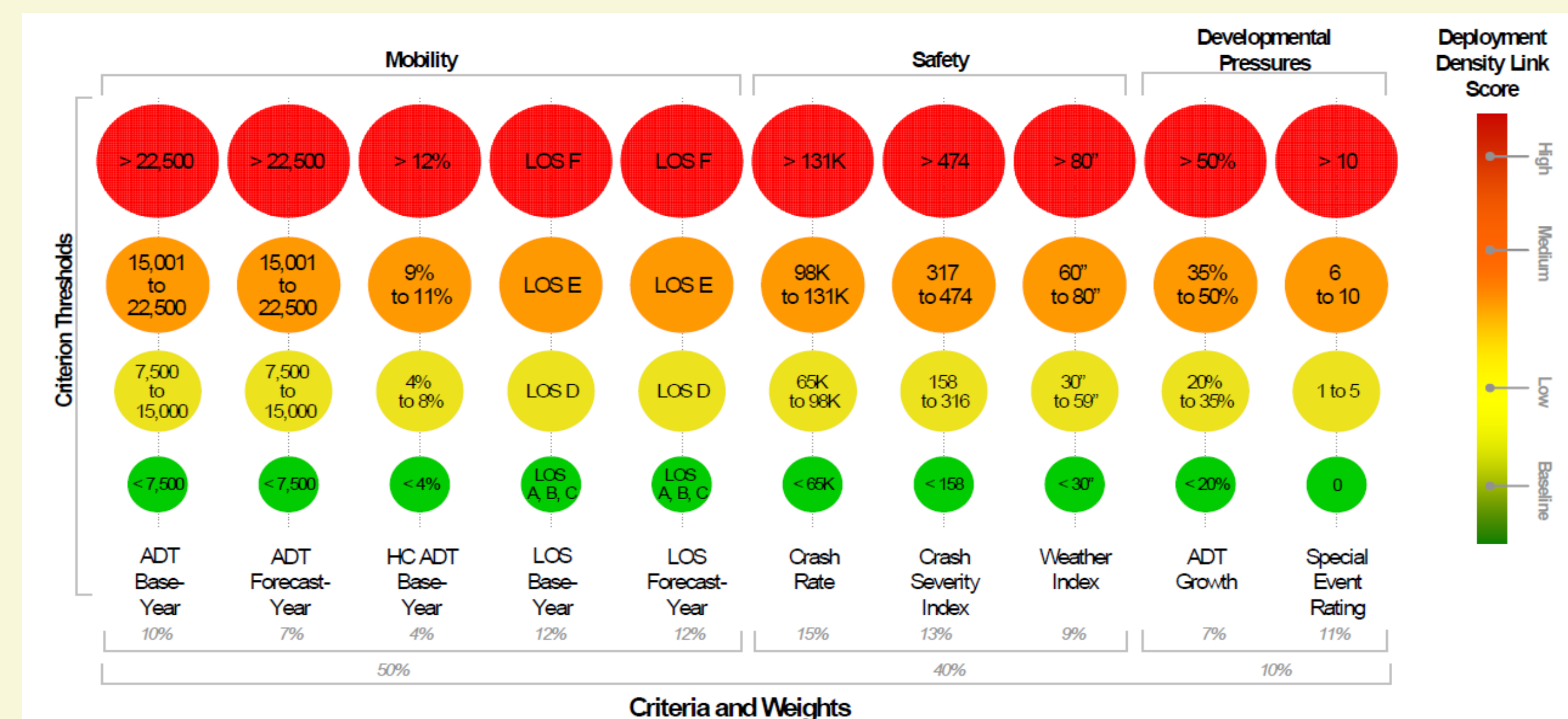


## Purpose and Concept

- Evaluate operational projects in the same manner as traditional infrastructure projects and integrate operations into Wisconsin Department of Transportation (WisDOT) planning processes
- Connections 2030* Long-Range Transportation Plan identified 37 corridors that were the focus for an ITS plan
- The **Traffic Operations Infrastructure Plan (TOIP)** was initially completed in 2008 including an operationally-oriented methodology to provide ITS deployment recommendations

