



May 12, 2016

MONEY AND TIME:
CONSIDERATIONS WHEN WORKING ON LOCAL
PROJECTS

Iona Thomas, STEWART and Ed Johnson, NCDOT



What to Expect from this Presentation

- Looking at Locally-Administered Projects
- Highlighting project delivery issues that may not have been considered
- Identifying typical time frames for particular steps
- This will be a tag team presentation
- Presentation will roughly follow the project delivery process from Funding to Project Close-Out
- Will consider administrative steps as well as “on the ground” issues



Before We Start

- Every project is unique
- Every local government has their own process and procedures
- Not every eventuality is addressed
- This presentation is not a substitute for focused engineering analysis of your project
- Estimates are just a starting point

*Consider these topics and their impacts on your budget **prior to** applying for funding*



Let's Get Started



Programming and Agreement

- All projects must be programmed in the State Transportation Improvement Program (STIP) when funding is approved.
- Programming can take several months – involves MPO TIP as well as State TIP (allow 3-4 months)
- Once a project is programmed, an agreement between the local government agency (LGA) and NCDOT can be initiated.
- Agreements can take several months – consider your own local process for getting agreements signed (allow 3-4 months)

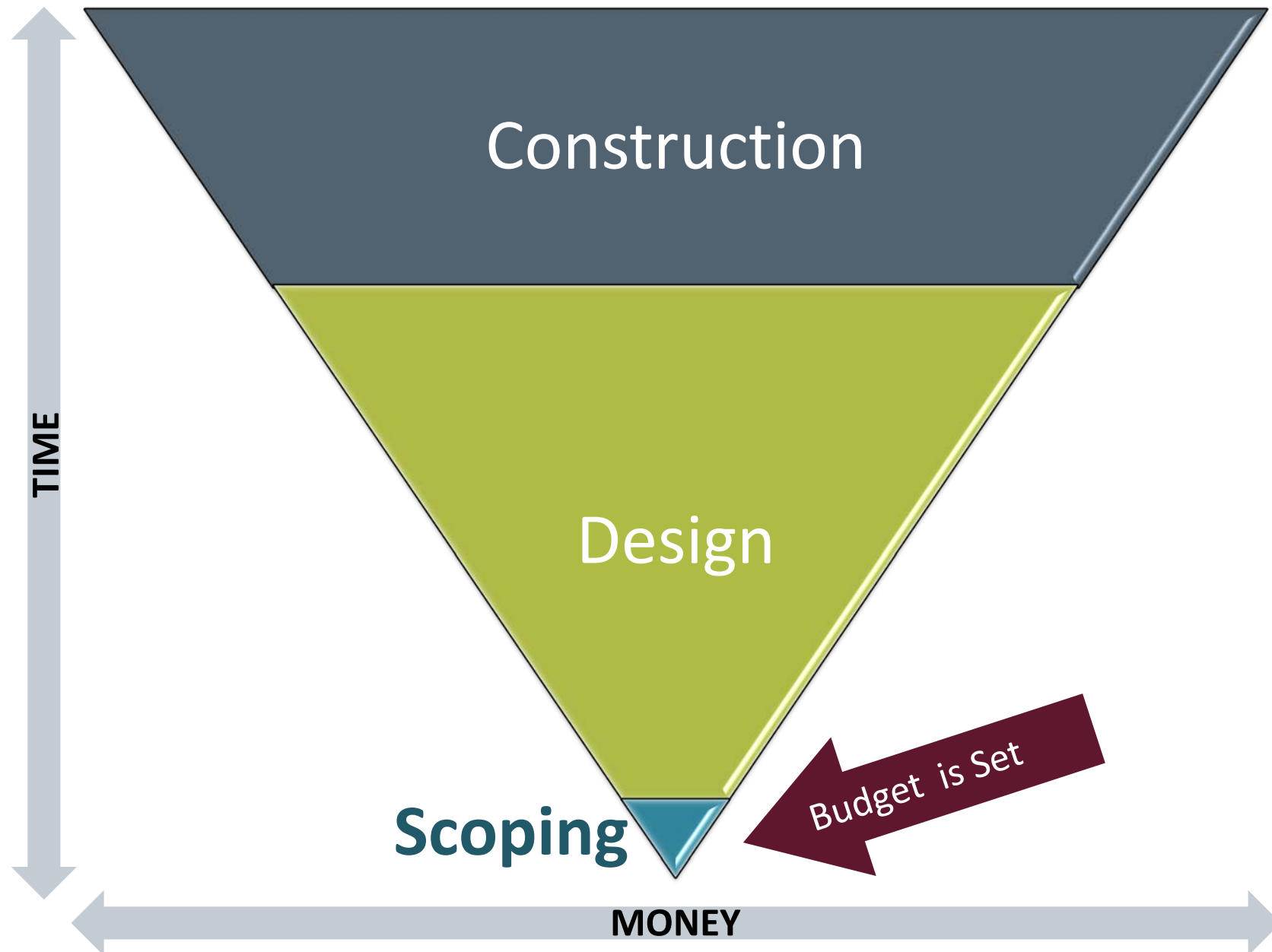
No work can occur until agreements are fully executed – by LGA and NCDOT.



Professional Services

- Process of obtaining professional services (engineering firms) can take several months (3 – 6 months).
- Several steps and review by NCDOT.
- Consider:
 - Advertisement/Solicitation
 - Evaluation and Selection of a firm
 - Scoping Project and Negotiation of a contract
 - Review by NCDOT including an audit of rates
 - Execution of a consultant contract
- This is the point when many LGAs have their first indication that the funding is insufficient for the needs they have.





- Property
- FEMA
- Jurisdictional Features
- Threatened & Endangered Species
- Drainage
- Railroad
- Utilities
- Survey
- Bridges & Other Structures
- Geotechnical Investigations
- Construction Cost Escalation
- Construction Administration & Inspections

These topics will effect both your design and construction budgets.

