Final Report

The DOT-Mandated Studies on Tolls and Tunnel and Public Highway Authorities

Prepared for
STATE OF COLORADO
DEPARTMENT OF TRANSPORTATION
Denver, Colorado

Kimley-Horn and Associates, Inc.
Highway Economics and Finance Group
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PREFACE

This report is organized into the two basic parts which were established in the Request For Proposals and by the Colorado Legislature:

Part A - Toll Policy Study

Chapter 1 - Toll Revenue Financing Policy

Part B - Public Highway Authority Policy

Chapter 2 - Institutional Policy
Chapter 3 - Public Policy Issues

A detailed outline of each part is provided in the Table of Contents.

A summary of important policy recommendations for both parts of the study are contained in the **Executive Summary** following.

EXECUTIVE SUMMARY

The following points embrace the highlights of the consultant team's recommendations. These recommendations are divided into three strategic policy groups: 1) tollroad financing policy, 2) strategic financing opportunities, and 3) institutional policy.

RECOMMENDATIONS - TOLLROAD REVENUE FINANCING POLICY

1. The consultant team prefers motor fuel taxes over tolls as a transportation funding mechanism. However, there appears to be little probability of short-term or long-term increases in motor fuel taxes of sufficient magnitude to correct the transportation deficiencies of the State of Colorado. Therefore, the legislature should provide the Colorado Department of Transportation (CDOT) and other transportation providers with alternative funding sources for transportation such as value capture.[1]

2. The use of tolls and new toll roads is one of several equitable[2] means of financing new capital improvements. The CDOT should undertake a more aggressive program of tollroad development where appropriate, exercising its existing tollroad development authority.

3. Non-users often also benefit from decreased congestion on non-toll facilities in tollroad corridors. In recognition of this, and the need to stimulate new sources of transportation funding, the U.S. Congress passed the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), which permits federal loans and capital assistance for public *and private* tollroads, tunnels, and bridges. The CDOT should adopt policies to use its federal funds within all the discretionary modes available in ISTEA on a case-by-case basis.

4. It is recommended that CDOT exercise sufficient latitude and discretion to develop toll facilities within the following categories:

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[1]If all the funds needed could be created through motor fuel taxes, this recommendation (and this report) would be unnecessary.

[2]People who are opposed to tolls can elect not to pay them by using other non-toll facilities. (If the tolls were not imposed, the new toll facility would not be an option. With tolls, the user has an option.) If he or she elects to use a non-toll facility, chances are the trip will be less congested, due to the traffic that *is* using the tollroad. Either way, the use can "vote" with his route selection decision, and can often receive user-benefits, regardless of that decision.

a. New expressway or new partially controlled access facility on a new alignment.

b. Adding lanes or significant upgrading of capacity on an existing expressway or partially-controlled access facility; policy options should include the discretion to place tolls on the new lanes only or on the entire facility.

c. Placement of tolls on existing HOV lanes that are under-utilized, so that excess capacity can be "sold" to single or two-occupant vehicles during peak hours. This should be managed in a way that, 1) does not degrade the freeflow condition of the HOV lanes, and 2) improves the productivity of both the HOV and general travel lanes.

The final decisions regarding these strategies should be subjected to detailed studies by CDOT on a case-by-case basis. Toll pricing policy should also be exercised with wide latitude and discretion at the CDOT level, since free-market factors will ultimately control pricing except in very unusual cases, which CDOT can and should regulate.

5. Toll revenues may not create substantial net cashflow surpluses for several years. However, when such surpluses occur, these revenues should be generally restricted to use within the general tollroad corridor and/or system where they are collected. In addition, latitude in the disbursement of such revenues should include the use of these funds for multimodal operations and/or capital investments. Park-and-ride facilities, express bus services, bike paths, light-rail transit and other investments could be candidates for such funds.

6. The CDOT should exercise its general toll powers to utilize congestion pricing on toll facilities that experience heavy demands or that produce congestion on connecting facilities. The intent of this initiative would be to mitigate congestion through pricing, but not at the expense of creating congestion on parallel facilities that would offset "gains" on the toll facility.

7. For a potential project to be eligible for consideration as a toll facility, it is recommended that the facility be either a limited access highway or a partially-controlled access highway, with sufficient project-related revenues to cover, at a minimum, 50% of its capital costs before state assistance policies are employed. Projects (both toll and non-toll) competing for state assistance should be measured against several criteria, including, but not limited to:

1. Delivery schedule.
2. Capital cost coverage ratio - or level of public assistance required.
3. Project financing and revenue risks.
4. Financial commitment of other public and private entities.
5. Technical merit of proposed project.
6. Public need served.
7. Benefit/cost ratio using state assistance costs in the denominator.
8. Conventional benefit/cost ratio

8. The legislature should consider the creation and establishment of an independent state revolving fund to provide credit support, loans, and assist marginally feasible revenue-producing highway and transit projects. This fund should be professionally run and managed by financial experts with considerable risk assessment skills. It should also be independent of the CDOT.

RECOMMENDATIONS - STRATEGIC FINANCING OPPORTUNITIES

1. The use of "value capture" techniques for funding transportation should be given more widespread opportunity in Colorado. Again, this is an equitable funding technique that "captures" some of the landowner's benefit derived from the value imputed by a nearby transportation investment - either highway or transit. These funds can then help pay for the investment. This power, already vested in public highway authority law, should also be vested in the CDOT and local public entities who engage in road building or transit development. Limitations on the use of such power should include limits on the percentage of imputed value recaptured by the public agency. In addition, the requirements for a public hearing, property owner notification, and reasonable opportunity for appeal should be provided.

2. The ISTEA legislation provides for federal matching grants and loans to public and private tollroad developers. This report produces analyses that show that a tollroad matching policy can produce more total revenues and benefits than a policy that forbids such actions. Unfortunately, the current shortage of funds and the state's existing commitments preclude the immediate enablement of such a strategy. However, regardless of current financial difficulties, it is recommended that the Transportation Commission provide CDOT with broad latitude to employ such policies on a case-by-case basis. A tollroad assistance policy package should include discretion to:

- Provide federal *and state* matching grants and loans to tollroad projects that can provide 50% of their own support.[3]

- Provide up to 50% state-funded operating and maintenance cost support for the first 15 years of a tollroad project.

The above discretion should only be used where needed and considered on a case-by-case basis after thorough study by the CDOT.

3. The CDOT should formally adopt state-local matching policies that are currently deployed on an informal basis. The matching ratios should be adopted by the Transportation Commission for various categorical programs. The purpose of this policy recommendation is to:

   a. Encourage local funding of state-sponsored programs.

   b. Stretch the state dollar further and create more significant state projects.

   c. Reward local entities who financially participate in such programs.

   d. Draw down and put to work some of the residual cash resident in city and county accounts.

4. The CDOT has been evolving into more and more of a "maintenance" role rather than a primary provider of new transportation capacity. To maintain healthy economic growth and meet transportation demand, the legislature should consider a substantial increase in motor fuel revenues at the earliest practical date.

5. The legislature should consider and pass a comprehensive infrastructure privatization bill which should include transportation -- specifically tollroads, airports, and transit systems. An "office of privatization and tollroads" should be established within the CDOT to serve as a focal point for public, private and public-private tollroads and other transportation ventures. Private and public-private ventures should be considered and analyzed on a case-by-case basis using a "level playing field."[4]

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[3]ISTEA permits 80% grants and loans for toll tunnels and bridges. Colorado should permit this level of flexibility as well.

[4]Private sector taxes paid to the public sector should be given fair consideration in such studies.

6. Toll financing policy should not be viewed as a panacea for solving Colorado's transportation funding shortfall. Toll financing will help, but not solve, Colorado's transportation problem. Continuing motor fuel tax increases, expanded value capture policies, matching programs, and other creative financing techniques should all be employed in a systematic funding program designed to ultimately solve the funding problem for all modes of transportation in Colorado.

RECOMMENDATIONS - INSTITUTIONAL POLICY

1. Difficulties of the E-470 Public Highway Authority (PHA) may be linked, in part, to the economics of the project itself, early revenue forecasting errors, and the original conception of the project mission and delivery schedule. Therefore, the E-470 PHA and W-470, should not be used as an absolute or sole barometer for measuring the value of PHA's in general. Many states have experienced difficulties with individual expressway authorities from time to time. Yet, most of those same states continue to operate expressway authorities as partners in the delivery of needed transportation assets. Therefore, the consultant team recommends that the opportunity for local PHA's to be created should continue. It is recommended that the legislature enact oversight functions in a manner that would not inhibit PHA's ability to move quickly or that would create unnecessary encumbrances. Instead, an oversight plan should be created that encourages *and rewards* PHA's for cooperating on technical matters with the CDOT, and requires an early, independent due diligence review of costs, economic analyses, traffic and earnings forecasts and their attendant methodologies. Such a plan should be conceived in a way to be beneficial to all parties.

2. The CDOT should have the latitude to negotiate and enter into mutually agreeable inter-agency agreements with PHAs. These agreements could call for mutually agreed upon state financial assistance coupled with state controls necessary to protect the state's investment.

3. The CDOT should begin to negotiate, in detail, rational processes and procedures within which it will deal with the Denver Regional Council of Governments, in view of ISTEA. This framework should be designed to foster cooperative and productive dialogue that will produce maximum beneficial program results for the citizens of the Denver region. Similar constructs should be embraced with all of Colorado's MPO's.

CHAPTER 1
TOLL REVENUE FINANCING POLICY

This chapter focuses on the following primary questions regarding tollroad financing:

- What should the state's policy be in relation to tolls, tollroads, and tollroad financing?
- If a toll financing policy is adopted, how much revenue will be generated? and,
- How should tollroad revenues be allocated?

Before we begin our analysis, a brief presentation of tollroad characteristics is presented below. Our analysis follows this brief presentation by exploring the potential toll financing policies available to the State of Colorado.

Toll-financed highway facilities, while differing in minor details from region to region or from country to country, have a number of common characteristics which derive from the dual objectives of premium service (speed and safety) and control of access and egress. In summary, these common characteristics are:

- Physical Design/Access Control - Virtually all tollroads are designed as fully grade-separated, access-controlled expressways with median-separated, multi-lane, unidirectional roadways. With the exception of toll collection areas, these facilities differ little from standard interstate freeways. The older *intercity* tollroads found throughout the eastern United States typically have much wider interchange spacing than found on typical interstate highways; however, more contemporary urban tollroads (e.g., facilities in Florida, Texas, and northern Virginia) have interchanges spaced comparably to those on "free" roads.
- Location, Competition, Cost, and Traffic - The first phase of modern tollroad building consisted primarily of rural expressways and highways linking two or more major urban centers.[1] The older intercity tollroads had virtually no competition from the then primitive system of two-lane rural highways, and they were an immediate success. Modern toll facilities, both rural and urban, must compete with an extensive network of interstate highways, other freeways and

[1]The Boulder Turnpike (in its day) was an example of this type of facility.

expressways, and urban arterials.[2] Of late, the cost of highway construction, the availability of the "free" interstate system, and the relative decline in the cost of air travel have all coincided to limit new tollroad development to *within* urban areas where traffic volumes are highest. Construction costs of a typical stretch of urban tollroad may range from $3.7 million to $12 million per mile and, given that construction and operations costs can vary considerably even within the same urbanized area, modern facilities must, at an absolute minimum, attract traffic at toll-restrained volumes of at least 20,000 vehicles per day from opening day in order to remain financially viable on the basis of toll revenue alone.

- Operations/Toll Collection - The older intercity tollroads typically have been operated either with barriers requiring a periodic deposit of tolls[3] or with a "closed" ticket system requiring the user to stop when entering to obtain a ticket and again when exiting to pay the appropriate toll. Most modern urban toll facilities are operated using a variation on the barrier system which includes both "mainline" barriers (on the main travel lanes) and barriers at exit ramps. Toll collection has traditionally been a cash system, automated to some extent through the use of coin counting machines and token machines for high volume facilities in urban areas. Most recently, toll operators have begun to experiment with technology allowing remote sensing of identification cards carried by travelers while in motion. Termed "automatic vehicle identification" (AVI) or "electronic toll collection" (ETC), such technology can, in theory, process more than double the number of vehicles per lane than the best token system, and can allow operators to vary pricing by time of day, type of vehicle, and other factors. Segment I of E-470 is an example of the application of AVI technology.

1.1 TOLL FINANCING POLICIES

Before beginning a tollroad financing policy study, the question must first be asked, "are tolls needed at all? Can transportation infrastructure be funded with motor fuel tax revenue alone?" The answer to this basic and fundamental inquiry must be addressed in two parts. There are basically

[2]Indeed, tollroad programs in several states are required by law to ensure that all areas served by a toll facility also have access via a "free" road.

[3]The Boulder Turnpike, with its one barrier, was an example of this system.

two widely accepted methods that have been used in the past to fund most highway related infrastructure in the United States: motor fuel taxes and user tolls.

1.1.a. TOLLS VS. MOTOR FUEL TAXES

Motor fuel taxes collected within the State of Colorado are placed into the state's transportation trust fund. This fund is restricted to use on transportation projects. This source is used by the state, first, to "match" Federal funds. Funds remaining after all federal funds have been matched can be used as unencumbered "state-only" funds.

A fundamental finding of the consulting team is that the use of toll revenue is less attractive than motor fuel taxes because of the cost of toll collection and the attendant user inconvenience. Therefore, *if* adequate levels of transportation funding can be created using equitable motor fuel taxes, there would be no public need to consider a less attractive option. Unfortunately, this is not the case. In Colorado, and in the United States as a whole, motor fuel taxes have been unable to keep pace with:

- Increasing highway travel demand,
- Rising highway construction costs, and
- Improved motor vehicle fleet efficiency which shrinks revenue per vehicle-mile while demand (vehicle-miles of travel) continues to increase.

These factors have combined to create an acute shortfall in transportation infrastructure investment. Motor fuel taxes, in real dollars, have been remaining steady, or declining, while investment requirements have increased dramatically over the last 50 years. Therefore, the consideration of other "legs" of transportation funding is not only appropriate, but essential for continued competitive economic growth.

Tolls are a fair method of paying for infrastructure. The fees collected from those who use the system are used to pay back the debt incurred to build the facility. The fact that "users pay and non-users do not" is why this funding source is generally found to be politically acceptable. People who are opposed to tolls can elect not to pay for them by using other non-toll facilities. (If the tolls were not imposed, the new toll facility would not be an option. With tolls, the user has an option.) If he or she elects to use a non-toll facility, chances are the trip will be less congested, due to the traffic that *is* using the tollroad. Either way, the user can "vote"

with his route selection decision, and can often receive user-benefits, regardless of that decision.

1.1.b. TOLL REVENUE VS. OTHER REVENUE SOURCES

Toll revenue can also be evaluated against other possible sources of transportation revenue such as motor vehicle license fees, value capture revenue, weight-distance taxes, joint-development revenue, ground leases and so forth. Most of the "other" sources of revenue are generally small in comparison to motor fuel taxes. In addition, some sources are not only small but are connected with constituencies that possess some legislative influence and skills that are consequential. The ability of the state to materially decrease its shortfall in transportation funding through these "other" sources is relatively weak. This is not to say that toll revenue is a panacea, but that among the revenue enhancement options, the equity of tolls is at least equal to other techniques. Among the "other" strategies, value capture revenues are a promising possibility that is explored in more detail later. Let it suffice, for this discussion, to say that tolls, and "other" revenue sources should *all* be considered, until such time as there is a real danger of *over*-funding the state's transportation program -- which is not yet a likely possibility.

Now that we have determined that there is, in fact, a potential need for tolls, the first step in developing a toll policy is to establish and analyze its feasibility. This will be the focus of the next section.

1.2 GENERALIZED TOLL FEASIBILITY GUIDELINES

The feasibility of financing infrastructure projects in the State of Colorado is evaluated in this section. Project type, location, cost, traffic levels and financial policies were evaluated in the analyses: and the margin of feasibility of different scenarios were then compared. For the purposes of this discussion, the term "margin of feasibility" will be frequently used. This term is defined within this context as being the percent of total project capital costs that can be supported by a bond issue funded by the project's revenue streams after all deductions for operating and maintenance expenses and other financing and coverage costs are considered. For example, if a toll (or other) revenue stream will create a supportable project construction cost account of $75 million and the total project cost is actually $100 million, than the project has a margin of feasibility of .75. This means that 75 percent of the project's actual capital cost can be supported by a revenue bond program. This section also presents the methodology used by the Kimley-Horn CASH*STAR financial modelling

system, how it was used and describes the findings of the modelling results.

The analyses in this section are based upon general assumptions that cannot be used for purposes of determining the actual feasibility of a specific tollroad. A detailed study of individual projects should be undertaken before passing judgement on any toll project's feasibility.

It is important that we begin by first explaining the CASH*STAR model.

1.2.a. CASH*STAR TOLLROAD FINANCING MODELLING SYSTEM

The Kimley-Horn CASH*STAR model was developed to simulate the combined revenue and bond sizing effects of toll financing coupled with a variety of public/private and value capture financing methods. This model is capable of testing a variety of parameters to determine the "margin of feasibility" for selected categories of projects in various urban/rural settings throughout the state. This user-friendly model is designed to enable users to:

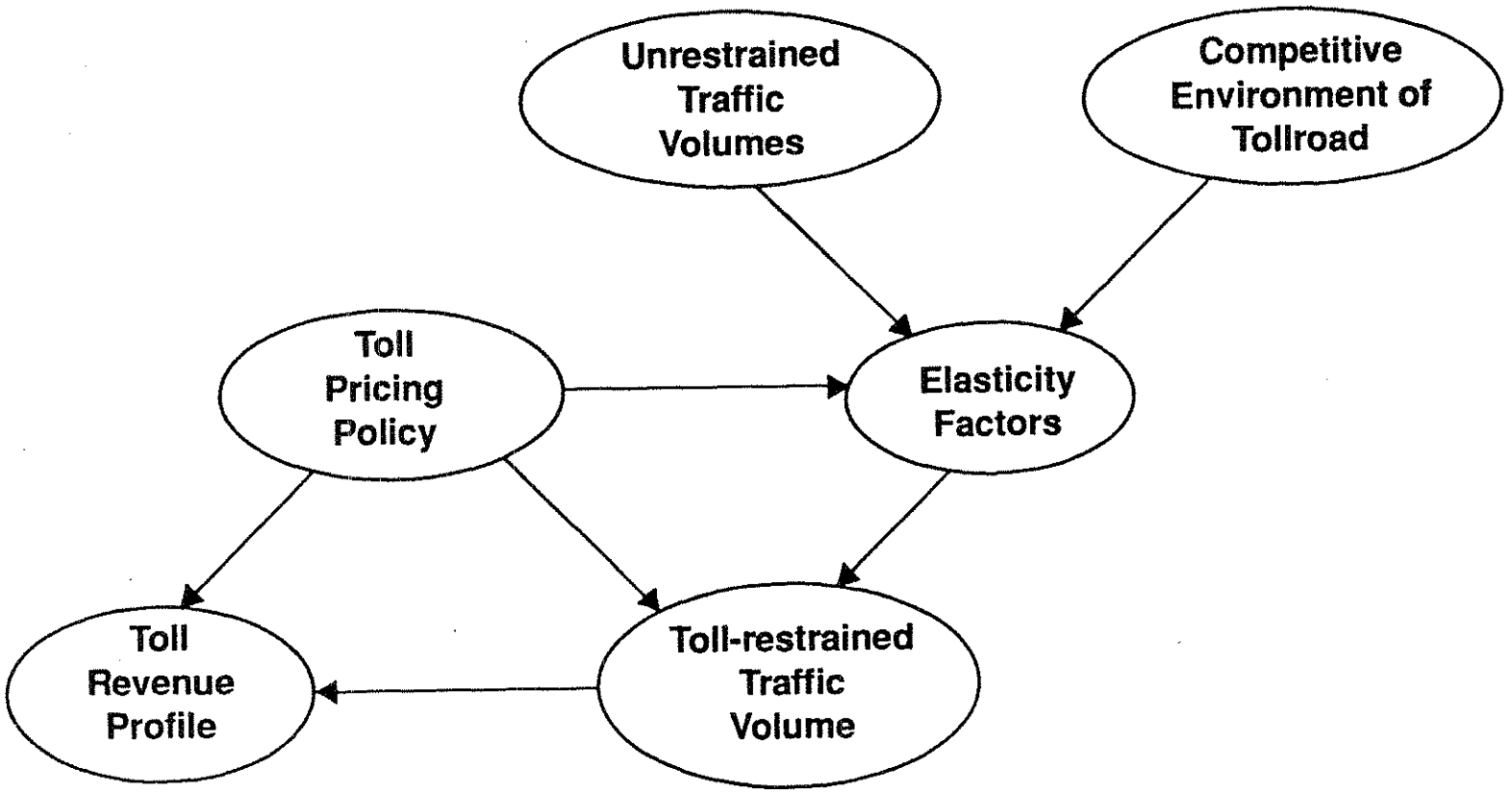
- evaluate a potential tollroad corridor, or set of corridors
- analyze variable traffic volumes
- analyze the geographic setting and character of projects
- analyze complex financing policies
- instantly see the project's rough margin of feasibility (based on the policy assumptions selected).

