

Collin County **2003 Bond Program** *Transportation*

Prepared for



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**COLLIN COUNTY
2003 BOND PROGRAM
*TRANSPORTATION***

Prepared under the direction of:

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REFERENCES

1. North Central Texas Council of Governments, *Mobility 2025 Update: The Metropolitan Transportation Plan*, May 2001.
2. Parsons Transportation Group, Inc., *Collin County Mobility Plan*, July 2002.
3. HDR Engineering, Inc., *1999 Collin County Bond Program, Roads and Highways*, October 1999.



SECTION 1 - PROJECT OVERVIEW

1.1 Purpose and Need

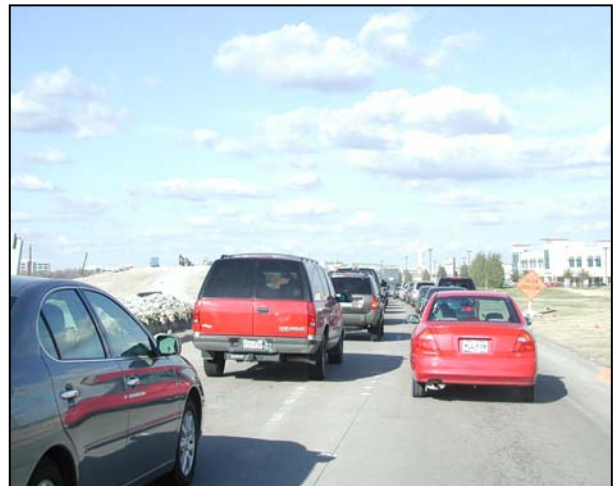
Year 2000 Census data shows that the Dallas-Fort Worth Metropolitan Area (DFW MPA) is the ninth largest metropolitan area in the nation with a growth rate more than twice that of the eight larger areas. From figures presented in the *Mobility 2025 Update: The Metropolitan Transportation Plan* (1), Table 1.1 reflects the impact this growth will have on the region's transportation system. If the projects, programs, and policies contained in *Mobility 2025 Update* are implemented, 45 percent of the roadways will be congested with an annual congestion cost of \$8.2 billion and a revenue shortfall of \$3.3 billion for the citizens living within the region. For this reason, it is important to continue to aggressively pursue additional congestion mitigation strategies as well as additional revenue to implement those strategies.

**Table 1.1 – Mobility 2025 Update
Travel Performance**

Performance Measure	1999	2025 Projections	Projected Growth
Population	4,536,000	6,671,200	47%
Employment	2,690,900	3,907,300	45%
Vehicle Miles of Travel (million)	125.2	200.0	60%
Roadway Lane Miles	26,500	36,300	37%
Total Delay (vehicle hours)	1,300,000	2,000,000	53%
% Lane Miles Congested	38%	45%	18%

Source: North Central Texas Council of Governments (NCTCOG)

Collin County is located within the DFW MPA and continues to be one of the fastest growing counties in Texas. A significant shift in density, especially along the County's major regional thoroughfares, will occur leading into 2025. With that growth comes the challenge of meeting the transportation needs of its citizens and maintaining or improving the serviceability of the existing transportation system with increased budgetary constraints. In addition, delays due to incidents, accidents, construction, special events and congestion will affect the County's air quality, thus impacting ozone formation. Because Collin County is designated "non-attainment" for the pollutant ozone, increased ozone levels and reduced air quality can cause the reduction of federal funding available for roadway projects in the





future. The transportation implications that will result from Collin County's projected growth are shown in Table 1.2.

**Table 1.2 – Collin County Growth
Transportation Implications**

Performance Measure	1999	2030 Projections	Projected Growth
Population	477,173	1,106,929	132%
Employment	161,852	511,023	216%
Vehicle Miles of Travel (million)	10.1	26.5	162%
Roadway Lane Miles	2,645	4,558	72%
Total Delay (vehicle hours)	93,524	352,419	277%
% Lane Miles Congested	39%	59%	51%

Source: North Central Texas Council of Governments (NCTCOG) and *Collin County Mobility Plan*

The County has identified through the *Collin County Mobility Plan* (2) that its goal is to alleviate future congestion by identifying transportation improvements on a county-wide basis, while taking into consideration the limitations of the existing county thoroughfare network. To accommodate projected demographic growth in the region, Collin County has identified their transportation needs with the implementation of a thoroughfare plan based on forecasted roadway volumes and congestion levels. The County Thoroughfare Plan, located in Appendix A, was developed as part of the *Collin County Mobility Plan*.

Many improvements to the transportation infrastructure have been implemented throughout the County to address increasing traffic congestion problems. However, the rate of growth experienced by the rapid urbanization of several municipalities in the County, especially along the SH 121 and US 75 corridors, has continued to generate traffic volumes that exceed the planned operating capacities of much of the County's major roadway network. To adequately address the future needs of the County Thoroughfare Plan, aggressive steps are necessary to fund the design and construction of the planned improvements. Due to increased budgetary constraints, bonds will be sold to help fund the expansion of the roadway network and develop the County Thoroughfare Plan. Because these bonds require approval from the County's voters, the Collin County Commissioners Court appointed a Transportation Sub-committee to receive input from city representatives, as well as their citizens, to determine the most urgent thoroughfare plan needs for Collin County. Subsequently, Carter & Burgess, Inc. was hired to aid in the development of the Transportation Bond Program, provide necessary technical support and develop a formal report recommending which projects should be included in the 2003 Transportation Bond Program.



