# Long Distance Passive O-D Data for Statewide Models: An Implementation Plan

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# Using Passive Long-Distance O-D Data

## Considerations

- Long-Distance (LD) is ≥ 50 miles
- Components of LD travel needed for statewide model
- Point-in-time evaluation of O-D sources: cell, LBS,GPS
- Case studies, lessons-learned from other DOTS
- Costs of acquiring and developing LD O-D data
- Ability to process, analyze, store Big Data

# LD Trip Components and Sources

| Trip Stratification | Source | |
|---|---|---|
| | Primary | Secondary |
| I-I non-work passenger, >50 miles | LBS | GPS |
| I-E/E-I passenger | | |
| E-E passenger | | |
| I-I/E-I/I-E special generator | Combined LBS and GPS | N/A |
| I-I truck/freight, >50 miles | GPS | ATRI |
| I-E/E-I truck/freight | | |
| E-E truck/freight | | |

# Implementation Plan

## For Acquiring and Developing Passive O-D Data

Task 1: Planning and Preparation

Task 2: Develop TAZ Structure for LBS Data Capture

Task 3: Determine Attributes and Acquire LBS Data

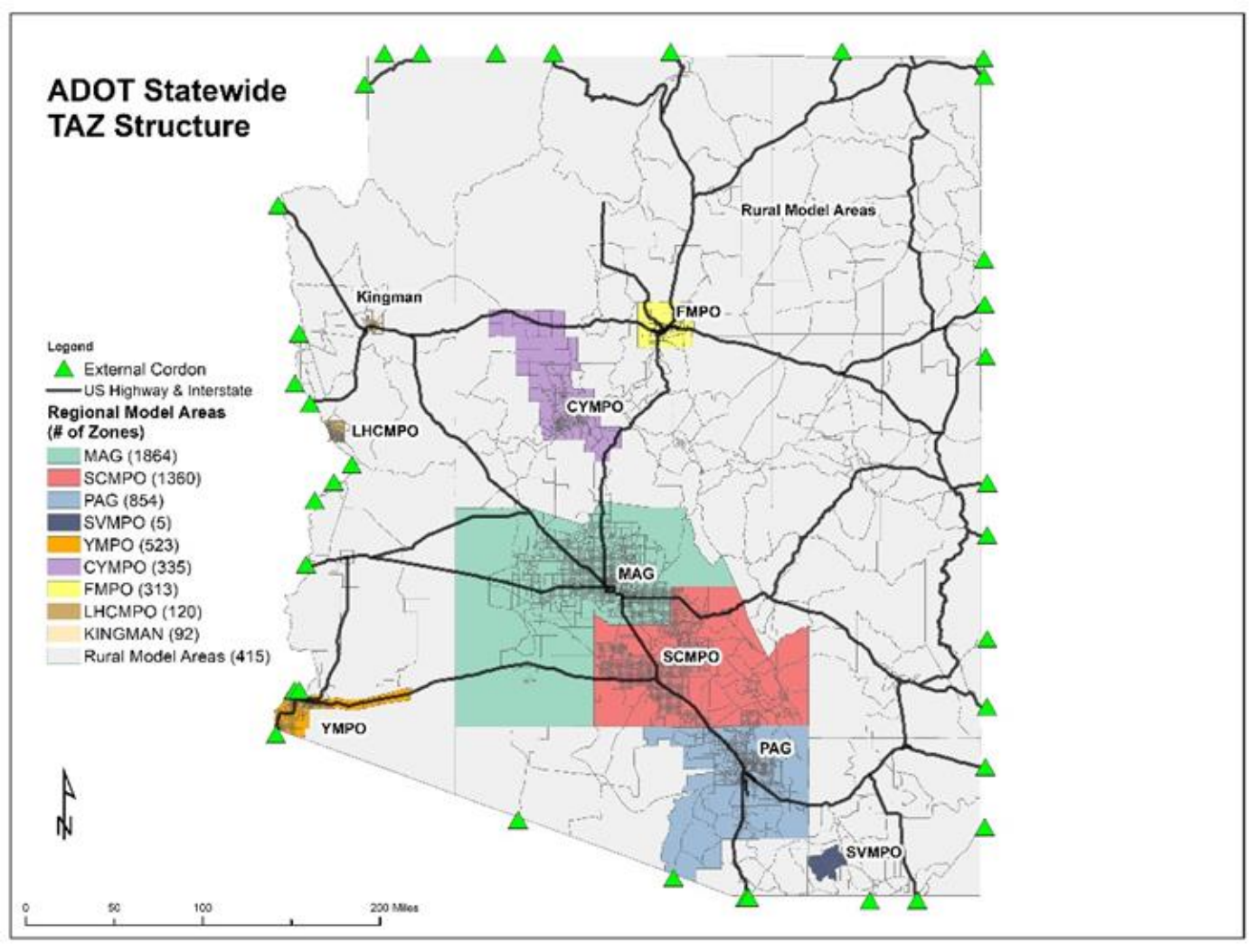
Task 4: Assess Options and Acquire GPS Data