Walk Your Projects

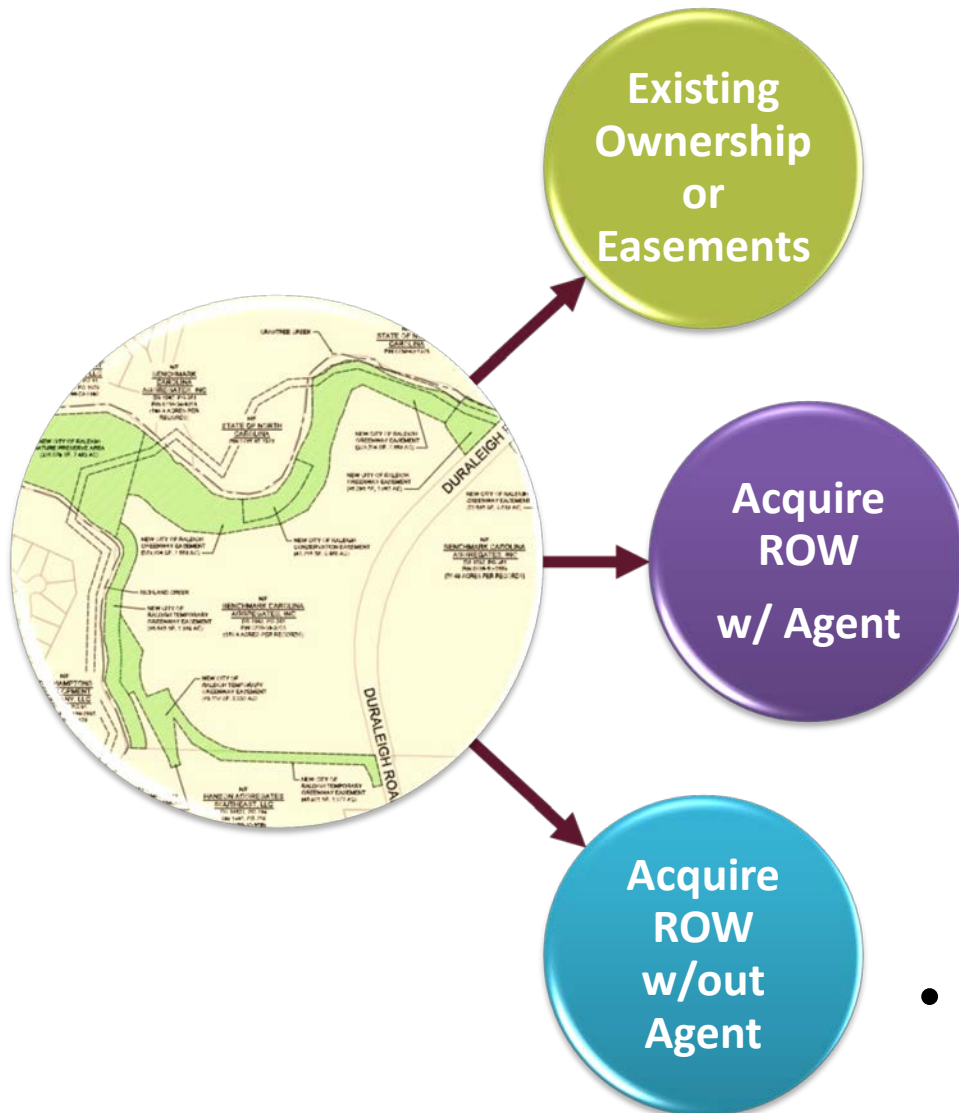
STRONGER BY DESIGN



PROPERTY AND RIGHT OF WAY

- Do not assume that right of way is available for project.
- Practice due diligence.
- All right of way needed for the project, including temporary use must be acquired in accordance with federal requirements.
- The Uniform Act applies even when federal funding is not used for right of way acquisition.
- The Uniform Act provides protection for property owners and ensures their rights are protected when a federal project makes use of their property.
- NCDOT reviews appraisals and acquisitions process.





- Select NCDOT pre-qualified firm
- Include property acquisition services in design fee
 - Survey
 - Appraisals
 - Acquisition Negotiation
 - Recording
 - Purchase price
- Include significant time in schedule

- Include all of the above costs except acquisition negotiations fees
- Include significant time in schedule

Clearzone/Drainage/Property Relationship


STRONGER BY DESIGN



The Clearzone/Drainage Relationship

STRONGER BY DESIGN

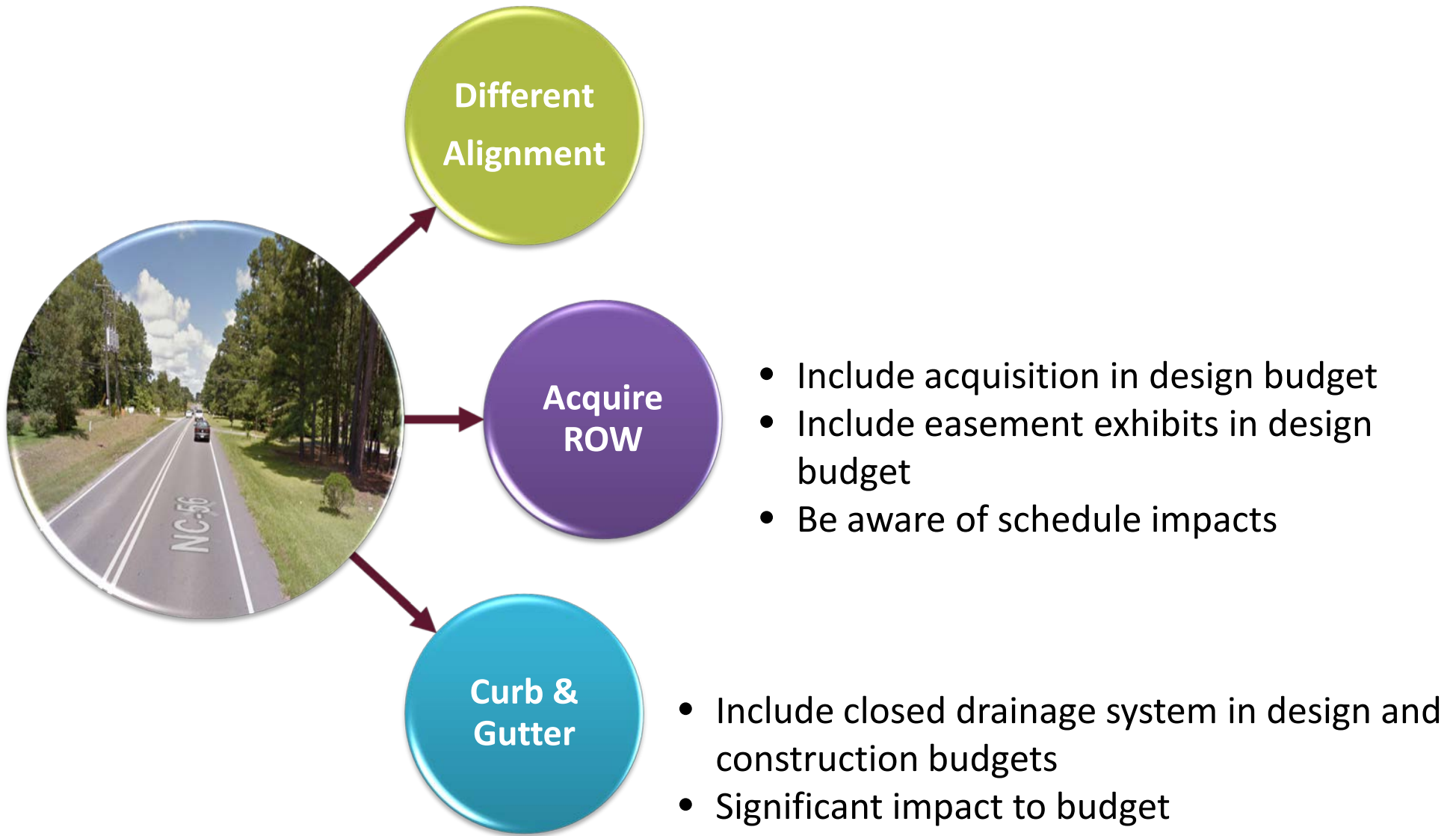


- 
- An aerial photograph of a two-lane road in a rural area. A green diagonal band, representing the clearzone, runs parallel to the road. This band is bordered by thin yellow and red lines. The surrounding landscape includes trees, fields, and some buildings. A small white rectangle is visible on the left side of the road.
- NC 56 Granville Co.
 - Speed limit 35 MPH
 - ADT 9800
 - Clearzone is 14-16 feet