Some relationships exercised within the CASH*STAR model are shown in Figures 1-1 and 1-2. A more detailed description of the CASH*STAR model along with an example analysis is presented in Appendix A of this report.

When using CASH*STAR to evaluate the feasibility of financing infrastructure, it is necessary to begin by focusing on two key elements: project cost and project revenue. These elements, as they relate to Colorado, are presented in the following sections. First, we explore cost issues.

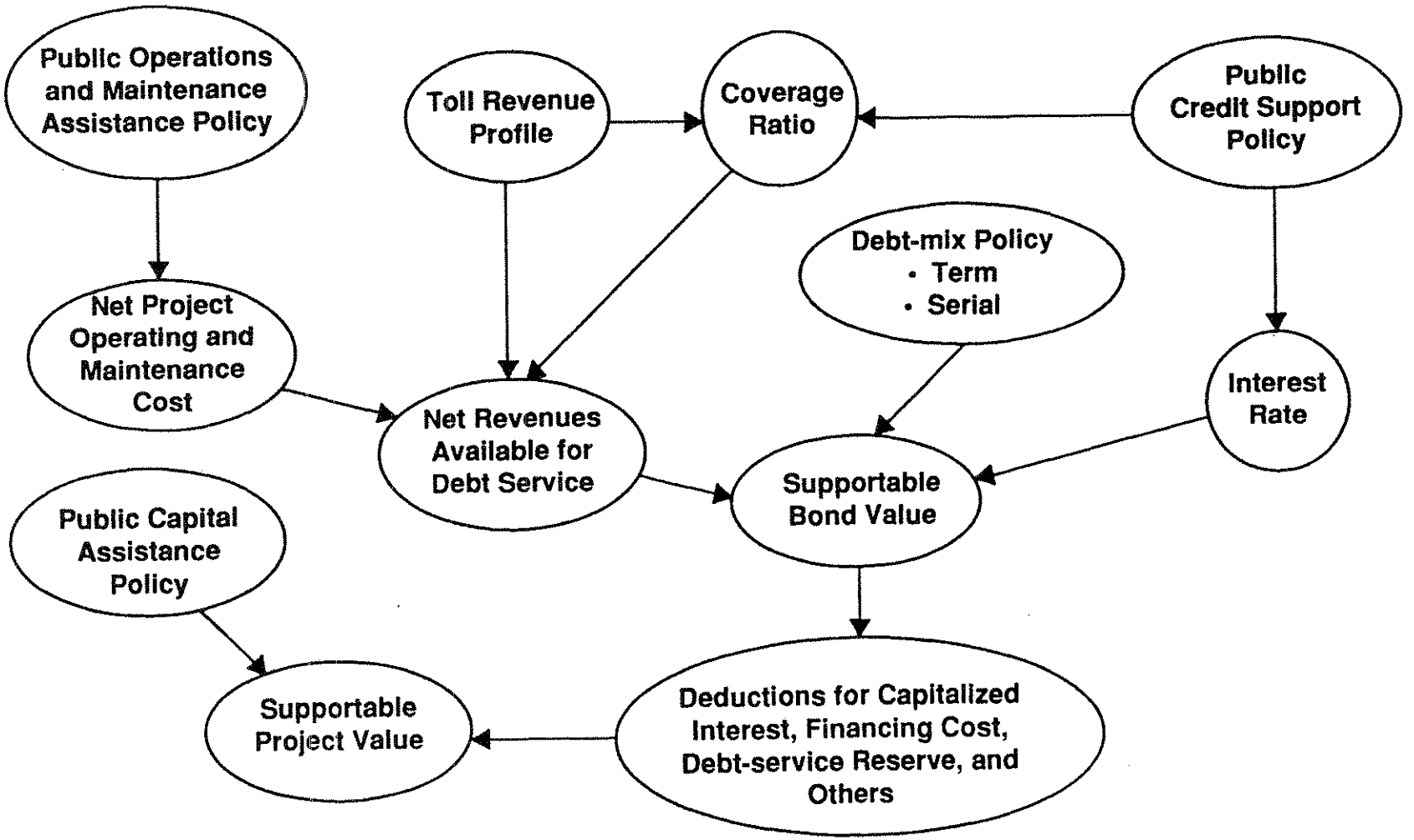
RELATIONSHIP OF KEY VARIABLES TO TOLL REVENUE

Figure 1-1



RELATIONSHIP OF KEY FINANCING POLICIES TO PROJECT SIZING

Figure 1-2



1.2.b. PROJECT COST ANALYSIS

The background setting for a particular category of project will have a significant and distinct effect on the cost profile for that project. For example, urban expressways in densely built-up areas can be extraordinarily expensive. A recently constructed 13-mile stretch of I-595 in Fort Lauderdale, Florida cost $1.3 billion, or roughly $100 million per mile. These costs were exacerbated considerably by the construction of two unusually complex freeway-to-freeway interchanges located on I-95 and Florida's Turnpike. On the other hand, suburban expressways located in the relatively undeveloped areas outside of the major metropolitan areas can cost as little as $7 million per mile. The number of interchanges and the spacing between interchanges will have a profound effect on the overall cost of suburban and rural expressway facilities.

The type of roadway improvement is another factor that contributes to the cost profile for a project. These categories of facilities include constructing new freeway on new alignments, adding lanes to existing freeways, upgrading existing arterial highways to "superstreets" or partially-controlled access facilities, and constructing new, partially-controlled access facilities or "superstreets" on new alignments. These five categorical project types times the three geographical categories (urban, suburban, rural) will yield fifteen sets of cost profiles to be used in the feasibility analysis.

For example, one type of project category evaluated in this study is a new expressway on a new alignment in a rural setting. Another type of project is upgrading an existing arterial highway to a "superstreet" in an urban area. The typical project costs for the fifteen project categories were provided by Colorado DOT staff and are summarized in Table 1-1.

This concludes the assessment of multivariant cost profiles for various project categories and background settings. Next, we turn our attention to the important issue of revenue profiles for various financing policy-sets.

TABLE 1 - 1
CAPITAL COST ASSUMPTIONS
FOR ROADWAY IMPROVEMENT ALTERNATIVES
($/mile)

	URBAN AREA	SUBURBAN AREA	RURAL AREA
BUILD NEW FREEWAY ON NEW ALIGNMENT	$11,813,000	$9,849,000	$6,069,000
ADD LANES TO EXISTING FREEWAY	$3,654,000	$3,507,000	$2,688,000
UPGRADING EXISTING ARTERIAL TO FREEWAY	$6,279,000	$6,006,000	$3,528,000
BUILD NEW PARTIALLY CONTROLLED ACCESS HIGHWAY ON NEW ALIGNMENT	$9,450,000	$7,875,000	$4,967,000
UPGRADING EXISTING ARTERIAL TO PARTIALLY CONTROLLED ACCESS HIGHWAY	$4,473,000	$4,274,000	$2,426,000

SOURCE : COLORADO DEPARTMENT OF TRANSPORTATION

1.2.c. TRAFFIC VOLUME LEVELS AND PROJECT REVENUE

Needless to say, the toll revenues collected from the traffic using a toll facility is its basic revenue source. A higher traffic volume level brings a higher amount of toll revenue which increases the margin of feasibility of a project. However, the margin of feasibility for a particular project can also be significantly affected by factors other than the traffic volume alone. For example, if the State adopted a public credit support policy that was fairly aggressive, then the coverage ratio (required for estimating the net revenues available for debt service) could be lowered and the size of the supportable bond issue could be increased significantly. At the same time, an aggressive public credit support policy could also yield a lower interest rate, which would also affect the supportable bond and the supportable project value. Several policy categories were evaluated in conjunction with the different traffic volume levels for margin of feasibility. The traffic volume levels and other revenue-generating policies are discussed below.

Traffic Volume Matrices

Various levels of traffic that could be expected on each of the fifteen facility types discussed in section 1.2.b were evaluated for margin of feasibility in six distinct traffic demand levels. These levels include toll-restrained traffic volumes of 10,000 vehicles per day, up to 60,000 vehicles per day, in 10,000 vehicles per day increments. For each traffic volume category, a revenue estimate and preliminary bond sizing analysis was performed, yielding a project construction cost account that could be supported by toll revenue bond financing alone. For example, it is a relatively straight-forward exercise to estimate the revenue yield for a toll policy of 10 cents per mile times 50,000 vehicles per day, using traditional serial debt bond sizing calculations, current underwriting criteria, and financial controls. Once the supportable project construction cost account is computed, this figure can be divided by the actual construction cost for a prototypical one-mile facility, for example, and a "margin of feasibility" can be easily determined.

Pricing Policies

In the 1940s, 1950s and 1960s, tollroad pricing policies of 2 cents to 4 cents per mile were not uncommon, particularly for rural tollroads. However, modern urban expressways are often difficult to finance with toll rates as high as 10 cents per mile. Studies recently conducted by members of the consultant team have demonstrated that in fairly competitive

environments, toll rates of 15 cents per mile are possible[4] before a point of diminishing returns is reached relative to net revenue. The Reason Foundation in California has recently estimated that a peak-hour toll rate of 50 cents per mile would have to be used before significant reductions in traffic volumes would begin to occur on some of California's most congested freeways. This shows that recent trends appear to support relatively inelastic behavior relative to toll pricing. This is not a suggestion that Colorado adopt an exorbitant toll pricing strategy; however, premium and moderate pricing strategies in the 10 cents per mile category should be reasonable for this analysis. Once again, the effect of toll pricing policy on the margin of project feasibility will be fairly substantial. In this study, an average pricing policy of 8 cents, 10 cents, and 12 cents per mile was tested for the facilities in an urban or suburban area, and an average pricing policy of 6 cents, 8 cents, and 10 cents per mile was tested for the facilities in rural areas. This reflects a moderate to moderately aggressive framework from a policy perspective.

Indexed Toll Rate - To acquire the greatest returns on toll revenue, a toll rate indexing strategy should be deployed. This policy provides for an increase in toll rates in accordance with the general consumer price index. This provides for maximal leveraging of structured debt in the financing. Historic long term inflation, according to the U.S. Department of Commerce, is about 3% per year, and is used in this study.

VALUE CAPTURE REVENUE POLICIES

It is important to consider the use of "value capture" as a supplemental source of revenue for tollroad projects. Three value capture policies were evaluated for margin of feasibility in this study:

Special Assessment District Value Capture - The special assessment district technique evaluated in this study is the creation of special tax districts to collect additional property tax. The additional property tax millage was calculated so the tollroad could capture a portion of the anticipated value increase on property within the districts as a result of constructing the toll road. The capture rate was tested in conservative (0%), moderate (50%), and aggressive (75%) levels for margin of feasibility testing purposes. A variety of collection/taxation strategies could be deployed within this broad policy concept, including: motor vehicle tag fees, sales tax, sales tax increment, employee taxes,

[4]Palm Beach Expressway Traffic and Revenue Study, Kimley-Horn and Associates, Inc., 1988.

transportation utility fees and so on.[5]

Impact Fee District - The impact fee district policy tested in this study includes $0, $1000, and $2000 per dwelling unit and $0, $1, and $2 per square foot for non-residential development.

Fractional Tax Increment Financing - The fractional tax increment capture policy considered in this study is to capture the added tax benefits (City and County property tax) which are results of property value increase due to a public investment in infrastructure. Similarly, the tax increment capture rate was tested in conservative (0%), moderate (50%), and aggressive (75%) levels for margin of feasibility.

REAL ESTATE-RELATED REVENUE POLICIES

Joint Development - The first real estate policy considered in the margin of feasibility test is joint development. A combination of non-residential and residential joint development projects were entered in the CASH*STAR model to achieve an increase in margin of feasibility. The selected conservative joint development policy is no joint development. For moderate and aggressive policy levels the selected joint development policies are one joint development project for every four interchanges and one joint development project for every two interchanges, respectively. Joint development is not considered probable for rural areas.

Service Plaza Concession Revenue - This policy applies to service plazas located on a toll facility, such as those on the Florida and Ohio Turnpikes, to mention two examples.

A conservative policy of "NO" and a moderate/aggressive policy of "YES" were evaluated for margin of feasibility. The revenue generated by the service plazas was assumed 0.4¢ per vehicle mile travelled on the system.[6]

Other Revenues - In addition to toll revenue and revenue generated by service plazas, a toll facility can also generate other revenues through advertising, collecting special license fees, and investment. A conservative policy of "NO" (no fees from these sources) and a moderate/aggressive

[5]This concept can embrace existing statutory powers in Colorado, including LID's, PHA law, etc.

[6]This is based upon actual service plaza data in Ohio, Appendix B provides an additional listing of creative "system revenues" and "vendor-financing" concepts. Ohio is one of a few states with excellent plaza financial data. There is no reason to anticipate that Coloradan revenues on a "per vehicle-mile" basis would be substantially different.

policy of "YES" (fees collected from one or more of the identified sources) were also evaluated for margin of feasibility. The other revenues were assumed 0.25¢ per vehicle mile travelled.[7]

Now, we will shift our attention away from "user" and value capture revenues and focus on some public financing and public assistance policies.

PUBLIC FINANCING POLICIES

It is apparent that the margin of feasibility for a particular project can be significantly affected by factors other than traffic volume alone. Policies related to how the tollroad providers can get assistance in financing, i.e., operating and maintenance (O&M) and public capital assistance, public debt structure, and public credit support, all greatly affect the feasibility of a toll facility.

Federal Tollroad Matching Policy - The Federal matching policy for tollroad facilities is contained in the Intermodal Surface Transportation Efficiency Act (ISTEA) was signed into law on December 18, 1991. This Act authorizes the use of Federal funds to be allocated for various programs, including tollroads, throughout a six year period (1992-1997). Eligible tollroad projects include:

- Construction of toll highways, bridges, or tunnels (except on the Interstate System).
- Reconstruction, resurfacing, restoring, and rehabilitation of toll highways, bridges, or tunnels.
- Reconstruction or replacement of toll-free bridges or tunnels and converting them to a toll facility.
- Preliminary feasibility studies for constructing or reconstructing toll facilities.

Both publicly and privately owned toll facilities are eligible for federal participation. The federal funding share is 50 percent for the construction of new toll roads and the conversion of existing toll-free facilities to toll facilities. An 80 percent share is available for the construction, reconstruction, or replacement of bridges, tunnels, or their approaches.

A more detailed description of the ISTEA legislation is contained in Appendix C of this report.

[7]This is based upon actual service plaza data in Ohio.

Public Capital Assistance - Federal-State Matching Policies - Another key policy issue relates to how "surplus" state funds might be leveraged. This issue-set can best be described by an example: assume a $50 million federal apportionment would normally be "matched" with $12.5 million in state gas tax revenue; now, input the federal toll and matching policy, allowing up to 50 percent of the toll project's cost can be financed with federal funds; Colorado has several candidate toll projects. The project with the highest "margin of feasibility" is judged to be the most attractive with a 50 percent margin of feasibility ($60 million in supportable project cost) and a $120 million price tag. In this case, the state could elect to match the available $50 million in federal funds with the $60 million in toll revenue bond funds to create $110 million in capital for the tollroad with no state capital assistance. However, the state now has $12.5 million in unmatched state funds, since the $50 million federal match is now being applied to a tollroad venture. Under this scenario, the state could apply a state capital assistance subsidy to the tollroad (or $10 million in state funds) to create a 100 percent feasible toll project. At this point, the state still has $2.5 million in unmatched, unencumbered "new" cash to expend on projects of its choice. This $2.5 million in state funds could become a source of additional tollroad assistance funds.

The implied policies in this scenario center around two possibilities: Maximize the application of federal matching funds toward eligible toll projects. Use the "released" unmatched portion of state funds toward toll project opportunities that maximize the leverage of these funds. A comparison of this policy-set with the traditional matching policy containing no provision for toll financing would look like this:

Traditional Federal Matching Program Yield	State and Federal Toll Financing Program Yield:
$62.5 million	$122.5 million
($12.5 million state funds plus $50 million in federal funds)	($60 million in toll revenue bonds, $50 million in federal matching funds and $10 million in state matching funds, plus $2.5 million in unmatched state funds)

In other words, a maximum tollroad matching policy could yield $50 million more funds than would normally be available. We believe these examples of *some* of the emerging federal policies graphically show some of the potential benefits of this policy to the state agency, if the state is able to position itself to take advantage of the federal policy change. Therefore, we recommend that the DOT adopt flexible policies to use

state and federal transportation funds to match tollroad funds on a selective, case-by-case basis.

State-Local Matching Policy - Currently, the Federal Highway Administration (FHWA) uses a matching system to get more mileage out of its dollars. After matching Federal funds, the State's remaining funds could be used to develop a matching policy between local government and the State only. Local funds could also be used to create a portion of the state match in its federal matching programs. These policies can inspire local governments to come up with as much funding as possible; therefore, more projects can come to fruition. To provide the most incentive and leverage, a 90-10 or 80-20 matching plan could be formulated. A "use-it-or-lose-it" policy could produce the strongest form of incentive. A formal state-local matching policy for selected categorical programs is recommended.

Capital assistance from Federal, State and local governments were evaluated for margin of feasibility in three policy levels: conservative, moderate, and aggressive. According to the 1991 ISTEA legislation, the capital assistance from the Federal Government for toll facilities can be up to 50%, providing certain criteria are met. A state/local capital assistance matching policy for tollroads was evaluated at levels of 0%, 0%, and 10%, for conservative, moderate and aggressive policies, respectively.

Operating & Maintenance Assistance - It is recommended that the Colorado DOT adopt an aggressive operating and maintenance cost assistance policy that would enable the State to "take out" or "cover" up to 50% of the operating and maintenance (O&M) costs for a tollroad project for a period of up to 15 years. Such a policy would create a substantial effect on the margin of feasibility for a project. This result can offset the fact that the early years of a project, as mentioned previously, are extremely lean revenue years. By removing 50% of the O&M cost obligation, the revenue profile for the net revenues available for debt service are substantially increased. This, in turn, creates a substantial effect on the size of the supportable project construction cost account.

The conservative and moderate State O&M assistance policy was tested at 0%, while the aggressive assistance level was tested at 50% for 15 years.

DEBT FINANCING POLICIES

Another method for funding infrastructure is creation of debt financing. The financial policy of the State, regarding nontraditional forms of debt financing, could significantly affect the size of the pool of capital that

would be created in a project's financing. For example, serial debt programs are customary, traditional ways of bond financing. However, toll revenue projects exhibit notoriously weak revenue streams in the early years of the project's life cycle. Therefore, the amount of capital that can be created using a serial debt stream that is extraordinarily weak in the early years is going to be very limited. The use of deferred payment debt, or structured debt, has recently become more accepted in the tollroad financing arena, if not yet fully embraced in the credit markets.[8] The structured debt financing approach enables the tollroad developer to capitalize a larger sum of money at the beginning of a project, thereby substantially increasing the "margin of feasibility" of any given project that has a growing revenue stream, as do most toll road projects. The use of structured debt is recommended for use in the State of Colorado toll financing policy for these reasons.

Credit Support Policy

If the State adopted a public credit support policy that was fairly aggressive, then the coverage ratio required for estimating the net revenues available for debt service could be lowered and the size of the supportable bond could be increased significantly. At the same time, an aggressive public credit support policy could also yield a lower interest rate, which would also affect the supportable bond and supportable project that would be forthcoming from the analysis. In short, the public credit support policy of the State of Colorado could have a significant effect on the margin of feasibility for any given project category.

In Florida, and elsewhere, local County gas tax funds are often used as project-level revolving funds. The state or federal government could also assume this role. This could provide several advantages. These include avoidance of local political-financing problems associated with the pledge and short-term escrow of local funds. In addition, the state-funded accounts, if drawn down, would, many times, be repaid in the future. The replenishment of these funds, or the non-consumptive pledge of these funds, means they can be used again and again. This is a significant departure from the traditional usage and deployment of state funds.[9] The creation of state-funded "pledge" accounts or state revolving funds and subordinate revolving debt accounts should be seriously explored.

[8]Some credit analysts still view structured toll revenue bonds as "dicey" propositions.

[9]Federal ISTEA funds cannot currently be used in this manner.

State revolving loan funds are state appropriations. The principal of the fund, once established, is not used to retire principal, but is revolved or rolled over to make additional loans.