## TOIP Methodology

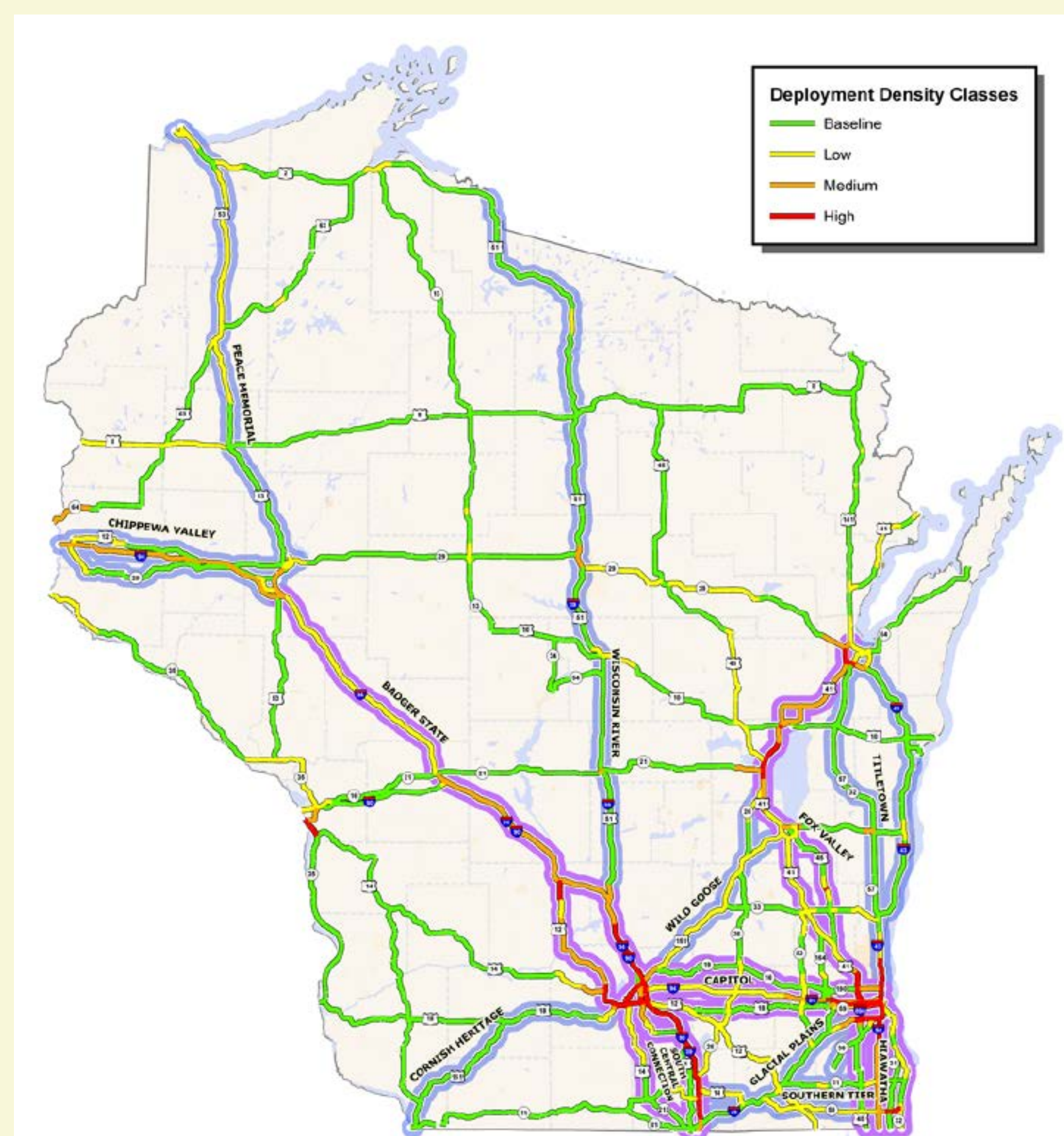
- Deployment Density Class (DDC) recommendation for every road segment as **BASELINE, LOW, MEDIUM** or **HIGH**
- The DDC is reached through the analysis of 10 criteria grouped into tiers and a threshold established for each criterion



- The method is applied to obtain all the DDC contributions for each criterion for the final DDC of a road segment
- Data obtained principally from WisDOT Meta-Manager dataset