Multi-use Path with Curb & Gutter

STRONGER BY DESIGN

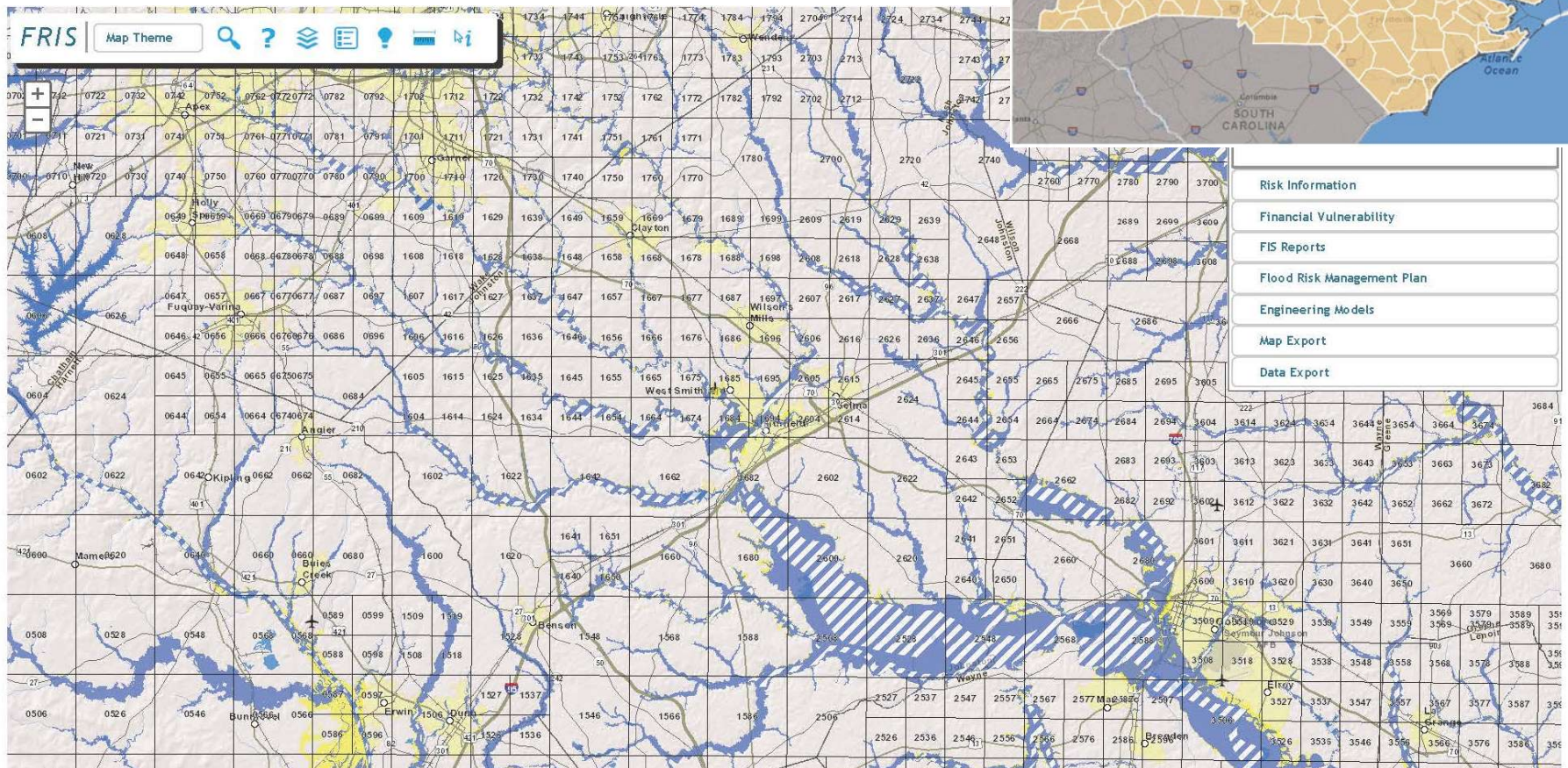
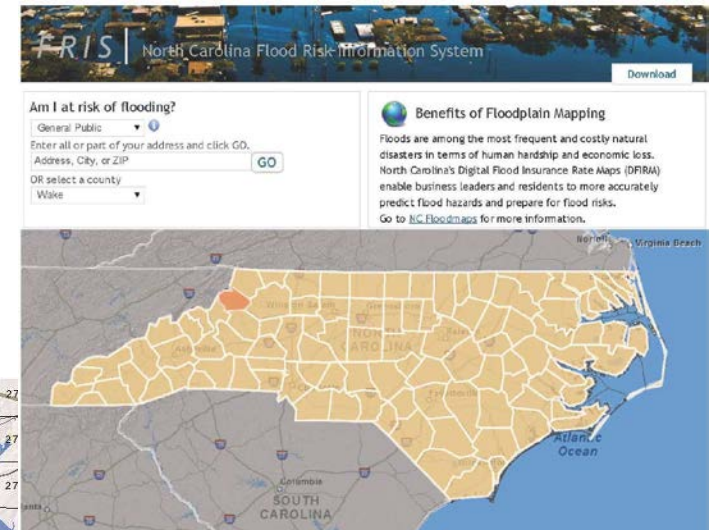




