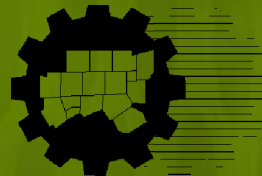


Regional GIS Meeting

Regional Veloweb Review
and Update

October 29, 2009



North Central Texas Council of Governments

Agenda

- I. Background
- II. Review Process
- III. Methodology
- IV. Results
- V. Questions



The Regional Veloweb

A 644-mile interconnected network of off-street trails designed to provide safe efficient mobility to pedestrians, cyclists, and in-line skaters.

Design Considerations:

- Concrete surface
- Design speed of 25 miles per hour
- Recommended width of 12 feet to accommodate a variety of users
- Grade separated crossings
- Few, if any, signalized or stop sign intersections
- Easy access from roadways, particularly on-street bicycle routes



The Regional Veloweb

Objectives of the Mobility 2030: The Metropolitan Transportation Plan for the Dallas- Fort Worth Area, 2009 Amendment include:

1. Improve safety, mobility, and access to transit for trips made by non-motorized modes of transportation.
2. Increase the service area of bicycle and pedestrian facilities.
3. Make further progress toward the regional commuting goal of an 8% combined alternative transportation mode share.



The Regional Veloweb

MTP 2030 – 09 Amendment, NCTCOG Veloweb Strategy

- Encourage consistent local government action to incorporate bicycle and pedestrian facilities into policies and planning.
- Coordinate local government, transit agency, and TxDOT activities to preserve right-of-way for trail corridors and promote grade separated intersections.
- Prioritize funding recommendations based on locations that provide access to transit, access to high exposure areas, or complete a trail connection.
- Promote transportation plans that provide regional connectivity.
- Identify activity centers on the Veloweb plan and focus on constructing the Veloweb extending outward.



The Regional Veloweb

MTP 2030 Map

- Existing Regional Veloweb map was developed in 1997.
- Recommended routes and trails included in the Regional Veloweb are considered high priority projects and are often used as part of the evaluation process when funding becomes available for various Regional Transportation Council (RTC) programs.



The Regional Veloweb Route Determination, 1997

Individual routes were determined by:

- Creating an inventory of existing and funded trails.
- Identifying facilities planned by local governments.
- Identifying routes that could provide air quality benefits.
- Identifying routes linking transit stations.
- Examining the potential of linking routes.
- Examining the potential for securing free or low cost right-of-way along the proposed routes.





The Metropolitan Transportation Plan

Bicycle-Pedestrian Transportation Districts

Legend

Recommended Veloweb Routes

- Completed: 112 miles
- Funded: 34 miles
- Needed: 289 miles

Candidate Veloweb Routes

- Completed: 7 miles
- Needed: 202 miles

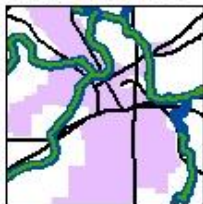
Bicycle-Pedestrian Transportation Districts
Within all rail corridors, all existing and planned stations are bicycle and pedestrian districts.

Freeways

County Boundaries

Metropolitan Planning Area Boundary

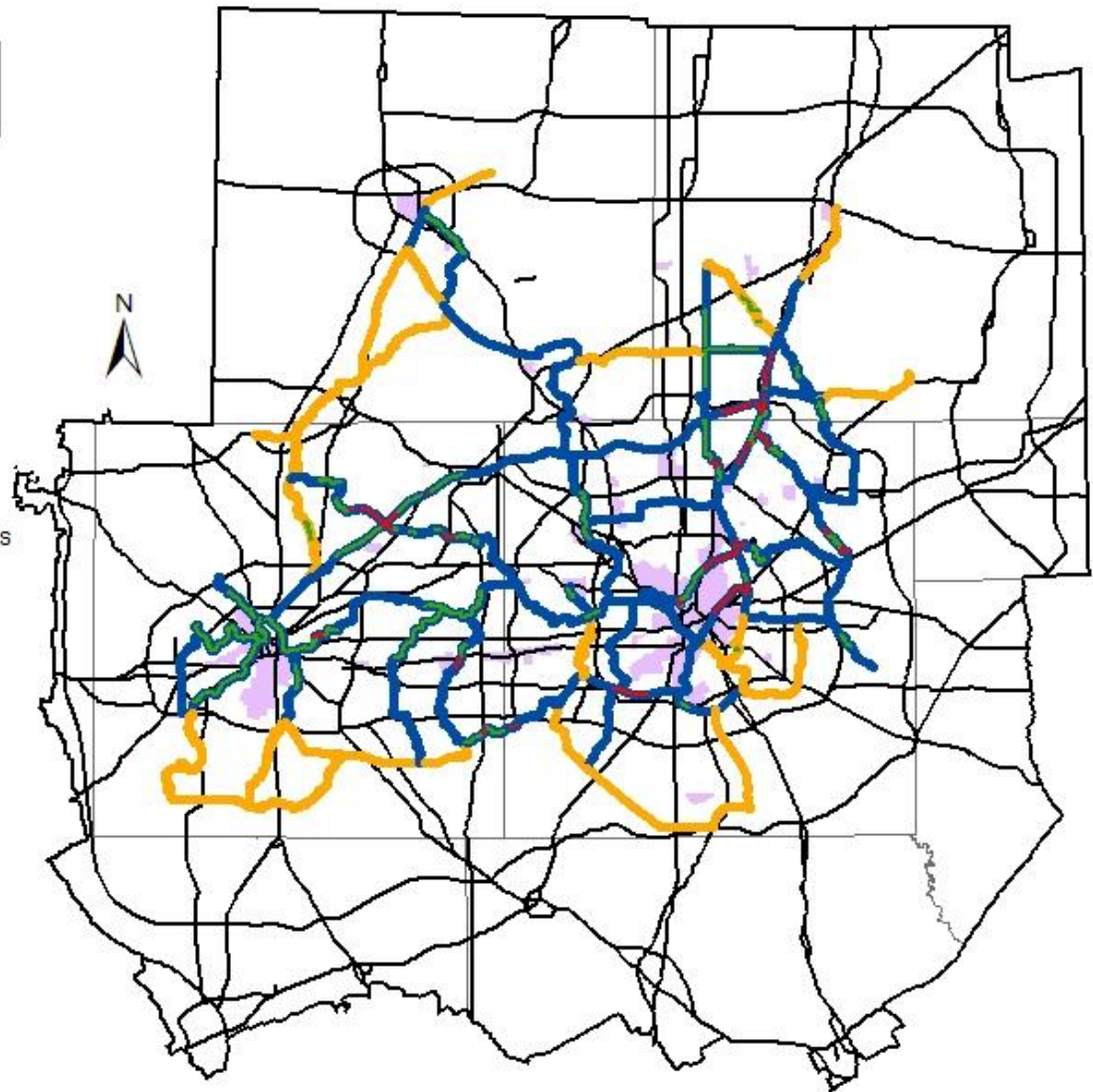
Fort Worth CBD



Dallas CBD



New facility locations indicate transportation needs and do not represent specific alignments



South Central Texas
Council of Governments
Transportation

January 18, 2008

The Regional Veloweb

MTP 2030 – 09 Amendment, NCTCOG Obstacles

1. **Current infrastructure is insufficient for bicyclists and pedestrians in the region.**
2. **Varied knowledge levels and education programs about safe and effective habits exist among bicyclists, pedestrians, motorists, and law enforcement agencies.**
3. **There is a lack of end-of-trip facilities (showers, parking, changing facilities).**



The Regional Veloweb Review Public Meetings, 2008

A series of county-specific workshops were held in 2008 as an opportunity for local government staff, bicycle and pedestrian interested parties, and interested citizens to provide feedback about existing and planned regional trail facilities.

January 31, 2008

Kick Off, NCTCOG

March 6, 2008

Tarrant County

April 3, 2008

Denton County

May 23, 2008

Dallas County

May 29, 2008

Collin County

July 17, 2008

Rockwall & Kaufman Counties

August 5, 2008

Johnson & Ellis Counties

August 12, 2008

Parker County



The Regional Veloweb Review Public Meetings, 2008



The Regional Veloweb Review Goals

- Assess the condition of current Veloweb facilities.
- Encourage partnerships for bicycle and pedestrian facility implementation.
- Identify regularly traveled routes.
- Identify missing routes and unmarked trails.
- Evaluate the need to re-align the Veloweb plan in areas.
- Promote a consistent Regional Veloweb design.
- Provide a forum to discuss issues and successes.
- Evaluate overall connections to employment locations, transit stations, schools, and other commuter destinations.



The Regional Veloweb Review

Goals, cont.

Top Priorities that led discussions:

- **Completing trail segment connectors.**
- **Utilizing levees, abandoned rail lines, and utility corridors for trail right-of-way.**
- **Encouraging the construction of bicycle and pedestrian facilities upfront.**
- **Exploring alternative surface options for regional trails.**
- **Evaluating the prioritization of funds for bridges versus trail network extensions.**
- **Conflicting design standards at intersections.**



The Regional Veloweb Review Methodology

- Inventory comments and suggestions from previously held County workshops.
- Incorporate the recommendations from the county workshops that are consistent with city/county plans and are missing connections or needed extensions.
- Acquire local cities and counties comprehensive plans, trail master plans, and/or ArcGIS shape files to identify existing, planned, and funded trails, and update the Regional Veloweb accordingly.



The Regional Veloweb Review

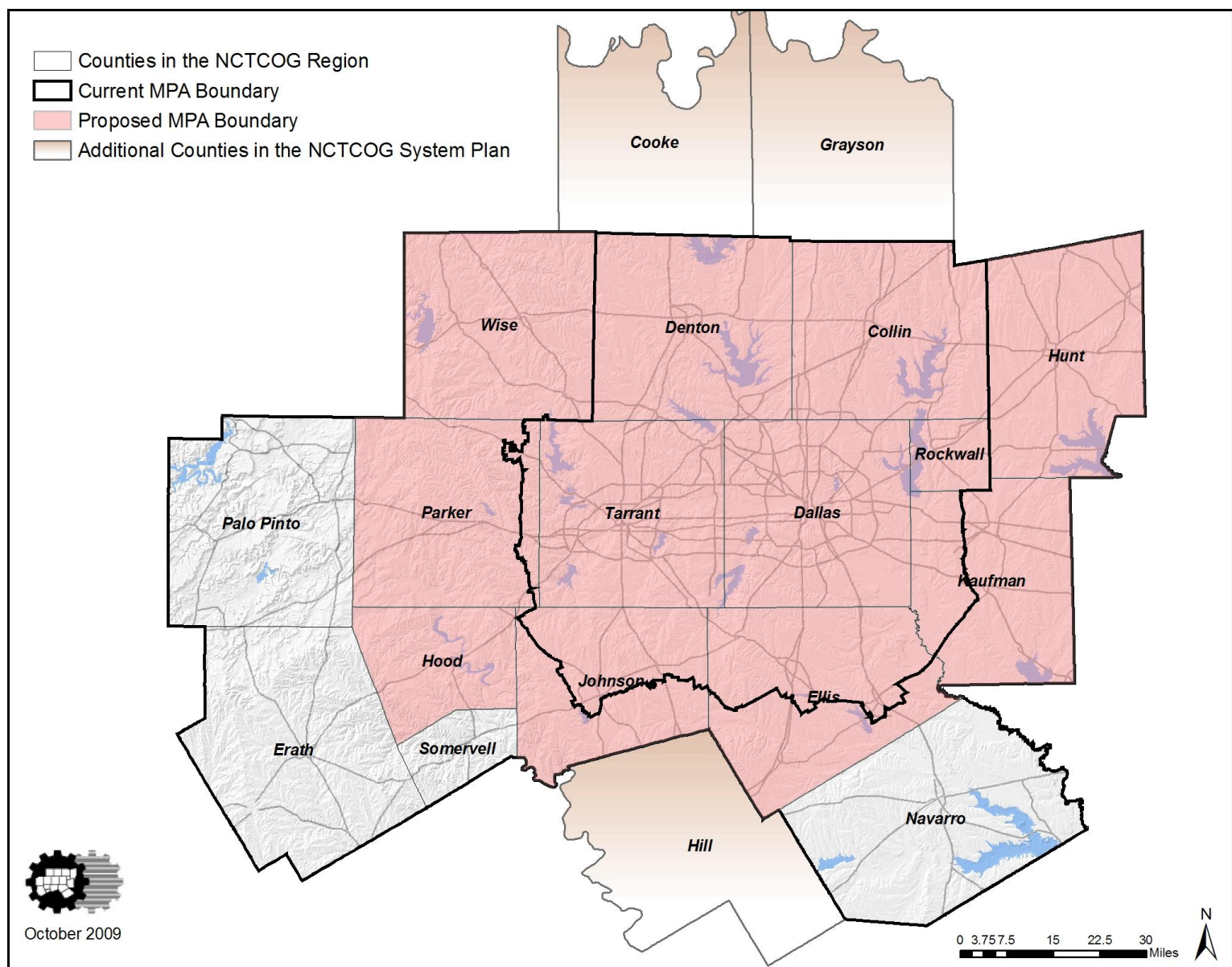
Methodology, cont.