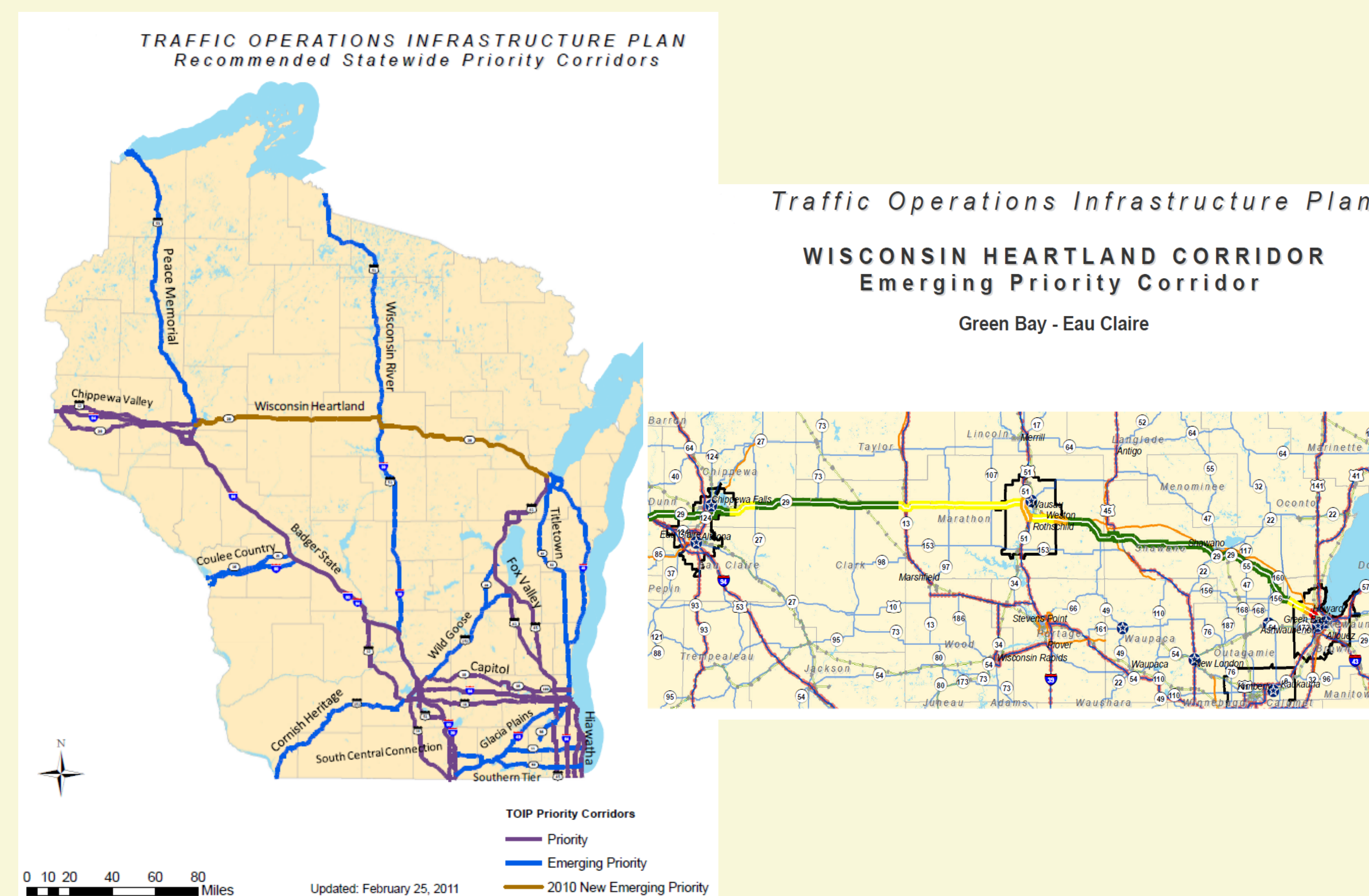
## TOIP Results

- Based on the DDC, a priority score was obtained and 14 corridors were ranked as Priority and Emerging Priority Corridors