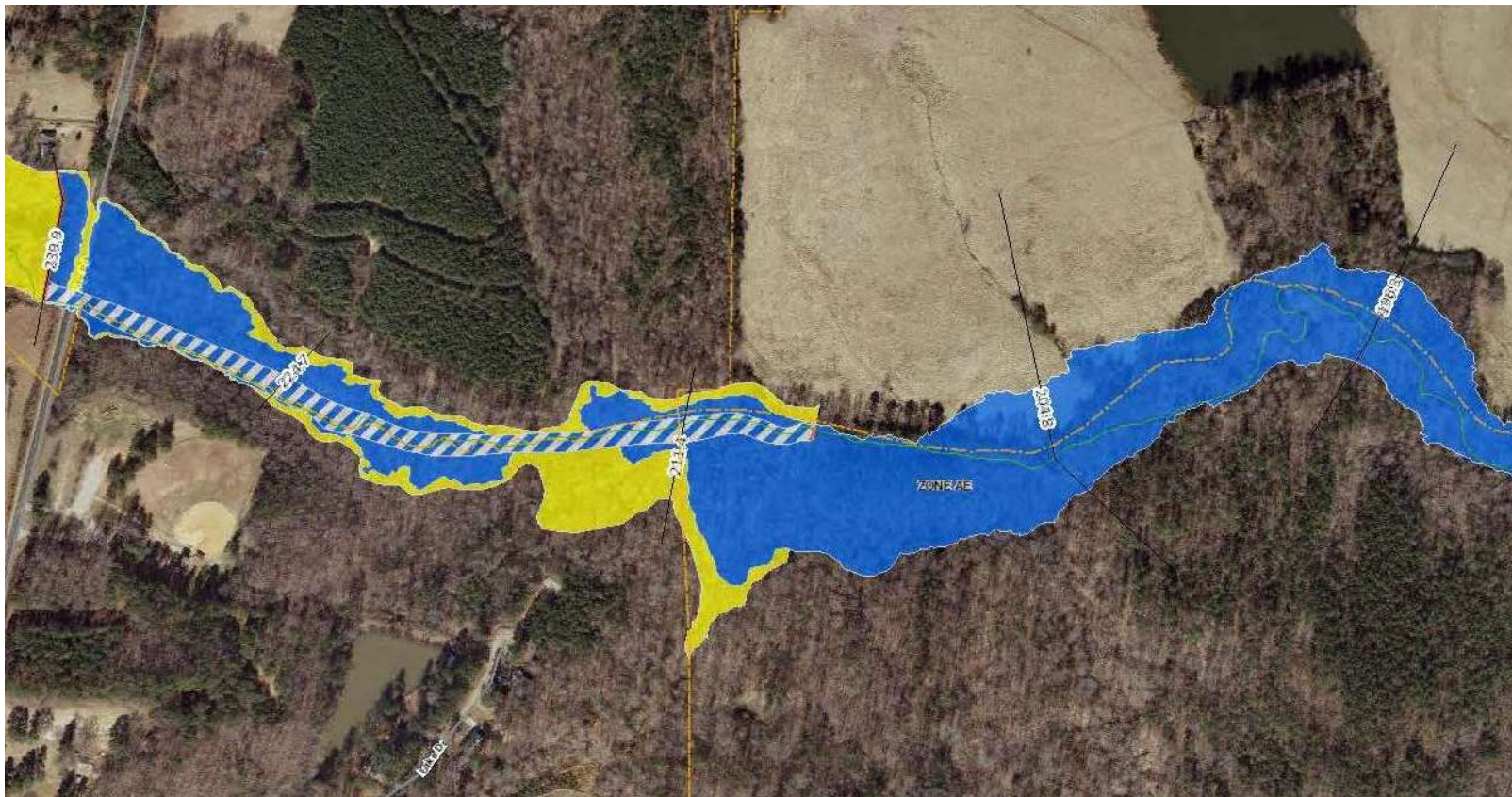
- Is your project in a regulated floodplain?

- Flood Risk Information System (FRIS)

<http://fris.nc.gov/fris/Home.aspx?ST=NC>



- Detailed study vs. Limited Detail Study (LDS)
 - Detailed Study has regulated **Floodway**
 - LDS has “**Non-encroachment areas**”
 - Both have established Base Flood Elevations (**BFE**)



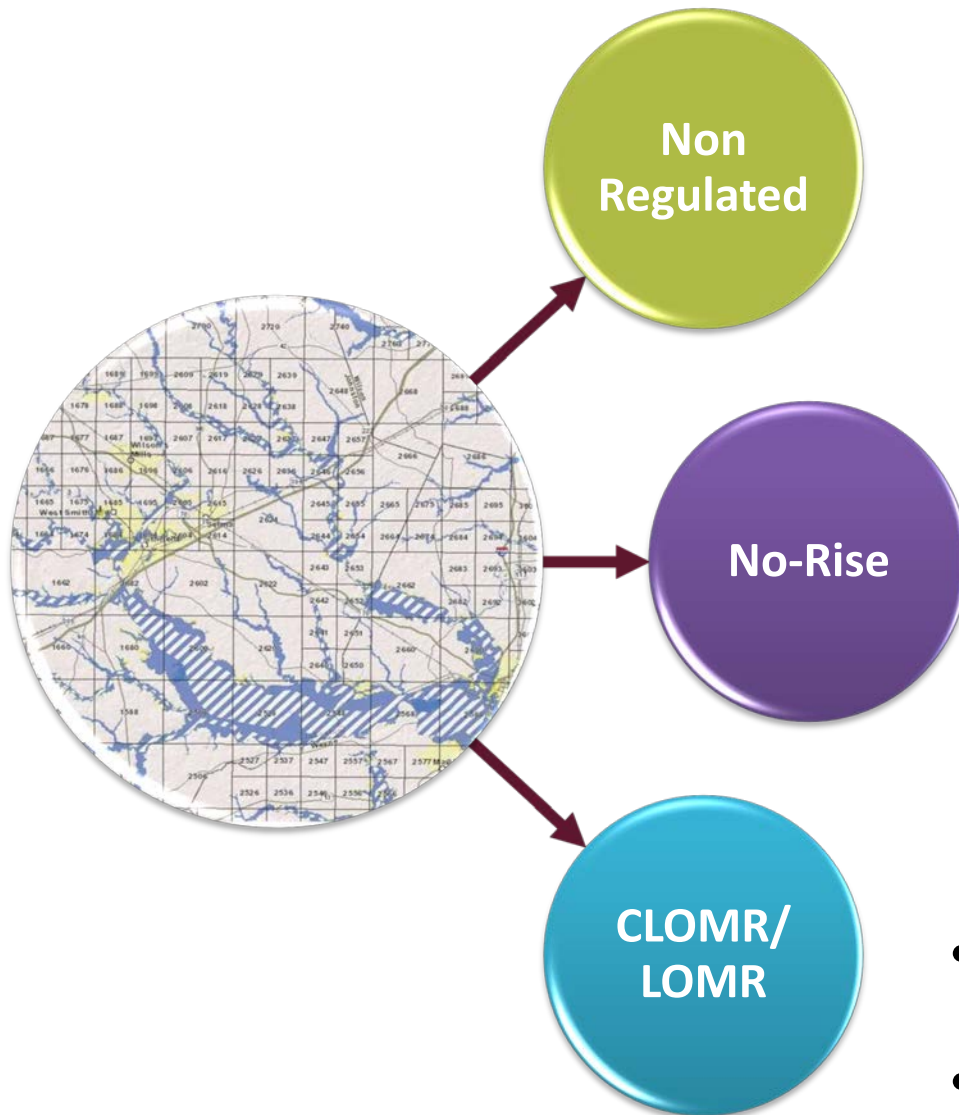
- How does FEMA impact my project?
 - No-Rise vs. Conditional Letter of Map Revision (CLOMR)
 - No-Rise
 - Decrease in BFE less than 0.1', no additional action required
 - Decrease in BFE greater than 0.1', LOMR required
 - Permitted at the local level – City or County Floodplain Administrator
 - CLOMR
 - Increase in base flood elevation greater than 0.01'
 - Decrease in base flood elevation greater than 0.1'
 - Permitted at State and Federal Level
 - NC Floodplain Mapping Program
 - FEMA
 - Requires Letter of Map Revision (LOMR) after construction complete
 - Most projects with new stream crossing will result in CLOMR
 - Lateral, at-grade encroachments may qualify for No-Rise

- What does FEMA compliance cost?
 - No-Rise
 - Typically no permitting fee at local level
 - CLOMR/LOMR

Request for Map Changes	Paper Form Fee	Online LOMC Fee
CLOMR	\$6,750	\$6,500
LOMR	\$8,250	\$8,000

- Engineering costs will vary depending on the size of the project and level of detail involved
 - Average between \$35,000 and \$50,000

- Resources
 - FRIS
 - <http://fris.nc.gov/fris/Home.aspx?ST=NC>
 - NC Floodplain Mapping Program
 - www.ncfloodmaps.com
 - FEMA Flood Insurance Program
 - www.fema.gov/national-flood-insurance-program
 - www.ncfloodmaps.com/pubdocs/nc_quick_guide_2008.pdf
 - FEMA fee structure
 - www.fema.gov/flood-map-related-fees



