Traffic Engineering Studies for Public Agencies

Consultant's Approach

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Freese and Nichols

Manual of Transportation Engineering Studies, 2nd Edition

- A "how to" guide on conducting various studies
- Standardized study techniques and current technology
- A “must have” for the transportation professional's library

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Traffic Engineering Study Types

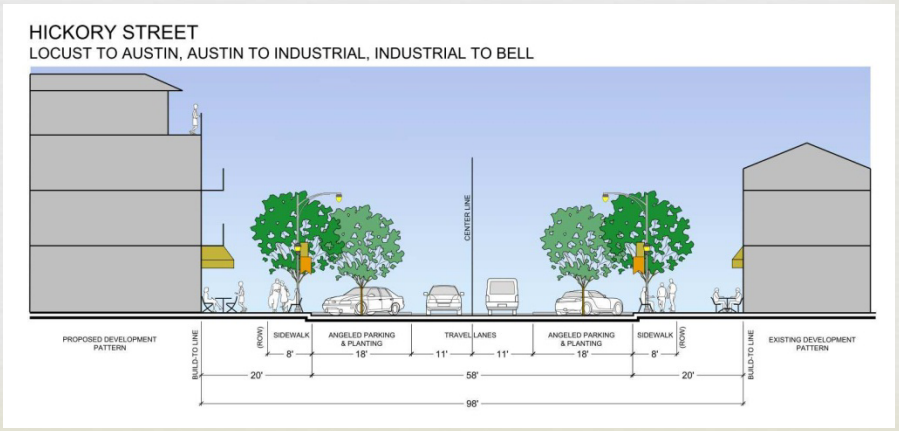
- Volume Studies
- Spot Speed Studies
- Intersection and Driveway Studies
- Traffic Control Device Studies
- TCD Compliance Studies
- Travel Time and Delay Studies
- Freeway and Managed Lane Studies
- Simulation Studies
- Pedestrian and Bicycle Studies
- Public Transportation Studies
- Goods Movement Studies
- Parking Studies
- Traffic Collision Studies
- Alternative Safety Studies
- Roadway Lighting
- Transportation Planning Data
- Environmental Impacts of Transportation Projects
- Traffic Access and Impact Studies

Developing a TE Study for a Public Agency Client

- *Listen to Client issues & concerns*
- *Understand the Client's end audience*
- *Know recommended and common practices*
- *Devise appropriate methodology and assumptions*
- *Document existing conditions, findings and recommendations and review with Client*
- *Prepare audience-specific materials*
- *Manage Client expectations*

Listen to Client Issues & Concerns

- "Discovery"
- Gather all the facts
- Read between the lines, unsaid items
- Ask questions
- *Example: Denton Downtown Plan Traffic Study*

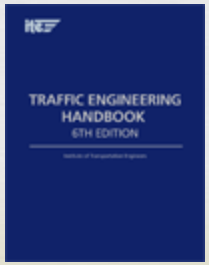


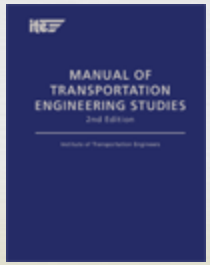
Understand the End Audience

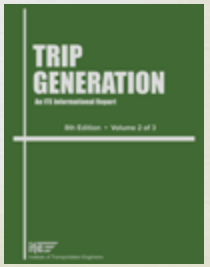
- Keep study focused on the "end game"
- Touch all the bases
- Study needs to be as un-biased as possible
- *Example: Denton Bike Plan Update*

Recommended/Common Practices

- Ethics guidelines
- Recommended Practices
- Informational Reports
- "Standard Care of the Industry"





Methodology and Assumptions

- Review budget & schedule with Client
- Discuss intended application of results
- Discuss appropriate degree of accuracy
- Discuss acceptable assumptions
- Devise data collection plan and QC the data
- QC each stage of the analysis

Documentation

- Existing conditions – review with Client
- Concurred methodology and assumptions
- Initial findings – review with Client
- Recommendations – review with Client
- Study Report in appropriate format and detail