Further assess the Regional Veloweb based on the following conditions:

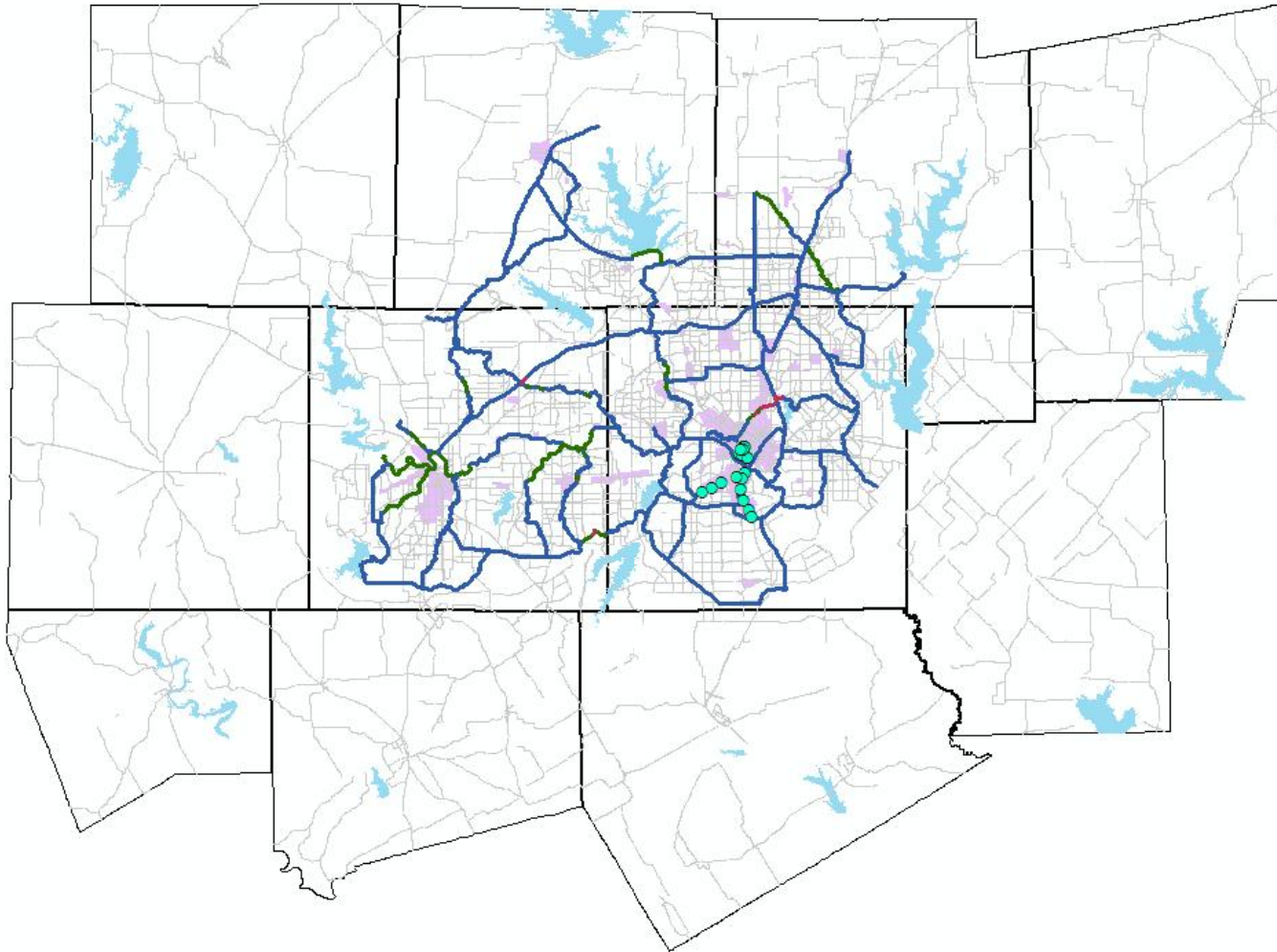
- Heavily traveled paths not already included
- Connections to transit and other desired destinations
- Extension into the proposed Metropolitan Planning Area (MPA) expanded boundary
- Utilization of levees, abandoned rail lines, and utility corridors for trail right-of-way
- Costly right-of-way attainment
- Connections between jurisdictions



Expanded Metropolitan Planning Area (MPA) Boundary

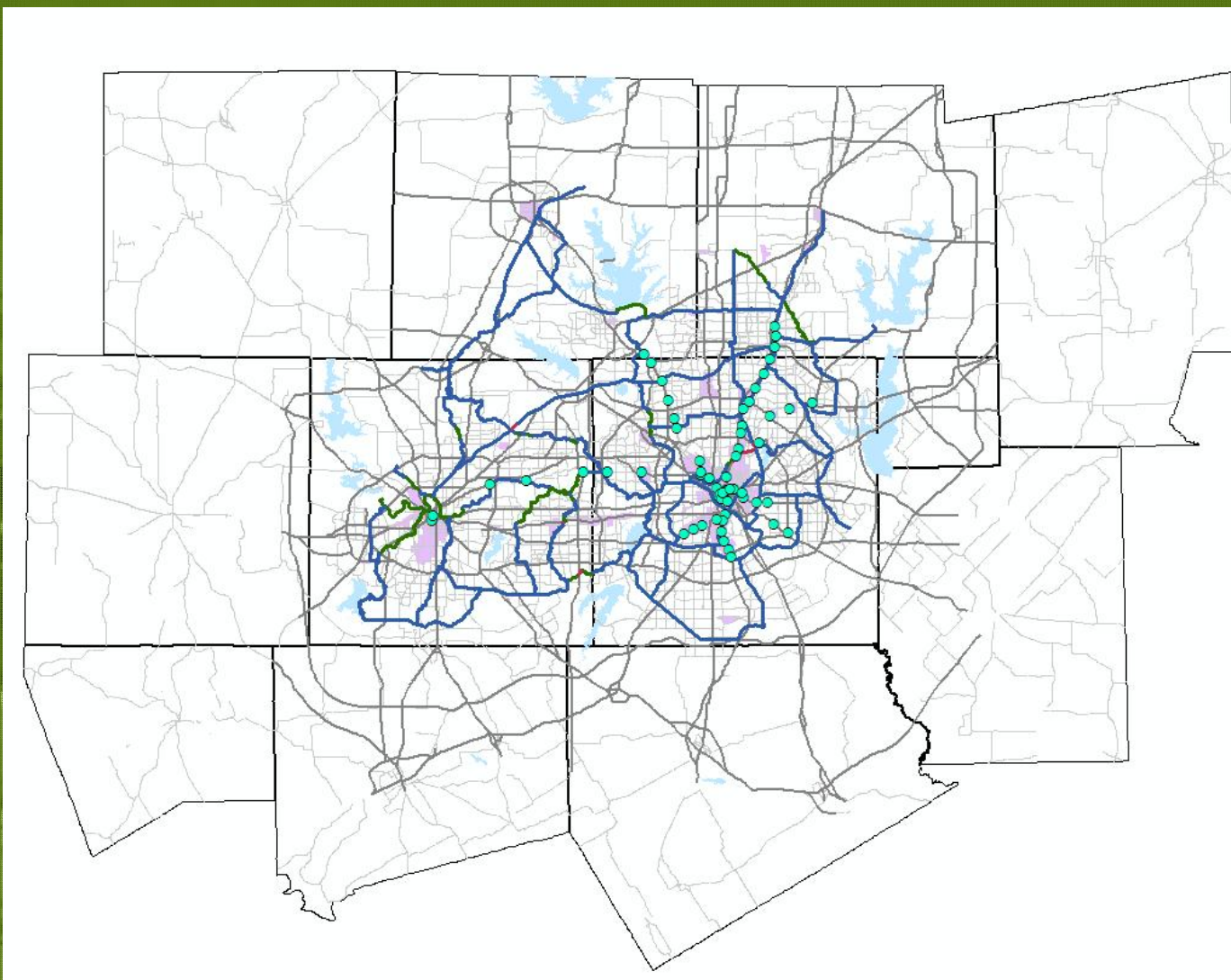


1997 Rail Stations



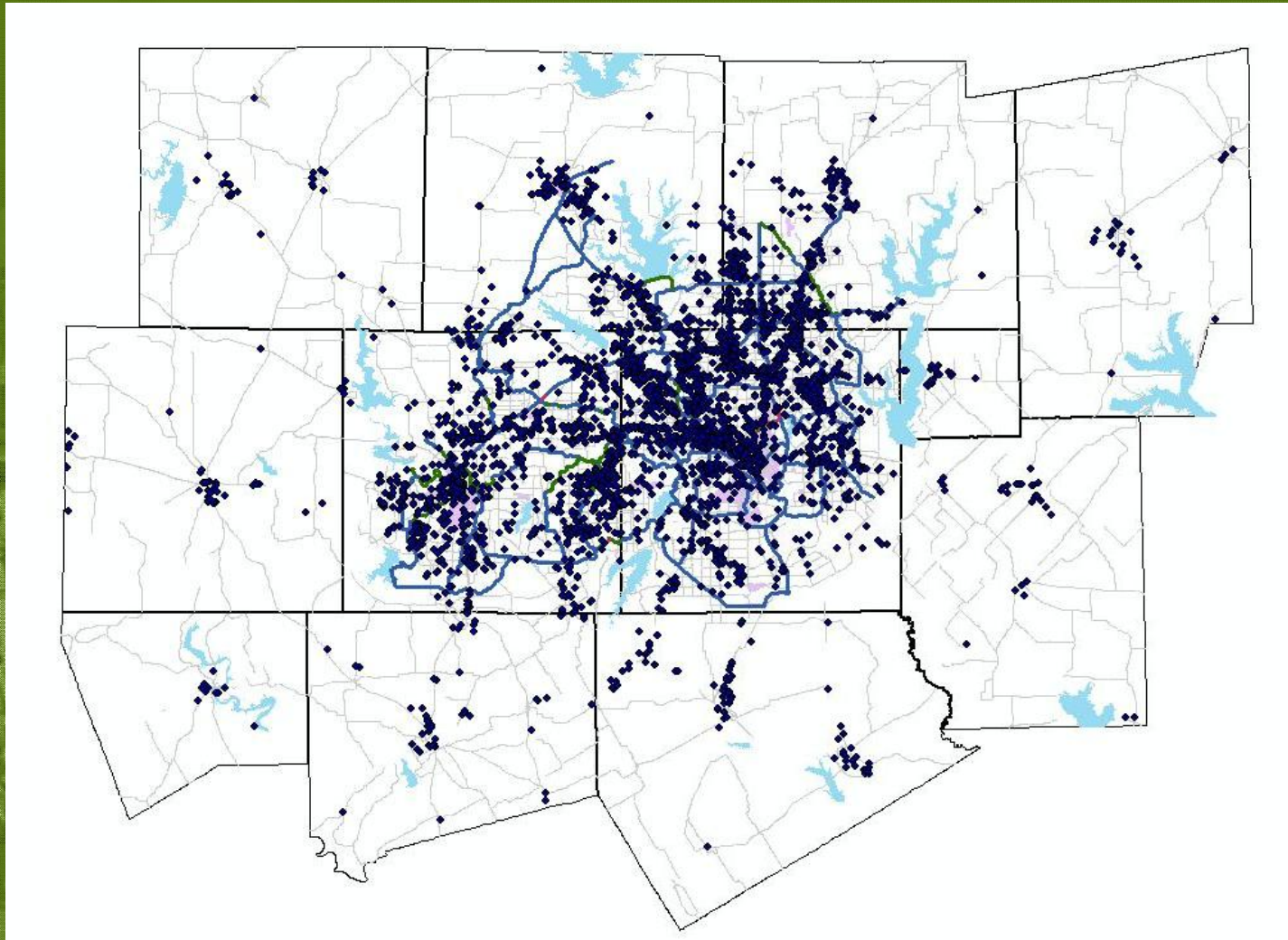
4 operational commuter rail stations, 20 operational light rail stations

2009 Rail Stations



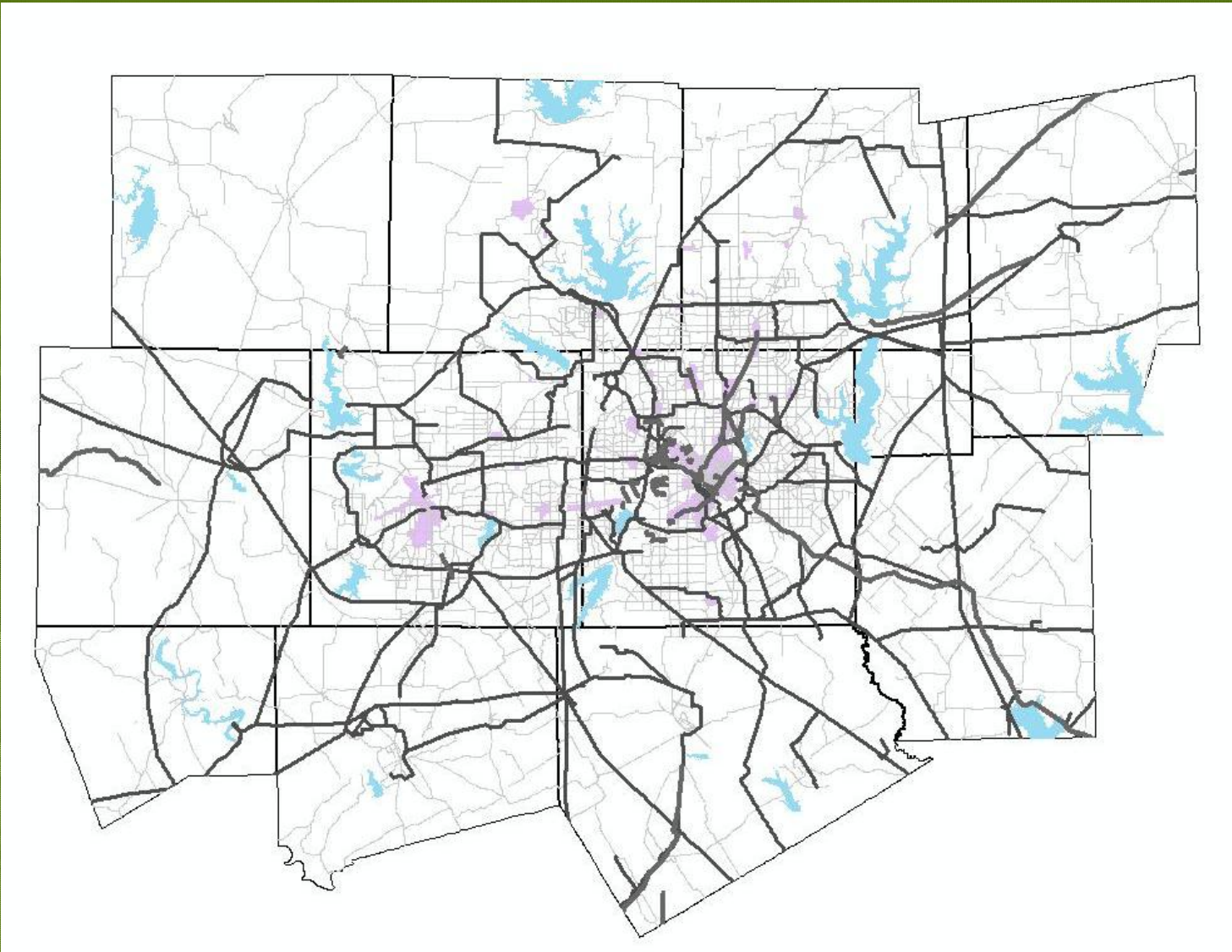
9 operational commuter rail stations, 35 operational light rail stations, and 29 planned light rail stations scheduled to come on-line by December of 2012.

