

North Carolina

DEPARTMENT OF TRANSPORTATION

Roads and Highways Road Map



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Let's take a little road trip...



Starting out...

*Like a lot of stories,
this one starts in a pub...*

THE FIELD
AUTHENTIC IRISH PUB
GASLAMP QUARTER • SAN DIEGO

- In-house developed solution
 - LARS (LRS Access and Reporting System)
 - ARID (Attribute Road Inventory Data system)
- Complex and rigid
 - Combined spatial and non-spatial system for the base LRS
- Expensive to maintain, enhance, and upgrade
- “Let’s work with Esri and build a solution...”

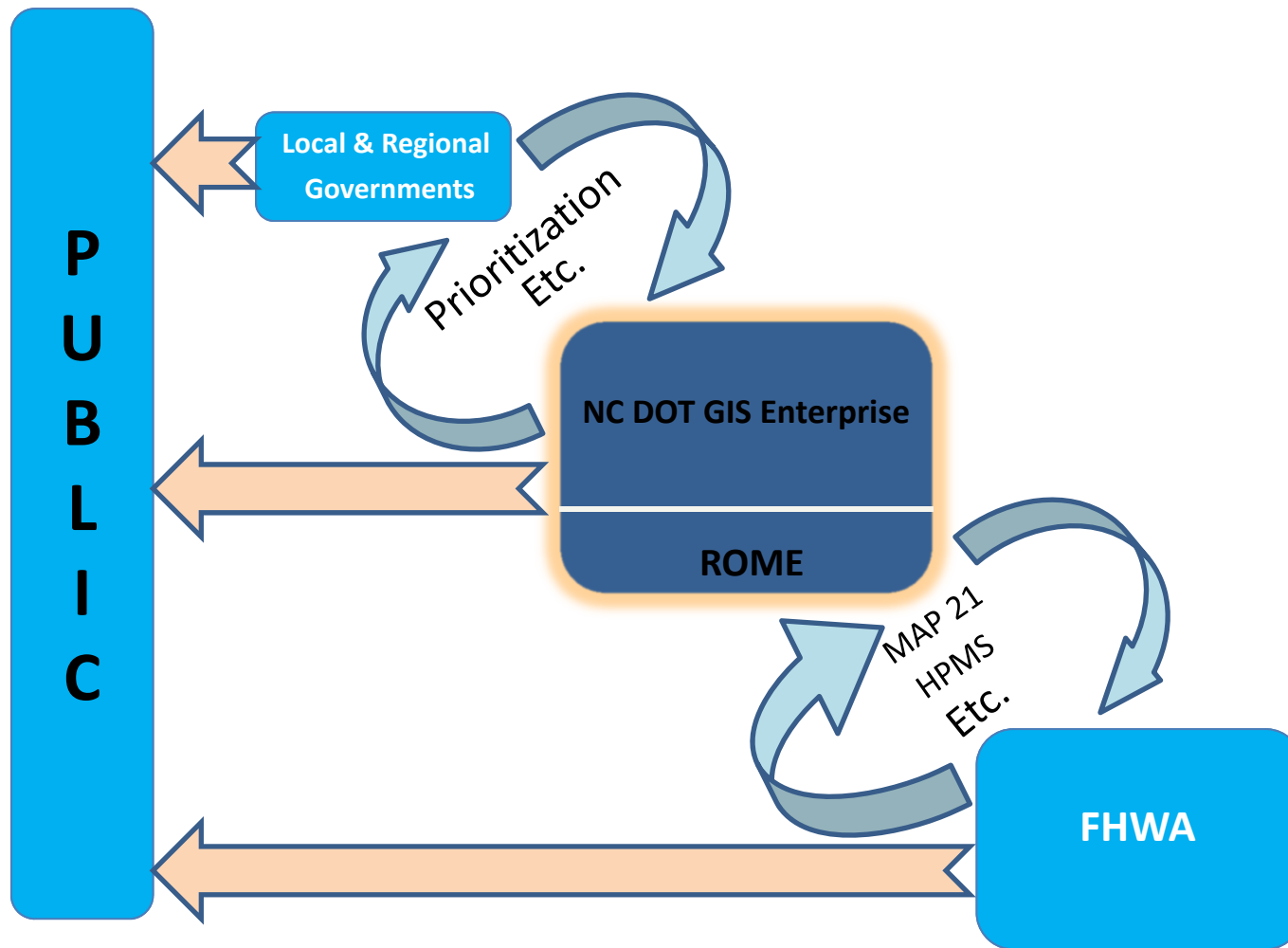
Where are we headed?

