JOINT FLORIDA
Model Task Force & Transportation
Data and Analytics Workshop

FTO FORECASTING & TRENDS OFFICE
FDOT TDA TRANSPORTATION DATA & ANALYTICS

Central Florida Regional Planning Model (CFRPM) 7

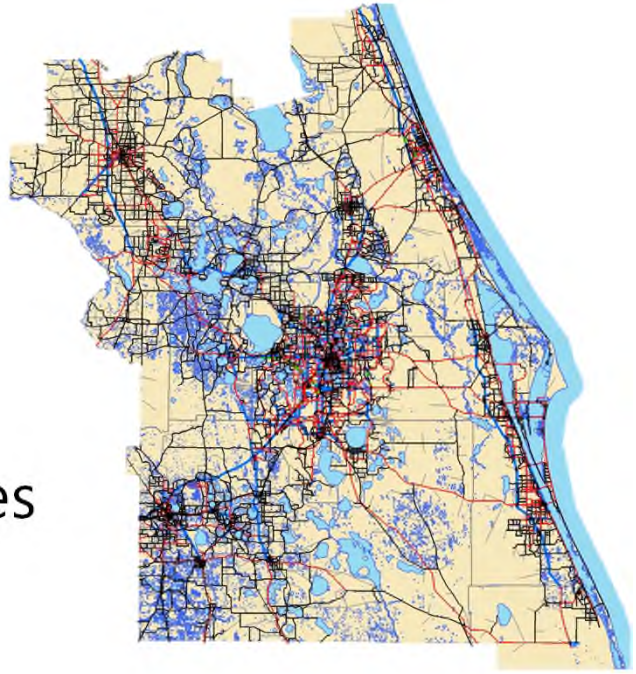
A GIS-Based Model

Agenda

- Introduction to CFRPM
- Shifting the travel demand model (TDM) paradigm
- Why we shifted it and how
- How it works
- The new GIS-based CFRPM
- The Future

Introduction to CFRPM

- Central Florida Regional Planning Model, Version 7
  - All of District 5
  - Polk County (D1)
  - Northern Indian County (D4)
- 4-Step, Gravity, Time-of-Day
- Completely re-scripted and rebuilt
- New TAZ structure, from 5,400 to 8,700 zones
- Newly built and segmented network



Slide 3

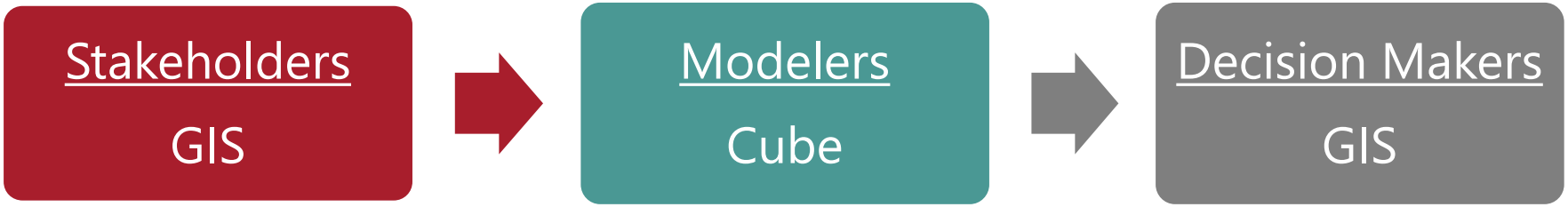
DM1 Removed LRTP from here and moved to comments.
Daniel Miller, 2/11/2020

DM2 Broke out the model coverage to clearly delineate the options
Daniel Miller, 2/11/2020

DM3 Added graphic of CFRPM 7 area.
Daniel Miller, 2/11/2020

Shifting the Paradigm

- Modeling's proprietary "black box" structure
  - What can we "open up" for upstream and downstream integration
- Where we sit shapes our perspective – transportation planners
- What enables us as planners to make better decisions?



Why We Shifted It & How

- GIS enables us as planners to make better decisions!
- The basis for CFRPM and new standard going forward
- Why did we do this?

GIS **complements** the *data we already* have in TDMs.

GIS **allows** users to *detect patterns, trends, and relationships* otherwise not known.

