PROTOTYPE TRANSPORTATION REINVESTMENT ZONE SCREENING AND EVALUATION TOOLSET - TIER 1 TRZ SCREENING TOOL
User Manual

Product 0-6538-P1
September 2010

BACKGROUND

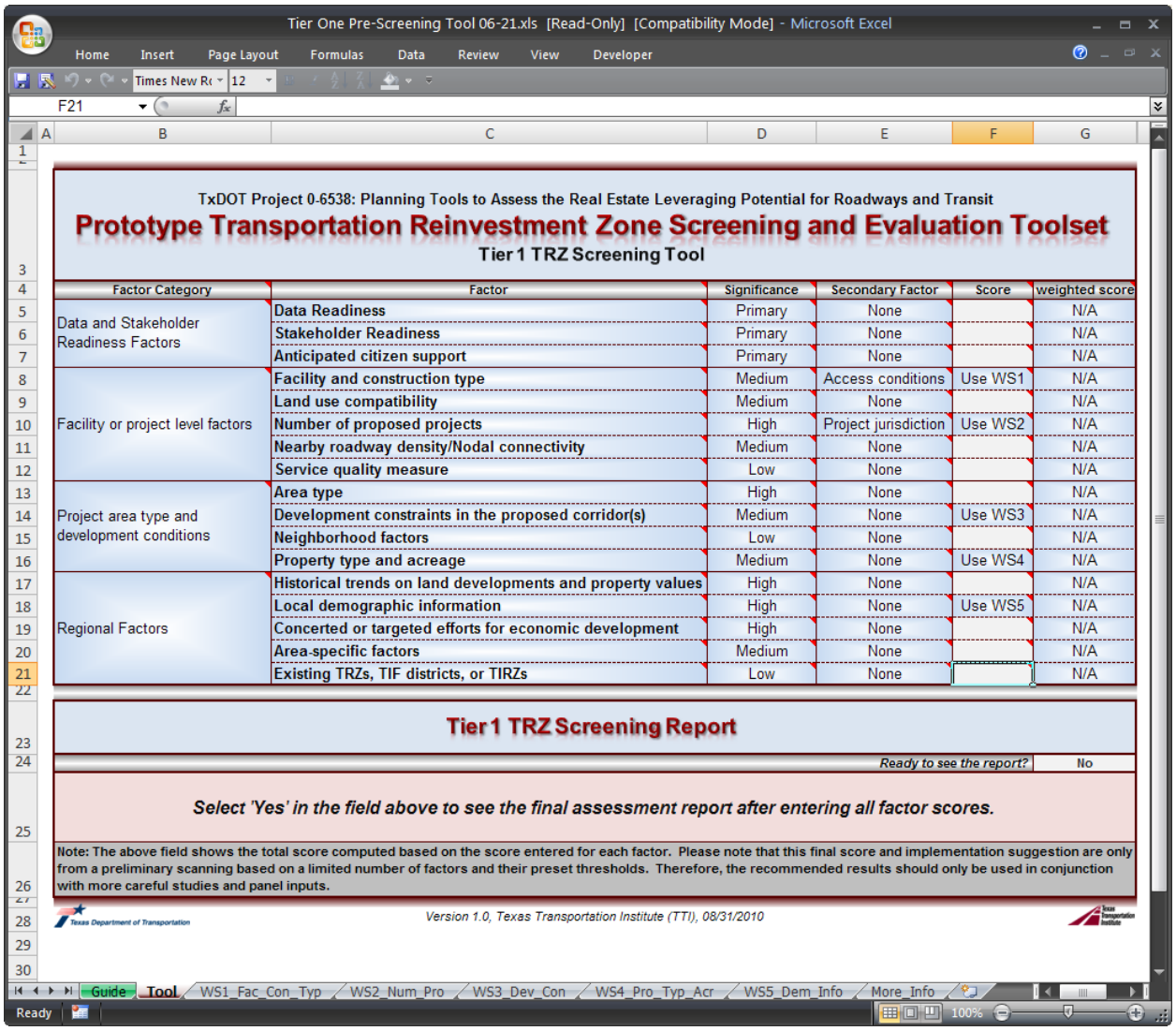
A funding crisis exists for financing many needed transportation infrastructure projects across the nation, and Texas is no exception. The State of Texas has responded to the crisis by passing several bills allowing innovative financing and alternative options for project financing. Among these is the 80th Legislature Senate Bill 1266 (SB1266), which provides the legal backdrop for the creation of an institutional arrangement called the "Transportation Reinvestment Zone" (TRZ). A TRZ facilitates value capture of the potential benefit or tax increment from a future transportation project.

TxDOT project 0-6538 (planning tools to assess the real estate leveraging potential for roadways and transit) studies various aspects of the SB1266 to augment the implementation across Texas. More specifically, this study addresses knowledge gaps and provides guidance with respect to the bill, makes recommendations for needed amendments, provides cost-effective and standardized procedures for ascertaining the feasibility of TRZ implementation projects, and finally implements guidance via workshops and guidebook material.

As part of the project, the research team developed two tiers of decision support TRZ facilitation tools for the establishment and preliminary revenue potential of TRZs. The Tier 1 tool helps users to decide whether support conditions exist for establishing a TRZ for an individual project or group of projects. The Tier 2 tool is a more advanced screening tool that allows agencies that pass the first stage to obtain a sense of the likely revenues, payback amounts, and bondable capacity if needed. This user manual provides information on the methodology and use of the Tier 1 tool.

TIER 1 SCREENING TOOL INTERFACE

The Tier 1 tool is developed as a standalone spreadsheet on an Excel platform. The tool contains two information tabs, a tool interface tab, and five worksheet tabs (Figure 1). It takes into consideration 17 factors of five categories in order to fully assess the potential of a TRZ. Some of the factors involve secondary factors that need to be further considered. A standard score range of 0–5 is assigned to each of the factors, with 5 indicating maximum TRZ potential and zero indicating no potential. Each factor is further assigned with a global weight score at a macro level (0.25 for low-weight factors, 0.5 for medium-weight factors, 0.75 for high-weight factors, and 1 for primary factors) to reflect its overall significance in the assessment process. The sum of the adjusted scores is compared against thresholds to estimate the level of potential a project has to generate sufficient revenue through a TRZ.



TxDOT Project 0-6538: Planning Tools to Assess the Real Estate Leveraging Potential for Roadways and Transit

Prototype Transportation Reinvestment Zone Screening and Evaluation Toolset

Tier 1 TRZ Screening Tool

Factor Category	Factor	Significance	Secondary Factor	Score	weighted score
Data and Stakeholder Readiness Factors	Data Readiness	Primary	None		N/A
	Stakeholder Readiness	Primary	None		N/A
	Anticipated citizen support	Primary	None		N/A
Facility or project level factors	Facility and construction type	Medium	Access conditions	Use WS1	N/A
	Land use compatibility	Medium	None		N/A
	Number of proposed projects	High	Project jurisdiction	Use WS2	N/A
	Nearby roadway density/Nodal connectivity	Medium	None		N/A
	Service quality measure	Low	None		N/A
Project area type and development conditions	Area type	High	None		N/A
	Development constraints in the proposed corridor(s)	Medium	None	Use WS3	N/A
	Neighborhood factors	Low	None		N/A
	Property type and acreage	Medium	None	Use WS4	N/A
Regional Factors	Historical trends on land developments and property values	High	None		N/A
	Local demographic information	High	None	Use WS5	N/A
	Concerted or targeted efforts for economic development	High	None		N/A
	Area-specific factors	Medium	None		N/A
	Existing TRZs, TIF districts, or TIRZs	Low	None		N/A

Tier 1 TRZ Screening Report

Ready to see the report? No

Select 'Yes' in the field above to see the final assessment report after entering all factor scores.

Note: The above field shows the total score computed based on the score entered for each factor. Please note that this final score and implementation suggestion are only from a preliminary scanning based on a limited number of factors and their preset thresholds. Therefore, the recommended results should only be used in conjunction with more careful studies and panel inputs.

