2.4.1   **Building and Maintaining a Roads & Highways Data Model for Local Government**

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The City and County of Denver, Colorado has been working with regional local governments to improve the management of roadway data so that data holdings can better serve the needs of the City as well as the Denver regional community. Participants in this project include Boulder County and the Cities of Boulder, Longmont and Erie, as well as the Boulder Regional Emergency Telephone Service Agency. J. Al Butler has served as the Data Architect for the customized development of a Regional Transportation Geodatabase Model built upon the foundation of the Esri Roads and Highways (R&H) solution.

A key area for improvement has been the management of roads and their associated assets using linear referencing to better integrate and support the wide variety of business systems that leverage roadway information. Following extensive research and analysis, the City determined that the best starting point was to pattern their data model after the best practices outlined in Designing Geodatabases for Transportation by J. Allison Butler (ESRI Press, 2008, ISBN 978-1-58948-164-0). The data modeling and database maintenance paradigms were then validated by participating in the Esri R&H solution beta release program. This product, an LRS-based highway data management solution from Esri, provided tools to help test the data model while refining the data maintenance rules. Participation in the software product's beta program gave the City and Boulder County valuable insight into the software capabilities while simultaneously providing Esri with critical feedback to improve the product.

This presentation will discuss the design of the R&H data model, including custom components built upon the R&H extensible architecture, as it has been completed in the Denver metro area. We will also discuss the current status of the ongoing project to implement the model utilizing COTS, custom tools that are being employed or are in development and integration with a variety of COTS business systems including:

- Accela - Permitting System
- CityWorks - Asset Management
- CrashMagic - Traffic Safety
- CDOT HUTF - Highway Users Tax Fund
- Pontis - Bridge Information System