



GIS Tools for Displaying 4-Year Plan Projects

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Research Overview

TxDOT District Pavement Engineer develops a 4-year plan for their District each year based on PMIS data and other criteria, and usually meets with the Area Engineers to finalize the 4-year plans. A mapping tool based on ArcGIS is developed to help this process.

Methodology

Data Acquisition

- PMIS database
- 4-year plan list
- Candidate list

Data Process

- Check validation
- Calculate B-DFO and E-DFO
- Clean data format

Data Mapping

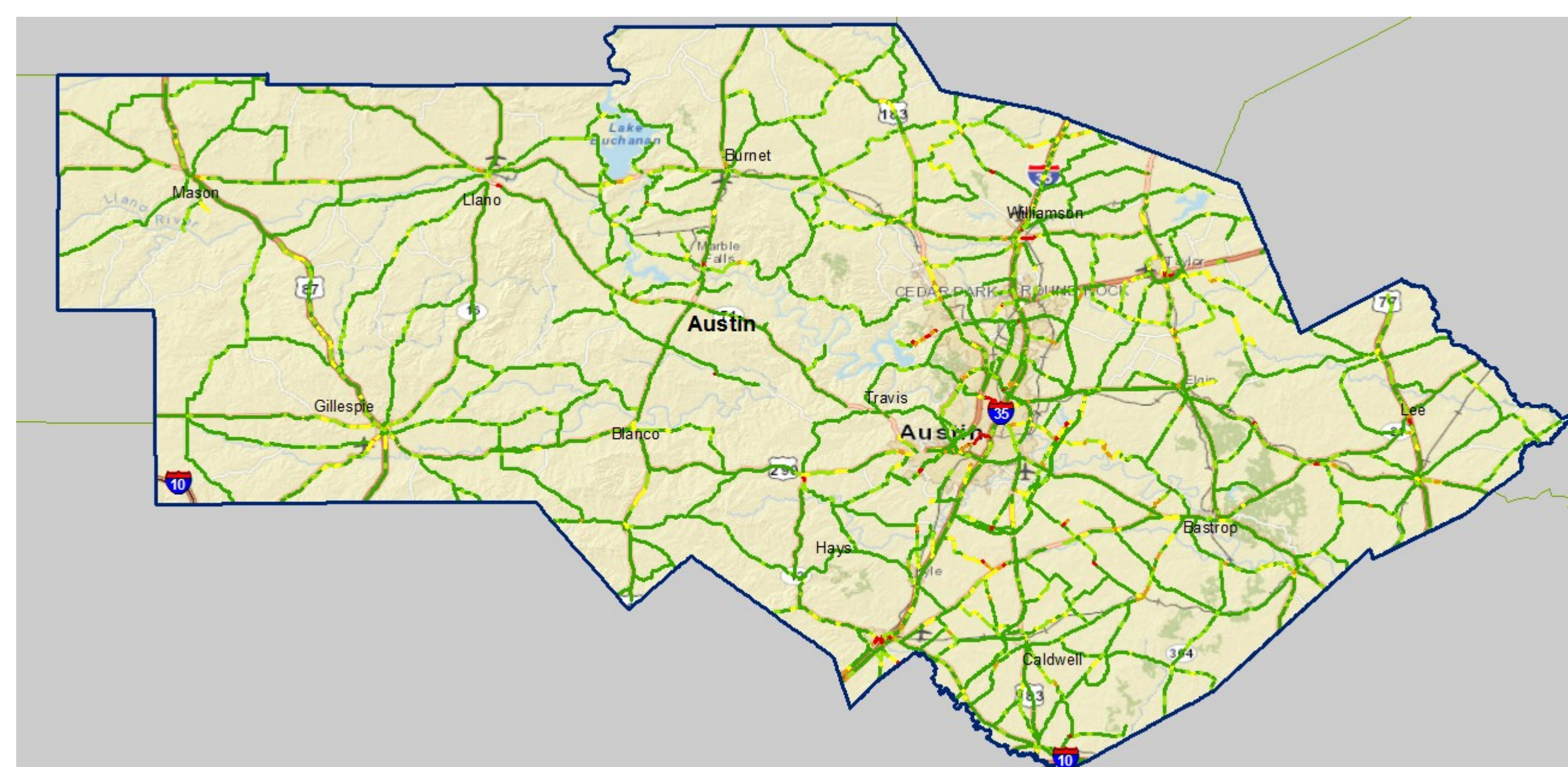
- Desktop version
- Publish desktop version map online
- Online version