2009 Major Employers* and Activity Centers



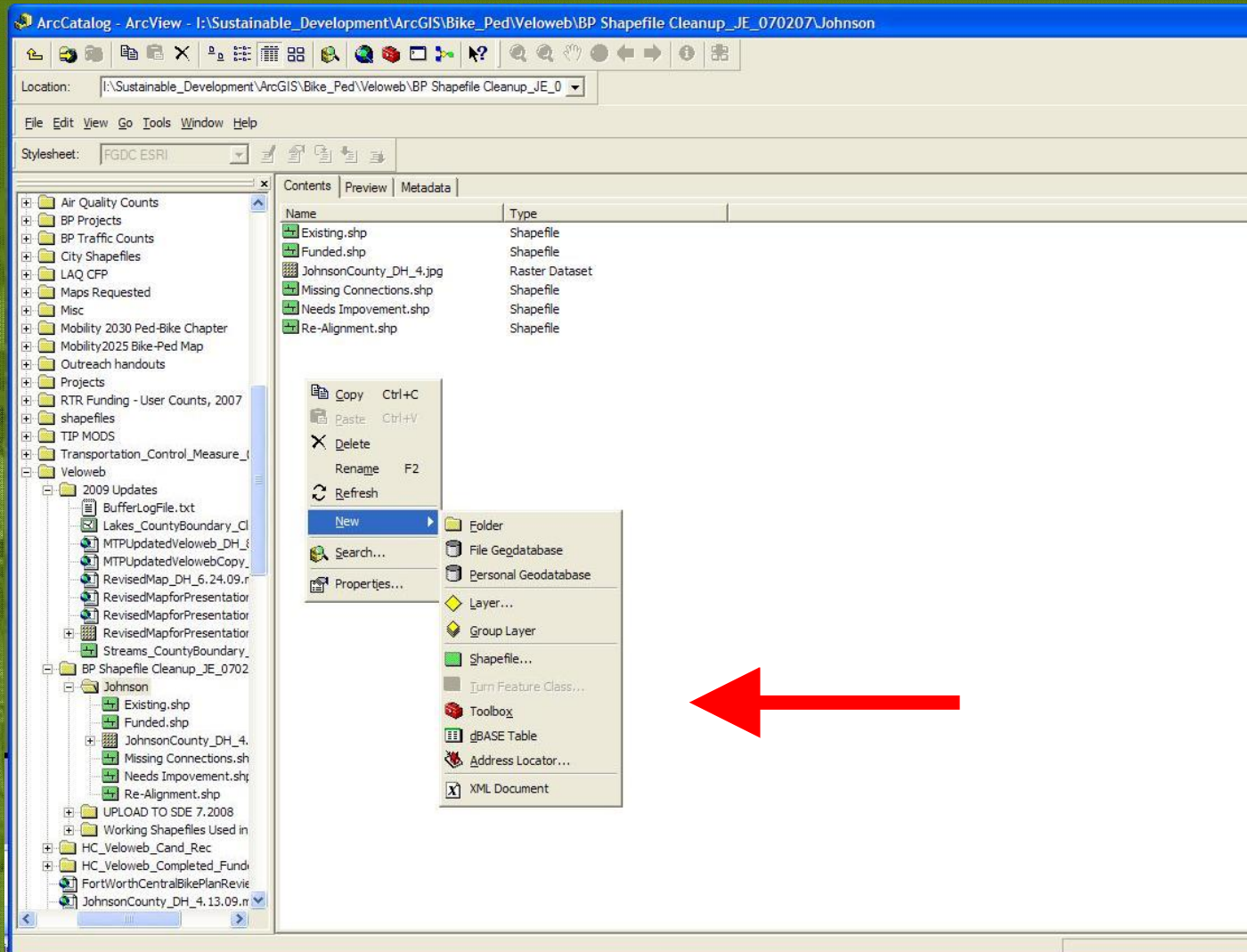
*Major employers is defined as 80 or more employees and/or occupy 80,000 square feet or more of space.

2009 Utility Corridors and Abandoned Rail Corridors



The Regional Veloweb Review

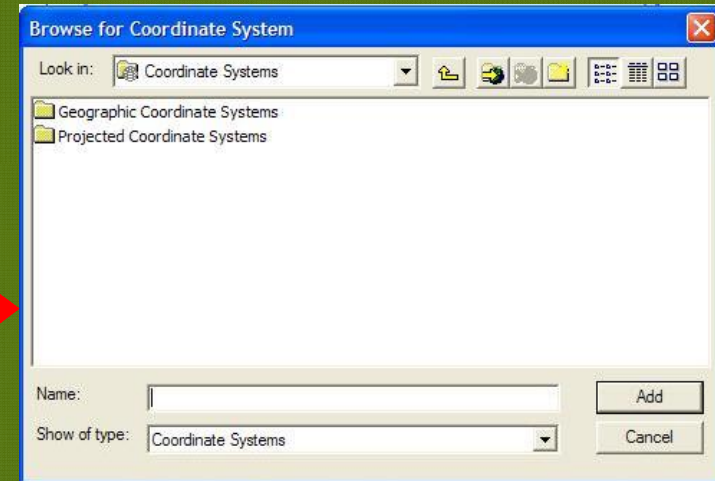
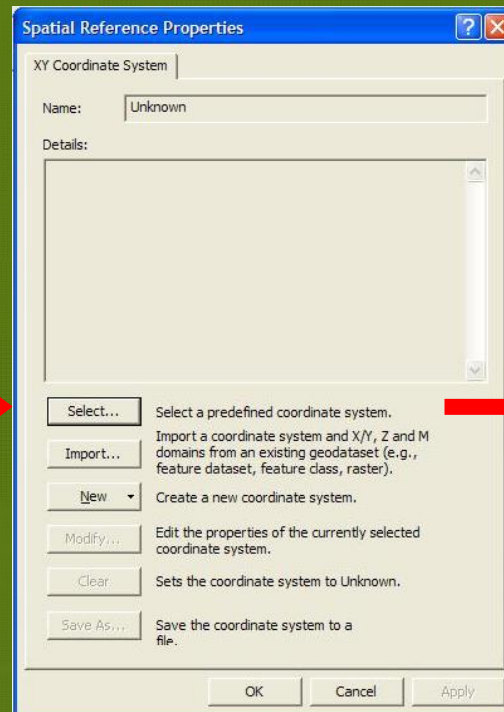
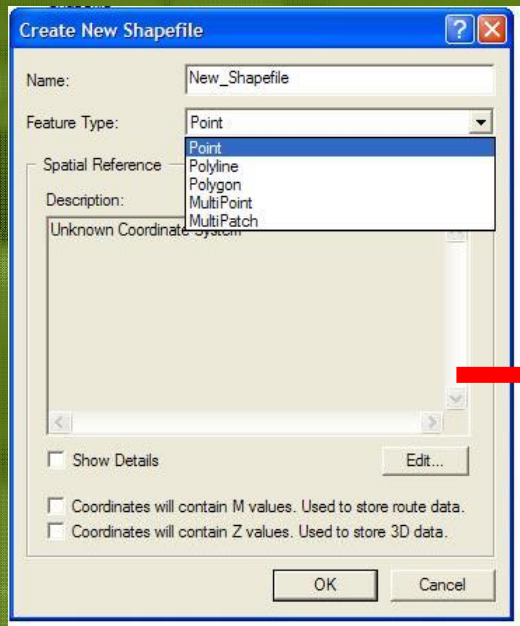
ArcCatalog Methodology



Creating a Shapefile

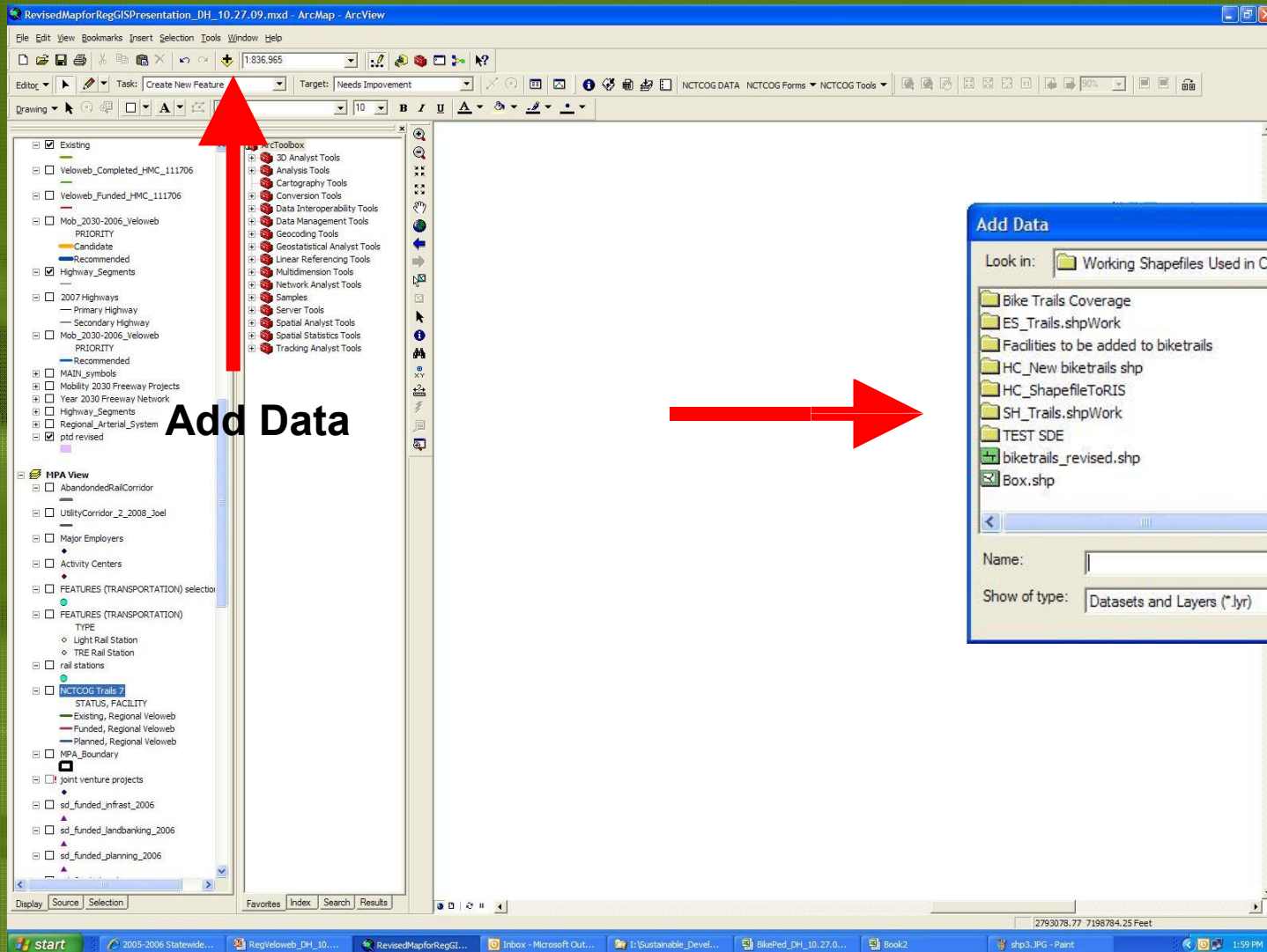
The Regional Veloweb Review

ArcCatalog Methodology



Creating a Shapefile

The Regional Veloweb Review ArcGIS Methodology

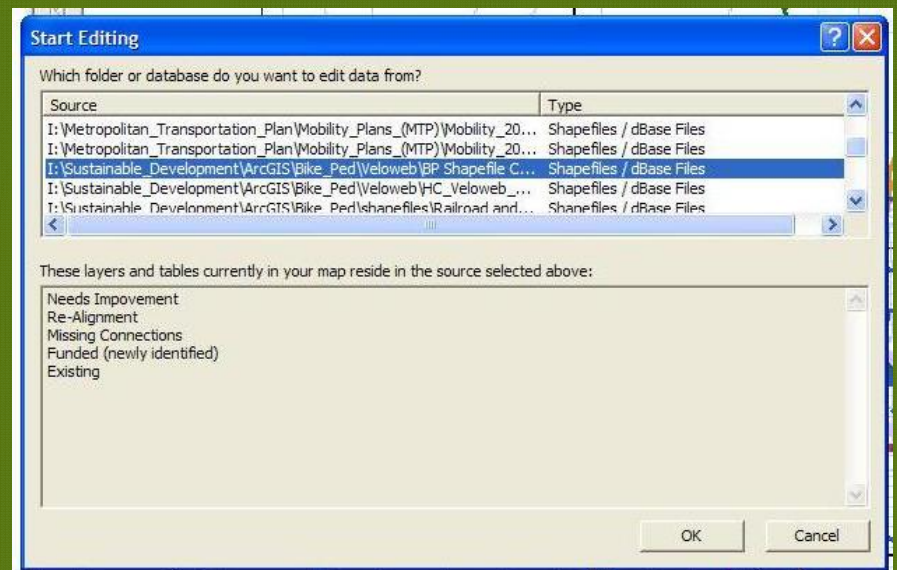
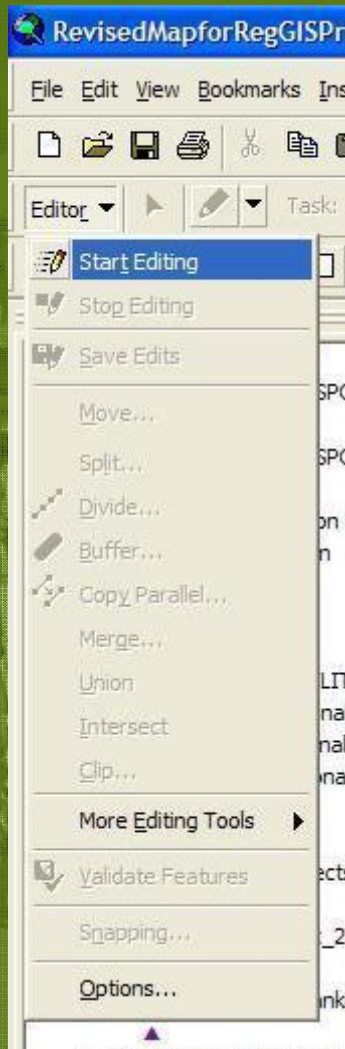