1.2 Funding

Funding for transportation improvements is one of three subdivisions for the entire Collin County 2003 Bond Program, with the other two being for facilities and parks space projects. Based on the anticipated bonding capacity without raising County taxes, the Collin County Commissioners Court set the initial funding for the 2003 Transportation Bond Program at \$100 million. Of that amount, \$25 million was set aside as “County discretionary” money to fund undetermined critical transportation projects as the need was identified. However, due to the projected date of the next available bond election and the anticipated cost for the transportation system needs, it was evident that \$100 million was insufficient to address these needs. At the request of the Transportation Sub-committee, the County Commissioners initially raised the transportation portion of the Bond Program to \$125 million with \$10 million of that amount set aside for “County discretionary”. At the conclusion of the July 8, 2003 regular meeting of the Collin County Commissioner’s Court, the decision was made to add another \$17 million, which set the transportation portion of the Bond Program to a total of \$142 million. A summary of the projects and their associated funding for this additional \$17 million allocated is detailed in Section 2.2.

Four (4) projects with a total bond cost of \$48.5 million were deemed “regionally significant projects” that will provide mobility throughout the County. These projects include:

- SH 121 from Preston Road to US 75
- FM 2551 (Murphy Road) from FM 544 to Parker Road
- Betsy Lane from Dublin Road to FM 2551
- Dallas North Tollway (DNT) extension from US 380 to FM 428.

It should be noted that engineering plans have been completed for three of the four significant County Regional projects. The plans are still in progress for the DNT extension where a basic alignment has been determined. The funding required for these regionally significant projects, along with the “County discretionary”, County drainage and rural road projects total \$72.4 million. The remaining \$52.7 million will be distributed among the participating Cities. The projects Collin County will fund initially will





be those that are ready for implementation (i.e. engineering, right-of-way acquisition, utility relocations, or construction).

1.3 Transportation Sub-committee

To express the County's and each cities' thoroughfare plan needs, Collin County Commissioners Court developed a Transportation Sub-committee to evaluate and determine viable transportation projects for the Bond Program scheduled for November 2003. The Transportation Sub-committee includes representatives from municipalities and delegates from Collin County. Other members include Carter & Burgess, Inc., engineering firms representing the cities in their proposed project endeavors, and various other constituents. Members of the Commissioners Court and delegates from Collin County are listed at the beginning of this report, while the remainder of the Transportation Sub-committee is shown in Table 1.3. Members of the Sub-committee attended weekly meetings from October 21, 2002 to December 13, 2002 to appraise and rank the transportation needs for the County and the individual cities. The Sub-committee was able to identify significant transportation corridor improvements within Collin County and subsequently determine those projects to be included in the 2003 Bond Program.

The Sub-committee's primary goal was to develop a list of projects that would provide for the initial \$100 million Transportation Bond Program according to the following preliminary guidelines:

- To encourage as much local participation from the cities and other entities, the County portion of the funding would not exceed 50% of the total project cost.
- The county participation for a certain project is a fixed amount. If a project overruns its estimated cost, the County's portion of the funding for that project will not increase. If a project runs under its estimated cost and both the city and County agree, the remainder of the funding allocated to that project may remain within that city for application toward another project.
- If a city is unable to contribute the required matching funds for a particular project, that project would be removed from the list considered for the Bond Program and the funding applied toward a project in the Tier 2 list.
- If a project within a particular city is dropped for any other reason (i.e. letting date not met, a change in project priority, or funding from other sources) and both the city and County agree, the funding for that project remains within that city for application toward an alternate project.



Table 1.3 – Transportation Sub-committee

Affiliation	Member Name
Chairperson	Ben Whisenant
Co-chairperson	A.L. Dougal
Allen	John Baumgartner
Allen	E.T. Boon
Allen	Richard Buchanan
Allen	Joe Farmer
Allen	Chris Flanigan
Allen	Peter Tian
Anna	John Rattan
Celina	Rex Glendenning
Chiang, Patel & Yerby	Steven Schoenekase
Chiang, Patel & Yerby	Phil Yerby
Community ISD	Bud Nauyokas
Community ISD	John Roderick
Collin County	Jack Bick
Collin County	Don Dillard
Collin County	Dan Fay
Collin County	Jon Kleinheksel
Collin County	Bob Lindberg
Collin County	Jaye Olin
Collin County	Jerry Yancey
Dallas	Richard Brown
Dallas	Harold Coppedge
Dallas	Marc Friedland
Dallas	Alan Hendrix
Dallas	Michael Sanderson
Farmersville	George Crump
Farmersville	Craig Overstreet
Farmersville	James Rice
Frisco	Bob Allen
Frisco	Buddy Minett
Frisco	George Purefoy
Frisco	Mike Simpson
Frisco	Bob Warren
HNTB	Ben Biller
Kimley-Horn	Roy Wilshire
McKinney	Jack Carr
McKinney	John Childers