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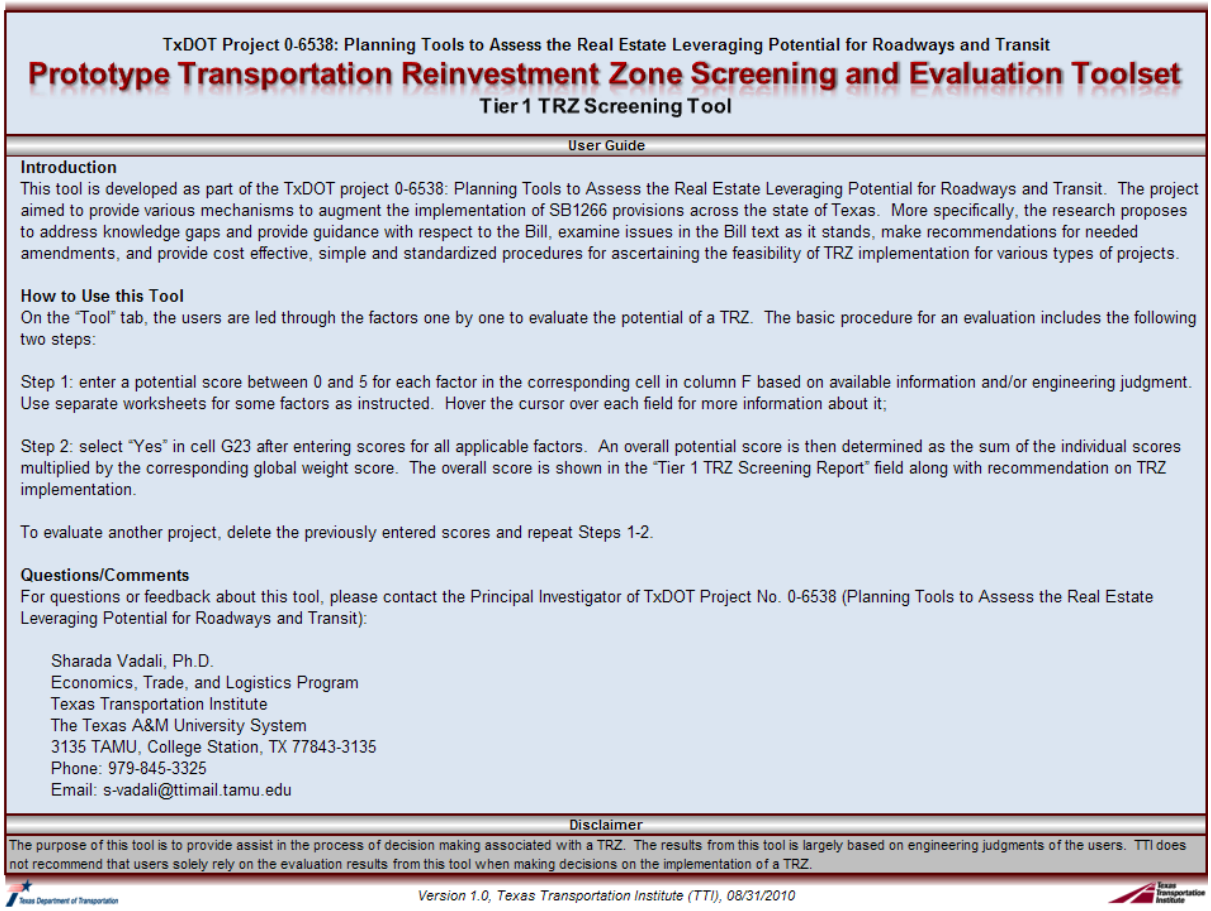
Guide | Tool | WS1_Fac_Con_Typ | WS2_Num_Pro | WS3_Dev_Con | WS4_Pro_Typ_Acr | WS5_Dem_Info | More_Info

Figure 1. Tier 1 Tool Interface.

The following describes each of the tabs in detail:

- Guide tab (Figure 2). This tab provides brief background information about research project 0-6538 that resulted in the development of the tool, and instructions on how to use the Tier 1 tool.



TxDOT Project 0-6538: Planning Tools to Assess the Real Estate Leveraging Potential for Roadways and Transit

Prototype Transportation Reinvestment Zone Screening and Evaluation Toolset

Tier 1 TRZ Screening Tool

User Guide

Introduction

This tool is developed as part of the TxDOT project 0-6538: Planning Tools to Assess the Real Estate Leveraging Potential for Roadways and Transit. The project aimed to provide various mechanisms to augment the implementation of SB1266 provisions across the state of Texas. More specifically, the research proposes to address knowledge gaps and provide guidance with respect to the Bill, examine issues in the Bill text as it stands, make recommendations for needed amendments, and provide cost effective, simple and standardized procedures for ascertaining the feasibility of TRZ implementation for various types of projects.

How to Use this Tool

On the "Tool" tab, the users are led through the factors one by one to evaluate the potential of a TRZ. The basic procedure for an evaluation includes the following two steps:

Step 1: enter a potential score between 0 and 5 for each factor in the corresponding cell in column F based on available information and/or engineering judgment. Use separate worksheets for some factors as instructed. Hover the cursor over each field for more information about it;

Step 2: select "Yes" in cell G23 after entering scores for all applicable factors. An overall potential score is then determined as the sum of the individual scores multiplied by the corresponding global weight score. The overall score is shown in the "Tier 1 TRZ Screening Report" field along with recommendation on TRZ implementation.

To evaluate another project, delete the previously entered scores and repeat Steps 1-2.

Questions/Comments

For questions or feedback about this tool, please contact the Principal Investigator of TxDOT Project No. 0-6538 (Planning Tools to Assess the Real Estate Leveraging Potential for Roadways and Transit):

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Disclaimer

The purpose of this tool is to provide assist in the process of decision making associated with a TRZ. The results from this tool is largely based on engineering judgments of the users. TTI does not recommend that users solely rely on the evaluation results from this tool when making decisions on the implementation of a TRZ.

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Figure 2. Tier 1 Tool Guide Tab.

- Tool tab (Figure 3). This tab is the main interface of the Tier 1 screening tool. The tool interface includes two portions: tool portion (upper) and screening report portion (lower). The former consists of a table listing all 17 factors and is organized in the following columns:
    - Factor Category. This column shows the category where a factor is grouped.
    - Factor. This column contains the name of each factor.
    - Significance. This column lists the significance of a factor in the overall rating process.
    - Secondary Factor. This column shows the secondary factors (if exist) associated with a factor.
    - Score. These are the fields where a user is required to enter scores for the factors. There are five factors that require the use of separate worksheets.
    - Weighted Score. This column lists the globally weighted score for each factor after a score is entered in the "Score" column.

  The report portion shows the overall score and implementation recommendation based on the project information. When a score is entered for every factor in the "Score" column and after the user selects "Yes" in the "Ready to see the report" field, the screening results will be shown automatically.

To obtain additional information about the cells on the tool interface, simply hover the cursor over the cell and an information window shows up automatically (Figure 4).

TxDOT Project 0-6538: Planning Tools to Assess the Real Estate Leveraging Potential for Roadways and Transit

Prototype Transportation Reinvestment Zone Screening and Evaluation Toolset

Tier 1 TRZ Screening Tool

Factor Category	Factor	Significance	Secondary Factor	Score	weighted score
Data and Stakeholder Readiness Factors	Data Readiness	Primary	None		N/A
	Stakeholder Readiness	Primary	None		N/A
	Anticipated citizen support	Primary	None		N/A
Facility or project level factors	Facility and construction type	Medium	Access conditions	Use WS1	N/A
	Land use compatibility	Medium	None		N/A
	Number of proposed projects	High	Project jurisdiction	Use WS2	N/A
	Nearby roadway density/Nodal connectivity	Medium	None		N/A
	Service quality measure	Low	None		N/A
Project area type and development conditions	Area type	High	None		N/A
	Development constraints in the proposed corridor(s)	Medium	None	Use WS3	N/A
	Neighborhood factors	Low	None		N/A
	Property type and acreage	Medium	None	Use WS4	N/A
Regional Factors	Historical trends on land developments and property values	High	None		N/A
	Local demographic information	High	None	Use WS5	N/A
	Concerted or targeted efforts for economic development	High	None		N/A
	Area-specific factors	Medium	None		N/A
	Existing TRZs, TIF districts, or TIRZs	Low	None		N/A

Tier 1 TRZ Screening Report

Ready to see the report?

Select 'Yes' in the field above to see the final assessment report after entering all factor scores.

Note: The above field shows the total score computed based on the score entered for each factor. Please note that this final score and implementation suggestion are only from a preliminary scanning based on a limited number of factors and their preset thresholds. Therefore, the recommended results should only be used in conjunction with more careful studies and panel inputs.

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Figure 3. Tier 1 Tool Tab.

TxDOT Project 0-6538: Planning Tools to Assess the Real Estate Leveraging Potential for Roadways and Transit

Prototype Transportation Reinvestment Zone Screening and Evaluation Toolset

Tier 1 TRZ Screening Tool

Factor Category	Factor				ighted score
Data and Stakeholder Readiness Factors	Data Readiness				N/A
	Stakeholder Readiness				N/A
	Anticipated citizen support				N/A
Facility or project level factors	Facility and construction type				N/A
	Land use compatibility				N/A
	Number of proposed projects				N/A
	Nearby roadway density/Nodal connectivity				N/A
	Service quality measure	Low	None		N/A
Project area type and development conditions	Area type	High	None		N/A
	Development constraints in the proposed corridor(s)	Medium	None	Use WS3	N/A
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Regional Factors	Historical trends on land developments and property values	High	None		N/A
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	Concerted or targeted efforts for economic development	High	None		N/A
	Area-specific factors	Medium	None		N/A
	Existing TRZs, TIF districts, or TIRZs	Low	None		N/A

Description:
The availability of data required for TRZ management and value assessment, such as parcel data in a GIS format. Lack of data limits the ability to enter into planning initiatives pertaining to actual parcels.
Source:
TGIC data layers recreated for 254 counties in Texas (2009).