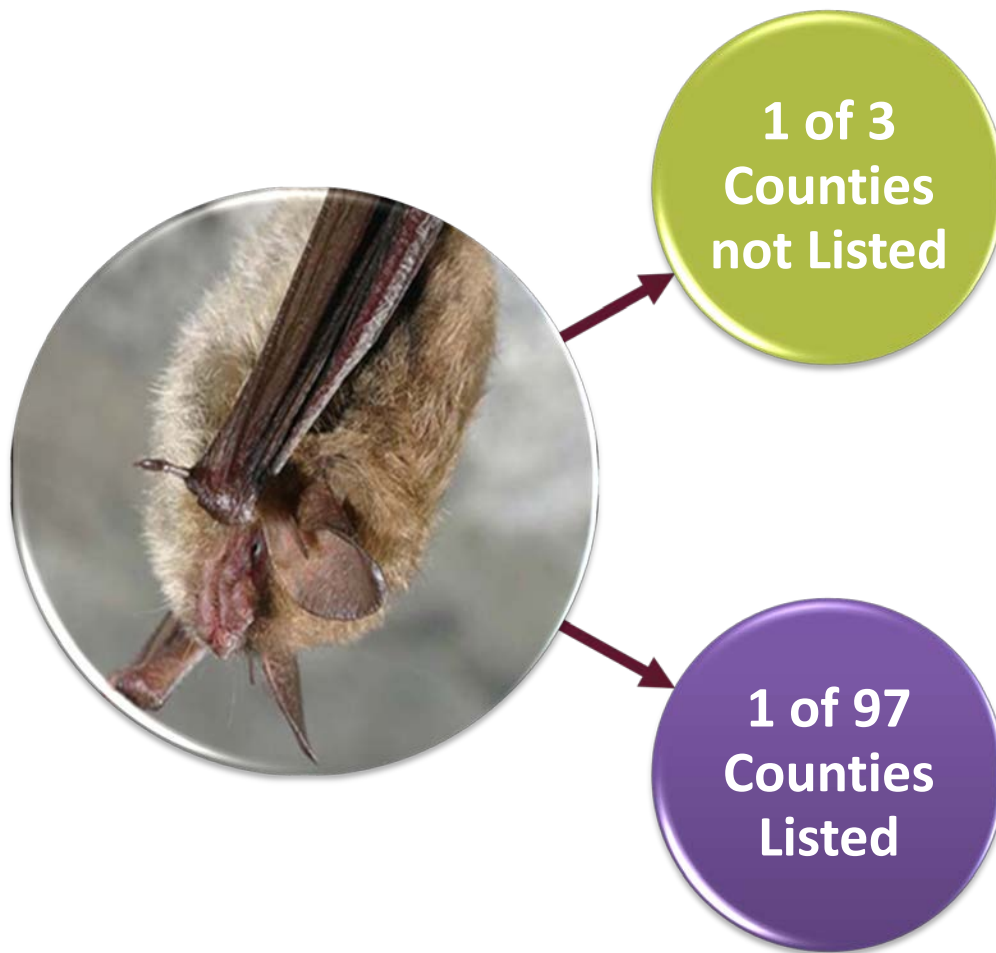
- Include modeling and Local Floodplain Coordination in design budget

- Include modeling and FEMA/NCFPM coordination in design budget
- Include FEMA fees in design budget

- What is listed in your county? www.fws.gov/endangered
- Northern Long-eared Bat - Effective May 4, 2015
 - Surveys are labor and budget intensive
 - Visual habitat assessment
 - Acoustic Monitoring for multiple nights
 - Overnight mist-netting for multiple nights
 - Tracking of bats to locate and assess health of colony
- Include surveys in design estimate



Photo by New York Dept. of Env. Conservation; Al Hicks



- Include T&E surveys in design budget

Jurisdictional Features

STRONGER BY DESIGN



Fee Category	Unit	Cost
Riparian Buffer	Square foot	\$1.08
Stream	Linear foot	\$289-\$381
Nonriparian Wetland	Acre (.25 min)	\$25,874-\$50,313
Riparian Wetland	Acre (.25 min)	\$39,428-\$69,736
Coastal Wetland	Acre (.25 min)	\$171,544

- Impacts to wetlands occur when permanently filled
- Impacts to streams occur when they are piped
- Ratio is usually 2:1
- “Like” credit must be available in your HUC