There are two primary types of revolving funds:

1. The pure or unleveraged fund, where the original capital is permanently contributed, i.e., by an appropriation of funds or dedication of a tax revenue.

2. The leveraged fund, where at least part of the capitalization comes from borrowed funds that must be repaid. To the extent that there is a permanent portion of the fund not lent out, this reserve can be used to increase the security behind any borrowing done externally.

State revolving fund assistance was evaluated for margin of feasibility as a candidate credit support policy in this study as a part of the moderate financing policy-set.

1.2.d. POLICY "PACKAGING" AND ANALYSIS RESULTS

In summary, the above-mentioned revenue-generating policies were combined into three policy packages: conservative, moderate, and aggressive. The conservative policy-set includes toll revenue only and assumes that the project will be financed with serial debt only. No value capture, real estate, or public financing policies are considered in this policy package. The toll rate is set at 8 cents per mile for toll projects in urban and suburban areas and 6 cents per mile for rural areas.

The moderate policy-set brings in structured debt financing, value capture, real estate, and public assistance financing policies. The public assistance financing policies considered in the moderate policy-set include public assistance that will be repaid in the future such as federal loan assistance and credit enhancement policy such as state revolving fund assistance. Toll rate indexing is also a part of the moderate policy-set with the toll rate starting at 10 cents per mile for urban and suburban toll projects and 8 cents per mile for rural toll projects, and experiencing 3% inflation on average.

The aggressive policy-set also includes structured debt financing, value capture, real estate, and public financing policies. The magnitude of the value capture and real estate financing policies are greater in the aggressive package than in the moderate package. Public assistance

policies that call for permanent public contributions, such as federal/state/local capital assistance and state O&M assistance, replaced the federal loan assistance and state revolving fund assistance policies used in the "moderate" policy-set.

Each policy package was evaluated for margin of feasibility for each of the fifteen facility types with selected traffic volume levels (270 combinations). Table 1-2 summarizes the three policy "packages" used in the analysis.

Table 1-3 depicts the technical assumptions used in the CASH*STAR model. Most of the technical assumptions were assembled from information collected from the State of Colorado. Table 1-4 shows how the combination or "packaging" of policy choice can affect the margin of feasibility for the fifteen different tollroad project types under different levels of toll-restrained traffic activity.

As shown in Table 1-4, if a tollroad project has an opening year demand of 20,000 toll-restrained vehicles per day, then the moderate policy-set can cover over 100% of the project cost. The aggressive policy-set can cover more than 100% of the project cost for all the facility types except constructing a new freeway on a new alignment in rural areas. The aggressive policy package is showing a high margin of feasibility because the federal/state/local capital assistance alone covers 60 percent of the total project cost. The state O&M assistance is creating a substantial increase in the margin of feasibility in addition to the capital assistance.

For the conservative policy-set, since toll revenue is the only source to pay off the serial debt, the opening year toll-restrained traffic volume would have to reach 40,000 vehicles per day before the capital cost can be 100% covered for some lower cost projects.

The scenario of building a new freeway on a new alignment cannot be 100% affordable with a conservative financing policy package, even if the toll-restrained traffic demand reaches 60,000 vehicles per day in the opening year.

Overall, the moderate policy package is considered satisfactory and sufficient to provide a good margin of feasibility even for projects that only have toll-restrained traffic demand as low as 20,000 vehicles per day.

This concludes the rough quantification of tollroad feasibility conceptual guidelines. The next section deals with related issues associated with the justification and feasibility of tollroads: demand management and environmental considerations.

TABLE 1 - 2
TOLL ROAD FINANCING POLICY ALTERNATIVES

	POLICY LEVEL								
	URBAN AREA			SUBURBAN AREA			RURAL AREA		
	CONSERVATIVE	MODERATE	AGGRESSIVE	CONSERVATIVE	MODERATE	AGGRESSIVE	CONSERVATIVE	MODERATE	AGGRESSIVE
PRICING POLICIES:									
Toll Rate	$0.08/MILE	$0.10/MILE	$0.12/MILE	$0.08/MILE	$0.10/MILE	$0.12/MILE	$0.06/MILE	$0.08/MILE	$0.10/MILE
Indexed Toll Rate	NO	YES	YES	NO	YES	YES	NO	YES	YES
DEBT FINANCING POLICIES:									
Serial Debt	YES	YES	YES	YES	YES	YES	YES	YES	YES
Structured Debt	NO	YES	YES	NO	YES	YES	NO	YES	YES
VALUE CAPTURE POLICIES:									
Special Assess. District Capture Rate	0%	50%	75%	0%	50%	75%	0%	50%	75%
Impact Fee District	NO	$1000/DU $1000/1000 SF	$2000/DU $2000/1000 SF	NO	$1000/DU $1000/1000 SF	$2000/DU $2000/1000 SF	NO	NO	NO
Fractional Tax Incre.Dist.Cap.Rate	0%	50%	75%	0%	50%	75%	0%	50%	75%
REAL ESTATE POLICIES:									
Joint Development Projects per District	0	.25	.5	0	.25	.5	0	0	0
Turnpike Service Plazas	NO	$0.00400/VMT	$0.00400/VMT	NO	$0.00400/VMT	$0.00400/VMT	NO	$0.00400/VMT	$0.00400/VMT
Ad.,License,and Other Revenues	NO	$0.00250/VMT	$0.00250/VMT	NO	$0.00250/VMT	$0.00250/VMT	NO	$0.00250/VMT	$0.00250/VMT
PUBLIC FINANCING POLICIES:									
Federal Capital Assistance	0%	0%	50%	0%	0%	50%	0%	0%	50%
Federal Loan Assistance	0%	50%	0%	0%	50%	0%	0%	50%	0%
State/Local Cap.Assis. Matching Policy	0%	0%	10%	0%	0%	10%	0%	0%	10%
State Revolving Fund Assistance	NO	YES	NO	NO	YES	NO	NO	YES	NO
State O&M Assistance	0%	0%	50% @ 15 yrs	0%	0%	50% @ 15 yrs	0%	0%	50% @ 15 yrs

TABLE 1 - 3
CASH*STAR TECHNICAL ASSUMPTIONS

	GEOGRAPHIC/POLICY SUBSETS								
	URBAN AREA			SUBURBAN AREA			RURAL AREA		
	CONSERVATIVE	MODERATE	AGGRESSIVE	CONSERVATIVE	MODERATE	AGGRESSIVE	CONSERVATIVE	MODERATE	AGGRESSIVE
I. FINANCIAL DATA									
a) No. of Years of Amortization	30	30	30	30	30	30	30	30	30
b) No.of Yrs of Amortization-equity	40	40	40	40	40	40	40	40	40
c) Capitalized Interest Rate	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%
d) Cost of Issuance	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
e) No.of Yrs of Capitalized Interest	2	2	2	2	2	2	2	2	2
f) Underwriters Discount	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
g) Year 1	1995	1995	1995	1995	1995	1995	1995	1995	1995
h) Interest Rate on Cash Reserves	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%
i) Int. Rate on Shrt Term Borrowing	12.00%	12.00%	12.00%	12.00%	12.00%	12.00%	12.00%	12.00%	12.00%
j) Fed/State Cap. Assistance (%)	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven
k) State O & M Assistance (%)	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven
-No.of Yrs of State O&M Assis.	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven
l) Local Capital Assistance (%)	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven
m) Capital Reserve Sinking Fund (%)	NO	NO	NO	NO	NO	NO	NO	NO	NO
-No.of Yrs of Cap.Res.Sink.Fund	NO	NO	NO	NO	NO	NO	NO	NO	NO
n) State Revolving Fund Assist. ?	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven
II. TRAFFIC IMPACT FEE DATA									
a) Residential Impact Fees (S/Unit)	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven
b) NonRes Impact Fees (S/1000 sf)	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven
c) Impact Fee Growth Rate	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
III. PROJECT DATA									
a) Capital Cost per Mile	see table III - 1	see table III - 1	see table III - 1	see table III - 1	see table III - 1	see table III - 1	see table III - 1	see table III - 1	see table III - 1
b) O & M Cost per Mile	250,000	250,000	250,000	220,000	220,000	220,000	200,000	200,000	200,000
c) Avg Unrestrained Traffic Year 1	to be tested	to be tested	to be tested	to be tested	to be tested	to be tested	to be tested	to be tested	to be tested
d) Traffic Growth Rate	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	2.00%	2.00%	2.00%
e) Level of Elasticity(1=very high)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
f) Roadway VMT (intern. computed)	to be computed	to be computed	to be computed	to be computed	to be computed	to be computed	to be computed	to be computed	to be computed
g) Toll Rate per Mile	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven
h) % Increase in Tolls Fm Trucks	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%
i) Elasticity (proprietary,computed)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
j) Growth Rate w/Elasticity(computed)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

TABLE 1 - 3 (Continued)
CASH*STAR TECHNICAL ASSUMPTIONS

	GEOGRAPHIC/POLICY SUBSETS								
	URBAN AREA			SUBURBAN AREA			RURAL AREA		
	CONSERVATIVE	MODERATE	AGGRESSIVE	CONSERVATIVE	MODERATE	AGGRESSIVE	CONSERVATIVE	MODERATE	AGGRESSIVE
III. PROJECT DATA (Continued)									
k) O & M Cost Growth Rate (%)	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
l) Highway Const. Cost Growth Rate	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
m) No. of Miles of Project	10	10	10	10	10	10	10	10	10
n) Toll Rate Growth Rate	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven
o) Service Plaza Revenues	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven
p) Other Revenues	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven
IV. JOINT DEVELOPMENT DATA									
a) New NonRes. Const. Value ($/sf)	65	65	65	65	65	65	n/a	n/a	n/a
b) New Res. Const. Value ($/DU)	115,000	115,000	115,000	115,000	115,000	115,000	n/a	n/a	n/a
c) Joint Dev. Proceeds (%)	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
d) No. of Joint Dev. Prjcts	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven
e) No. of Res. Joint Dev. Prjcts.	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven
f) No of NonRes Joint Dev Prjcts	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven
g) Avg Sq Footage of NonRes Project	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000
h) Avg No. of Unts Resid. Project	200	200	200	200	200	200	200	200	200
i) Construction Cost Growth Rate	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
j) Non-Res Avg. Lease Rate($/sf)	8	8	8	8	8	8	n/a	n/a	n/a
k) Growth Rate for Lease	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	n/a	n/a	n/a
l) % Capture of Gross Lease Revenue	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	n/a	n/a	n/a
m) Duration of Joint Dev Pgms (yrs)	10	10	10	10	10	10	n/a	n/a	n/a
V. TAX INCREMENT DATA									
a) City Advalorem Tax Rate	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
b) County Advalorem Tax Rate	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023
c) School Advalorem Tax Rate	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
d) Other Advalorem Tax Rate	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
- Total Advalorem Tax Rate	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
e) Tax Increment Capture Rate (%)	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven
f) Property Value Growth Rate	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	2.00%	2.00%	2.00%
g) Prop.Value Increase Imputed by Projec	25%	25%	25%	25%	25%	25%	25%	25%	25%

TABLE 1 - 3 (Continued)
CASH*STAR TECHNICAL ASSUMPTIONS

	GEOGRAPHIC/POLICY SUBSETS								
	URBAN AREA			SUBURBAN AREA			RURAL AREA		
	CONSERVATIVE	MODERATE	AGGRESSIVE	CONSERVATIVE	MODERATE	AGGRESSIVE	CONSERVATIVE	MODERATE	AGGRESSIVE
VI. SALES TAX INCREMENT DATA									
a) Sales Tax Proceeds in District	0	0	0	0	0	0	0	0	0
b) Sales Tax Proceeds Growth Rate	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
VII. SPECIAL ASSESSMENT DATA									
a) Value of All Property(computed)	to be computed	to be computed	to be computed	to be computed	to be computed	to be computed	to be computed	to be computed	to be computed
b) Special Assess Rate ($/$1000)	to be computed	to be computed	to be computed	to be computed	to be computed	to be computed	to be computed	to be computed	to be computed
c) Special Assess Growth Rate	0.00%	0.00%	0.02%	0.00%	0.00%	0.02%	0.00%	0.00%	0.02%
d) Property Value per Acre in Dist.	22,000	22,000	22,000	22,000	22,000	22,000	11,000	11,000	11,000
e) No. of Acres per District	640	640	640	640	640	640	320	320	320
f) No. of District(Int.) per mile									
Freeway	0.5	0.5	0.5	0.5	0.5	0.5	0.17	0.17	0.17
Partially Controlled Access Highway	0.25	0.25	0.25	0.25	0.25	0.25	0.125	0.125	0.125
g) Special Assess Capture Ratio	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven
VIII. REAL ESTATE DATA									
a) Res. Absorp. Rate (unts/yr)	400	400	400	400	400	400	0	0	0
b) Non-Res. Absorp. Rate (sf/yr)	100,000	100,000	100,000	100,000	100,000	100,000	0	0	0
c) Growth Rate - Absorption	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	n/a	n/a	n/a
IX. PUBLIC-PRIVATE FINANCIAL STRUCTURE									
a) Senior Debt	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven
b) Mezzanine Debt	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven
c) Subordinant Debt	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven
d) Equity	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven
e) Total	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven	policy driven

Policy Driven : See table 1 - 2

TABLE 1 - 4
MARGIN OF FEASIBILITY ANALYSIS
URBAN AREA

Toll Restrained Traffic Level (vpd)	FINANCING POLICY - SETS		
	CONSERVATIVE	MODERATE	AGGRESSIVE
Alternative U1 - New Freeway on New Alignment			
10,000-20,000	0 % - 13 %	75 % - 113 %	107 % - 136 %
30,000-40,000	25 % - 38 %	150 % - 186 %	165 % - 194 %
50,000-60,000	50 % - 63 %	223 % - 259 %	223 % - 252 %
Alternative U2 - Add Lanes to Existing Freeway			
10,000-20,000	0 % - 41 %	165 % - 283 %	213 % - 306 %
30,000-40,000	82 % - 122 %	400 % - 518 %	400 % - 493 %
50,000-60,000	163 % - 203 %	636 % - 753 %	586 % - 680 %
Alternative U3 - Upgrading Existing Highway to Freeway			
10,000-20,000	0 % - 24 %	111 % - 180 %	149 % - 203 %
30,000-40,000	48 % - 71 %	249 % - 318 %	258 % - 312 %
50,000-60,000	95 % - 118 %	386 % - 454 %	366 % - 421 %
Alternative U4 - New Partially Controlled Access Highway on New Alignment			
10,000-20,000	0 % - 16 %	70 % - 117 %	102 % - 138 %
30,000-40,000	32 % - 47 %	163 % - 209 %	174 % - 211 %
50,000-60,000	63 % - 79 %	254 % - 300 %	247 % - 283 %
Alternative U5 - Upgrading Existing Highway to Partially Controlled Access Highway			
10,000-20,000	0 % - 34 %	110 % - 206 %	149 % - 226 %
30,000-40,000	67 % - 100 %	302 % - 399 %	302 % - 378 %
50,000-60,000	133 % - 166 %	495 % - 591 %	454 % - 531 %

Note: All figures are rough and relative, and should be used for broad policy studies only. Detailed studies of site-specific project data should be undertaken prior to determining any project's actual feasibility.

TABLE 1 - 4 (Continued)
MARGIN OF FEASIBILITY ANALYSIS
SUBURBAN AREA

Toll Restrained Traffic Level (vpd)	FINANCING POLICY - SETS		
	CONSERVATIVE	MODERATE	AGGRESSIVE
Alternative S1 - New Freeway on New Alignment			
10,000-20,000	2 % - 17 %	87 % - 131 %	118 % - 153 %
30,000-40,000	32 % - 47 %	175 % - 219 %	187 % - 222 %
50,000-60,000	62 % - 77 %	263 % - 307 %	257 % - 291 %
Alternative S2 - Add Lanes to Existing Freeway			
10,000-20,000	5 % - 48 %	179 % - 302 %	223 % - 320 %
30,000-40,000	90 % - 132 %	424 % - 547 %	417 % - 515 %
50,000-60,000	175 % - 217 %	669 % - 792 %	612 % - 709 %
Alternative S3 - Upgrading Existing Highway to Freeway			
10,000-20,000	3 % - 28 %	120 % - 192 %	155 % - 212 %
30,000-40,000	53 % - 77 %	264 % - 335 %	269 % - 325 %
50,000-60,000	102 % - 127 %	407 % - 478 %	382 % - 439 %
Alternative S4 - New Partially Controlled Access Highway on New Alignment			
10,000-20,000	2 % - 21 %	81 % - 137 %	112 % - 156 %
30,000-40,000	40 % - 59 %	192 % - 247 %	199 % - 242 %
50,000-60,000	78 % - 97 %	301 % - 356 %	286 % - 329 %
Alternative S5 - Upgrading Existing Highway to Partially Controlled Access Highway			
10,000-20,000	4 % - 39 %	120 % - 221 %	156 % - 236 %
30,000-40,000	74 % - 109 %	322 % - 422 %	316 % - 396 %
50,000-60,000	143 % - 178 %	523 % - 624 %	476 % - 555 %

Note: All figures are rough and relative, and should be used for broad policy studies only. Detailed studies of site-specific project data should be undertaken prior to determining any project's actual feasibility.

TABLE 1 - 4 (Continued)
MARGIN OF FEASIBILITY ANALYSIS
RURAL AREA

Toll Restrained Traffic Level (vpd)	FINANCING POLICY - SETS		
	CONSERVATIVE	MODERATE	AGGRESSIVE
Alternative R1 - New Freeway on New Alignment			
10,000-20,000	-1 % - 17 %	44 % - 110 %	91 % - 134 %
30,000-40,000	35 % - 53 %	163 % - 216 %	178 % - 221 %
50,000-60,000	71 % - 88 %	269 % - 322 %	264 % - 308 %
Alternative R2 - Add Lanes to Existing Freeway			
10,000-20,000	-3 % - 37 %	83 % - 203 %	130 % - 228 %
30,000-40,000	78 % - 119 %	322 % - 441 %	326 % - 424 %
50,000-60,000	159 % - 200 %	560 % - 679 %	522 % - 619 %
Alternative R3 - Upgrading Existing Highway to Freeway			
10,000-20,000	-2 % - 29 %	70 % - 164 %	114 % - 188 %
30,000-40,000	59 % - 90 %	255 % - 345 %	263 % - 337 %
50,000-60,000	121 % - 152 %	436 % - 526 %	412 % - 486 %
Alternative R4 - New Partially Controlled Access Highway on New Alignment			
10,000-20,000	-2 % - 20 %	53 % - 126 %	98 % - 151 %
30,000-40,000	42 % - 64 %	191 % - 256 %	204 % - 256 %
50,000-60,000	86 % - 108 %	320 % - 385 %	309 % - 362 %
Alternative R5 - Upgrading Existing Highway to Partially Controlled Access Highway			
10,000-20,000	-3 % - 42 %	88 % - 221 %	137 % - 246 %
30,000-40,000	86 % - 131 %	352 % - 484 %	354 % - 462 %
50,000-60,000	176 % - 221 %	616 % - 747 %	571 % - 679 %

Note: All figures are rough and relative, and should be used for broad policy studies only. Detailed studies of site-specific project data should be undertaken prior to determining any project's actual feasibility.

1.2.e. DEMAND MANAGEMENT AND ENVIRONMENTAL CONSIDERATIONS

This section discusses demand management and environmental issues, which can affect the justification decision regarding tollroad implementation.

Demand Management Strategies: The most serious problem affecting urban transportation plans and programs today is the significant imbalance in the demand/supply relationship for highway capacity. In short, there is much greater demand than supply for the highway user. In a free market economy, supply/demand imbalances are typically corrected through pricing. Unfortunately in the United States a government-regulated environment exists so that free market pricing of the transportation "commodity" does not exist. The transportation commodity has been badly underpriced for many years, and demand has grown at a pace that the supply has been unable to sustain.

Typically, when a pricing correction is made, two things happen simultaneously: demand is reduced as the price of the commodity is increased, and the additional revenue that is created by the increase in price creates an opportunity to produce more of the item or commodity in short supply. This is precisely the opportunity that is afforded through correct pricing on tollroad projects. Pricing enables the tollroad developer and operator to regulate demand, and at the same time, increase the available cash that is required to produce more transportation service.

It is very dangerous to one's credibility to try to overstate the effect of a statewide toll-pricing strategy on systemwide demand, particularly on a statewide level. The issue is this: does systemwide demand really diminish in the face of a statewide toll policy? The answer is yes, *if* all the tolls that are imposed in the state are imposed on existing roads and no new capacity is created. In such an instance it is likely that the total quantity of traffic in the state would, in fact, diminish in reaction to the increased price of using the highway system. However, this is a very unlikely scenario. It is more likely that substantially more capacity will be created at the same time the toll policy is implemented.