- The core activity of the ROME project is the implementation of Esri's Roads & Highways solution, a COTS product to be customized for NCDOT
- Roads & Highways will allow
 - Deliver an improved operational transportation data model
 - Establish a more consolidated and authoritative source of the NCDOT statewide LRS data
 - Provide a web application for online editing of asset data
 - Drive more automation (HPMS federal reporting) and integration of legacy systems

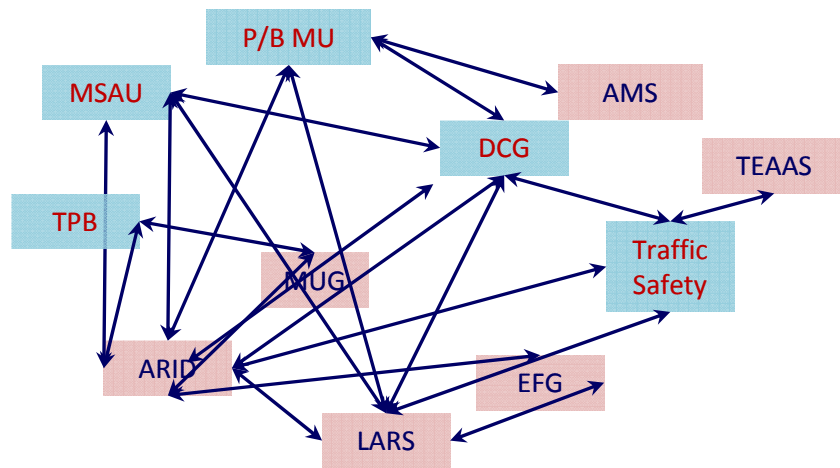
Where are we headed?

- Create a solution to take the NCDOT LRS and dependent business data to the next level in automation and functionality
 - *Without losing any functionality that exists in the current LRS solution*
- Implement a commercial-off-the-shelf (COTS) product which will be customized to meet NCDOT needs and requirements

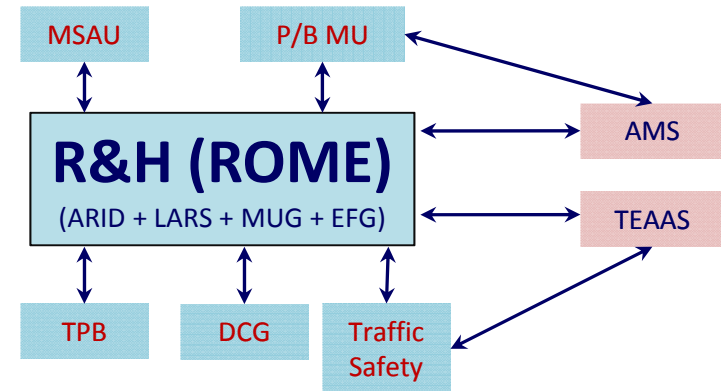
How it fits together...



Before and after...



Current

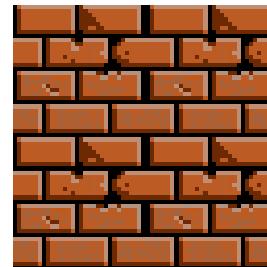


September
2015



Get the car tuned up, checked out, and see what might fall off...

- Build the team
 - NCDOT Staff
 - Esri (Product Development and Professional Services)
 - Supplemental Contractors
 - Other Vendors
- Several In-Depth Workshops
 - Ensure technical aspects are conveyed, received, and understood by all parties
- Negotiations and Procurement...



Don't forget the baggage...

(emotional or otherwise)

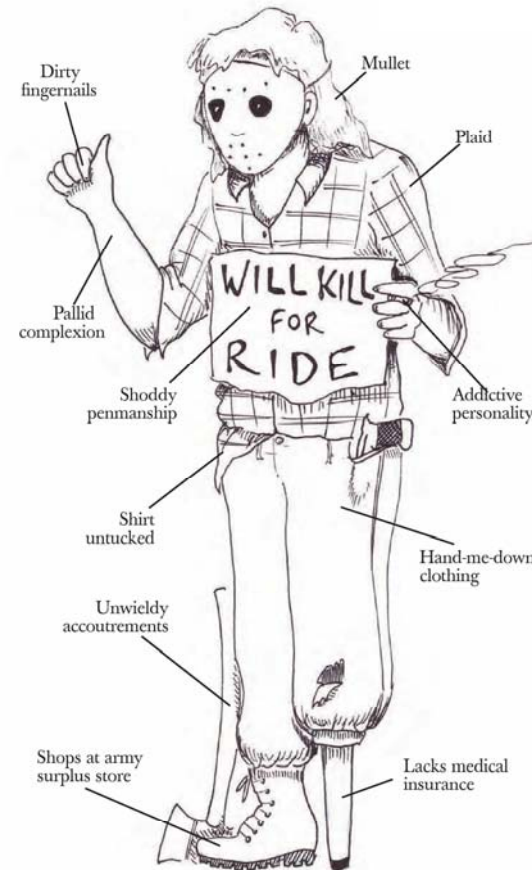
- Legacy Systems - *build on existing capability*
- Understand As-Is Environment - *existing data model, data quality, LRS software, LRS Business users and workflows*
- Risk - *Events/technology that over-come the project*