Bridge & Boardwalk Basics

STRONGER BY DESIGN



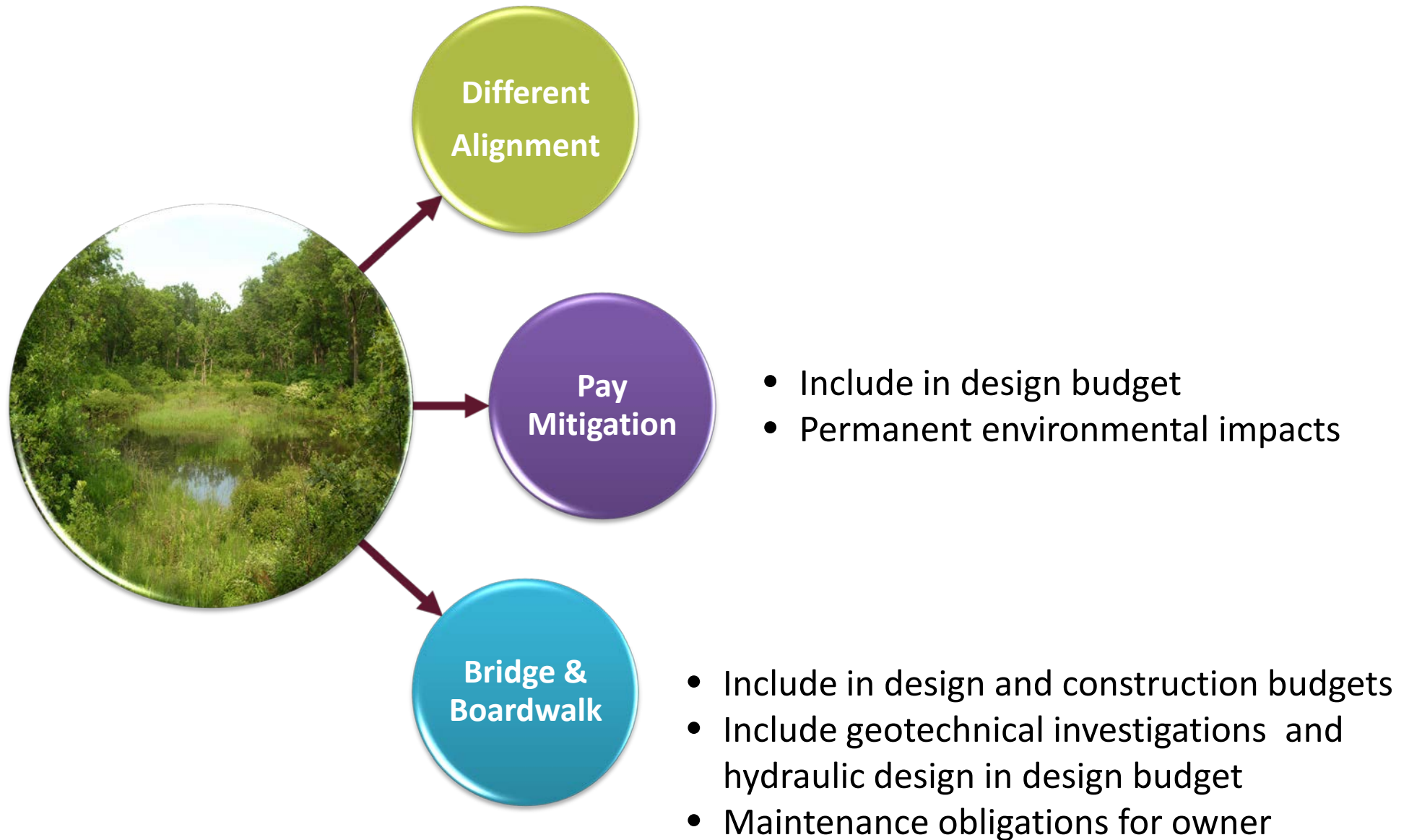
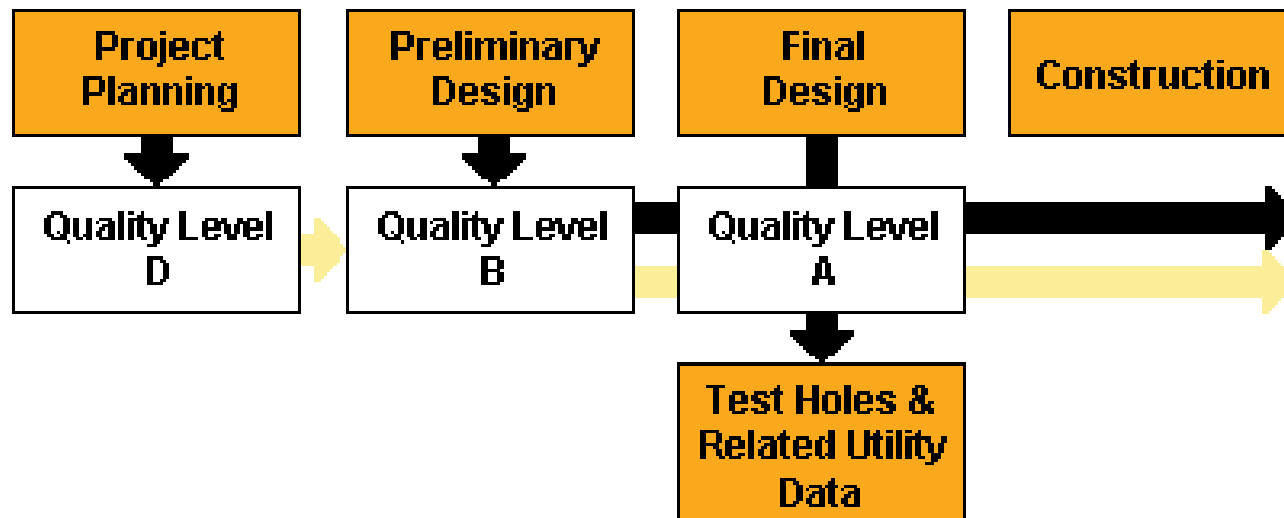




Photo: Gary Borland, Cardno TBE Inc



"The Federal Highway Administration has been encouraging the use of Subsurface Utility Engineering on Federal-aid highway projects since 1991. Proper use of this cost-effective professional engineering service **will eliminate many of the utility problems typically encountered** on highway projects. Using this technology, it will be possible to **avoid many utility relocations** before construction and many unexpected encounters during construction, thereby **eliminating many costly, time-consuming project delays**."

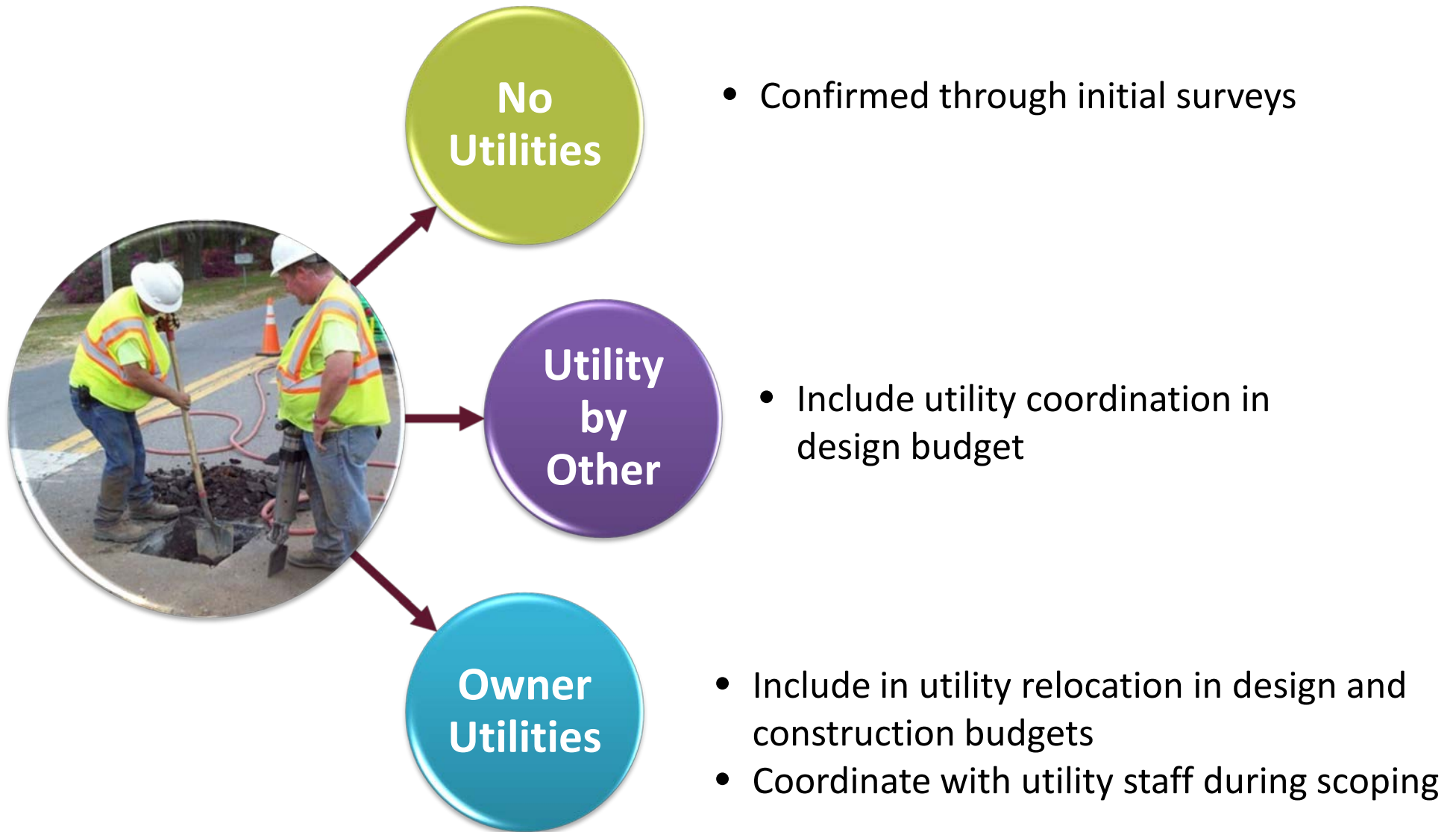


Quality Level D - Information derived from existing records or oral recollections.

