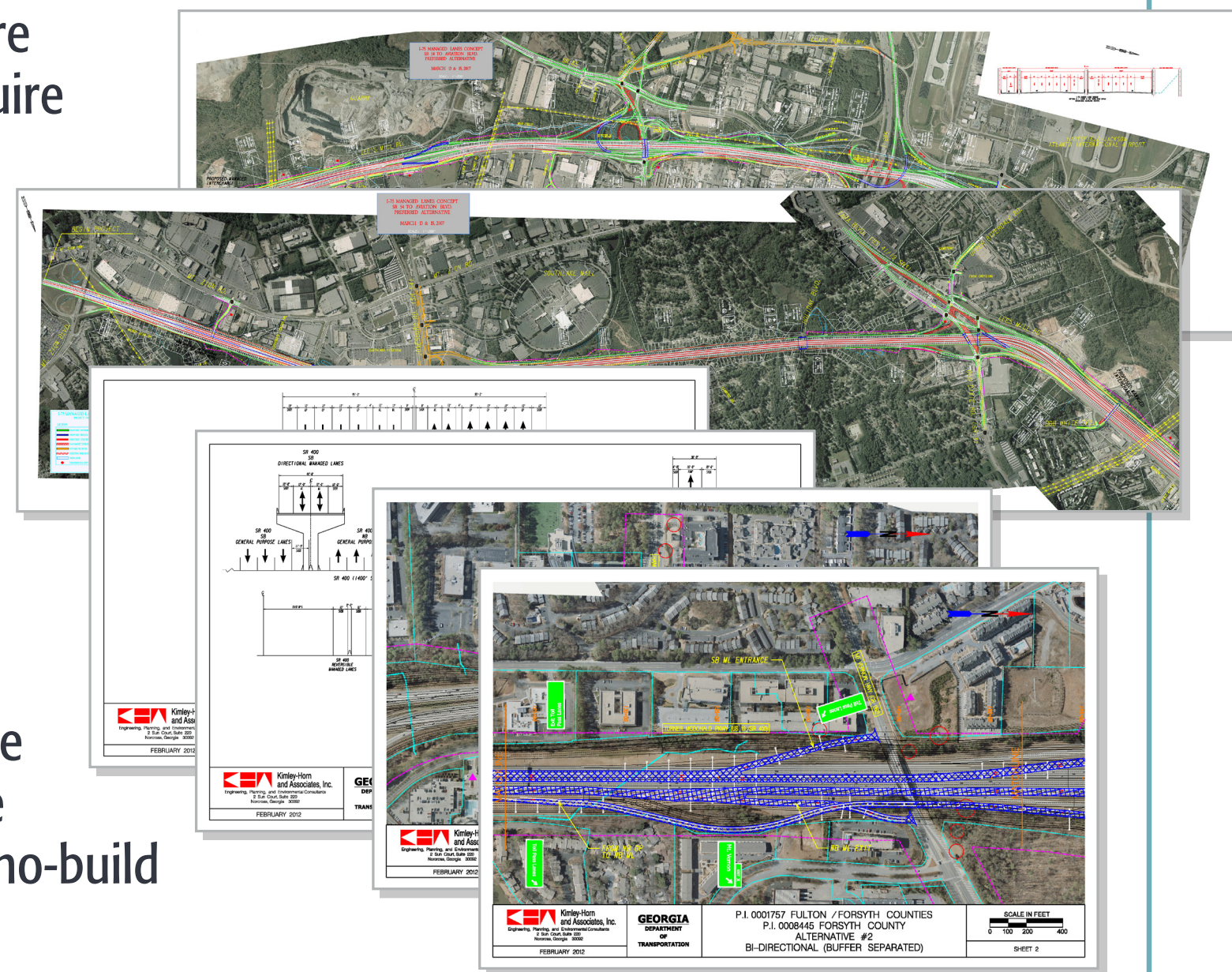


# Managed Lane Alternatives Tool

A tool for evaluating conceptual managed lane geometric alternatives through long transportation corridors is presented to determine the feasibility of alternatives **without the need for extensive CAD design**. The tool is applied using a Microsoft Excel spreadsheet. The tool provides a concise interpretation of the existing topographic limitations of a particular transportation corridor and compares them to the proposed geometric cross section of a managed lane alternative. This is achieved by tabulating existing lane dimensions and clearances to edges of pavement, bridge piers, overhead sign structures, right-of-way, wetlands, or any other variables that are noteworthy for the purpose of tabulating impacts in a matrix of alternatives. Geometric alternatives are then compared to the aforementioned existing limitations through a series of algorithms that instantaneously identifies the conflicting feature, its location, and the width in which a particular alternative is not feasible. The evaluation allows the user to develop a matrix of alternatives without the need for extensive conceptual engineering design layouts or plan sets and allows for **quicker and more cost effective review** before further developing alternatives.

## ▼ What's the traditional method?

- Plan sheets only capture a limited area and require extended conceptual review and design time
- Layouts for long corridors are printed on long roll plots and it is difficult to review conflict areas in detail
- Layouts and plan sheets require extensive conceptual design time to determine build vs. no-build alternatives



## ▼ How does the tool work?

- The tool tabulates existing corridor geometry in Microsoft Excel
- Proposed alternatives are compared with existing obstructions taken into consideration