Affiliation	Member Name
McKinney	Rob Collins
McKinney	Bill Cox
McKinney	Andy Hardin
Melissa	David Dorman
Melissa	Bob Helmberger
N. Preston Properties	Jim Nelson
Parker	Robert Montgomery
Parsons Brinckerhoff	Larry Cervenka
PBS&J	Clarence Daugherty
Plano	Dick Bode
Plano	Dick Cathriner
Plano	Joseph Celso
Plano	Jim Edwards
Plano	George Elking
Plano	Larry Flannery
Plano	Don Griffin
Plano	Art Martin
Plano	Jim McGee
Plano	Lissa Smith
Plano	Alan Upchurch
Plano ISD	Danny Modisette
Richardson	Henry Drexel
Richardson	Walter Ragsdale
Richardson	Arturo Serna
Richardson	Jim Shepherd
Wylie	Reta Allen
Wylie	Raymond Cooper
Wylie	Chris Holsted
Wylie	John Mondy
Wylie	Sam Satterwhite
Citizen	Paul Huang
Citizen	Daniel Jones
Citizen	Johnny Lewis
Citizen	Van Nichols
Citizen	Humberto Rodriquez
Citizen	Steve Shafranek
Citizen	Victoria Shaw



1.4 Purpose of Report

The purpose of this report is to describe the study process, identify the projects considered for the Bond Program and provide a viable list of “Tier 1 Projects” for inclusion in the Collin County 2003 Bond Program. Finally, a list of “Tier 2 Projects” will identify and prioritize viable projects if additional funds above the \$142 million become available.



SECTION 2 - STUDY PROCESS

The study process was divided into two phases – the Data Collection Phase and the Project Screening Phase. The Data Collection Phase involved the identification of significant corridor improvements needed for Collin County. Through correspondence and discussions with city personnel, pertinent information was acquired and compiled in spreadsheets that reflected the project lists utilized in this report. The major components of the Data Collection Phase are:

- Initial request for and receipt of proposed projects
- Final request for projects and creation of the Initial Project Screening list (Appendix C)
- Traffic volume projections
- Data verification through discussions with cities
- Refined project cost estimates
- Agency participation determination

The Project Screening Phase involved the prioritization of the submitted improvements through a detailed screening process to determine the most qualified transportation projects to be included in the 2003 Bond Program. The projects submitted were evaluated to determine if they were compatible with the County's transportation goals based on their cost efficiency, congestion relief impact, and improvement to overall safety. In summary, the Project Screening Phase consisted of:

- Developing project descriptions and identifying project types
- Determining the various project costs
- Conducting an initial project screening
- Performing a traffic evaluation
- Programming with Transportation Sub-committee members
- Developing a list of Tier 1 and Tier 2 projects
- Comparing this program with the 1999 Bond Program

2.1 Data Collection Phase

The objective of the Data Collection Phase was to create a viable list (Initial Project Screening list) of projects that reflect the transportation infrastructure needs of the County. Although some of these projects were not chosen for the 2003 Bond Program, the remainder was listed in the event additional County transportation funding becomes available.



Initial Request for Projects

On September 20, 2002, Collin County submitted a letter to each local jurisdiction requesting viable proposed transportation projects to be considered for the 2003 Bond Program. The following minimum information for each project was requested in a spreadsheet format prioritized according to each city's need:



- Project description, including type of project, project length, limits, and location map
- Is funding request for engineering, construction, or both?
- Anticipated award and construction dates for the engineering/construction contracts
- Availability of 50% matching funds from applying cities
- Status of engineering plans, right-of-way acquisition, and utilities clearance
- Total project cost

Of the 29 cities contacted, 10 cities initially responded with projects within their communities. Appendix B includes Collin County's letter to the cities requesting proposed improvements and a detailed list of projects submitted by the cities, including the total cost, the funding requested, and the type work to be done. As summarized in Table 2.1, this initial list identified 72 projects totaling approximately \$255 million in total project cost with approximately \$124 million requested for Bond funding.

Table 2.1 – Initial Project Submittal Summary

Location	Number of Projects	Total Project Cost	Bond Funding Requested
Allen	7	\$ 30,800,000	\$ 15,400,000
Dallas	3	\$ 2,820,000	\$ 1,410,000
Farmersville	5	\$ 3,675,200	\$ 1,837,600
Frisco	14	\$ 54,413,000	\$ 27,206,500
McKinney	4	\$ 31,200,000	\$ 15,600,000
Melissa	3	\$ 2,569,000	\$ 1,284,500
Parker	2	\$ 3,146,700	\$ 1,573,350
Plano	23	\$ 81,700,000	\$ 37,550,000
Richardson	5	\$ 14,830,000	\$ 7,415,000
Wylie	6	\$ 29,760,000	\$ 14,880,000
Totals	72	\$ 254,913,900	\$ 124,156,950



Final Request for Projects

On October 29, 2002, Carter & Burgess, Inc. contacted the remaining cities that had not submitted projects for inclusion in Collin County's 2003 Transportation Bond Program. Of those contacted, the City of Anna submitted two projects totaling \$477,300, the City of Celina submitted six projects totaling \$7,293,808, and the City of Dallas submitted three more projects totaling \$760,000. Collin County listed 37 projects totaling \$161,324,251 for county wide urban thoroughfare, rural road, and drainage improvements. In addition, the cities of Allen, Frisco, Melissa, Plano, and Wylie submitted modifications to some of their project costs and funding requested.

As summarized in Table 2.2, the final list submitted identified 118 projects totaling approximately \$421 million in total project cost with approximately \$213 million requested for Bond funding. This list of projects is referred as the Initial Project Screening list and is provided in its entirety in Appendix C. Accompanying this list are maps depicting each of the project locations. Based on the total bond funds required for these projects, there is a \$71 Million shortfall from the Transportation Sub-committee's \$142 million funding goal for the 2003 Bond Program.