Quality Level C - Information obtained by surveying and plotting visible above-ground utility features and by using professional judgment in correlating this information to Quality Level D.

Quality Level B - Information obtained through the application of appropriate surface geophysical methods to determine the existence and approximate horizontal position of subsurface utilities.

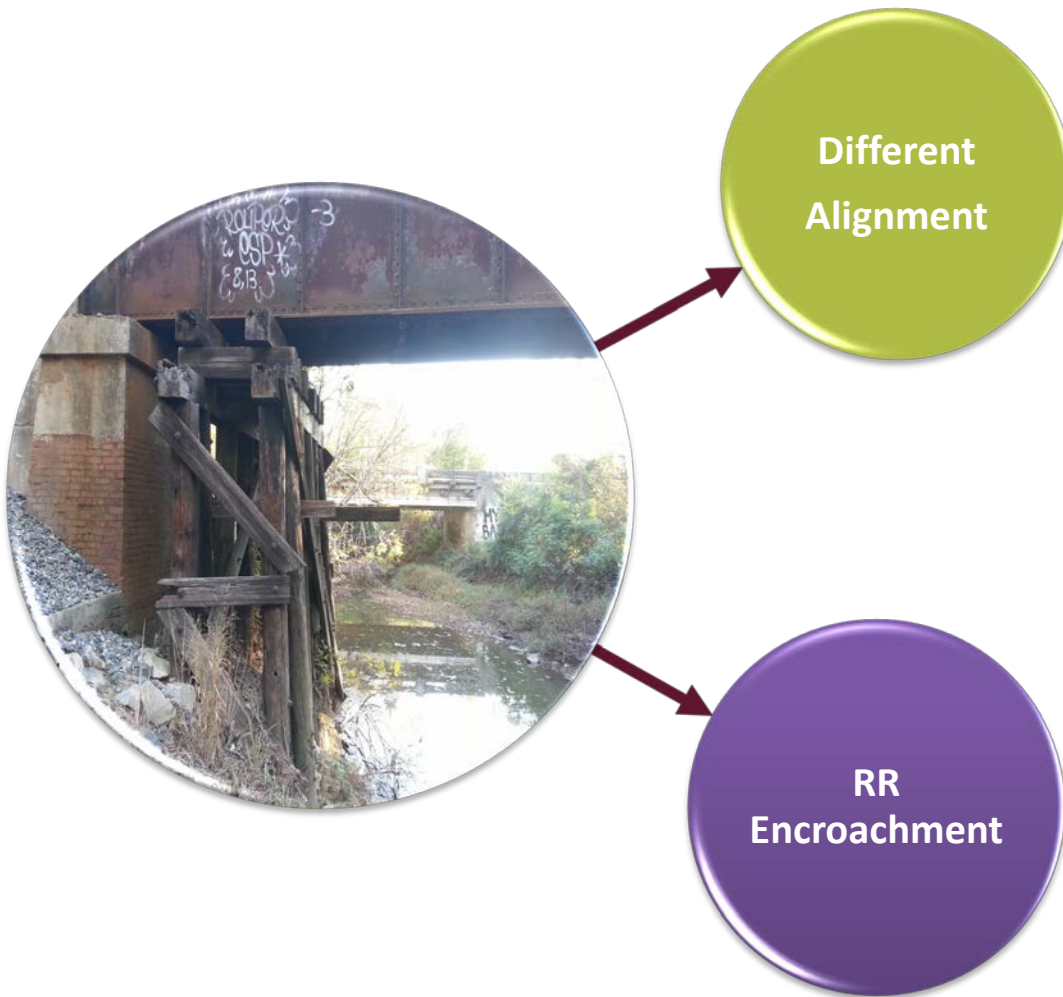
Quality Level A - Precise horizontal and vertical location of utilities obtained by the actual exposure and subsequent measurement of subsurface utilities, usually at a specific point.



Railroad Considerations

STRONGER BY DESIGN





- Include fee for railroad to review plans \$8,000-\$15,000
- Schedule delays will occur
- Construction specifications include insurance and flagman requirements

- Fewer bidders & rebidding
- 20-30% higher construction bids
- Smaller projects are hit harder
- Some contractors want to avoid NCDOT inspection and audit requirements
- What can you do?
 - Use latest line item bid prices
 - Have good plans for construction access and staging included in plans
 - Use alternatives if concerned about bids exceeding budget





- Need clear commitment from owner and agreement on costs
- A mix of CA by Owner and CMT by Consultant is Common
- 10-12% of Construction Cost



CONSTRUCTION CONTRACTS

- Contract Proposals should be developed in accordance with NCDOT Specifications
- Federal Provisions must be included
 - Minimum Wage Rates (Davis-Bacon)
 - Disadvantaged Business Enterprise (DBE) goals
 - Proprietary Products
 - Buy America (domestic steel and iron), etc.
- Consider how these provisions may affect contractors' bid prices



NCDOT REVIEW & ADMINISTRATIVE FEES

- Varies by Division, but several units of DOT may charge time to the project if they review items.
- These charges accumulate at 100% against the federal money, which is set up at 80%, therefore NCDOT must bill the other 20% from the LGA.
- In addition to direct staff time, NCDOT also applies indirect charges to all open projects per an agreement with FHWA.
- These charges are eligible for federal funds for 80% of their costs, but the Department will still bill the LGA for 20%.
- If all the federal funds have been used on reimbursement to the LGA or Departmental charges, and there are still costs remaining, then the LGA will be billed 100% of those remaining costs.
- Language has been added to the Agreement to account for NCDOT charges up front.
- This should be calculated into any initial budgets developed for the project.



- What kind of data?
 - User counts
 - Economic Surveys
 - Property value trends
- Partner
 - Universities
 - NCDOT
 - MPO/RPOs
- Standardization
- Share your data

