

# **LUMP SUM DISTRIBUTION OF TxDOT'S UNIFIED TRANSPORTATION PROGRAM CATEGORIES 2 AND 3 FUNDS FOR PRELIMINARY ENGINEERING, RIGHT- OF-WAY, AND CONSTRUCTION**

## ***RECOMMENDATIONS REPORT***

***August 2006***

*Submitted for Review to  
TxDOT Executive Management*

*and the  
Texas Transportation Commission*



*Prepared by  
Texas Transportation Institute*



*In Cooperation with the  
Texas Department of Transportation*



*and the  
Association of Texas Metropolitan  
Planning Organizations*

## EXECUTIVE SUMMARY

The Texas Department of Transportation (TxDOT) or “Department” Administration requested that the Department initiate a total project cost system. One element of this system would allow metropolitan planning organizations (MPOs) the opportunity to control and be responsible for the planning and implementation of all phases of Unified Transportation Program (UTP) Categories 2 and 3 transportation projects within their respective areas. This approach would provide MPOs with one lump sum of dollars to identify and program for project development. The MPO would have the authority to direct the dollars for funding right-of-way (ROW) acquisition, consultant-based preliminary engineering (PE) development, or actual project construction. Currently,

- MPOs are provided a percentage of construction funds as determined by the previous statewide UTP Categories 2 and 3 Working Groups. The MPOs then select construction projects to use those allocated dollars within a fiscally constrained program.
- The MPOs do not receive a percentage of the ROW or consultant dollars, therefore, they cannot directly determine when and where the dollars are used.
- ROW and consultant-based PE budgets are managed on a statewide basis with each district being allocated a “soft” annual target.
- TxDOT is working on Design and Construction Information System (DCIS) changes that will allow tracking total project costs. The changes should be fully implemented by November 2006.
- Regional areas (MPOs) desire to make decisions locally regarding corridor preservation and consultant utilization. Some local areas see huge benefits to preserving ROW corridors in lieu of project construction.
- Construction, ROW and consultant funding are budgeted, tracked and reported to the legislature separately.

At the direction of the Texas Transportation Commission, TxDOT convened a workgroup comprised of experts from TxDOT and selected MPOs. The workgroup was charged to determine how to distribute funds for consultant-based PE and ROW acquisition among the MPOs . MPOs will have the authority and responsibility to identify and program uses for PE and ROW funds within their areas. TxDOT will continue to be responsible for expending these funds. The workgroup met twice during May 2006 in Austin, Texas to review, discuss, deliberate, and develop a PE and ROW funding distribution process to MPOs.

The workgroup recommended a distribution process that mimics the statewide distribution of mobility construction funds (UTP Category 2 and 3) for each MPO. PE and ROW funding would be an amount equivalent to 10 percent and 12 percent, respectively, of each MPO’s mobility construction funds. The workgroup understood that these funds were flexible, not mutually exclusive, so that an MPO may direct them in any desired proportion among PE, ROW acquisition, and project construction. The workgroup also recommended these ratios be reviewed every five years and adjusted as needed.

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## **ACRONYMS**

DES	Design Division
DCIS	Design and Construction Information System
MPO	metropolitan planning organization
PE	preliminary engineering
PEERS	Preliminary Engineering Efficiency Report System
ROW	right-of-way
TEMPO	Association of Texas Metropolitan Planning Organizations
TPP	Transportation Planning and Programming Division
TTI	Texas Transportation Institute
TxDOT	Texas Department of Transportation
ULI	Urban Land Institute
UTP	Unified Transportation Program

# **Lump Sum Distribution of TxDOT's Unified Transportation Program Categories 2 and 3 Funds for Preliminary Engineering, Right-Of-Way, and Construction**

This report describes the process and results of a workgroup that deliberated how to distribute funds for consultant-based preliminary engineering (PE) and right-of-way (ROW) acquisition among the metropolitan planning organizations (MPOs) in Texas. MPOs will have the authority and responsibility to identify and program uses for PE and ROW funds within their areas. The Texas Department of Transportation (TxDOT) will continue to be responsible for expending these funds. TxDOT anticipates implementing the recommendations detailed in this report with the 2009 Statewide Mobility Plan.

## **BACKGROUND**

TxDOT Administration requested that it initiate a total project cost system. One element of this system would allow MPOs the opportunity to control and be responsible for the planning and implementation of all phases of Unified Transportation Program (UTP) Categories 2 and 3 transportation projects within their respective areas. This approach would provide MPOs with one lump sum of dollars to identify and program for project development. The MPO would have the authority to direct the dollars for funding ROW acquisition, consultant-based PE development, or actual project construction. Currently,

- MPOs are provided a percentage of construction funds as determined by the previous statewide UTP Categories 2 and 3 Working Groups. The MPOs then select construction projects to use those allocated dollars within a fiscally constrained program.
- The MPOs do not receive a percentage of the ROW or consultant dollars; therefore, they cannot directly determine when and where the dollars are used.
- ROW and consultant-based PE budgets are managed on a statewide basis with each district being allocated a “soft” annual target.
- TxDOT is working on Design and Construction Information System (DCIS) changes that will allow tracking total project costs. The changes should be fully implemented by November 2006.
- Regional areas (MPOs) desire to make decisions locally regarding corridor preservation and consultant utilization. Some local areas see huge benefits to preserving ROW corridors in lieu of project construction.
- Construction, ROW and consultant funding are budgeted, tracked and reported to the legislature separately.

## **WORKGROUP PARTICIPANTS**

At the direction of the Texas Transportation Commission (Commission), TxDOT convened a workgroup comprised of experts from TxDOT and selected MPOs. The Association of Texas Metropolitan Planning Organizations (TEMPO) participated in selecting the MPO members. A cross-section of representatives from TxDOT districts and divisions also participated in the

workgroup. Only one workgroup member represented each district or MPO. A listing is shown below of workgroup participants and the agencies they represented:

Ms. Dione Albert TxDOT Design Division	Mr. Mark Longenbaugh TxDOT El Paso District	Mr. Jim Randall TxDOT Transportation Planning and Programming Division
Ms. Robin Boone TxDOT Pharr District	Mr. Philip Lujan TxDOT Beaumont District	Mr. Duane Sullivan TxDOT Finance Division
Mr. Roger Burtchell MPO-Texarkana	Mr. Brad McCaleb MPO-Texarkana	Mr. Lanny Wadle TxDOT Finance Division
Mr. Gus Cannon TxDOT Right-of-Way Division	Mr. Tom Niskala MPO-Corpus	Mr. Wayne Wells TxDOT Transportation Planning and Programming Division
Mr. Chris Evilia MPO-Waco	Ms. Linda Olson TxDOT Design Division	<u>Facilitators</u> Mr. Montie Wade Mr. Jason Crawford Mr. Bill Frawley Texas Transportation Institute
Ms. Nancy Johnson TxDOT Right-of-Way Division	Ms. Jenny Peterman TxDOT Transportation Planning and Programming Division	<u>Recorder</u> Ms. Carol Court Texas Transportation Institute
Mr. Dan Lamers MPO-NCTCOG	Mr. Kenneth Petr TxDOT Amarillo District	
Ms. Linda LaSut MPO-Bryan/College Station	Mr. Max Proctor TxDOT Transportation Planning and Programming Division	
Mr. Gary Law TxDOT Odessa District		

## WORKGROUP CHARGE

The Commission and TxDOT Administration charged this workgroup to recommend a method for distributing ROW and PE funding to MPOs. This charge included eight challenges facing the workgroup:

1. Determining the appropriate amount of right-of-way acquisition and consultant dollars that could be allocated by respective category to the MPOs;
2. Determine an allocation method;
3. Scheduling each area's use of the total allocation;
4. Tracking the actual use of the dollars and balancing future scheduling with past obligations;
5. Educating Districts and MPOs on the use of its area's allocation and what can be accomplished with the funds;
6. Temporarily continuing data maintenance to fulfill legislative reporting requirements (the Department is currently working on changes to enable tracking of total project costs that should be fully implemented by fall 2006);
7. Investigating legal issues (contained in the Texas Administrative Code); and
8. Developing recommendations to present to the Districts and MPOs.

## **MEETINGS**

The workgroup met for discussion and deliberation on May 2 and May 24, 2006. The workgroup held these one-day meetings at the Thompson Conference Center located on the University of Texas at Austin campus. Texas Transportation Institute (TTI) staff facilitated all meetings. TTI staff also prepared final meeting notes and transmitted them to the workgroup for their review and comment after each meeting. Attendance at each meeting is provided in each of the meeting notes included as appendices to this report.

The first meeting on May 2, 2006 brought the workgroup participants together to review their charge and begin work. TTI staff made technical presentations regarding how workgroups charged with developing distributions for UTP Categories 2 and 3 construction funds worked through their processes. TxDOT staff presented background material, workgroup philosophy, and a strategic development timeline. During this meeting, the workgroup began deliberating the challenges and devised a development schedule yielding the final recommendations report being delivered to the Commission by December 1, 2006. A summary of the notes from this meeting are provided in Attachment A. The first meeting produced several assignments for individuals to return to the subsequent meeting with additional information for the workgroup to consider.

The second and final meeting on May 24, 2006 continued discussions from the previous meeting and completed the primary work for the workgroup. TxDOT staff made presentations relating to ROW estimation procedures and an analysis of Preliminary Engineering Efficiency Report System (PEERS) data. Workgroup members presented and discussed the additional information requested from the previous meeting. A summary of the notes from this meeting is provided in Attachment B. At the conclusion of this meeting consensus was gained on the distribution criteria and proportions to mobility funding. This consensus is presented as formal recommendations of this report.

### **UTP Category 2 and Category 3 Distribution**

Workgroup participants agreed to base the PE and ROW funds distribution on the currently adopted manner for distributing mobility construction funds. Mobility construction funds are found in three categories in the UTP, Categories 2, 3, and 4. Currently, Category 2 receives 65 percent of the total mobility construction funds, Category 3 receives 10 percent and the remainder (25 percent) is allocated to Category 4. Within each UTP Categories 2 and 3, the workgroup participants agreed to adopt each category's method for allocating funds by area using the established and adopted criteria weightings.

### **Preliminary Engineering**

Throughout both meetings participants noted that PE expenses traditionally are tied to a project's expected construction cost as a percentage of that construction cost. One source identified a range of 8 to 20 percent<sup>1</sup>, where PE costs are inversely related to construction cost. The general

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<sup>1</sup> Kyte, C.A., M.A. Perfater, S. Haynes, and H.W. Lee. *Developing and Validating a Highway Construction Project Cost Estimation Tool*. Report VTRC 05-R1. December 2004.

rule-of-thumb is PE expenses are equal to 10 percent of the total construction cost<sup>2</sup>. The participants were generally comfortable with this rule-of-thumb. While the TxDOT PEERS data reflected a lower ratio, the participants assessed that these results were skewed by a few large-scale projects.

### **Right-of-Way Acquisition**

The workgroup dedicated considerably more attention and discussion to ROW acquisition. The workgroup members expressed interest in relating ROW

- as a percent of the total construction cost;
- to population density;
- over a five-year trend; and
- to other economic indicators.

At the second meeting, a 12.5 percent ratio of ROW to construction costs was presented as a general rule-of-thumb based on historical statewide expenses. Increases in this ratio are expected in urban areas as lower ratios may be expected in rural areas. Workgroup participants felt strongly that ROW ranged between 10 and 15 percent of construction costs. While TxDOT PEERS data reflected a higher ratio, the participants assessed that these results were skewed by a few large-scale projects that required very expensive ROW. Another analysis of ROW data compared to construction expenditures for fiscal years 2001 through 2004 showed that ROW expenditures averaged 11 percent of construction costs.

The workgroup discussed whether there is a correlation among population, population densities, and ROW values in urbanized areas (having populations of 50,000 or more). TTI presented a summary of population densities for each urbanized area in Texas from the U.S. Census Bureau web site. There was no consistent relationship between population densities and total populations for each urbanized area. This observation led the workgroup to believe that there is no likely correlation between population density of urbanized areas and ROW values. The workgroup made this determination based on the fact that urbanized area populations and densities vary, as well as that a given construction project may or may not traverse a specific portion of an urbanized area where a high population density exists.

Resources including the Texas A&M Real Estate Center and the Urban Land Institute (ULI) were sought to provide additional guidance. These sources provided no additional insight that was useful to the workgroup. TTI staff shared that discussions with Texas A&M Real Estate Center staff indicated their data reflects rural areas, not urban areas. TTI also reported finding no materials from ULI that could provide useful insight.

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<sup>2</sup> FHWA CA Emergency Relief (ER) Guidance (Document #S48309).  
[http://fhwainter.fhwa.dot.gov/cadiv/docs/er\\_qa.htm](http://fhwainter.fhwa.dot.gov/cadiv/docs/er_qa.htm)

## **INCOMPLETE CHALLENGES**

Many challenges were not addressed by the workgroup. The workgroup did discuss these challenges but identified others having the responsibility to consider and execute them. Each challenge and comments noted from the workgroup are:

Challenge	Comment
3. Scheduling each area's use of the total allocation;	The workgroup concluded that this challenge should be addressed by TPP
4. Tracking the actual use of the dollars and balancing future scheduling with past obligations	The workgroup concluded that this challenge should be addressed by TPP and DES with assistance from TTI as required
5. Educating Districts and MPOs on the use of its area's allocation and what can be accomplished with the funds	The workgroup concluded that this challenge should be addressed by TPP with assistance from TTI as required
6. Temporarily continuing data maintenance to fulfill legislative reporting requirements	TxDOT is currently working on changes to enable tracking of total project costs that should be fully implemented by fall 2006. The Finance Division is considered to be the most logical office of primary responsibility for expenditure information.
7. Investigating legal issues (contained in the Texas Administrative Code)	The workgroup concluded that this challenge should be addressed by TPP and the TxDOT Office of General Counsel with assistance from TTI as required;
8. Develop recommendations to present to the Districts and MPOs	The workgroup concluded that TPP develop time line requirements and implement the lump-sum distribution approach at the earliest possible opportunity.

## **RECOMMENDATIONS**

The workgroup recommends distributing amounts equal to 12 percent of an MPO's mobility construction funding (UTP Category 2 or 3) for ROW acquisition and 10 percent of the construction costs for consultant-based PE. The workgroup understood that these and construction funds were flexible; the individual distribution amounts are not mutually exclusive, but may be directed in any proportion among consultant-based PE, ROW acquisition, and project construction.

The workgroup further recommends reviewing these ratios every five years to make adjustments as needed. It is expected that TxDOT's total project cost initiative will provide a comprehensive data source for future reviews.

## **Attachment A**

## **Meeting 1 Notes**

## Lump Sum Distribution Workgroup Meeting Notes

May 2, 2006, 8:30 am – 3:10 pm

Thompson Center, Austin, TX  
Recorded by Carol Court, TTI

In attendance (unless otherwise noted):

Wayne Wells	TxDOT-TPP		Mark Longenbaugh	TxDOT District El Paso	
Kenneth Petr	TxDOT District Amarillo		Dan Lamers	MPO-DFW	
Tom Niskala	MPO-Corpus		Chris Evilia	MPO-Waco	
Dione Albert	TxDOT-DES		Max Proctor	TxDOT-TPP	
Philip Lujan	TxDOT District Beaumont		Gary Law	TxDOT District Odessa	
Linda Olson	TxDOT-DES		Jenny Peterman	TxDOT-TPP	
Roger Burtchell <i>(for Brad McCaleb)</i>	MPO-Texarkana		Lanny Wadle	TxDOT-FIN	
Jim Randall	TxDOT	Ab-sent	Montie Wade	TTI	
Robin Boone	TxDOT District Pharr		Bill Frawley	TTI	
Duane Sullivan	TxDOT-FIN		Todd Carlson	TTI	
Linda LaSut	MPO-Bryan/CS	(AM only)	Jason Crawford	TTI	
Nancy Johnson <i>(for Gus Cannon)</i>	TxDOT-ROW		Carol Court	TTI	

Definitions below are taken from TxDOT's online Glossary,  
<http://manuals.dot.state.tx.us/dynaweb/colcomun/glo>.

### **Plans, Specifications and Estimates**, Acronym or Abbreviation: **PS&E**

Plans, Specifications and Estimates are the detailed plans and accompanying specifications and construction cost estimates which serve as documents for construction contract letting purposes. Plans are the contract drawings which show the location, character, and dimensions of the prescribed work, including layouts, profiles, cross section, other miscellaneous details, and quantity summaries. Specifications are the compilation of provisions and requirements for the performance of prescribed work. The estimate is a list of all bid items and quantities estimated bid prices, total cost for each bid item, and the total estimated cost for the proposed project.

**preliminary engineering** - Preliminary engineering is that portion of the development of a project during which the basic planning objectives are translated into specific, well-defined criteria that can permit the final design process to begin.

### **Introduction and Background: Montie Wade, TTI**

- Introduced purpose of meeting: Commission requests recommendation for distribution of **right-of-way (ROW)** and **preliminary engineering (PE)** funding to MPOs and TxDOT districts, and background.
- Review of Agenda
- Member Self-Introductions
- Deadline of December 1, 2006

### **Review of Category 2 and 3 Development, Bill Frawley, TTI and Todd Carlson, TTI**

- Frawley, B. - Reviewed development of Category 2 (See Appendix A)
  - Wade, M. - The criteria and weightings are currently being used for allocation on construction funds.
  - Proctor, M. - The group is not here to re-develop these factors/weightings for construction.
- Carlson, T. - Reviewed development of Category 3 (See Appendix B)
  - Law, G. - Category 3 did not consider off-system roads.
  - Proctor, M. – Association of Texas MPOs (TEMPO) selected Category 3 Workgroup participants as well as those for this Lump Sum Workgroup.

### **The Current Situation, Max Proctor, TxDOT-TPP**

- Provided example of benefits from using increments versus years for Categories 2 and 3. For example, we were able to easily advance some projects, since they were not tied to a specific fiscal year.
- Entering into the 4<sup>th</sup> UTP using this structure
- Good thing for programming – everybody knows what they have to work with.
- Amadeo Saenz wants MPOs to have the authority and responsibility of PE and ROW.
- There are a lot of issues to be addressed
  - Adopt same formula as is used for construction funding – easy thing to do, but is it important? Needs discussion.
  - One distribution formula to determine funding to go to each individual MPO, then they decide what to do with the funds (PE, ROW and construction).
  - Challenges to finance system
    - Allows us to move money between TxDOT strategies related to vision of the MPOs and they communicate back to TxDOT
- This process was mandated by TxDOT Administration and the Commission
- Get authority down to local areas and they become responsible for consequences of those decisions, not the Commission, TxDOT Administration or Division.

### Discussion

- Law, G.:
  - Is the workgroup to develop a process distributing a quantity of funds to each MPO for necessary planning, ROW acquisition, and construction? A: Proctor, M. - Yes
  - Will MPOs take over management of Category 3 corridors? A: Proctor, M. - MPO decides where funding is spent; District implements that decision.
  - *Commentary: The point was made that RMA funding is separate from Category 2 and 3 Funding.*
  - The workgroup needs to spend time up front to describe the end product to keep the group focused. We are trying to tie together 5-6 processes internal and external to our departments. We may all be talking from different perspectives.
- Johnson, N. - Does it include PE work on ROW? A: It comes out of **plans, specifications, and engineering (PS&E)** dollars. (*This needs additional explanation*)
- Longenbaugh, M.:
  - I don't see how the ROW and PS&E would be tied to a formula instead of projecting from projects already in the pipeline.
  - MPO will determine priority, but District will have oversight? A: Proctor, M. - MPO will schedule projects. Process is not going to change for prioritizing projects
- Law, G. - This determines allocation of funds for what part of the process? A: Wade, M. – This group is not proposing the size of the budget, we are allocating ROW and PE to Category 2 and 3.

### Discussion on TxDOT Strategy codes.

- Johnson, N. - Strategy 111 is contracted professional engineering costs. ROW is strategy 102, what about acquisition and utilities? A: Proctor, M. - If professional engineering work is contracted, it comes out of PE. MPO will get one amount and they will do total project funding out of that amount.
- Johnson, N. I have a procedural guide from ROW Department (hand out was distributed-See Appendix C)

### Cont'd Discussion on Current Process

- Longenbaugh, M. - Could you just forecast if you know your needs and have a formula? I don't see how we can come up with a formula.
- Boone, R. - I like the process we have now. We tell what we need and get it.
- Burtchell, R. - I'm new to the process and I don't understand MPO position. Could you line out basic process of who does what? A: Proctor, M. - There are 25 MPOs in the state and 25 different processes. Your internal process is between you and the district. This is establishing an overall process / goal, this workgroup is not changing the internal process.
- Boone, R. - MPO people here need to understand that MPOs aren't involved at all right now with ROW and PE processes. So they don't know much about the processes, and this is going to change that.
- Proctor, M. - That's the point, we need MPOs to take responsibility. The purpose is to devise a process to allocate responsibility to MPOs. We have been ordered to do so and it will happen.
- Olson, L. - Can this group decide to make recommendation by percentages?
- Boone, R. – We all have a learning curve because we all have a narrow focus.

- LaSut, L - Corridors aren't being used in our area. What are they? We didn't have anyone at the Category 2 and 3 UTP meetings.
  - Proctor, M. - A: Every area was done, and your district has that and is supposed to be coordinating with the MPOs. Districts and MPOs work together in various ways, if you're not talking with your districts, you need to coordinate with them.
  - Peterman, J. - We sent a letter out to MPOs in December instructing them to coordinate with the districts.