Table 2.2 – Final Project Submittal Summary

Location	Number of Projects	Total Project Cost	Bond Funding Requested
Allen	7	\$ 29,500,000	\$ 14,750,000
Anna	2	\$ 477,300	\$ 238,650
Celina	6	\$ 7,293,808	\$ 3,646,904
Dallas	6	\$ 3,580,000	\$ 1,790,000
Farmersville	5	\$ 3,675,200	\$ 1,837,600
Frisco	14	\$ 54,413,000	\$ 24,729,800
McKinney	4	\$ 31,200,000	\$ 15,600,000
Melissa	2	\$ 2,889,000	\$ 1,444,500
Parker	2	\$ 3,146,700	\$ 1,573,350
Plano	23	\$ 81,700,000	\$ 36,450,000
Richardson	5	\$ 14,830,000	\$ 7,415,000
Wylie	5	\$ 26,888,500	\$ 12,069,250
County Regional	6	\$ 135,113,719	\$ 64,813,719
County Drainage	21	\$ 11,083,773	\$ 11,083,773
County Rural	10	\$ 15,126,759	\$ 15,126,759
Totals	118	\$ 420,917,759	\$ 212,569,305

As shown in Appendix D, of the 29 cities contacted, 12 submitted projects, while 17 either declined to submit projects at this time or did not respond.



Traffic Volume Projections

Because year 2025 traffic volume projections are crucial in evaluating the demand that will be placed on a roadway's future capacity, this information was requested and utilized in the traffic evaluation portion of the Project Screening Phase explained later in this report. Future traffic volumes provided in the *Collin County Mobility Plan* were based upon growth that would occur at the "build-out" population of 1.93 million, which occurs if all transportation improvements on the County Thoroughfare Plan are implemented. In some areas of Collin County, "build-out" will occur prior to 2025, while in other areas "build-out" will occur after 2025. For this reason, projections from the *Collin County Mobility Plan* were not used in this report. The North Central Texas Council of Governments (CTCOG) traffic projections were readily available from the *Mobility 2025 Update: The Metropolitan Transportation Plan* and have been included in Appendix E. NCTCOG used their standard travel demand model forecasting process to project the future traffic demand within the County. Conservatively, these traffic volume projections were used to calculate the congestion factor and cost efficiency for each project.

Data Verification

Correspondence and discussions with city officials were necessary to gather additional information and to verify or refine data that was originally provided with each project submitted. To develop a realistic list of projects to meet the bond goal, accurate information, especially total project cost, was required. Of great importance to this study was the analysis and verification of the information provided by the cities, including:

- Verification of information such as city priorities, limits, type, scope, anticipated letting date, total project cost, and cost participation by other agencies
- Confirmation of right-of-way acquisition, utility relocation, and engineering costs
- Confirmation of status of construction plans, right-of-way acquisition, and utility relocations
- Verification that provided costs were reasonable compared to similar project types
- Confirmation that proposed projects were not listed as part of previous bond programs
- Verification of public support for the proposed projects

Refined Project Cost Estimates

As stated previously, accurate estimates for total costs were necessary to provide the Subcommittee with a realistic list of projects to meet the County bond goal. Each city was responsible for providing the cost estimates for improvements within their jurisdiction. However,



because some costs had not been assessed, Carter & Burgess, Inc. developed the detailed estimates for those projects. In addition, many project assumptions required confirmation. Such projects included the Dallas North Tollway extension and both FM 455 projects in Anna. For those, field surveys were conducted to examine individual project needs. The visible inspections included the examination of existing pavement type and condition, potential major drainage needs (including bridge structures), existing traffic congestion, potential right-of-way requirements and development along the corridor, and constructability of the project. Upon completion of the field surveys, Carter & Burgess, Inc. prepared the estimates for inclusion in the spreadsheets.



Preliminary estimate format and procedures were developed by the Sub-committee to aid in verifying the cost estimates supplied by others. It was concluded that a unit price per mile methodology would be used to determine probable construction cost (with contingencies), additional right-of-way acquisition cost, and engineering cost. Estimates provided by the cities were checked for inconsistencies or confirmed using this cost per mile methodology based on project type. If inconsistencies in cost were found for a particular project, the city or their consultant was notified and modifications to the estimate were requested for submittal.

Agency Participation Determination

To implement the County Thoroughfare Plan, a collective effort among the multiple jurisdictions will be required. For transportation improvements within any city's jurisdiction, the city and Collin County must be partners through inter-local agreements defining project scope and funding. The nominating community must have the ability to provide at least a 50% match for the proposed project cost minus donations or any other participation from a third party. If the community's goal of a 50% match could not be achieved on a particular project, the city exercised the choice of possibly changing the project scope. For example, the city may have changed the scope from "Construction" to "Engineering and Right-of-Way Acquisition" only. The Sub-committee felt that this would provide the means for some projects to be included in the Bond Program when they would otherwise be excluded. Some projects on the list had the additional benefit of funding from other sources. Examples of other sources of funding are



private developers, Texas Department of Transportation (TxDOT), Dallas Area Rapid Transit, North Texas Tollway Authority, and adjoining cities.