Tier 1 TRZ Screening Report

Ready to see the report?

Select 'Yes' in the field above to see the final assessment report after entering all factor scores.

Note: The above field shows the total score computed based on the score entered for each factor. Please note that this final score and implementation suggestion are only from a preliminary scanning based on a limited number of factors and their preset thresholds. Therefore, the recommended results should only be used in conjunction with more careful studies and panel inputs.

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Figure 4. Additional Information Window on the Tier 1 Tool Interface.

- WS1_Fac_Con_Typ tab (Figure 5). This is the worksheet for the "facility and construction type" factor. To estimate a score for this factor, users are required to select the options for each of the questions listed in the worksheet based on the project information. After finishing this worksheet, proceed to the next factor on the Tool tab.

Questions/Worksheet for Addressing Project Type Influence Used to Set Scores

Question	Please select
1. Select the type of capacity or mobility improvement project(s) for which the TRZ is being considered:	
a. Tollway b. Non-Tollway Option c. Project combining tollway and non-tollway options (e.g., HOV/T lanes)	
1a. If a is selected (tollway):	
a. Greenfield b. Brownfield	
1b. If b is selected (non-toll):	
a. New alignment project(s) b. Widening project(s) c. Interchange or other project(s)	
2. Specify specific access features of the project(s). Check all that apply:	
a. Does the project provide land side access or new specific multi-modal connectivity (e.g., new access to airport or distribution system or intermodal hubs)?	
b. Will the project link enhance access to existing employment centers, key nodes in the region, or new/existing tourist sites?	
Overall score for Facility and Construction Type:	0

Figure 5. WS1_Fac_Con_Typ Tab.

- WS2_Num_Pro tab (Figure 6). This is the worksheet for the "Number of Proposed Projects" factor. Select the applicable option for each of the questions on this worksheet and then return to the "Tool" tab for the next factor.

Questions/Worksheet for Addressing Number of Proposed Projects

Question	Please select
1. Select the number of projects for which the TRZ is being considered:	
a. Single b. Two c. Three or more	
2. Which of the following applies to the evaluated projects?	
a. All projects within a regional boundary (single city); b. Projects across ETJs. c. Projects across multiple cities; d. Projects across multiple counties;	
Overall score for Facility and Construction Type:	0

Figure 6. WS2_Num_Pro Tab.

- WS3_Dev_Con tab (Figure 7). This worksheet is used to estimate a score for the "Development Constraints in the Proposed Corridor(s)" factor. Select the applicable answer for each question listed on this worksheet and then proceed to the next factor on the "Tool" tab.

Questions/Worksheet for Addressing Development Constraints

Question	Please select
1. Specify percent land with absolute constraints within the project corridor(s):	
a. 0 - 20% b. 21 - 30% c. 31 - 40% d. 41 - 50% e. > 50%	
2. Specify percent land with natural resource constraints within the project corridor(s):	
a. 0 - 20% b. 21 - 30% c. 31 - 40% d. 41 - 50% e. > 50%	
3. Are there legal constraints on commercial developments within the project corridor(s)?	
a. Yes b. No	
4. Are there legal constraints on residential developments within the project corridor(s)?	
a. Yes b. No	
Overall score for Development Constraints:	N/A

Figure 7. WS3_Dev_Con Tab.

- WS4_Pro_Typ_Acr tab (Figure 8). This worksheet is used to estimate a score for the "Property Type and Acreage" factor. Users are required to fill in the percentage of each property type in the project corridor(s) and then proceed to the next factor on the "Tool" tab.

Questions/Worksheet for Assessing Property Type and Acreage

Option 1: Assess the project(s) using the Shannon Index method

This method attempts to capture information only on already developed land in the immediate project corridor (i.e., within an one-mile radius) through a land use entropy index (Shannon Index) that is calculated as: $(-\Sigma[P\ln P])/\ln k$, where P is the proportion of a specific developed land use and k is the number of developed land use types. This method requires expert opinion from those (e.g., City officials who are familiar with the land use in the project area, or information from available parcel data.

Enter the approximate percentage of each land use in the total developed land area within one mile of the project corridor(s):

Land Use Type	Percentage
o Residential - Single family	
o Residential - Multi-family	
o Commercial - Retail/Office	
o Commercial - Industrial	
o Developed open space (e.g., parks)	
o Other	
Total should be 100%:	*0%*
Overall score for Property Type and Acreage:	**0**

Option 2: Assess the project(s) based on engineering judgment

This method is recommended if the detailed land use information in the project area is not available. In this case, please enter a score between 0-5 in the following cell. Scores closer to 0 are reflective of homogeneity while values diverging from 0 are reflective of diversity. Relatively diverse land use benefits further development.

Please enter a score between 0-5 with 5 indicating great potential for further land development judging solely based on property type and acreage:

Overall score for Property Type and Acreage:	

Figure 8. WS4_Pro_Typ_Acr Tab.

- WS5_Dem_Info tab (Figure 9). Users should use this worksheet to estimate the score for the "Local Demographic Information" factor. After selecting the applicable answers for all questions, return to the "Tool" tab to continue on the next factor.

Questions/Worksheet for Addressing Local Demographic Information

Local Demographic Information

This factor takes into consideration three sub-factors: population density, employment density, and local municipal bond ratings. Information about population and employment densities is available at sources such as Census, local planning agencies, and other local public agencies. An example map of Texas population density by Census tract is available at Possible data sources for population density include Census, local planning agencies, and other local public agencies. An example of Census population density map is available at http://www2.census.gov/geo/maps/special/profile2k/TX_2K_Profile.pdf. Information about local municipal bond rating are available at various bond rating websites.

Question	Please select
1. Specify population density (persons/square mile) in the project region:	
a. Less than 20	
b. 20 - 80	
c. More than 80	
d. No data	
2. Specify employment density (persons/squire mile) in the project region:	
a. Less than 20	
b. 20 - 80	
c. More than 80	
d. No data	
3. Select the best recent municipal bond rating applicable to the project region:	
a. Best quality (AAA)	
b. High quality (Moody's: AA1 - AA3; S&P or Fitch: AA+ - AA-)	
c. Upper medium grade (Moody's: A1 - A3; S&P or Fitch: A+ - A-)	
d. Medium grade (Moody's: BAA1 - BAA3; S&P or Fitch: BBB+ - BBB-)	
e. No data	
Overall score for Development Constraints:	**N/A**

Figure 9. WS5_Dem_Info Tab.

- More_Info tab (Figure 10). This tab includes additional information about the research project than resulted in the development of this tool and the tool itself.

TxDOT Project 0-6538: Planning Tools to Assess the Real Estate Leveraging Potential for Roadways and Transit

Prototype Transportation Reinvestment Zone Screening and Evaluation Toolset

Tier 1 TRZ Screening Tool

Additional Information

Project

TxDOT Project 0-6538: Planning Tools to Assess the Real Estate Leveraging Potential for Roadways and Transit

Project Background

A funding crisis exists for financing much needed transportation infrastructure projects across the nation and Texas is no exception. The State of Texas has responded to the crisis by passing several bills allowing innovative financing and alternative options for project financing. Among these is the 80th Legislature Senate Bill 1266 (SB1266) which provides the legal backdrop for the creation of an institutional arrangement called the "Transportation Reinvestment Zone" (TRZ). A TRZ facilitates value capture of the potential benefit or tax increment from a future transportation project. There are only two implementation projects to date using this funding mechanism. This research aims to provide various mechanisms to augment the implementation of SB1266 provisions across the state of Texas. More specifically, the research proposes to address knowledge gaps and provide guidance with respect to the Bill, examine issues in the Bill text as it stands, make recommendations for needed amendments, and provide cost effective, simple and standardized procedures for ascertaining the feasibility of TRZ implementation for various types of projects.

The project resulted in one IT product: 0-6538-P1 (Prototype TRZ Screening and Evaluation Toolset), which includes the Tier 1 and Tier 2 screening tools. This Microsoft® Excel®-based tool is the Tier 1 screening tool of the Prototype TRZ Screening and Evaluation Toolset. The intended users of the toolset will be both TxDOT users and external users such as Regional Mobility Authorities (RMAs), Metropolitan Planning Organizations (MPOs), counties, and cities who are involved in the evaluation of transportation projects and impacts in the context of TRZ development.

Evaluation Methodology

All TRZ's will generate some level of income as long net tax rolls are added to. A project influences tax rolls in two ways: a) in the short term it takes away via tax base loss if there is right of way acquisition, and b) in the medium to long term it adds to rolls by enhancing values of remaining properties and adding new tax base or new developments. The real question is therefore if the conditions exist to support the TRZ and if TRZ's can be successfully deployed for raising local matching funds.