#### Discussion-Category 2 & 3 Funding

- LaSut, L - What about Category 12 funding priority? A: Proctor, M. - Under this process, only Category 2 and 3 are the MPO's responsibility.
- Wade, M. - Where do Category 2 and 3 funds come from? A: Proctor, M. - Under the new Federal Bill we have no options in the process for categories 5, 6, 7, 8, 9 and 10. Of the remaining 6 categories: 1, 2, 3, 4, 11 and 12; we only have some control of Categories 2, 3 and 4. Category 2 gets 65%, Category 3 gets 10%, and Category 4 gets 25%. Next year the Highway Trust Fund will be depleted and funds will drop by 20%. If that happens, there will be no mobility funds
- Wade, M. - So, we have one big pot for Categories 2, 3, and 4, and we have to determine how those funds are split.
- Lamers, D. - Does that mean we need to recommend total dollars for ROW and PE off the top? If a project is chosen by the MPO, are we determining allocation of funds for non-consulting money? A: Proctor, M. - No, the PE work is only consultant activity, TxDOT staff is already paid. TxDOT has some PS&E money and MPOs have to work cooperatively with districts to determine what other PE will come out of budget. This puts the responsibility on the MPO and emphasizes their relationship with the district.
- Longenbaugh, M. - If the MPO and district are working together prioritizing projects, they should have already worked this out.
- Proctor, M. - The process won't change.
- Lamers, D. - I just want to understand our responsibility.

#### Discussion-PS&E Funding Split

- Wade, M. - Funding for PE between MPOs and district is not clear.
- Proctor, M. - This will refer only to consultant dollars.
- Law, G. - It will depend on who you hire.
- Proctor, M. - Strategy will be determined later.
- Law, G. - From a district perspective, Category 3 projects and professional engineering expense will be from allocated funds, and TxDOT will do minimal support while doing other projects already funded.
- Proctor, M. - MPOs will get a pot of money to determine how to use, they can decide to use all the money to secure ROW 25 years before a project is funded for construction.
- Longenbaugh, M. - TxDOT is getting their approval for how the funds are used.
- *Commentary: The point was made that PL funds (federal plu match for planning only) are not to be used for PE or ROW.*
- Sullivan, D. - Statewide engineering and design varies from district to district. Should this be allocating the same amount to districts not designing as much? A: Proctor, M. - That is what

we will be determining. The TMAs compete with one another in Category 2, and non TMAs compete with one another in Category 3.

- Sullivan, D. – The MPOs will decide cooperatively with districts how to allocate funds?
  - A: Proctor, M. - MPO Policy Boards will determine priority projects.
  - *Commentary: Once the funds are allocated, the MPO determines how they are spent on projects. All funds are part of one lump sum: construction, ROW and PE.*
  - Lujan, P. - MPO could spend all money on acquisition and figure out later how to fund construction.
- Law, G. - We all need to learn more so we all have the same level of understanding.

10 min. BREAK

Resume-10:30 am

### **Work Group Philosophy and Strategic Plan of Development- Wayne Wells, TxDOT-TPP**

#### Discussion –Presentation of Recommendations to TEMPO (See Appendix D)

- Proctor, M. - Once it has been put through MPO/District discussion and the five MPOs here agree, they will take draft recommendations to TEMPO for review and act as champions
  - May 31 is the next TEMPO meeting. The group meets quarterly.
  - Evilia, C. - Do other MPOs know this is going on?
  - It can be presented every time TEMPO meets but it doesn't look like we'll have coverage at the planning conference.
  - Proctor, M - I don't think we'll be ready by then anyway.
  - Wade, M. - MPO members of this workgroup need to help us to remember to make a presentation to TEMPO.
- Boone, R. - This would be implemented with the 2009 SMP? A: Proctor, M. - Yes, reasonable expectation is that this formula would be used for FY09 Statewide Mobility Plan.
- Olson, L./Wells, W. – As a result of the Total Cost Workgroup, New Design-Construction Information System (DCIS) screens are being developed for all these strategies. (ROW,etc)
- Law, G. – Is it possible for the slides and notes presented at today's meeting to be posted on website? A: Wade, M. – Yes.

#### Discussion-Review of funding formulas & application

- Wade, M. - Let's look at a flowchart (flipchart)

STP Percentage Breakdown for Construction	
Category 2	gets 65%
Category 3	gets 10%
Category 4	gets 25%

- To add to these portions allotted for construction, MPOs will have to decide what will be designated for ROW and PE for Categories 2 and 3.
- Category 4 will get whatever is leftover.
- Does anyone understand how percentage is distributed?
- How do we turn percentage into dollars? A: Viewed slide showing funding target allocation (See Appendix E)

- Lamers, D. – Gave an explanation of spreadsheet breakdown using percentages by category split between 8 TMAs.
- Allocation of construction funding to MPOs has already been established. We have the charge to allocate dollars for ROW and PE.
- PE has always been tied to construction as a percentage of cost.
- True, but we don't know what percentage to use
- Proctor, M.
  - TMF and Proposition 14 Fund give us additional funding for PE and ROW. This caused a “bubble,” resulting in approximately \$640M in ROW per year.
  - We have to know what percentage of funding can be anticipated realistically.
  - The preliminary “bubble” is \$640M; then it drops to about \$320M.
  - We have to plan on having funds even if we don't know where they're coming from.
- Longenbaugh, M. - Will we have preliminary funds for plan status?
- A: Proctor, M. - Plan status could be established before construction status.

*Discussion of PE costs*

- Consultant cost is funded from Strategies 102-190.
- Has been around \$300M for consultant cost under PE
- FY04 was \$286M in-house and consultant
- FY05 was \$632M
- Strategy 101 pays TxDOT staff no matter what.
- Strategy 111 pays consultants.
- Proctor, M. - We need to forget minutia, just look at what we actually pay for consulting. Drop accounting, look at programming and what we plan to pay for consulting PE.
- Finance forecasted spending \$360M in 2007 for ROW acquisition.
- Lamers, D. - I want to know who pays for what—what are we expected to come up with? A: Proctor, M. - That amount does not cover TxDOT staff time, just consulting, ROW and Acquisition. In 2007, \$507M is forecast for PE, including in-house and consulting. We need the breakout for consulting only. That's the number we need to plan with.
- Once we get it, what portion of that is going to be allocated?
- Construction is allocated based on 65% Category 2, 10% Category 3, and 25% Category 4.
- Do these percentages need to correlate to the construction budget?
  - Olson, L. - We could get the numbers for the last 3 yrs and see if there is correlation.
  - Proctor, M. - Not sure historical spending is going to be applicable to forecasting future spending.
- Lamers, D. - Could look at what total dollars were spent on construction, PE, etc.
- Proctor, M. - Historical data on these categories only exists for the past 3 yrs and we have been in a “bubble.”
- Come up with some sort of construction costs on these projects and apply percentages to the projects. Look at average consultant cost and ROW cost. We already know what construction cost is, so we just tack those percentages on. This will allow us to ignore the “bubble.”
- Olson, L. - We have 3 yrs worth of data broken down by cost.
- LaSut, L. - Look for a correlation between construction and ROW costs, or if they're all over the board.
- Frawley, B. - You have to look at the cost by project to get a historical view.

- Lamers, D. - Is that total cost? What if we have half the cost of project covered locally, and the percentage is based on 50% of the project cost? In the future, if we don't have local funds, would we still only get 50% from the State? **A:** Proctor, M. - This allocation process will not allow you to leverage extra funding.

*Discussion of PEERS Report*

- Sullivan, D. - PEERS report (Preliminary Engineering Efficiency Report System--tied to actual project) may be useful to get project costs
- Frawley, B. - Charted a table of data desired by work group on board:

Project CSJ	Total Construction \$	ROW \$	PS&E \$	Category

- Group agreed the data was desirable, Olson, L. stated it was not feasible.

*Data to be furnished by divisions*

- FIN-Sullivan, D.
  - PEERS Report– monthly letting and a 3-year moving average, summarize by district, in-house v. consultant, can break out by CSJ
  - Can provide data by year
- ROW-Johnson, N.
  - List of ROW projects for Categories 2 and 3
  - 5-6 year history
  - New system captures data based on category, maybe we can merge that into FIN data.
  - Percentage of Fund 6 per year
  - Not forecast
- DES-Olson, L.
  - Numbers for last 3 years. Anticipated letting volumes, anticipated PS&E expenditures, and anticipated ROW expenditures for Category 2 and 3.
  - Projected construction expense per year per CSJ
- TPP(P)-Peterman, J.
  - Spreadsheet of construction allocation formula

*Other Discussion on available data and ROW*

- PEERS doesn't have ROW information.
- Olson, L. - There is a ROW CSJ field on the P1 screen in DCIS.
- Boone, R. - Need programmer from Information Systems Division (ISD) to help with databases.
- Lamers, D. – Do we also need breakout for project Categories 7 and 11? **A:** PEERS-by year-partial acquisition and PE, cannot break it out by category.
- Wade, M. - FY 01-05, ROW percentage of construction has been 11%
- PE has been running close to 20% up to letting?
- Law, G. – PE may be up to 15% on Category 3 after letting.
- Niskala, T./Petr, K. - PEERS report may break down costs enough to get data we need.
- Proctor, M. - If \$667M is allocated for Category 2 construction, estimate 11% or \$73M for ROW, and 10% or \$67M for PE. We need to come up with a reliable percentage relating to construction for Category 2 and Category 3, and that percentage is what we need to use.

TPP(P) Spreadsheet of Construction Allocation Formulas (Sample Breakout)		
Category 2 (\$10B/15 years)	\$667M (65%) Construction	\$73M (11%) ROW \$67M (10%) PE
Category 3 (\$1.65B/15 years)	\$110M (10%) Construction	\$12M (11%) ROW \$11M (10%) PE
Category 4	(25%) Construction	Whatever is left over

Discussion on percentage to use for distribution

- Boone, R. - Cannot necessarily use historical data from FIN, we need to look at this by project, because percentage may or may not remain consistent in all areas. We should look at real estate projection too.
- Burtchell, R. – Let's look at our projects using these percentages and see if they are higher or lower? Can't we do this in a project-related manner? **A:** Proctor, M. That's being done now and commission doesn't want it done like that because the money has been coming out of a "magic pot." All the money available is going to be allocated for these two categories and decisions will have to be made. MPOs should have to make those project-level decisions.
  - We have a forecast for construction cost. The department has been projecting with reasonable correctness for ROW and PE. But the MPOs will still have to make the decisions.
- Law, G. – If we use that historical info by percentage, we can take MPO projection of available Category 3 dollars, apply percentage and take that figure back to MPO and do the breakdown.
- Petr, K. - Our corridors are currently being built on existing ROW.
- Law, G. - You will be given an aggregate fund, and if you have lower PE or ROW requirement and complete project sooner, percentage may be lower.
- Boone, R. - It's a useful exercise. If we establish some goals and don't explore all the options, how can we defend our findings?
- Burtchell, R. - Gary Law's idea plus or minus 20% for ROW is enough for us but not Houston or Dallas.
- Boone, R. - I think we need to be able to defend and maximize useful data.
- Niskala, T. - What data will we get?
- *Commentary: The point was made that not all data requested will be available and/or useful. Therefore we will explore what is available and useful.*
- Wade, M. – We will investigate and see what data we can obtain for the next meeting.

BREAK for lunch 12:15

Resumed at 1:25 pm

Discussion of workgroup challenges (see Appendix F) and milestones to meet them

- Law, G. - Can we review the challenges for the group as listed in the Agenda and, based on Challenges, develop milestones for accomplishing our goals?
- The workgroup developed these milestones:
  - May – Use division supplied data for review
  - May 31 – TEMPO initial announcement of workgroup
  - June – Complete Challenge #1 (Category Distribution)
  - July – Complete Challenge #2 (Allocation)

- Determine methodology
- TPP(P) run numbers through spreadsheet
- August 15 – Begin writing draft report
- August 31 – Complete Challenge #3 (Process Design)
- September – Identify legal questions for inclusion in report
- October 1 – Draft report to TEMPO and Districts
  - MPO and District review
  - 2<sup>nd</sup> TEMPO update
- November 1 – Begin addressing comments
  - Second draft report
- December 1 – Final recommendation report to Commission
- 2007/Future – Education and training

*Discussion on data needed to begin reaching consensus*

- Construction doesn't consider other categories,
- PS&E has to consider nine other categories in the allocation.
- Construction cost is higher in rural areas; ROW is higher in urban areas.
- Could PE possibly be higher in urban areas due to air quality issues?
- Boone, R. – Is PE tied to construction costs by percentage?
- Do we need a different formula for Category 2 and 3?
- Once we make the first separation, we could go back and use average population density percentage.
- Boone, R. – How do we get away from county numbers for all data?
- Wade, M. - What kind of info would you want to see to determine distribution? Would MPOs and Districts here look back over the past 5-years' projects to see what the cost of ROW has been?
- Law, G. - Is that looking back far enough?
- Wade, M. – Go back as far as you have to and determine the percentage of cost that was ROW.
- Petr, K. - Population density is a consistent benchmark.
- Wade, M. – County numbers could skew that.
- Proctor, M. - If we could come up with a typical percent of the construction cost needed for ROW, it would neutralize other costs.
- Boone, R. – Need a dataset that's defensible, comparable and reliable among all the regions.
- Lamers, D. - Can't the ROW Division provide some information on how areas compare in ROW costs? What is the cost-of-living index?
- Proctor, M. – Doesn't matter, it needs to be compared to construction cost.
- Petr, K. – Didn't TTI do some research we could use?
- Boone, R. – That data had never been shared with us.
- Petr, K. – It is better than what we have right now.
- Wade, M. – Gus mentioned that CTR did research for them and has a program for preparing total cost of a project, including ROW and PE. He encouraged all the districts to try it but only about three might have tried it. We may be able to ask CTR to make a presentation.
- Longenbaugh, M. – We're going through budget process and we could send you something from that.

- Olson, L. – We can provide you with letting cost, PE cost and numbers of CSJs and you could go back to the district and get the ROW cost.
- Proctor, M. – Whatever we come up with is going to be a close approximation.
- Boone, R. – We've got the total costs out there, we just need to fill in the blanks for total construction cost and ROW.
- Proctor, M. – If you can establish the relationship between construction, ROW and PE, that's what you need. Construction is already figured you just need to establish if you need a separate formula for TMAs and non-TMAs for PE and ROW.
- Lamers, D. – The District people will go back as far as they can and bring what they have.
- I think we decided to wait and see what DES and ROW have before we do this.
- Olson, L. – We will put together our report using the PEERS report and possibly get ROW info from districts and have something to work with next time.
- Frawley, B. – Showed population densities from census bureau webpage on screen. (See Appendix F) *Commentary: may not be directly related to ROW costs and land values*
- Wade, M. – Do you want this info supplied to you in a table?
- Frawley, B. – These densities are based on census-designated, pre-smoothing urbanized areas.
- Lamers, D. – Couldn't we use an economic indicator instead of population density?
- Wade, M. – What we want is percentage of ROW cost to construction cost
- Proctor, M. – It's not a huge amount of money, so it's not worth spending too much time hashing over it. We need to come up with something relatively close that we can live with and that's what we'll use.
- Wade, M. - Is there any other data you guys want to see before the next meeting?
- Carlson, T. – Is there a document in TPP(P) that shows the money spent in all the UTP categories by year?
- Proctor, M. – Expenditures or lettings? We have lettings.
- Carlson, T. - I'm thinking expenditures for all categories except 2 and 3.
- Proctor, M. - I don't think it's broken out.
- Lamers, D. - We have to figure out a formula that will tell us what percentage needs to go to Categories 2 and 3, and then decide if that correlates with construction cost proportionally.
- Longenbaugh, M. - All you need to know is what percentage of the construction cost should be allotted to Categories 2 and 3 for ROW.
- Amount expended the last five years on construction and on ROW. What Linda Olson is giving us total construction v. total ROW v. consultant.

Discussion for next meeting:

- Population density may be surrogate for real estate costs
- Presentations the workgroup recommends to help them deliberate
- TMMP/TUMP ROW Costs
- CTR Form and Program
- The next meeting will be **Thursday, May 24<sup>th</sup>, 8:30 am - 4:30 pm at the Thompson Center.**

## **APPENDIX A**

# BACKGROUND

## TxDOT UTP

### Category 2:

*Metropolitan Area  
(TMA) Corridor  
Projects*

## **Category 2 Parameters**

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- Transportation Management Areas (TMA) – 200,000+ pop.
- 8 TMAs in Texas
  - Austin
  - Corpus Christi
  - Dallas-Fort Worth
  - El Paso
  - Hidalgo County
  - Houston-Galveston
  - Lubbock
  - San Antonio

## **Work Group Membership**

---

- Each TMA had one voting representative
- Each TxDOT District in which a TMA is located was represented
- Various other TxDOT divisions and offices also had representation on the work group

## **Work Group Support**

---

- Additional appropriate staff from local entities
  - participated in discussions
  - provided necessary information
- Voting members could have proxies represent them

## **UTP Category Reduction**

---

- New Category 2 created from variety of previous categories

### **IMPORTANT NOTE:**

Category 2 covers these types of projects for corridors located within TMA boundaries that have both local and statewide interest, such as the Katy Freeway in Houston

## **Charge to Category 2 Work Group**

---

- Corridor Guidelines Work Group developed the following charges for Category 2,3, and 4 work groups:
  1. Identify and review priority corridors
  2. Apply weighting factors to the corridor selection criteria
  3. Document criteria weighting rationale
  4. Determine corridor prioritization eligibility

## **Charge to Category 2 Work Group**

---

5. Score each eligible priority corridor
6. Rank prioritized eligible corridors
7. Prioritize eligible mobility projects that fit the Statewide Connectivity Corridor
8. Review regional funds distribution
9. Prepare draft report of recommendations for review and final approval by the Texas Transportation Commission

## **Statewide Corridor List Development Process**

---

### **Issues Considered**

### **Local vs. Statewide Criteria**

### **Geographic Funding Fairness**

## **Statewide Corridor List Development Process**

---

### **Issues Considered**

- Work group began analyzing CGWG corridor segment ranking criteria
- CGWG criteria were categorized as:
  - Traffic Engineering Issues
  - Financial Issues
  - Special Significance Issues
  - Connectivity Issues

## **Statewide Corridor List Development Process**

---

- ***Traffic Engineering Issues***
  - Traffic Volumes
  - Vehicle Miles of Travel
  - Travel Time/Delay
  - Level of Service/Capacity /Access Management
  - Safety
  - Percent of Trucks

## **Statewide Corridor List Development Process**

---

- ***Financial Issues***
  - Economic Development
  - Leveraging and/or Tolls
  - Benefit–Cost

## **Statewide Corridor List Development Process**

---

- ***Special Significance  
Issues***
  - International Traffic/Ports of Entry
  - Military or National Security Installations
  - Tourism and/or Recreational Areas
  - Major Freight Routes
  - Air Quality/Conformity

## **Statewide Corridor List Development Process**

---

- ***Connectivity Issues***
  - Closing System Gaps
  - Connect with Principal Roadways from Adjacent States
  - Intermodal Connectivity
  - Fit with Other TxDOT Development
  - Maximize the Use of Existing Transportation System

## **Statewide Corridor List Development Process**

---

### **Local vs. Statewide Criteria**

- Iterative process
- Found it more difficult to rank metropolitan corridor segments statewide than to rank statewide connectivity corridor segments
- Group agreed each TMA could develop a specific list of criteria for prioritizing its own corridor segments.

## **Statewide Corridor List Development Process**

---

### **Geographic Funding Fairness**

- Recognized importance of ensuring each TMA would receive equitable funding
- Developed criteria to determine funding allocation targets for each metropolitan area
- Allocation targets used to determine fiscal constraints for each area

## **Statewide Corridor List Development Process**

---

### **Geographic Funding Fairness**

- Work group consensus on criteria to identify funding allocation targets:
  - Truck VMT (14.06%)
  - Population (22.19%)
  - Centerline Miles (0.93%)
  - Lanes miles of on-system roads (16.88%)
  - Fatal and incapacitating crashes (6.72%)
  - Percent of population under the federal poverty level (7.04%)
  - Total VMT (on and off system) (32.63%)

## **Statewide Corridor List Development Process**

---

### **Geographic Funding Fairness**

- Criteria and weighting percentages result of work group's cooperation:
  - Specific criteria selected by rounds of straw poll votes
  - Voting members submitted preferences for weighted values
  - Facilitator determined average and median values of submitted weights
  - Group agreed to use the mean values

## **Corridor List Recommendation**

---

### **Background**

- Maintained goal to develop corridor segment list appropriately representing the needs of each TMA in the state
- Number of projects in each TMA ranges from just a few to dozens
- Protects smallest TMAs with fewest numbers of projects

## **Corridor List Recommendation**

---

### **Format List Explanation**

- 15-increment prioritized list of corridor segments
- Three 5-increment groups
- 5-increment groups ensure each TMA will have projects let in each three-group period
- Each area would have at least one project in the first 1/3 of the programming period

## **Corridor List Recommendation**

---

### **Format List Explanation**

- Funding target of about \$10B for the 15-increment period
- 5-increment corridor segment groups are balanced statewide in terms of anticipated funds available
- List balances TMA project priorities and available funding
- Group worked cooperatively moving projects among years to achieve fairness goals

## Recap

---

14.06% Truck VMT

22.19% Population

0.93% Centerline Miles

16.88% Lane Miles of On-System Roads

6.72% Fatal & Incapacitating Crashes

7.04% Percent of Population Under the Federal Poverty Level

32.63% Total VMT (On- & Off-System)

## **APPENDIX B**

# TxDOT UTP Category 3

*Urban Area (Non-TMA)  
Corridor Projects*

## Workshops

### Category 3 Parameters

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**Urban Area (Non-TMA)**  
**50,000 – 200,000 population**  
**17 in Texas**

- Abilene
- Amarillo
- Brownsville
- Bryan-College Station
- Harlingen-San Benito
- Killeen-Temple
- Laredo
- Longview
- Midland-Odessa
- San Angelo
- Sherman-Denison
- Beaumont-Port Arthur
- Texarkana
- Tyler
- Victoria
- Waco
- Wichita Falls

## **Work Group Membership**

---

- 14 of the 17 Non-TMAs had one representative in the Category 3 work group
- Each TxDOT District in which a Non-TMA urban area is located had a representative
- Other TxDOT divisions and offices also had representation on the work group

## **Work Group Membership**

---

- Additional appropriate staff from local entities attended to participate in discussions and provide necessary information
- Voting members could have proxies represent them

## **UTP Category 3 Work Group Charge**

---

A charge was developed for the workgroup prior to its first meeting

1. Identify and review existing and currently proposed priority corridors
2. Apply weighting factors to the corridor selection criteria
3. Document criteria weighting rationale
4. Determine corridor prioritization eligibility

## **UTP Category 3 Work Group Charge**

---

5. Score each eligible priority corridor
6. Rank prioritized eligible corridors
7. Prioritize eligible mobility projects that fit the Statewide Connectivity Corridor
8. Review regional funds distribution
9. Prepare draft report of recommendations for review and final approval by the Texas Transportation Commission

## **Workshops**

---

**July 2002 – March 2003**

### **Eight Workshops**

**Six devoted to criteria development and percentages**

**Last two focused on project prioritization**

***Consensus-based discussion***

## **Criteria Development**

---

**Workgroup decided to begin with criteria developed by the CGWG**

- Traffic Engineering
- Financial
- Special Significance
- Connectivity

## **Criteria Development**

---

**Sub-committees formed for each category**

**Data gathering and communication between meetings**

**Facilitators acted as conduit for questions and information**

## **Criteria Development**

---

### **Traffic Engineering Issues**

**Average Daily Traffic**

**Annual Average Daily Traffic**

**Lane Miles**

**VMT per Lane**

**LOS**

**Travel Time**

**Capacity**

**Safety**

**Percent Trucks**

## **Criteria Development**

---

### **Financial**

**Local Funding/Leveraging**  
**Economic Development**  
**Benefit/Cost Ratio**  
**Construction Costs**  
**Poverty Rates**  
**Enterprise Zones**

## **Criteria Development**

---

### **Special Significance Issues**

**International Traffic/Ports of Entry**  
**Military/National Security Installations**  
**Tourism/Recreational Areas**  
**Major Freight Routes**  
**Hazardous Cargo Routes**  
**Air Quality/Conformity**

# **Criteria Development**

---

## **Connectivity Issues**

**Closing system gaps**

**Connect with principal roadways from adjacent states**

**Intermodal connectivity**

**Fit with other TxDOT development**

**Maximize the use of existing transportation system**

# **Criteria Development**

---

**Vigorous discussion in each workshop**

- Statewide perspective
- Fairness to all
- Data requirements
- Intellectual rigor

**Consensus reached on criteria, variables, and weighting, either verbally or through straw polls**

**Equation built iteratively by the workgroup**

**Deadline pressures**

## **Criteria Development**

---

### **Final Criteria and Weights**

Total VMT	22%
Truck VMT	15%
Population	26%
Centerline miles	6%
Lanes miles (On-system)	11%
Fatal and incapacitating crashes	11%
Percent population under federal poverty level	9%

## **Corridor List Recommendation**

---

### **Background**

The work group maintained a goal of developing a list of corridor segments appropriately representing the needs of each urban area (non-TMA) in the state

The number of projects in each ranged from a few to several

Workgroup agreed that no area should have to wait beyond the first increment of the programming period to let its first project

## **Corridor List Recommendation**

---

### **Explanation of List Format**

**The work group decided to develop a 15-increment prioritized list of corridor segments grouped in three 5-increment groups.**

**5-increment groups ensured that each urban area would have some of its corridor segments let in each of the three groups.**

## **Corridor List Recommendation**

---

### **Explanation of List Format**

**TPP staff provided a funding target of approximately \$1.7 billion for the 15 increments.**

**Each 5-increment group of corridor segments was balanced in terms of anticipated funds available.**

## **Corridor List Recommendation**

---

### **Explanation of List Format**

The list attempted to balance each urban area's project priorities and the available funding.