Congestion pricing strategies have a reasonably excellent potential to substantially manage demand when demand management is needed the most; that is, during the peak periods. This particular strategy also has the possibility of further increasing the total amount of revenue that could be made available to support the State's transportation program. Without a toll policy, congestion pricing using tolls is not possible; it therefore

represents a demand management tool that would not be deployed unless a toll policy was adopted at the state level.

Some Environmental Considerations: Air and noise considerations are also items that should be carefully considered and examined before implementing a tollroad. Typically, the introduction of new tollroads has a positive effect on air quality because the additional capacity provided by the tollroad will typically free heavily congested routes nearby, reducing the total amount of congestion in the area. As vehicular speeds and travel efficiencies increase, the amount of pollutant loads created by the automobile generally diminishes.[10]

The opposite happens on the noise side of the equation. As travel speeds increase, tire noise increases and the potential noise impact on the community can be significantly greater. This is particularly true when new expressways are being contemplated as tollroads adjacent to existing neighborhood communities and other sensitive receptors. Fortunately, noise is a very mitigatable intrusion, whereas air pollution is infinitely more difficult to resolve at the "project" level. In summary, toll pricing policies should have an overall positive effect on the most difficult environmental problem while producing some minor noise problems that can be mitigated in most cases.

Another issue that should be discussed and examined is that of the highway users that are "tolled off." The term "tolled off" was first coined in the 1960s, and describes those persons who would normally use a toll facility but are diverted to another facility because of the toll impedance. When tolls are placed upon an existing facility, some of its existing users will divert to other facilities, making them more congested. When this happens, an argument can be made that the overall air quality in the sub-region is actually being diminished by the toll pricing strategy. This particular problem offsets itself though, because the more congested the competing facility becomes, the greater the propensity for the competing facilities' users to divert to the toll facility until travel cost-time equilibrium is reached. In most cases, however, new tollroads will offer a net increase in corridor capacity, which should yield a significant net positive environmental result, if traditional air pollution models hold true.

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[10]Recent findings regarding air pollution in California indicate that carbon monoxide and other pollutant loads and emissions *increase* at speeds in excess of 45 miles per hour. However, even more recent air pollution modelling work by Kimley-Horn and Associates, Inc., using the MOBILE 5.0 model, suggest that 55 mph is the breakpoint. (Study performed for the Arizona Department of Transportation: *Phoenix Freeway System Congestion Pricing Pilot Program*, January, 1993.)

1.3 STATEWIDE TOLLROAD DEVELOPMENT SCENARIOS AND POSSIBLE REVENUE YIELDS

How much new capital can be created in Colorado if a moderate toll financing policy is deployed? The answer is between $800 billion and $5.1 billion, depending on the level of aggressiveness (or quantity of projects executed) of the tollroad program. A "moderate" strategy should yield about $2.7 billion. This section explores the technical assumptions and policy options that produce these "yields."

The feasibility of employing a toll financing policy at a meaningful scale in Colorado ultimately depends upon a number of factors regarding project opportunities, costs, use of funds, legal and institutional opportunities and constraints, etc. Two of the most important of these factors are (1) the availability of project opportunities–that is, the extent to which existing or proposed facilities exist with characteristics suitable for toll-financing, and (2) the related issue of how or where revenue derived from tolled facilities should be applied: (a) only to the facility itself, (b) elsewhere in the same region, or (c) anywhere in the state.

This section presents an analysis of project opportunities and key findings to be used in financial modelling of various future scenarios of tollroad mileages and investment. By request and design, the analysis (and these discussions) are generalized and non-specific with regard to facilities and locations. The information obtained, however, is sufficient to allow a meaningful assessment of the financial implications of tollroad financing for the state. The following section explores the issues surrounding how and where tolls should be applied.

1.3.a. TYPES OF PROJECTS CONSIDERED

In order to consider the full extent of opportunities for toll-financed projects on the Colorado state system, it is first necessary to consider the *types* of projects which could theoretically be implemented as toll facilities. These are:

- New Facility on New Alignment
  - General Purpose Lanes Only
  - Mixed General Purpose and HOV Lanes

- New Capacity (Lanes) Added to Existing Facilities
  - Toll Imposed On *All* Traffic
  - Toll Imposed On Traffic Using New Lanes Only (e.g,. Dulles Toll Road, Northern Virginia)

- Reconstruction of Existing Facility/Toll All Traffic
- Regular Maintenance of Existing Facility/Toll All Traffic
- Peak Hour Pricing For Existing Facility/Toll All Traffic
- Toll HOV Lanes (Existing or New)
  - Sliding Toll Based On Vehicle Occupancy

In addition, there are the related questions of *where* the toll revenue should be used, and for *what purposes*. Although mentioned here, the following issues will be addressed in Section 1.4:

- Use Toll Revenue:
  - On the Tolled Facility Only
  - Anywhere Within the Same Region
  - Anywhere Within the State
- Use Toll Revenue:
  - Only For Source or Other Toll Roads
  - On Toll and "Free" Highways
  - For Transit and/or "Alternative Modes"
  - Combinations

Our analysis begins by discussing the existing Colorado State Highway System.

1.3.b. EXISTING STATE HIGHWAY SYSTEM AND TRAFFIC DATA

The existing state highway system consists of approximately 9,200 centerline miles of interstate and other freeways, urban expressways and arterials, and rural highways. The system is characterized by two principal interstate routes (I-25 and I-70) providing north-south and east-west service between Denver and adjacent states in four directions, a number of other two-lane rural highways[11] that collectively serve virtually every community in the state, and a large number of expressways and arterials located between and within the principal North Front Range communities of Denver, Boulder, Longmont, Loveland, Fort Collins, and Greeley, as well as the state's other principal urbanized areas of Colorado Springs, Pueblo, and Grand Junction.

[11]With the exception of I-76, a standard four-lane interstate highway.

Within minor exceptions, travel on the state system can be characterized as either *intra*urban–the great majority of which occurs on facilities within the greater Denver/Boulder metropolitan area and Colorado Springs–or *inter*urban, with principal corridors consisting of Denver-Fort Collins, Denver-Colorado Springs (and, less so, Pueblo), and Denver-Grand Junction, including extensive seasonal travel between Denver and mountain destinations in between.[12]

Traffic volumes on the state system in 1991 are summarized in Table 1-5. In that table, centerline miles of facility with volumes above 25,000 vehicles per day (both directions) are estimated by type of facility and location within the state. In that year, high volumes of traffic occurred almost exclusively within the Denver-Boulder metro area and, to a limited extent, within the Colorado Springs area.[13]

Not unexpectedly, traffic is anticipated by the Department to increase dramatically by the year 2010. Using CDOT escalation factors, traffic volumes by facility type were recalculated, this time for year 2010. As shown in Table 1-6, total centerline miles of existing facilities with volumes over 25,000 per day is likely to grow by more than 60 percent.

[12]Travel east of Denver on I-70 and northeast on I-76 is relatively light.

[13]It should be noted that none of the figures in this table, nor the table immediately following, reflect *non*-state highway projects such as E-470 and W-470.

TABLE 1-5

COLORADO STATE HIGHWAY SYSTEM
APPROXIMATE CENTERLINE MILES OF FACILITY
BY TRAFFIC LEVEL: 1991

(Facilities With Volumes of 25,000 Per Day
Or Greater, In Increments of 25,000)

	25-50	50-75	75-100	100+	TOTAL
Interstate	150	30	25	25	230
Non-interstate Expressways	25	15	5	5	50
Other Facilities	85	20	0	0	105
Metro Denver-Boulder	105	50	30	30	215
Colorado Springs	25	15	0	0	40
Pueblo	5	0	0	0	5
Rural	125	0	0	0	125
TOTAL	260	65	30	30	385

SOURCE: Decision Economics, Inc.

TABLE 1-6

**COLORADO STATE HIGHWAY SYSTEM
APPROXIMATE CENTERLINE MILES OF FACILITY
BY TRAFFIC LEVEL: 2010**

**(Facilities With Volumes of 25,000 Per Day
Or Greater, In Increments of 25,000)**

	25-50	50-75	75-100	100+	TOTAL
Interstate	140	85	20	115	360
Non-interstate Expressways	15	5	10	40	70
Other Facilities	170	30	5	5	210
Metro Denver-Boulder	155	30	15	145	345
Colorado Springs	25	10	5	15	55
Fort Collins	2	20	0	0	22
Grand Junction	15	0	0	0	15
Pueblo	5	3	0	0	8
Rural	120	55	15	0	190
TOTAL	325	120	35	160	640

NOTE: Figures may not add to total due to rounding.
SOURCE: Decision Economics, Inc.

As with 1991, most of the most congested segments of highway will be in the greater Denver metro area, though 15-20 miles of road in the Colorado Springs area also will be heavily travelled. Also of interest, however, approximately 70 miles of *rural* highway may have volumes of 50,000 per day or greater by 2010.

1.3.c. PENDING AND PROPOSED PROJECTS

The Colorado Department of Transportation does not at this time have a long range state transportation plan, though one will be prepared shortly

pursuant to new planning requirements established by federal law. The Department does have a five year capital facilities program, authorized by the Transportation Commission and administered by the various engineering districts in coordination with headquarters staff. That program, like similar programs in other states, is shaped largely by the availability of federal funds and permitted uses of those funds. Though ISTEA has substantially increased the flexibility available to state and local officials in the use of federal funds, there is no question that federal funding issues will continue to have considerable impact at the state level.

Some of the most important characteristics of Colorado's state transportation program as it exists today are:

- The proportion of total funding committed to operations and maintenance of the existing network is likely to increase, not decrease, over time.

- With the interstate system within the state now virtually complete, the total amount of federal funding committed to projects within the state will decrease, not increase, at least over the short term.

- With the exception of small "link" projects connecting or improving connections between existing state highways, *there are no new facilities (on new alignments) currently planned or proposed anywhere in the state.*[14]

- With the exception of operations-related improvements to various older expressway-type facilities (e.g., US-36, US-6), there are no pending projects for major upgrades of state highways, particularly from a non-freeway to a freeway design.

The vast bulk of the state program, therefore, is likely to be limited to rehabilitation of existing facilities and limited, "spot" improvements to correct operational problems. Only a very limited amount of additional capacity can be anticipated.

[14]This condition does not reflect the E-470 and W-470 beltway projects, which are not state projects at this time.

1.3.d. OTHER ISSUES

In addition to potential demand (addressed in the preceding section) there are additional factors which should be considered when identifying potential toll projects, including:

- Cost to Construct
- Environmental Impact: Local and Air Quality/Land Use/Energy
- Federal Funding Limitations and State Investment Policy: New Capacity vs. Demand Reduction

Construction costs can vary dramatically, even for essentially similar facilities, depending on specific locations and, in particular, the extent of existing development. Costs for a four-lane standard toll facility will vary from as little as $4 million per mile for flat rural sections, to as much as $100 million per mile and more for dense urban sections with extensive property acquisition needs and structural requirements.

Closely associated with cost is the potential impact of a facility, both to the natural environment and to human development. Present and evolving social values suggest that projects with extensive environmental impacts, even if theoretically mitigable, will not be constructed. This problem is especially acute when the proposed project is a major redesign and reconstruction of an existing non-freeway facility.

A related environmental concern is the now-topical issue of air quality improvement, with linkages to reduction in auto use and changes in land use policy and development standards. The viability of toll-financed projects can be affected by the broad environment in which they are to be placed, particularly if the area in question is in non-attainment for one or more federal air quality standards (as is Denver) and/or if severe traffic congestion has diverted public favor away from highways and toward rail transit.

These concerns may affect toll-financed projects through state policy, or more directly through one or more federal regulations governing the use of federal funds or requiring conformity with clean air law and policy. At its most direct, federal law still prohibits the use of tolls on existing or pending interstate *highways* unless the federal contribution is repaid.[15] Alternatively, new federal guidelines for demonstrating "conformity" between projects providing new capacity for single-occupant vehicles

[15]Though not necessarily bridges or tunnels on the interstate system.

"conform" and air quality improvement plans are still highly uncertain. It is clear, however, that they will play a role in future toll road development.

1.3.e. TOLLROAD ELIGIBILITY POLICY: TYPES OF ROADS SUITABLE FOR TOLL FINANCING

What kinds of projects should we consider for the application of tolls? What are their physical characteristics -- should they only be new freeways on new alignments? What levels of opening year traffic should we consider as the minimum threshold? What levels of cost should be considered reasonable? How do these factors interrelate in making an informed decision? These, and related issues are addressed in this section.

Analysis of the foregoing information suggests that existing facilities and proposed projects within Colorado can be best categorized in the following manner:

- **New Urban Freeways** - Opportunities for *entirely new facilities* are extremely limited. Aside from the proposed beltway projects (E-470 and W-470), what opportunities do exist are entirely confined to the Denver and Colorado Springs areas.

- **Reconstruction/Upgrade of Existing Freeways or Expressways** - To add capacity and/or operational improvements are perhaps the largest source of potential toll-financed projects. A number of freeway opportunities exist within the greater Denver region, though not elsewhere. Expressway opportunities can also be found in Colorado Springs and Grand Junction, and in the Denver-Fort Collins and Denver-Colorado Springs corridors.

- **Reconstruction/Upgrade of Existing Arterials or Rural Highways** - To add capacity and limited-access operations is theoretically possible, and there is no shortage of candidates meriting such treatment. This category of project, however, would be perhaps the most difficult to effect due to (1) cost, (2) adverse impact and disruption to existing development, and/or (3) marginal traffic volumes. Opportunities for such projects can be found in as described immediately above under "existing freeways or expressways."

- **Projects Involving the Interstate System** - *If* permitted by future changes in federal law, the interstate system in Colorado could host a number of innovative toll projects in and between metro Denver

and Colorado Springs, and in the I-70 corridor between Denver and Dillon. Such projects could include additions of general purpose or HOV lanes, upgrades to existing geometrics, and provision for peak period relief (reversible facilities). At present however, federal law would preclude all toll-financed projects on the interstate system, except for placing tolls on new *added* lanes only.

Another emerging nontraditional application of tolls involves the implementation of toll pricing strategies on partially controlled access arterial streets and highways. The advent of AVI/ETTM technology has permitted the conceptual development of toll pricing on "superstreets" and other partially controlled access arterials that were heretofore not considered strong candidates for such applications. This nontraditional "superstreet" concept, and the use of tolls to help finance it, creates two additional categories that could be considered in this particular issue analysis. These two categories would include: 1) the upgrading of existing arterial streets and highways to "superstreets" or partially controlled access highways and 2) the development of new "superstreets" or partially controlled access highways on new alignments. These concepts are particularly attractive from a toll revenue bond financing standpoint because the cost profile of these types of facilities is substantially less than more traditional expressway cost profiles. Moreover, the reduced rights of way and lowered operating costs generated by the AVI technology will produce a much more attractive relationship between the supportable project costs and the toll revenue stream. In short, it may be possible to find a higher percentage of self-supporting projects within these categories of "eligible" projects than one would find within the typical "expressway" category.

1.3.f. RECOMMENDED TOLLROAD ELIGIBILITY CRITERIA

The following categories of facilities should be considered as candidates for toll facilities where appropriate:

- Adding lanes to existing limited access expressways.
- New expressways.
- New partially-controlled access highways.
- Adding lanes to partially controlled access highways.
- Placing tolls on existing or new HOV lanes, alone.

Fifty percent (50%) of the capital cost should be covered using project revenue bonds alone.

1.3.g. TOLLROAD DEVELOPMENT SCENARIOS

For analysis purposes, three tollroad development scenarios -- conservative, moderate, aggressive -- were formulated to present a range of possible toll-financed projects (in terms of centerline miles) involving the above categories of roads. These scenarios are presented below in Table 1-7.[16]

TABLE 1-7

TOLL FINANCING OPPORTUNITIES WITHIN COLORADO:
THREE SCENARIOS

(Miles)

	Conservative	Moderate	Aggressive
New Facilities	0	40	120
Reconstruction/Upgrade			
Freeways (Non-Interstate)	25	35	60
Expressways & Arterials	15	50	100
Interstate Projects	20	40	100
TOTAL MILEAGE	60	165	380

Source: Decision Economics, Inc.

[16]Consistent with the nature of this study, specific facilities are not indicated.

1.3.h. STATEWIDE TOLLROAD CAPITAL CREATED

The three scenarios, "conservative," moderate," and "aggressive", were evaluated by the CASH*STAR model with the moderate financing policy package. The length, total project cost, excess cash, and total capital created for these three scenarios are summarized in Table 1-8. Approximately, $0.8 billion, $2.7 billion and $5.4 billion can be created for 60-mile, 165-mile and 380-mile tollroad systems, respectively. It should be noted that the ability of the CDOT to find publicly-acceptable projects, in excess of the 60-mile conservative assumption, might be very limited. This issue should be explored more carefully in future site-specific studies.

Next, we address the topic of how and where toll revenues should be applied.

1.4 ALLOCATION OF TOLL PROCEEDS

The issue of how and where toll revenues should be applied to transportation needs has elicited a wide range of responses from policy-makers in various parts of the country. This section deals with two fundamental issues associated with the allocation of toll revenue:

Geographical Allocation Policy:

- What restrictions, if any, should govern the geographic allocation of toll revenue relative to its point of collection?

Functional Allocation Policy:

- How should toll revenue be allocated from a functional perspective? Should toll revenue be used for transit? For "off-system" operating costs?

The following paragraphs address these issues, among others.

1.4.a. GEOGRAPHICAL ALLOCATION OF TOLL REVENUE

The development of a consistent, equitable, geographical allocation policy is of utmost importance to the Colorado DOT[17]. There are basically

[17]In Colorado, the major equity issues will center on allocation policy relative to east vs. west of the Continental Divide; urban vs. rural, etc.

TABLE 1 - 8
TOLL REVENUE CAPITAL CREATED
THREE TOLL ROAD IMPLEMENTATION SENARIOS W/ MODERATE FINANCING POLICY-SET

	TOTAL MILES	TOTAL PROJECT COST	EXCESS CASH	TOTAL CAPITAL CREATED
CONSERVATIVE TOLL ROAD SENARIO	60	$0.3 BILLION	$0.5 BILLION	$0.8 BILLION
MODERATE TOLL ROAD SENARIO	165	$1.1 BILLION	$1.6 BILLION	$2.7 BILLION
AGGRESSIVE TOLL ROAD SENARIO	380	$2.7 BILLION	$2.7 BILLION	$5.4 BILLION

Source : Colorado DOT and Kimley-Horn and Associates, Inc.

three categories of geographical allocation policy for toll revenue proceeds. They include: 1) on toll highway system expenditures, 2) related toll highway system expenditures, and 3) off toll highway system expenditures.

There is no particular difficulty with the policy of using toll proceeds on the actual highway facility or system from which the toll proceeds are obtained. However, once the proceeds start to distance themselves from the primary system of collection, some difficulties begin to emerge. It is not particularly unusual, nor is it unfair, to see toll proceeds expended on related systems, including for example a connecting non-toll facility. In many cases in Pennsylvania, Florida, and elsewhere, "off-system" arterial streets were constructed with toll proceeds to provide improved access to the turnpike interchanges. In some cases, these types of access improvements resulted in the construction of an overpass of one arterial street over another arterial street at an intersection a half-mile from the turnpike interchange[18]. Therefore, the expenditure of toll revenue bond proceeds on related facilities is not an unusual occurrence and it generally meets the *rational nexus* test for the allocation of toll proceeds.

This *rational nexus* test basically requires that a rational connection can be drawn between the point of collection, the payee, the point of expenditure, and the beneficiaries of the off-system expenditure. A more difficult case arose regarding the use of the toll proceeds on a bridge over the Caloosahatchee River in Lee County, Florida. In that case, a bond counsel opinion was sought regarding the use of toll revenue proceeds on a parallel toll bridge located several miles upriver. The bond counsel's opinion simply stated that as long as a rational connection or some benefit could be shown to accrue to the users of the toll bridge who were paying for the off-system improvements, then such an allocation policy was in fact legal and justifiable under Florida law. It was therefore left to be a technical decision as to whether a legally defensible expert opinion could be established that the upstream improvements would result in the diversion of some traffic from the downstream facility (which would result in some beneficial gain to those who were paying the bill). In this instance, an airtight technical case for such an hypothesis could not be established; therefore the transference of toll revenue proceeds over that great a distance was dropped from further consideration[19].

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[18]Sunrise Boulevard over U.S.441 in Fort Lauderdale, Florida is one actual case. This particular overpass was constructed to increase the accessibility of a particular market area to the turnpike facility, thereby enhancing the revenue profile for the facility for that area.

[19]Expert analyses were provided by Kimley-Horn and Associates, Inc.