Many factors can affect the TRZ potential of transportation projects. Based on a literature review and previous project experience, the researchers compiled a range of factors along with variables or sub-factors and secondary risk/influence factors associated with each factor. A standard score range of 0-5 is assigned to each of the factors, with 5 indicating maximum TRZ potential and zero indicating no potential. Each factor is further assigned with a global weight score at a macro level (0.25 for low-weight factors, 0.5 for medium-weight factors, 0.75 for high-weight factors, and 1 for primary factors) to reflect its significance in the overall assessment of TRZ potential. The sum of the adjusted scores is compared against thresholds to estimate the level of potential a project has to generate sufficient revenue through a TRZ.

The maximum overall score up is 52.5. The potential of the evaluated projects is classified into the following five groups based on their overall scores:

- High potential (overall score > 40). Projects in this group have a great potential for setting up a TRZ and for creating value increments as indicated from various aspects. The results suggest that a TRZ set up based on these projects will be highly likely to succeed.
- Medium high potential (30 – 40). Projects in this group outstand in many aspects towards a successful TRZ. If cautiously implemented, TRZs based on these projects should generate sufficient value increments.
- Medium potential (20 – 30). Projects in this group have a moderate potential for TRZs. However, if conditions justify and with adequate risk analyses, a TRZ plan may still be implemented.
- Medium low potential (10 – 20). Projects in this group have a very low potential for generating revenue increments if a TRZ is set up. It is generally not recommended to implement a TRZ for such projects.
- Low potential (0 – 10). These projects have little or no potential for generating value increments within a TRZ. It is not recommended to implement TRZs based on these projects.

Disclaimer

The purpose of this tool is to provide assist in the process of decision making associated with a TRZ. The results from this tool is largely based on engineering judgments of the users. TTI does not recommend that users solely rely on the evaluation results from this tool when making decisions on the implementation of a TRZ.

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Figure 10. More_Info Tab.

SCREENING PROCEDURE

To evaluate a project, users are required to fill out the corresponding cell in the "Score" column by assigning a score between 0–5 for each factor. The tool uses such a coloring mechanism that all and only editable cells (i.e., cells that require user inputs) are in light gray. Five factors require the use of separate worksheets in order to determine their scores, as marked under the "Score" column. In these cases, users should use a corresponding worksheet on a separate tab to determine the score. When all editable cells are filled on each worksheet, an overall score for the factor will be determined and copied to the tool interface automatically.

After all factors are assigned with a score, a user is required to select "Yes" in the dropdown list in the "Ready to See the Report" field (cell G23) to view the screening report. An overall potential score is then determined as the sum of the individual scores multiplied by the corresponding global weight score. The overall score is shown in the "Tier 1 TRZ Screening Report" field along with recommendation on TRZ implementation. Figure 11 shows the flowchart of the Tier 1 tool.

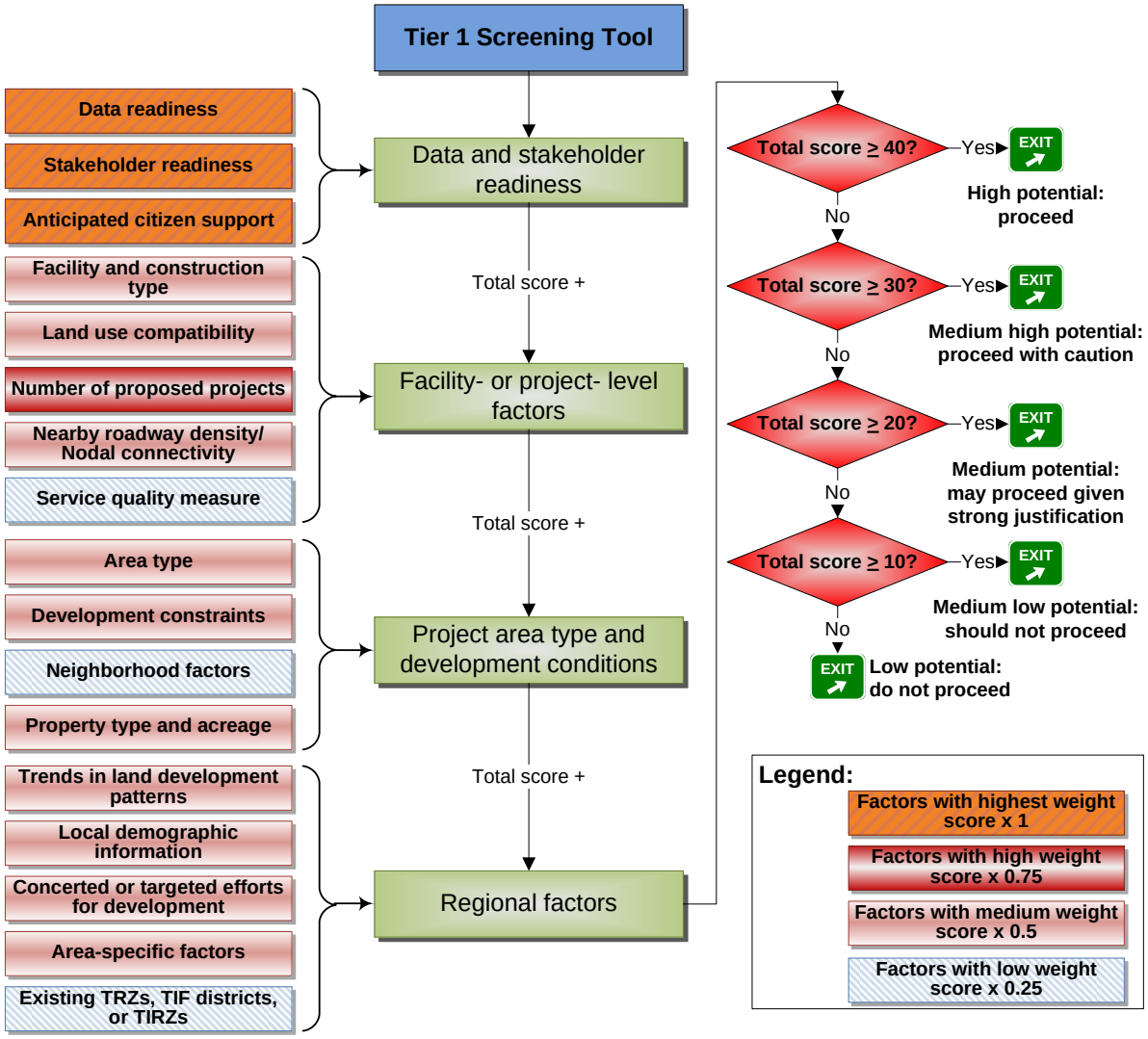

Figure 11. Tier 1 Tool Decision-Tree Interface Flowchart.

The maximum overall score is 52.5. The potential of the evaluated projects is classified into the following five groups based on their overall scores:

- High potential (overall score > 40). Projects in this group have a great potential for setting up a TRZ and for creating value increments as indicated from various aspects. The results suggest that a TRZ set up based on these projects will be highly likely to succeed.

- Medium high potential (30–40). Projects in this group outstand in many aspects toward a successful TRZ. If cautiously implemented, TRZs based on these projects should generate sufficient value increments.
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- Low potential (0–10). These projects have little or no potential for generating value increments within a TRZ. It is not recommended to implement TRZs based on these projects.

Users should note that the purpose of this tool is to provide a mechanism to facilitate decision makers in assessing the potential of a TRZ. By going through the screening process, users may identify potential risks associated with the implementation of a TRZ and then develop countermeasure to mitigate/eliminate those risks before carrying out the TRZ. Therefore, the use of this screening tool should be repetitive: as the stakeholders mitigate or eliminate negative factors affecting the TRZ, they can go through the screening process for additional rounds to identify additional risks associated with the TRZ. The process should only end when a satisfactory result is reached through the tool, indicating most or all risk factors are fully understood, mitigated, and/or eliminated.

TRZ POTENTIAL FACTORS IN TIER 1 TOOL

As discussed earlier, the Tier 1 tool considers 17 factors grouped in five categories. The following describes these factors as well as how a score is determined for each of them in detail.

Support Factors – Data and Stakeholder Readiness to Enter into Collaborative Planning Agreements

These are factors that could impact the speed and reliability with which TRZ planning arrangements could proceed in the near term. As such these are not watertight measures, since transitions are possible at any stage based on data quality, awareness, and discussions. This group includes the following factors:

1. **Data readiness**. The availability of necessary data especially parcel data in a geographic information system (GIS) format is highly critical for TRZ implementation and management. Since TRZ feasibility depends on tax increments that are estimable at the parcel level within the zone, the non-availability of such data can be a significant impediment. According to the Central Appraisal District surveys conducted by the State Comptroller (See Figure 12. A GIS layer showing the GIS parcel data status has been recreated based on the figure.), approximately 75 percent of the districts have parcel data in a digital format. Based on Figure 12, Figure 13, and Table 1 (Appendix), a large number of counties and regions are ready for such mechanism, but a greater number of counties may just not be ready. However, it is quite likely that the graphic would be representative of more recent initiatives that might be ongoing at individual appraisal

districts. According to the ability to provide or have in possession reliable parcel layers in the immediate short term (1–2 years), a project can be assigned with one of the following scores:

- 5 (high): a region has in its possession fairly reliable parcel layers or is willing to make available such layers. Based on Figure 12, approximately 20 percent of the counties (52) in Texas are very data-ready (shaded very dark green) as of 2009–2010. These are counties with 100 percent of parcels digitized. Notice that most of these counties are located around urban/metropolitan areas. There are three implementation TRZ projects underway—all three are from regions with good parcel data (El Paso – darkest green or best quality; Hidalgo County and Kaufman region – dark green shaded regions).
- 4 (medium high-dark green shaded): counties with 75–99 percent of digitized parcels (Hidalgo and Kaufman fall in this category).
- 3 (medium): counties with 50–74 percent of digitized parcels.
- 2 (medium low): counties with 25–49 percent of digitized parcels.
- 1 (low or difficult): regions that currently have very limited (1–24 percent) parcel data layers in a digitized format (counties with little or no digitized data).
- 0: regions that currently have no digitized parcel data.