In creating the project list, the workgroup worked cooperatively by moving projects among the years to achieve fairness goals and stay within the funding targets.

### **Final Criteria and Weights UTP Category 3**

---

Total VMT	22%
Truck VMT	15%
Population	26%
Centerline miles	6%
Lanes miles (On-system)	11%
Fatal and incapacitating crashes	11%
Percent population under federal poverty level	9%

## **APPENDIX C**

**TEXAS DEPARTMENT OF TRANSPORTATION  
ROW DIVISION**

**PROCEDURAL GUIDE  
DISTRICT FORECASTING OF STRATEGY 102 EXPENDITURES**

---

**PREPARATION:**

Prepared For: TxDOT District ROW Administrators  
Prepared By: Gus Cannon, Resource Mgmt. Sec. Director – ROW Div.  
Original Preparation: April 9, 2001  
Original Effective: April 9, 2001  
Latest Revision: April 17, 2003  
Revisions Effective: April 17, 2003

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**DISCUSSION:**

Sound business practice requires District ROW Administrators to become involved in the forecasting of Strategy 102 expenses early in the development stages of a transportation project. District projections of the expected costs that will track to Strategy 102 can and should be adjusted at the time the ROW Project is released. As the project progresses, continuous monitoring of the Strategy 102 expenses is needed. The ROW estimate can be increased or decreased by sending a letter to the ROW Division Director stating the amount of the increase/decrease and supplying detailed discussion as to the need for the action.

In summary, this procedural guide is revised from its original April 9, 2001 publication to update and reinforce general methodology in budgeting and forecasting of district Strategy 102 expenses.

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**PURPOSE:**

For the foreseeable future, there will be continued demand for new and improved roadways in every section of the state, accompanied by tightening budget constraints. This equates to the need for a continuing micro-level review by districts of their Strategy 102 forecasts. The ability to forecast Strategy 102 expenditures can only start on a parcel by parcel basis. Average costs and historical district trends are important considerations but cannot and should not replace parcel by parcel analysis. The purpose of this guide is to put forth and reinforce basic procedural guidelines to aid district personnel in forecasting Strategy 102 costs at the most finite levels possible.

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**PROCEDURAL GUIDE:**

In the Financial Information Management System (FIMS) "function codes" are used to describe what activity is performed in the payment of an expense. An "object of expenditure" is best defined in FIMS as the type of service or good that is purchased.

When forecasting Strategy 102 expenses, the district should take into account all applicable function and object of expenditure codes. While not all-inclusive, the following table provides a general description of the function and object codes typically used in the payment of costs that will track to Strategy 102.

**Function and Object Codes of Expenditure for Strategy 102 Payments**

Expense Category	Unit of Cost	FIMS Code		Description
		Function	Object	
Preliminary Engineering	Project	130	365	Environmental services (on project level)
Preliminary Engineering	Project	130	421	Surveys (ground or aerial)
Preliminary Engineering	Project	130	423	Engineering services other than survey; i.e., SUE payments on a project level
Preliminary Engineering	Project	130	451	Expert witness (use 490 for non-expert witness)
Acquisition	Parcel	400	336	Land purchases for right of way
Acquisition	Parcel	400	365	Environmental services (on a parcel level)
Acquisition	Parcel	400	408	Court reporter fees
Acquisition	Parcel	400	421	Technical experts for ground and aerial surveys
Acquisition	Parcel	400	423	Engineering services other than survey; i.e., SUE payments on a parcel level
Acquisition	Parcel	400	431	Appraisal
Acquisition	Parcel	400	437	Legal and court costs
Acquisition	Parcel	400	438	Title costs and costs of filing official documents
Acquisition	Parcel	400	439	Fees and special costs not otherwise classified
Acquisition	Parcel	400	451	Expert witness (use 490 for non-expert witness)
Acquisition	Parcel	400	470	Contracted hazardous/toxic waste disposal
Relocation	Parcel	410	392	Relocation assistance payments
Utilities	Parcel	500	393	Utility adjustments
Outsourcing	Project	600	425	Right of way and utility operation expense (professional service contracts)

Source: TxDOT FIMS Function and Object Code Charts

Development of an EXCEL spreadsheet or an ACCESS database is all that is needed for districts to begin the process of detailed forecasting analysis. Regardless of the software used, the end result is only as good as the data input into the system. As previously stated, using averages and historical district trends are important considerations but cannot and should not replace parcel by parcel analysis. The initial step in your forecast is to list every individual parcel in the pending project. Then it becomes a matter of estimating Strategy 102 costs by each applicable function and object of expenditure.

Begin with projected preliminary engineering costs that will track to Strategy 102 through the Area Engineer's Office under Function 130 and Object of Expenditure 365, 421, 423 and 451. You should consult your Area Engineering Office about their projections of preliminary engineering costs for the each project generating Strategy 102 costs.

Next, move to the acquisition expense category covered by Function 400 and Objects of Procedural Guide 1 (revised 4/17/03)

## District Forecasting for Strategy 102 Expenditures

Expenditure 336, 365, 408, 421, 423, 431, 437, 438, 439, 451 and 470. The review of historical information in your district files can help you establish reasonable ranges in which these costs should fall, but it does not and can not replace parcel by parcel review.

Other expense categories that should be reviewed are relocation, Function 410 and Object of Expenditure 392 and the utilities expense category, Function 500 and Object of Expenditure 393. If you have budgeted for the use of a Right of Way Acquisition Provider Service company, the cost of these professional services must also be considered. These figures can be obtained by contacting the ROW Division.

An example of a spreadsheet for a simple 10-parcel project follows. The first column shows units costs with an abbreviation of PR (based on a project as the unit of cost) or PL (cost based on a parcel as the unit of cost).

### Example of Spreadsheet Format used in Forecasting Strategy 102 Expenses

Unit of Cost	Acquisition Function 400										Comments									
	Preliminary Eng. Function 130	Object 365	Object 421	Object 423	Object 451	Object 336	Object 365	Object 408	Object 421	Object 423		Object 431	Object 437	Object 438	Object 439	Object 451	Object 470	Relocation Function 410	Utilities Function 500	Outsourcing Function 600
PR	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$		\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$			As needed
PL1	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$		\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$			As needed
PL2	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$		\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$			As needed
PL3	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$		\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$			As needed
PL4	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$		\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$			As needed
PL5	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$		\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$			As needed
PL6	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$		\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$			As needed
PL7	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$		\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$			As needed
PL8	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$		\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$			As needed
PL9	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$		\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$			As needed
PL10	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$		\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$			As needed
Total s	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$		\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$	\$ \$ \$ \$ \$			As needed

District monitoring of Strategy 102 costs should be constant. As actual costs replace projected costs, revise your spreadsheet to reflect the changes as they occur. Keeping your spreadsheet or database up to date will allow the district to know when to send a letter to the ROW Division requesting an increase/decrease in the project's ROW budget, and will allow preparation of quarterly budget revisions in an efficient manner.

Annual district forecasts of Strategy 102 expenditures (on a quarterly basis) should be submitted on July 1<sup>st</sup> of every year, for the next fiscal year beginning September 1<sup>st</sup>. As a new fiscal year begins, districts may revise their remaining quarterly forecasts as shown in the following table.

District Forecasting for Strategy 102 Expenditures

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Date Due	Report Due
Jul. 1 <sup>st</sup>	District annual forecast of Strategy 102 expenditures for the next fiscal year.
Oct. 1st	District revisions for 2 <sup>nd</sup> , 3 <sup>rd</sup> and 4 <sup>th</sup> quarters of current fiscal year.
Jan. 1st	District revisions for 3 <sup>rd</sup> and 4 <sup>th</sup> quarters of current fiscal year.
Apr. 1st	District revisions for 4 <sup>th</sup> quarter of current fiscal year.

## **APPENDIX D**

## Lump Sum Distribution for Categories 2 & 3

The Work Group Plan  
May 2, 2006

## Lump Sum Distribution – What's the Plan?

- Develop Strategic Approach for policy and procedures
- Districts and MPOs review and provide comment
- Consensus
- Administration and Commission review
- Revisions?
- Implement lump sum distribution

## Lump Sum Distribution – What's the Plan?

- What is needed:
  - Determine amount of ROW/consultant dollars to allocate
  - Determine allocation method
  - UTP Category 2 and 3 annual process with TPP:
    - Schedule each area's use of the allocation
    - Track actual use of the dollars and balance future scheduling with past obligations
  - Districts to educate MPOs on the use of its area's allocation and what can be accomplished with the funds

## **APPENDIX E**

## Metropolitan Area (TMA) Category 2 Projects

### **Funding Target Formula**

- 32.50% Total VMT (on and off State Hwy System)
- 22.19% Population
- 16.88% Lane miles (on System)
- 14.06% VMT (trucks only)
- 6.88% Percent population under federal poverty level
- 6.56% Fatal & incapacitating crashes
- 0.93% Centerline miles (on System)

## Urban Area (non-TMA) Category 3 Projects

### **Funding Target Formula**

- 22% Total VMT (on and off State Hwy System)
- 26% Population
- 11% Lane miles (on System)
- 6% Centerline miles (on System)
- 15% VMT (trucks only)
- 9% Percent population under federal poverty level
- 11% Fatal & incapacitating crashes

## Statewide Connectivity Corridor Projects

**Selections based on engineering analysis of projects on three corridor types:**

- **Mobility Corridors** – based on congestion
- **Connectivity Corridors** – 2-lane roadways requiring upgrade to 4-lane divided.
- **Strategic Corridors** – strategic corridor additions to the state highway network. An example would be the Ports-to-Plains.

## **APPENDIX F**

## Challenges To Be Addressed

The Work Group will begin to address as many of the eight individual challenges as allowable in time permitted. Challenges to be addressed are as follows:

## **Challenges to be Addressed:**

- 1. Determining the appropriate amount of right of way acquisition and consultant dollars that could be allocated by respective category to the MPOs;**

## **Challenges to be Addressed:**

- 2. Determine an allocation method;**

## **Challenges to be Addressed:**

- 3. Scheduling each area's use of the total allocation**

## **Challenges to be Addressed:**

- 4. Tracking the actual use of the dollars and balancing future scheduling with past obligations;**

## **Challenges to be Addressed:**

- 5. Educating Districts and MPOs on the use of its area's allocation and what can be accomplished with the funds;**

## **Challenges to be Addressed:**

- 6. Temporarily continuing data maintenance to fulfill legislative reporting requirements (the Department is currently working on changes to enable tracking of total project costs that should be fully implemented by summer 2006);**

## **Challenges to be Addressed:**

- 7. Investigating legal issues (contained in the Texas Administrative Code and the Texas Transportation Code); and**

## **Challenges to be Addressed:**

- 8. Developing recommendations to present to the Districts and MPO.**

## **APPENDIX G**

<b>URBANIZED AREA</b>	<b>POP</b>	<b>AREA</b>	<b>DENSITY</b>
Abilene, TX	107,041	123,183,306	2,250.6
Amarillo, TX	179,312	191,869,273	2,420.5
Austin, TX	901,920	823,944,485	2,835.1
Beaumont, TX	139,304	210,896,368	1,710.8
Brownsville, TX	165,776	148,489,175	2,891.5
College Station--Bryan, TX	132,500	127,288,843	2,696.0
Corpus Christi, TX	293,925	285,650,962	2,665.0
Dallas--Fort Worth--Arlington, TX	4,145,659	3,644,217,906	2,946.4
Denton--Lewisville, TX	299,823	314,875,939	2,466.2
El Paso, TX--NM	648,465(PT)	528,461,265	3,178.1
Galveston, TX	54,770	31,329,844	4,527.7
Harlingen, TX	110,770	153,145,586	1,873.3
Houston, TX	3,822,509	3,354,721,332	2,951.1
Killeen, TX	167,976	165,957,328	2,621.5
Lake Jackson--Angleton, TX	73,416	87,604,879	2,170.5
Laredo, TX	175,586	110,110,429	4,130.1
Longview, TX	78,070	131,073,251	1,542.7
Lubbock, TX	202,225	192,988,298	2,713.9
McAllen, TX	523,144	812,821,746	1,667.0
McKinney, TX	54,525	70,254,693	2,010.1
Midland, TX	99,221	117,232,622	2,192.1
Odessa, TX	111,395	137,939,905	2,091.6
Port Arthur, TX	114,656	118,772,004	2,500.2
San Angelo, TX	87,969	118,121,322	1,928.9
San Antonio, TX	1,327,554	1,055,573,512	3,257.3
Sherman, TX	56,168	82,559,038	1,762.1
Temple, TX	71,937	107,081,814	1,739.9
Texarkana, TX--Texarkana, AR	48767(PT)	107,842,689	1,171.2
Texas City, TX	96,417	151,668,090	1,646.5
The Woodlands, TX	89,445	107,987,273	2,145.3
Tyler, TX	101,494	148,817,811	1,766.4
Victoria, TX	61,529	132,117,043	1,206.2
Waco, TX	153,198	180,614,619	2,196.8
Wichita Falls, TX	99,396	134,519,373	1,913.7

## **Attachment B**

## **Meeting 2 Notes**

## Lump Sum Distribution Workgroup Meeting Notes

May 24, 2006, 8:30 am – 2:10 pm

Thompson Center, Austin, TX  
Recorded by Carol Court, TTI

In attendance:

Wayne Wells	TxDOT-TPP		Nancy Johnson	TxDOT-ROW	
Kenneth Petr	TxDOT District Amarillo		Mark Longenbaugh	TxDOT District El Paso	
Tom Niskala	MPO-Corpus		Dan Lamers	MPO-DFW	
Dione Albert	TxDOT-DES		Chris Evilia	MPO-Waco	
Philip Lujan	TxDOT District Beaumont		Max Proctor	TxDOT-TPP	
Linda Olson	TxDOT-DES		Gary Law	TxDOT District Odessa	
Brad McCaleb	MPO-Texarkana		Jenny Peterman	TxDOT-TPP	
Robin Boone	TxDOT District Pharr		Montie Wade	TTI	
Duane Sullivan	TxDOT-FIN		Bill Frawley	TTI	
Linda LaSut	MPO-Bryan/CS		Jason Crawford	TTI	
Gus Cannon	TxDOT-ROW	(AM only)	Carol Court	TTI	

### Agenda Discussion – M. Wade/TTI

Wade welcomed the group at 8:40 am and reviewed the Agenda

- Order is flexible
- Challenges listed on the Agenda Page
- Notes from May 2 Meeting
- Questions

### Recap of May 24, 2006 – M. Wade

### Right-of-way (ROW) Estimation Procedures – G. Cannon/ROW

Presentation: *Budgeting for Strategy 102* (See Appendix A)

- Developed for ROW Administration Meeting less than 60 days ago
- TxDOT FIN and ROW Divisions don't know what preliminary engineering (PE) costs are until after the fact. PE for ROW does not flow through the ROW Division and is a great unknown. These expenditures flow from the Area Engineers Offices.
- Budgeting plays larger part than 5 years ago

- Strategy 102 is 48% of the “Plan It” portion of total TxDOT budget (8.6% of total TxDOT budget)
  - Inside/Outside the Box Spending
  - Strategy 102 Dollars
    - Forecast vs. actual budget allocation creates a huge budgeting problem for ROW administrators.
    - Utility adjustments may take 2 years to complete, condemnations may take a much longer time to resolve
    - There is a 40-50% over-forecast of district ROW costs from his 4-5 year review of trends.
    - In FY05, TxDOT Administration experimented with giving budget amount equal to forecast amount. Expenditures were very close to budget but were attributed much to one project (Katy Freeway).
    - FY06 showed the variance again
    - Gave districts an opportunity to redo biennial forecast, but still left a huge gap between forecast and actual budget allocation

**R. Boone** - Is this over-optimism? **A: G. Cannon** – No, it a lack of knowledge.

- Forecast vs. Budget Allocation
  - Utility adjustment costs are rising very quickly statewide. Cannon expects them to be very high in next 4 to 5 years. Cannon noted in one example the original utility adjustment estimate at \$9M, but actual bill showing \$50M
  - Expect legislation to respond to this rise.

**R. Boone** - What is the annual ROW budget? **A: G. Cannon** - \$480-500M this fiscal year, but in the past the budget was \$225M.

What kind of legislation do you anticipate? **A:** Don’t know, utilities are a powerful lobbying tool. The introduction of fiber optics, etc. has driven ROW cost up 4-6 times

**R. Boone** - We don’t pay for that, do we? **A: G. Cannon** - Yes

**M. Longenbaugh** – Utilities cost along Interstate is all reimbursable.

**M. Proctor** - We don’t pay for all of the costs, but those costs are arguable.

**G. Law** - Our construction cost has gone up 60% in the last few months. Labor won’t commit to a job, they wait for highest bid.

- Cannon noted that over the last 10 years, construction projects begin with about 20% of ROW in hand, whereas early Interstate-era projects were built with 70-80% of ROW in hand.
- Statewide condemnation rate is less than 15%. In FY05 the condemnation rate increased to 18% due to Katy Freeway project (60% eminent domain rate).
- ROW PE costs hit after they are made and are not part of the ROW budgeting process
- County appraisal district data doesn’t reflect true costs of property. True costs are related to damages
- A lot of projects are let with no ROW costs, but that doesn’t necessarily reduce budget
- 85% of people we take property from are satisfied with the process

- Katy Freeway skewed the figures, but we were still at less than 20% statewide condemnation rate
- Preliminary Engineering costs are unknown because project administrators don't see costs
- I'm trying to develop a process to track these costs, if that is so, it's not part of the budgeting process
- They can't track value of the land until they finish the appraisal
- Damage to property increases those costs, can increase them significantly

**Presentation: *ROW Cost Estimation* – G. Cannon** (See Appendix B)

- Demonstrates an electronic model used to forecast costs, using Research Project 0-4079 as an example
- The administrators have to be lucky to estimate ROW costs
- ROW has been a necessary evil in the past
- ROW Information System (ROWIS) is different from Financial Information Management System (FIMS) in that ROWIS provides information down to the parcel and FIMS only goes as far as the project level
- A 12.5% ratio of ROW to Construction costs may be a general rule of thumb for the state; the ratio will increase in urban areas and decrease in rural areas.
- But we don't know how much that will contribute to letting costs
- Our cost accounting system has not been in place long enough to provide historical analysis

**B. Frawley** - Does your research give relationship between areas? **A: G. Cannon** - These models don't take into account the differences in counties. The Transportation Commission looks at each area uniquely and allots funds based on regional differences when going to hearings

- A Commissioners Court can be favorable or not and that impacts overall costs. There is no fact rule as there is in a jury proceeding.
- FIN can't give costs associated with a land parcel acquisition
- I think the cost is between 10-15% of total construction costs, maybe 12.5% is more in line with today's costs
- In reality this is just a number off the shelf, an average to start from

**R. Boone** - How would you apportion a statewide budget among districts? **A: G. Cannon** - I think 12.5% across the board is where I would start. It will hurt some areas, and it's not the best way to allocate, but it would be most equitable.