2.2 Project Screening Phase

Projects were initially screened to determine if they were compatible with the County's transportation goals and whether they would benefit multiple jurisdictions based on their estimated construction cost, congestion relief, and improvement to safety. Before developing the projects for inclusion in the 2003 Bond Program, an Initial Project Screening list of viable enhancements and associated pertinent information (shown in Appendix C) was created. In general, this list comprises all the projects submitted by the cities that are needed within each community and Collin County for possible inclusion in the Bond Program. The spreadsheet is divided into four major sections that are described in further detail below:

- Project description
- Cost breakdown
- Initial Project screening
- Traffic evaluation

Descriptions and details for the various sub-headings within these major sections of the Initial Project Screening list are shown in Appendix F.

Project Description (Columns 1-10)

Fundamental project information received from the cities and the County was recorded in columns 1-10. This information included an identification number, city ranking, project limits, length, type, existing and proposed number of lanes, and an anticipated letting date. The "city ranking" reflects the priority of the project based upon city or County staff recommendations. Each project included in the Initial Project Screening list was assigned an identification number and their location is shown on the associated maps in Appendix C.

To fairly compare projects independent of their length and location, 13 project types were created for this report. In this way, improvements of the same type could be compared when performing the traffic evaluation portion of spreadsheet. For example, the congestion factor and cost efficiencies for Bethany Drive (East) in Allen could be compared with those for Parkwood Boulevard in Plano because both these project types were classified in this report as "widening." Definitions for the different project types utilized in this report can be found in Appendix G.



Cost Breakdown (Columns 11-14)

When calculating the total funding needed for the Transportation Bond Program, it was necessary to break down the total costs associated with each proposed project.

Columns 11-14 include total project costs, other participation, city participation, and the County's portion of the funding. As stated before, the total cost includes costs for construction, right-of-way acquisition, utility relocations, and engineering. In most



scenarios, the city and County would participate equally toward the total cost. In some cases, though, the city may have already acquired right-of-way or paid for engineering services, thus reducing the County's portion for the project. In addition, funding from other sources such as TxDOT or adjoining cities might be included for some projects.

Initial Project Screening (Columns 15-19)

The Sub-committee was responsible for developing and refining the criteria used in screening the projects for inclusion in the Transportation Bond Program. One of the most important criteria used in the screening process was its regional benefit to Collin County and its connectivity to multiple jurisdictions as shown in the County Thoroughfare Plan in Appendix A. If an improvement is not listed on the County Thoroughfare Plan, it was not considered a candidate for the 2003 Bond Program. Typically, projects not included on the County Thoroughfare Plan may be smaller roadways such as local roads that would only benefit a particular city involved and have a lower priority to the County as a whole.

Another important criterion for inclusion in the Bond Program is a city's ability to match funds with Collin County. Typically, the amount of money a city or an agency is willing to match on a project must be 50% or greater to be included in the Bond Program. Every city-sponsored project listed on the Initial Project Screening list met this criterion. The projects were then evaluated according to increased capacity and operational improvements. If the project did not add capacity or provide major operational improvements, it was not considered for the 2003 Bond Program. Projects that would not meet this criterion may include signalization projects, Intelligent Transportation Systems, or minor pavement rehabilitation.



Lastly, the column labeled “Letting < 5 years?” was used as an initial screening tool, but was ignored when selecting projects for Tier 2 consideration. Projects with anticipated letting dates later than five years typically receive a lower priority than those with letting dates less than five years. Because of these priorities, those projects run the risk of falling behind schedule under this Bond Program and should preferably be considered for the Tier 2 Project list or submitted with the next bond program.

Traffic Evaluation (Columns 20-23)

The Sub-committee developed preliminary evaluation criteria, such as cost efficiency, to compare the costs of similar project types. This enabled the staff to detect possible errors in estimates and to question and reevaluate the totals if necessary. Although the evaluation criterion is vital, the “traffic evaluation” portion of the list was used to reaffirm the need of the project to reduce congestion and to confirm data provided by the cities.

Year 2025 average daily traffic, as shown in Appendix E, was utilized in the formulas for calculating the congestion factor (col. 21), total cost efficiency (col. 22), and the bond cost efficiency (col. 23). The congestion factor for a particular type of project assumes there will be no improvements to the roadway in year 2025. The congestion factor is calculated by dividing the projected 2025 ADT by the number of vehicles a roadway with the existing number of lanes could carry for level of service E. Similar projects’ congestion factor was compared for shortcomings in the information that was received.

For projects of the same type, the total cost efficiency and bond cost efficiency numbers provided a method to fairly compare them independent of their length and location. The cost efficiency is the anticipated cost of the proposed project (total project cost and County cost, respectively) divided by the length and the projected 2025 ADT. These values are shown in dollars per vehicle-mile, with the more efficient projects having lower values.

Programming with the Transportation Sub-committee

Meetings with the Sub-committee, County officials, and municipal representatives were held weekly to discuss the proposed transportation improvements, available Bond funding, and funding from the individual cities. The main goal was to develop a list of projects that best reflects the needs of the entire county.

In creating the Project Shortlist (Tier 1 Projects) from the Initial Project Screening list, the Sub-committee reached a consensus on the strategy for choosing the projects for inclusion in the Bond Program. Because the County Regional Projects will enhance the transportation needs



for the entire county, it was decided that those would be allotted the funding necessary for implementation and be included in the Bond Program. Collin County re-evaluated the County Rural Road and County Drainage Projects and concluded that \$13.9 million of the \$26.2 million initially submitted would satisfy their immediate needs for the Bond Program.