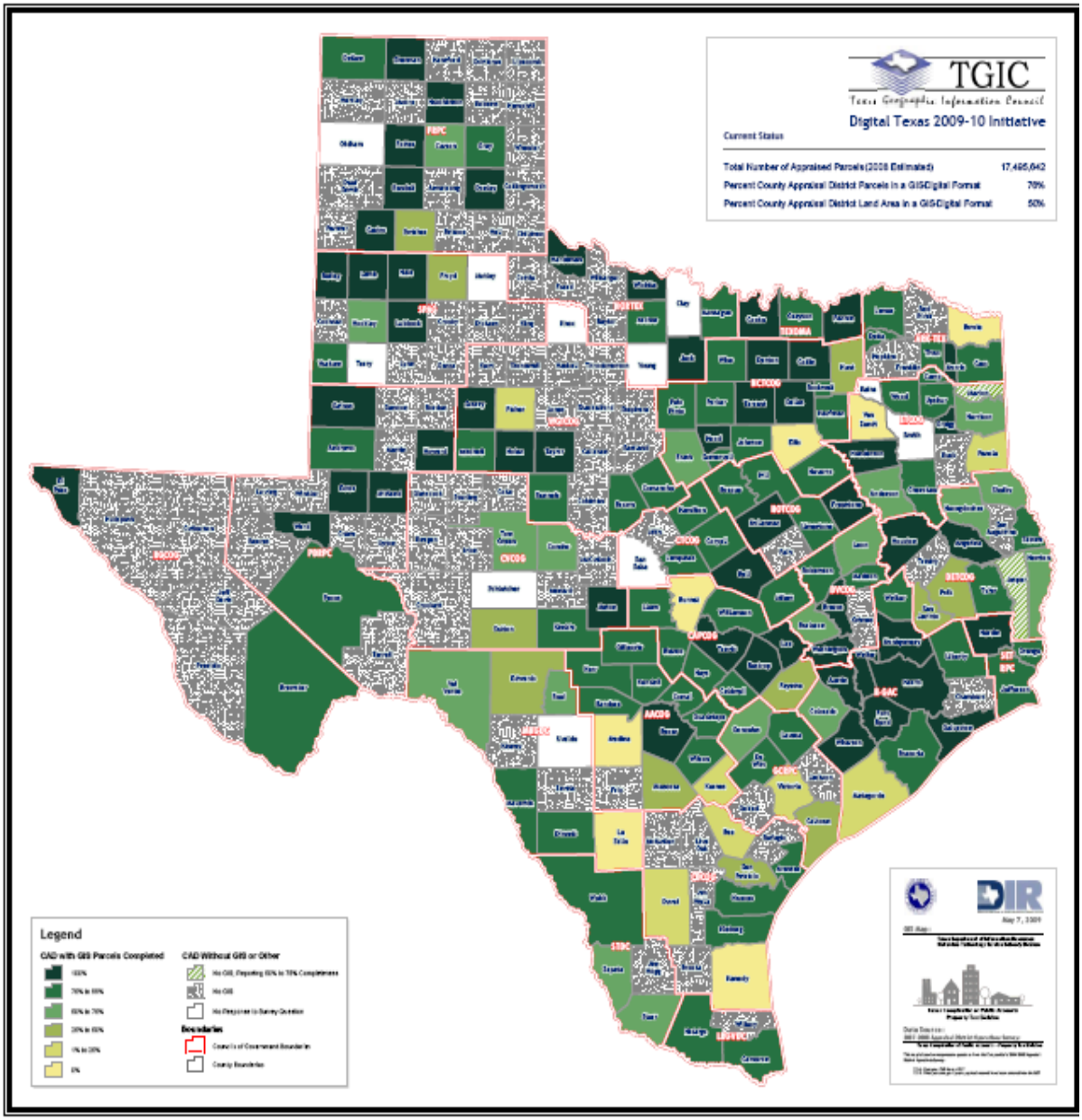

Figure 12. Appraisal District GIS Digital Parcel Data Status – 2009.

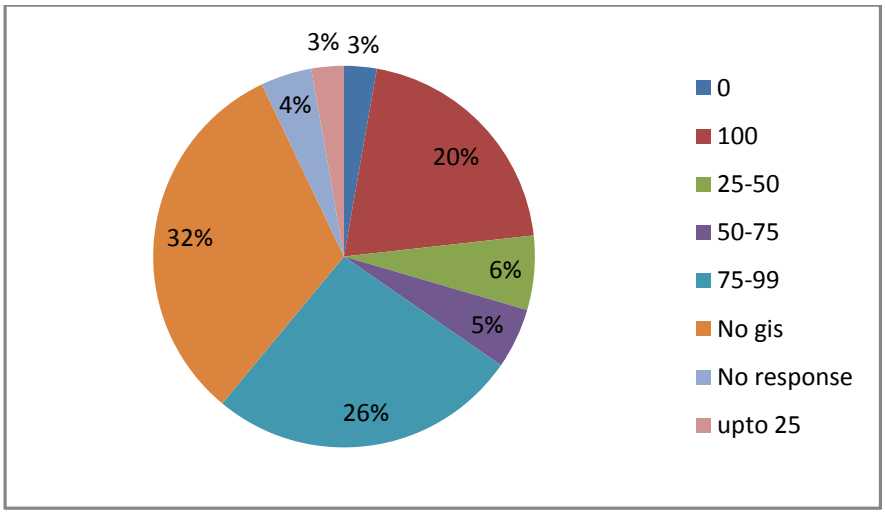

Figure 13. Distribution of Texas Counties by Percent Digitized (TGIC 2009–2010).

2. **Stakeholder readiness**. This factor refers to the ability and political will of stakeholders, local governments, and key entities in the decision making process, such as TxDOT, City, county, and/or Regional Mobility Authorities to come together to recognize the need for critical projects and the need for public-private partnerships that would be necessary for this mechanism to work. Depending on the level of stakeholder readiness, a project can be assigned with one of the following scores:
    - 4–5 (high): critical stakeholders and local governments are willing to come forward and discuss financing options including setting aside tax increments for the project. Financial factors like strength of city's bond ratings could also impact participation. The key parties include TxDOT, the relevant Regional Mobility Authority, the County representatives, and/or City representatives.
    - 2–3 (medium): some key stakeholders are reluctant to actively participate in the setup of a TRZ.
    - 0–1 (low): none or only limited stakeholders have the willingness to support a TRZ and relevant policy/regulation makings.

3. **Anticipated citizen support as necessitated in TRZ establishment protocols**. Public support for transportation projects as well as setting aside a portion of the tax increment for the TRZ to be set up is an important consideration for the TRZ to be successfully established. According to the level of support from the affected public/voters, a project can be assigned with a score between 0–5 with 5 indicating the highest possible level of public support.

Facility or Project Level Factors. These factors include those that directly depict the transportation projects being considered for TRZ. Typically capacity projects are associated with land development impacts but there are several tempering factors that serve to influence the size of likely impact. These include the actual type of capacity project and other sub-factors.

1. **Facility and construction type**. Different types of facilities and constructions will result in different extents of TRZ Potential. The literature suggests that not all projects are uniform in their impact on land development. While added capacity projects (both new and widening) are valid candidates, there are many others that do not satisfy this criterion. For this research, the various projects could be classified on a development potential scale ranging from least or no potential (0) to maximum potential (5). Several secondary influence factors were also identified that can be used to further adjust the score based on the project type. To determine the factor score of a project, users should use the score assigned according to the project type and then make reasonable adjustment based on applicable secondary influence factors. For the time being, this list is only developed for highway projects since the Bill is currently directed to highway projects alone. Subsequently, this could be expanded to consider transit projects.

   Based on a review, some key project level aspects seem more conducive for augmenting land development effects, given certain conditions. For instance, the entire range of capacity projects can be meaningfully broken down into three types of broad capacity/mobility characteristics: tollway, non-tollway free capacity improvements, and finally options that combine both features. Minor improvements such as reconstruction and resurfacing are not considered if they are part of a main project. While the jury is still out on some aspects, tollway projects tend to be riskiest in terms of generating widespread land developments while free options tend to generate the most widespread effects. This aspect is used to develop the rating scale. This scale is tempered by the broad type of access features a project provides.