**L. Olson** - Don't they base budget on what funds are requested? **A: G. Cannon:** Yes, two spreadsheets are used; what they say they need vs. what they will spend right now (takes off about 5%) compare efficiency of forecast last year. The closer the estimate is, the more money they get. With "inside" and "outside the box" money available, there is less constraint.

**G. Law** - 12.5% of construction costs of those projects that require ROW? **A: G. Cannon** - Yes  
**G. Law** - Over a period of time, it will balance out and be enough, some years good, some bad.

**G. Cannon**-Over 18 months, we will see the data coming forward to get this estimation closer

**M. Proctor** - Commission strategic projects do not include ROW, they only include construction costs.

**D. Sullivan** began speaking about Category 2 and 3 PEER

- FIN pulled the list of Control-Section-Jobs (CSJs); ROW Division came up with associated ROW CSJs (Hand-out--See Appendix C)
- 22% of low bid amount for Category 2 project
- Very few category 3 projects let in last 3 years
- 7% on ROW expenses of let amount

**G. Law** - In Metro area, Katy Freeway anomaly is included.

**G. Cannon** - Ideally we need category breakdown per district for a three-year trend. Anything beyond five years is irrelevant

**T. Niskala** – Is a three-year trend enough?

**L. Olson** - ROW cost-to-date may not be accurate because the ROW may not be paid yet.

**M. Longenbaugh** - Forecasting on past history isn't best because of big corridor projects stretched out over multiple years

**G. Cannon** - Estimate parcel by parcel cost through all categories-how good are you at estimating?

**M. Longenbaugh** – For El Paso, it might have been 5%, but in five years it could be 10-15%.

**M. Proctor** - We are looking at only a small percentage being distributed; distribution of regular ROW budgets to districts will continue to happen. This is a distribution of some ROW funds to an MPO for use over a long period of time to plan for a 25-year horizon. Districts are still going to get an annual ROW budget using the same factors that have always been used. Allocation dollars will be subtracted from a district's annual ROW budget.

**G. Law** - They will help MPOs schedule work out over a long range.

**M. Proctor** - It will allow MPOs to acquire corridors in advance and save money in the long run.

**M. Longenbaugh** - It will help the planning, but it won't help much with acquisition.

*The question was asked:* Are we trying to give planning money to MPOs to use for ROW when we actually need to buy the land? That money won't be enough to cover the purchase.

**M. Proctor** – We're giving the MPOs a target sum of dollars to control their own destiny.

**B. Frawley** – Is this amount supplemental or taken out of their budget? **A: M. Proctor** – The MPO will be able to control some of those dollars.

**B. McCaleb** – Could these funds be used to purchase access rights? **A: M. Proctor** – Yes.

**R. Boone** – We thought we were talking about the bulk of construction dollars. In the last 5 years, we've been doing a lot of high dollar projects without ROW cost, but that is going to change significantly, so this is reflective.

**M. Proctor** – We're taking into account that you won't be doing as much work anyway because the funds won't be there.

**L. Olson**-Category 2 dollars will be handled like Category 7. Eligible expenditures can be anything

**B. McCaleb** - Can these funds be used to buy ROW costs?

**G. Law** - Total parcel costs are going up.

**G. Cannon** - We could be looking at huge relocation costs for sign relocation (personal property)

**G. Law** - Take the construction funding in the planning horizon as a basis, then back out from this number using 18% ("Plan It" portion of budget) to allocate for PE and ROW costs.

**L. Olson** - The "Build It" strategy is everything except Categories 1, 6, and 8.

**D. Sullivan -**

- The 4<sup>th</sup> page of the handout lists projects not picked up by PEERs report because they were a work type not monitored.
- PEERS only picks 13 categories of work

**R. Boone** - These are lower-dollar projects too.

- The 5<sup>th</sup> page of the handout is a summary of construction engineering costs (22%) and PE costs (71%), contracted vs. in-house.
- These figures don't mean a lot because sometimes the ROW was purchased at an earlier time.

**G. Law** –Our first Workgroup challenges are: Issue 1--Decide aggregate amount of money; and Issue 2--Decide how to distribute to MPOs.

- Pie chart – TxDOT “Plan It” budget is 18% of total budget
- On our spreadsheets we know what our horizon costs are for Categories 2 and 3
- Why don't we back up through that? Take 18% of that cost and decide how to distribute it.

**G. Cannon** - Put pie chart back up for review. (See Appendix A)

**G. Law** - We have one unknown, but we know that the total portion of the budget is 18%;

- We know construction is 34%;
- We know the total construction budget of the projects we are looking at;
- This covers all 12 categories (except 1, 6 and 8);

**T. Niskala** - Define what portion of the total fund goes into this distribution.

**M. Wade** - If your combined PE and ROW pot is 18%, then your ROW distribution is 10%. The 18% includes salary costs, etc., more dollars than we need for ROW and PE

**G. Law** - Over the time of a project, the funding will be prioritized for different costs. We just need to find a funding stream

**M. Proctor** - We just need to allocate a percentage of dollars to be determined how to spend.

**R. Boone** - If we know PE is about 10% of cost and ROW is about 12.5%, then if MPO gets \$1M, they should get 22.5% in ROW and PE dollars.

**M. Proctor** - The figure we use really doesn't matter, it's just a percentage and the MPO will still have access to the rest of the dollars

**G. Law** - 2% difference of \$77M is \$1.5M to be divided between all the districts

**R. Boone** - That 18% is hard to explain, it is more commonly understood that PE is 10%, and ROW is 12.5%.

**D. Lamers** – Attempted to relate a ROW+PE/Construction ratio using the strategy 102 (8.6% of total disbursement), related to “Build It” (34% of total disbursements).

**G. Law** – Strategy 102 is 8.6% of the total Department budget. It is included in the 18% “Plan It” budget.

**D. Lamers** - 48% of the “Plan It” budget is for ROW

**M. Wade** - Is construction engineering included? What if it is done by consulting? **A: All** - Agreed that comes out of construction dollars

**M. Wade** - If so, then my conversation with Dallas brings us back to approximately 18%

**M. Proctor** - Solution? **A: R. Boone** - I recommend 22%

**M. Wade** - How do we justify this? **A: R. Boone** - 10% PE (consultant) and 12% ROW

**Suggested “Rule of Thumb” formula for LS Disbursement:**

10% PE (consulting)

12% ROW

22% of Construction Dollars

**M. Proctor** - The purpose is to give MPOs control and responsibility of spending/planning

**D. Lamers** – I suggest raising ROW to 15%

**R. Boone** - we could make it 7% and 15%

**PE and Total Project Costs and Forecasts – L. Olson/DES**

- We can't provide our numbers to everyone until the end of June

**M. Longenbaugh** - These percentages are not going to cover everything anyway.

**L. Olson** - This is only going to give us a snapshot, but will not be totally useful.

**B. McCaleb** - One of the main purposes behind this is not how much money goes to each area, but rather giving the MPOs more say in what projects are put in the stream, set a timeline and allow for bringing everyone to the table and working together.

**M. Proctor** - And give the MPOs more responsibility

**M. Wade** - Once this is established, there won't be a huge pot of money for MPOs to go back and draw from. You will all have to live with this distribution.

**B. Frawley** – I suggest we break while we try to chart an example

Break

**B. Frawley / J. Crawford / TTI**

Programming and Scheduling Spreadsheet – Category 2

Calculations on Board:

(Pie Chart)

8.6/34 ≈ 25%

10% PE (consulting)

12% ROW

22% of Construction \$\$

Assumption – No construction dollars

**TMAs**

\$10B / 15 Years	Construction Cost per Year	\$667M
Category 2	ROW (%)	x .12
Construction	ROW =	\$80M

\$80M / 8 TMAs = \$10M / Year ROW / TMA \$

(@ \$19M / Year Combined PE & ROW LS Distribution)

## Non-TMAs

\$1.7B / 15 Years	Construction Cost per Year	\$110M
Category 3	ROW (%)	x .12
Construction	ROW =	\$13M

\$13M / 17 MPOs = \$764,000 / Year ROW / MPO \$

(@ \$1.2M / Year PE & ROW LS Distribution)

**J. Crawford** - explained aggregate peer group scoring among TMAs

**G. Law** - Purpose of TMMP and TUMP is to show how big the gap is (hypothetical)

- This Workgroup is working with actual dollars and developing a distribution percentage
- This provides a management tool for our current projected dollars

### TMA Breakdown using the proposed percentages

Discussion:

- Conceptual, not specific by numbers
- Non-TMAs

**R. Boone** - With respect to Brownsville and Harlingen, can all dollars be used county-wide if they want? Are they restricted to their planning area boundary? **A: M. Proctor** - San Antonio elected to use some of their money outside their area, so it is possible, if they choose.

**B. McCaleb** – You can use it if you can prove the benefit.

**M. Proctor** - They can use it however they wish.

LUNCH

### Review of Questions – Crawford (See Appendix D – Questions)

**L. LaSut** - What kind of downward spiral begins now that surplus has been spent? **A: M. Proctor**

- We hope feds stop this from happening. That is basis for this action.

If this doesn't happen we may not have any funds to distribute any way.

**M. Wade** - The Category 2 and 3 funds come from? **A: M. Proctor** - Out of ROW and PE dollars funds

### Discussion / Answers to Questions

1. We are charged with determining how much to allocate (22%)
2. Not known and doesn't influence what we're deciding
3. FIN back page of handout has that information (includes Texas Turnpike expenditures)
4. **M. Longenbaugh** – Complexity. You could task orient to outsource, combination of ROW and PE consultants  
**G. Law** - Local support effects level of PE necessary more support means less PE needed  
**R. Boone** - Concurred
5. **N. Johnson** – Location. If ROW is needed for project, letting schedule, utilities, /relocation, rural characteristics

- M. Wade** - The only reason we would care is if it within a category and makes something more expensive
6. NA
  7. NA
  8. If construction costs are 65/10/25 for categories 2, 3 and 4.
  9. NA
  10. Definitions of PS&E and PE. Does our purpose involve both or one? Only consulting dollars as long as its consulting/professional services.
- G. Law** - Consultant selection will follow department selection process. The MPOs are not managing consultants, so department is. All rules would be in place and utilized. MPOs only decide how much money is set aside the money.
- M. Wade** - You can suggest that as a workgroup. That this is not a change of responsibility for anything other than where the funds go and prioritizing and approval
- The comment was made* - If I don't have the depth of staff to handle all this, could I partner with a consultant who the MPO hires?
- G. Law** - I see a struggle saying the MPO has money allocated and they disperse.
- M. Proctor** - It's a matter of balancing your manpower
- D. Lamers** – What if MPO gave you so much money to get projects going, and district has no more time left to do other work?
- G. Law** - No rules needed to regulate the process so the process still follows district guidelines?
- R. Boone** – You can get the county and city to do ROW acquisition and reimburse them.
- T. Niskala** - In some cases you can follow local procurement practices.
- M. Proctor** - That's why this process will help. The MPO will be helping district plan for the long range.
11. L. Olson - Currently the security limits the screens the MPOs can access. If we recommend it, we can have them look at this. When we have completed the new screens, I can see the need for MPOs to have access.
  12. W. Wells - We can make a separate effort for MPOs
  13. 65/10/25 split is administrative decision that has been adjusted twice. This is relatively fair and does coincidentally reflect population
  14. Answered previously under 10-follow TxDOT guidelines and rules
- M. Longenbaugh** - You have to have professional engineering overseeing consultants, MPOs may not have the capability. If the city could do that, then district could oversee
- M. Proctor** - City could not be reimbursed from these funds
- B. McCaleb** - If MPO has engineer on staff, we don't have to expend funds and PE funds could be used for ROW or consultant costs
- G. Law** - We would capture that as an in-kind service and they might want to bill district, but they could not be paid.
- M. Longenbaugh** - This is the difference between planning and implementing
- D. Lamers** - We have engineers on staff and we cooperate with the district. The rules haven't changed because we can do this now

- G. Law** - I just want to make sure people don't see this as a funding mechanism to get reimbursed
- N. Johnson** - In our ROW agreements, normally the State prepares a map and we give it to locals
- M. Longenbaugh** - If it's a category, on-system project, region would decide priority
15. **M. Proctor** - I-69 will be handled differently from all others--example: statewide effort to widen I-35 will be the same, but some areas that fall within an MPO would have to be covered by the MPO if it is expanded beyond the original plan (12- instead of 8-lane)
- D. Lamers** - I have a problem with that if the traffic is generated locally
- M. Proctor** - This is being done due to local traffic and is not a state connectivity project there is not other place to fund it.
- B. McCaleb** - I can see there might be a problem in the future when there aren't enough funds
- D. Lamers** - All the ROW etc., come out of small local pot?
- M. Proctor** - This can be supplemented by the district if that's what you work out.

No other questions

### **Review of May 2 Notes - All**

No comments

### **Additional TTI Research – B. Frawley / J. Crawford**

Research report-Project 4079 excerpt (portions) – J. Crawford (See Appendix E)

Thought this would be helpful. Demonstrates diversity between areas / questions and answers from each area interviewed. Invite you to take it with you and review.

Research review results (second handout packet) – J. Crawford (See Appendix F)

ROW 12.5% of project costs

TxDOT in Lubbock - Summed up, the cost of ROW was approximately 60% (not clear)

Cost/benefits report – 12-person jury for eminent domain. Gus spoke about this

Virginia transportation research report – 90% of forecasting was insufficient

CTR-accurate ROW cost estimation keys and challenges

Population density (distributed with May 2 notes) -- **B. Frawley**

This is not really a relative issue. Researched other areas for assistance, such as the Real Estate Center at A&M and they had nothing useful to our purposes. Urban Land Institute (ULI) Library hasn't revealed anything either.

**M. Wade** - We recommend flow process to take what you have reached and come up with a process incorporating the comments. Set up a meeting sometime in July.

## **Continuing Discussion**

*It was noted that the workgroup timeline set the allocation process for July. It was generally agreed that the comments from this meeting could be distributed and reviewed by email and another meeting scheduled for sometime after the middle of July.*

**M. Proctor** - Any dissenting opinions?

**D. Sullivan** – 12% ROW is too low and 10% PE too high, but 22% overall is good. I can justify a higher ROW, but maybe not PE

**T. Niskala** - It's fine as long as the actual use is flexible

**M. Proctor** - We can put a suggestion out that this be reviewed every five years and see if the percentages need to be adjusted

**M. Wade** - History shows 11% is average for ROW

**M. Proctor** - We're planning for a 25-year period and that's much different from a 3-year window

**D. Sullivan** - I just want to be able to explain the percentages

**M. Wade** - We used historical trend

**M. Proctor** - This is just a target and we can suggest this be reviewed in five years after we track these costs closely

**L. LaSut** - If overall numbers are a little different, then why don't we use Duane's numbers?

*It was noted that* - Those numbers are skewed

**L. LaSut** - But there is always a project that causes skewing

**M. Wade** - We're looking at percentages, and bigger projects cause bigger ROW costs. Linda and Max do you feel the new accounting system will allow us to track these costs closely enough to keep this alive?

**G. Law** - When will this new TxDOT-DES accounting program be fielded?

**L. Olson** - We're planning to go out in the field and train.

**G. Law** - If we revisited this in five years, we'll have plenty of data to draw on. **L. Olson** Agreed.

**T. Niskala** - Current datasets will be much more relevant than historical data.

**M. Proctor** - It will all be proportional and any errors they come up with we will deal with later

**K. Petr** - Knowing other pots are there makes a big difference

**M. Proctor** - Yes they can go back to the district and negotiate, but the drive is to give MPOs responsibility in spending these funds. The pot may be there, but don't depend on receiving anything extra out of that.

**G. Law** - These dollars are not enough to make huge allocations and cause me to use all my staff time managing.

**M. Proctor** - You have to make sure the MPO understands their responsibility to coordinate with district and allocating their money. If they mismanage their money, they may not be given any more funds. The district has a voice in this process. Once again, this depends greatly on the relationship between the MPO and the District

**D. Sullivan** - I need some help figuring out how to track all this

**L. Olson** - Within TxDOT we can come up with a process to track this.

**G. Law** - This is going to be very time-consuming for all of us in the first year or two.

**R. Boone** - Isn't there flexibility in how I want to spend these funds?

**G. Law** - That's the internal process, the inside-the-box spending.

## **APPENDIX A**



## Right of Way Administrator's Meeting

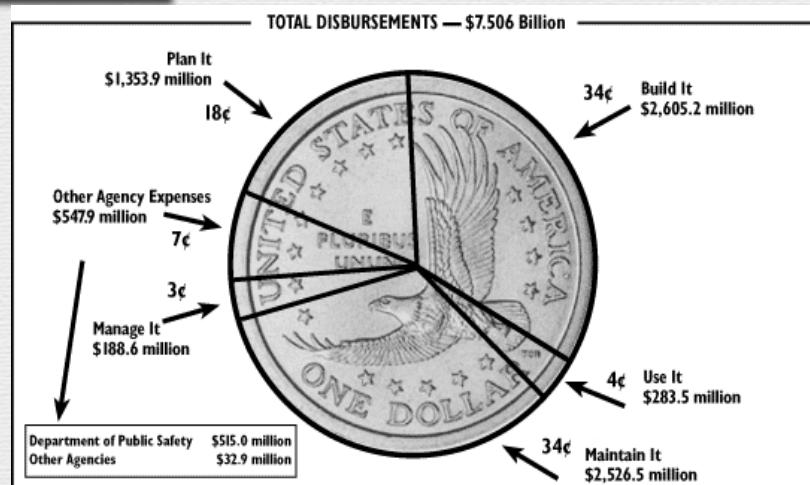
Austin, Texas    March 15, 2006

### "Budgeting for Strategy 102"

Gus Cannon, SR/WA, CTPM



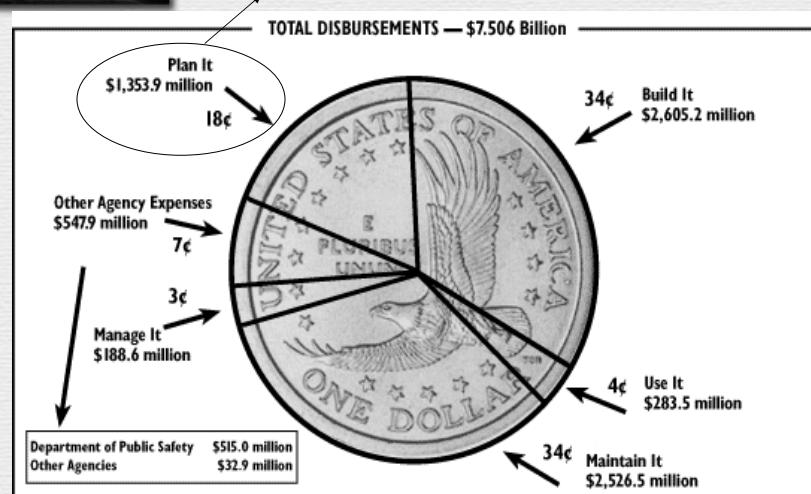
### The Budget Big Picture





## How Much for Strategy 102

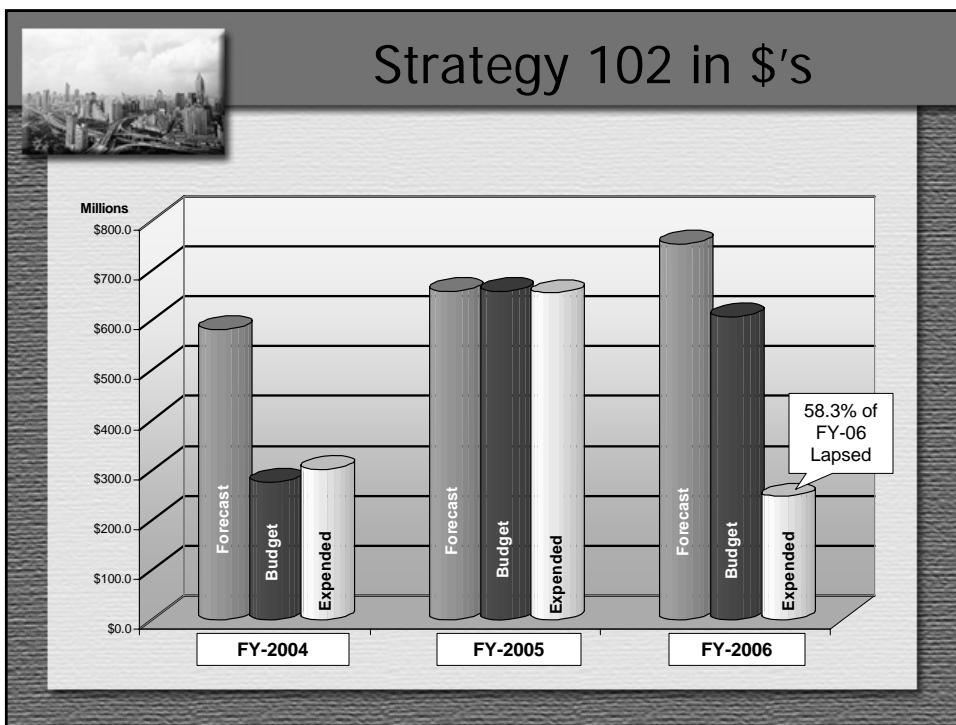
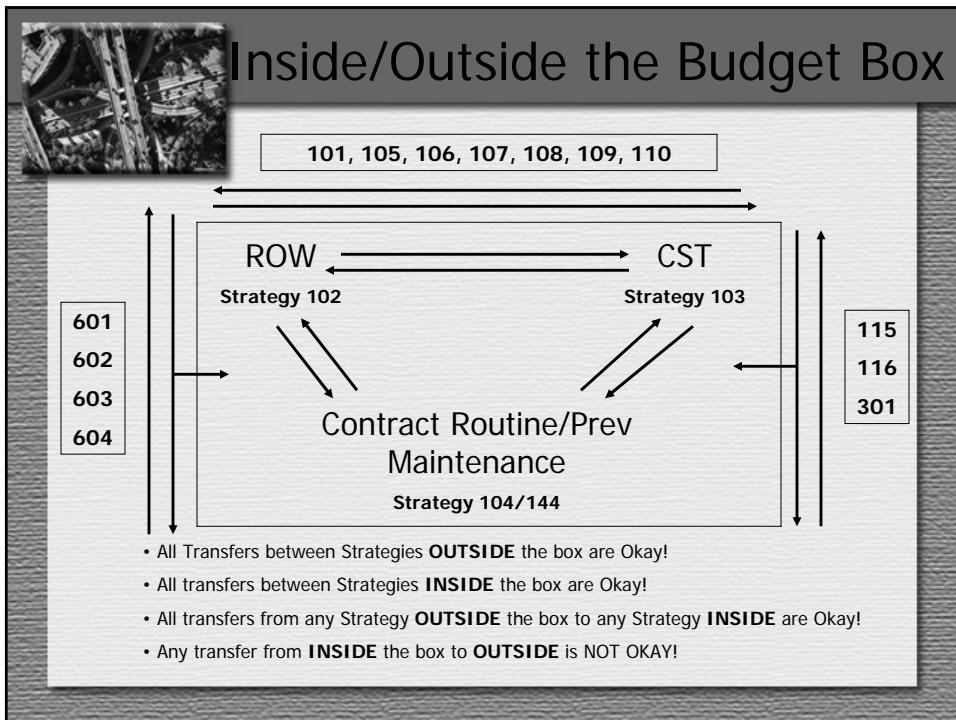
Strategy 102 = 48% of "Plan It" or 8.6 cents of each dollar disbursed



## Budget Performance Measures

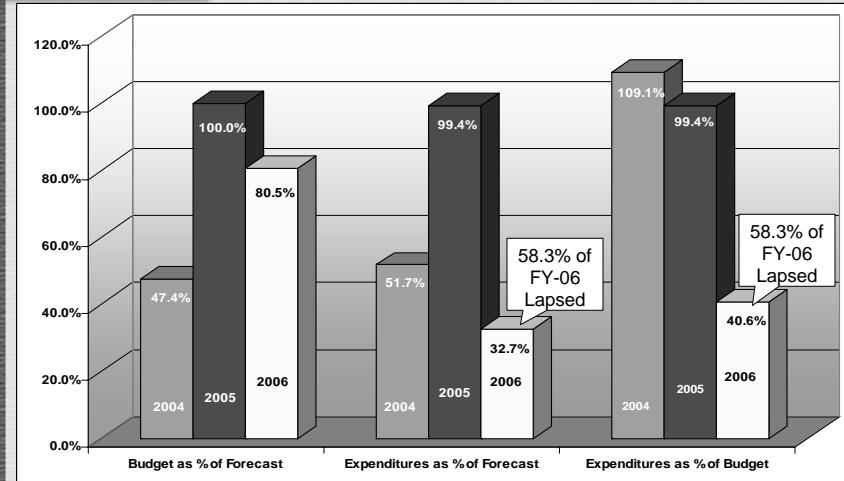
- In addition to the Strategic Plan, the Legislative Appropriations Request (LAR) is also prepared and presented in even years and requires establishing performance targets for all budget related measures corresponding to the level of funding requested for each strategy with information for 5 years.