Each city's portion of the remaining funding amount was based on projected population data or anticipated growth. As described in detail under the Project Shortlist (Tier 1 Projects) section, these percentages were utilized to determine the allotted amount for each city. The Transportation Sub-committee relied on initial project request criteria and guidelines and County staff recommendations for the order in which the projects were listed in the Tier 1 Projects list.

In an attempt to maximize the funding allotted, some cities further researched the possibility of obtaining participation by others. This could include projects on the State highway system or improvements within multiple jurisdictions, which would ultimately reflect the city's ability for funding participation. If a city could not provide its portion for the total project build-out, the scope was reduced to include engineering and right-of-way acquisition only. Furthermore, due to bond funding limitations, projects such as FM 720 in Frisco, Alma Drive in Plano, and FM 1378 in Wylie did not reflect a 50/50 share between the city and Collin County. In these cases, the Sub-committee requested the city to fund greater than 50% of their share in order to receive as much County funding as possible and to keep the project in the Bond Program.



Project Shortlist (Tier 1 Projects)

With the conclusion of the project screening, traffic evaluation, and programming with the Bond Committee, the Project Shortlist (Tier 1 Projects) was created. These projects are listed in detail in Appendix H along with its associated location maps. All 59 projects included in this list meet the Sub-committee's criteria and the County's bond goal in funding associated with the cost for the transportation improvements. For the city projects, this list reflects their commitment of 50% of the total cost (minus other participation) and represents a balance of funds spread



within the County based on community population and anticipated growth. The percentage of Collin County's current and projected population for each city is summarized in Table 2.3.

As stated previously, the initially submitted County projects were screened and reduced significantly based on County engineering staff review. County Regional Projects such as SH 121 and the DNT Extension will benefit the cities located along these corridors and enhance the transportation needs for the entire county. For this reason, the Collin County projects totaling \$72.4 million (57.9% of Bond Program) is the major component and the remaining \$52.7 million (42.1% of Bond Program) will be distributed among the participating cities.

To practicably and equitably choose the city projects for inclusion in the Tier 1 Projects list, each city's funding allocation was primarily based on their percentage of Collin County's projected 2025 population. For example, the City of Allen's population percentage of Collin County in 2025 was forecast to be 9.6% as shown in Table 2.3. Based upon that figure, approximately the same percentage of the funding available to the cities was allocated to that city. As shown in Table 2.3, the City of Allen was actually allocated 9.7% (\$5,100,000) of the funds available to the cities. The remaining cities were allocated funding that closely reflected their respective 2025 population percentages. However, funding percentages for the Cities of Frisco, McKinney, and Wylie were set slightly higher than their population projections indicated because of the expected growth that is anticipated in these communities over the next 10 years. The Transportation Sub-committee felt that these cities will require additional funding support to help minimize the congestion impacts that are anticipated with the rapid urbanization of entire sections of these cities.

When choosing which transportation improvements within each city to fund, the Sub-committee relied heavily on the city's priority recommendations because of their knowledge of the most effective congestion mitigation solutions within their respective community. The Sub-committee selected the projects in order of each city's priority until the allocated city funding amount was reached.



**Table 2.3 – Tier 1 Projects
Funding and Population Data**

Location	Funding Data						Population Data				
	1999 Bond Program		2003 Bond Program				2000 Population	2025 Population	% Growth	% of Collin County	
	Funding	% of Program	Initial Submittal	% Total Request	Funding Request	% of Program				2000 Population	2025 Population
Total Bond Program	\$81,275,000		\$212,569,305		\$125,187,532						
Collin County	\$38,608,000	47.5%	\$ 91,024,251	42.8%	\$ 72,440,478	57.9%	491,675	931,900	89.5%	100.0%	100.0%
Available to Cities	\$42,667,000	52.5%	\$121,545,054	57.2%	\$ 52,747,054	42.1%					
Allen	\$ 6,666,000	15.6%	\$ 14,750,000	12.1%	\$ 5,100,000	9.7%	43,457	89,000	104.8%	8.8%	9.6%
Anna	\$ 0	0.0%	\$ 238,650	0.2%	\$ 238,650	0.5%	1,176	N/A	N/A	0.2%	N/A
Celina	\$ 242,000	0.6%	\$ 3,646,904	3.0%	\$ 235,404	0.4%	1,849	5,750	211.0%	0.4%	0.6%
Dallas	\$ 2,707,000	6.3%	\$ 1,790,000	1.5%	\$ 1,410,000	2.7%	27,572	29,348	6.4%	5.6%	3.1%
Farmersville	\$ 400,000	0.9%	\$ 1,837,600	1.5%	\$ 144,800	0.3%	3,043	3,150	3.5%	0.6%	0.3%
Frisco *	\$ 6,379,000	14.9%	\$ 24,729,800	20.3%	\$ 9,310,000	17.7%	25,504	99,312	289.4%	5.2%	10.7%
Lucas	\$ 466,000	1.1%	\$ 0	0.0%	\$ 0	0.0%	2,931	16,650	468.1%	0.6%	1.8%
McKinney *	\$ 4,999,000	11.7%	\$ 15,600,000	12.8%	\$ 10,050,000	19.1%	54,384	125,600	131.0%	11.1%	13.5%
Melissa	\$ 0	0.0%	\$ 1,444,500	1.2%	\$ 1,022,500	1.9%	1,295	N/A	N/A	0.3%	N/A
Parker	\$ 0	0.0%	\$ 1,573,350	1.3%	\$ 751,450	1.4%	1,352	14,850	998.4%	0.3%	1.6%
Plano	\$14,720,000	34.5%	\$ 36,450,000	30.0%	\$ 16,750,000	31.8%	215,355	302,978	40.7%	43.8%	32.5%
Richardson	\$ 3,685,000	8.6%	\$ 7,415,000	6.1%	\$ 4,165,000	7.9%	32,814	36,168	10.2%	6.7%	3.9%
Sachse	\$ 0	0.0%	\$ 0	0.0%	\$ 0	0.0%	2,431	7,168	194.9%	0.5%	0.8%
Wylie *	\$ 2,403,000	5.6%	\$ 12,069,250	9.9%	\$ 3,569,250	6.8%	14,664	28,613	95.1%	3.0%	3.1%
Total	\$42,667,000	52.5%	\$121,545,054	57.2%	\$ 52,747,054	42.1%	427,828	758,587		87.0%	81.0%