Add Data

Importing a Shapefile into ArcGIS

The Regional Veloweb Review

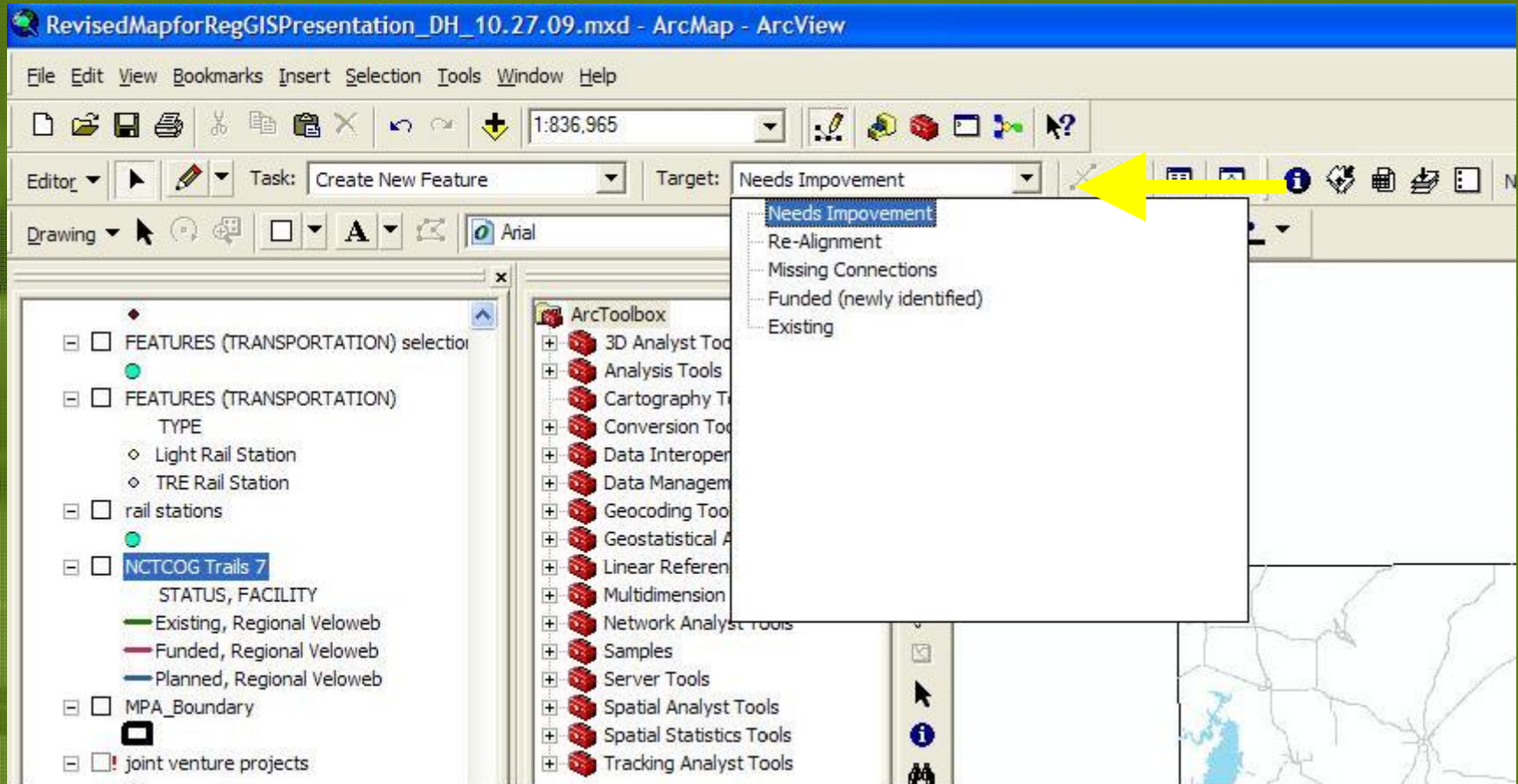
ArcGIS Methodology



Editing in ArcGIS

The Regional Veloweb Review

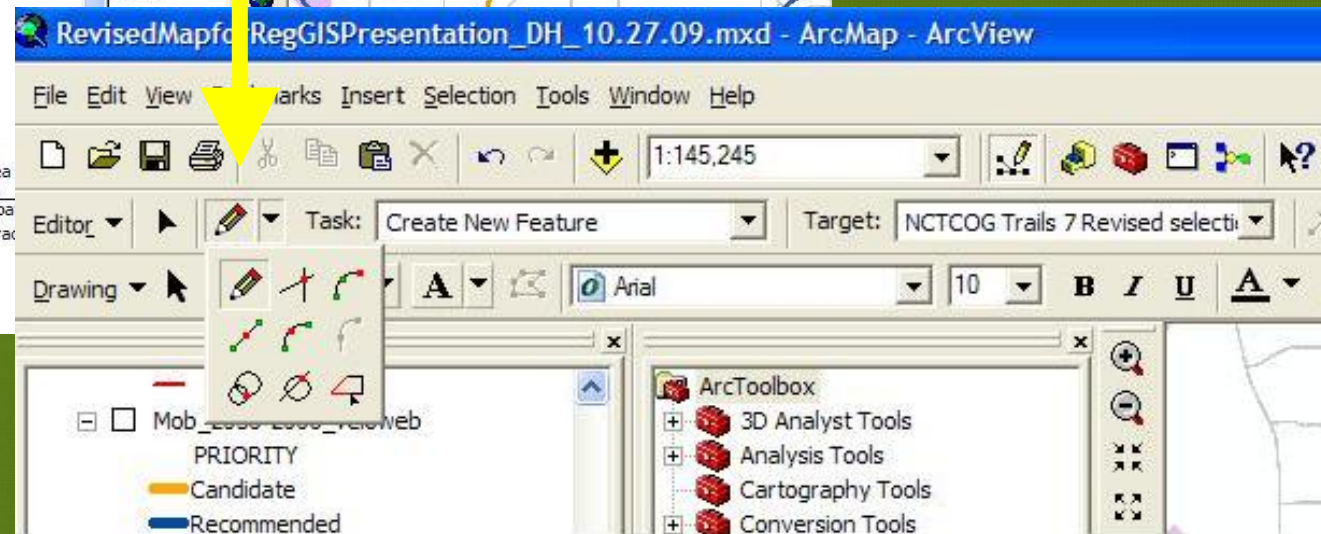
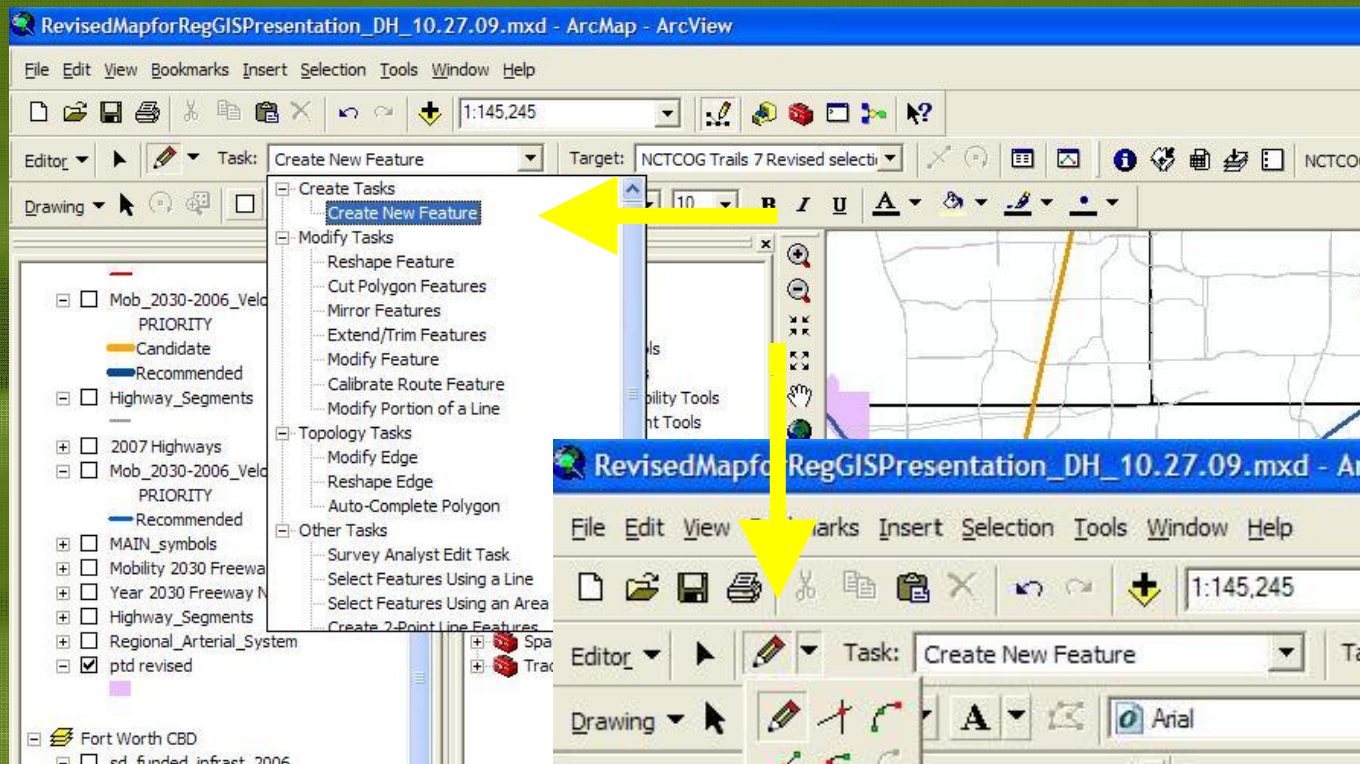
ArcGIS Methodology



Editing in ArcGIS

The Regional Veloweb Review

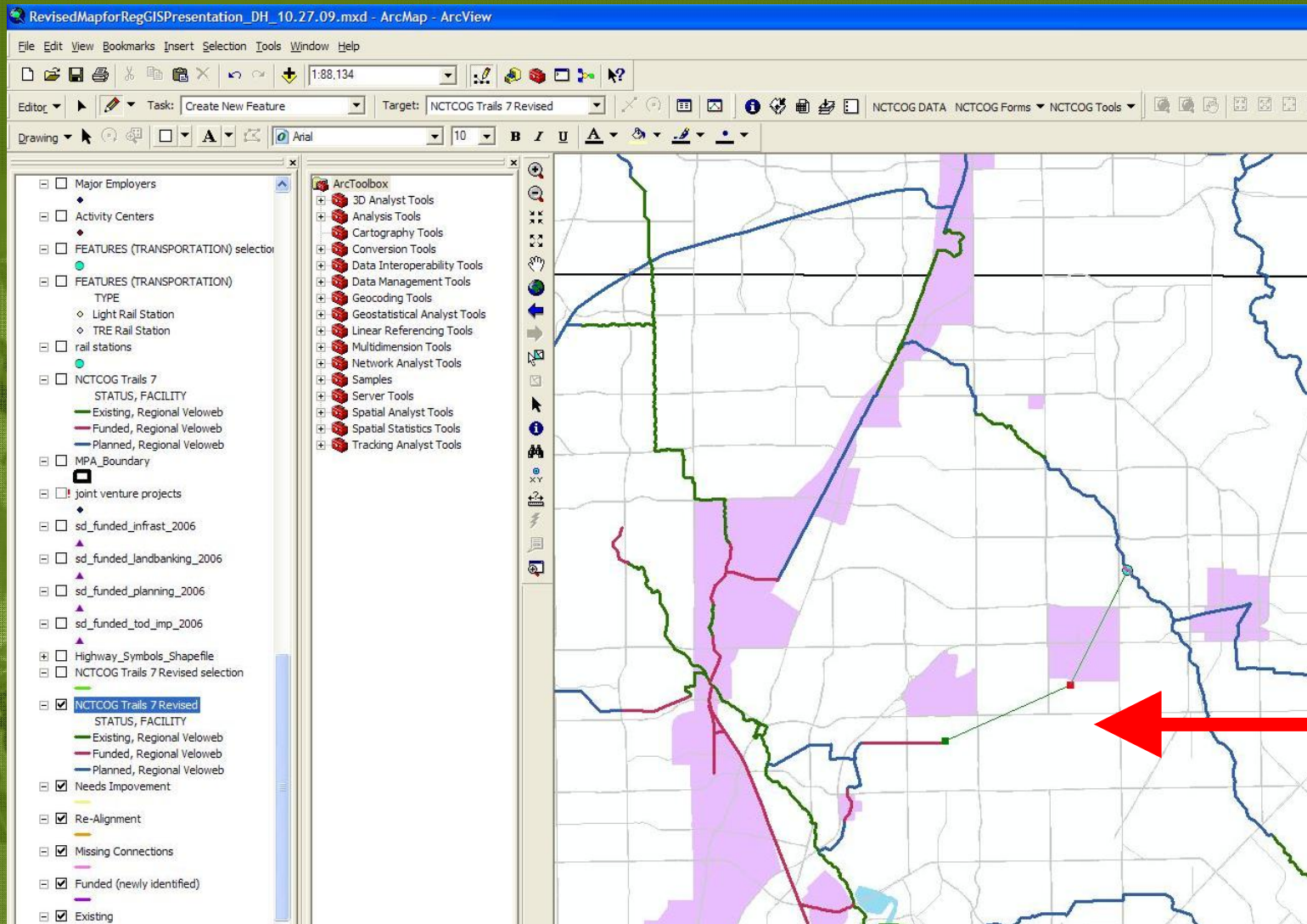
ArcGIS Methodology



Editing in ArcGIS

The Regional Veloweb Review

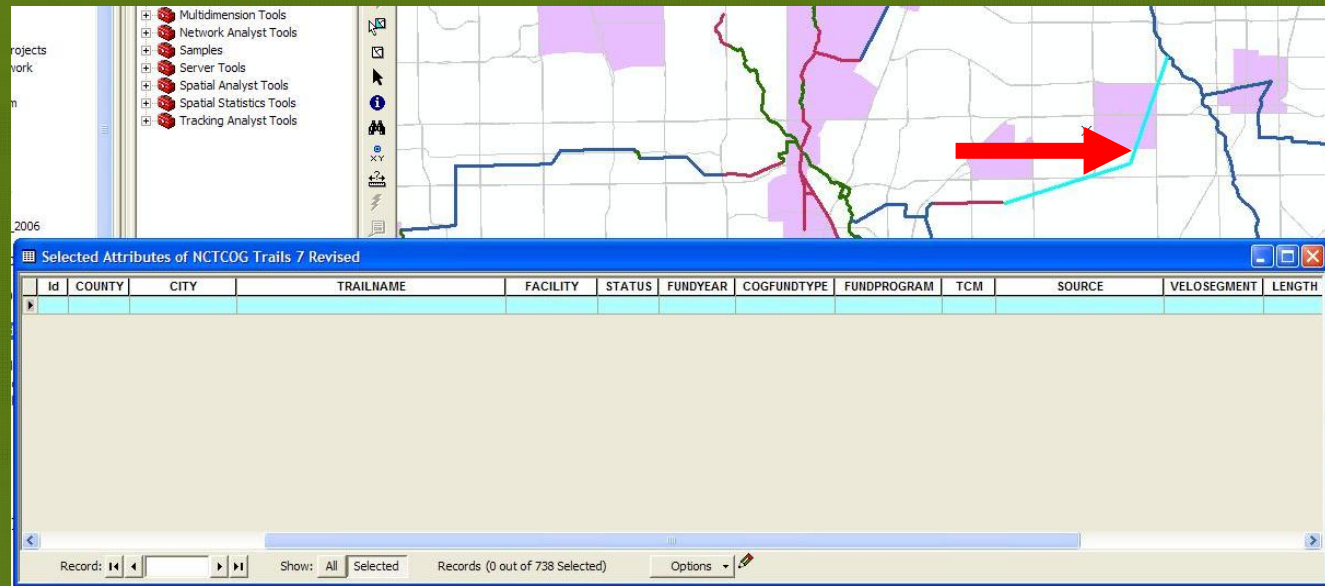
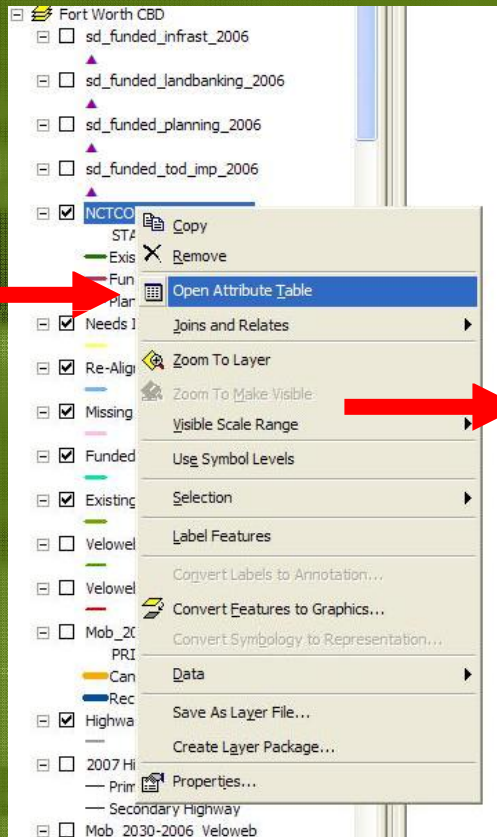
ArcGIS Methodology