Map Demonstration — Desktop Version

The desk version tool requires ArcGIS software. The layers and corresponding category criteria are:

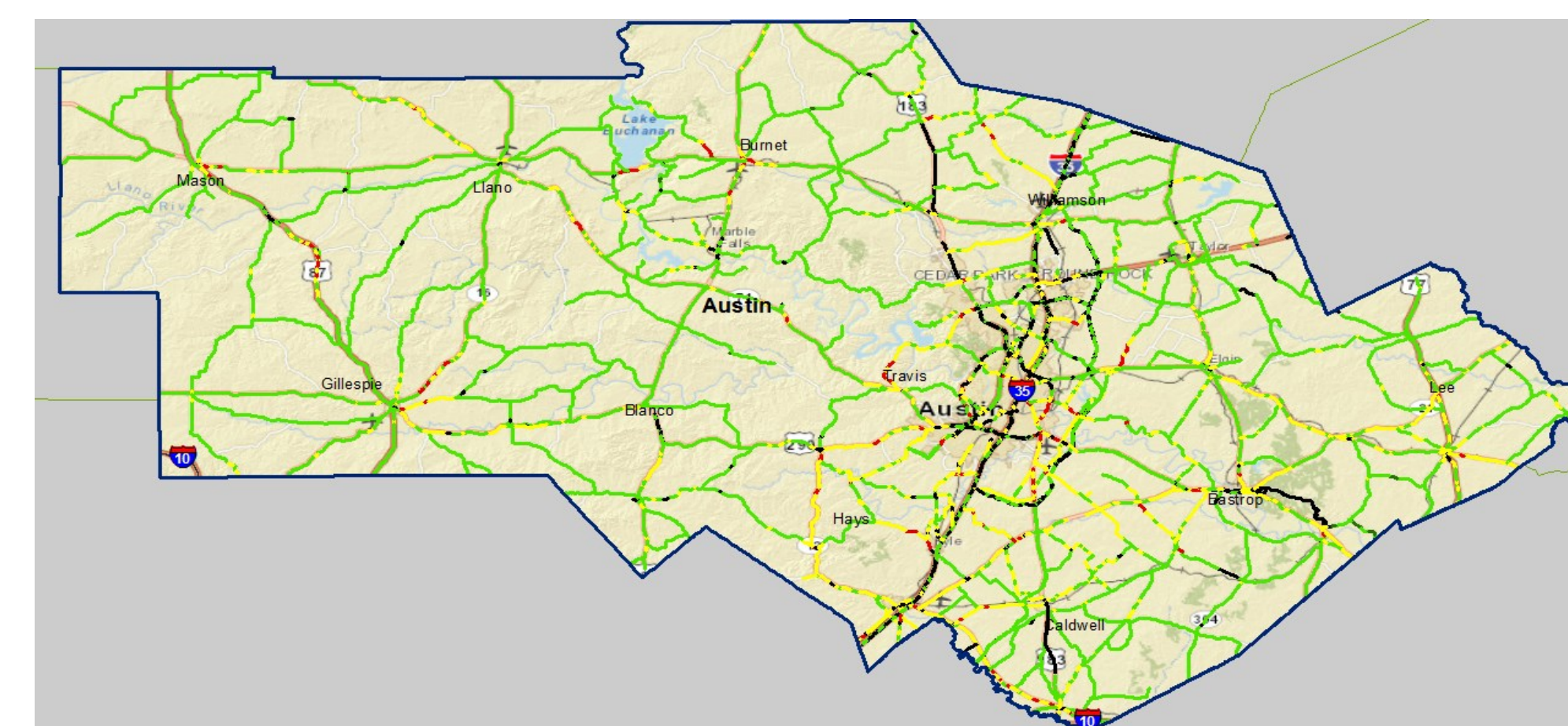
- PMIS Condition/Distress Score Layer:

- ☒ PMIS2015_Condition_Score
- ☒ Condition_Score_2015 CS_2015
 - Very poor (≤ 35)
 - Poor (36 - 50)
 - Fair (51 - 70)
 - Good (71 - 90)
 - Very good (> 90)
- ☒ Condition_Score_drop CS_Drop_2015
 - ≤ -30
 - between -29 and -21
 - between -20 and -11
 - ≥ -10