The image shows a screenshot of a Microsoft Excel spreadsheet titled 'CORRIDOR IMPACT EVALUATION ANALYSIS - EXISTING GEOMETRY'. The spreadsheet is organized into columns for 'ROUTE 66 WESTBOUND' and 'ROUTE 66 EASTBOUND'. It contains a detailed table of bridge information and obstruction types. A smaller table is overlaid on the bottom right, showing 'BRIDGE INFORMATION' and 'EXISTING ROADWAY CORE' with columns for 'LENGTH BETWEEN CORRIDOR FEATURES' and 'WIDTH (FEET)'. The 'BRIDGE INFORMATION' table includes columns for 'BRIDGE NUMBERS', 'BRIDGE CROSSING TYPE', 'PROGRAMMED REPLACEMENT YEAR', 'OUTSIDE CONSTRUCTION AREA', 'WETLAND BODY OF WATER/ENVIRONMENTAL IMPACT', 'RETAINING WALL', 'BRIDGE PIER', 'SIGN FOUNDATION', 'INSIDE CONSTRUCTIBLE AREA', 'OUTSIDE SHOULDER', and 'ADJUTARY LANE'. The 'EXISTING ROADWAY CORE' table includes columns for 'THRU' and 'THRU' lanes for both directions.

## ▼ Why is it quicker and more cost-effective?

- The tool summarizes the location of corridor impacts and widths in which they don't meet criteria
- Proposed alternative input is dynamic

The image shows a screenshot of the 'CORRIDOR IMPACT EVALUATION ANALYSIS' spreadsheet. It features a complex grid with columns for 'STATION', 'CORRIDOR FEATURE', 'LENGTH', 'BRIDGE NO.', 'BRIDGE TYPE', 'STOP YEAR', and 'IMPACT ANALYSIS'. The 'IMPACT ANALYSIS' section is color-coded: green for 'NO IMPACT IDENTIFIED', red for 'IMPACTED CONDITION AND WIDTH OF IMPACT', and yellow for 'EXISTING GEOMETRY'. A legend at the top right explains these color codes. The spreadsheet also includes sections for 'ROUTE 66 WESTBOUND' and 'ROUTE 66 EASTBOUND' with detailed impact analysis for each direction. A 'LEGEND' box at the top right defines the color coding: Green for 'NO IMPACT IDENTIFIED', Red for 'IMPACTED CONDITION AND WIDTH OF IMPACT', and Yellow for 'EXISTING GEOMETRY'. The spreadsheet also includes a 'BRIDGE IMPACT' section and a 'RIGHT-OF-WAY RELATED IMPACT' section.