* Proportionally funded based on anticipated growth



Further Funding

As stated earlier in the report, the Collin County Commissioner's Court ultimately set the transportation portion of the Bond Program to \$142 million. In addition to the \$125 million allocated for the Tier 1 Projects list, another \$17 million in funding was incorporated under the 2003 Bond Program. Table 2.3a summarizes the associated projects with their project costs and the bond funding requested. It should be noted that FM 720 and the Parker Road/US 75 interchange will be funded first and the remainder of the projects will be funded if they are initiated within 3 years of the November Bond Election.

Table 2.3a – Added Projects for Further Funding

Roadway Name	From	To	Total Project Cost	Bond Funding Requested
FM 720	Alma Road	Custer Road	\$ 6,280,000	\$ 6,280,000
Parker Road / US 75	Interchange	N/A	\$ 12,000,000	\$ 6,000,000
Alma Drive *	Spicewood Drive	Hedgcoxe Road		\$ 300,000
Windhaven Pkwy	County Line	Spring Creek Pkwy	\$ 3,200,000	\$ 1,600,000
Hedgcoxe Road	Georgetown Drive	Alma Drive	\$ 1,300,000	\$ 650,000
Shiloh Road	14 th Street	Park Boulevard	\$ 1,700,000	\$ 850,000
Razor Road	Ohio Drive	SH 121	\$ 2,100,000	\$ 1,050,000
Totals			\$ 26,580,000	\$ 16,730,000

* Increased County participation and decreased City participation shown on Tier 1 Projects list to achieve 50/50 matching funds.

Tier 2 Project List

A list of projects, termed Tier 2 Projects, is presented in Appendix I and includes seventeen (17) projects totaling \$18,032,473 in additional funding. Tier 2 projects are improvements that are important to the County from a regional perspective and are important to individual cities. However, sufficient funds were not available in the Bond Program to fund the Tier 2 projects. Tier 2 projects may be included if additional funding is secured or if additional funding becomes available due to a city's inability to contribute the required matching funds. The goal of the Tier 2 Project list is to make the cities whole on the projects that were "under funded". In addition, the design and construction of Hedgecoxe Road for Allen was included due to the high traffic volume and its importance as an east/west arterial. Furthermore, all the remaining Collin County projects were included in the Tier 2 Projects list. As shown in Table 2.4, the remaining Tier 2 projects were selected based on the approximate funding percentage of the Tier 1 projects as well as their regional importance.



Table 2.4 – Tier 2 Projects Funding Data

Location	Funding Data			
	Tier 1 Projects		Tier 2 Projects	
	Funding	% of Program	Funding	% of Program
Total Bond Program	\$ 125,187,532		\$ 18,032,473	
Collin County	\$ 72,440,478	57.9%	\$ 12,303,773	68.2%
Funds Available to Cities	\$ 52,747,054	42.1%	\$ 5,728,700	31.8%
Allen	\$ 5,100,000	9.7%	\$ 950,000	16.6%
Anna	\$ 238,650	0.5%	\$ 0	0.0%
Celina	\$ 235,404	0.4%	\$ 0	0.0%
Dallas	\$ 1,410,000	2.7%	\$ 0	0.0%
Farmersville	\$ 144,800	0.3%	\$ 0	0.0%
Frisco	\$ 9,310,000	17.7%	\$ 2,476,700	43.2%
Lucas	\$ 0	0.0%	\$ 0	0.0%
McKinney	\$ 10,050,000	19.1%	\$ 0	0.0%
Melissa	\$ 1,022,500	1.9%	\$ 927,000	16.2%
Parker	\$ 751,450	1.4%	\$ 0	0.0%
Plano	\$ 16,750,000	31.8%	\$ 0	0.0%
Richardson	\$ 4,165,000	7.9%	\$ 0	0.0%
Sachse	\$ 0	0.0%	\$ 0	0.0%
Wylie	\$ 3,569,250	6.8%	\$ 1,375,000	24.0%
Total	\$ 52,747,054	42.1%	\$ 5,728,700	31.8%

Comparison With 1999 Bond Program

As stated in the 1999 Collin County Bond Program, Roads and Highways (3), the goal of the Transportation Sub-committee then was to develop a \$60 million bond program for implementing the transportation needs for Collin County. That evaluation resulted in 51 projects being chosen at an approximate total project cost of \$124 million. For the 2003 Bond Program, \$142 million in bond funding will be available for 65 projects totaling \$291 million in project cost. Even though the number of projects chosen in both bond programs remained closely the same, nearly \$82 million more in funding will be required by Collin County for the 2003 Bond Program.