Make sure you know your passengers...

- Project Sponsor
- Business Units
- Vendors
- Hitchhikers

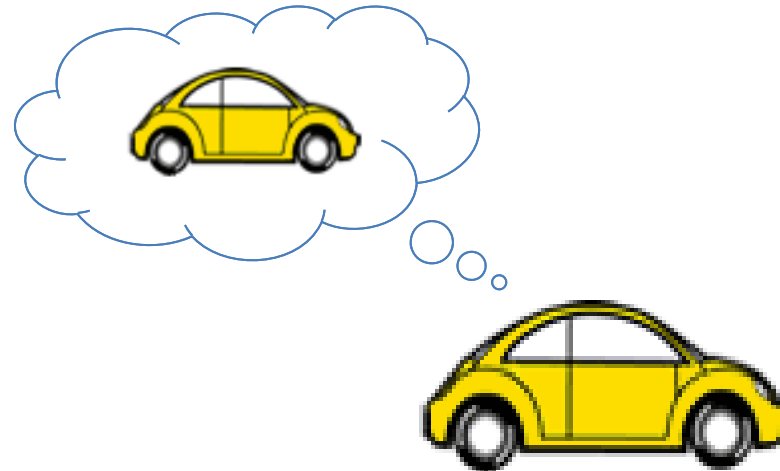
SIGNS OF A DANGEROUS HITCHHIKER



—Dounia Bredes, '11

Let's crank it up and see if it runs...

- Beta Test...or Alpha Test...or...
- Working / Prototyping in the Cloud



Detours and roadblocks...

- PM Challenges

- Infrastructure / IT



- Competing Projects / Resources / Turnover



- Procurement

- Building the product as you go

Hard earned lessons from the road...

- Start Data Migration planning early
 - It should be a living plan
 - One-stop shopping for all official artifacts
- Communications Plan
- Test – *the right data with the right versions*
 - Staging and development environments
 - COTS Testing
 - Non-COTS Testing
 - Smoke tests on data, tools, processes
 - Use Case - Requirement - Test

We are getting there...

- Data deliveries going well
- COTS Testing is going well
- Non-COTS Testing is going well RP2
- Business partners are communicating
- Delay to AMS build RP3

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- RP2** Non-COTS testing has gone through multiple builds and needed some corrections and different design approaches
Russell Pence, 4/13/2015
- RP3** AMS Agile Assets build is delayed but benefiting from other State DOT testing
Russell Pence, 4/13/2015

Are we there yet...

- SOW finalized 12/2011
- Requirements Workshops 12/2011
- 2nd Rome Task Order Approved 3/2013
- Four County Delivery 1/2015
- Statewide Data Delivery 5/2015
- AMS Testing Begins 8/2015
- Go-Live 9/2015



On the family trip to nirvana

Slide 15

JCF1

Do we have better milestones?

Farley, John C, 4/13/2015

ROME (R&H) ROI

- COTS / Non-COTS LRS Implementation/Replacement
- All Roads (includes non-system roads)
- COTS integration with our asset management system
- Required 5 year O&M for TCO calculation



- TCO - \$7.2 million over 5 years
- Total Savings - \$10.4 million over 5 years

ROME ROI Calculation

- Cost Avoidance
 - Replacing an legacy system with limited time to failure
 - LARS/ARID
- Federal Requirements
 - Real cost vs actual cost for non-compliance
 - HPMS & Non-System Roads
- LRS Value
 - “Potential overall cost/benefit savings of \$12.6 million for a state with 25,000 miles of road network”
 - Multi-Level Linear Referencing System (MLLRS) Cost/Benefit Value Analysis Study
 - AASHTO – *RH & Associates, Inc.* 2011



“Rome wasn’t built in day”

-- *Old French Proverb*

“Yah, it was built painfully over many years”

-- *Old GIS Manager*

Questions?

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