   Two risk factors, connectivity and access, are considered along with micro-location. Therefore, every project can be considered as five categories. In principle, there are more risk factors, but we have decided to focus on the most critical and perhaps easiest to note based on planned project routes. The risk factors, when positive, are assigned with a score of 0.5 on top of the base score assigned based on project type (0–5).

2. **Land use compatibility**. The consistency of a proposed project with the local land use plans as well as other transportation plans may affect the probability of a project creating compatible land uses and maintaining values in the area. For example, a metropolitan transportation improvement program (TIP) project is likely to be consistent with existing zoning patterns and have a greater possibility for generating predictable development patterns consistent with those considered in land use plans. Therefore, one indicator is whether a project is part of a long range plan or a metropolitan transportation improvement plan. Projects that do not belong in these categories can lead to incompatible uses and lead to fluctuations in value. A binary score is assigned to this factor: a score of 0 indicating the project is not a TIP project while a 5 indicating the opposite.

3. **Number of projects that are considered**. The number of major proposed projects in the TRZ and their scales/types have an impact on TRZ potential. Multiple projects that lead to synergistic network influences frequently prompt more significant value increments in the region. However, the significance of this factor to the success of a TRZ also depends

on the number of jurisdictions the projects cross. The land developments associated with projects that are completely contained within a single jurisdiction are generally easy to identify and manage, simplifying the assessment of TRZ potential. In contrast, crossing borders of multiple cities or even counties will inevitably complicate the management of a TRZ and increase the difficulty of achieving sufficient investment return. In addition, due to the lack of zoning in regions beyond extra territorial jurisdiction (ETJ) boundaries. A project of which a large part traverses an ETJ may have a lower level of feasibility of setting up a TRZ primarily because the degree to which land use conversions occur in these areas is a function of several additional factors. To determine the score of the projects in this aspect, users should first assign a score based on the number of projects (3 for one project only, 4 for two projects, and 5 for three or more projects). Reasonable adjustment can be made on top of the base score based on the number of jurisdictions the projects cross:

- all projects within a regional boundary: minus 0;
- projects across ETJs: minus 1;
- projects across multiple cities: minus 2; and
- projects across multiple counties: minus 3.

Projects that traverse multiple counties are multi-jurisdictional by nature, requiring strong inter-local agreements. These projects may be broken down by county for analysis purposes since support has to be generated at the county level.

4. **Nearby roadway density**. An existing dense nearby roadway network is likely to maximize the potential of a new highway project leading to significant further developments. As such, this measure is an indirect accessibility measure. This tool uses the number of nodes (i.e., intersections) within the 1-mile radius of the project(s). This can be further refined by type of opportunity afforded. The following criteria are used when assigning a score:
    - 0 if no intersections within the one-mile buffer,
    - 1 if 1–2 intersections,
    - 2 if 3–4 intersections,
    - 3 if 5–6 intersections,
    - 4 if 7–8 intersections, and
    - 5 if 9 or more intersections.

5. **Service quality measure**. Projected service quality has potential impact on TRZ potential for both transit and highway projects. Commonly used performance measures such as predicted levels of service (LOS), safety, emissions reductions, and congestion (travel time conditions) may be used as indicators of service quality. Travel time improvements can be capitalized in land values as safety measures can improve the amenity factor. To determine the overall score for a project associated with this factor, users should first assign separate scores (0–5 scale) based on the potential improvements to LOS, safety, and travel time. The overall score is the average of these three scores. In non-attainment areas, the ability of a project to impact air quality while still being a good TRZ candidate is also an important consideration since randomly developed projects do have potential to exacerbate sprawl with negative implications for regional air quality. Non-attainment areas are also large urban areas where majority of the existing TIF/TIRZs

are already distributed. This is likely to bring up the issue of distributions of dollars across districts especially if there are overlaps in boundaries and parcels. In such non-attainment areas, TRZ may have the potential to foster more compact development in the longer term.

Project area type and development conditions. The factors in this group depict the development conditions within a potential TRZ. Readers should note that all of these are best quantified in GIS, none of which may be readily compliable for this analysis. If those exist, an external analysis can facilitate this process. In subsequent efforts, the Tier 1 screening tool may be upgraded to include ready access and calculation of all of these aspects internally; however, good parcel layers are a requirement for this process. To maintain simplicity and ease of use as a TRZ facilitation tool, it was decided that this effort should retain the capability for users to resort to either expert judgment or a more quantitative assessment of the following sub-factors.

1. **Area type**. The development type of the TRZ area has an impact on TRZ potential and therefore value capture after a TRZ is set up. Examples of variables or observations for this factor include urban, suburban, and rural. We suggest a simple classification based on a population classification scheme for classifying macro-location. These factors will be rated on a 1–4 scale:
    - 4 for urbanized areas with a population $\geq$ 200,000;
    - 3 for urbanized areas with a population between 50,000–199,999;
    - 2 for small urban areas with a population between 5,000–49,999; and
    - 1 for rural areas with a population less than 5,000.

2. **Development constraints**. The ability of land developments to occur depends on the amount of vacant land that is developable and constraint free, among other factors. Development constraints include absolute constraints, natural constraints, and legal constraints such as restrictive zoning that limits the development potential by reducing the amount of vacant land that is developable. The overall score for this factor is estimated as the sum of those determined based on the following variables (cannot exceed five):
    - Absolute physical constraints include features such as existence of water bodies, major utility rights of way, roadways, or railroads. Absolute constraints are riskier than resource related constraints since they can cause land largely undevelopable. A base score can be determined based on the percentage of land with absolute constraints within the TRZ: 2.5 = 0–20 percent, 2 = 21–30 percent, 1.5 = 31–40 percent, 1 = 41–50 percent, and 0.5 = 51 percent and up.
    - Natural resource related constraints include features such as flood plains, detention ponds, landfills, environmental constrains (e.g., wetlands), and high terrain. The score of this variable is determined based on the percentage of the land with natural resource constraints within the TRZ: 2.5 = 0–20 percent, 2 = 21–30 percent, 1.5 = 31–40 percent, 1 = 41–50 percent, and 0.5 = 51 percent and up. Legal constraints on commercial developments, which will inevitably decrease the potential of transportation project catalyzing further developments.

This is a binary variable with 0 indicating no existing legal constraints and −3 indicating existence of legal constraints.

- Legal constraints on residential developments, which may result in a greater likelihood of commercial land developments. This is also a binary variable with 0 indicating no constraints and −2 indicating the existence of such legal constraints.

3. **Neighborhood factors.** Some neighborhood factors such as local crime rate and poverty levels may have impact on the TRZ potential of a transportation project(s). These work in a similar fashion as development constraints and higher values serve to detract rather than contribute; hence these values should be adjusted away from an overall score. Poverty level is rated lower because poverty features are partly a requirement in the establishment of TRZs. However, since crime and poverty tend to be correlated, there could be an argument to drop crime and to consider only poverty levels. A score can be assigned as following:
   - Crime rate in the region: 1 for low, 3 for medium, and 5 for high (may be based on percentages from Census data or quick expert judgments).
   - Poverty level: 1 for low, 3 for medium, and 5 for high (may be based on percentages from Census data or quick expert judgments).

4. **Property type and acreage**. Different types of properties within a TRZ may have different rates of further development and therefore TRZ potential. Land use diversity or mix to a degree is beneficial for TRZ development. However, land use mix beyond certain levels could actually work to the detriment of dominant land values. While there are complex measures that can be used to describe this, an entropy measure based on percentage of uses is simple and can be useful in this context. Values closer to 0 are reflective of homogeneity in the distribution of developed land while values closer to 1 are reflective of diversity. This is an entropy measure reflecting the evenness of distribution of several land-use types within the region.

   This factor is a single index value and attempts to capture information only on already developed land in the immediate project corridor (say, within a 1-mile radius of the project). Expert opinion from city officials or those familiar with land use can provide these inputs, while precise assessments may be made if parcel data are available. The aim of this attribute is to capture the developed land use mix in the region. This factor is often used in the context of trip generation; however, it can be of importance in influencing developmental trends in the region and is of even greater significance in the case of transit projects. The specific measure being adopted to address this is the land use entropy index that is commonly calculated through the following formula. The measure is bounded between 0 and 1 and represents the land use balance in a region.

$$\frac{\{-\sum_k [P_i ln P_i]\}}{lnk}$$

   P represents proportion of the various developed land uses in the corridor; *i* = the specific type of distinct land uses (developed); *k* = the number of land use types. *Ln (Pi)* is the log of the proportion to the base 10. The index spells out the proportion of each of the land

use types such as single family residential, multi-family residential, commercial, industrial, public institutional, and park uses. This factor is broadly correlated with micro-location. For instance, suburban areas will tend to have homogeneous use, while more urban locations will tend to have a mix. In general, closer the index is zero, the less the potential for TRZs. The closer the index is to 1 the greater is the indication of a more developed corridor and of limitations to development. Hence threshold values between 0.3 and 0.7 are likely to be conducive to TRZ growth.