It is therefore recommended that toll proceeds be used to first finance the facilities on which they are collected. When an excess of funds is realized, the funds should be used to improve related system and off-system expenditures in the general vicinity of the tollroad corridor, or within the context of the tollroad "system."

The various types of geographical allocation procedures are described below:

- On-System Only - This method requires that revenues collected on a toll facility be spent only on that facility. A number of other, stand-alone toll authorities operate in accordance with this policy. Examples include: Pennsylvania Turnpike, Garden State Parkway (New Jersey).

- On-System Plus Extensions - Under this system, revenues may also be applied to facilities which are considered extensions to the toll facilities. Typically, these facilities are sections prior to the toll facility but may also include those that connect with the toll facility. Earlier operational practice of the Florida Turnpike was an example.

- In-Corridor - Funds collected from toll facilities may, in this case, be applied to other toll or non-toll facilities which intersect or run parallel to the tolled facility. This may also include extensions of the toll facility.

- Regional - Regional allocations of revenues may also be allowed within a specified region that includes the toll facility. These revenues may be applied to non-toll facilities and other modes of transportation including mass transit. Both the Port Authority of New York and New Jersey and the Triborough Bridge and Tunnel Authority operate in this manner.

- Statewide - The most flexible policy for allocating toll revenues is the ability to apply toll revenues throughout the state regardless of facility or transit type, or location. Though not yet implemented, agreements signed in California between the California DOT (Caltrans) and four private toll road companies stipulate that all revenue received above and beyond that stipulated as "fair return" to the companies will be deposited with Caltrans for general use within the state system.

- Other Toll Facilities - The Florida turnpike system allows for revenue sharing among facilities operated by the same authority (e.g, Orlando) and, theoretically to facilities throughout the state. Use of toll revenue for non-toll facilities is permitted on connecting facilities, however. In California, the future operator of three toll facilities now under development in Orange County (the Transportation Corridor Agencies) is authorized to apportion revenue in the most effective manner among the three facilities.

There is no basis, *a priori*, to rule out any of these methods as a possible approach for Colorado. Sound reasons can be found for every side of the issue, and excellent arguments can be fashioned to either restrict the use of the toll revenue as tightly as possible or to have it be as widely available as possible.

Benefits to restricting the use of toll revenue to the facility from which it was collected include:

- Provides greatest financial security to that facility, particularly to bondholders and underlying guarantors of debt, if any.

- Provides the most visible linkage between cost and benefit to users and is therefore possibly the most palatable to the public.

Benefits to using toll revenue from one facility to assist in financing another toll facility include:

- Provides the ability to assist in securing initial financing for new toll facilities through (1) actual contributions of cash toward expenses or toward debt service, and (2) provision of additional creditworthiness to the new facility by virtue of being an established, or "proven" operation.

- Provides additional financial security on an ongoing basis by becoming part of a larger "pool" of resources.

Finally, the chief benefit of allowing toll revenue to be used elsewhere within a region or throughout the state is the flexibility it grants officials to address needs and react to unexpected circumstances as quickly and as effectively as possible. The principal negative associated with such a policy is a possible perception by facility users that they are in fact

subsidizing other projects and/or locations from which they derive no benefit. This is, of course, true with all general taxation, but is frequently a much harder sell when user fees are involved.

This concludes the discussion of geographical allocation policy. The next issue is connected with functional allocation policy.

1.4.b. FUNCTIONAL ALLOCATION OF TOLL REVENUE

This particular policy analysis will focus on a disbursement policy relative to functional categories[20] of expenditures. The "functional disbursement" of toll revenue proceeds can be generally grouped into two primary categories: 1) multimodal and intermodal activity such as park-and-ride facilities, express transit services, HOV lanes, etc., and 2) highway related activity such as safety improvement, additional lanes, shoulder work, etc. At another level, and within each of the above-referenced modal options, funds can be further subdivided into: 1) improvement measures that increase capacity, and 2) improvement measures that do not increase capacity, such as maintenance.

Of these latter two functional categories, the first category could include projects involving the construction of new facilities on new alignments, for example. It could also include the expansion, widening, and/or reconstruction of existing facilities where additional lanes are being added to the facility. This particular category could also be extended to include measures that increase the efficiency of existing facilities such as freeway management systems or other transportation management practices and policies including HOV lanes, transit initiatives, etc. The upgrading of an existing arterial to a partially controlled access facility is another capacity improvement type project. This whole category involving increases in capacity is generally one of the more attractive disbursement policies that could be employed relative to toll revenues. Examples of potential projects could perhaps include the Boulder Turnpike (U.S. 36)[21], I-70 over the Continental Divide, I-25 through Colorado Springs, the Front Range corridor, or express bus transit services.

The second functional category of disbursements could involve improvements that do not result in the increase of capacity. Such improvement activities could involve major reconstruction programs that

[20]Functional categories are activities such as maintenance, adding lanes, resurfacing, etc.

[21]There are obvious political issues here.

do not result in the addition of lanes or new transit capacity. It could involve significant safety improvements, including widenings that add shoulders, or improve the shoulder width on otherwise deficient typical sections. It could also involve bridge widening projects where shoulders are being widened to meet standards. Other projects in this category could also include bridge repairs, mowing operations, resurfacing, toll operations and administrative costs, and other general maintenance activities. It is somewhat typical and standard in the tollroad business to provide for operating maintenance, administrative, and major resurfacing expenses out of the toll revenue proceeds on the facility from which these proceeds are collected. The use of toll proceeds to finance enforcement activities on the particular tollroad is also a somewhat customary practice.

It should also be recognized that toll revenues sometimes only cover a fraction of the capital, operating, and maintenance cost requirements of modern tollroad facilities. In this context, it is generally unreasonable to presume that large quantities of "surplus" toll revenue cash can be "exported" to extraneous uses, except perhaps in the long-term.

Now, we turn our attention to *modal* disbursement policy. The principal benefits from applying toll revenue to *non*-toll facilities, including transit and alternative modes, include:

- Provides the ability of transportation officials to utilize funds where they are perceived to be most needed. Utilizes the concept of marginal pricing to capture revenue where demand is greatest and apply it where needs are demonstrated but funding is lacking.

- Can assist officials in addressing various environmental and social goals through support of transit and other alternative modes.

A policy on the allocation of surplus toll revenue should, in the end, seek to maintain the greatest amount of flexibility possible commensurate with sound financial practice and public acceptance. At this juncture, it appears that a policy permitting revenue transfers to projects of all modes within the same general tollroad corridor or related tollroad system could be the most realistic and the most effective for Colorado. Further, the use of surplus tollroad revenue, after meeting all bond indentures, for related off-system, and multimodal/intermodal operations investments would appear to be acceptable, as a discretionary policy.

1.5 TOLL POLICY RECOMMENDATIONS

In conclusion, the consulting team recommends the moderate policy-set for toll financing in Colorado. These are several reasons for this recommendation:

1. In view of our leadership interviews, the policy-set appears to be politically feasible.

2. This policy-set represents the most cost-effective use of public funds by virtue of the heavy reliance on leverage rather than outright public assistance grants.

This policy-set is characterized by the following general short summary of policies:

- Pricing Policies:
  - Toll rate - "premium" policy - used herein as generally about 10¢ per mile for urban/suburban areas; 8¢ per mile for rural areas, in 1992 U.S.$
  - Indexed Toll Rate? - "Yes"
- Debt Financing Policies:
  - Serial Debt? - "Yes"
  - Structured Debt? - "Yes"
- Value Capture Policies:
  - Special Assessment District Value Capture Rate - 50%
  - Impact Fee District - $1000 per dwelling unit and $1000/1000 SF (non-residential) for urban/suburban areas; "NO" for rural areas
- Real Estate Policies:
  - Joint Development - 0.25 Projects Per District (one in four districts would have an active joint development project) for urban/suburban areas; "No" for rural areas
  - Concession Plaza - "Yes" (0.4¢/VMT assumed)
  - Other Revenues - "Yes" (0.25¢/VMT assumed)

- Public Financing Policies:
  - Federal Loan Assistance - 50%
  - State Revolving Fund Assistance - "Yes"
- Recommended Discretionary Policies From "Aggressive" Policy-Set
  - Federal Capital Assistance - 50% (80% for tunnels and bridges)
  - State/local Capital Assistance - 10%
  - State O&M Assistance - 50% Over 15 Years

Additional recommendations are:

1. There appears to be little probability of short-term or long-term increases in motor fuel taxes of sufficient magnitude to correct the transportation deficiencies of the State of Colorado. Therefore, the legislature should provide the Colorado DOT and other transportation providers with alternative funding sources for transportation such as value capture.[22]

2. The use of tolls and new toll roads is one of several equitable means of financing new capital improvements. People who are opposed to tolls can elect not to pay them by using other non-toll facilities. (If the tolls were not imposed, the new toll facility would not be an option. With tolls, the user has an option.) If he or she elects to use a non-toll facility, chances are the trip will be less congested, thanks to the traffic that *is* using the tollroad. Either way, the user can "vote" with his route selection decision.

3. Non-users often also benefit from decreased congestion on non-toll facilities in tollroad corridors. In recognition of this, and the need to stimulate new sources of transportation funding, the U.S. Congress passed the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), which permits federal loans and capital assistance for public *and private* tollroads, tunnels and bridges. The CDOT should adopt policies to use its federal funds within all the discretionary modes available in ISTEA on a case-by-case basis.

4. It is recommended that the CDOT pursue the development of toll facilities within the following categories:

[22]If all the funds needed could be created through motor fuel taxes, this recommendation (and this report) would be unnecessary.

a. New expressway or new partially controlled access facility on a new alignment.

b. Adding lanes or significant upgrading of capacity on an existing expressway or partially-controlled access facility; policy options should include placement of tolls on new lanes only, or on the entire facility.

c. Placement of tolls on existing HOV lanes that are under-utilized, so that excess capacity can be "sold" to single or two-occupant vehicles during peak hours.

The final decisions regarding these strategies should be subjected to detailed studies by CDOT on a case-by-case basis. Toll pricing policy should also be exercised with wide latitude and discretion at the DOT level, since free-market factors will ultimately control pricing except in very unusual cases, which DOT can and should regulate.

5. Toll revenues are not likely to create net cashflow surpluses for many years. However, when such surpluses occur, these revenues should be generally restricted to use within the general tollroad corridor and/or system. In addition, latitude in the disbursement of such revenues should include the use of these funds for multimodal or transit operations and/or capital investment, including park-and-ride facilities.

6. The CDOT should consider and utilize, where appropriate, congestion pricing on toll facilities that experience heavy demands or that produce congestion on connecting facilities. The intent of this initiative would be to mitigate congestion through pricing, but not at the expense of creating congestion on parallel facilities that would offset "gains" on the toll facility.

7. For a potential project to be eligible for consideration as a toll facility, it is recommended that the facility be either a limited access highway or a partially-controlled access highway, with sufficient project-related revenues to cover, at a minimum, 50% of its capital costs, before state assistance policies are employed. Projects (both toll and non-toll) competing for state assistance should be measured against several criteria, including, but not limited to:

    1. Delivery schedule
    2. Capital cost coverage ratio - or level of public assistance required.
    3. Project financing and revenue risks.

4. Financial commitment of other public and private entities.
5. Technical merit of proposed project.
6. Public need served.
7. Benefit/cost (B/C) ratio using state assistance costs in the denominator.
8. Standard B/C ratios.

8. The legislature should consider the creation and establishment of an independent state revolving fund to provide credit support and assist marginally feasible revenue-producing highway and transit projects. This fund should be professionally run and managed by financial experts with considerable risk assessment skills. It should be independent of the CDOT.

1.6 STRATEGIC FINANCING RECOMMENDATIONS

Based on a review of the financing opportunities available to the State of Colorado, the consulting team recommends the following methods:

1. The use of "value capture" techniques for funding transportation, should be given more widespread opportunity in Colorado. Again, this is an equitable funding technique that "captures" some of the landowner's benefit derived from the value imputed by a nearby transportation investment - either highway or transit. These funds can then help pay for the investment. This power, already vested in public highway authority law, should also be vested in the CDOT, and local public entities who engage in road building or transit development. Limitations on the use of such power should include limits on the percentage of imputed value recaptured by the public agency. In addition, the requirements for a public hearing, property owner notification, and reasonable opportunity for appeal should be provided.

2. The ISTEA legislation provides for federal matching grants and loans to public and private tollroad developers. This report produces analyses that clearly show that a tollroad matching policy can produce more total revenues and benefits than a policy that forbids such actions. Unfortunately, the current shortage of funds and the state's existing commitments preclude the immediate enablement of such a strategy. Regardless of current financial difficulties, it is recommended that the Transportation Commission exercise broad latitude to employ such policies on a case-by-case basis. A tollroad assistance policy package should include discretion to:

- Provide federal *and state* matching grants and loans to tollroad projects that can provide 50% of their own support.[23]

- Provide up to 50% operating and maintenance cost support for the first 15 years of a tollroad project.

The above discretion should only be used where needed, and considered on a case-by-case basis after thorough study by the CDOT. Credit enhancement and loans should be deployed prior to outright financial contributions.

3. The DOT should formally adopt state-local matching policies, that it currently deploys on an informal basis. The matching ratios should be adopted by the Transportation Commission for various categorical programs. The purpose of this policy recommendation is to:

   a. Encourage local funding of state-sponsored programs.

   b. Stretch the state dollar further and create more significant state projects.

   c. Reward local entities who financially participate in such programs.

   d. Draw down and put to work some of the residual cash resident in city and county accounts.

4. The CDOT has been evolving into more and more of a "maintenance" role rather than a primary provider of new transportation capacity. To maintain healthy economic growth and meet transportation demand, the legislature should consider a substantial increase in motor fuel revenues at the earliest practical date.

5. The legislature should pass a comprehensive infrastructure privatization bill including transportation -- specifically tollroads, airports, and transit systems. An "office of privatization and tollroads" should be established within the CDOT to serve as a focal point for public, private and public-private tollroads and other transportation ventures. Private and public-private ventures should be considered and

[23]ISTEA permits 80% grants and loans for toll tunnels and bridges. Colorado should permit this level of flexibility as well.

analyzed on a case-by-case basis using a "level playing field."[24]

6. Toll financing policy should not be viewed as a panacea for solving Colorado's transportation funding shortfall. Toll financing will help, but not solve, Colorado's transportation problem. Continuing motor fuel tax increases expanded value capture policies, matching programs, and other creative financing techniques should all be employed in a systematic funding program designed to ultimately solve the funding problem for all modes of transportation in Colorado.

[24]Private sector taxes paid to the public sector should be given fair consideration in such studies.

CHAPTER 2
INSTITUTIONAL POLICY

This chapter addresses a number of institutional policy issues connected with Public Highway Authorities (PHA) and their relationship to the Colorado DOT. This analysis constitutes one of the Colorado Legislative mandates in H 91-1198 which requires the Transportation Commission of the Colorado Department of Transportation (CDOT) *"...to study the feasibility of transferring some or all of the existing tunnel and highway authorities to the Department...."* This chapter thus deals with the potential organizational and financial benefits of tunnel and public highway authority functions integrated with other CDOT operations. Specific issues include the development of policy recommendations relative to the W-470 and the E-470 PHAs. The consultant team recommends the following:

- Create a "dotted-line" oversight relationship between the Colorado DOT and extant and future Public Highway Authorities such as E-470 and W-470.

The following pages document how we arrived at this conclusion. The discussion is organized as follows:

1. First, the powers vested in PHA's relative to special districts and Colorado special district statutes are revisited in a legislative and institutional context.

2. Secondly, a historic perspective, in the form of a chronology of Public Highway Authorities is presented.

3. Thirdly, the organizational and financial status of existing authorities is reviewed and summarized.

4. Fourth, alternative PHA/CDOT institutional constructs are examined and discussed.

5. Fifth, the legislative intent of the PHA law is reviewed.

6. Sixth, recommendations are presented in some detail.

While the enabling legislation in Colorado provides for additional tunnel and highway authorities to be established according to certain guidelines, only two PHAs exist as of the time of this report (November 1992): (1)

W-470 Public Highway Authority[1] and (2) E-470 Public Highway Authority. A third entity, the Berthoud Tunnel Building Authority, was organized as a non-profit (501(C)3) corporation. It does not function under the provisions of the PHA legislation, however, for the purposes of this study, all three entities will be referred to as PHA's and will be included in the discussion of the feasibility of integrating some or all of their operations into the CDOT.

Various references are made to *integrating, merging, consolidating,* and *transferring* functions, facilities, personnel, etc. into the CDOT. For the purposes of this study, these terms will be treated as synonymous. Also, references to tunnel and public highway authority(ies), when abbreviated as PHA or PHA's, include *tunnel* authorities, where appropriate, whether or not they were actually established under the PHA enabling legislation or through some other mechanism.

In the sections which follow, there is first a brief primer on special districts in Colorado. Then, a chronology of tunnel and highway authorities in Colorado is provided, including key events and major circumstances surrounding them. Then, each extant Authority is examined in turn, focusing on its organizational structure, operations, financial status, and future outlook.

Several scenarios, or alternative approaches, to the possible integration of PHA's - either in whole or part - into the CDOT are delineated, including retaining their separate entity status. Criteria are established for evaluating the scenarios, and the advantages and disadvantages of each approach are discussed. Appropriate notation is made of the legislative intent (and current legislative perception) of the creation of PHA's, as well as the opinion of existing PHA board members regarding possible changes. Finally, recommendations are put forth regarding the preferred scenario and the reasons therefore.

2.1 CHARACTERIZATION OF VARIOUS "SPECIAL DISTRICTS" IN COLORADO

There are three classes of what are generally referred to as "special districts" which exist under Colorado law to construct and maintain new

[1]The W-470 Public Highway Authority Board of Directors voted to suspend operations and close its offices as of July 15, 1992.

infrastructure independent of cities and counties. In summary, principal characteristics of the three districts are:

- Special Districts - Independent political subdivisions of the state, formed pursuant to Title 32, Article 1 CRS (the "District Act"). Often termed *independent* districts, these districts are governed by a board of directors named by electors residing (or owning property) within the district, which may exist within both cities and unincorporated areas of counties. Permitted districts include: ambulance, fire protection, hospital, metropolitan[2], park and recreation, sanitation, water, and water & sanitation.[3] Within the limits of authorized services, these districts have many of the same powers as cities and counties, including the power to levy property taxes, impose fees and charges, and to issue debt. Such districts can operate indefinitely.

- General Improvement Districts (GID) - GIDs are a form of a *dependent* special district, in that the governing bodies (e.g., city council) of the municipalities[4] in which they are located serve *ex officio* as the district board of directors. (Individual GIDs may exist within one municipality only.) A GID is authorized to construct, acquire, operate, and maintain any public improvement except electric and gas utilities and water and sewer treatment plants, and can operate indefinitely. Formation is through a vote of affected residents and/or property owners. GIDs are empowered to levy ad valorem taxes, assess fees and charges, and issue debt, among other standard powers.

- Special Improvement Districts (SID) - SIDs (*Local* Improvement Districts for counties) are formed to fund the capital cost of specific infrastructure improvement (e.g., street paving, water or sewer mains, etc.). Unlike Special Districts or General Improvement Districts, property is *assessed* for the cost of an improvement according to an apportionment of "special" benefit to

[2]Metropolitan districts may provide two or more of the following services: fire, mosquito control, parks, traffic safety, sanitation, streets, television, transportation, and water.

[3]The Denver Regional Transportation District (RTD) is a form of an independent special district, but operates under its own enabling statute and has many characteristics that differ from those authorized under the "District Act."

[4]*Public* Improvement Districts (PIDs) are the analogous mechanism for counties and, with minor exceptions, operate in much the same manner as GIDs.

property conferred by the proposed improvement, as opposed to "general" benefit which can be recovered through ad valorem taxation or other method. Like GIDs, SIDs are governed *ex officio* by the governing body of the authorizing city (or county). However, unlike GIDs or Special Districts, they are strictly a financing vehicle–they have no operational role, they are created to fund one facility only, and they cease to exist when the project has been completed or when all indebtedness has been retired. Special assessment districts are the oldest form of special district in Colorado, with uses recorded before 1910.

Public Highway Authorities do not fall completely within any of these categories of special districts, but actually incorporate aspects of all three. First, PHAs are not only permitted to be multi-jurisdictional, as in the case of other independent districts, but indeed they *are required* to be comprised of at least two municipalities and/or counties, or at least one municipality or county and the state of Colorado. Also, like independent districts or GIDs, PHAs may exist "in perpetuity." Unlike independent districts, however, the governing boards of PHAs are *not* elected independently, but are comprised of elected officials representing their constituent jurisdictions (a version of the *ex officio* structure used with GIDs and SIDs). Also, PHAs are limited in the scope of the kinds of improvements they can make (i.e., toll-financed transportation improvements) and in the revenues they can tap to fund those improvements. Specifically, PHAs do *not* have the authority to levy ad valorem taxes, and are authorized to impose motor vehicle fees, sales taxes, or head taxes only with a public vote.