Task 5: Process and Develop O-D Data

# Task 1: Planning and Preparation

- Utilize a Technical Advisory Committee (TAC)
  - Reps for DOT, MPOs, other stakeholders
  - Provide technical review, guidance, feedback
- Preview and assess key technical decisions
  - Changes needed to TAZs, model stream, etc.
  - Choices, options in data acquisition
- Get update on O-D sources, products and pricing prior to data acquisition

# Task 2: Develop TAZ Structure and Network



# Tasks 3 and 4: Assess Attributes and Acquire Data

- Various forms, attributes, options in LBS and GPS data: some required, some optional
- TAC should assess those required versus desired
- Key attributes/options
  - internal and external zones options: I-I, I-E/E-I, E-E
  - day aggregations: average weekday, weekend, others
  - time-of-day periods: AM Peak, PM Peak, 24-hour

# Key Attributes Needed in Data

- Options with I-I, E-I/I-E, and E-E trips
- Daily long distance trip filter (for ≥ 50 miles)
- Average weekday travel based on 24-hour period
- Resident class attributes with subcategories
- Optional attributes to consider
  - weekend data
  - seasonal data
  - device home locations

# Key Recommendations

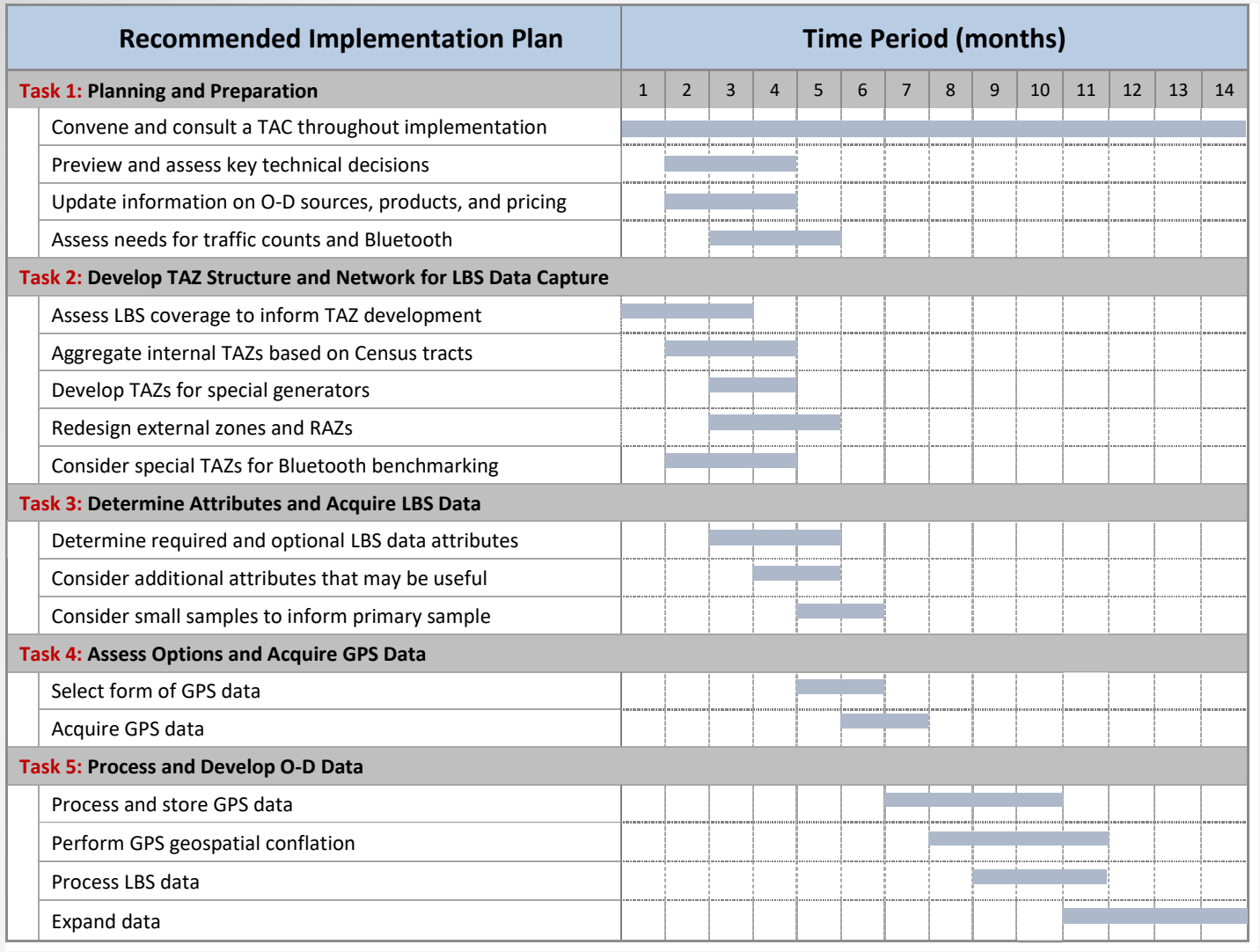
## for Statewide Passive LD O-D Data

- Obtain update on O-D sources and products *prior* to acquiring data
- Acquire LBS data as matrices with LD filter for passenger vehicles
- Use GPS data with waypoints for trucks

Task 5:

- Conflate data to statewide TAZ and network
- Expand data using IPF and ODME

# Implementation Plan Overview



| Recommended Implementation Plan | Time Period (months) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Task 1: Planning and Preparation** | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| Convene and consult a TAC throughout implementation | | | | | | | | | | | | | | |