Regional factors. Factors listed in this group are those that describe the relevant characteristics or macro conditions of the relatively large region (e.g., region in a city, city, or county) where the proposed TRZs are located. Many of these factors may be obtained from Census data, discussions with the Appraisal Office in the region, and the City Planning offices.

1. **Historical trends on land developments and property values**. Historical trends on land developments and property values are an indicator of economic health of the region. The score associated with this factor for a project can be estimated as the average of the two determined based on the following two variables:
    - Percent increase in building permit activity (five-year average). A score is assigned based on the increased percentages: 0 = 0–4 percent, 1 = 5–9 percent, 2 = 10–14 percent, 3 = 15–19 percent, 4 = 20–24 percent, and 5 = 25 percentand up.
    - Percent increase in taxable values (five-year average). A score is assigned similarly based on the percent increase as follows: 0 = 0–4 percent, 1 = 5–9 percent, 2 = 10–14 percent, 3 = 15–19 percent, 4 = 20–24 percent, and 5 = 25 percent and up.

2. **Local demographic information**. Local demographic conditions may affect the extent of further developments. Several demographic variables need to be considered while assessing the feasibility of a TRZ. An overall score between 0–5 associated with this factor can be then computed as the average of the scores based on the regional employment and population densities as well as recent bond ratings. Information about population and employment densities is available at sources such as Census data, local planning agencies, and other local public agencies. Information about local municipal bond ratings is available at various bond rating websites.
    - Regional employment/employment density:
        - 5 if 80 or more per square mile,
        - 3 if 20–80 per square mile, and
        - 1 if less than 20 per square mile.

    - Regional population/population density:
        - 5 if 80 or more per square mile,
        - 3 if 20–80 per square mile, and
        - 1 if less than 20 per square mile.

    - Recent regional bond ratings (municipal or otherwise).
        - 5 for best quality (AAA),
        - 4 for high quality (Moody's: AA1–AA3; S&P or Fitch: AA+–AA−),

- 3 for upper medium grade (Moody's: A1–A3; S&P or Fitch: A+–A−), and
- 2 for medium grade (Moody's: BAA1–BAA3; S&P or Fitch: BBB+–BBB−).

3. **Concerted or targeted efforts to promote economic growth and development**. This is a collateral action at the regional level that can impact development trends in the broader region as well as the TRZ, if it is undertaken. For instance, if the local and regional economic development agencies and the city have identified specific regions for development, have incentives for promoting development, or have undertaken specific action items to promote development, a TRZ would have a much better chance to create higher increment. A binary score of 0 or 5 can be assigned to this factor with 5 indicating the existence of such efforts or actions.

4. **Area-specific factors**. Other factors that are specific to the region where the project is located may also have impact to value increment. An example of such factors is border trade trends for border regions. Depending on the existence of such factors and their potential contribution to value increment, a binary score of 0 or 5 can be assigned with 5 indicating the existence of such significant factors.

5. **Existing TRZs, TIF districts, or TIRZs**. Too many existing TRZs, TIF districts, or TIRZs in a region might cause conflicts with the implementation of additional TRZs. This is quite likely to be the scenario in the urban areas of Texas (Houston, Dallas, Arlington, San Antonio, Austin, etc.). Few TIFs or TIRZs are an indication that the region is ready to undertake such ventures and is aware of the protocols and processes of TRZ. A score may be assigned based on this factor as follows:
   - 5 if no existing zones,
   - 3 if one to five existing zones, and
   - 0 if more than five zones.

APPENDIX

Table 1: GIS Parcel Data Quality and Availability across Texas Counties (TGIC 2009–2010 Initiative).

County	County_No	TDOT District	TxDOT District_Name	Percent Digitized	Total	Percent
BOWIE	19	ATL	Atlanta	0		
BURNET	27	AUS	Austin	0		
ELLIS	71	DAL	Dallas	0		
KENEDY	66	PHR	Pharr	0		
LA SALLE	142	LRD	Laredo	0		
LIPSCOMB	148	AMA	Amarillo	0		
MEDINA	163	SAT	San Antonio	0	7	3%
ANGELINA	3	LFK	Lufkin	100		
AUSTIN	8	YKM	Yoakum	100		
BAILEY	9	LBB	Lubbock	100		
BASTROP	11	AUS	Austin	100		
BELL	14	WAC	Waco	100		
BEXAR	15	SAT	San Antonio	100		
BRAZOS	21	BRY	Bryan	100		
CASTRO	35	LBB	Lubbock	100		
COLLIN	43	DAL	Dallas	100		
COOKE	49	WFS	Wichita Falls	100		
DALLAS	57	DAL	Dallas	100		
DENTON	61	DAL	Dallas	100		
DONLEY	65	CHS	Childress	100		
ECTOR	69	ODA	Odessa	100		
ELPASO	72	ELP	El Paso	100		
FANNIN	75	PAR	Paris	100		
FORT BEND	80	HOU	Houston	100		
FREESTONE	82	BRY	Bryan	100		
GAINES	84	LBB	Lubbock	100		
GALVESTON	85	HOU	Houston	100		
GREGG	93	TYL	Tyler	100		
HALE	96	LBB	Lubbock	100		
HARDEMAN	100	CHS	Childress	100		
HARDIN	101	BMT	Beaumont	100		
HARRIS	102	HOU	Houston	100		
HENDERSON	108	TYL	Tyler	100		
HOOD	112	FTW	Fort Worth	100		
HOUSTON	114	LFK	Lufkin	100		
HOWARD	115	ABL	Abilene	100		
HUTCHINSON	118	AMA	Amarillo	100		
JACK	120	FTW	Fort Worth	100		
LAMB	140	LBB	Lubbock	100		
LEE	144	AUS	Austin	100		
LUBBOCK	152	LBB	Lubbock	100		
MASON	157	AUS	Austin	100		
MC LENNAN	161	WAC	Waco	100		
MIDLAND	165	ODA	Odessa	100		
MONTGOMERY	170	HOU	Houston	100		
MORRIS	172	ATL	Atlanta	100		
NOLAN	177	ABL	Abilene	100		
POTTER	188	AMA	Amarillo	100		
RANDALL	191	AMA	Amarillo	100		
SCURRY	208	ABL	Abilene	100		
SHERMAN	211	AMA	Amarillo	100		

TARRANT	220	FTW	Fort Worth	100		
TAYLOR	221	ABL	Abilene	100		
TRAVIS	227	AUS	Austin	100		
WALLER	237	HOU	Houston	100		
WARD	238	ODA	Odessa	100		
WASHINGTON	239	BRY	Bryan	100		
WHARTON	241	YKM	Yoakum	100		
WICHITA	243	WFS	Wichita Falls	100	52	20%
ANDERSON	1	TYL	Tyler	25-50		
ATASCOSA	7	SAT	San Antonio	25-50		
BURLESON	26	BRY	Bryan	25-50		
CALHOUN	29	YKM	Yoakum	25-50		
EDWARDS	70	SJT	San Angelo	25-50		
FLOYD	78	LBB	Lubbock	25-50		
HUNT	117	PAR	Paris	25-50		
REAL	193	SJT	San Angelo	25-50		
SAN PATRICIO	205	CRP	Corpus Christi	25-50		
SUTTON	218	SJT	San Angelo	25-50		
SWISHER	219	LBB	Lubbock	25-50		
NACOGDOCHES	174	LFK	Lufkin	25-50		
NEWTON	176	BMT	Beaumont	25-50		
SHELBY	210	LFK	Lufkin	25-50		
FAYETTE	76	YKM	Yoakum	25-50		
SAN JACINTO	204	LFK	Lufkin	25-50	16	6%
CARSON	33	AMA	Amarillo	50-75		
CONCHO	48	SJT	San Angelo	50-75		
DALLAM	56	AMA	Amarillo	50-75		
HOCKLEY	111	LBB	Lubbock	50-75		
STARR	214	PHR	Pharr	50-75		
TOM GREEN	226	SJT	San Angelo	50-75		
VAL VERDE	233	LRD	Laredo	50-75		
ZAPATA	253	PHR	Pharr	50-75		
COLORADO	45	YKM	Yoakum	50-75		
GONZALES	90	YKM	Yoakum	50-75		
ERATH	73	FTW	Fort Worth	50-75		
LEON	145	BRY	Bryan	50-75		
HARRISON	103	ATL	Atlanta	50-75	13	5%
ANDREWS	2	ODA	Odessa	75-99		
ARANSAS	4	CRP	Corpus Christi	75-99		
ARCHER	5	WFS	Wichita Falls	75-99		
BANDERA	10	SAT	San Antonio	75-99		
BLANCO	16	AUS	Austin	75-99		
BOSQUE	18	WAC	Waco	75-99		
BRAZORIA	20	HOU	Houston	75-99		
BREWSTER	22	ELP	El Paso	75-99		
BROWN	25	BWD	Brownwood	75-99		
CALDWELL	28	AUS	Austin	75-99		
CAMERON	31	PHR	Pharr	75-99		
CAMP	32	ATL	Atlanta	75-99		
CASS	34	ATL	Atlanta	75-99		
CHEROKEE	37	TYL	Tyler	75-99		
COMAL	46	SAT	San Antonio	75-99		
COMANCHE	47	BWD	Brownwood	75-99		
CORYELL	50	WAC	Waco	75-99		
DELTA	60	PAR	Paris	75-99		
DIMMIT	64	LRD	Laredo	75-99		
GILLESPIE	87	AUS	Austin	75-99		