GIS **provides** increased *transparency and accountability* of model data

GIS **increases** *communication and collaboration* among consumers of models

GIS **increases** the *accuracy* of input data, resulting in better forecasts.

GIS **makes** model data *portable and easily shared*.

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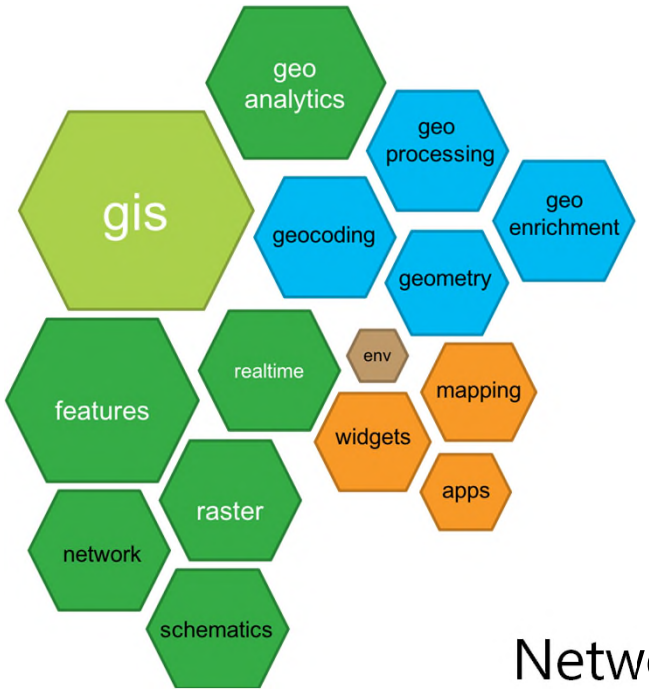
Why We Shifted It & How



Direction of data → spatial/geodatabase

Data warehouses, FDOT base maps

Quicker data integration & manipulation

Utilize power of GIS platforms

Mature & stable with powerful database & programming integration (VBA, Python)