Interestingly, PHAs may themselves create Local (Special) Improvement Districts (LID) within their boundaries, though *unlike* cities and counties, a PHA may not create a LID without the express concurrence through petition of a majority of affected property owners and residents. PHAs may also levy "highway expansion fees" (development impact fees) and, of course, PHAs may levy tolls, charges, etc. for the use of their constructed facilities in the manner of SDs and GIDs. One power unique to PHAs is the ability to form "Value Capture" areas within their boundaries. The value capture concept is similar in form with tax-increment financing used for redevelopment areas. However, it differs in one very important aspect: the amount of incremental ad valorem revenue to be diverted to the PHA is subject to negotiation and can vary with every other taxing entity within the affected zone. Indeed, unlike with redevelopment areas, schools are statutorily exempted from participation in PHA value capture areas.

2.2 A CHRONOLOGY OF PUBLIC HIGHWAY AUTHORITIES

Key events and dates relevant to the creation and activities of Colorado Public Highway Authorities are summarized in a chronological format below. Documentation of the history of extant PHAs (E-470 and W-470) is supplemented with citations of other related events affecting transportation policy at the regional and state levels. (A brief chronology of the Berthoud Tunnel Building Authority is included in a subsequent section entitled Organization and Financial Status of Existing Authorities. While not a PHA, it is included in the discussion because of it's similar proposals for tolls, financing vehicles, and major highway construction.)

1952 — The Boulder Turnpike opens to traffic. Usage greatly exceeds forecasts and bonds will be retired in 1967, 13 years early. Tolls are removed at that time.

1958 — A belt highway around Denver is proposed.

1964 — I-225 is defined as the southeastern quadrant of an "inner beltway." Construction begins in 1965 and is completed in 1976.

1968 — I-470 is defined as the southwest quadrant of the metro Denver beltway and placed on the regional transportation plan. An extension of I-470 to the east of I-25 (roughly comparable to the present E-470 Segment 1) is shown on the Arapahoe County Comprehensive Plan, but no action is taken to implement the project.

1974 — Governor Dick Lamm is elected. He promises to "drive a silver stake" through the I-470 project.

1973 — The Interstate Transfer Program is authorized by Congress. This becomes the basis for downgrading I-470 to Federal-Aid Primary status and transfer of over $100 million in funds (escalated) to other projects in the region, including the downtown Denver transit mall and improvements to US 85 in 1977.

1980 — Construction of C-470 begins. The first segment opens in 1985 and the project is completed in 1990, several years earlier than projected when it was still part of the interstate program. The C-470/I-70 interchange was

	designed to accommodate a possible W-470 route to the north.
1982-1985	Denver experiences an economic boom, fueling extensive real estate development through the region. Heavy growth pressures in eastern Aurora and Arapahoe County spur discussions of new highway facilities in that area.
1983	Arapahoe County Airport Influence Area Transportation Study recommends development of circumferential highway between I-25 (South) and I-70 (East). The recommended configuration functions as an extension of C-470 to the east and north.
1983	A group of landowners organizes a public/private coalition to sponsor development of the southeast quadrant circumferential road project, now labeled "E-470" (for "Extension-470"). Interest is initially limited to Arapahoe and Douglas Counties, but Adams County soon becomes involved.
1983	The E-470 Task Force is organized, comprised of Adams, Arapahoe, and Douglas County staff and private sector representatives. Non-landowner citizen representatives are also included. The City of Aurora joins the Task Force a short time later.
1983	Using public and private funds, the Task Force commissions an alignment and financing study for the E-470 project in July 1983, which is completed in January 1985. The Colorado Department of Highways (CDOH) and the Denver Regional Council of Governments (DRCOG) make technical contributions to the study, but do not become further involved with the project.
1985	Discussions between Denver and Adams County increase as plans for a new metropolitan airport move forward. The area north and east of Stapleton Airport becomes the primary site location area. The potential proximity of the new airport to E-470 is considered in the study, but is not viewed as a critical determinant of need or location.

1985	The completed E-470 study produces a recommended project alignment (still functionally equivalent to present plans), institutional structure for implementation, and various funding mechanisms. Of interest, toll revenue financing is *not* recommended at this time.
Feb/1985	The "E-470 Authority" is created through an intergovernmental agreement executed by Adams, Arapahoe, and Douglas Counties. Aurora joins the Authority in July. The governing board is comprised of ten elected officials–three from each county and one from Aurora. This strategy of creating an intergovernmental agency expressly for the purpose of implementing the project is believed most likely to succeed within the desired time-frame.
Fall/1985	The E-470 Authority hires an executive director and, in early 1986, a chief engineer. Toll-based financing becomes a more desirable and necessary approach as the economy begins to slow and fiscal constraints become evident. Financing strategy for the Authority rests on home rule city power to levy tolls (Aurora), county authority to issue bonds for transportation improvements in adjacent counties (Arapahoe), and still extant authority for private toll roads (1883 statute). The Authority cannot issue debt in its own name.
Spring/1986	The E-470 Authority engages services of legal, financial, and engineering consultants. A strategy to earn arbitrage income from county-issued bonds held "in escrow" is formulated.
August/1986	Arapahoe County issues $772 million in "Capital Improvement Trust Fund Highway Revenue Bonds" on behalf of the Authority. These are placed in escrow pending detailed engineering and financial studies. Arbitrage income from the bonds is estimated at $15 to 20 million annually for a period of up to five years. Bonds are to be "rolled over" (refinanced) at six-month intervals, thereby imposing a tight, repetitive cycle for demonstrating progress to bondholders.
January/1987	Senate Bill 247 is introduced in the 1987 legislative session to authorize creation of formal

intergovernmental agencies with express powers to plan, finance, build, and operate toll-financed transportation facilities–the Public Highway Authority Act. SB 247 is sponsored by Dave Wattenberg (Senate) and Bill Owens (House). Key issues of debate include: revenue mechanisms other than tolls, requirement for public elections to implement non-toll mechanisms, areas of the state authorized to create PHAs pursuant to the legislation, maximum size of an authority district. Initial version provides for a $25 annual vehicle registration fee, a 0.5% sales tax, and a $2/employee business tax. No public vote is required.

April/1987 — The W-470 Authority is created by intergovernmental agreement between Adams County, Jefferson County, and the cities of Arvada, Broomfield, Golden, Lafayette, Louisville, Superior, and Westminster.

June/1987 — SB 247 is defeated in the Senate on the last day of the regular session.

August/1987 — SB 247 is modified and re-introduced at a special three-day session called by the Governor. The vehicle fee is reduced to $10, the sales tax is reduced to 0.4%, and a public vote requirement is added. The bill passes by wide margins in both houses and is signed by the Governor.

Summer/1987 — Governor Romer convenes a "transportation round table" to formulate regional solutions to transportation improvement needs. Attempt to enact legislation based on this process fails in the following (1988) legislative session.

December/1987 — A corridor alignment for the W-470 highway is officially designated by DRCOG based on studies begun in 1985. The project formally became part of the *2010 Regional Transportation Plan*.

January/1988 — The E-470 Public Highway Authority is officially chartered as a "political subdivision" of the state. A new board structure is created, comprised of one elected official from each member jurisdiction. The charter permits inclusion of additional members meeting tests

for proximity to the project. The charter mandates unanimous agreement on all key matters, including alignment, interchanges, design, finance, etc.

May/1988 — An election held in Adams County to authorize the annexation of land for the new airport into Denver is successful.

May/1988 — The W-470 Public Highway Authority is officially chartered as a "political subdivision" of the state.

August/1988 — A plan of finance is adopted by the E-470 Board calling for the project to be constructed in phases, with the toll revenue from each phase providing security for the next phase (termed the "additional bonds test" by financial analysts). A $10/year vehicle registration fee is to be collected in portions of all three counties to supplement toll revenue until such time that toll revenue is sufficient to meet all financial requirements. An election to authorize the fee is scheduled for November, 1988.

November/1988 — The E-470 vehicle fee is approved by a margin of 58% to 42%.

December/1988 — Ground breaking for E-470 Segment 1 is held.

1989-1991 — Repeated attempts to create a regional transportation agency for metro Denver are not successful. Enacted in 1989, the Metropolitan Transportation Development Commission (MTDC) prepares two proposals in two successive years for consideration by the Legislature. Both are rejected.

February/1989 — A letter-of-credit agreement with the Union Bank of Switzerland (UBS) is executed to provide full construction financing for E-470 Segment 1. $68 million of the $722 million of Arapahoe County bonds held in escrow are technically released under the new letter-of-credit security.

February/1989 — An election to authorize a $10 vehicle fee for W-470 is unsuccessful. A coalition of environmental and community-based organizations is successful in fomenting opposition based on alleged environmental degradation,

	unchecked growth, and unfair taxation. The defeat also reflects differences in policy between Boulder County and Jefferson County and their constituent cities.
Spring/1989	An opposition group "W-470 Concerned Citizens" brings a suit alleging that the Authority promoted the vehicle registration fee in violation of state law. The suit is ultimately dismissed.
July/1989	The E-470 Authority, for the first time, draws funds from the $68 million in bonds secured with UBS letter of credit. UBS assumes a major role in project development and decision-making.
Fall/1989	Newly-created Metropolitan Transportation Development Commission (MTDC) excludes W-470 from its proposed mobility improvements plan to be presented to the General Assembly in the 1990 session.
March 1990	The process to complete the remainder of E-470 (Segments 2-4) using a single design-build contractor begins.
May/1990	Financial plan to complete E-470 is outlined, relying on a multi-bank letter of credit for $997 million.
Summer/1990	Preliminary engineering for remainder of E-470 is completed.
November/1990	Design-build contractors submit bids for completion of E-470 Segments 2, 3, and 4.
Spring/1991	The Colorado Department of Transportation is created by the Colorado Legislature. Enabling legislation provides for a number of policy studies, including the Toll/PHA Policy Study.
January/1991	Morrison-Knudsen (MK) is selected as the design-build contractor by the E-470 Authority.
June/1991	E-470 Segment 1 opens to traffic.
	The E-470 Authority and Morrison-Knudsen (MK) agree to a financing agreement to continue project

development after the cessation of arbitrage income in August, 1991. The agreement involves an outlay of MK funds at risk, with reimbursement, profit, and expenses linked to the achievement of "success" hurdles.

1991-1992 Repeated efforts to assemble bank letter-of-credit syndications for E-470 are unsuccessful. External economic and financial conditions, as well as concerns regarding future traffic levels, are cited as reasons.

January/1992 E-470 Authority staffing and budget are reduced in response to cessation of bond arbitrage income.

July/1992 Due to its inability to obtain either additional working capital or long-term financing, the W-470 Authority suspends its operations and closes its office. The Authority is not formally disbanded, and can be reactivated at the discretion of its members.

Summer/1992 A transportation finance task force is again convened under the auspices of DRCOG to study funding alternatives for regional transportation needs.

September/1992 The E-470 Authority announces a new design and financial plan, that provides for realignment of the project onto Gun Club Road and for equity contributions and loans to the project, including a request for a loan of state funds.

2.3 ORGANIZATION AND FINANCIAL STATUS OF EXISTING AUTHORITIES

This section of the report describes the current status, organization and staffing, operations (if applicable), financial condition, and issues and future outlook of the two extant highway authorities in Colorado and the Berthoud Tunnel Building Authority. At present, the E-470 Public Highway Authority is the only PHA functioning with full time staff, offices, etc. The W-470 Public Highway Authority Board of Directors voted to suspend operations and close its office as of July 15, 1992. The Berthoud Tunnel Building Authority was organized as a non-profit corporation rather than under the PHA enabling legislation. While still viable as a corporation, it has no staff or office, and its operations also are dormant for the time being.

2.3.a. BERTHOUD TUNNEL BUILDING AUTHORITY

Status - Interest in a railroad tunnel at Berthoud Pass dates to the 1860's. In recent years, improved highway access across the Continental Divide at the Pass has been identified as a primary means of providing improved economic development on the west side and of increasing the safety and decreasing the time and cost of highway travel on U.S. 40.

The Berthoud Tunnel Building Authority (BTBA) is a non-profit Colorado corporation established for the principal purpose of constructing a highway tunnel under the Continental Divide. The proposed project is a 4-mile long, 2-lane toll tunnel located approximately 45 miles west of Denver beneath Berthoud Pass. Both north and south portals would connect to existing U.S. 40.

As noted in a May 1989 Status Report on the Berthoud Tunnel, the proposed project is a "...design-build turnkey venture in a private environment. Using the principles and efficiency of private enterprise, the project is proposed to be designed and constructed to public standards while minimizing cost through creative contract structuring and reducing the 'red tape' associated with typical governmental projects. This project implementation process envisions a partnership between the public and private sectors that is expected to yield an economically viable project."

Organization and Staffing - The Berthoud Tunnel Building Authority functions under Section 501(c)3 of the Internal Revenue Code as a non-profit corporation. This provision allows the authority to receive tax deductible contributions.

The BTBA Board of Directors consists of seven local volunteer business persons representing nearby communities and consisting of a cross-section of professional capabilities. The BTBA project is intended to be a joint public/private initiative, and numerous public agencies and private individuals and corporations have been involved in feasibility planning to date.

From June 1987 to December 1989, the BTBA had a full time, contract staff director (President) and an office in Winter Park. Prior to that time, the President served in a part time capacity. Currently, there are no employees - contract or otherwise - and financial and legal filing matters are handled pro bono or with nominal fees paid by friends of the Authority. The BTBA no longer maintains a bank account.

Initially, a "development team" was established which consisted of consultants/advisors in the following areas: design/build, financial, legal, economic feasibility, geotechnical, civil engineering, and environmental. Each company provided pro bono services to the BTBA, in some cases substantial amounts, e.g., in excess of $200,000.

In the Fall of 1988, the BTBA entered into a project development agreement with the design-build joint venture, Shank-Ohbayashi, which provides it with exclusive rights to the engineering and construction elements of the project and precludes the BTBA from soliciting other proposals. This, in return for continuing support of the project by Shank-Ohbayashi (up to $1 million) until permanent financing can be arranged. That agreement is still in place, not having been unilaterally withdrawn by either party; the agreement has no sunset provisions.

Over a several year period, the BTBA invoked the assistance of CDOT in several ways. First, CDOT provided analytical data and information from a regional traffic projection model which greatly assisted the Authority in forecasting future levels of demand - and, subsequently, projected toll revenues - for the tunnel. CDOT also provided, and continues to do so, traffic count data in the vicinity of the project.

BTBA representatives made two formal presentations to the Transportation Commission (at that time, the Highway Commission), who was encouraging, but unwilling and/or unable to provide any seed funding outside of the data collection and analysis contributions noted above. Specific requests for the CDOT to provide engineering and design services for the project were not acted upon. "Grass roots" support for the project, not only from the citizenry, but also from local and state elected and appointed officials has not been forthcoming in large measure, and this fact greatly impedes CDOT initiative and commitment to the project.

Financial Status - As part of the pro bono preliminary project feasibility work, costs for the project were estimated (in 1992 dollars) as follows:

Construction Cost	$ 190 million
Cost of Financing	46 million
Total Project Cost	$ 236 million
Operations and Maintenance Cost (Annually)	$ 2.5 million

Extensive financial plan modeling was conducted in order to structure the anticipated debt to the projected toll revenue. Unfortunately, even under

the most ambitious scenarios, toll revenue alone was forecast to be insufficient to satisfy debt service, O&M costs, and debt service coverage requirements.

Given this scenario, other sources of funding were sought, primarily from CDOT (at the time, the Department of Highways). State participation was proposed as (1) operating and maintaining the tunnel, (2) funding a $20 million reserve fund from which interest earnings would serve as a revenue source for the project, and (3) leasing the tunnel for up to 10 years at $5 million per year. According to BTBA documents, by owning the tunnel debt free at the end of 40 years, this financing structure would represent a "...present value return of $236 million on an $18 million investment..." by the state. The break even point was projected in the 10-12 year range.

Consideration also was given to the use of Special District legislation, modified in May 1987, to allow special districts to be created specifically for toll tunnels. (Similar special district legislation was used many years ago to successfully construct the Moffat Railroad Tunnel; the concept was to mirror that approach for the Berthoud Tunnel.) However, creation of a special district required a general referendum, and an additional property tax assessment would have been required as the principle source of revenue. These obstacles were deemed too formidable, so the option was abandoned.

Later, plans were made for an interim financing involving limited earnings from arbitrage (on tax exempt, single purpose bonds issued prior to construction) to fund project development work. This plan would have produced approximately $1 million to match the $1 million in technical feasibility analysis provided by Shank-Ohbayashi, noted above. Following the project development work, the bonds would be remarketed as permanent financing for the project. Bids for letters of credit to guarantee the bonds were received from several financial institutions, and the financing was scheduled for a mid-1989 closing.

Citizen opposition to the tunnel project forced a general referendum on whether the town of Winter Park should lend it's tax exempt bond authority to the BTBA. While the referendum passed (with a heavy voter turnout), it delayed the proposed closing further. Then, in November, changes in federal tax law contained in the Omnibus Reconciliation Act of 1989 prevented the BTBA from pursuing this approach any further and the project has been essentially dormant ever since.

It has been suggested that funds could be made available from the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) for the Berthoud Tunnel project. This will take a high degree of interest, commitment, and hard work by CDOT and others, if it is to be realized. For example, identifying the Berthoud Tunnel project specifically in an appropriations bill would be a major step in this direction.

ISTEA provides a greater degree of flexibility for projects such as this one, including avenues for public/private ventures and collection of toll revenues on federal-aid highways. Compared to numerous other states, however, Colorado has not fared well in the designation of special projects or in the availability of funding for major projects such as the Berthoud Tunnel. In fact, Colorado received no "special project" funds except for a $20 million allocation allocated to states with no special projects.

In a January 1992 BTBA Board meeting, several concepts for obtaining funding under ISTEA and/or other CDOT funds were surfaced, including the following:

- Request a sustained financial commitment from the Transportation Commission and use those funds to leverage a comprehensive project financing plan (a level of $10 million per year for five years was noted)

- Request design and feasibility planning funds from the U.S. DOT - through CDOT and the Transportation Commission - under the ISTEA legislation.

Clearly, these approaches would require enthusiastic endorsement and support from the Transportation Commissioner from the District, as well as from the affected District Engineer(s). Such commitments would have to be given in lieu of other project priorities, assuming five-year needs exceeded available funds, which is almost always the case. If some of the ISTEA special projects in other states are not built, Berthoud Tunnel may have an edge in securing those funds simply because of the relative maturity of the project.

Issues and Future Outlook - The construction and design/engineering community continues an interest in the project, but they (several major international firms) are reluctant to invest their own funds without a definitive financing plan that can see the project through to completion.

A substantial number of preliminary technical feasibility assessments has been completed, sufficient to convince promoters of the project that it is technically sound. However, if federal and state funds are to become involved as a key ingredient of the project's future, then considerable additional work in environmental and other technical areas must be accomplished, especially in light of ISTEA and Clean Air Act Amendments provisions.

A high priority must be given by BTBA to engender the support required on the Transportation Commission and staff. Such support is *critical* and must compete with other meritorious projects, potentially very large ones such as E-470 for construction funding. In the area of engineering feasibility, support of the CDOT staff and key Transportation Commissioners also is critical.

In the current commercial credit financing environment, a prominent CDOT role in feasibility work and financial guarantees, at a minimum, is increasingly necessary if the project is to proceed in the next several years.

Citizens in the northwest area of Colorado will need to support increased access to that part of the state, a factor around which the future success of the Berthoud Tunnel projects revolves. This implies that the U.S. 40 Improvement Coalition will have to play a leading role in developing grass roots public support, such that the tunnel project will eventually be a beneficiary.

It is generally perceived that construction, operation and maintenance of the Berthoud Tunnel would require a fairly substantial toll (the $2.50 range has been suggested). With the financial issues still surrounding the existing E-470 toll facility and the proposed financing mechanisms for other segments of E-470, not to mention the general notion that "tolls are not popular in the West," the BTBA probably will face anti-toll opposition.

Despite the probable need for a toll as a major source of revenue, it is highly likely that other major financing will also be needed. A creative, hybrid financing scheme drawing on funding from multiple sources may be the only realistic choice if the project is to proceed.

Operating as a private, non-profit corporation, the BTBA has no substantial oversight entity except for routine tax and corporate filings with the requisite state and federal agencies. These filings, of course, do not address project feasibility, viability, extent of public support, etc. That is, no public agency is in a position to review and comment on, much less

approve, the Authority's program development, design and/or financing plan.

