Session 3.2.3 Massachusetts Road Inventory – LRS Based, Data Rich, and An Asset Management Tool

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Road Inventory Files (RIF) have been maintained by Departments of Transportation (DOT) to track roadway characteristics and provide important mileage-based values that determine how much Federal-Aid a state will receive. The Massachusetts RIF has been transformed to a multi relational database that is completely linear-referenced. The new RIF can house road attributes such as pavement condition and traffic volumes as well as other attributes beyond Federal requirements such as bridge assets, trucking exclusions, and tunnel locations. With three different linear referencing systems (LRS), the file can also dynamically connect to transportation spatial databases such as project locations (active construction, planning studies, etc.), low salt areas, shared road bicycle routes, rest areas, Intelligent Transportation System equipment locations, milepost locations, and highway interchanges. The file's linework is based on 1:5,000 orthophotos, but as orthophotos have become more precise, the linework continues to be improved with all connecting databases adjusted through the database relationships. Recently, the Massachusetts DOT, in conjunction with other agencies, has started to develop a road inventory street address hybrid file, the combination of the road inventory and a vendor-based street address database. The result will connect highway assets with street addresses. With the dynamic nature of the RIF, new roadway characteristics or asset-based data can always be added and all data within the RIF can be shown and spatially analyzed through GIS. The Massachusetts RIF can be applied to many transportation planning functions such as corridor planning, traffic analysis, emergency response, accurate crash reporting, and asset management. The presentation will consist of the evolution of the Massachusetts RIF to its present form, the dynamics of each LRS by linking key attributes or assets (i.e. pavement condition, traffic volumes, bridges, tunnels, street address datasets, etc.) to the RIF, and application examples.