Creating a new feature in ArcGIS

The Regional Veloweb Review

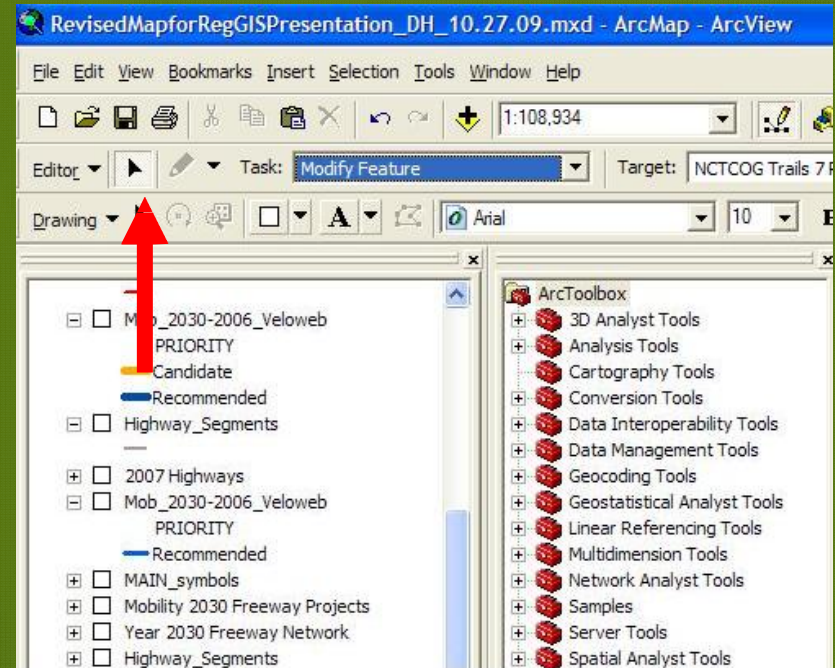
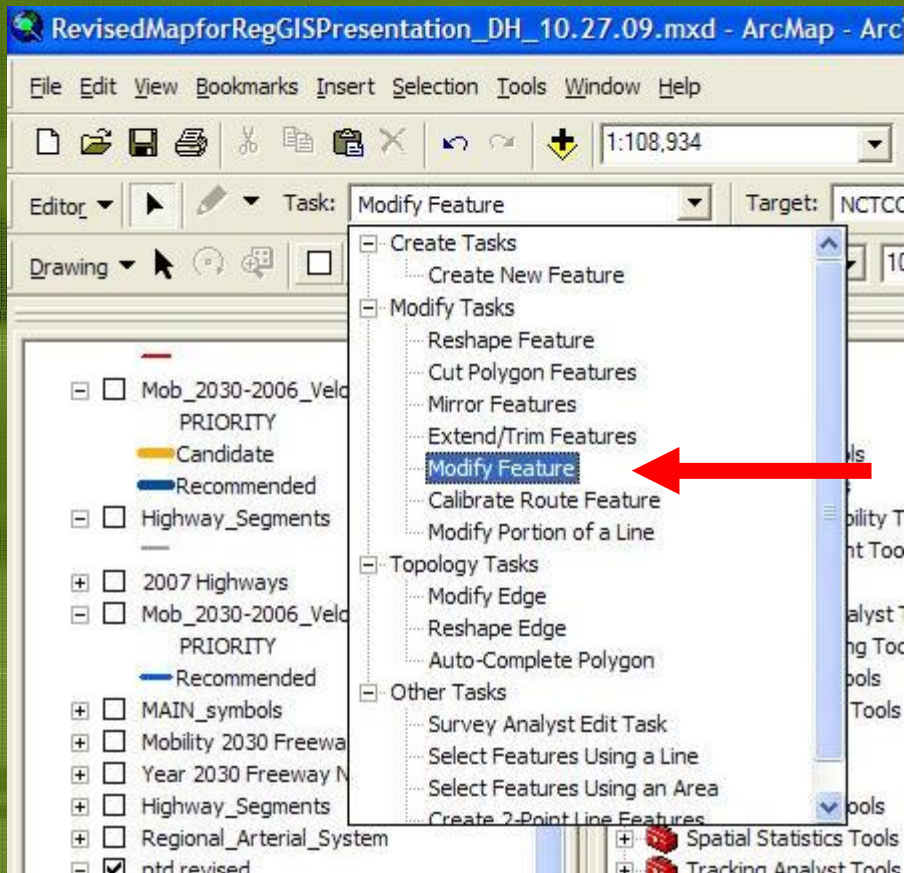
ArcGIS Methodology



Editing the Attribute Table in ArcGIS

The Regional Veloweb Review

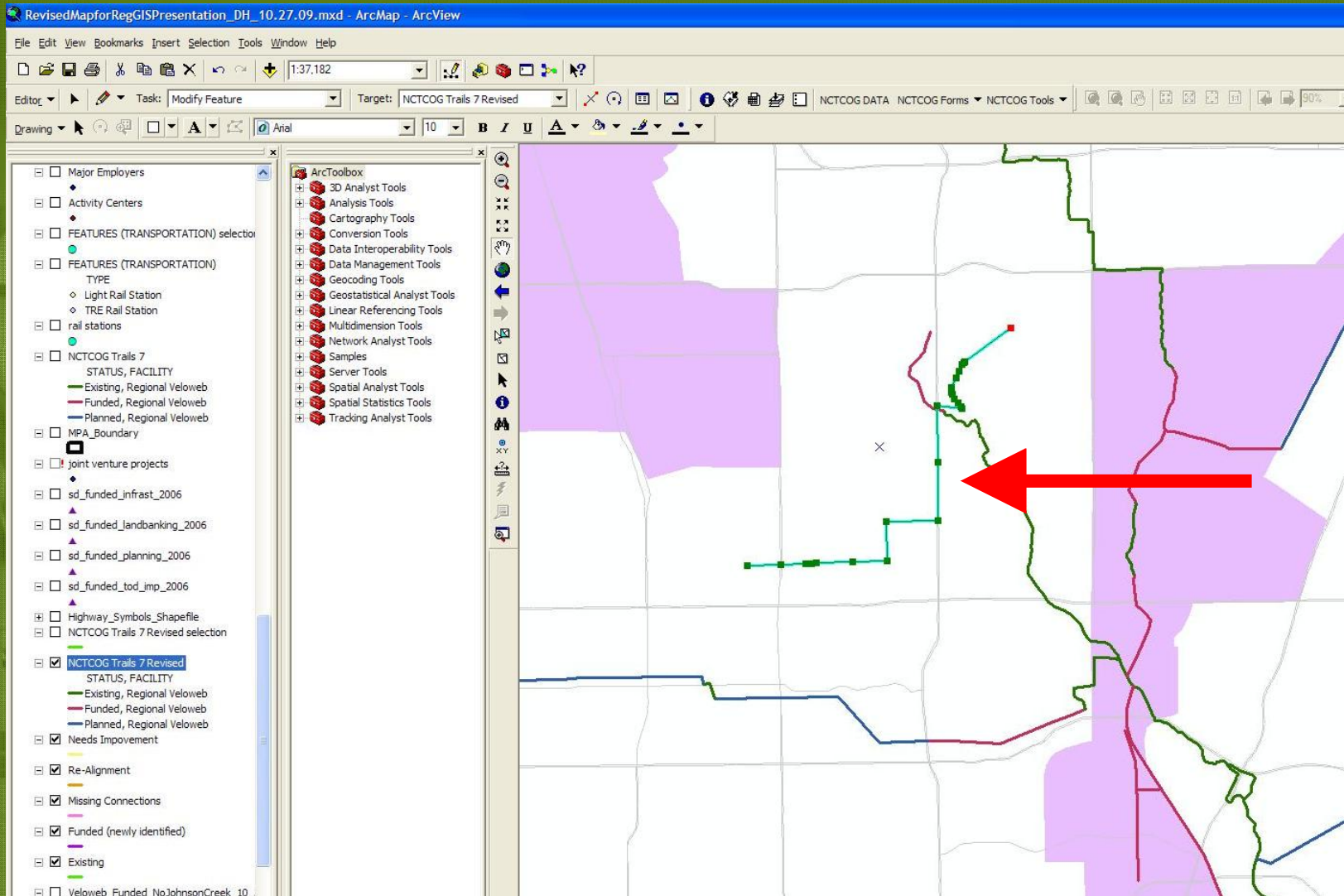
ArcGIS Methodology



Modifying a feature in ArcGIS

The Regional Veloweb Review

ArcGIS Methodology



The Regional Veloweb Review

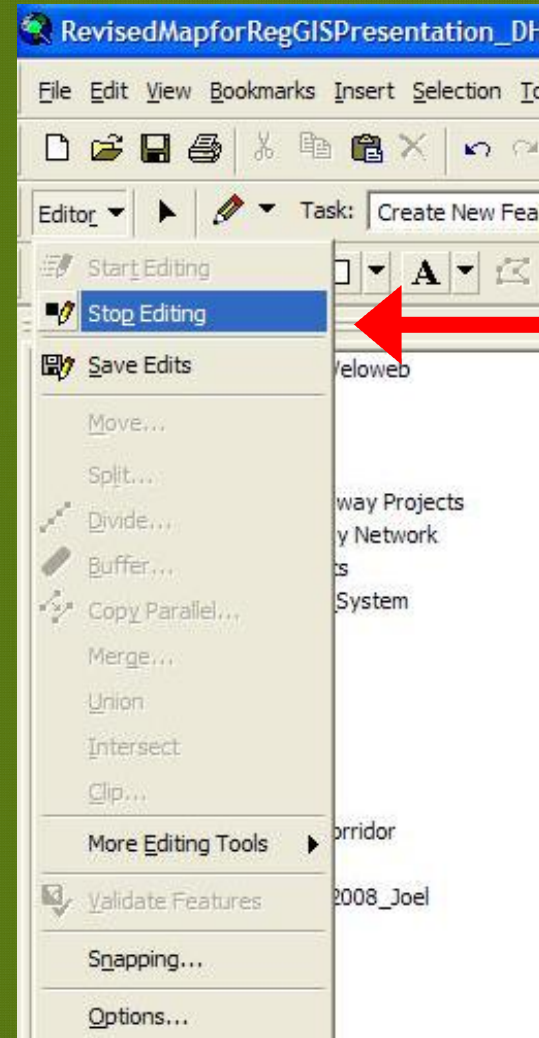
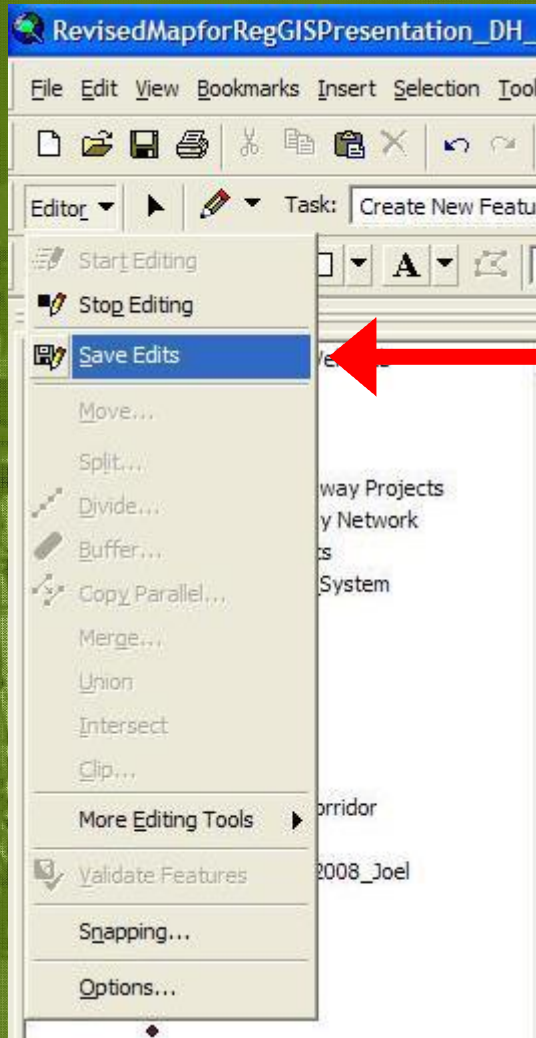
ArcGIS Methodology

The screenshot displays the ArcGIS interface with a map showing various transportation features. A red arrow points to a specific feature on the map, which is highlighted in the 'Selected Attributes of NCTCOG Trails 7 Revised' table below. The table contains the following data:

PRIORITY	FID	Shape*	Id	COUNTY	CITY	TRAILNAME	FACILITY	STATUS	FUNDYEAR	COGFUNDTYPE	FUNDPROGRAM	TCM	SOURCE	VELOSEGMENT	LENGTH
N/A	387	Polyline	416	DALLAS	DALLAS	Greater Dallas Bike Plan, Route 320	On-Street	Existing	0	Unknown	Locally Funded	YES	Dallas Bike Plan	0	16205

Modifying a feature in ArcGIS

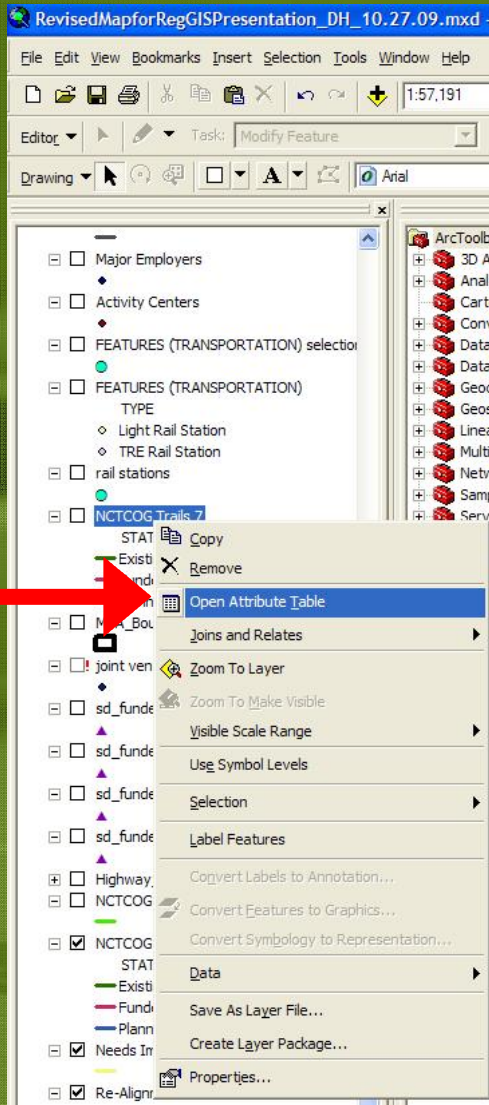
The Regional Veloweb Review ArcGIS Methodology



Closing Editor in ArcGIS

The Regional Veloweb Review

ArcGIS Methodology



The screenshot shows the 'Attributes of NCTCOG Trails 7 Revised' table. The table has columns for PRIORITY, FID, Shape *, Id, COUNTY, CITY, TRAILNAME, and FA. A context menu is open over the 'SHAPE' column, with the 'Add Field...' option highlighted. A red arrow points to this option. Other options in the menu include 'Find & Replace...', 'Select By Attributes...', 'Clear Selection', 'Switch Selection', 'Select All', 'Turn All Fields On', 'Show Field Aliases', 'Restore Default Column Widths', 'Joins and Relates', 'Related Tables', 'Create Graph...', 'Add Table to Layout', 'Reload Cache', 'Print...', 'Reports', 'Export...', and 'Appearance...'.