Although a considerable amount of effort has been expended on behalf of the Berthoud Tunnel project, it is unlikely that it will be able to proceed without a "sponsor." The sponsor could be the CDOT, a PHA,[5] a special district, a group of local elected officials/jurisdictions, or some other grass roots entity whose primary focus is to develop support - and financing - for the project. It is not likely that the BTBA acting alone will successfully build such a major project in the current economic and fiscal environment. Unfortunately for it's advocates, the project does not seem to have a broad base of support either in the legislature or the state transportation commission.

2.3.b. W-470 PUBLIC HIGHWAY AUTHORITY

Status - *The W-470 Highway Authority has been created to plan, design, construct and maintain the northwest segment of the federally designated toll beltway facility around metropolitan Denver. All members of the W-470 Highway Authority are committed to constructing a quality, environmentally sensitive, controlled-access, user-pay highway that is responsive to changes in growth conditions and will accommodate the comprehensive and economic development plans of the respective members. This will be accomplished using a consensus-building process to overcome negative public perception by involving the public, environmental and business interests and will balance needs, routing advantages and environmental considerations.*

-- W-470 Mission Statement, adopted April 18, 1990

The corridor for the W-470 highway facility was designated by a resolution of the Denver Regional Council of Governments. A "W-470 Task Force" provided advice and guidance to the Council of Governments and recommended the designation and alignment of the proposed facility.

The W-470 PHA approach to project development was characterized by the earlier work of the W-470 Task Force which involved a large number of individuals and numerous local elected officials and their respective governing bodies. While this process was healthy from the standpoint of

[5]Only local governments in the Metropolitan Denver area are authorized to create PHAs, although a PHA may finance and construct a project anywhere in the state.

public involvement, it was laborious and slow; it also led to a coalescing of various groups around alignment options. The Authority also embraced the prior work by the Council of Governments, including key assumptions and results on important parameters of the project. This was done advisedly by the board and staff, thinking it would help gain popular support.

In May 1988, the W-470 Authority also commissioned three major studies: an Alignment Refinement Study, a Revenue Study, and Environmental Overview Study. In addition to Authority board and staff representatives, a technical advisory committee comprised of staff from local governments, the Colorado Department of Highways, the RTD, and others also were involved.

Undeterred by the failure of a referendum seeking authorization for a $10 motor vehicle fee and an (ultimately unsuccessful) lawsuit, the W-470 PHA continued its search for viable financing and improved grass roots support for the project. This was based on the belief - supported by a series of polls before and after the referendum - that the electorate actually favored the highway project but objected to the means of financing. Also, it was noted that the E-470 vote was held during a *general*, rather than *special*, election, and it passed by a 58 percent majority. Although the matter of suspending Authority operations was discussed, in the minds of the W-470 board, community support was sufficient to push forward with identifying alternative financing packages.

Several communities withdrew from the Authority due to pessimism that the project did not have a near term positive outlook or, in some cases, elected officials changed and the project no longer had favorable local support. Many expected the Authority to go out of business, and this notion prevailed for several years. Finally, on July 15, 1992, the W-470 PHA board voted to suspend operations and close its office, suggesting that perhaps the project was premature; certainly, the Authority had not been able to forge a successful financing package. Legally, the PHA still exists and could be resuscitated by a majority of its member governments.

Organization and Staffing - The W-470 PHA was organized in May 1988 pursuant to the state "Public Highway Authority Law" (Title 43, Article 4), which was enacted in 1987. This legislation has the primary purpose of providing "beltways" and other regional transportation improvements in Colorado metropolitan areas over 1 million population through the cooperative establishment of PHA's with broad capabilities to raise needed revenue. It has particular application in situations where there is limited availability of state and federal funds for such purposes or the

proposed project location involves multiple local governmental jurisdictions.

Other primary provisions of the Law include:

- A PHA has all the duties, privileges, immunities, rights, liabilities, and disabilities of a public body politic and corporate.

- A PHA board of directors must include at least one elected official from each member local government; it may include a representative of the state (upon approval of the Transportation Commission, the Governor, and the Senate); and it shall include non-voting representation of any regional transportation agency, air quality control commission, and regional planing commission.

- PHA powers include:

  ✓ To exercise the power of eminent domain.

  ✓ To construct, finance, operate, or maintain public highways within or without its own boundaries.

  ✓ To establish fees, tolls, rates, and charges for use of ("traveling on") it's highway facilities.

  ✓ To establish highway expansion fees from property owners within its boundaries.

  ✓ To impose annual motor vehicle registration fees on persons residing in part or all of member jurisdictions.

  ✓ To levy a sales or use tax (or both) on part or all of the member jurisdictions.

  ✓ To establish an employment tax on part or all of the member jurisdictions.

  ✓ To establish a trade, business, occupation, or profession tax on part or all of the member jurisdictions.

- A PHA may establish local improvement districts within its boundaries to facilitate the financing, construction, operation, or maintenance of public highways within or without its boundaries.

- A PHA may establish one or more value capture areas within its boundaries. The value capture plan may include the collection of property taxes and/or sales taxes.

- A PHA may issue bonds.

- A PHA may not finance, construct, operate, or maintain local arterial or collector streets.

- None of the above fees or taxes may be imposed without an affirmative vote of the registered electors in the jurisdictions proposed to be affected.

- All revenue-raising powers of a PHA shall terminate once all capital obligations have been paid in full and a maintenance trust fund established to meet on-going obligations.

The information coordination and reporting provisions of the PHA legislation require a PHA to give prior notice of its creation to - and to file a financial plan with - the Division of Local Government (Department of Local Affairs), the Department of Revenue, and the Highway Legislation Review Committee, with a copy to the General Assembly. Any establishment of taxing boundaries, increases in fees or taxes, or issuance of bonds also requires notification of the Division of Local Government, with a copy to the General Assembly. (The Division of Local Government is required to copy the CDOT if it determines that provisions of the PHA notice will have "...an impact on any operations of..." the CDOT.)

Oversight provisions require a PHA to report every August to the Highway Legislation Review Committee regarding its activities during the year past and its plans for the succeeding year. No other official public oversight is provided for in the PHA Legislation.

The first years' membership of the W-470 PHA consisted of two counties and seven cities. Within approximately a year, the city of Golden and Adams County withdrew their membership; Louisville subsequently withdrew. By the time the Authority suspended operations, it's voting membership was six: Jefferson County and the cities of Arvada, Broomfield, Lafayette, Superior, and Westminster. (Lafayette, while not officially withdrawn from the Authority, was not active and had not made a membership contribution for over two years.) Non-voting members were the Colorado Department of Health, the Colorado Department of

Transportation, the Denver Regional Council of Governments, and the Regional Transportation District.

In its early days, the W-470 staff consisted of an Executive Director, an Administrative Assistant, a Special Projects Manager, and an Attorney. When the referendum was defeated, the latter two employees left soon thereafter. The Executive Director and Administrative Assistant were employed until operations were suspended in July 1992.

A Technical Advisory Committee and a Citizens Advisory Board also were appointed. The Technical Advisory Committee consisted of professional representatives from most member jurisdictions and other interested agencies. They reviewed consultant studies and provided advice to the Executive Director and board on transportation matters. The Citizens Advisory Board - while representative - was perceived to have been dominated by developers. Members would attend Authority board meetings, and, while they had no vote, were vocal participants in the deliberations. After the failed election, the citizens group was abandoned and never re-established.

Financial Status - Construction costs for the original W-470 project were estimated between $283 million and $535 million, depending on the assumptions, alignment, etc. Later, costs for a scaled down, substitute Northwest Parkway project sanctioned by Boulder County representatives were estimated at $343 million. The Parkway would make use of existing roads and would vary from two lanes to four lanes in width. Conceptually, it is a very different proposal from the W-470 beltway project, which would resemble the completed C-470 facility in design.

The W-470 PHA evaluated numerous means of financing the project; in fact, at one time or another, they evaluated all *potentially* available revenue under the allowances of the PHA Act. Net revenue steams were not able to cover projected project costs and debt retirement in the early years under any of the financing alternatives.

For example, combining *all* potential revenues sources (except tolls) - expansion fees, head taxes, vehicle registration fees, sales and use taxes, and value capture fees - would produce only approximately $22 million per year over the first five years. After 20 years, these same sources were together projected to produce about $35 million per year (in 1989 dollars). Clearly, this was the "up side" of the revenue stream; no one realistically expected to collect all these fees.

Forecasts of anticipated toll revenues were characteristically slow in the early years of a project. A net (after expenses of collection) toll capture total of about $13 million (in 1989 dollars) was projected to be collected in the first year a major segment of the project would be open to traffic (1998). Toll revenues were projected to increase from that point forward at rates approximating 50 percent per year for several years, settling down at less than 20 percent annually thereafter, and averaging about 7 percent annual increase after 20 years. Net toll revenue was projected at $133 million annually 20 years after the facility opened to traffic.

From its inception, the W-470 Authority derived a majority of its funding from member governments. These budgeted "assessments" and total budget amounts were as follows (actual amounts contributed varied somewhat):

YEAR	ASSESSMENT	BUDGET
1988	$ 376,350	$ 513,074
1989	$ 320,350	$ 530,521
1990	$ 104,504	$ 271,450
1991	$ 220,340	$ 289,515
1992	$ 167,143	$ 267,787

Large surpluses in the early years carried over to later years and provided for relatively level expenditures over the entire period. Note the substantially reduced assessment and budget in the year following the defeat of the referendum (1990) and the renewed vigor the following year. In the first two years, contributions were made by eight jurisdictions; in the last three years, by only five. Jefferson's County's contributions averaged approximately 70 percent of the total over the entire period.

Although represented as "loans" to the Authority, the above assessments are by law required to be repaid only out of the first proceeds of a successful financing package. Until such financing occurs, there is no obligation to repay the assessments to the member governments.

At the time the W-470 Authority suspended operations, it had approximately $150,000 in current assets and about $650,000 in fixed assets. Almost all - except for some office furniture and equipment - of the fixed assets is represented by planning, engineering, and financing studies contracted over the five year life of the Authority. The Authority purchased no real estate in its own name, although both Golden and Broomfield have reserved portions of the right of way for a future project.

(In the case of Golden, the right of way will revert to the prior owners if not used for a highway project within ten years, e.g., by 2000.)

Final balance sheet and operating statement results await the completion of an audit in December 1992. All bills of the Authority have been paid, and no other costs are being incurred. When the audit is complete, the remaining cash funds will be distributed to the member governments based on their contributions over the period. That amount is expected to total less than $100,000.

Issues and Future Outlook - As noted, the W-470 Public Highway Authority may be resurrected or restructured by a vote of the governing bodies in the area. Whether - and when - such an approach may make sense is indeed subject to much debate. The Authority suffers from negative public perception on several fronts, whether justified or not. Given this situation, there is little doubt that it cannot be successfully resuscitated in the near term.

One of the most significant transportation issues facing the metropolitan area is whether the beltway will be completed and, if so, how. According to surveys - both current and dated - a large proportion of the Denver populous desires such a facility. Clearly, if E-470 is able to continue its program in the northeast and southeast quadrants, only the W-470 portion will remain. This situation would seem to put added pressure on completing the beltway in some form at some future date, although even that is not certain.

The Denver metropolitan region - through the Council of Governments - will play an increasingly important role in designating and prioritizing transportation projects of all types in its planning area. This is particularly true under the ISTEA provisions. As a body representing 40 plus local governments, it may have to become the forum for deciding whether the W-470 project (or some version, thereof) will be viable in future years.

CDOT also may have to become more involved in the W-470 matter. Again, under ISTEA, the state must develop a long range statewide intermodal transportation plan by 1994. These planning efforts will involve a broad public review before being adopted. Also, the state plan *must* incorporate the comprehensive long range plans developed and approved by the Denver Council of Governments. The implications for a major project such as W-470 in this process are indeed intriguing.

Of course, the financing issue remains as the most evasive and complex. A more aggressive and acceptable policy towards and visible support for

the use of tolls as a financing mechanism, for example, on behalf of the legislature, CDOT, and the metropolitan region may go a long way in resolving the funding matter. It would appear that CDOT involvement - at least in the early years of a W-470 type project - may be critical to its eventual success. The recommendations set forth below for the E-470 PHA would also apply to the W-470.

2.3.c. E-470 PUBLIC HIGHWAY AUTHORITY

Status - The E-470 Public Highway Authority is the only currently functioning PHA in Colorado. It operates a section of limited access, divided circumferential toll highway south of Denver, and it is moving ahead with plans for financing and constructing the remaining portions of the entire project.

A relatively detailed chronology of the E-470 Public Highway Authority was presented previously in this chapter. As noted, the Authority dates from February 1985, reconstituted under the Public Highway Authority Law in January 1988. It's intent is to finance, acquire, construct, maintain, and operate an approximately 48-mile limited access toll circumferential highway ("beltway") in the northeast and southeast quadrants of the Denver metropolitan area.

There are four proposed segments of the E-470 facility. Segment I opened to traffic in June 1991; it is the southernmost part of the project - a 5.3-mile highway in Douglas County between I-25 and Parker Road. Total costs for this segment are now estimated at over $91 million. At its west extremity, it joins the 26-mile C-470 portion (southwest quadrant) of the beltway, constructed principally in the 1980's by the CDOT at a cost of $270 million.

The estimated cost to design and build the remaining three segments is well in excess of $500 million, assuming they were built to the level and design first anticipated. Focus is now concentrated on Segments II and III, with substantial "enhanced realignment" of the proposed facility, and cost estimates now total $334 million for this portion of the project. Currently, however, the E-470 Authority is evaluating less expensive alternatives, including deferring Segment IV and moving the alignment further west. The Authority also is involved with others in planning portions of the highway access facilities for the new airport. In fact, the future operation (in January 1994) of the new Denver International Airport has become a significant factor in toll traffic forecasts for the project.

In June 1991, the E-470 PHA and Morrison Knudsen (MK) entered into a Program Management Agreement which provides for MK to structure and arrange for favorable financing for the entire project, or for financially feasible portions. Also, the Authority has an agreement with Platte River Constructors (PRC) - of which MK is a major player - to execute a design-build contract for Segments II - IV, once financing has been secured. Finally, the Authority also has a separate contract with PRC to operate Segment I. Thus it is clear that MK has a substantial stake in the success of the project, including several million dollars of its own money at risk.

In November 1992, the E-470 Authority formally approached CDOT concerning the latter's potential financial participation in the project. The draft E-470 plan shows a $40 million loan and $15 million of credit enhancement services. Discussions are underway and additional work sessions between the Transportation Commission and the E-470 representatives are being scheduled. A summary of the financing plan is presented in the Financial Status section below.

Organization and Staffing - Under PHA Law, the board of the E-470 Authority consists of local elected officials, one each, appointed to represent their participating governmental unit. The current board consists of seven voting members representing Arapahoe, Douglas, and Adams Counties, and the Cities of Thornton, Aurora, Parker, and Brighton. Also, Commerce City applied for membership as of November 1992.

Ex officio members of the board represent the regional air quality agency, DRCOG, and the RTD, as specified under the PHA enabling legislation. Although not called for in the Law, courtesy also has been historically extended to CO DOT to participate in the same non-voting, *ex officio* status. A member of the Transportation Commission thus has served in this capacity for several years. (The Governor has not appointed an official Transportation Commission representative to the board, although the Law provides for one.) With one exception, the participation of the above-noted representatives is very limited; in fact, most do not attend board or staff meetings at all, although under the by-laws, they are allowed to attend even the executive sessions of the board.

Due to the airport annexation agreement, the City and County of Denver now owns property in the proposed alignment of E-470 for a distant of about two miles in length. Denver has not elected to join the E-470 Authority at this time. The City and County is focused on the new airport construction and has committed a significant amount of funding to that project and other improvements in Adams County. An intergovernmental

agreement has been approved between the E-470 Authority and the City and County of Denver regarding the construction of the interchange at proposed E-470 and Pena Boulevard.

The E-470 staff was reduced from a historical high of eighteen to eight (plus one full time contract financial advisor) in January 1992. The current staff (November 1992) includes the following:

- Executive Director
- Management Assistant - focusing mostly on Segment I management and operations
- Director of Toll Operations
- Director of Engineering
- Director of Finance and Administration
- Support staff (3) - office assistant, administrative assistant, and receptionist, plus two temporary full time clerical staff
- Contract employees (4) - right of way, public involvement (2), and finance, each related primarily to the current effort to obtain financing. Two of these contract employees are scheduled to work only through November 30, 1992.

The Authority is involved in several outside contracts dealing with planning, financing, engineering, and operations. The staff is responsible for monitoring these efforts on an on-going basis, in addition to other duties.

Operations - Segment I is a 5.3 mile toll highway south of the Denver metropolitan area. The facility was opened to traffic in June 1991 and tolls were implemented six weeks later. It is operated by an independent agent under contract to the E-470 Authority. The contractor must submit an annual operating budget to the Authority for approval and it's operations are subject to a monthly review. Under the current contract, the Authority has a cash O&M requirements of $400,000 per year in addition to estimated toll collections of $750,000 (1993). Any difference in available cash and actual O&M costs will be carried by PRC as an accounts payable. Interest payments on the bond indebtedness is available from the $10 per vehicle registration fee. In March 1994, the United Bank of Switzerland, which holds the current letter of credit, may elect to

continue that LOC indefinitely. The Bank also has the sole option at that time to turn the LOC into a term loan and to set the loan provisions.

Traffic projections on Segment I are considerably lower than projected originally: 12,000 to 14,000 vehicles per day were projected in 1989 versus less than 4,000 today. The speed limit was recently increased from 55 mph to 65 mph, and a significant increase in traffic was recorded.

In addition to manual collection of tolls, Segment I is the first highway in the nation with fully dedicated, high speed automatic vehicle identification (AVI) lanes. The system provides for vehicles to pass through the toll plazas at highway speeds where a computerized tally of the specific vehicle and the toll charge is recorded. Thus regular commuters may use the facility without encountering the normal delays associated with toll booths, at a savings both in time and air quality.

Financial Status - The E-470 Authority has just released a draft financing plan for Segments II and III, with Segment IV temporarily deferred until financing on the other two segments is closed. The proposed sources of funding are as follows:

- Vehicle Registration Fee Bonds. The proposed lowest cost source of capital, these bonds will be structured with a 1.50x minimum debt service coverage ratio.

- Fixed Rate Senior Bonds. Investment grade rating is anticipated for additional bonds with a priority lien on all toll revenues.

- Letter-of-Credit Backed Bonds. Short term or variable rate debt secured by a letter of credit, to be remarketed at improved rates upon completion of construction.

- Subordinated Debt. Convertible capital appreciation bonds, unrated, which will pay no interest until 2003.

- Platte River Constructors Note. An investment by the design-build contractor in the form of a subordinated note.

- Government Contributions. Funding - probably long term loans - from member governments, the state, and/or other governmental entities, as yet undetermined.

Toll revenue forecasts were recently updated, resulting in estimates of toll revenues of $28 million upon full opening of the facility in 1997. Estimates of growth in annual toll revenue include $105 million in 2005 and $265 million by 2015.

As noted elsewhere, in 1986, Arapahoe County issued $722 million of tax-exempt revenue bonds on behalf of the E-470 project. (At that time, the Authority could not issue debt in its own right.) Those bonds are currently held in escrow until a suitable financing plan can be devised for their release. The bonds are rolled over every six months, and arbitrage earnings on the bonds have been used to pay E-470 development and construction costs. In 1989, $63 million of the 1986 bonds were used to complete construction on Segment I.

Since late 1990, the investment community has advised the E-470 Authority that "significant" government participation in the project has become increasingly necessary in order to demonstrate support for and confidence in the project. A minimum "loan" amount of $40 million and $15 million in credit enhancement services (a total of $55 million) has been defined as necessary to solicit participation by letter of credit banks.

A summary of the estimated budget (on an accrual basis, in thousands of dollars) for the E-470 PHA for fiscal year 1992 is as follows:

REVENUES

Gross Vehicle Registration Fee Receipts	$ 4,950
Gross Toll Receipts	600
Impact Fees	20
Investment Income	350
Pledged Bonds Earnings	26,742
Miscellaneous and Other Income	139
Total	$ 32,801

EXPENSES

Segment I Operation & Maintenance	$ 1,256
Salaries	727
Operating	819
Professional Services	791
Furniture & Fixtures	6
Segment II-IV Activities	662
Construction Activities (Segment I)	2,109
Principal and Interest Payments	24,063
Indirect Debt Related	2,622
Other/Accounts Payable	240
Total	$ 33,295

The estimated deficit of approximately $494,000 will be taken out of beginning retained earnings. The Authority had a 1992 beginning operating cash balance of over $5.3 million. There are two additional reserve accounts with a total balance of approximately $5.5 million at year end.