- 1-yr of actual expenditures (from last FY)
- 1-yr of projected expenditures (est. amt. based on current FY budget)
- 1-yr budgeted (from the following FY budget)
- 2-FY's requested (request for the next biennium)





## Forecast –Vs- Budget Allocation



## Statewide looks okay, but...

**FY-2005** Forecasting performance seemed to be almost perfect as expenditures reached 99.4% of the amount forecasted. Except...

The Houston District had a remarkable year with expenditures reaching \$365.9 million which accounted for well over one-half of the entire statewide Strategy 102 expenditures. If you this variable from the statistical population, the statewide Forecast Performance drops from 99.4% to 56.7%.

**FY-2006** In April, each district will have the opportunity to revise Strategy 102 forecasts for the remaining period of FY-2006.

## **APPENDIX B**

Project No. 0-4079

## Right-of-Way Cost Estimation

PC & PD: John Campbell & Gus Cannon  
(ROW Division)

RS: Kara M. Kockelman (UT Austin)

Other researchers: Dr. James Jarrett  
& GSRs: Jared Heiner & Shadi Hakimi

## Overview

- Background
- DOTs' Survey Results
- Cost Models
- Cost Estimation Tool
- Best Acquisition Practices
- Influential Laws for State Condemnation Rates
- Condemnation Rates

## The ROW Acquisition Process...

- Key element of construction projects
- Costly & time-consuming
- Socially sensitive
- State DOTs desire:
  - Better cost estimation procedures
  - More efficient acquisition strategies
  - More effective acquisition laws

## Surveys of ROW Administrators: In-state & out-of-state

- **Issues vary** by district type & size (e.g., urban vs. rural)
- Estimate accuracy directly related to **plan detail**
- **Damages, utility** relocations, **time constraints** & time **lapses** result in mis-prediction
- Most **states** working to:
  - Reduce incidence of condemnation
  - Improve cost estimation via valuation models
  - Reduce ROW costs
  - Preserve corridor ROW

## Cost Estimation: 3 Data Sets

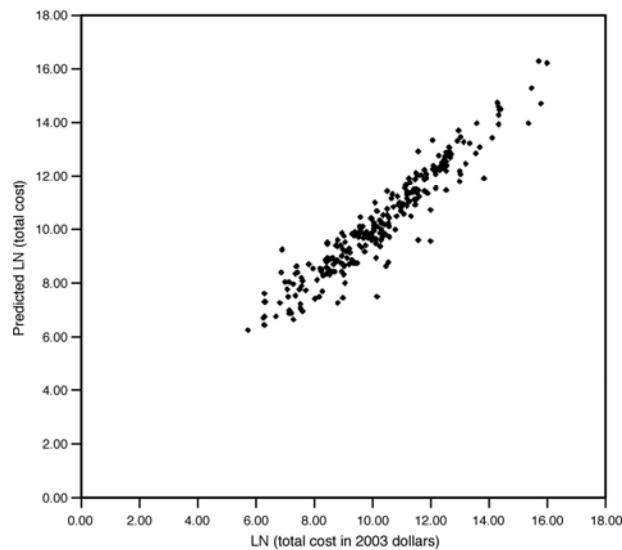
- 6 Texas Corridors: Costs of **Partial & Whole Takings**, n=285, R<sup>2</sup>=.91
- TCAD: Whole **Commercial** Property Sales & Asking Prices, n=1,353, R<sup>2</sup>=.86
- CoStar: Whole Commercial Property Sales in Texas's **4 major metro regions**, n=10,987, R<sup>2</sup>=.60

## Texas Corridor Model

$$y = \ln(\text{acquisition cost})$$

Variables	Coefficient	Std. Coef.	Variables	Coefficient	Std. Coef.
(Constant)	2.73786		<i>LANDSF*FTWORTH</i>	0.12397	<b>0.1731</b>
<i>LANDSF</i>	-	-	<i>LANDSF*HOUSTON</i>	0.3329	<b>0.5822</b>
<i>LANDSF*CORNER</i>	0.02105	0.0422	<i>LANDSF*SAN ANTONIO</i>	0.40861	<b>0.5443</b>
<i>LANDSF*TIMETREND</i>	0.49643	<b>0.3612</b>	<i>IMPSF</i>	0.72522	<b>1.319 (!)</b>
<i>LANDSF*vacant</i>	0	n/a	<i>IMPSF*TIMETREND</i>	-0.38778	-0.836
<i>LANDSF*AGRI</i>	-0.04532	-0.0536	<i>IMPSF*BASE USES<sup>2</sup></i>	0	n/a
<i>LANDSF*SFAM</i>	0.08536	<b>0.1765</b>	<i>IMPSF*RETAIL</i>	-0.0691	-0.0716
<i>LANDSF*MFAM</i>	0.07404	0.0538	<i>IMPSF*SERVICE</i>	0.05461	0.0328
<i>LANDSF*RETAIL</i>	0.13481	<b>0.2176</b>	<i>IMpSF*popdensity</i>	-0.10035	<b>-0.3606</b>
<i>LANDSF*SERVICE</i>	0.07239	0.0556	<i>REMSF</i>	0.03095	0.0769
<i>LANDSF*OTHER</i>	0.079	0.0609	<i>REMSF*CHGHBUSE</i>	-0.04654	-0.0689
<i>LANDSF*BASE SITES<sup>1</sup></i>	0	n/a	<i>REMSF*SHAPECHG</i>	-0.01723	-0.0232
<i>LANDSF*ELPASO</i>	0.24731	<b>0.4545</b>	<i>REMSF*FRNTLOSS</i>	-0.01251	-0.032

## Predicted vs. Actual Costs



## Texas Corridor Model: Example Results

Land Use	Land Area (Acres)	Built Area (SF)	Location	Remainder (Acre)	Cost (\$2004)
Agri.	2.71	-	Abilene	7.21	\$ 10.7k
Agri.	3.43	-	Abilene	0	\$ 15.5k
Res.	0.23	1657	Houston	0	\$ 270k
Res.	0.54	5710	Corpus Christi	0	\$ 34.3k
Com.	1.24	43500	Houston	0	\$1,339k
Com.	1.63	55000	Houston	0.26	\$ 3,927k

## TCAD Cost Model

y=Sales Price

	Coef.	Std. Coef.		Coef.	Std. Coef.
(Constant)	126,169		<i>IMPSF*LGOFFICE</i>	43.13	<b>0.3216</b>
<i>LANDSF</i>	-4.678E-4	-0.0517	<i>IMPSF*smwarehs</i>	-28.39	-0.0221
<i>landSF*nwarea</i>	0	n/a	<i>IMPSF*lgwarehs</i>	-104.0	<b>-0.1054</b>
<i>landSF*searea</i>	14.53	<b>0.2927</b>	<i>IMPSF*NWarea</i>	0	n/a
<i>landSF*SwAREA</i>	2.635	0.0187	<i>IMPSF*NEAREA</i>	-24.71	-0.0597
<i>IMPSF</i>	70.29	<b>0.5327</b>	<i>IMPSF*SEAREA</i>	-65.78	-0.12
<i>IMPSF*condition</i>	7.292	0.0505	<i>impsf2</i>		
<i>IMPSF*LISTPRICE</i>	17.67	0.0227	<i>IMPSF2*APARTMT</i>	0	n/a
<i>IMPSF*TIMETREND</i>	12.13	<b>0.1045</b>	<i>IMPSF2*convstore</i>	-0.0113	-0.0189
<i>IMPSF*APARTMT</i>	0	n/a	<i>IMPSF2*lgwarehs</i>	0.002393	0.039
<i>IMPSF*HIRISE</i>	113.9	0.0433	<i>IMPSF2*hotel</i>	2.403E-4	0.027

## TCAD Cost Model: Example Results

Land Use	Land Area (Acres)	Built Area (SF)	Location	Cost (\$2004)
Retail	0.051	700	Austin	\$ 228k
Office	0.574	4500	Austin	\$ 762k
Restaurant	0.046	600	Austin	\$ 214k
Conv. Store	0.034	400	Austin	\$ 185k

## CoStar Cost Model

y=Sales Price

(Constant)	538,440		<i>IMPSF*IMPAGE</i>	-0.6854	<b>-0.2667</b>
<i>LANDSF</i>	0.5541	<b>0.4408</b>	<i>IMPSF*IMPCOND</i>	9.228	<b>0.3986</b>
<i>LANDSF*FRONTAGE</i>	-4.411E-05	-0.0544	<i>IMPSF*NUMFLOORS</i>	2.079	<b>0.1232</b>
<i>LANDSF*base uses<sup>1</sup></i>	0	n/a	<i>IMPSF*HOTEL</i>	39.09	0.0481
<i>LANDSF*COMRCL</i>	0.1482	0.0801	<i>IMPSF*base uses<sup>1</sup></i>	0	n/a
<i>LANDSF*HOTEL</i>	-12.21	-0.032	<i>IMPSF*INDSTR</i>	-13.85	<b>-0.112</b>
<i>LANDSF*indstrl</i>	0.2556	0.0223	<i>IMPSF*OFFICE</i>	14.97	0.0704
<i>LANDSF*MOBILE</i>	1.0782	0.0353	<i>IMPSF*RETAIL</i>	-13.89	-0.0627
<i>LANDSF*RETAIL</i>	5.625	<b>0.1068</b>	<i>IMPSF*SPECIAL</i>	36.62	0.0773
<i>LANDSF*SPECIAL</i>	-1.7	-0.0344	<i>IMPSF*BEXAR</i>	-8.839	-0.0173
<i>LANDSF*BEXAR</i>	-0.3483	-0.0329	<i>IMPSF*COLLIN</i>	15.35	0.0388
<i>LANDSF*COLLIN</i>	0.6327	0.0626	<i>impsf*Fort Bend</i>	9.308	0.0186
<i>LANDSF*BASE AREAS<sup>2</sup></i>	0	n/a	<i>IMPSF*BASE AREAS<sup>2</sup></i>	0	n/a
<i>LANDSF*DENTON</i>	0.7403	0.0514	<i>IMPSF*HARRIS</i>	-4.932	-0.0364
<i>LANDSF*FORTBEND</i>	-0.344	-0.0784	<i>IMPSF*TARRANT</i>	-5.274	-0.0286
<i>LANDSF*MONTGMRY</i>	-0.5359	-0.1587	<i>IMPSF*TRAVIS</i>	16.12	0.055
<i>LANDSF*TRAVIS</i>	-0.2555	-0.0613	<i>IMPSF*WILLIAMSON</i>	14.49	0.0245
<i>LANDSF*WILLIAMS<sub>n</sub></i>	-0.5083	<b>-0.3099</b>	<i>PRKCOVER</i>	6026	0.0771
<i>IMPSF</i>	21.16	<b>0.281</b>	<i>UNCONFIRMED</i>	206405	0.0162

## CoStar Model: Example Results

Land Use	Land Area (Acres)	Frontage (Ft)	Built Area (SF)	Build. Cond.	#Floors	Location	Cost
Retail	0.230	200	2400	Good	1	Houston	\$ 720k
Office	1.033	400	5000	Good	5	Houston	\$ 955k
Retail	0.190	100	1000	Good	1	Dallas	\$ 657k
Office	0.450	500	5500	Good	10	Dallas	\$ 1,080k
Retail	0.360	100	2300	Average	1	El Paso	\$ 190k
Office	1.250	500	3100	Good	6	El Paso	\$ 596k

# Cost Estimation Tool

**Right-of-Way Cost Estimate Worksheet**

**Texas Department of Transportation**

GENERAL ACQUISITION INFORMATION		Applicability of the Variable
Parcel Number:	1	Applicable
CSJ Number:	23	Applicable
Estimated Consumer Price Index (CPI) for the Acquisition Year:	0	Optional
Parcel Location:	Houston (Harris County)	Applicable
Type of Parcel Acquisition:	Non-Commercial Whole Taking	Applicable
Land Use:	Single Family Residence	Applicable
Acquisition Year:	2004	Applicable
Population Density (persons/square mile):	1967	Applicable

LAND CHARACTERISTICS		Applicability of the Variable
Land Area Acquired (SF):	10020	Applicable
Length of Parcel Frontage with the Main Road (FT):	176	Not Applicable
Is this parcel located on a corner (of two public roads)?	No	Applicable

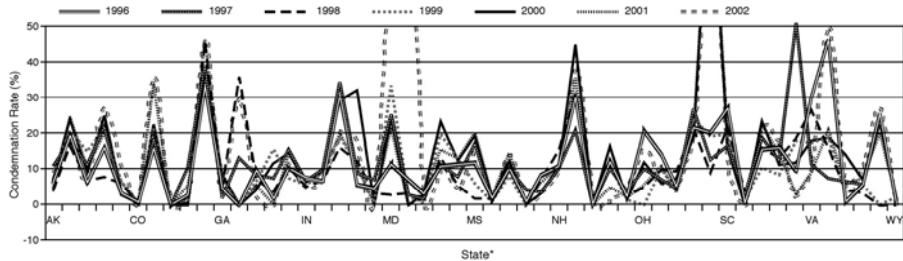
  

IMPROVEMENT CHARACTERISTICS		Applicability of the Variable
Acquired Building Area (SF):	1639	Applicable
Acquired Building Condition:	Average	Not Applicable
Age Of the Acquired Building (Years):	25	Not Applicable
Number of Floors in the Acquired Building:	1	Not Applicable
Number of Car's Closed Parking Spaces:	0	Not Applicable

## Cost Estimation: Test of Concept

Land Use	Location or Other Specifics	Absolute % Misprediction (Averaged across Properties)
Vacant & Agricultural	Rural & Urban Areas	28%
Vacant & Agricultural	Metropolitan Areas	40%
Residential	No Building Acquired	20%
Residential	Building Acquired	28%
Commercial	Austin	26%
Commercial	San Antonio	47%
Commercial	Dallas	31%
Commercial	Houston	31%

## Comparison of State Condemnation Rates



## ROW Laws vs. Condemnation Rates

Key Policies/Laws	Condemnation Rates				
	20%-50%	14%-20%	8%-14%	5%-8%	0%-5%
Allow taking of uneconomic remnants?	<b>89%</b>	78%	50%	70%	12%
Allow “quick taking”?	<b>50%</b>	23%	32%	12%	81%
Require state to pay owner a portion of litigation costs?	15%	<b>21%</b>	6%	18%	9%
Appraisal waiver limit up to \$10,000?	10%	2%	<b>12%</b>	8%	11%
Require proof of efforts to reach agreement through negotiation?	18%	25%	26%	51%	<b>76%</b>
Allow land consolidation?	34%	37%	45%	52%	<b>70%</b>

Key Policies/Laws	Condemnation Rate				
	20%-50%	14%-20%	8%-14%	5%-8%	0%-5%
Provide comprehensive & detailed laws on compensable items?	10%	15%	24%	36%	<b>51%</b>
Mandate early public involvement?	25%	31%	35%	40%	<b>46%</b>
Require sharing appraisal with property owners?	23%	27%	37%	43%	<b>54%</b>
Encourage & facilitate mediation?	30%	41%	47%	54%	<b>74%</b>
Allow > 30 days to petition against compensation offer?	22%	24%	32%	40%	<b>44%</b>
Allow early taking?	4%	16%	25%	20%	<b>31%</b>
Allow land exchange?	2%	6%	9%	10%	<b>12%</b>

## Most Influential ROW Laws

- States with lowest condemnation rates:
  - Allow early taking of land, land consolidation, & land exchange techniques,
  - Mandate early public involvement,
  - Require that appraisal details be reported to property owners,
  - Emphasize negotiation & mediation before filing for condemnation proceedings,
  - Provide comprehensive & detailed laws regarding compensable items.

# Condemnation Rates

- Condemnation Rates by State
- Comparison of Condemnation Rates Across the States

	Coeff.	t-Statistics	p-value
Constant	-2.244	-3.932	0
%land owned by the federal government	-0.013	-3.145	0.026
%population registered to vote as republicans	0.0196	2.345	0.066
%population with a college degree or higher	0.3294	1.978	0.105
%population residing in urban areas	0.5611	3.234	0.023
Rural highway mileage per capita	-0.232	-3.725	0.014

## **APPENDIX C**

**Category 2 and 3**  
**CSJs Included in the Preliminary Engineering Efficiency Report**

May 2003 - April 2006

DD	District Name	County	CSJ	ROW CSJ	Category	Low Bid & Misc.	Consultant PE	%	ROW Exp as of 4/30/06		Let Date (MMYY)
									%	%	
2	Fort Worth	Tarrant	0081-12-020	0081-12-036	2	3,017,711	0	0.0%		0.0%	07/03
2	Fort Worth	Tarrant	0081-12-031		2	5,500,540	0	0.0%		0.0%	07/03
2	Fort Worth	Tarrant	2266-02-096	2266-02-115	2	20,407,888	32,703	0.2%	0	0.0%	08/03
2	Fort Worth	Tarrant	8648-02-011	8648-02-012	2/10	9,884,182	8,676	0.1%	14,209,252	143.8%	07/04
3	Wichita Falls	Wichita	0044-01-080		3	24,711,869	0	0.0%		0.0%	08/05
3	Wichita Falls	Wichita	0156-04-092		3	13,676,155	0	0.0%		0.0%	08/05
5	Lubbock	Lubbock	0380-01-049		2	22,226,014	1,034,620	4.7%		0.0%	09/04
5	Lubbock	Lubbock	0380-01-064		2/12/7	136,239,326	3,862,495	2.8%		0.0%	12/04
5	Lubbock	Lubbock	0783-01-080		2	14,285,839	0	0.0%		0.0%	09/04
5	Lubbock	Lubbock	0905-06-045		2	9,854,213	704,044	7.1%		0.0%	10/03
9	Waco	Bell	0184-04-025	0184-04-042	3	30,816,746	1,582,672	5.1%	2,549,785	8.3%	07/05
10	Tyler	Gregg	1763-03-031	1763-03-036	3	4,147,924	40,738	1.0%	108,331	2.6%	08/04
12	Houston	Fort Bend	0027-12-110	0027-12-115	12/2/5	102,508,931	166,663	0.2%	2,663,654	2.6%	06/04
12	Houston	Fort Bend	0027-12-121	0027-12-124	11/5/10/2	45,142,442	0	0.0%	4,950	0.0%	01/06
12	Houston	Harris	0050-06-068		2	18,633,188	78,600	0.4%		0.0%	07/05
12	Houston	Harris	0050-06-069		2	13,721,136	0	0.0%		0.0%	07/05
12	Houston	Fort Bend	0089-09-064		10/7/2	39,699,626	788,974	2.0%		0.0%	06/05
12	Houston	Montgomery	0110-04-164	0110-04-171	2/5	39,213,067	113,507	0.3%	0	0.0%	06/04
12	Houston	Montgomery	0177-05-055	0177-05-079	2/1	65,278,219	288,755	0.4%	3,891,590	6.0%	09/04
12	Houston	Brazoria	0179-01-028	0179-01-040	2	12,122,644	1,234,840	10.2%	10,394,117	85.7%	01/04
12	Houston	Brazoria	0179-02-063		2	10,232,559	810,411	7.9%		0.0%	12/03
12	Houston	Brazoria	0179-02-068		2	38,904,679	1,723,849	4.4%		0.0%	02/04
12	Houston	Brazoria	0179-03-024		2	26,933,293	607,709	2.3%		0.0%	03/04
12	Houston	Brazoria	0179-05-001		2	3,737,639	0	0.0%		0.0%	02/04
12	Houston	Brazoria	0188-07-004		2	2,410,629	0	0.0%		0.0%	02/04
12	Houston	Fort Bend	0192-01-050	0192-01-081	2	13,561,131	874,911	6.5%	275,624	2.0%	08/04
12	Houston	Fort Bend	0192-01-082		2	8,278,659	58,685	0.7%		0.0%	11/03
12	Houston	Harris	0271-06-090	0271-06-100	2/7	87,361,184	4,086,603	4.7%	4,425,246	5.1%	07/03
12	Houston	Harris	0271-07-245	0271-07-237	2/5	168,766,538	9,083,397	5.4%	117,931,106	69.9%	02/05
12	Houston	Harris	0271-07-247	0271-07-264	2/5	203,140,413	9,558,897	4.7%	81,973,795	40.4%	01/05
12	Houston	Harris	0271-07-248	0271-07-237	2/5	242,449,787	13,319,119	5.5%	117,877,106	48.6%	07/04
12	Houston	Harris	0271-07-249	0271-07-262	2/5	138,226,129	5,664,528	4.1%	47,141,319	34.1%	03/05
12	Houston	Harris	0271-07-254	0271-07-261	2/7/5	88,293,304	4,516,677	5.1%	136,431,261	154.5%	12/04
12	Houston	Galveston	0389-11-032	0389-11-053	11/2/1	16,197,854	86,704	0.5%		0.0%	05/03
12	Houston	Harris	0500-03-475	0500-03-510	2	58,232,680	117,179	0.2%	6,305,590	10.8%	09/05
12	Houston	Brazoria	0598-02-019		2/1	26,397,638	1,009,995	3.8%		0.0%	06/04
12	Houston	Harris	0720-03-084		2/10/1	55,584,150	959,577	1.7%		0.0%	06/05