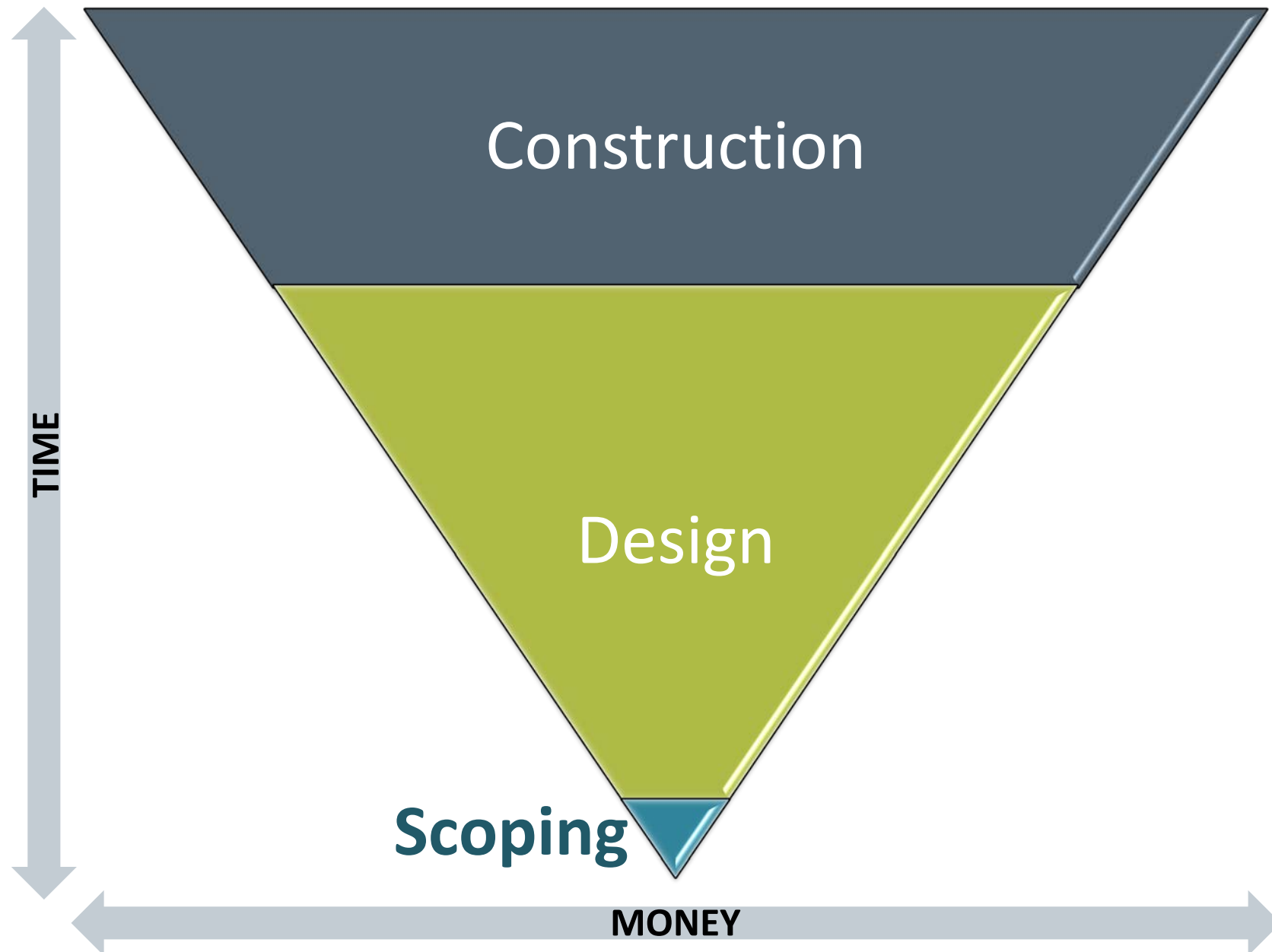


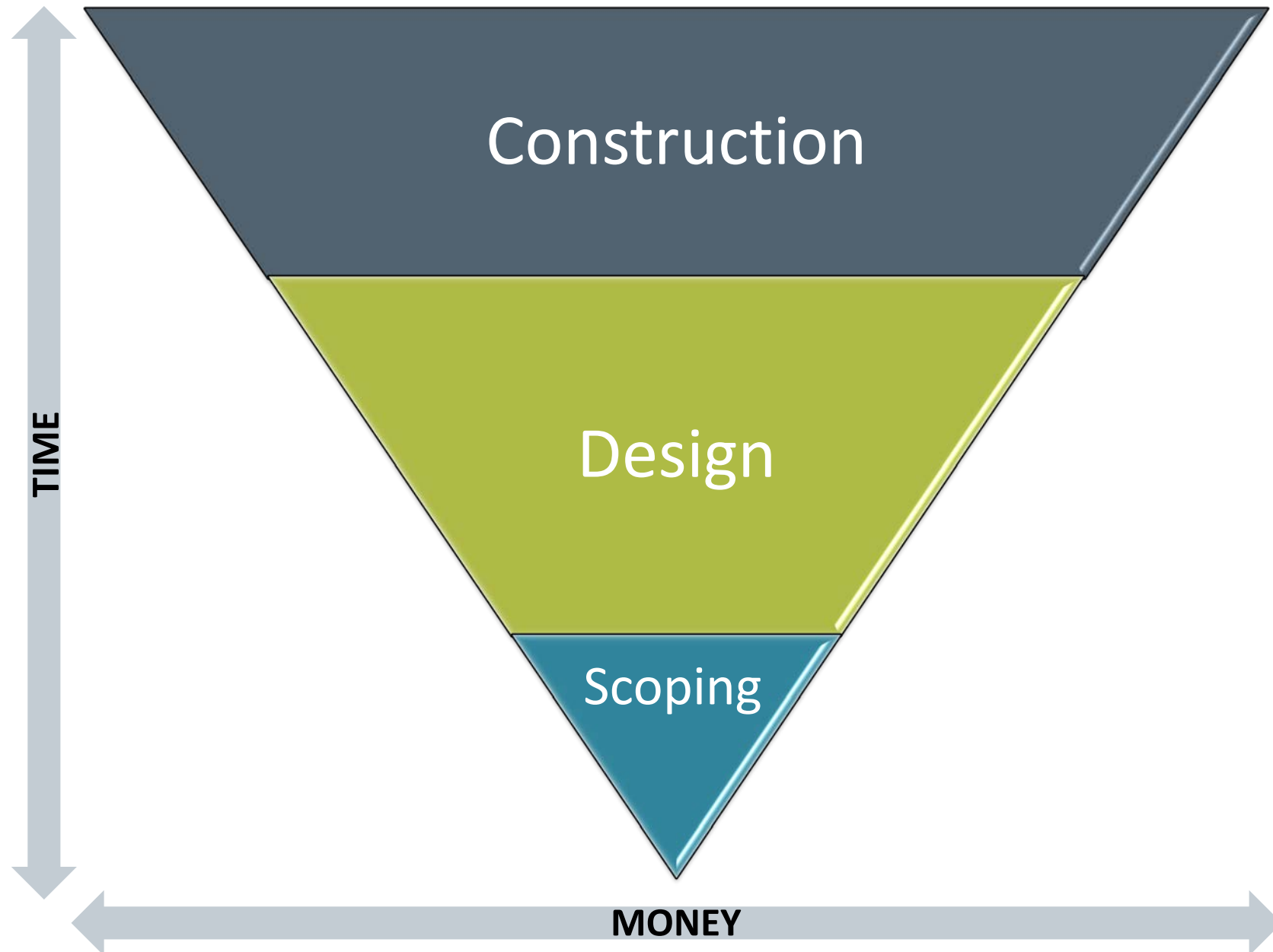
User data tells the story of the return on investment on bicycle and pedestrian projects.



- Educate yourself on the options
- Include equipment and installation cost in budget and construction docs
- Include staff time and costs for data collection, equipment maintenance and analysis







- Watch limiting beliefs
 - There's not enough money
 - We'll never get the land
 - NCDOT will never let us do that
 - Our citizens won't "get it"

It is beholden upon us as planners to plan BIG. Plans only get smaller when they leave our hands.