Overview

- What is the FSUTMS Air Quality Postprocessor (AQPP)?
- Benefits of the FSUTMS AQPP
- Emissions Calculation Process
- Impacted FSUTMS Models
- Schedule
- FSUTMS AQPP Training Opportunities
- Next Steps
- Demonstration
What is the FSUTMS AQPP?

- A module within FSUTMS/Cube Voyager that calculates emissions for portions of the nonattainment area (NAA) inside the FSUTMS travel demand model.

Calculates:
- Emissions related to Ozone formation
  - Oxides of Nitrogen (NOx)
  - Volatile Organic Compounds (VOCs)
- Emissions related to Greenhouse Gas (GHG) formation
  - Carbon Dioxide Equivalents (CO2eq)
  - Methane (CH4)
  - Nitrous Oxide (N2O)

Users:
- Ozone NAAs for conformity
- Areas interested in measuring GHG emissions
Benefits of the FSUTMS AQPP

Streamlines Calculation of Emissions
- Minimizes number of times needed to run MOVES
- Shorter run times
- Outputs summary tables in .csv and .dbf format

Standardized approach
- Reduces human error
- Facilitates transferability
- Streamlines interagency consultation process

Outputs loaded network with emissions by pollutant on each link (total and per mile) to visualize emissions geographically
**Benefits of the FSUTMS AQPP (Cont’d)**

### Summary of Air Quality for All Three Counties

<table>
<thead>
<tr>
<th>NAME</th>
<th>CLASS</th>
<th>UNADJ. VMT</th>
<th>ADJ. FACTOR</th>
<th>ADJUSTED VMT</th>
<th>NOX (gms)</th>
<th>VOC (gms)</th>
<th>CO2eq (gms)</th>
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<tr>
<td>Rural Interstate</td>
<td>1</td>
<td>431660.4</td>
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Benefits of the FSUTMS AQPP (Cont’d)
Emissions Calculation Process

1. **Step 1. Develop VMT and Speed Data**
   - Generate link-level VMT by multiplying AADT by link-length from travel demand model.

2. **Step 2. Reconcile with Count Data**
   - Aggregate link-level model VMT by functional class for each county.
   - Develop HPMS adjustment factor using ratio of HPMS VMT to model VMT.
   - Apply HPMS adjustment factor to model VMT estimates at link-level by functional class.

3. **Step 3. Develop Emissions Factors**
   - Develop emissions factors look-up tables in grams per mile by speed bin, pollutant, model year, and county in MOVES model.

4. **Step 4. Estimate Emissions**
   - Apply emissions factors to model VMT for each link to estimate emissions.
   - Aggregate link-level emission estimates by HPMS functional class for each county and pollutant.

FSUTMS/Cube Voyager procedure
MOVES procedure
(conducted by user outside of FSUTMS/Cube Voyager)
Impacted FSUTMS Models

- Currently exceeds 0.075 ppm standard based on 2007-2009 ozone monitoring data
  - Northwest Florida Regional Planning Model
  - Tampa Bay Regional Planning Model

- What happens if a potentially stricter standard is implemented?
**Schedule**

- **December 2009** – MOVES2009 Final Release
- **Early 2010** – NAAs run MOVES emissions factors using final release and localized parameters & FDOT finalize AQPP process
- **Spring/Summer 2010** – AQPPs complete for currently anticipated NAAs based on 0.075 ppm standard (base year)
- **Fall 2010** – AQPPs complete for anticipated NAAs based on a potentially stricter standard (base year)
- **August 2011** – EPA designates Ozone NAAs
- **August 2012** – Ozone NAA Conformity Determination Reports (CDRs) Must be Approved by U.S. DOT
FSUTMS AQPP Training Opportunities

FSUTMS Modeling Training Series

Knowledge Sharing Opportunities
- New & Advanced Webinars in Modeling Users Presentation Series (Bimonthly)
- FSUTMS Users Group Meetings
- Full Model Task Force Meetings (Half Oice a Year)
- Florida Model Applications (Conference Held Every Other Year)

Estimated Level of Difficulty
- Basic
- Intermediate
- Advanced

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Next Steps

- Coordinate FSUTMS AQPP process with:
  - EPA Region 4
  - FHWA FL Division and Resource Center
  - DEP SIP emissions budget calculation process
  - FDOT Districts
  - Potential ozone nonattainment areas (MPOs/Counties)

- Formalize interagency consultation process
  - Ozone baseline year (2007?)
  - MOVES input parameters by County
  - Use of HPMS adjustment factors

- Upon final MOVES2009 release:
  - Localize MOVES input parameters in coordination with DEP
  - Run MOVES emissions factors for base year
Demonstration of the FSUTMS AQPP
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