**Category 2 and 3**  
**CSJs Included in the Preliminary Engineering Efficiency Report**  
May 2003 - April 2006

DD	District Name	County	CSJ	ROW CSJ	Category	Low Bid & Consultant		% as of 4/30/06	ROW Exp %	Let Date (MMYY)
						Misc.	PE			
12	Houston	Brazoria	0912-31-120		2	5,947,268	416,096	7.0%		0.0% 01/05
12	Houston	Harris	0912-71-657	0912-71-790	10/2	15,426,761	0	0.0%	78,440	0.5% 02/06
12	Houston	Galveston	0976-03-049		2	15,989,325	1,295,359	8.1%		0.0% 06/05
12	Houston	Galveston	0976-05-014		2	8,247,800	82,937	1.0%		0.0% 06/05
12	Houston	Harris	0981-01-086		12/2/1/11	43,893,725	256,206	0.6%		0.0% 04/04
12	Houston	Brazoria	1412-02-012		2	2,699,218	0	0.0%		0.0% 02/04
12	Houston	Galveston	1607-02-016		2/1	16,334,028	254,399	1.6%		0.0% 10/04
14	Austin	Travis	3136-01-065		2	9,739,593	398,836	4.1%		0.0% 08/03
15	San Antonio	Bexar	0024-08-110		2/12/1	13,191,857	710,859	5.4%		0.0% 05/03
15	San Antonio	Bexar	0253-04-114	0253-04-125	2/12	84,407,659	383,370	0.5%	18,909,592	22.4% 09/05
15	San Antonio	Bexar	0521-04-189	0521-04-257	2	42,029,103	2,386,919	5.7%		0.0% 01/04
15	San Antonio	Bexar	0521-04-190	0521-04-258	2	81,563,924	3,419,394	4.2%	458,894	0.6% 01/05
15	San Antonio	Bexar	0521-04-209	0521-04-260	2	29,002,882	1,308,961	4.5%		0.0% 09/03
15	San Antonio	Bexar	0521-04-223	0521-04-263	2	169,200,122	11,693,143	6.9%	1,472,128	0.9% 10/04
16	Corpus Christi	Nueces	0102-01-081		2	21,296,537	530,253	2.5%		0.0% 08/03
16	Corpus Christi	Nueces	0326-01-030		2/7	16,851,750	480,797	2.9%		0.0% 09/03
17	Bryan	Brazos	0050-02-080	0050-02-091	12/11/10/3	25,681,213	0	0.0%		0.0% 12/05
18	Dallas	Ellis	0048-04-074	0048-04-080	2	4,228,199	220,171	5.2%	0	0.0% 08/04
18	Dallas	Collin	0364-04-037	0364-04-034	2/12/11/5/7/10	97,037,825	42,219	0.0%	105,356,187	108.6% 07/04
18	Dallas	Collin	0364-04-038		2/7	13,851,919	698,070	5.0%		0.0% 05/04
18	Dallas	Dallas	0442-02-127	0442-02-135	2	22,162,336	1,045,318	4.7%	39,212	0.2% 08/04
18	Dallas	Ellis	0442-03-031	0442-03-037	2/10	40,242,999	1,239,365	3.1%	0	0.0% 08/04
18	Dallas	Dallas	1068-04-115	1068-04-121	2	27,988,228	1,055,592	3.8%	18,106,377	64.7% 03/06
18	Dallas	Dallas	2374-02-110	2374-02-112	2/10/7	44,963,548	0	0.0%	1,093,132	2.4% 10/05
18	Dallas	Dallas	2374-03-054	2374-03-062	2	2,576,368	0	0.0%	277,423	10.8% 08/03
18	Dallas	Dallas	2374-03-064		12/2/1/7	15,125,529	114,942	0.8%		0.0% 07/05
18	Dallas	Dallas	2374-04-054		2	16,185,499	100,570	0.6%	3,525,175	21.8% 06/05
18	Dallas	Dallas	2964-01-024		2/7	50,600,041	528,013	1.0%		0.0% 07/04
18	Dallas	Dallas	2964-01-029		2	29,839,015	161,467	0.5%		0.0% 06/05
18	Dallas	Dallas	2964-01-030		2	27,911,833	307,626	1.1%		0.0% 07/05
18	Dallas	Denton	3547-01-009		2	33,517,914	1,286,993	3.8%		0.0% 10/03
18	Dallas	Dallas	8050-18-042	8050-18-038	2/10	24,956,834	390,597	1.6%	1,661,283	6.7% 02/05
20	Beaumont	Orange	0028-09-100		3	28,562,061	82,604	0.3%		0.0% 12/05
20	Beaumont	Orange	0028-11-164		3	55,198,945	0	0.0%		0.0% 12/05
21	Pharr	Cameron	0039-08-087		3	38,366,232	934,507	2.4%		0.0% 07/05
21	Pharr	Hidalgo	0039-18-086	0039-18-106	2	86,039,914	3,395,136	3.9%	140,518	0.2% 08/04
21	Pharr	Hidalgo	0039-18-105		2	3,695,776	0	0.0%		0.0% 09/04

**Category 2 and 3**  
**CSJs Included in the Preliminary Engineering Efficiency Report**  
May 2003 - April 2006

DD	District Name	County	CSJ	ROW CSJ	Category	Low Bid & Misc	Consultant PE	%	ROW Exp as of 4/30/06	%	Let Date (MMYY)
21	Pharr	Cameron	0039-19-042	0039-19-056	3	86,073,292	1,292,912	1.5%		0.0%	09/04
21	Pharr	Cameron	0039-19-057		3	9,115,215	0	0.0%		0.0%	09/04
21	Pharr	Hidalgo	0255-07-107	0255-07-113	11/2	6,884,415	0	0.0%	160,911	2.3%	06/03
21	Pharr	Hidalgo	0255-07-110		2	45,948,812	1,048,946	2.3%		0.0%	03/06
21	Pharr	Hidalgo	0255-08-091	0255-08-093	2/11	47,930,062	3,428,598	7.2%	1,793,032	3.7%	10/03
21	Pharr	Hidalgo	0255-08-094		2	37,315,843	9,999	0.0%		0.0%	02/04
22	Laredo	Webb	0018-06-138		3	14,672,954	521,704	3.6%		0.0%	07/05
22	Laredo	Webb	0038-01-033		3	19,544,590	0	0.0%		0.0%	09/05
22	Laredo	Webb	0542-01-039		3	26,386,197	2,148,608	8.1%		0.0%	08/04
24	El Paso	El Paso	0167-01-083		2	31,757,424	14,449	0.0%		0.0%	08/03
24	El Paso	El Paso	2552-03-033	2552-03-043	2	40,895,130	806,492	2.0%	403,273	1.0%	06/04
24	El Paso	El Paso	2552-03-041		2/1	25,080,923	0	0.0%		0.0%	06/04
86	Texas Turnpike Authority Division	Williamson	0151-05-081		2	32,705,475	1,978,250	6.0%		0.0%	11/03
86	Texas Turnpike Authority Division	Williamson	0683-06-024		2	37,707,206	8,568,436	22.7%		0.0%	01/04

Total	3,546,367,244	117,454,641	699,658,303		
Category 2	3,169,413,851	110,850,896	3.5%	697,000,187	22.0%
Category 3	376,953,393	6,603,745	1.8%	2,658,116	0.7%
Total	3,546,367,244	117,454,641	3.3%	699,658,303	19.7%

## CSJs Not Included in the Preliminary Engineering Efficiency Report

May 2003 - April 2006

DD	District Name	County	CSJ	ROW CSJ	Category	Low Bid & Misc	Consultant PE	%
2	Fort Worth	Tarrant	0014-02-014	0014-02-042	2	8,064,219	5,829	0.1%
2	Fort Worth	Tarrant	0014-16-231	0014-16-253	2	4,921,928	61,643	1.3%
6	Odessa	Midland	0005-15-056		3	498,442		0.0%
9	Waco	Coryell	0231-02-045		3	296,306		0.0%
9	Waco	Bell	0231-03-115		3	227,329		0.0%
12	Houston	Harris	0271-07-291		2	3,423,335		0.0%
14	Austin	Travis	0015-13-234		2	3,812,727	259,329	6.8%
14	Austin	Travis	0114-01-044		2	2,264,833	233,240	10.3%
15	San Antonio	Bexar	0521-04-266		2	81,463		0.0%
15	San Antonio	Bexar	0521-05-128		2	1,836,026	136,114	7.4%
15	San Antonio	Bexar	0521-06-125		2	340,947		0.0%
16	Corpus Christi	San Patricio	0074-05-086		2	450,162	172,104	38.2%
16	Corpus Christi	Nueces	0074-06-194		2	1,261,531	13,821	1.1%
16	Corpus Christi	Nueces	0101-06-100		2	214,249		0.0%
16	Corpus Christi	Nueces	0326-03-087		2	195,072		0.0%
16	Corpus Christi	Nueces	0617-01-149		2	606,152	20,974	3.5%
18	Dallas	Dallas	2374-01-111		2	1,142,119	114,308	10.0%
18	Dallas	Dallas	2964-01-034		2	9,432,432	584,983	6.2%
18	Dallas	Dallas	8050-18-037		2	Let by DART	788	
24	El Paso	El Paso	0167-01-082		2	2,377,891	1,061,199	44.6%

**TEXAS DEPARTMENT OF TRANSPORTATION**  
**Analysis of Preliminary and Construction Engineering Expenditures**  
**FY 2005 as of August 31, 2005**

<b>Cost Category</b>	<b>PE</b>		<b>CE</b>		<b>Total PE &amp; CE</b>	
	<b>\$</b>	<b>%</b>	<b>\$</b>	<b>%</b>	<b>\$</b>	<b>%</b>
<b>CONTRACTED:</b>						
Design	253,396,380	59.37%	26,348,338	13.17%	279,744,718	44.63%
Survey	46,729,219	10.95%	587,803	0.29%	47,317,022	7.55%
Lab and Core Tests	2,596,519	0.61%	6,773,277	3.39%	9,369,796	1.49%
<b>Total Contracted</b>	<b>302,722,118</b>	<b>70.93%</b>	<b>33,709,418</b>	<b>16.85%</b>	<b>336,431,536</b>	<b>53.67%</b>
<b>IN HOUSE COSTS:</b>						
In House Labor:						
Direct	41,917,054	9.82%	54,446,724	27.22%	96,363,778	15.37%
Payroll Additive (.6685)	28,021,550	6.56%	36,397,635	18.20%	64,419,185	10.28%
Total In House Labor	69,938,604	16.38%	90,844,359	45.42%	160,782,963	25.65%
Res Eng Overhead	21,910,953	5.13%	30,741,466	15.36%	52,652,419	8.39%
Equipment Rental	773,508	0.18%	10,200,572	5.10%	10,974,080	1.75%
Matls & Supplies	277,592	0.07%	1,304,387	0.65%	1,581,979	0.25%
Travel	63,609	0.01%	136,591	0.07%	200,200	0.03%
In House Lab & Core Tests	250,490	0.06%	21,078,147	10.53%	21,328,637	3.40%
In House Photogram Services	350,959	0.08%	0	0.00%	350,959	0.06%
Advertisement	1,053,695	0.25%	6,233	0.01%	1,059,928	0.17%
In House Survey	383,854	0.09%	55,463	0.03%	439,317	0.07%
Inter Agency Prof Fees	36,127	0.01%	0	0.00%	36,127	0.01%
Division Gen & Admin Indirect	13,381,087	3.13%	6,072,883	3.04%	19,453,970	3.10%
District Gen & Admin Indirect	9,347,652	2.19%	4,555,190	2.28%	13,902,842	2.22%
Other	6,348,267	1.49%	1,331,282	0.66%	7,679,549	1.23%
<b>Total In House Costs</b>	<b>124,116,397</b>	<b>29.07%</b>	<b>166,326,573</b>	<b>83.15%</b>	<b>290,442,970</b>	<b>46.33%</b>
<b>Total</b>	<b>426,838,515</b>	<b>100.00%</b>	<b>200,035,991</b>	<b>100.00%</b>	<b>626,874,506</b>	<b>100.00%</b>

NOTE: PE = Preliminary Engineering, includes all segment 76 (construction projects) function codes 1XX in FIMS.

NOTE: CE = Construction Engineering, includes all segment 76 (construction projects) function codes 3XX in FIMS.

**Contracted Preliminary Engineering Cost by District**  
**Fiscal Year 1996 through Fiscal Year 2005**

DISTRICT	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	TOTAL
Abilene	61,165.89	436,159.52	1,015,402.10	1,234,039.91	1,556,408.21	2,935,252.87	2,024,099.16	885,985.31	1,403,137.72	1,001,437.74	12,553,088.43
Amarillo	37,622.60	291,833.62	1,357,738.96	4,332,814.04	2,653,317.53	2,600,779.08	2,011,157.33	1,939,345.96	1,656,059.64	1,525,018.86	18,405,687.62
Atlanta	569,533.01	781,552.99	2,994,346.38	4,319,810.48	3,104,401.87	2,979,231.39	3,739,353.31	3,503,645.79	4,021,160.82	5,215,664.61	31,228,700.65
Austin	2,603,071.85	5,551,191.10	8,779,321.89	10,738,528.97	9,895,955.62	13,602,815.34	9,628,470.86	7,966,070.47	8,894,270.38	61,873,235.35	139,532,931.83
Beaumont	3,789,470.58	3,708,424.94	8,499,600.65	6,451,580.87	5,750,044.87	6,256,859.50	7,265,181.65	4,775,174.47	5,526,585.73	5,529,291.83	57,552,215.09
Brownwood	157,324.78	69,546.42	128,544.26	532,249.89	687,014.45	833,198.68	278,993.52	247,000.86	174,066.29	299,929.11	3,407,868.26
Bryan	1,152,437.78	2,263,436.25	3,247,556.83	3,871,136.50	3,663,958.56	4,167,149.11	4,091,853.07	3,309,186.15	2,721,243.43	3,921,288.34	32,409,246.02
Childress	62,999.20	23,437.90	100,297.50	586,646.28	1,235,973.86	1,685,963.04	995,763.74	1,252,379.68	433,213.29	993,922.07	7,370,596.56
Corpus Christi	990,298.83	1,852,298.06	1,906,309.82	1,528,984.83	1,720,604.79	3,641,360.72	4,949,923.02	4,841,447.99	4,749,270.51	5,570,443.62	31,750,942.19
Dallas	10,300,618.09	10,597,565.27	13,891,839.83	13,327,957.33	12,681,398.38	13,102,765.99	14,948,670.71	20,939,940.14	23,272,166.30	33,513,259.21	166,576,181.25
El Paso	2,133,652.27	4,176,209.82	3,109,738.40	2,678,682.88	3,663,532.88	9,663,670.80	7,221,750.30	5,447,121.44	10,340,826.59	15,816,924.34	64,252,109.72
Ft Worth	2,530,081.94	3,920,585.86	3,167,712.94	4,730,232.57	7,643,665.06	14,206,030.25	14,989,000.91	12,653,890.12	10,084,914.59	10,887,563.06	84,813,677.30
Houston	12,221,601.96	11,449,772.89	19,463,435.94	15,334,946.49	19,122,994.19	34,773,661.72	47,404,298.11	41,546,670.04	52,710,856.69	42,345,365.62	296,373,603.65
Laredo	1,855,519.13	2,396,515.96	3,768,784.40	6,588,668.38	4,035,304.08	7,072,083.30	5,302,971.24	7,757,953.86	8,725,093.58	9,115,655.29	56,618,549.22
Lubbock	360,199.29	391,247.59	1,710,437.31	4,143,178.21	2,485,442.84	3,040,186.82	4,263,808.89	3,720,157.89	3,975,036.73	3,419,815.06	27,509,510.63
Lufkin	1,115,600.20	2,255,585.80	4,767,353.94	7,474,680.01	10,859,525.64	8,602,818.22	4,376,823.31	2,823,373.57	4,382,472.54	5,770,742.41	52,428,975.64
Odessa	47,804.12	186,437.35	885,225.54	1,794,902.93	1,296,470.74	1,986,924.21	1,119,196.46	384,455.51	468,961.57	1,094,286.05	9,264,664.48
Paris	963,469.32	1,799,040.52	2,883,503.79	4,635,736.91	6,892,865.77	5,284,367.09	3,125,584.64	774,654.09	1,703,710.95	2,905,429.12	30,968,362.20
Pharr	6,320,191.72	6,067,890.49	2,981,955.18	3,825,290.61	9,208,219.14	12,517,058.91	11,096,514.60	12,161,617.23	10,841,858.65	9,572,645.99	84,593,242.52
San Angelo	48,617.50	76,767.50	505,971.92	1,319,644.43	1,162,701.28	1,072,824.87	2,017,972.54	846,652.77	1,034,948.43	2,074,437.83	10,160,539.07
San Antonio	9,614,660.33	9,708,198.29	7,148,741.81	11,326,126.39	19,416,556.95	26,315,242.45	19,955,835.02	16,555,660.15	17,060,291.23	54,031,768.30	191,133,080.92
Tyler	1,056,725.95	1,526,610.84	2,399,531.05	3,388,579.28	6,849,897.95	6,325,782.52	3,518,037.74	2,649,874.04	2,650,338.36	4,506,952.71	34,872,330.44
Waco	1,674,139.88	4,200,422.56	4,040,912.37	3,729,205.40	5,048,092.02	8,278,811.69	10,869,788.18	5,421,777.44	10,254,793.03	12,760,889.04	66,278,831.61
Wichita Falls	30,482.50	121,174.97	219,041.10	565,931.80	2,317,640.83	1,139,767.52	1,298,207.72	1,158,650.19	1,700,506.82	1,871,607.16	10,423,010.61
Yoakum	609,862.83	496,255.62	1,183,652.72	1,494,688.67	2,345,425.29	1,282,006.74	2,110,407.72	1,066,863.28	2,506,087.86	3,293,061.15	16,388,311.88
<b>TOTALS</b>	<b>60,307,151.55</b>	<b>74,348,162.13</b>	<b>100,156,956.63</b>	<b>119,954,244.06</b>	<b>145,297,412.80</b>	<b>193,366,612.83</b>	<b>188,603,663.75</b>	<b>164,629,548.44</b>	<b>191,291,871.73</b>	<b>298,910,633.87</b>	<b>1,536,866,257.79</b>