| Preview and assess key technical decisions | | | | | | | | | | | | | | |
| Update information on O-D sources, products, and pricing | | | | | | | | | | | | | | |
| Assess needs for traffic counts and Bluetooth | | | | | | | | | | | | | | |
| **Task 2: Develop TAZ Structure and Network for LBS Data Capture** | | | | | | | | | | | | | | |
| Assess LBS coverage to inform TAZ development | | | | | | | | | | | | | | |
| Aggregate internal TAZs based on Census tracts | | | | | | | | | | | | | | |
| Develop TAZs for special generators | | | | | | | | | | | | | | |
| Redesign external zones and RAZs | | | | | | | | | | | | | | |
| Consider special TAZs for Bluetooth benchmarking | | | | | | | | | | | | | | |
| **Task 3: Determine Attributes and Acquire LBS Data** | | | | | | | | | | | | | | |
| Determine required and optional LBS data attributes | | | | | | | | | | | | | | |
| Consider additional attributes that may be useful | | | | | | | | | | | | | | |
| Consider small samples to inform primary sample | | | | | | | | | | | | | | |
| **Task 4: Assess Options and Acquire GPS Data** | | | | | | | | | | | | | | |
| Select form of GPS data | | | | | | | | | | | | | | |
| Acquire GPS data | | | | | | | | | | | | | | |
| **Task 5: Process and Develop O-D Data** | | | | | | | | | | | | | | |
| Process and store GPS data | | | | | | | | | | | | | | |
| Perform GPS geospatial conflation | | | | | | | | | | | | | | |
| Process LBS data | | | | | | | | | | | | | | |
| Expand data | | | | | | | | | | | | | | |

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# Questions?

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# Final Report

## Optimizing Technology for Collecting Long-Distance Data

### ADOT SPR-744

Arizona Department of Transportation
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https://www.azdot.gov/docs/default-source/research-reports/spr744