PRIORITY	FID	Shape *	Id	COUNTY	CITY	TRAILNAME	FA
N/A	0	Polyline	1	COLLIN	DALLAS	Greater Dallas Bike Plan, Route 33	On-SI
N/A	1	Polyline	2	COLLIN	ALLEN	Unknown	Regio
N/A	2	Polyline	3	COLLIN	ALLEN	Mustang Creek Trail	Off-S
N/A	3	Polyline	4	COLLIN	ALLEN	Unknown	Off-S
N/A	4	Polyline	5	COLLIN	ALLEN	Unknown	Off-S
N/A	5	Polyline	6	COLLIN	WYLIE	Unknown	Soft
N/A	6	Polyline	7	COLLIN	WYLIE	Unknown	Soft
N/A	7	Polyline	8	COLLIN	UNINCORPORATED	Unknown	Soft
N/A	8	Polyline	9	COLLIN	UNINCORPORATED	Unknown	Soft
N/A	9	Polyline	10	COLLIN	MCKINNEY	Unknown	Regio
N/A	10	Polyline	11	COLLIN	MCKINNEY	Unknown	Off-S
N/A	11	Polyline	12	COLLIN	MCKINNEY	Unknown	Regio
N/A	12	Polyline	13	COLLIN	MCKINNEY	Unknown	Regio
N/A	13	Polyline	14	COLLIN	UNINCORPORATED	Unknown	Soft
N/A	14	Polyline	15	COLLIN	UNINCORPORATED	Unknown	Soft

Calculating Length in the Attribute Table

The Regional Veloweb Review

ArcGIS Methodology

The image illustrates the methodology for calculating length in an attribute table using ArcGIS. It consists of three main components:

- Add Field Dialog:** Shows the process of adding a new field named "Length" with a type of "Double".
- Calculate Geometry Dialog:** Shows the configuration for calculating the length of the "Length" field. The coordinate system is set to "PCS: NAD 1983 StatePlane Texas North Central FIPS 4202 Feet", and the units are set to "Feet US [ft]".
- Context Menu:** Shows the "Calculate Geometry..." option selected in the context menu for the "Length" field in the attribute table.

Red arrows indicate the flow of the process: from the "Add Field" dialog to the "Calculate Geometry" dialog, and from the context menu to the "Calculate Geometry" dialog.

Off-Street	Existing	0	Unkn
86			
43			
51			
28			
38			
89			
86			
89			
55			
63			
88			
17			
96			
55			
64			

Calculating Length in the Attribute Table

The Regional Veloweb Review

ArcGIS Methodology

Attributes of NCTCOG Trails 7 Revised

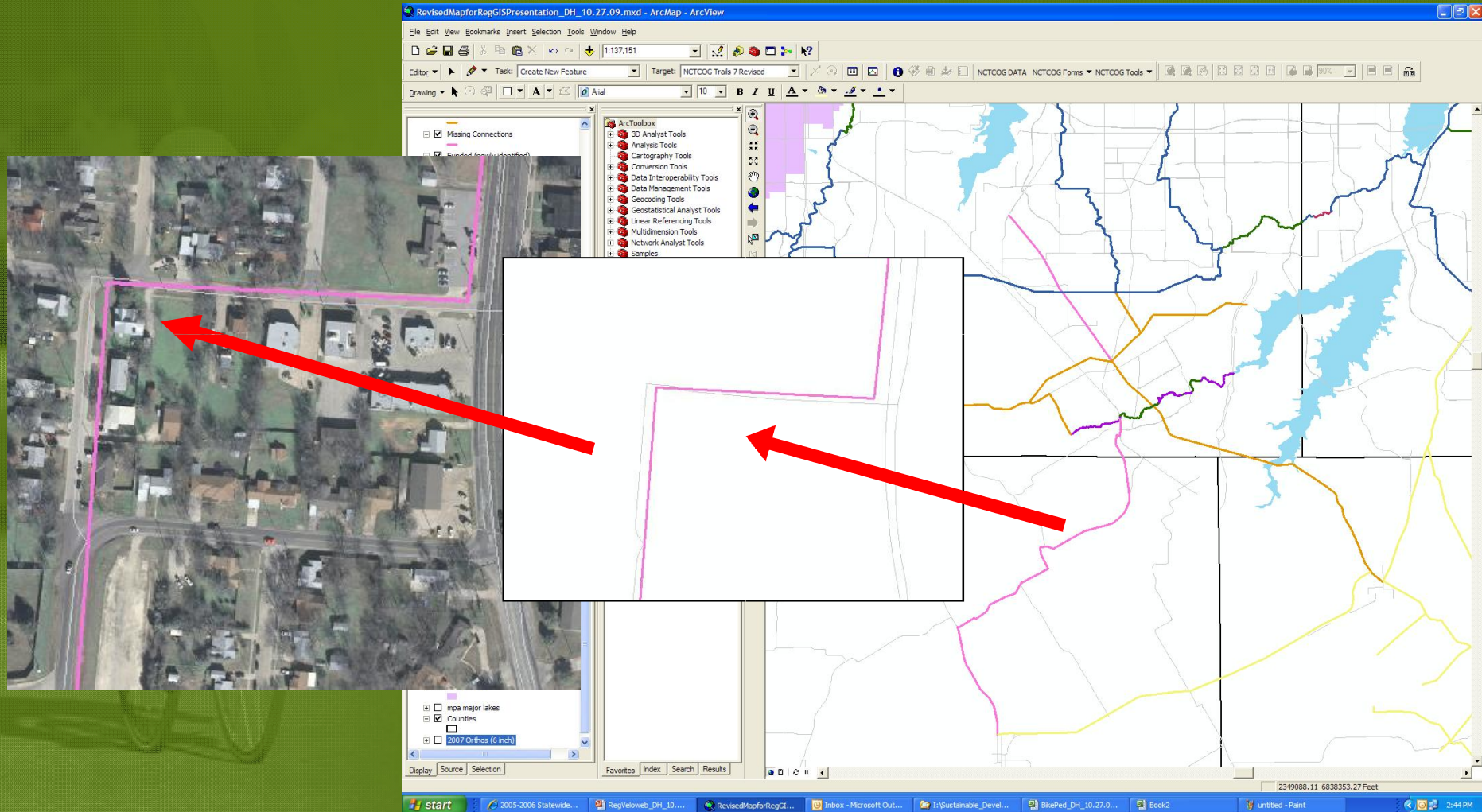
Shape *	Id	COUNTY	CITY	TRAILNAME	FACILITY	STATUS	FUNDYEAR	COGFUNDTYPE	FUNDPROGRAM	TCM	SOURCE	VELOSEGMENT	LENGTH	Miles
Polyline	1	COLLIN	DALLAS	Greater Dallas Bike Plan, Route 33	On-Street	Existing	0	Unknown	Locally Funded	YES	Dallas Bike Plan	0	1298	0.245886
Polyline	2	COLLIN	ALLEN	Unknown	Regional Velow	Existing	0	Unknown	Locally Funded	NO	Unknown	0	4200	0.79543
Polyline	3	COLLIN	ALLEN	Mustang Creek Trail	Off-Street	Existing	0	Unknown	Locally Funded	NO	Unknown	0	4784	0.906151
Polyline	4	COLLIN	ALLEN	Unknown	Off-Street	Existing	0	Unknown	Locally Funded	NO	Unknown	0	3913	0.741128
Polyline	5	COLLIN	ALLEN	Unknown	Off-Street	Existing	0	Unknown	Locally Funded	NO	Unknown	0	6632	1.256138
Polyline	6	COLLIN	WYLIE	Unknown	Soft Surface	Existing	0	Unknown	Unknown	Unknown	Unknown	0	10597	2.006969
Polyline	7	COLLIN	WYLIE	Unknown	Soft Surface	Existing	0	Unknown	Unknown	Unknown	Unknown	0	22070	4.179986
Polyline	8	COLLIN	UNINCORPORATED	Unknown	Soft Surface	Existing	0	Unknown	Unknown	Unknown	Unknown	0	3083	0.583989
Polyline	9	COLLIN	UNINCORPORATED	Unknown	Soft Surface	Existing	0	Unknown	Unknown	Unknown	Unknown	0	2843	0.538355
Polyline	10	COLLIN	MCKINNEY	Unknown	Regional Velow	Existing	0	Unknown	Locally Funded	NO	McKinney Bike Trails	0	525	0.099463
Polyline	11	COLLIN	MCKINNEY	Unknown	Off-Street	Existing	0	Unknown	Locally Funded	NO	McKinney Bike Trails	0	3330	0.630668
Polyline	12	COLLIN	MCKINNEY	Unknown	Regional Velow	Existing	0	Unknown	Locally Funded	NO	McKinney Bike Trails	0	1307	0.247617
Polyline	13	COLLIN	MCKINNEY	Unknown	Regional Velow	Existing	0	Unknown	Locally Funded	NO	McKinney Bike Trails	0	1901	0.359996
Polyline	14	COLLIN	UNINCORPORATED	Unknown	Soft Surface	Existing	0	Unknown	Unknown	Unknown	Unknown	0	2289	0.433555
Polyline	15	COLLIN	UNINCORPORATED	Unknown	Soft Surface	Existing	0	Unknown	Unknown	Unknown	Unknown	0	4295	0.813464
Polyline	16	COLLIN	UNINCORPORATED	Unknown	Soft Surface	Existing	0	Unknown	Unknown	Unknown	Unknown	0	1860	0.352206
Polyline	17	COLLIN	UNINCORPORATED	Unknown	Soft Surface	Existing	0	Unknown	Unknown	Unknown	Unknown	0	2053	0.38881
Polyline	18	COLLIN	MCKINNEY	Unknown	Regional Velow	Existing	0	Unknown	Locally Funded	NO	McKinney Bike Trails	0	1594	0.30181
Polyline	19	COLLIN	MCKINNEY	Unknown	Off-Street	Existing	0	Unknown	Locally Funded	NO	McKinney Bike Trails	0	2877	0.544981
Polyline	20	COLLIN	DALLAS	Greater Dallas Bike Plan, Route 37	On-Street	Existing	0	Unknown	Locally Funded	YES	Dallas Bike Plan	0	859	0.162667
Polyline	21	COLLIN	DALLAS	Greater Dallas Bike Plan, Route 370	On-Street	Existing	0	Unknown	Locally Funded	YES	Dallas Bike Plan	0	3808	0.721129
Polyline	22	COLLIN	DALLAS	Greater Dallas Bike Plan, Route 45	On-Street	Existing	0	Unknown	Locally Funded	YES	Dallas Bike Plan	0	3824	0.724315
Polyline	23	COLLIN	DALLAS	Greater Dallas Bike Plan, Route 360	On-Street	Existing	0	Unknown	Locally Funded	YES	Dallas Bike Plan	0	6322	1.197415
Polyline	24	COLLIN	RICHARDSON	Spring Creek Nature Trail, Phase 1	Off-Street	Existing	0	Unknown	Locally Funded	YES	Richardson Bike Plan	0	188	0.035648
Polyline	25	COLLIN	RICHARDSON	Spring Creek Nature Trail, Phase 1	Off-Street	Existing	0	Unknown	Locally Funded	YES	Richardson Bike Plan	0	844	0.159893
Polyline	26	COLLIN	RICHARDSON	Spring Creek Nature Trail, Phase 1	Off-Street	Existing	0	Unknown	Locally Funded	YES	Richardson Bike Plan	0	1151	0.218081
Polyline	27	COLLIN	RICHARDSON	Unknown	Off-Street	Existing	0	Unknown	Locally Funded	NO	Richardson Bike Plan	0	1988	0.376494
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Polyline	29	COLLIN	RICHARDSON	Breckenridge Park Trail	Off-Street	Existing	0	Unknown	Locally Funded	YES	Richardson Bike Plan	0	596	0.112847
Polyline	30	COLLIN	RICHARDSON	Breckenridge Park Trail	Off-Street	Existing	0	Unknown	Locally Funded	YES	Richardson Bike Plan	0	62	0.011707
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Polyline	32	COLLIN	RICHARDSON	Breckenridge Park Trail	Off-Street	Existing	0	Unknown	Locally Funded	YES	Richardson Bike Plan	0	182	0.034435
Polyline	33	COLLIN	RICHARDSON	Breckenridge Park Trail	Off-Street	Existing	0	Unknown	Locally Funded	YES	Richardson Bike Plan	0	1668	0.315968