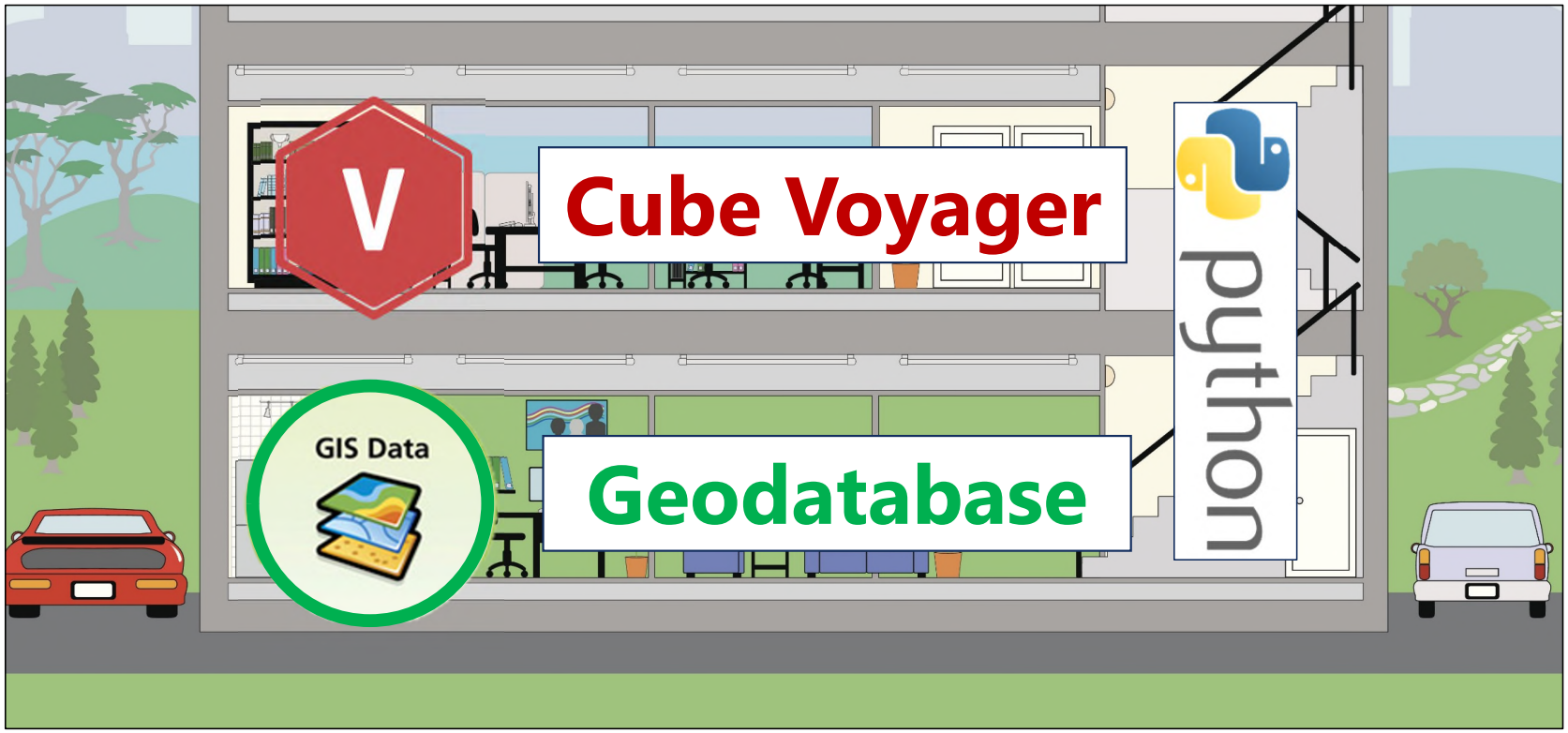
Avoid trappings of True-Shape networks

Maintain network concurrency, eliminate stick networks

Networks & TAZs can be updated to reflect ground truth

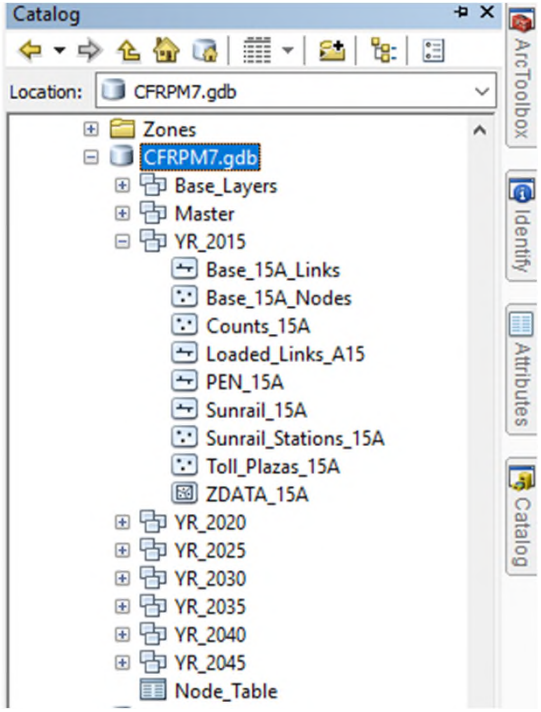
Can add Basemaps, Topologies, aerials, CAD lines, etc.

How it Works



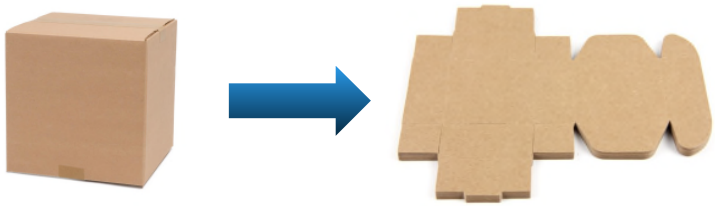
GIS Architecture

- Geodatabase
  - Scenario Datasets
    - Spatial inputs & outputs
- Python Scripts
  - Imports from GDB into Cube (inputs)
  - Exports from Cube into GDB (outputs)
- User Tools & Training



The Future

- CFRPM as new standard and benchmark for Central Florida
- Continued refinement of GIS component
- Widespread user acceptance
- Expanded modeling community
- Greater dissemination and knowledge of model forecasts
- “Collapsing” the modeling “box”



Questions?

Thank you!

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