Source: Monthly Preliminary Engineering Reports

Prepared By: Latrice Good, Accounting Management, Finance Division

File Name: D:/My Computer/Excel/District Contracted Preliminary Eng Cost

**Total Preliminary Engineering Cost by District**  
**Fiscal Year 1996 through Fiscal Year 2005**

DISTRICT	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	TOTAL
Abilene	1,251,921.14	1,738,126.59	2,301,831.87	2,251,537.30	3,224,837.51	4,864,325.64	4,141,425.28	2,945,876.26	3,091,417.21	2,330,843.78	28,142,142.58
Amarillo	863,999.01	1,403,226.04	2,490,627.41	5,602,366.30	4,463,825.31	4,268,127.80	3,840,879.02	3,654,063.88	3,157,357.57	3,199,037.53	32,943,509.87
Atlanta	1,750,256.99	2,141,110.84	4,481,128.83	6,101,417.90	4,894,584.71	4,808,160.50	5,979,768.24	5,367,016.18	6,569,293.29	7,956,137.97	50,048,875.45
Austin	6,527,821.56	9,812,901.96	13,729,948.37	16,359,560.43	15,444,373.79	19,432,758.13	16,153,479.30	14,309,978.91	14,719,058.03	69,535,394.30	196,025,274.78
Beaumont	5,800,126.16	5,762,004.63	11,089,478.16	8,362,180.60	7,982,814.20	8,250,704.10	9,524,736.63	7,216,614.19	7,344,882.93	7,774,743.86	79,108,285.46
Brownwood	1,259,365.24	1,044,808.00	1,259,912.98	1,695,243.03	2,067,970.55	1,987,819.31	1,430,099.22	1,581,043.58	1,306,783.00	1,627,020.34	15,260,065.25
Bryan	2,214,863.69	4,014,225.73	6,114,495.32	6,620,169.91	6,068,272.95	7,008,883.25	7,397,488.03	6,732,715.80	5,833,928.26	6,706,675.54	58,711,718.48
Childress	446,972.06	428,459.43	761,604.45	1,367,258.01	1,977,163.24	2,597,870.26	1,860,072.20	2,199,660.65	1,416,999.57	1,755,252.67	14,811,312.54
Corpus Christi	3,296,202.65	3,699,547.49	3,969,230.25	3,971,419.06	4,903,516.28	7,240,923.15	8,078,054.60	8,264,873.56	8,171,645.17	9,125,710.25	60,721,122.46
Dallas	19,089,180.23	19,112,917.70	22,902,588.63	22,327,251.55	22,103,932.40	25,106,027.28	28,901,902.56	34,976,411.49	37,146,887.47	46,917,868.07	278,584,967.38
El Paso	4,714,296.93	7,287,218.37	6,201,599.63	5,829,378.13	7,512,369.14	13,540,501.51	11,885,608.48	9,862,717.82	14,866,446.57	20,285,187.16	101,985,323.74
Ft Worth	7,730,968.54	9,342,173.98	9,712,989.20	11,155,842.60	14,055,610.11	20,855,916.97	21,434,102.55	20,331,550.48	17,776,347.90	18,831,733.47	151,227,235.80
Houston	26,350,400.01	24,780,484.15	34,260,568.02	32,409,033.39	36,207,971.71	53,673,722.58	67,291,744.52	65,297,160.14	74,935,939.25	63,212,824.28	478,419,848.05
Laredo	2,722,218.30	3,379,013.14	5,453,416.30	8,197,702.18	5,628,691.20	9,247,773.98	7,227,171.53	10,181,741.66	11,367,150.85	11,479,202.35	74,884,081.49
Lubbock	1,961,361.49	1,902,637.97	3,316,398.18	6,059,047.17	4,506,107.86	5,160,723.85	6,961,353.13	5,787,880.56	6,653,947.47	5,791,411.49	48,100,869.17
Lufkin	2,419,445.98	3,951,583.15	6,754,898.46	9,649,074.13	13,525,804.50	10,635,422.73	6,407,353.38	5,233,543.13	6,452,442.62	7,838,304.13	72,867,872.21
Odessa	1,179,063.43	1,368,708.25	2,358,530.77	2,979,625.26	2,825,447.33	3,701,749.25	2,303,328.57	1,892,036.11	1,696,395.02	2,779,558.95	23,084,442.94
Paris	2,436,561.73	3,681,006.96	5,268,523.80	7,007,597.47	9,127,881.75	7,476,664.91	5,392,030.57	2,871,171.68	3,820,230.36	5,469,900.18	52,551,569.41
Pharr	8,428,232.67	8,434,543.94	5,520,908.89	6,864,445.21	12,800,037.98	16,187,332.08	15,389,783.59	16,181,138.96	14,452,938.97	12,890,499.47	117,149,861.76
San Angelo	1,025,531.09	1,170,584.86	1,546,475.50	2,714,767.57	2,337,534.56	2,592,830.27	3,428,521.71	2,042,023.63	2,158,909.49	3,302,681.18	22,319,859.86
San Antonio	13,787,106.57	13,620,969.49	11,418,689.34	15,942,036.20	25,024,784.66	31,279,221.02	26,031,661.13	23,706,609.98	24,668,321.89	62,428,037.65	247,907,437.93
Tyler	3,087,901.33	3,679,053.25	4,584,675.42	5,954,930.57	10,039,916.62	9,523,806.86	6,925,567.12	5,925,862.07	5,487,180.99	7,558,149.61	62,767,043.84
Waco	3,865,477.99	6,701,754.67	7,172,376.21	6,835,474.78	8,349,990.25	11,398,703.76	14,982,223.32	9,841,499.98	14,881,421.63	17,557,460.23	101,586,382.82
Wichita Falls	1,038,245.20	1,397,942.53	2,023,495.43	2,144,018.31	3,869,059.25	2,532,265.75	3,013,086.11	3,225,889.73	3,686,607.94	3,706,531.92	26,637,142.17
Yoakum	2,043,717.78	1,846,491.97	3,035,444.97	3,200,506.42	4,054,230.82	3,058,306.69	4,044,156.75	3,175,559.32	4,434,215.38	4,919,228.18	33,811,858.28
<b>TOTALS</b>	<b>125,291,237.77</b>	<b>141,701,495.09</b>	<b>177,729,836.39</b>	<b>201,601,883.48</b>	<b>232,996,728.68</b>	<b>286,430,541.63</b>	<b>290,025,597.54</b>	<b>272,804,639.75</b>	<b>296,096,748.83</b>	<b>404,979,394.56</b>	<b>2,429,658,103.72</b>

Note: General and administrative costs are not included in these amounts.

Source: Monthly Preliminary Engineering Reports

Prepared By: Latrica Good, Accounting Management, Finance Division

File Name: D:/My Computer/Excel/District Total Preliminary Engineering Cost

### ROW Expenditures Excluding TxDOT Labor and Indirects

District	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Abilene	31,161	27,529	149,001	999,066	207,714	950,881	115,334	2,871,141	2,107,136	1,589,197
Amarillo	1,905,907	860,728	741,809	350,407	109,948	101,251	206,572	351,817	961,479	218,218
Atlanta	1,190,077	1,583,070	1,472,118	2,711,213	1,559,946	2,207,992	1,313,114	2,856,065	2,781,958	3,769,813
Austin	21,284,236	31,243,925	5,778,906	17,161,592	15,869,563	20,578,047	22,511,648	10,528,123	10,840,170	22,698,370
Beaumont	2,417,415	2,198,756	3,582,681	3,207,282	2,014,233	1,427,299	2,875,973	2,047,273	4,089,356	2,078,377
Brownwood	492,151	955,301	1,300,103	1,845,525	2,322,973	1,009,894	494,504	254,979	477,913	631,103
Bryan	350,564	1,107,529	1,075,361	2,114,810	1,817,905	5,006,513	4,491,545	6,226,221	11,432,735	12,185,713
Childress	2,111	238,331	105,686	251,427	516,656	159,961	2,367,834	947,853	660,123	985,257
Corpus Christi	2,363,233	1,153,606	781,632	815,765	274,056	202,019	227,356	2,294,898	2,335,793	3,018,215
Dallas	10,215,466	23,165,584	6,957,374	36,799,650	105,415,024	87,082,879	62,812,663	88,043,073	36,225,067	68,186,033
El Paso	560,236	4,114,336	5,548,943	2,320,260	3,220,139	2,845,199	2,918,234	4,926,031	487,468	3,779,805
Fort Worth	17,656,792	25,243,474	25,486,391	28,007,075	27,718,515	34,313,355	14,750,054	11,261,979	12,253,973	42,773,660
Houston	41,591,972	39,099,649	43,098,523	50,265,469	33,107,571	32,527,670	32,943,226	77,559,726	106,979,574	339,539,604
Laredo	1,008	8,030	97,354	198,740	46,360	1,629,182	1,816,993	2,771,456	20,846,278	(16,826,694)
Lubbock	2,459,935	13,238,381	16,219,781	18,270,491	21,379,998	19,064,794	51,240,764	8,904,505	3,205,626	1,985,158
Lufkin	609,260	1,195,891	551,831	729,748	1,875,555	5,172,493	5,335,560	2,759,553	2,367,799	2,197,863
Odessa	65,898	7,322			50,456	383,923	31,410	19,741		19,259
Paris	18,981	164,569	533,435	999,435	2,253,919	1,293,753	234,264	1,120,472	2,965,536	1,855,034
Pharr	2,517,053	677,302	3,110,013	7,868,236	5,976,262	2,731,021	5,040,595	5,763,799	12,529,915	13,961,911
San Angelo	257,441	90,302	174,607	228,785	155,688	562,910	485,879	95,877	4,304	156,181
San Antonio	8,569,913	3,330,182	7,857,777	7,729,163	6,973,974	9,343,071	21,167,337	9,223,149	27,244,160	32,094,232
Tyler	2,923,777	2,295,794	1,003,527	1,518,432	4,533,016	7,921,067	2,971,783	7,840,184	4,538,180	9,727,006
Waco	2,098,357	2,507,206	2,553,789	3,086,112	3,887,255	3,429,104	3,450,044	4,739,614	7,279,509	28,999,912
Wichita Falls	3,100	268,991	405,486	659,152	246,718	870,391	1,567,691	1,306,539	2,099,294	4,420,716
Yoakum	1,376,463	3,290,754	4,137,268	7,202,879	1,963,536	3,846,176	2,195,236	1,586,732	3,289,026	2,074,139
Total District	120,962,505	158,066,542	132,723,395	195,340,714	243,496,980	244,660,846	243,565,616	256,300,799	278,002,374	582,118,082

Division	1,894	19,469	41,103	12,134	35,900	34,606	49,134	23,372	1,669	32,554
Right of Way										
Texas Turnpike Authority										
Total Division	1,894	19,469	41,103	12,134	35,900	1,791,113	12,675,143	126,295,218	108,278,263	164,145,842

<b>Grand Total</b>	120,964,398	158,086,011	132,764,498	195,352,848	243,532,880	246,486,564	256,289,893	382,619,389	386,282,306	746,296,478
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## **APPENDIX D**

## Questions received since the first Lump Sum Distribution Workgroup meeting May 2.

1. Is the workgroup charged with determining the total size of both the PE and ROW funding? or only the size of one piece (Category 2 and 3)?
  2. What is the amount of consultant PE expenditures outside of Categories 2, 3, and 4?
  3. What are the historical expenditures of PE and ROW by district for the previous 10 years?
  4. What factors make one project's PE greater than another?
  5. What factors make one project's ROW greater than another?

6. How big is the total pie for both PE and ROW?
7. How big should the Category 2/3/4 slice of the PE and ROW be?
8. How should these slices be divided between Categories 2, 3, and 4?
9. Within each category, how should allocations be made between MPOs?
10. On pages 1 & 2 the definitions of PS&E and PE are provided. On page 2 Montie introduces the task as recommendation of distribution of ROW and PE funding to MPOs and TxDOT Districts...My question is does our purpose involve distribution of funds for PE or for PS&E or for both PE and PS&E?

11. On page 5 Olson, L/Wells, W. mentioned DCIS in a statement. The Texarkana MPO has access to some DCIS screens but I was wondering if all MPOs do or will have access and will training be available for its use?

12. On page 5 under *Discussion-Review of funding formulas & application* Montie presents a table of STP Breakdown for Construction. Is population the basis for these percentages, is some other single basis or is it a combination of factors?

13. At our Technical Committee meeting today one of our members asked if the MPO staff will be selecting the consultants for PE work and managing the contract? Will the MPO staff be selecting and managing ROW contracts (I.e., appraiser contract, negotiations, etc.)

14. What entities will be allowed to perform PE or PS&E work for a project other than TxDOT staff or a consultant? (a) Would a city engineer be allowed to do the work as long as it conforms to state standards? What if that engineer works for a city where the MPO staff is housed? (b) If an MPO housed within a city is allowed to use city engineers, can a stand-alone MPO use in-house engineers? (c) All of these possibilities would, of course, allow an MPO to save that money and reallocate it toward ROW or Construction costs.
15. Will the MPOs be expected to fund engineering services for national/statewide mobility projects such as IH-69 partially or fully from the Category 3 funds or are we only talking about projects that are “local” in nature?

## **APPENDIX E**

Technical Report Documentation Page

1. Report No. FHWA/TX-05/0-4079-1	2. Government Accession No.	3. Recipient's Catalog No.	
4. Title and Subtitle <b>RIGHT-OF-WAY COSTS AND PROPERTY VALUES: ESTIMATING THE COSTS OF TEXAS TAKINGS AND COMMERCIAL PROPERTY SALES DATA</b>		5. Report Date August 2004	6. Performing Organization Code
7. Author(s) Kara M. Kockelman, Jared D. Heiner, Shadi Hakimi, and James Jarrett		8. Performing Organization Report No. 0-4079-1	
9. Performing Organization Name and Address Center for Transportation Research The University of Texas at Austin 3208 Red River, Suite 200 Austin, TX 78705-2650		10. Work Unit No. (TRAIS) 11. Contract or Grant No. Technical Report 0-4079	
12. Sponsoring Agency Name and Address Texas Department of Transportation Research and Technology Implementation Office P.O. Box 5080 Austin, TX 78763-5080		13. Type of Report and Period Covered Technical Report 9/1/2003-8/31/2004	
14. Sponsoring Agency Code			
15. Supplementary Notes Project performed in cooperation with the Federal Highway Administration and the Texas Department of Transportation. Project Title: Impacts of Landuse and Landuse Change on Right-of-Way Cost			
16. Abstract Right-of-Way (ROW) acquisition for highways and other transportation improvements can be very expensive, time-consuming, and socially sensitive. Accurate ROW cost estimation, efficient acquisition practices, and appropriate federal and/or state laws can be keys to successful completion of ROW acquisition. This report reviews the literature related to ROW acquisition, and highlights the findings of expert interviews. Hedonic price models were proposed using recent acquisition data from several Texas corridors and separate databases of full-parcel commercial sales transactions for Texas' largest regions. For the latter, the method of feasible generalized least squares (FGLS) was employed to correct the standard error terms for heteroskedasticity. The models presented here add considerably to the literature and research in this area and should prove valuable to ROW professionals, transportation planners, developers, appraisers, and others involved in ROW cost estimation and commercial property valuation. A cost estimation tool developed in Excel, accompanied by a supporting document providing instructions on its application, was presented to Texas ROW administrators as a potential budget estimation tool for future tasks. Furthermore, state condemnation statutes were aggregated and then compared and contrasted for ROW acquisition, noting their associated weaknesses and strengths. This report recommends modifications to current laws in order to expedite the acquisition process, minimize cost, and build property owners' trust in government actions. Additionally, it describes how state characteristics impact real property condemnation rates. Results indicate that states with the lowest condemnation rates allow early taking of land, land consolidation and land exchange techniques; mandate early public involvement; and require that appraisal details be reported to property owners. They also emphasize negotiation and mediation before filing for condemnation proceedings, while providing comprehensive and detailed laws regarding compensable items. This research also found that variables like rural highway mileage, fraction of land owned by the Federal Government, urban area population, and educational attainment are statistically significant in predicting condemnation rates.			
17. Key Words Right of Way Acquisition, Property Valuation, Cost Estimation, Commercial Real Estate, Condemnation Rates, Uniform Act		18. Distribution Statement No restrictions. This document is available to the public through the National Technical Information Service, Springfield, Virginia 22161; <a href="http://www.ntis.gov">www.ntis.gov</a> .	
19. Security Classif. (of report) Unclassified	20. Security Classif. (of this page) Unclassified	21. No. of pages 142	22. Price

- Estimates of Project and Parcel Valuation—Alaska, Connecticut, Iowa, Michigan, Virginia, Washington
- Management Information Systems—Idaho, Massachusetts, Oklahoma
- Estimation of Administrative Costs—Wisconsin.
- Corridor preservation or advanced purchasing is being undertaken in such states as Iowa, Kansas, Michigan, Minnesota, and Washington.
- Other interesting approaches underway in the states include new public information efforts (Alaska—open houses for affected landowners; Oklahoma—advance contact) and leasing, which is underway in numerous states.

The complete set of survey responses is included in Appendix B.

### **3.2 Synthesis of Texas Districts' Survey Results**

#### **3.2.1 Introduction**

A survey of Texas Department of Transportation (TxDOT) districts was also conducted through an email survey instrument sent to districts in February and March 2003.

All but seven of the TxDOT district offices provided information about:

- (1) Current procedures used in the district to forecast ROW costs for projects;
- (2) The types of parcels and other issues, which present the most difficulty in preparing estimates;
- (3) What changes and improvements, if any, should be made to the current procedures?
- (4) What new or additional information would aid staff's work in estimating costs; and
- (5) Other aspects about the estimation process.

The seven non-responsive districts were mostly rural: Pharr, Paris, Childress, with a sprinkling of medium-sized regions: San Angelo, Wichita Falls, Laredo. El Paso was the only metro district not to respond. Because all but one metro, most urban, and many rural districts provided data, the information should cover the major problems throughout the state. The email survey instrument can be viewed in Appendix D, complete responses to each question can be found in Appendix E, and respondents' contact information is contained in Appendix F.

#### **3.2.2 General Findings**

The findings of this survey are as follows:

- Issues and concerns vary greatly by the type and size of district (metro-urban-rural).
- Many of the difficult parcels or problems in estimating ROW costs are either present or absent in any one district. For example, utility relocation was identified by a number of districts as presenting major problems, while in other districts, it was never mentioned.

- The major metro areas share some similarity in problems but also exhibit diversity. Dallas does not have problems with the same types of parcels as Houston, and no area seems to have Houston's problems with condemnation attorneys. Austin and San Antonio appear not to have similar problems.
- Accuracy of estimates are deemed to be primarily a result of many factors: the amount and quality of information available, need for quick turnaround of an estimate, complex parcels, commercial establishments, parking for businesses, as well as many unknown and uncontrollable items. (For example, the rate of condemnation, legal damages, and current state statutes relating to obtaining clear titles are issues.) For most districts, the problems are primarily technical in nature; yet for Houston, the biggest issues are thought to be political and legal.
- Because of the uncontrollable factors, complexity of some parcels, and unpredictability of legal proceedings, many ROW administrators do not believe significant improvements in cost estimates can be achieved through a more systematic approach or quantitative model. Several district administrators, however, do believe greater quantification would improve estimates, and they suggested characteristics of a reliable and useful estimation technique.
- Most ROW administrators are unaware of any potential improvements in estimation from other states, and only a handful suggested anyone who might be contacted for further information.
- A number of ROW administrators would like to regularly discuss possible solutions and approaches in parcel cost estimation with other ROW administrators.

Detailed survey results are included in Appendix E.

## **Appendix E: Detailed Findings of Survey from Texas Districts' ROW Administrators**

### **I. Current Procedures In Your District**

#### **1. Budget Estimates—**

How do you prepare budget estimates for future ROW projects?

What are the procedures used?

Are they informal “guess estimates” or is there a fairly precise methodology used?

Are the estimates made primarily on individual parcels (micro) or on the entire project or major sections of a project (macro)?

Please be specific and if it applies to your district, please describe the procedures for the schematic stage, multiple alignment stage, preferred alignment stage, and when your district has the final ROW maps.

*While there is great variation in how the districts describe their estimation procedures, and several districts do not believe there is much consistency across the districts, there may be more comparability than thought. All districts proceed from a general or macro approach in the early stages to a more refined micro (parcel by parcel) procedure as ROW choices are made. Much variation across the districts probably is due to differences in project sizes, the stage at which projects are first estimated, and information availability. There does appear to be differences across districts on parcel types, project types, condemnation rates, and a host of other factors. However, it seems that a parcel involving strip shopping center parking would be estimated similarly (procedure, not the value) in most metro areas. Likewise, partial takings of rural farmland would be estimated similarly.*

*The procedures used by four districts are provided below. They show both the diversity and the similarity in general approaches.*

*The first comes from one of the major metro districts (Dallas).*

“The estimation process is viewed in successive, distinct stages.

- a. Schematic stage—This is a very general regional estimate at the earliest stages of a potential project. At this point they usually only have a centerline and a 300 foot corridor to go on. ROW develops an estimate, based on the area and type of project (rural, metro, widening-new etc.), using a “cost per mile” calculation. Successive estimates become much more refined for the following stages.
- b. Multiple alignments—usually 3-4 although sometimes as high as 5.
- c. Preferred Alignment
- d. ROW Maps—parcel by parcel.

*Once estimates, however rough, are developed at stages b, c, or d, a district may add a certain contingency percentage for expected damages, unknowns, past experiences, and other contingencies.”*

*The second example comes from an urban area district (Waco).*

“The procedures are very similar to other district offices. In a nutshell, if they (ROW staff) have a ROW map, they estimate how many square feet of property will be needed, multiply that by a price per square foot for the different types of parcels, and then add the parcel amounts for an aggregate number. If they have only schematics, they look at each property and develop a very gross estimate.”

*The third comes from a mostly rural district (Brownwood).*

- “Visually inspect project
- Calculate land area
- Categorize property types
- Discuss land values by category with local appraisers and realtors
- Value improvements
- Estimate damages to any remainders (fencing etc.)
- Calculate utility adjustments
- Estimate relocation cost
- Estimate closing cost

A fairly precise methodology is utilized. Estimates are normally made on a per-parcel basis. Each parcel is visually inspected and an estimate is applied to known cost of similar land and improvements along with other known cost of acquiring real property.”

*And the fourth example comes from a small urban area district (Tyler).*

“If the estimate is just for programming and a best guess is needed quickly-- We talk to the project manager and may drive the project. We also contact local real estate agents and call utility companies to get a rough estimate. We may only have a county map with the limits shown and maybe need estimates for taking ROW off one or both sides.

If we need a more detailed estimate, we use whatever information we have available at the time. We use approved schematics, preferred alignment or approved row map. Drive the project and look at each parcel for damages to the remainder, improvements in the taking, utility lines on public and private row.”

## 2. Accuracy of Estimates—

How well has your district done in terms of accuracy?

When the estimate is "off", is it generally low or high?  
(Please quantify in percentages your past accuracy.)

Why?