Record: 0 Show: All Selected Records (0 out of 4998 Selected) Options

Calculating Length in the Attribute Table

The Regional Veloweb Review

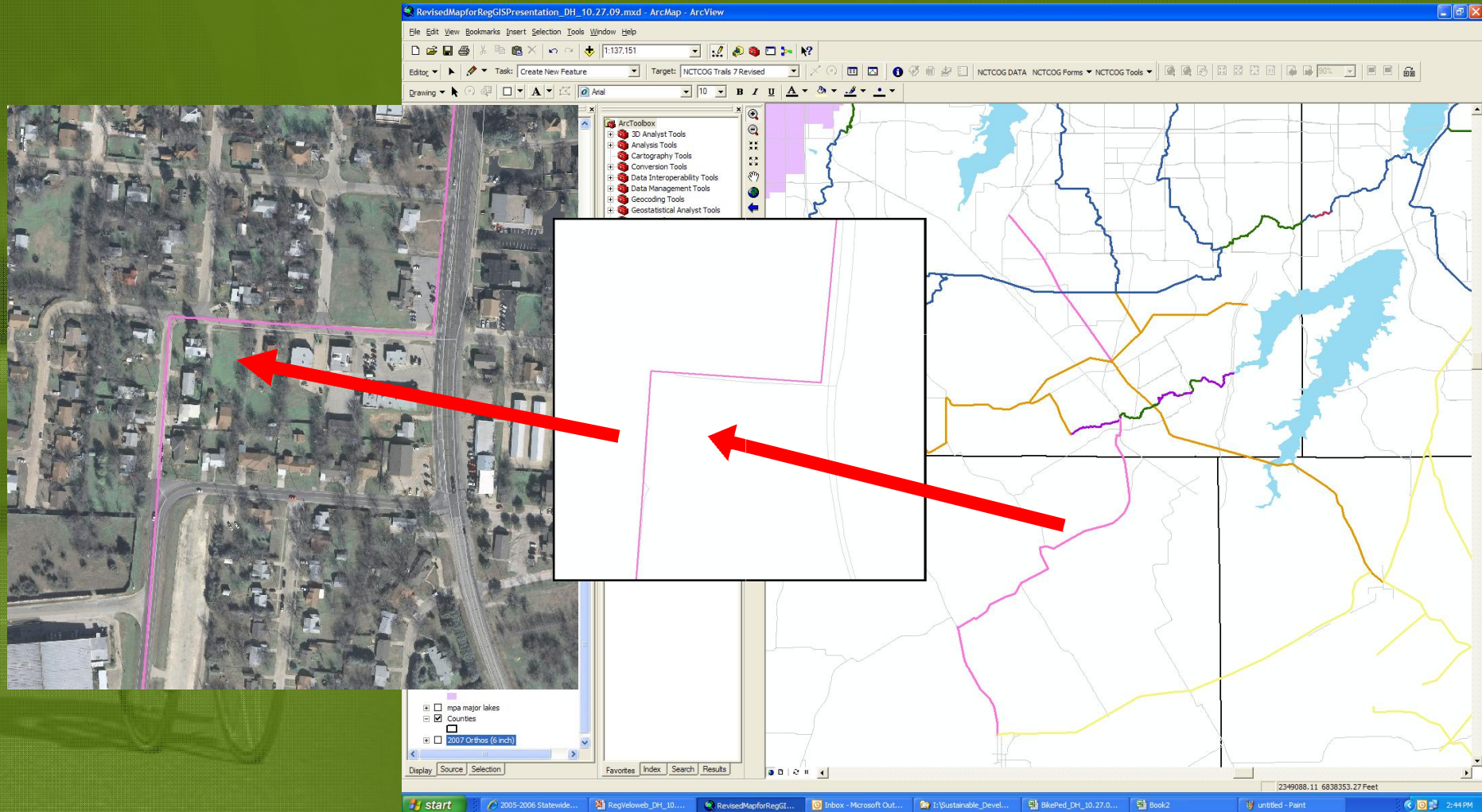
ArcGIS Methodology



Spatial Misalignment

The Regional Veloweb Review

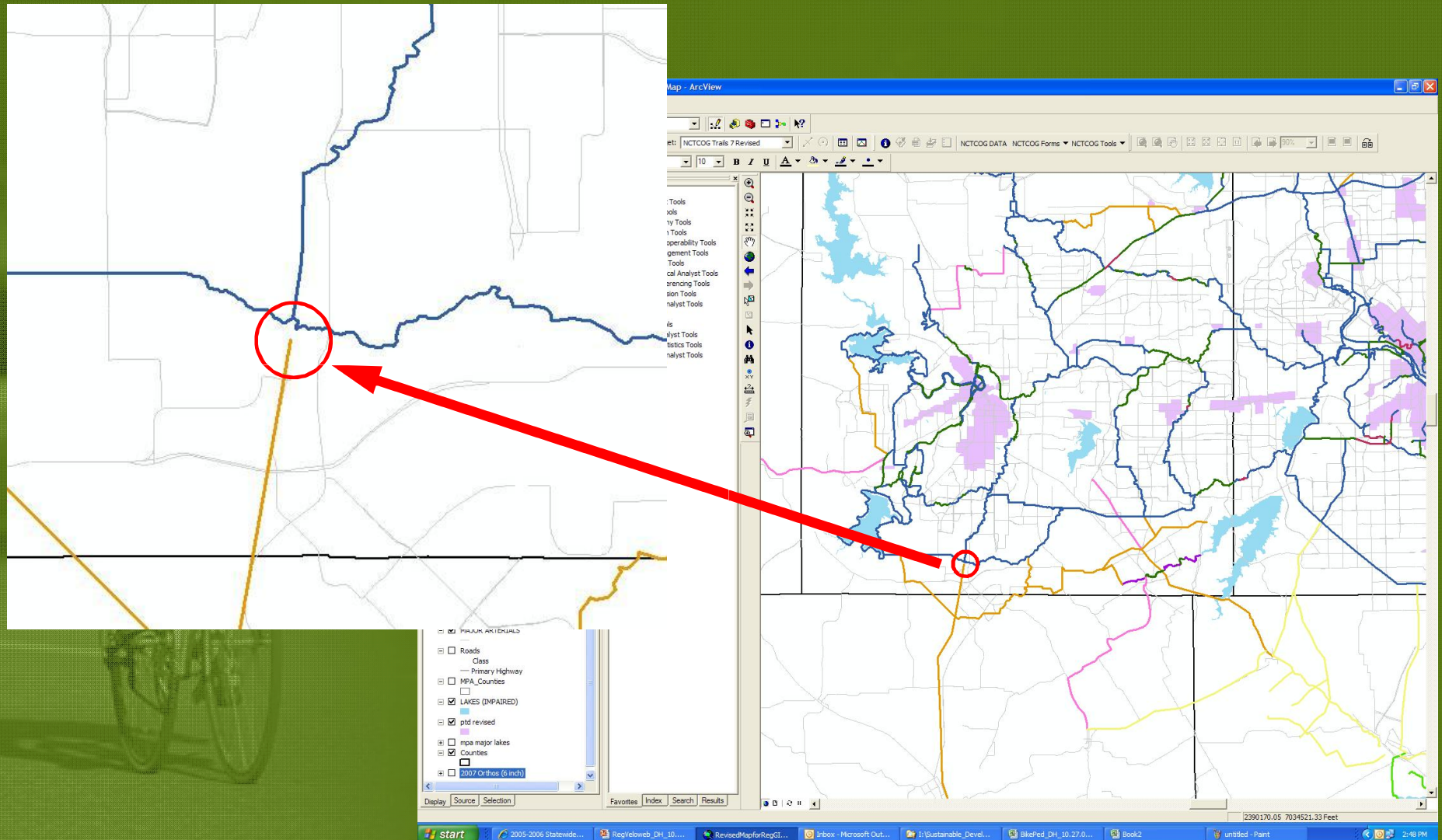
ArcGIS Methodology



Re-alignment

The Regional Veloweb Review

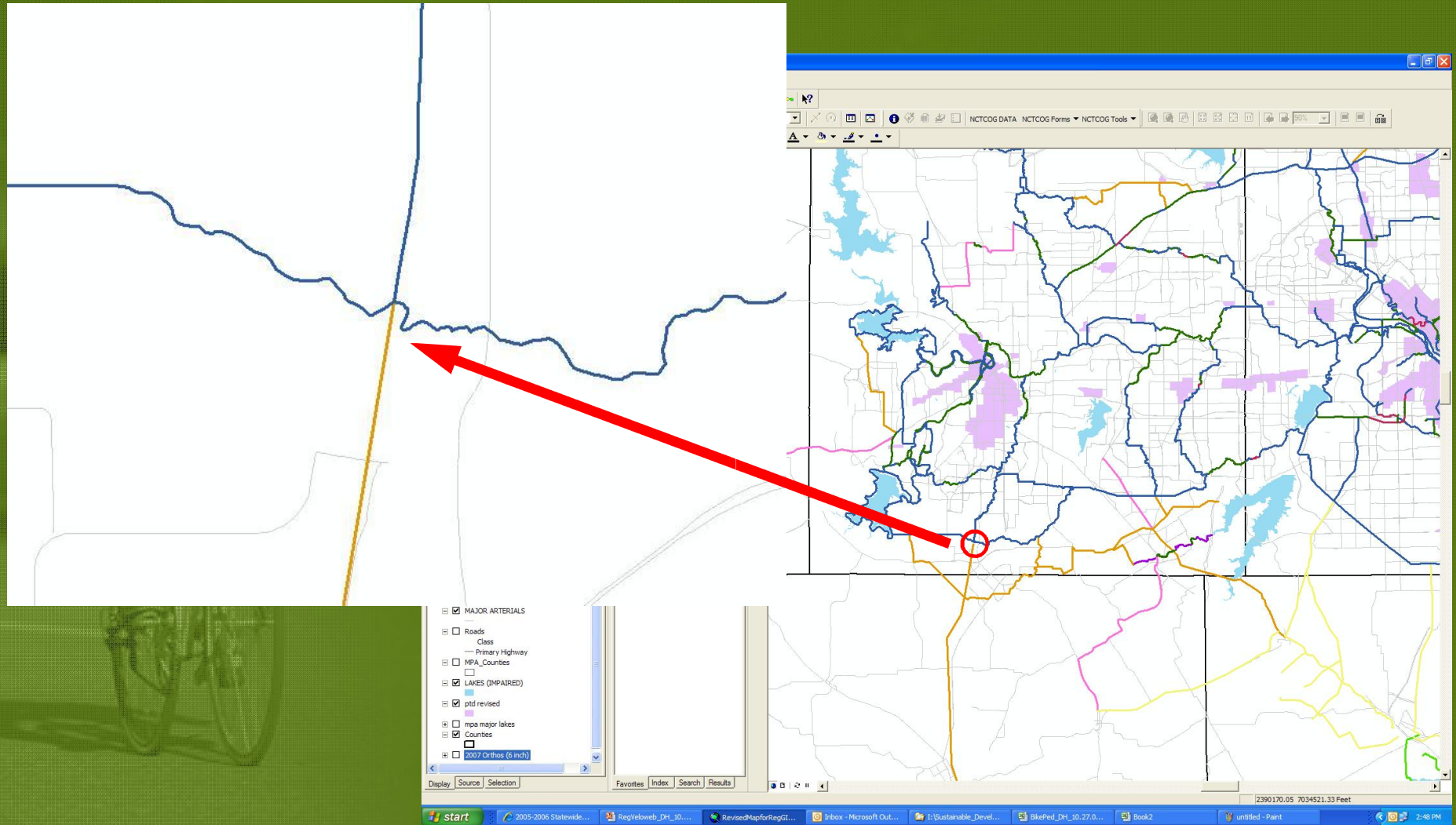
ArcGIS Methodology



Missing Link

The Regional Veloweb Review

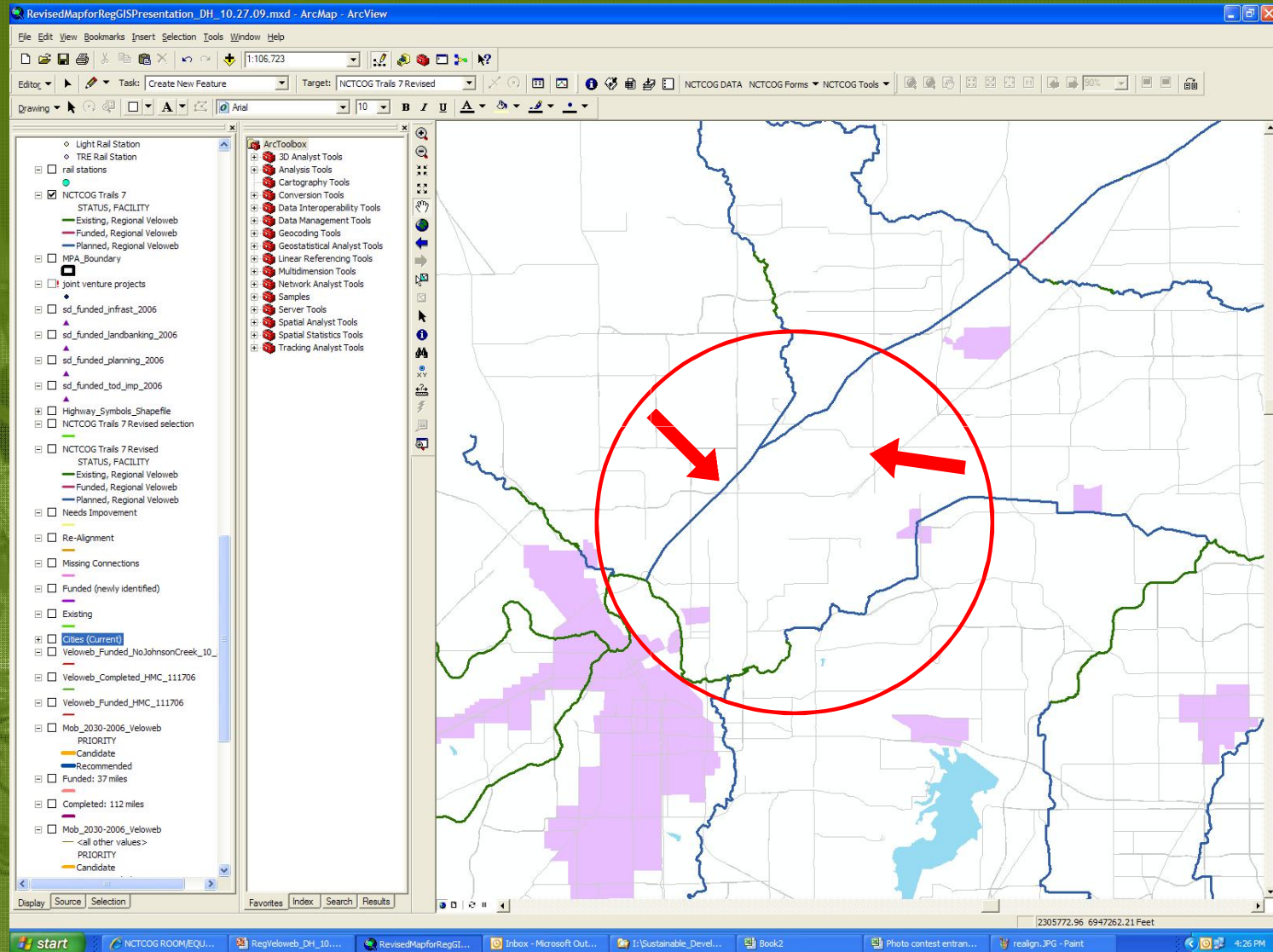
ArcGIS Methodology



Repaired Link

The Regional Veloweb Review

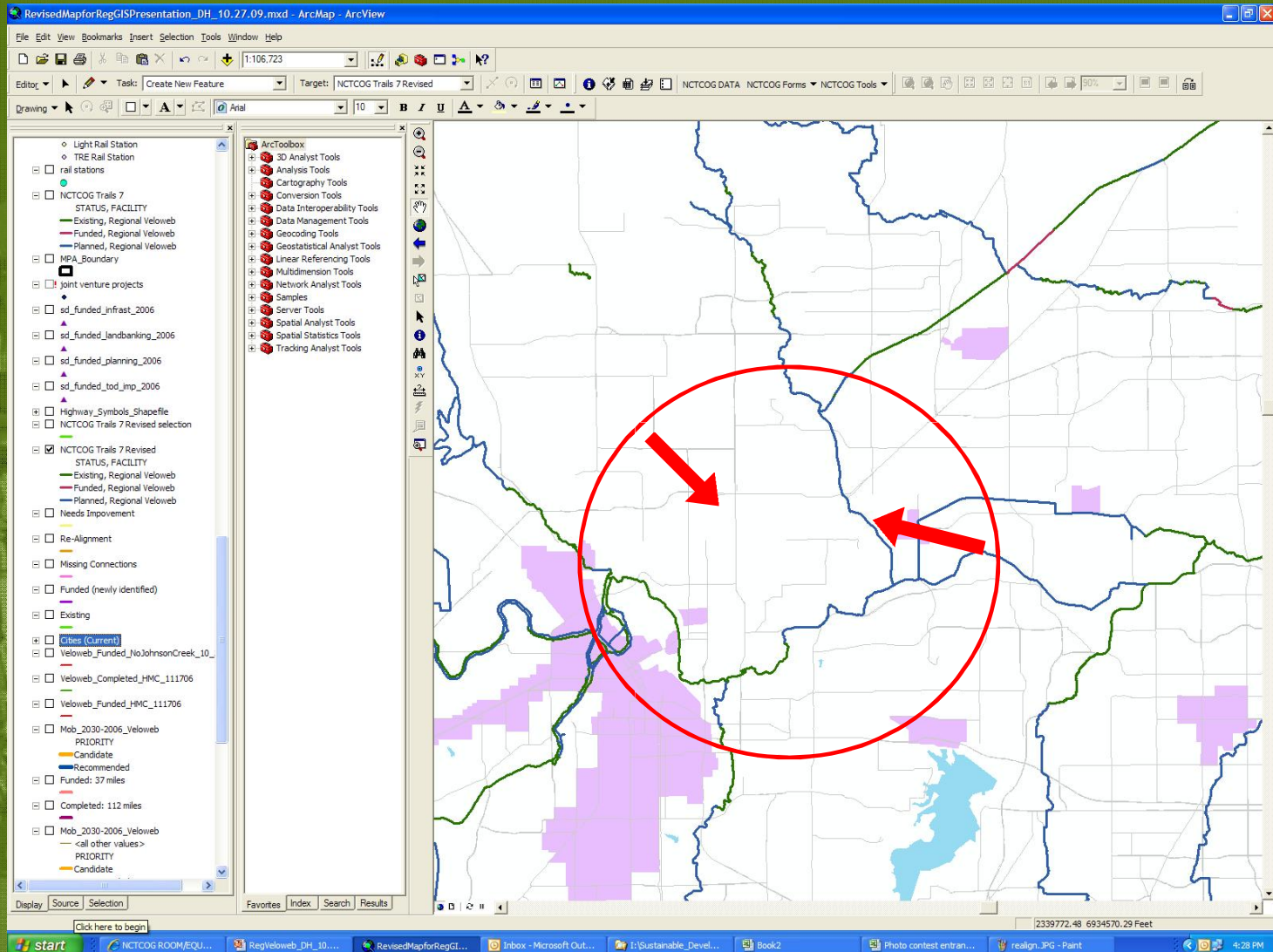
ArcGIS Methodology



Impractical Right-of-Way Attainment

The Regional Veloweb Review

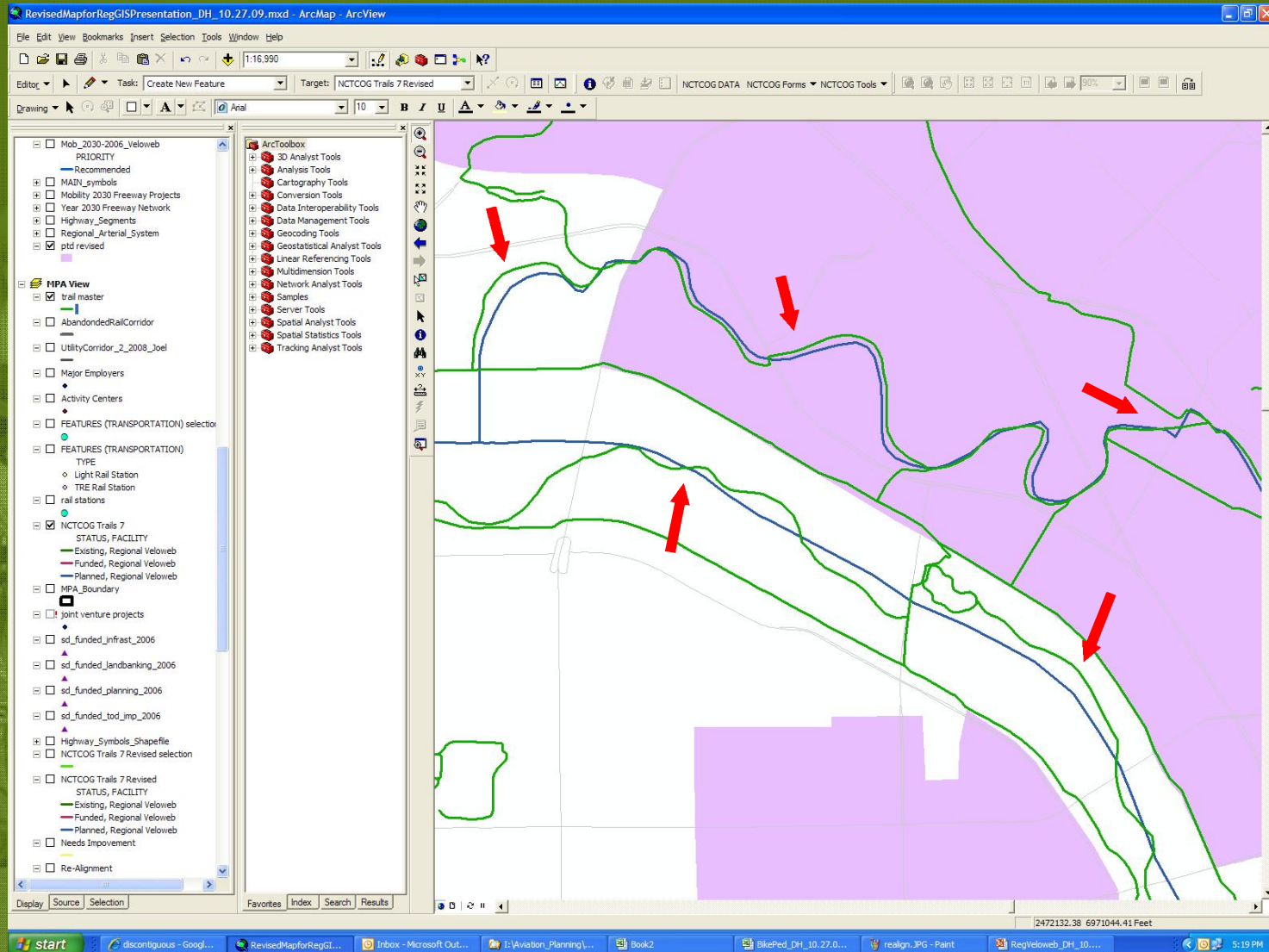
ArcGIS Methodology



Route Re-alignment

The Regional Veloweb Review

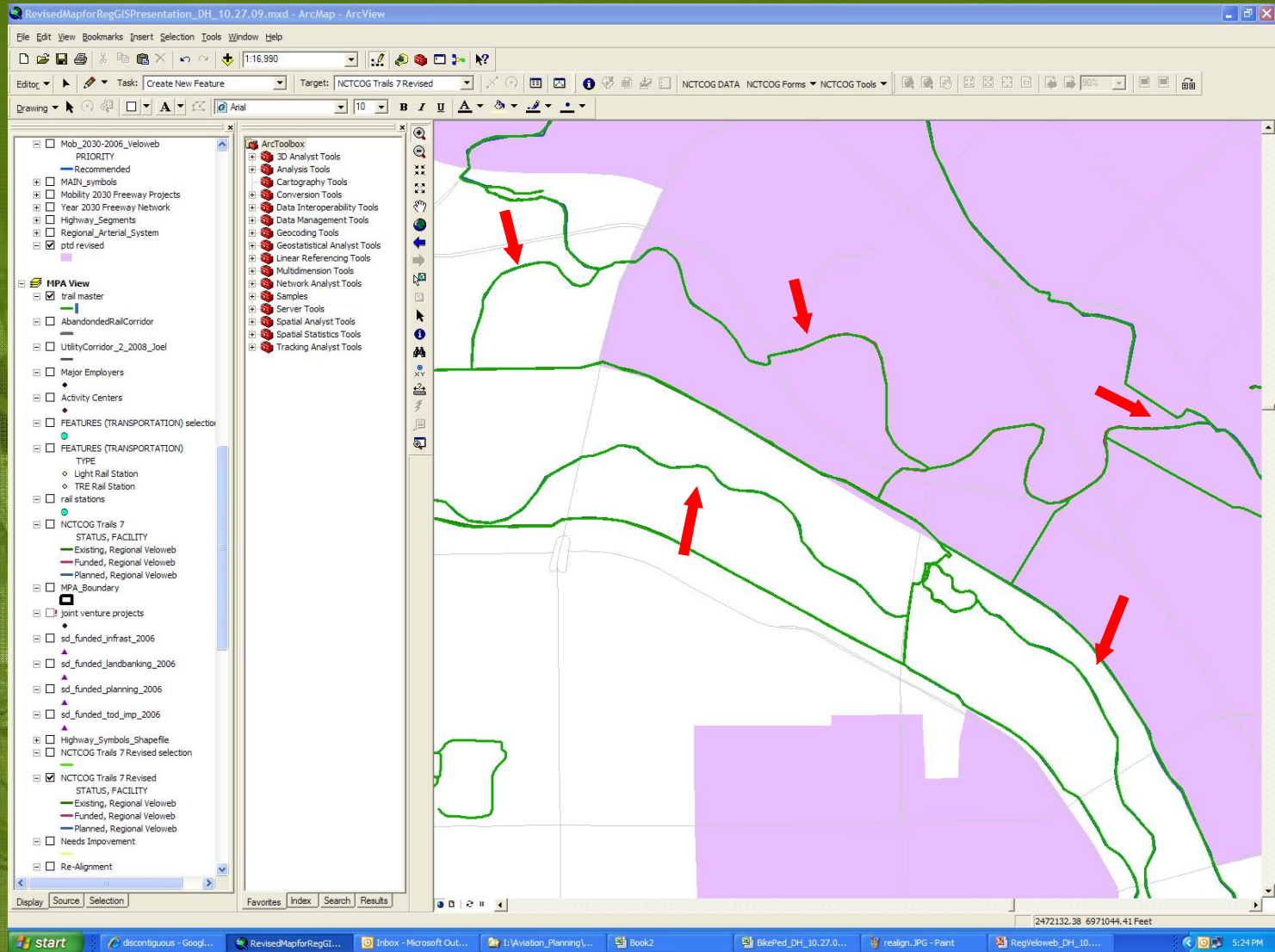
ArcGIS Methodology



Data Inaccuracy

The Regional Veloweb Review

ArcGIS Methodology






Feature Modification



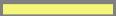


The Regional Veloweb Review

Key for Map Recommendations

Regional Veloweb Routes

-  Existing: trails that are existing on the ground and open to the public
-  Funded: money has been allocated for trail construction, but construction is not yet complete
-  Needed: proposed trails or connections

Recommendations from County Workshops

-  Re-Alignment: modifications or extensions requested- will become part of Needed category when finalized
-  Missing Connections: identified gaps- will become part of Needed category when finalized
-  Needs Improvement: identified routes that are in need of improvements or regularly scheduled maintenance
-  Funded (newly identified): will become part of Funded category when finalized
-  Existing (newly identified): will become part of the Existing category when finalized

DRAFT

Regional Veloweb

Legend

Regional Veloweb Routes

- Existing
- Funded
- Needed