The foremost reason for this increase can be placed on the inclusion of four high profile projects: SH 121, FM 2551 (Murphy Road), Betsy Lane, and the DNT Extension. Because these projects will benefit the region as a whole, Collin County will fund approximately \$48.5 million with a \$3.3 million contribution by the City of Murphy for right-of-way acquisition. In addition, the 2003 Bond Program includes an increase in county discretionary funds from \$7.8 million to \$10 million.





2.3 Bond Program Website

Development and Deployment

Due to the short time period available to develop the Transportation Bond Program, it was necessary to disseminate information to the Transportation Bond Committee as quickly as possible. Carter & Burgess, Inc. created a website to act as a project database and platform to disseminate information to the Committee. The website contains several features including a project location map, Bond Committee contact list, library of County sponsored reports, and project information for the 2003 Transportation Bond Program.

Members of the Committee are provided access to the website and the ability to browse and compare project information via the database. A location map is incorporated in the website to familiarize committee members with the project sites. Furthermore, the County Thoroughfare Plan is integrated into the location map to show the regional importance of various projects. The website is also used to inform committee members of upcoming meetings and other pertinent information regarding the Bond Program.

Future Uses for Program Management

The website has the versatility and flexibility to be useful to the County and the Committee for program management after the bond election. Possible uses include tracking the status of various levels of project completion, updating project costs and tracking or scheduling bond funding. The website can be utilized to provide initial project lists, screen projects and provide a consistent format for programming transportation improvements for future bond elections.



SECTION 3 - SUMMARY AND RECOMMENDATIONS

3.1 Summary

As shown on the Initial Project Screening list in Appendix C, approximately \$421 million in total project cost is needed to satisfy the present and anticipated near future transportation infrastructure needs of the County. However, based on a \$142 million contribution by the County, only \$291 million in transportation improvements will be implemented through this Bond Program. As recommended by the Transportation Sub-committee and to assist the Commissioners Court with determining the most effective projects to fund by this Bond Program, a tier system was developed to provide a viable list that met the criteria of the Bond Program as well as provide additional projects should funds become available. The list identified in Appendix H includes the proposed improvements selected as the Tier 1 projects for the 2003 Transportation Bond Program. The projects summarized in Table 2.3a includes the proposed improvements added as a result of the County Commissioner's decision on July 8, 2003. All 65 of these projects totaling a bond amount of \$141,917,532 represent the most critical transportation needs for Collin County. From the Tier 1 Projects list, three (3) projects were not funded at a full fifty percent (50%) match by the County due to funding limitations. The cities will fund the additional costs for these projects because they are necessary for their cities.

The county participation for a particular project is a fixed amount. If a certain project overruns its estimated cost, the County's portion of the funding for that project will not increase. In cases where project costs overrun, it may be necessary to change the scope to warrant the allotted funding amount. This measure ensures that the County's contribution is capped despite unforeseen changes to project scope, costs, or scheduling. However, if a project selected for the bond program is dropped for any reason, the funding for that project remains within that city for application toward another project.

Appendix I identifies the Tier 2 projects selected for the 2003 Transportation Bond Program. The county participation for these 17 projects total \$18,032,473 and may be included in the Bond Program if additional funding is secured or if additional funding becomes available due to a city's inability to contribute the required matching funds. If additional funding becomes available for Tier 2 projects, the following priorities should be followed:

1. Increase the county participation for the "under funded" Tier 1 projects shown for Wylie and Frisco, respectively.
2. Fund the Hedgecoxe Road projects in Allen.
3. Fund the projects listed for Collin County in the order provided in Appendix I.
4. Fund the construction of the Melissa Road project in the City of Melissa.



3.2 Future Transportation Bond Program Recommendations

Several comments were received throughout the development of this Program that should be considered in developing future bond programs. The funding for projects was primarily based on the cities' population as a percentage of the County population. Therefore, the majority of the funds available were allocated to the larger cities in the County. The majority of the comments pertain to the distribution of the available bond funds and/or the amount of matching funds required by the cities. First, encourage the cities to pursue "other participation" funding from TxDOT or private developers by reducing the percentage of city match required if additional funding is secured. Secondly, reduce the match percentage for smaller cities based on their ability to pay, population density or employment density.



Numerous discussions were presented concerning development of a technical rating system that calculates a score for projects similar to that used by the NCTCOG. The resulting bond program would include the highest-ranking projects based on the calculated scores and the ability of the cities to match the required funds. However, technical rating systems that rate various project types equally are difficult to develop and consensus among participating cities is difficult to achieve. Furthermore, these systems need a considerable amount of time to develop and implement.

Finally, it is suggested to begin the bond programming with the development of a website and database for the cities to enter project information directly. Requiring the project information to be entered into the database will ensure consistent data acquisition and eliminate errors caused by misinterpretation of data. Development of a "smart database" that calculates project costs based on inputs from the cities will produce cost estimates that are more readily comparable in a shorter amount of time.