*On the general question (how well has your district done), the responses were fairly evenly divided between positive and neutral, with almost no one saying they were doing a poor job. At least one-third of the districts said they have never looked at the accuracy of their estimates.*

*In looking at the districts that provided a numerical estimate of their accuracy, the most common range was 15%-30% off. Twenty-five percent was cited by a number of districts and might serve as the point estimate.*

*Of those who provided a response, the majority of districts, probably two-thirds, said their estimates were too low, compared to the eventual ROW costs. Some districts cited specific reasons for the differences (e.g. rate of condemnation proceedings, the likelihood of an unpredictable judgment for damages and so forth). Some districts said estimates are really nothing more than "guess-estimates", and others did not cite any reasons.*

*Several districts are now regularly adding contingency percentages on top of their best estimates. One district is adding 20% for its rural parcels and 33% for its urban parcels. Other districts are in the 30%-40% range. One said it has gone as high as 50%.*

*One metro district stated that even adding a "fudge factor" was less than adequate because they see considerable variation by project within the district. The estimates depend to some extent on characteristics of the projects themselves (widening from 2 lanes to 4, widening from 2 lanes to 6, as opposed to new alignments etc.). The estimates also depend to some extent on each project's condemnation rates (as high as 40-50% on some projects), donations (on one recent project, more than 60% of parcels were donated), close-by-deed rates (proportion accepting TxDOT's offer), and jury awards. Another metro district believes a good measure of how well they are estimating is the proportion of trials that terminate early. In their view, when more owners decide after a day or two that they will not receive large awards, that vindicates the accuracy of their original parcel estimate.*

3. What types of parcels, if any, are the most difficult to estimate without using outside appraisers?

- *Parking for commercial properties (strip shopping, stand alone retail, office buildings, and display (auto lots) businesses) all were mentioned. Depletion of strip shopping parking can mean the property is limited in its choice of possible tenants and also that its income potential and long-term value is diminished.*
- *Billboards—Dallas and Houston, although for different reasons*
- *Utilities in rural areas—availability of information, timeliness of information, discrepancies between expected and actual locations;*
- *Utilities in metro areas (problem is obtaining information on "what is where" although once they have that information, the estimation process is straightforward)*

- *Chain and franchise stores because of parking considerations and expertise of property owners in negotiating with departments of transportation on ROW;*
- *Contaminated parcels—Houston*
- *Industrial parcels—A higher proportion go to condemnation;*
- *Churches—Parking is very important and they rarely accept TxDOT's offer;*
- *Mixed-use parcels—More complex than single-use parcels and more difficult to find comparable properties;*
- *Large irrigation systems—Several rural districts*
- *Obtaining information on commercial properties was cited as a problem for most metro districts.*

4. What is the timing of the estimation/appraisal link—are estimates needed months (years?) in advance of any appraisal data?

The typical timeframe for large projects was estimated to be three years, with some stretching out to five and seven years. Small projects usually required less than a year, and sometimes only six months.

One district noted the irony of the tradeoff between amount of information and available time. For TxDOT estimation purposes, the district usually has sufficient time to prepare estimates but not much information, whereas in providing estimates to local government officials, the district generally has sufficient information but not much time.

The ROW administrator of one metro district argued that it is very difficult to forecast property values several years into the future. Not only is it difficult to forecast the national and state economic conditions and how property values in the aggregate will change over that period of time, but their estimates also must take into account projections about values for different areas and different classes of property within the metro region, and then incorporate the specific factors for each parcel.

5. How common are “partial takings” and “uneconomic remainders?”

*85%-95% are partial takings. Uneconomic remainders are either non-existent (rural districts) or a maximum of 5% in several districts. Perhaps half of the districts with uneconomic remainders expressed displeasure about the cumbersome nature of current TxDOT procedures on uneconomic remainders.*

Do they differ by project/corridor type (e.g., upgrades vs. expansions vs. new-location freeways)?

*Generally, partial takings are associated with upgrades and expansions vs. new locations. Partial takings are more common in rural than in metro and urban districts. Whole takings are most common with city parcels, especially when new locations are involved. Uneconomic remainders are equally common on upgrades and new locations.*

*In terms of expense, partial takings are more expensive on upgrades and expansions than on new locations. When uneconomic remainders occur with new locations, at least one district tries to acquire entire parcels rather than deal with denial of access, bisected properties, and control of access problems.*

6. In your district, do the planned alignments consider ROW costs to the extent they should (e.g., via access issues, creation of uneconomic remainders, generation of lawsuits)?

*Most districts said yes, although several expressly indicated more could be done. A number of districts indicated coordination between the design and ROW staffs had improved noticeably from the past. In the past, ROW staffs were sometimes not consulted about possible costs until late in the process. Now many of the districts appear to view ROW staffs as part of the decision-making process and their advice is used in determining if small alignment changes could affect cost significantly. No district mentioned, however, any rules of thumb about when an alignment would be changed based on a cost-tradeoff.*

7. Are you satisfied with current budget estimation procedures? If not, why not?

*The majority of districts said yes. If there was a pattern, it seemed that the rural districts are more satisfied. Others said the process is as accurate as it can be because of the nature of the process (lead time involved, uncertainty of alignment, lack of information, unpredictability of condemnation awards, unforeseen utility costs, uniqueness of each project and set of parcels, and so forth) precludes much improvement. However, a number of districts identified potential improvements from a database or more systematic information. (See below the section on Specific Comments on Databases and Models, on page 11.)*

8. Do you use the ROWIS information database in performing estimates or is it helpful in any way during the estimation process?

*Most districts do not consider ROWIS to be useful, several indicated ROWIS was a negative in fact, and ROWIS is being used in estimates only by a couple districts. There, it did not seem to have a central role. Comments about ROWIS ranged from its non-historical data, to non-comparability across regions, and its lack of utility information, which two districts indicated comprised up to 50% of ROW costs for them.*

*Several districts also noted they use current market data from appraiser files or the local tax district, rather than ROWIS data, to produce estimates. One district said ROWIS is not at all beneficial in generating estimates or in calculating values for parcels because (a) there is no narrative on the parcels, (b) no information about curative measures, and (3) nothing which would provide an appraiser with information about why a parcel may or may not be unique.*

## **II. Ideal Procedures and Improved Process**

9. What would be the ideal, practical estimation procedure for you at the district-level?
10. What are the biggest impediments, if any, to developing this ideal estimation procedure, or at least an improvement over what is done now?
11. Are there any promising or innovative procedures you've heard about or are working with to improve the current estimation process?
12. What, if anything, could be done now and at minimal cost to improve the process or procedure in your district?

*Few districts thought anything could be done. As noted in the answer for item 7 above, the majority of districts believe the current estimation process is satisfactory. Several districts said more information and more staff would improve valuation and budget estimates. Others said the existing framework and its constraints prevented improvement. Suggestions were mostly items such as obtaining ROW requirements and good maps earlier. For some rural districts, and at least one urban district, in particular, utility costs are a problem. Usually the problem relates to either obtaining information in a timely fashion about the location of utilities or to discrepancies between what utilities are expected and what are actually found on site. Another district suggested advanced surveying would help them determine if there were likely to be any major impacts on a parcel. (Staking the ROW alignment.) This district also suggested greater utilization of "distance finders" which would enable TxDOT personnel to gauge more accurately where they are located and how much ROW they would be taking from a parcel. At the estimate stage, they are unable to "walk the land."*

*Other impediments: securing information from tax appraisal districts which had provided information in the past without a charge but which now requires a fee; obtaining information about commercial sales; and finding sufficient staff time to prepare detailed estimates as most of their staff's time needs to be devoted to reviewing appraisals (because of the limited staff time, one district recently hired for the first time an appraiser to develop an estimate.)*

*Obtaining information on commercial properties was cited by most of the metro districts as being a problem. None has a solution, however.*

*One district suggested a Louisiana procedure "Quick Take" as being worthy of further consideration by TxDOT. The Texas Turnpike Authority has the authority for a "quick take" procedure, although it has yet to be used.*

13. Are the district engineers/planners finding ways to proactively save land, time, or money? (Examples might be by purchasing easements for impacted parcel owners through their neighbors' parcels, by building back roads, by warning developers and builders many years in advance of later corridor needs, and so forth.)

If that is occurring, please identify what has been the most successful

*This produced a wide range of specific responses, mostly from metro and urban districts. The predominant answer was that their district was involved with one or more of the examples or had considered them but found they did not apply. (Note that this question was not asked of all districts.) One of the metro districts provided a lengthy response on this, which is included beginning on page 14.*

*Another metro district no longer provides information to developers and builders about longer term ROW corridor needs as the district is convinced it has worked against, rather than benefited, TxDOT interests. The district ROW director provided examples of how information was used by property owners and condemnation attorneys to increase their eventual revenues from TxDOT.*

### III. People

14. Who at the local level do you deal with mostly on ROW issues—county, city, metro—and what kinds of questions do they ask you regarding ROW cost estimates?

*For the most part, city and county officials ask TxDOT districts what their contributions will need to be and when they will need to budget for them, rather than questioning the amount of the estimates or the methods used to generate the estimates. Several districts said they knowingly estimate high so that the local officials are not caught off guard, but several others noted that high estimates had caused problems when local officials reserved more funds than needed or when local officials had trouble meeting the requirements. Another noted that because his estimates are not based on a strong methodology, he believes the local officials are relying on him because of personal trust more than anything else.*

Are there any individuals (locally, anywhere in Texas, or elsewhere) whom we should contact regarding the estimation of ROW costs?

If so, please list their name, their phone number, why we should call them, and if we should, or should not, mention your referral.

*No one suggested anyone outside of Texas. Several districts named other district personnel. Others suggested were condemnation attorneys, individuals who previously worked for TxDOT, private appraisers, and acquisition consultant companies.*

15. Is there anything else you wish to mention about any aspect of this topic?

*One district provided considerable information about problems with parcels where there are title difficulties: lack of wills, liens, bankruptcies, divorces, and so forth. Several districts noted that changing some administrative procedures (settlement authority, business reestablishment limitation) would speed up certain types of smaller acquisitions. Several districts also noted*

*that they would like more frequent sharing among the districts of promising techniques and how others have addressed certain issues. One of the major metro districts provided unique information on condemnation attorneys and the myriad legal, political, and judicial constraints within which TxDOT ROW operates. This district believes the technical aspects of estimation can be handled adequately but that the non-technical (political, legal, and judicial) issues, which affect ROW estimates and costs, are mostly beyond the scope of districts.*

Our project team will be starting to generate a data set which details specifics of parcels, date when they were acquired, corridor details, condemnation issues, and other relevant information for which we can control statistically and/or describe more qualitatively. The ROWIS database will be the first source but if necessary, can a member of our project team (Jared Heiner, email: jheiner@mail.utexas.edu ) contact you regarding data from your district?

***Every district responding to this, which was most districts, was willing to provide data.***

### Specific Comments on Databases and Models

*(Unless otherwise noted, these are verbatim comments from the districts, with minor editorial changes.)*

#### **Brownwood**

A comprehensive database relating to cost would be helpful, especially in the area of consultants and utility adjustments.

A comprehensive database of right of way costs from around the State (would improve the process).

#### **Bryan**

A systematic approach to estimating the costs would be helpful. If the program were offered with a spreadsheet type of analysis this would help compare differing alternatives.

Obviously a model that used a set of variables that anyone could plug into and produce a ROW estimate would be ideal. In this model you could have multiple variables found throughout the general area you are acquiring. It would be nice to have the ability to assign low, moderate, or high values for tracts of land with the necessary attributes giving them this value.

#### **Corpus Christi**

An improvement would be to have all the details about the proposed acquisition as early as possible. The ideal would be to plug the specifics such as size, type of property, location, etc., in a database to get an estimate. (This would be the ideal, practical estimation procedure at the district-level.)

We have recently discussed developing a crude table of rural and urban land values by county for use in the early stages of alignment planning. The table, while it may not improve the accuracy, could be used to simplify the process, and could be used by designers not familiar with land values.

Utility adjustments and, often, residential and business relocation costs, can comprise a significant portion of right of way acquisition costs. In this area, utility adjustments often exceed the cost of the land on a project. These costs can be difficult to estimate, because often we do not know the extent of the necessary adjustments. We try to estimate these costs based on our prior experience. It would be helpful if there were some statistical data compiled on these as well.

#### **Lubbock**

*Are there any promising or innovative procedures you've heard about or are working with to improve the current estimation process?*

Use of statewide averages of relocation assistance cost, cost estimate services on the Internet for improvement estimations- Marshall & Swift, <http://www.CMDFirstSource.com/index.asp>

**Tyler**

Do more SUE work on projects and have a common database to access actual costs for utilities on current projects (would improve the current estimation process).

**Yoakum**

*Are there any promising or innovative procedures you've heard about or are working with to improve the current estimation process?*

The Yoakum District uses an Access database to aggregate the estimates. This allows flexibility in answering budget questions.

**Amarillo**

*Are there any promising or innovative procedures you've heard about or are working with to improve the current process?*

What would be nice is a vast database of regionally-based data which could be drawn upon by administrators and their staffs. The existing databases focus on property information which doesn't help ROW administrators that much (replacement cost guide for buildings) or they are very laborious and cumbersome to use, such as appraisal district information. A "good database" should contain detailed regional data so that an estimator in Amarillo can find that a three-phase power line of 10 miles should cost such and such, i.e. the data elements should be priced in unit costs appropriate for them. Other types of utility infrastructure data elements should be included also.

Databases that might be utilized for the new database: Marshall and Swift (replacement cost of buildings) and the Handy-Whitman Index of Public Construction Costs.

**Waco**

Researcher note: This district is at the very beginning stages of creating an access database for parcels, but they have nothing to share currently, as it is in the preliminary design stage.

**Austin**

Researcher note: The process is about as good as it can be right now. District ROW staff believe (1) every parcel is unique; (2) every situation is unique; (3) regional variations would be too significant to use a database; and (4) staff experience is the primary determinant of estimation accuracy. However, some type of quantitative model might be useful if staff experience could be incorporated into it or if the database could be used to "add experience" for their young, less experienced employees. (They have 18 ROW staff currently, down from 30 several years ago because of a declining workload.)

**Abilene**

Researcher note: District ROW administrator is interested in some type of model or computer program that would be more standard across districts, have more credibility, and generate more accurate estimates than current techniques.

### **Beaumont**

Researcher note: District ROW administrator needs something to reduce the time his staff spends on the 4-5 optional alignments, which never get built on each project. In his view, if a software package could be developed or is already available which would speed up the estimation process without proving too costly, it would be worthwhile.

### **Dallas**

The Dallas district has some type of database of parcels.

Because of a retirement, the district is looking at the option of having estimates performed by an outside consultant. One of them has a database which he says can verify estimates, based on work that he performed in Austin.

Incidentally, the Dallas district does not use much appraisal district information as they have found it "pretty useless." Valuations used to be too low compared to actual sales, and now they believe appraisal district valuations are too high, compared to market prices. So they use sales information instead, commercial brokers whenever possible, and also the Roddy Report in their estimation work.

Comments by San Antonio District on Proactive Approaches

(Juan Zaragosa, San Antonio ROW administrator, emails from February 6-7, 2003.)

13. Are the district engineers/planners finding ways to proactively save land, time, or money? (Examples might be by purchasing easements for impacted parcel owners through their neighbors' parcels, by building back roads, by warning developers and builders many years in advance of later corridor needs, and so forth.)

*The SAT District does a good job usually through the Project Development Process and strives to be proactive. Need to involve the ROW Personnel early in the initial phases of all project development to better utilize the ROW acquisition and appraisal expertise.*

*The SAT district is doing all of these (Advanced Acquisitions, donations, land exchanges, plat dedications, etc.) and using several combinations of each. If ROW personnel are involved in the early planning process, they may be able to identify problem parcels that will require special handling. In early or advanced acquisitions, it is possible to sequence acquisition work to deal with difficult parcels. This may be due to the complexity of the property or the ownership and previous acquisition history. In a Metro District, most acquisition are repeat business or old transactions handled correctly reap some good and/or bad returns. The ROW staff is in the unique position of having access to this information, if it exists to share with project designers or planners. Parcel donations can also be identified or handled in the early project development phase of planning a project. There are times that a landowner does not wish to sell but they may have some plan that will work with an exchange of property between them and TXDOT. This can also be handled by ROW staff after the parcel needs are developed, the exchange agreement may be an option to allow TXDOT to acquire and the landowner to also acquire some piece of ROW for his use of the remainder property to reach his highest and best use of the site. Because of a past transaction or repeat business, some property owners are willing to donate a tract early into the project and continue there development rather than wait for the project to develop through the planning and then the acquisition process. An announcement that a project will occur can really impact or label a property with a negative image. Ex: TXDOT will destroy the interim development of the tract with its future highway expansion. The payment of acquisition costs and damages does not always compensate a property and/or a new business for the disruption during the life of a project (from initial survey work to final completion of the highway improvements.) Temporary Construction Easements are usually not very effective or useful. They also impacted a property for the life of a project and may result in the same business loss of a partial or full taking and without the benefit of Relocation Assistance Program for displaced owners. If project needs are identified early and a property is to be platted through the Local Public Agency, dedications through the plat process do occur, especially if the required future ROW will be a minor amount of property, the developer will plat the required future ROW need. The voluntary setback by a developer in a proposed development of land needed for a future ROW project is also very helpful in the acquisition phase of a ROW project. It will minimize damages to the remainder property and avoid the cost of purchasing improvements along the required ROW. For the developer, there is the benefit of full disclosure that a project is forthcoming also along the corridor at a later date and some assurance that the highway project will not be destroy the planned use of a property being offered for sale. The*

*required need for more full disclosure in the real estate market make it helpful for the TXDOT to provide the ROW needs early to the community being impacted by a project. Being able to confirm a sale through a friendly land title company is a tremendous asset to have in any project development and the estimating of ROW costs becomes more accurate based on actual sales in the area of planned projects. This really helps the estimating of planned project costs. Advanced acquisitions and land exchanges are the best tools available once the property owner concedes that a project will occur in the future. A good recent example is the future Kelly Parkway Corridor. People along the proposed corridor are now ready to sell or deal with us. We will need to wait for planning to be complete and funding to allocate before we can proceed to purchasing parcels.*

## **Appendix F: Contact Information of Texas Districts' Respondents**

### **Fort Worth**

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### **Abilene**

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Fax: (325) 676-6902

Christopher Medley (Ft. Worth appraiser)

### **Amarillo**

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**Yoakum**

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**Waco**

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## **APPENDIX F**

**Lump Sum Distribution Workshop**  
**Research Review Results**

**May 24, 2006**

**Right of Way Domestic Scan, Austin, TX**

<http://www.fhwa.dot.gov/realestate/scans/ausfreport.htm>

State Highway 45 and Loop 1 project

State Highway 130 Segment 1-4

Cost \$1.034B

ROW excess of \$130M ( $130M/1.034B = 12.57\%$ )

Total project cost \$2.78B

**Marsha Sharp Freeway Project – Lubbock’s East/West Access**

<http://www.dot.state.tx.us/LBB/projects/q&a.htm>

Phase	Cost
I	\$46.5M
II	\$103M
III	\$53.6M
IV	\$60M
TOTAL	\$263.1M

354 parcels acquired along 13-mile freeway route and 62 railroad parcels at a cost to date about \$160M.

( $160/263.1 = 60.84\%$        $\$160M/13 \text{ mi} = \$12M/\text{mi}$ )

**Williams, K.M, H. Zhou, and L. Hagen. Assessing the Costs and Benefits of Strategic Acquisition of Limited Access Right-of-Way at Freeway Interchange Areas. November 2004.**

“In Florida, the cost of right-of-way has continued to escalate and right-of-way costs now exceed construction costs in many areas.” . . . “The combination of high growth and encouragement to litigate has the Florida Turnpike Enterprise anticipating that almost 75 percent of right-of-way cases will file for litigation (15). The high cost of litigation combined with the 12 person jury for eminent domain cases, as contributed to high awards.”

15. Florida’s Turnpike Enterprise Appraisal Guideline #1 – Cost Estimate, Florida Department of Transportation, July 2002.

**Kyte, C.A., M.A. Perfater, S. Haynes, and H.W. Lee. *Developing and Validating a Highway Construction Project Cost Estimation Tool*. Report VTRC 05-R1. December 2004.**

“...researchers concluded that cost forecasts tend to underestimate final costs 9 of 10 times.”

“...researchers...found that actual road projects are typically 20 percent higher than forecast.”

All things being equal, smaller projects have a slightly higher per mile costs than typical ones because of certain fixed costs. Cost adjustment factor of +20 percent for projects less than 0.5 mile in length, cost adjustment factor of +10 percent for projects between 0.5 and 1.0 mile in length, no adjustment for projects over 1.0 mile in length.

Use of annual compounded inflation rate of a flat 3% according to VDOT’s Financial Planning Division and will likely be adjusted to reflect prevailing market conditions.

“Analysis of project data demonstrated that PE costs ranged from about 8 percent of construction costs on very expensive projects to about 20 percent on very small ones. Bridge PE costs were similar but ranged from about 2 to about 40 percent.”

“...consultant PE costs...tend to be higher than in-house costs...”

Analysis of 136 projects completed across Virginia between January 2001 through August 2002  
“...showed that PE costs do vary inversely with the size of the project.”

“To attempt to account for consultant PE costs...[a] 50 percent factor is then applied to that percentage to raise the costs over in-house PE work. This 50 percent factor came from VDOT’s Management Services Division’s earlier study of the costs of design consultants.” The 50 percent mark-up was verified after a review of 29 consultant designed projects and 107 in-house designed projects.

**J.D. Heiner and K.M. Kockelman. “The Costs of Right of Way Acquisition: Methods and Models for Estimation,” presented at Transportation Research Board Annual Meeting, January 2004.**

The federal government spent an average \$36,400 per parcel in fiscal year 1999.

“Accurate ROW cost estimation can be key to project budgeting and completion.”

Challenges Texas ROW administrators face are: (1) early estimates based on limited information, (2) limited time to prepare estimates, (3) estimates are prepared several years in advance “...during which time significant inflation and speculation can occur, resulting in property and damage appreciation.” Urban and rural administrators reported the typical time interval is 3 years, but may stretch to 7 years.

There are uncertainties associated with damages and court costs. The value of damages is difficult to predict becoming a source of substantial error. “Condemnation awards can add

significantly to the total cost of acquisition; ROW cost estimators in metropolitan areas routinely add from 25 to 40 percent to the projected base cost of acquisition, in anticipation of these costs.”

“Access costs ranged from \$0 to \$2490 per linear foot of frontage, with an average value of \$511 per linear foot.”

“...commercial properties increase the total taking cost by \$24,000 per acre, compared to other land uses.”

Utility relocations “...can run very high, and may even exceed property acquisition costs.” I-10 in Houston utility costs exceed \$200 million representing a unit cost of \$10 million per mile for the 20-mile project length, or 30% of the ROW budget.

Land values for US 183 in Austin were “...estimated to fall \$52,000 per acre one-half mile from the facility, compared to lots that fronted the new facility. Corner lots at signalized intersections were valued \$55,000 higher per acre, and their built improvements \$4.61 higher per square foot.” Location and access are strong indicators of property value.

Land use types are significant, with retail uses having the strongest effect on total taking cost.