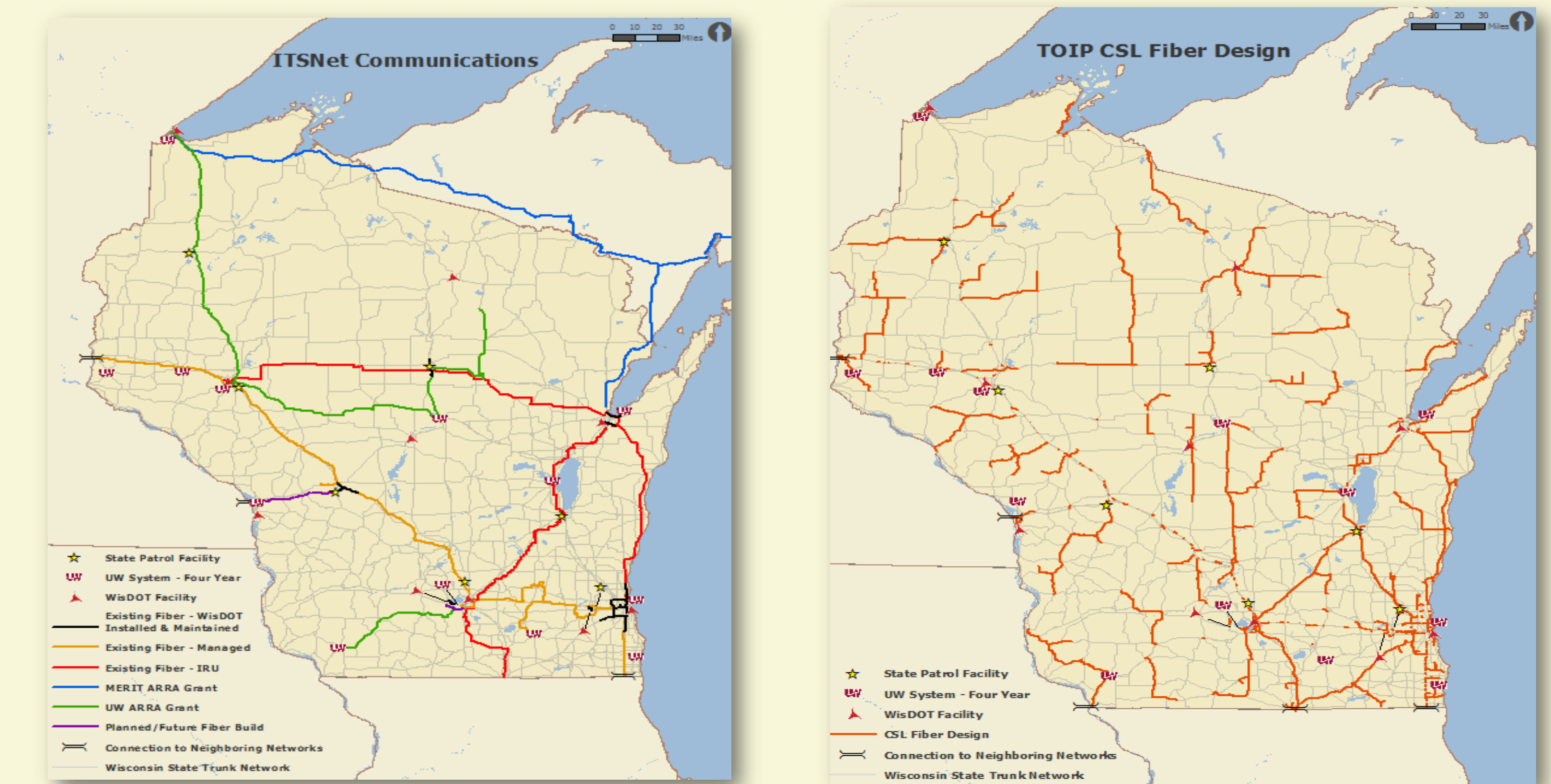
## 2010 TOIP Update

- In 2009, a TOIP implementation plan was completed, identifying locations to install ITS devices
- The 2010 TOIP update applied newer Meta-Manager data reflecting current traffic patterns as well as to expand ITS deployment outside the major cities
- Priority scores changed for most of the corridors as well as the prioritization list
- Changes were due principally to AADT, LOS, crash rate, percent of trucks and previous infrastructure improvements
- Wisconsin Heartland Corridor was added into the Emerging Priority list connecting Green Bay, Wausau, and Eau Claire

