AEGIST SANTA FE MEETING, AUGUST 23rd – 24th, 2022

DAY 1: AUGUST 23rd, 2022

Discussion Topics: Session 1 – Routes, Centerlines, Road Segments (Links) and Junctions (Nodes)

1. Should we allow for different route networks to be used for different business use cases? For e.g. network for funding analysis vs. network for operations? What roads data management/administration level will work (or are needed) for each State?

2. What would be the use cases supported by National Road Network (NRN)? What is NRN not supporting?

3. Do we need to build one authoritative road network data model to support all use cases and business stakeholders? Or, Should agencies create use case specific roads data models? E.g., for HPMS/ARNOLD, Digital Twin, Asset Management, NG911 operations etc. What use cases would need that integrated and authoritative roads data model?

4. Should NG911 Road Centerlines from local agencies be integrated with DOT maintained roads for creation of ARNOLD and National Road Network (NRN)? If NG911 and DOT Roads data are aligned, would the resulting conflated product be used for NG911 operations?

5. Are local agencies using ARNOLD Roads for referencing their data? Would it be easier to integrate State DOT and local agency-maintained asset, project, safety and mobility data if one road centerline dataset is created for the State?

6. What are the use cases for integrating statewide road network data? (e.g. Address referencing, Travel Demand modeling GIS network, Freight Routing/demand analysis, Safety, Other?). How will the stakeholders of these benefit from implementing one road centerline within the State?

7. Public and Private sector agencies are utilizing one centerline road network data from sources like HERE, Open Street Maps, INRIX (XD segments) for modeling travel demand, analyzing freight routes (origin-destination analysis), detour routes modeling, analyzing mobility and safety – How can State transportation agencies take the responsibility of coordinating roads data across transportation agencies in the State to build a authoritative statewide road network data model?
   - What policies are needed?
   - What collaboration efforts are needed amongst agencies within the State?
   - How can FHWA, USDOT, NENA and other such national agencies help?

Discussion Topics: Session 2 – Intersection Modeling

1. How are you utilizing the overlap between HPMS data items and MIRE FDEs to determine the extent to which MIRE requirements are being met currently with data collected for HPMS full extent and sample sections? Calculations/statistical representations approach to meet MIRE data requirements (e.g.: AADT)

2. How is your agency looking to meet intersection data modeling requirements?
   - Road Segments creation - Are you looking to create road segments that break at intersections?
   - Intersection and Road Segment attributes specified by MIRE - How are you collecting now and how would you collect in the future?

3. What are the rules that should be considered in automating the creation of geometry for - Intersection legs, Intersection Influence area?

4. Do you agree that the following intersection data modeling standards should be considered in the modeling of intersections - GMNS, FARS & MMUCC, MIRE, OGC GDF, CityGML and IFC. Which ones are you considering today?

5. What are the best practices (processes, tools, techniques) for maintaining intersection model data?
   - How would you like to manage/maintain Intersection data at Statewide level?
   - Utilizing State DOT and Local Agency Road Centerlines for Engineering Junctions, Intersections
   - Utilizing All Roads Data maintained by State DOTs for Engineering Junctions, Intersections
   - Utilizing Open/Proprietary data sources in addition to DOT LRS Routes for Intersections, e.g. Lidar data extracts
   - Other?

DAY 2: AUGUST 24th, 2022

Discussion Topics: Session 3 – Enterprise Geospatial Systems: Scope and Vision

1. Is there a need to connect BIM, digital delivery, digital as-built, or data from project information models (PIM) and asset information models (AIM) to the LRS? Why? What are the benefits?

2. Are HMPS, MIRE and LRS data used to meet business needs outside of Federal Reporting? How?

3. How can they better support business needs?

4. What are the intersection points between these data sets and the business data requirements? Has anyone mapped them out?

5. How do we connect asset and project information models?

6. How does the LRS support project development, construction/operations and asset management?

7. What could we do better?

8. Which business groups and geospatial data management processes are your GIS / LRS / Data Analysis / Roadway Inventory management groups supporting today?

9. Which business use cases and process requirements are you supporting today when you model road network data (routes, highway performance, roadway characteristics, etc.)? Should more business users/use cases be supported by creating an enterprise road network model? If yes, which ones? What's the future vision?

10. How is the role of your GIS / LRS / Data / Roadway Inventory group changing in your organization? What enterprise geospatial data management use cases do you envision supporting in the coming 2-5 years? For example:

    - Digital Delivery / Building Information Modeling / Digital Twins?
    - Geospatial road network data for travel demand modeling, safety analysis, routing?
    - Enterprise Asset management
    - Connected Vehicle Environment (CVE) Applications and Data Integration

11. In addition to ARNOLD, HPMS, MIRE data modeling and reporting standards, what other geospatial data modeling and management standards is your agency looking to adopt to deploy enterprise data standards?

12. What geospatial data management, integration and analysis activities do you envision taking up over the next 3-5 years to support the needs/requirements of internal and external stakeholders? Steering Groups? Working Groups? Check Existing groups? Do we need to establish data standards?

Discussion Topics: Session 4 – Multimodal Road Network, Asset and Project Information Modeling

Session 4 – Multimodal Road Network Information Modeling

1. What are the business rules and requirements that should be considered in the modeling of Bike and Pedestrian Route Networks?

2. Which business users & use cases at your agency require creation of bike & pedestrian routes?
    - Planning - Incorporating equity in decision support systems (e.g. measuring traffic level of stress for bicyclists and pedestrians)
    - Multi-modal network modeling - Bike, Pedestrians, Rail, Transit Routes etc.
    - Safety Analysis - Pedestrian and Bicyclists Safety
    - Bike and Pedestrian Travel Demand Modeling

3. Should standards such as Generalized Modeling Network Specifications be considered in modeling? Should data be extracted from open standards such as Open Street Maps?

4. What are sources that can be used for modeling, integrating and engineering bike and pedestrian information models?
    - Local Agency data
    - Proprietary data sources
    - Open data sources (e.g.: Open Street Maps, RITIS, BTS)
    - Other?

Session 4 – Asset Information Modeling

1. How are DOTs managing assets that do not necessarily align with the road network? For e.g. Sound Walls? ROW Parcels? Addresses, Left and right sidewalks?
2. What assets should be considered in scope for standards and best practices associated with using Enterprise GIS systems for asset data modeling? For e.g.: Roads, Bridges, Signs, Right-of-way parcels etc.?

Session 4 – Project Information Modeling

3. What data modeling standards, approaches and best practice should be considered in asset information modeling and exchange using GIS systems?
4. What project data modeling use cases should be considered in scope of Enterprise GIS systems-based data management?
5. What project data modeling standards, approaches and best practices should be considered for documentation in AEGIST Guidebook v2?