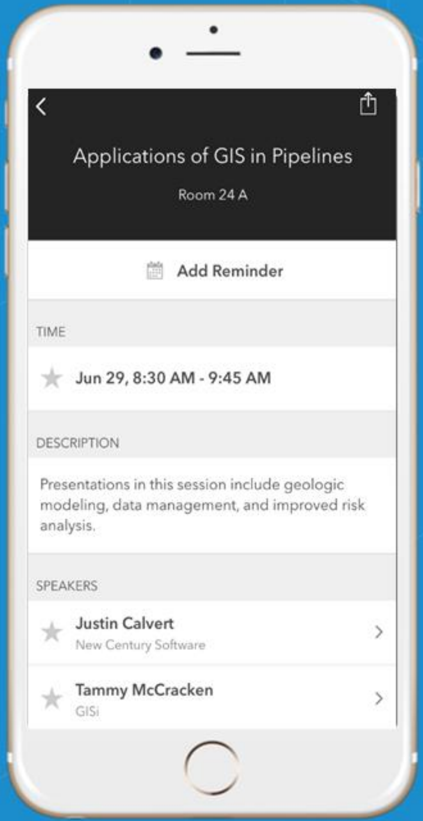

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Room 24 A

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TIME
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DESCRIPTION
Presentations in this session include geologic modeling, data management, and improved risk analysis.

SPEAKERS
Justin Calvert
New Century Software

Tammy McCracken
GISi

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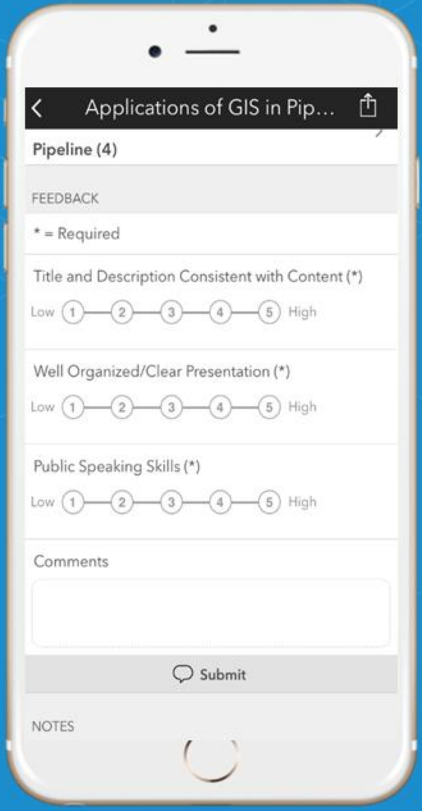

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Pipeline (4)

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