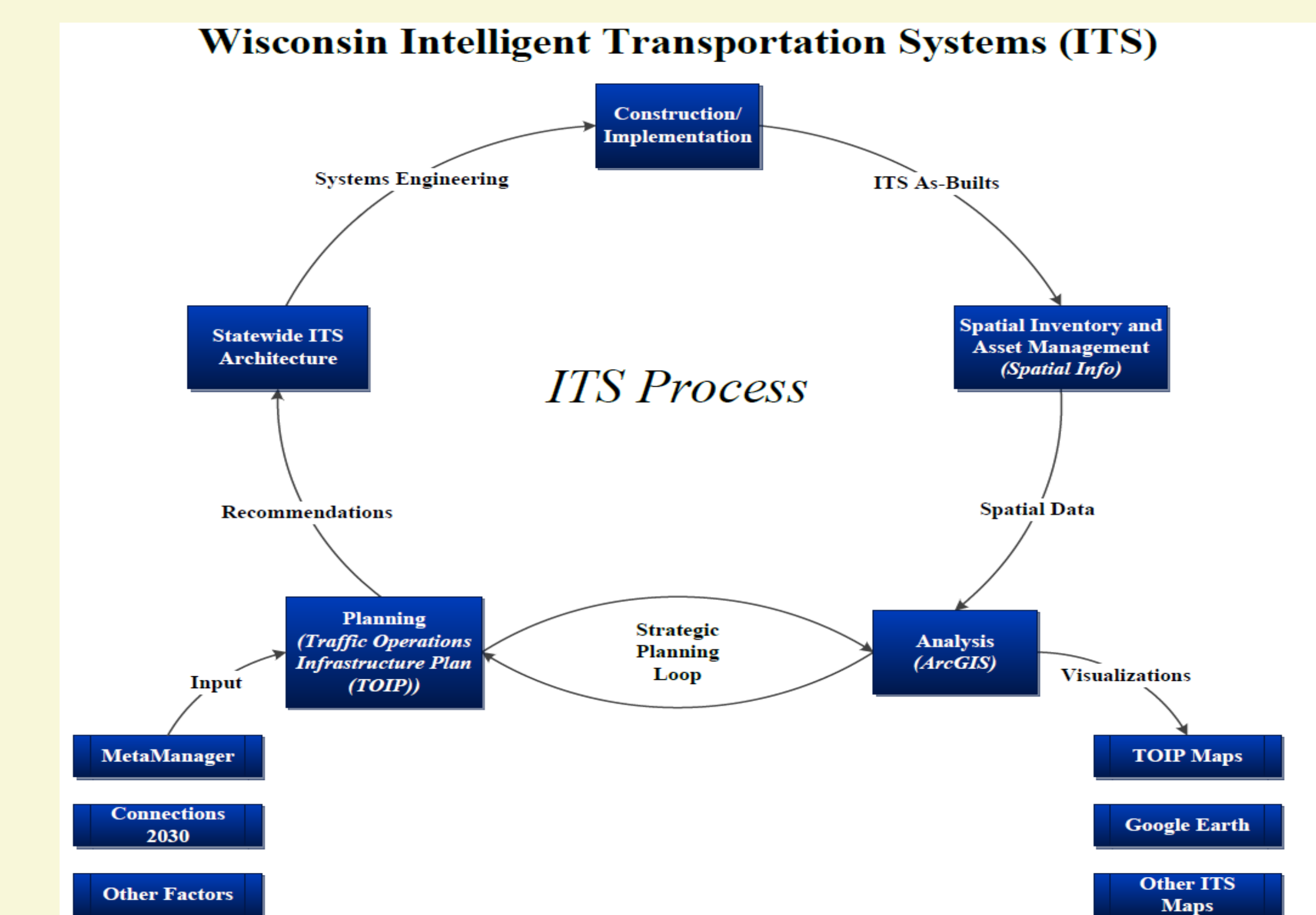


## TOIP Communications System Layer (CSL)

- In 2010, the TOIP CSL was completed identifying statewide communications infrastructure needs, deployment plans, and cost estimates for further ITS connectivity
- Current WisDOT fiber network communication system (ITSNet) connects the major cities around the state
- For the fiber network expansion, an inventory of the existing devices and network infrastructure was developed
- A geo-spatial database was created using ArcGIS, connecting the existing deployment and network with the proposed devices identified on the TOIP implementation plan, WisDOT offices, STOC, and other agencies that will be using the fiber network
- The results of the methodology is a TOIP CSL Fiber Plan



## Wisconsin ITS Process



- WisDOT is currently deploying a full-featured ITS and communications spatial inventory and asset management system
- It injects a versatile and dynamic inventory system that continually takes in as-built information, fuels the information necessary for maintenance activity, and can then in turn be used for further deployment planning
- Recommendations from the TOIP portion of the process flow through the Wisconsin statewide architecture, which was overhauled in 2011 and is now regularly updated and made available online to all stakeholders
- Deployments follow the systems engineering process, are constructed or implemented, and the as-built information comes back around to the new inventory system

## Acknowledgements

The authors gratefully acknowledge support of this study from WisDOT under the direction of John Corbin. Also acknowledged Dawn Krahn of WisDOT for providing updated Meta-Manager data, and Sam Van Hecke of Cambridge Systematics for providing assistance on the TOIP methodology development.