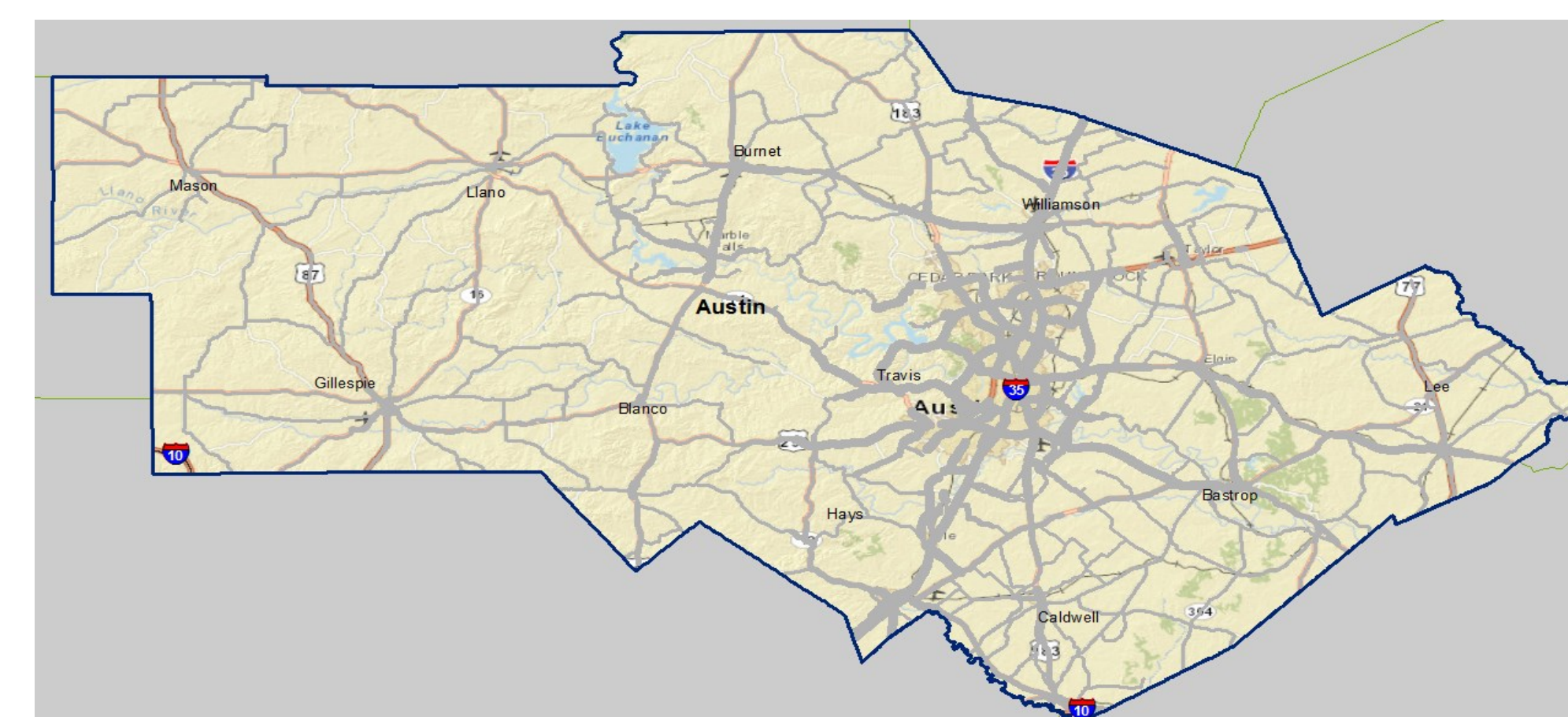
- PMIS Skid Score Layer:

- ☒ PMIS_Skid_Score SKID_SCORE_2014
 - No data (=0)
 - Action should be taken (≤ 14)
 - Project-level testing (15 - 28)
 - Vigilance should be exercised (29 - 74)
 - No action (> 74)