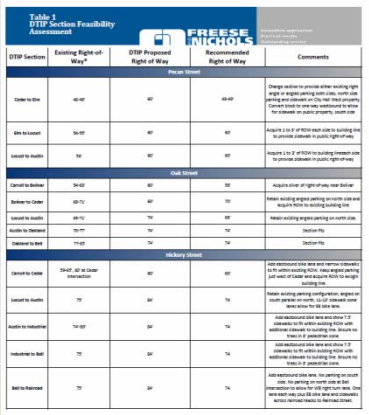


Table 1
DTIP Section Feasibility Assessment

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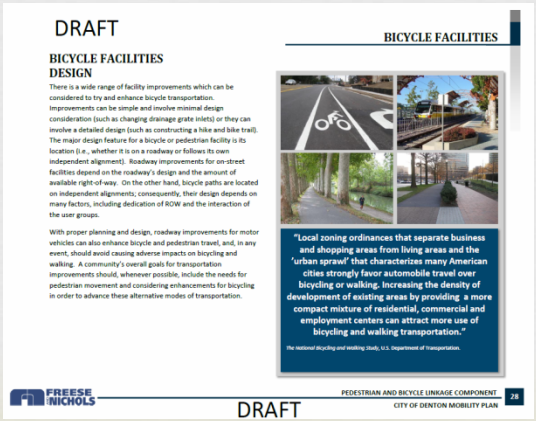
DTIP Section	Existing Right-of-Way*	DTIP Proposed Right of Way	Recommended Right of Way	Comments
Pecan Street				
Center to Elm	40-49'	60'	60-69'	Change section to provide either existing right angle or angled parking both sides, north side parking and sidewalk on City Hall West property. Convert Brick to one-way westbound to allow for sidewalk on public property, south side
Elm to Locust	56-59'	60'	60'	Acquire 1 to 3' of ROW each side to building line to provide sidewalk in public right-of-way.
Locust to Austin	56'	60'	60'	Acquire 1 to 3' of ROW to building linestach side to provide sidewalk in public right-of-way.
Oak Street				
Carroll to Bolivar	54-60'	60'	70'	Acquire sliver of right-of-way, near Bolivar
Bolivar to Center	69-71'	80'	70'	Retain existing angled parking on north side and acquire ROW to existing building line
Locust to Austin	69-71'	74'	68'	Retain existing angled parking on north side.
Austin to Oakland	70-77'	74'	74'	Section Fits
Oakland to Bell	77-85	74'	74'	Section Fits
Hickory Street				
Carroll to Cedar	59-67', 30' at Cedar intersection	80'	80'	Add eastbound bike lane and narrow sidewalks to fit within existing ROW. Keep angled parking just west of Cedar and acquire ROW to straight building line
Locust to Austin	75'	84'	74'	Retain existing parking configuration, angled on south parcels on north. 11-12' sidewalk zone leave extra for 5ft bike lane.
Austin to Industrial	74'-80'	84'	74'	Add eastbound bike lane and show 7.3' sidewalks to fit within existing ROW with additional sidewalk to building line. Ensure no trees in 4' pedestrian zone.
Industrial to Bell	75'	84'	74'	Add eastbound bike lane and show 7.3' sidewalks to fit within existing ROW with additional sidewalk to building line. Ensure no trees in 4' pedestrian zone.
Bell to Railroad	75'	84'	74'	Add eastbound bike lane. No parking on south side. No parking on north side at Bell intersection to allow for 160 right turn lane. One lane each way plus 5ft bike lane and sidewalks across railroad tracks to Railroad Street.



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BICYCLE FACILITIES

BICYCLE FACILITIES DESIGN

There is a wide range of facility improvements which can be considered to try and enhance bicycle transportation. Improvements can be simple and involve minimal design consideration (such as changing drainage grate inlets) or they can involve a detailed design (such as constructing a hike and bike trail). The major design feature for a bicycle or pedestrian facility is its location (i.e., whether it is on a roadway or follows its own independent alignment). Roadway improvements for on-street facilities depend on the roadway's design and the amount of available right-of-way. On the other hand, bicycle paths are located on independent alignments; consequently, their design depends on many factors, including dedication of ROW and the interaction of the user groups.

With proper planning and design, roadway improvements for motor vehicles can also enhance bicycle and pedestrian travel, and, in any event, should avoid causing adverse impacts on bicycling and walking. A community's overall goals for transportation improvements should, whenever possible, include the needs for pedestrian movement and considering enhancements for bicycling in order to advance these alternative modes of transportation.

"Local zoning ordinances that separate business and shopping areas from living areas and the 'urban sprawl' that characterizes many American cities strongly favor automobile travel over bicycling or walking. Increasing the density of development of existing areas by providing a more compact mixture of residential, commercial and employment centers can attract more use of bicycling and walking transportation."

The National Bicycling and Walking Study, U.S. Department of Transportation.

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PEDESTRIAN AND BICYCLE LINKAGE COMPONENT – CITY OF DENTON MOBILITY PLAN 28

Audience-Specific Materials

- Know decision makers & influences
- Know potential distractors
- Understand sensitivities
- Materials will be scrutinized over time
- Be objective, un-biased

Manage Client Expectations

- Don't "oversell" anticipated product
- Keep them informed
- Involve them in key decisions
- Hit the mark on deliverables & schedule
- Let them know about project issues early

Summary

- You are the Client's hired "expert"
- Be thorough
- Be objective
- Be relevant