GRAY	91	AMA	Amarillo	75-99		
GRAYSON	92	PAR	Paris	75-99		
GUADALUPE	95	SAT	San Antonio	75-99		
HAMILTON	98	WAC	Waco	75-99		
HAYS	106	AUS	Austin	75-99		
HIDALGO	109	PHR	Pharr	75-99		
HILL	110	WAC	Waco	75-99		
JOHNSON	127	FTW	Fort Worth	75-99		
KAUFMAN	130	DAL	Dallas	75-99		
KENDALL	131	SAT	San Antonio	75-99		
KERR	133	SAT	San Antonio	75-99		
KIMBLE	134	SJT	San Angelo	75-99		
KLEBERG	137	CRP	Corpus Christi	75-99		
LAMAR	139	PAR	Paris	75-99		
LAMPASAS	141	BWD	Brownwood	75-99		
LLANO	150	AUS	Austin	75-99		
MAVERICK	159	LRD	Laredo	75-99		
MILAM	166	BRY	Bryan	75-99		
MITCHELL	168	ABL	Abilene	75-99		
MONTAGUE	169	WFS	Wichita Falls	75-99		
NAVARRO	175	DAL	Dallas	75-99		
NUECES	178	CRP	Corpus Christi	75-99		
PALO PINTO	182	FTW	Fort Worth	75-99		
PARKER	184	FTW	Fort Worth	75-99		
PECOS	186	ODA	Odessa	75-99		
POLK	187	LFK	Lufkin	75-99		
ROBERTSON	198	BRY	Bryan	75-99		
ROCKWALL	199	DAL	Dallas	75-99		
RUNNELS	200	SJT	San Angelo	75-99		
SOMERVELL	213	FTW	Fort Worth	75-99		
TITUS	225	ATL	Atlanta	75-99		
UPSHUR	230	ATL	Atlanta	75-99		
WEBB	240	LRD	Laredo	75-99		
WILSON	247	SAT	San Antonio	75-99		
WISE	249	FTW	Fort Worth	75-99		
WOOD	250	TYL	Tyler	75-99		
YOAKUM	251	LBB	Lubbock	75-99		
DEWITT	62	YKM	Yoakum	75-99		
JEFFERSON	124	BMT	Beaumont	75-99		
LAVACA	143	YKM	Yoakum	75-99		
LIBERTY	146	BMT	Beaumont	75-99		
ORANGE	181	BMT	Beaumont	75-99		
SABINE	202	LFK	Lufkin	75-99		
WALKER	236	BRY	Bryan	75-99		
WILLIAMSON	246	AUS	Austin	75-99		
MADISON	154	BRY	Bryan	75-99		
TYLER	229	BMT	Beaumont	75-99	67	26%
ROBERTS	197	AMA	Amarillo	No gis		
VAN ZANDT	234	TYL	Tyler	No gis		
ARMSTRONG	6	AMA	Amarillo	No gis		
BAYLOR	12	WFS	Wichita Falls	No gis		
BORDEN	17	ABL	Abilene	No gis		
BRISCOE	23	CHS	Childress	No gis		
BROOKS	24	PHR	Pharr	No gis		
CALLAHAN	30	ABL	Abilene	No gis		
CHAMBERS	36	BMT	Beaumont	No gis		
CHILDRESS	38	CHS	Childress	No gis		

COCHRAN	40	LBB	Lubbock	No gis		
COKE	41	SJT	San Angelo	No gis		
COLEMAN	42	BWD	Brownwood	No gis		
COLLINGSWORTH	44	CHS	Childress	No gis		
COTTLE	51	CHS	Childress	No gis		
CRANE	52	ODA	Odessa	No gis		
CROCKETT	53	SJT	San Angelo	No gis		
CROSBY	54	LBB	Lubbock	No gis		
CULBERSON	55	ELP	El Paso	No gis		
DAWSON	58	LBB	Lubbock	No gis		
DEAF SMITH	59	AMA	Amarillo	No gis		
DICKENS	63	CHS	Childress	No gis		
EASTLAND	68	BWD	Brownwood	No gis		
FALLS	74	WAC	Waco	No gis		
FOARD	79	CHS	Childress	No gis		
FRANKLIN	81	PAR	Paris	No gis		
FRIO	83	SAT	San Antonio	No gis		
GARZA	86	LBB	Lubbock	No gis		
GLASSCOCK	88	SJT	San Angelo	No gis		
GOLIAD	89	CRP	Corpus Christi	No gis		
GRIMES	94	BRY	Bryan	No gis		
HALL	97	CHS	Childress	No gis		
HANSFORD	99	AMA	Amarillo	No gis		
HARTLEY	104	AMA	Amarillo	No gis		
HASKELL	105	ABL	Abilene	No gis		
HEMPHILL	107	AMA	Amarillo	No gis		
HOPKINS	113	PAR	Paris	No gis		
HUDSPETH	116	ELP	El Paso	No gis		
IRION	119	SJT	San Angelo	No gis		
JACKSON	121	YKM	Yoakum	No gis		
JASPER	122	BMT	Beaumont	No gis		
JEFF DAVIS	123	ELP	El Paso	No gis		
JIM HOGG	125	PHR	Pharr	No gis		
JONES	128	ABL	Abilene	No gis		
KENT	132	ABL	Abilene	No gis		
KING	135	CHS	Childress	No gis		
KINNEY	136	LRD	Laredo	No gis		
LIMESTONE	147	WAC	Waco	No gis		
LIVE OAK	149	CRP	Corpus Christi	No gis		
LOVING	151	ODA	Odessa	No gis		
LYNN	153	LBB	Lubbock	No gis		
MARION	155	ATL	Atlanta	No gis		
MARTIN	156	ODA	Odessa	No gis		
MC CULLOCH	160	BWD	Brownwood	No gis		
MC MULLEN	162	SAT	San Antonio	No gis		
MENARD	164	SJT	San Angelo	No gis		
MILLS	167	BWD	Brownwood	No gis		
MOORE	171	AMA	Amarillo	No gis		
OCHILTREE	179	AMA	Amarillo	No gis		
PRESIDIO	189	ELP	El Paso	No gis		
REAGAN	192	SJT	San Angelo	No gis		
RED RIVER	194	PAR	Paris	No gis		
REEVES	195	ODA	Odessa	No gis		
REFUGIO	196	CRP	Corpus Christi	No gis		
RUSK	201	TYL	Tyler	No gis		
SAN AUGUSTINE	203	LFK	Lufkin	No gis		
SHACKELFORD	209	ABL	Abilene	No gis		

STEPHENS	215	BWD	Brownwood	No gis		
STERLING	216	SJT	San Angelo	No gis		
STONEWALL	217	ABL	Abilene	No gis		
TERRELL	222	ODA	Odessa	No gis		
THROCKMORTON	224	WFS	Wichita Falls	No gis		
TRINITY	228	LFK	Lufkin	No gis		
UPTON	231	ODA	Odessa	No gis		
WHEELER	242	CHS	Childress	No gis		
WILBARGER	244	WFS	Wichita Falls	No gis		
WILLACY	245	PHR	Pharr	No gis		
WINKLER	248	ODA	Odessa	No gis		
ZAVALA	254	LRD	Laredo	No gis		
JIM WELLS	126	CRP	Corpus Christi	No gis		
PARMER	185	LBB	Lubbock	No gis	81	32%
CLAY	39	WFS	Wichita Falls	No response		
KNOX	138	CHS	Childress	No response		
MOTLEY	173	CHS	Childress	No response		
OLDHAM	180	AMA	Amarillo	No response		
RAINS	190	PAR	Paris	No response		
SAN SABA	206	BWD	Brownwood	No response		
SCHLEICHER	207	SJT	San Angelo	No response		
SMITH	212	TYL	Tyler	No response		
UVALDE	232	SAT	San Antonio	No response		
YOUNG	252	WFS	Wichita Falls	No response		
TERRY	223	LBB	Lubbock	No response	11	4%
BEE	13	CRP	Corpus Christi	1-25		
DUVAL	67	LRD	Laredo	1-25		
FISHER	77	ABL	Abilene	1-25		
KARNES	129	CRP	Corpus Christi	1-25		
MATAGORDA	158	YKM	Yoakum	1-25		
PANOLA	183	ATL	Atlanta	1-25		
VICTORIA	235	YKM	Yoakum	1-25	7	3%