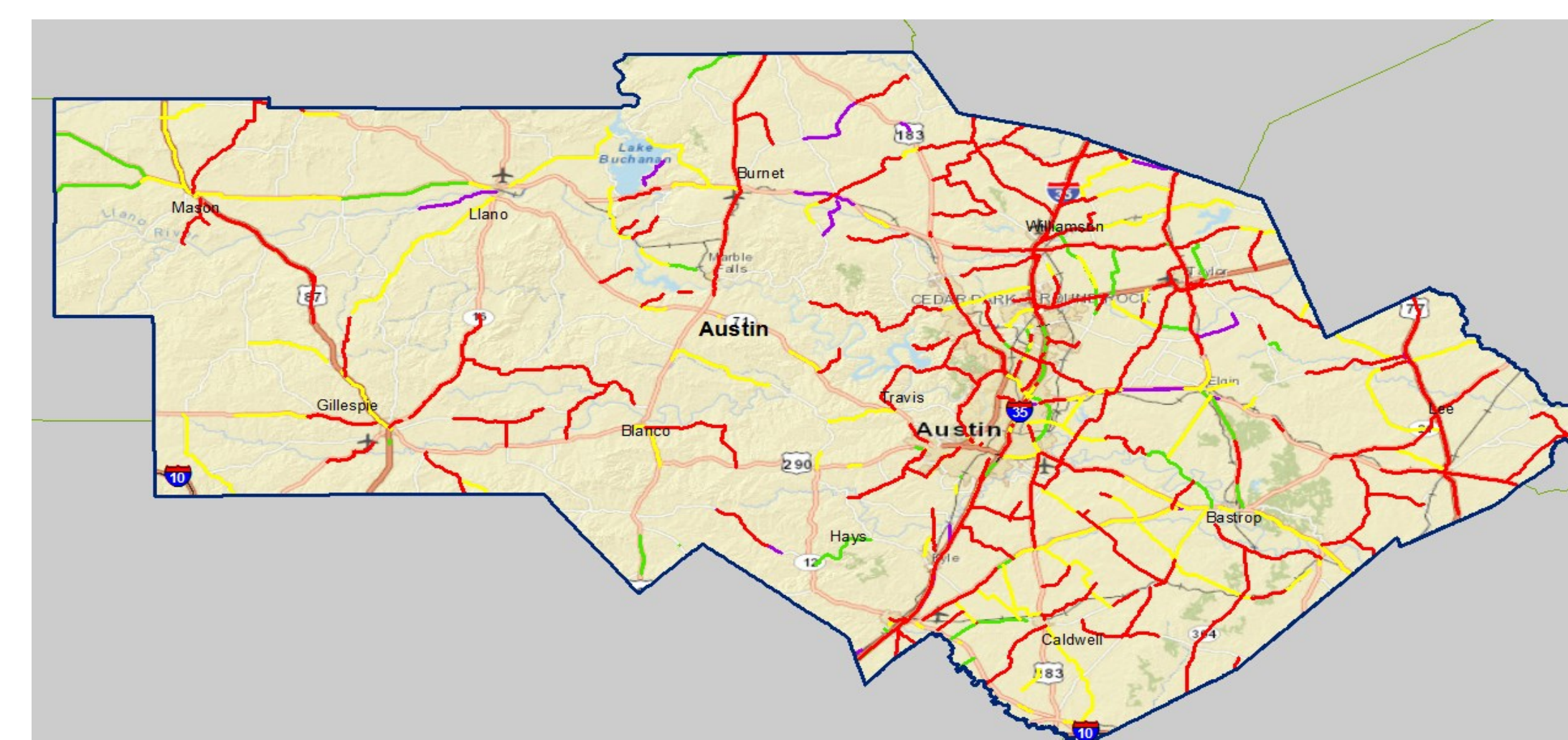
- PMIS Traffic Information Layer:

- ☒ Traffic AADT_PMIS2015
 - Low AADT (≤ 6575)
 - Medium AADT (6576 - 11835)
 - High AADT (≥ 11836)



- 4-Year Plan by Fiscal Year/Work Type/Funding Type:

- ☒ 2014_4-year_plan
- ☒ 2014 4-year plan_Fiscal Year
 - ☒ FY2016
 - ☒ FY2017
 - ☒ FY2018
- ☒ 2014 4-year plan_Funding Type
 - ☒ CAT1
 - ☒ 144
 - ☒ 105
- ☒ 2014 4-year plan_Work Type
 - ☒ Routine Maintenance
 - ☒ Preventative Maintenance
 - ☒ Light Rehabilitation
 - ☒ Medium Rehabilitation
 - ☒ Heavy Rehabilitation
 - ☒ Not Available



- Overlapped Projects of 4-Year Plan and Candidate Projects:

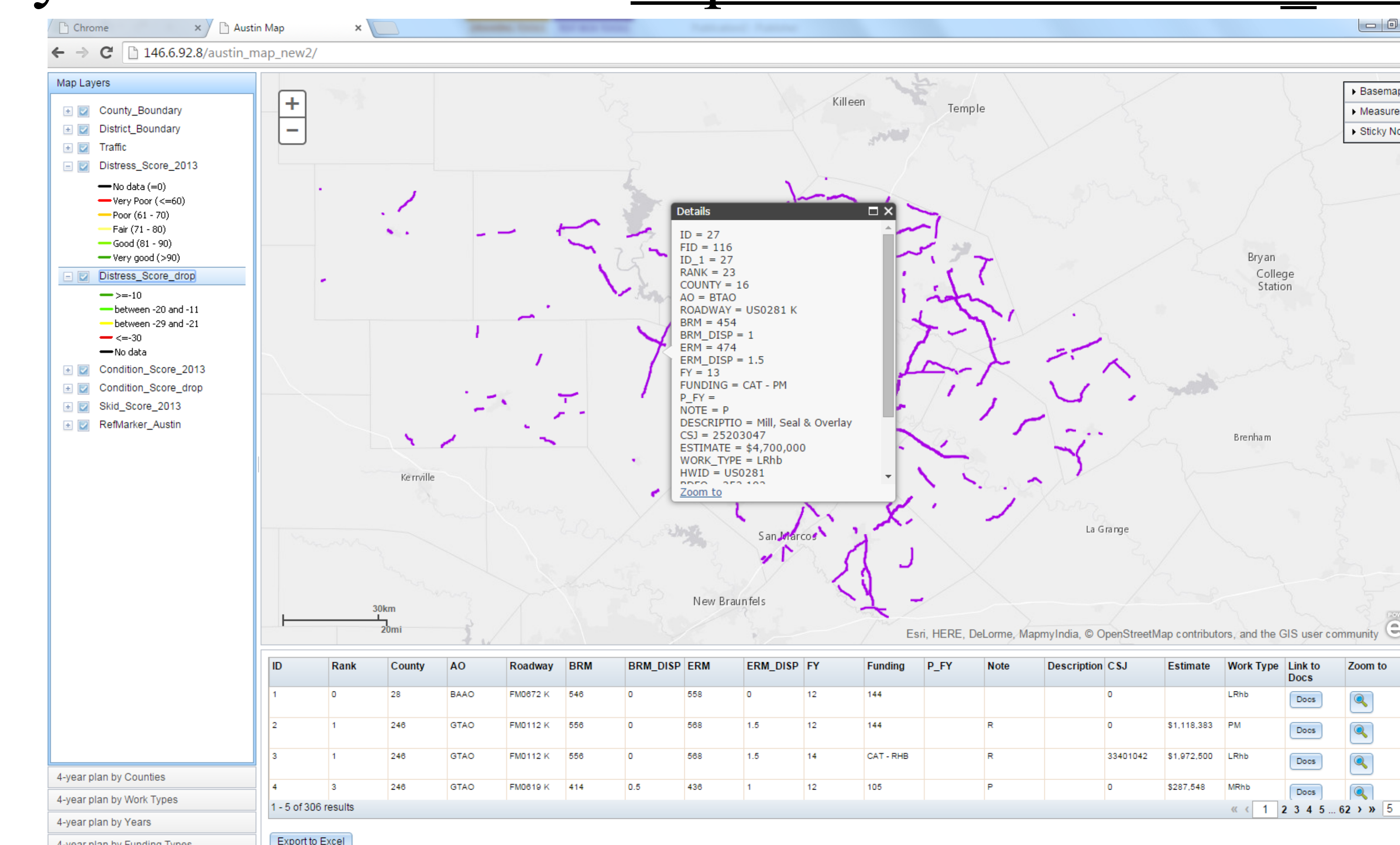
- ☒ 2014_4-year_plan
- ☒ 2014 4-year plan_Fiscal Year
 - ☒ FY2015
 - ☒ FY2016
 - ☒ FY2017
 - ☒ FY2018
- ☒ FY15_candidate_projects
- ☐ FY15_candidate
- ☒ Overlap_projects



Map Demonstration — Online Version

The online version tool does not require ArcGIS software. It is a web-based tool.

- Currently can be accessed at: http://146.6.92.8/austin_map_new2/



Conclusions

To summarize, this mapping tool:

- Visualize PMIS database
- Show planned project locations, treatment types and treatment timing to District Administration for further consideration
- Assist TxDOT District Pavement Engineer during meetings with the Area Engineers

Acknowledgements

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