Recommendations from County Workshops

- Re-Alignment
- Missing Connections
- Needs Improvement
- Funded (newly identified)
- Existing (newly identified)
- Bicycle-Pedestrian Transportation Districts
Within all rail corridors, all existing and planned stations are bicycle and pedestrian districts.

- Freeways
- County Boundaries
- Metropolitan Planning Area Boundary

Major Lakes

Fort Worth CBD

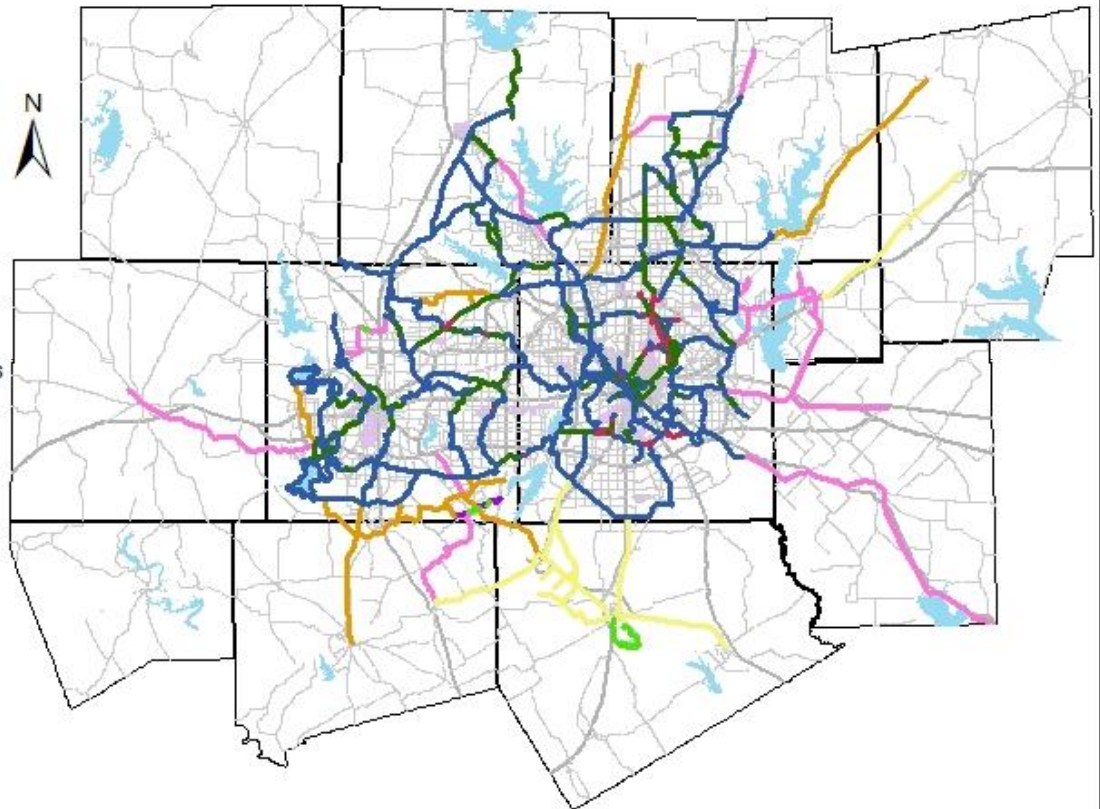
Dallas CBD



New facility locations indicate transportation needs and do not represent specific alignments



South Central Texas
Council of Governments
Transportation



August 13, 2009

The Regional Veloweb Results



	1997 Regional Veloweb	2009 Regional Veloweb Update
Length	644	1,433
Cities	50	more than 100
Counties	4	11

The Regional Veloweb Review Results

Facility	Miles
Regional Veloweb	988
Re-Alignment	141
Missing Connections	177
Funded (newly identified)	5
Existing (newly identified)	12
Needs Improvement	110
Total	1,433



The Regional Veloweb Results

Candidate Veloweb Routes and Recommended Veloweb Routes

- Due to a lack of documentation, the Regional Veloweb will no longer include both Candidate and Recommended Route rankings, but rather all segments will be considered Recommended Routes for implementation.

~~Candidate Veloweb Routes~~

- ~~Completed: 7 miles~~
- ~~Needed: 202 miles~~



The Regional Veloweb Review

Next Steps

October 2009/ November 2009	Metropolitan Planning Area (MPA) Boundary Expansion Approval
Spring BPAC Meeting	Present Final Drafts and receive feedback
Spring 2010	Outreach Meetings (3)
Spring 2010	NCTCOG Public Meetings
Spring 2010	Present to STTC
Spring 2010	Present to RTC
2010 – 2011	Include in re-write of Metropolitan Transportation Plan (MTP)



Questions, Comments, Feedback ?



Contact Information

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Website:**

<http://nctcog.org/trans/sustdev/bikeped/veloweb.asp>