Issues and Future Outlook - As the E-470 Authority focuses on completing a viable financing plan in the near term, in order that project development and construction of Segments II and III may proceed, there are a number of significant issues remaining:

- The Authority continues to suffer from a credibility problem with the public and numerous legislative and local governmental leaders.

- Some feel that the agreements with MK have favored the company to the long term detriment of the Authority and the public. However, it must be said that some - if not many - of those individuals do not have a complete base of knowledge of the agreements.

- Some feel the E-470 Authority staff is not sufficiently experienced to adequately oversee MK activities.

- The "enhanced" configuration of the Segment II/III project, while considerably less expensive, is not meeting with widespread acceptance in the community.

- Air quality implications of the project linger and have not yet been thoroughly examined. It is possible that meeting the Clean Air Act requirements through the construction of considerable additional capacity might not be smooth sailing.

- Government support (loan) in the total amount of $55 million is essential to the project's success in the near term.

- The Authority makes the case that the state can participate financially in the E-470 project. However, even if that is possible, there is a question as to whether the state, through the Transportation Commission, will be desirous of doing so.

- The ISTEA bill gives new authority regarding project prioritization to metropolitan planning organizations (DRCOG), and it will be critical for that agency to embrace the project and financing

scheme if any "STP" federal dollars are to be used. (The request from the E-470 Authority to the State is for State money only.)

- Cooperation on airport access issues can make the E-470 Authority an increasingly important player in the area.

In recent months, there has been increased discussion regarding a stronger PHA/CDOT coalition and increased cooperation between the two entities. In fact, as recently as November 1992, the E-470 board officially approached the CDOT Transportation Commission to open detailed discussions regarding funding options for its current project. These discussions are continuing.

A "dotted-line" oversight relationship is recommended for both the E-470 and W-470 PHA's. The rationale for this recommendation is presented in the sections that follow. These sections discuss, in detail, the institutional options available, and the advantages and disadvantages of each.

2.4 ALTERNATIVES FOR CONSOLIDATING PHA'S WITHIN CDOT

This section deals with a range of alternatives for better defining and clarifying the relationship between the PHAs and the Colorado Department of Transportation. It begins with a review of the legislative intent of the Public Highway Authority Law, which includes a review of a sample of legislators' perceptions on the subject and an assessment of the impact on public/private partnerships if PHAs were to be integrated into CDOT. Then, it identifies seven different scenarios, denotes evaluation criteria, discusses advantages and disadvantages of each alternative, and provides recommendations.

2.4.a. LEGISLATIVE INTENT OF THE PUBLIC HIGHWAY AUTHORITIES ACT

An important objective of this evaluation of public highway authorities was to assess "legislative perception" (that is, the views of elected officials and senior staff) of the authorities' record of success or failure as independent entities. In order to accomplish this, approximately thirty interviews were held with elected and appointed policy-makers, agency staff, and representatives of various private interest groups. The listing of all interviewees is contained in Chapter 3. It includes approximately a dozen members of the legislature and the Transportation Commission, among others.

To assist in understanding the opinions of those interviewed, it is important to appreciate the intent of the General Assembly on this issue as expressed in the Public Highway Authority Act ("the Act")[6].

The Act notes in its Legislative Declaration (§502) that PHAs are necessitated by a variety of conditions, including:

- The need to better coordinate planning and construction of beltways and other transportation facilities to serve regional needs;
- The present division of metropolitan areas into "a variety of incorporated and unincorporated areas;" and
- The very limited availability of state and federal funds for these projects.

The Legislative Declaration also states (paraphrase):

> It is the intention of the General Assembly that PHAs be formed to finance [projects] which cannot feasibly be financed ... by a municipality or county acting alone, and that it is *not* (emphasis added) the intention of the General Assembly for PHAs to assume the "traditional role" of counties or municipalities to finance local streets.

The Act, while allowing the state of Colorado to be a participant in a PHA, sets forth procedures for establishing PHAs which are entirely local in nature and which do not require explicit state concurrence (legislative or ministerial) in any way.

Certain noticing and reporting requirements for PHAs and state government are established by the Act, including:

- A notice of intent to create a PHA, or of intent by a PHA to create a "value capture" area (pursuant to §508 of the Act), shall be filed with the Division of Local Government (Department of Local Affairs), the Department of Revenue, and the Highway Legislative Review Committee ("HLRC") of the General Assembly, with a copy "filed with the General Assembly."

[6]Title 43, Article 4, §501 *et seq.*, C.R.S.

- Notices of increases of fees or taxes shall be sent to the Division of Local Government with a copy filed with the General Assembly.

- Each PHA shall make an annual presentation of its status and plans to the HLRC.

- The Division of Local Governments, in turn, shall forward copies of all notices to the Department of Highways (now the Department of Transportation), and shall make an annual report to the General Assembly on the activities of PHAs.

Aside from these purely routine reporting activities, the only *active* state oversight of PHA activities is mandated in §514(3)(b):

> "The division shall notify the general assembly either in the report required ... *or by letter, if it deems that immediate notification is warranted,* (emphasis added) of any situation relating to the creation of any authority or value capture area, the imposition of any fee or tax, or the issuance of any bonds by an authority which the Division believes or has reason to believe will adversely affect the tax-raising ability or credit or bond rating of any governmental unit or any school district."

The Act is otherwise silent on the subject of state oversight, and requires no other reporting, evaluation, approval, intervention or other response to adverse circumstances. Thus, it appears clear that the intent of drafters of the Public Highway Authorities Act was that PHAs should be considered full political subdivisions of the state (much as any independent special district) and that they be afforded full flexibility to operate within their defined sphere of activity without state control.

Legislative Perception of Public Highway Authorities - With only a few exceptions, a majority of those interviewed expressed generally consistent views regarding the existing public highway authorities and their ability to function effectively as independent entities:

(1) Problems with E-470 and W-470[7] are due both to internal mis-management and to external factors. The projects have not been especially successful, but there is nothing to point to a lack of state oversight as the primary cause.

[7]There was very little knowledge of or opinion regarding the Berthoud Tunnel Building Authority.

(2) The concept of metro Denver beltway remains attractive, and the efforts to complete the project should continue.

(3) Public highway authorities offer an alternative to the more "traditional" state and local transportation programs, and the PHA structure should be retained as an option for the future. The PHA Act should not be repealed.[8]

These views notwithstanding, there was considerable (though not universal) sentiment for increasing state *and regional* oversight for PHAs. This view was most strongly expressed by those who see the PHAs as mavericks operating outside of the regional planning and programming process, and by those opposed to specific projects.[9]

Most of those interviewed expressed skepticism regarding the ability of PHAs–and the E-470 Authority in particular–to achieve their goals without outside assistance, though few were willing to openly predict their failure. On the other hand, few advocated direct state financial assistance to the E-470 project, and those that did advocate intervention said they would condition such assistance with a much increased state role.

Thus it appears that most people implicitly (if not explicitly) believe that PHAs–as they are now structured–are unlikely to be successful, and that some additional state role will be necessary if the beltway is to be completed. This view may be founded more on the belief that the economics of such projects may be beyond the resources of sub-regional entities than on the view that the *institutional* structure of PHAs is flawed. Again, however, virtually everyone felt that additional oversight by the state would be in everyone's best interest.

Analysis of Impact of Absorbing PHAs on Future Public/Private Partnerships - The "public/private partnership (PPP)" is a concept that has been advanced with some frequency as a strategy for implementing difficult, expensive, or otherwise controversial infrastructure and/or land development projects. The fundamental concept behind the strategy lies

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[8]Two legislators who were interviewed did advocate repeal of the PHA statute as part of a broader concern about "special districts" and the lack of overall coordination and control. One legislator suggested that PHAs in general were a bad idea, while the other offered that such entities could be useful, but should be created by the legislature on a case-by-case basis.

[9]Indeed, there was more divergence of opinion regarding *state vs. regional* control of planning and programming than there was regarding the efficacy of the PHA concept and the success or failure of the two beltway authorities.

in the view that private (for-profit) establishments and public agencies bring different resources, skills, powers, and philosophies to the development and implementation of projects. Creating a "partnership" between the two can, in theory, yield a stronger development team and thereby improve the chances of success.

Characteristics and assets often viewed as unique to, or more predominate in, one sector or the other include:

Private Sector	Public Sector
• Entrepreneurial culture	• Bureaucratic culture.
• More cost-efficient	• More global viewpoint: public interest orientation
• Able to cut through "red tape"	• Long-term orientation: more staying power
• Strong negotiation skills	• Lower cost of capital: tax-exempt borrowing capacity
• Short-term orientation	• Condemnation powers in service of the public interest
• Limited public interest concern	
• Freer access to capital	
• Higher cost of capital: taxable borrowing only	

Private sector participants in PPPs are frequently (though not exclusively) land development companies, turnkey construction contractors and specialty consultants which have the financial resources and willingness to undertake unusual and complex projects.

The determinants of which public sector entities are most likely to seek roles in PPPs are more complex, often including:

- **Purpose and Access** - Certain government units, by their very nature and mission, will be more prone to involvement in PPPs than others. An obvious contrasting example: Redevelopment agencies are frequent PPP participants, while criminal justice operations are not.

- **Law** - Statutes authorizing general and special purpose governments often encourage or restrict participation in "innovative" arrangements such as PPPs by virtue of the scope of authority and powers granted to the entity.

- **Resources** - The location, size, and funding base of a government unit will partly determine its ability to support the higher initial costs of special projects arrangements, including staff, consultants, etc.

- **Mandate, Administrative Procedure and "Culture"** - The foregoing considerations combine to form a socio-political "culture" within an agency or district which either encourages or discourages unusual operational modes and associated risks (e.g., PPPs). Frequently, single purpose public agencies such as redevelopment agencies, transit or toll road agencies, and other special districts will have the greatest appetite for PPPs. Traditional state and local "line" departments are somewhat less likely to become involved in customized risk/responsibility arrangements, often because their "operations" versus "project" orientation encourages control and accountability over risk and reward.

Given the legal and political nature of both public highway authorities and the Colorado DOT, it is likely that CDOT would be less inclined than existing or future PHAs to participate in or encourage the more unorthodox PPPs. As a consequence, absorption of PHAs into CDOT would, in all likelihood, reduce the chance of using this project development strategy. Two specific reasons for this are:

(1) **Agency Mission, Size, and Culture** - The Colorado DOT is a large, complex, multipurpose organization which presents a high profile to elected officials and the general public. Its mission is to operate an extensive transportation system serving virtually every resident and business in the state with a maximum of efficiency and a minimum of fuss. Its organization and decision structure is by nature risk-averse, and rewards for those who advocate non-traditional methods are limited, even if they result in success.

Public highway authorities, by contrast, are small, highly-directed single-purpose government units *founded* on the principal of "doing it differently" in order to be successful at implementing a difficult class of projects. Their lower public profile, limited organizational layering, and centralization of authority and decision-making also encourage more unorthodox relationships and strategies, which are sometimes open to public criticism.

(2) **Legal Scope and Authority** - The Public Highway Authority Act explicitly grants powers to PHAs that are not available to CDOT, most importantly in the area of financing options, contracting for services, and use of debt. These powers encourage more direct interaction between PHAs and private

sector interests aimed at solving funding and other project delivery problems.

Any reduction in incentive to create public/private partnerships caused by the absorption of PHAs into the Colorado DOT could be mitigated to a considerable extent by:

(1) Granting CDOT some of the same flexibility in funding and contracting arrangements now available to the PHAs; and

(2) Creating a special tollroads and privatization office within CDOT charged with fostering special arrangements, such as PPPs, as part of implementing difficult projects. This special unit could be oriented exclusively toward toll road projects, or could have a more generalized, flexible mission.

These concepts are addressed in more detail as part of the evaluation of alternative organizational arrangements elsewhere in this report.

2.4.b. CANDIDATE SCENARIOS

As far as we can determine, there is little unanimity among legislators, commissioners, board members, or staffs regarding the preferred solution for "what to do with the PHA's." Some feel that the entire PHA function and responsibilities should reside within the CDOT organization, e.g., a complete integration. At the other extreme, some point out that a free-standing independent authority provides the only hope of successfully developing and implementing a financial package. A not insignificant number of individuals would "leave things alone in the hope that the PHAs will die a natural death." Still others call for a cooperative relationship among all affected agencies and organizations, particularly one with joint leadership by the CDOT Commission and the PHA Boards.

The candidate scenarios which are identified and evaluated in subsequent sections pertain to the currently extant PHAs - W-470 and E-470 - or any others that would be created under the PHA Law. However, given that the W-470 Authority has suspended operations and is not likely to resurface in the near term, the analysis and recommendations are made primarily with E-470 in mind. The analysis does not specifically address the Berthoud Tunnel Building Authority because it is organized under the Internal Revenue Code and Colorado state law as a non-profit corporation. (As far as we can tell, it is not within the prerogative of the General Assembly to disband or otherwise inhibit the BTBA.

Three *basic* scenarios were formulated to test a range of options for CDOT/PHA integration, namely:

- Scenario A - Maintain Independence of Existing PHAs (Status Quo)
- Scenario B - Fully Integrate or Combine Existing PHAs with CDOT
- Scenario C - Maintain Independence of PHAs, But Mandate Greater CDOT Oversight

Further, subalternatives were defined within each primary scenario in order to permit analysis of other, related options, including:

- Degree of modification to the PHA Act
- Retention of E-470 Authority to Operate E-470 Segment I
- Degree of CDOT Oversight

The extent of modifications to the PHA Act--ranging from no change to complete repeal - was considered an issue related to, but nevertheless independent of, the question of resolution of problems confronting the existing PHAs. The two extremes of either (1) retaining the PHA Act but absorbing existing PHAs into CDOT or (2) repealing the PHA Act but "grandfathering" existing PHAs were both considered options worth exploring. It was thought useful, as well, to consider two alternate degrees of CDOT oversight, and to test the desirability of retaining the E-470 Authority to operate existing Segment I of that facility.

Scenarios and subalternatives were combined to form seven distinct alternatives for testing, as described below:

SCENARIO A: MAINTAIN INDEPENDENCE OF *EXISTING* PHAs
Subalternatives: Modifications to the PHA Act. This approach represents the *status quo* with respect to the existing PHAs--there would be no official relationship between CDOT and any of the PHAs. However, alternatives *within* this basic scenario test provide for various degrees of change to the PHA Act, ranging from "Do Nothing" to outright repeal.

A1: No changes in PHA and CDOT official relationship and no changes in the PHA Law, e.g., do nothing.

A2 : No changes in PHA and CDOT official relationship, but various alterations to the PHA Law.

A3: Repeal the PHA Law as it may apply to new PHAs, but grandfather the E-470 Authority - and, perhaps, the W-470 Authority - to continue functioning as is.

SCENARIO B: INTEGRATE EXISTING PHAs WITH CDOT
Subalternatives: Degree of Modification of the PHA Act and Use of E-470 Authority to Operate Segment I. Representing the opposite extreme from Scenario A, this scenario would essentially - if not actually - eliminate the PHA Law and specifically provide for CDOT to assume whatever responsibilities, functions, operations, and liabilities currently exist at the PHA. Under this scheme, future toll projects would become the domain of the CDOT. A variation on this scenario would allow for the E-470 Authority, or a facsimile, to continue operating Segment I of the E-470 highway. In the latter case, a PHA *Advisory* Board - perhaps constituted similarly to the existing PHA Authority boards - could be established.

B1: Eliminate all PHAs and repeal the PHA Law; CDOT would take over existing PHA responsibilities.

B2: Eliminate all PHAs and repeal the bulk of the PHA Law, but provide for the E-470 Authority to continue to operate Segment I.

SCENARIO C: MANDATE OVERSIGHT OF PHAs BY CDOT.
Subalternatives: Degree of CDOT Oversight. Involve CDOT in PHA Authority decision making by providing financial, operational, and/or technical oversight. Again, this approach has several variations which relate predominantly to the nature and extent of the oversight function.

C1: Develop a "*weak* dotted line" relationship between the PHAs and the Transportation Commission. This alternative would create additional reporting and coordination requirements, but would not give the Commission authority to directly intervene in the affairs of a PHA.

C2: Develop a "*strong* dotted line" relationship between the PHAs and the CDOT Executive Director ("ED"). This alternative would give the CDOT ED direct authority--indeed, responsibility - to actively participate in the governance of a PHA by placing the ED on the governing board of a PHA and by mandating other independent audits and reports by CDOT and others.

Note that none of these alternatives is designed to address the palatability, feasibility, or attainability of any *specific* facility or project. The relative effectiveness and desirability of the alternatives can - and should - be evaluated independent of actual projects. Also, there is, clearly, a virtually limitless number of variations on the above scenarios. We believe there are sufficient differences among these seven, however, to evaluate the wide range of options. Based on extensive conversations with members of the legislature, the Commission, PHA board and staff, CDOT executives, other state and local officials, and numerous staffs, each of the above scenarios has *some* support, none yet represents a clear choice, and, in implementation, each would require compromise on several fronts.

2.4.c. EVALUATION CRITERIA

The evaluation criteria represent a means of subjectively comparing the scenarios in a systematic way. Their use enables a meaningful and structured discussion of the advantages and disadvantages of each scenario. They have been selected to cover the primary characteristics of interest relative to the relationship between the PHAs and CDOT.

Public Accountability - Extent to which representatives of the public interest have input to program and project decision making.

Technical and Financial Oversight - Extent of regular or periodic review of financial, operating, planning, and engineering program and project proposals.

Administrative and Managerial Effectiveness - Probability of administering and managing a project development program in a productive way.

Funding Flexibility and Capacity - Ability to successfully generate a variety of stable funding sources.

Political Acceptance - Likelihood that institutional and organizational changes would be accepted among political leaders (does not relate to *project*s, per se).

Legislative Changes - Extent of changes required of the General Assembly in the enabling legislation for the PHAs, the CDOT, or both.

These six evaluation criteria are intended to represent the most important elements in considering the institutional relationship between CDOT and the PHAs. They were selected from a longer list of possibilities as being of approximate equivalent weight when viewed in an independent, unbiased manner. Of course, they are *subjective* criteria whose application will vary considerably from individual to individual.

2.4.d. ADVANTAGES AND DISADVANTAGES

Evaluation of Scenarios - A *subjective* evaluative process - as opposed to an *objective* one - is open to a wide degree of interpretation, depending on one's point of view. While the legislature, the PHA boards, the Transportation Commission, and the staffs all genuinely represent the "public interest," deciding *what* the public best needs and *how* and *when* it should be delivered frequently engenders extensive discussion and disagreement.

The evaluation which follows is an attempt to represent a balanced perspective regarding the public interest. Each of the scenarios is evaluated against the above criteria.

A1: No changes in PHA and CDOT official relationship and no changes in the PHA Law.

Public Accountability - Limited to PHA board members and their accountability to their own local elected boards, plus an annual report to the HLRC.

Technical and Financial Oversight - Limited to a rather perfunctory annual report to the HLRC, which does not have the expertise within the membership or staff to challenge PHA activities or results. The PHA board and staff provide oversight of their contractors, to the extent of their capabilities.

Administrative and Managerial Effectiveness - Under the current institutional arrangement, there is little bureaucracy in the PHA organization(s). There have been charges in the past, however, of mis-management of PHA programs, and there are some today who feel that the complexities of PHA activities are beyond the grasp of the staff, which is smaller and less experienced than in the past. Accordingly, there is a concern that PHA contractors are in a position to take unfair advantage.

Funding Flexibility and Capacity - This scenario provides maximum flexibility under the PHA Law for the PHAs to creatively raise funds for

project planning, engineering, construction, and maintenance. For certain sources of revenue, a local referendum is required, such as the motor vehicle registration fee employed by the E-470 Authority. For others, such as value capture and highway expansion ("impact") fees, the PHAs may implement them without voter approval. Through bonding, the PHAs are able to raise large amounts of funds and use tolls and other mechanisms to retire the bonds. There also is a potential for E-470 to provide project development, funding, and toll revenue recovery outside their corridor with the consent and cooperation of the affected local governmental unit. (An example would be the 120th Street Bridge in Adams County.)

Political Acceptance - Would not provide for any changes in PHA management, functions, plans, operations, and/or oversight, and thus would not satisfy some of the area leaders. It would satisfy others, however.

Legislative Changes - None required.

A2: No changes in PHA and CDOT official relationship, but various alterations to the PHA Law.

Public Accountability - Alterations in the PHA Law could address the accountability issue by requiring a broader outreach program, including requirements for technical, financial, and citizens advisory boards, etc. It also could aggressively embrace public participation requirements of the ISTEA legislation through mandatory interactions with DRCOG, for example. It should be noted that the E-470 Authority, for one, has had a well-developed public participation program over the years. Active, regular involvement on items of potential mutual interest to both the PHAs and other areawide agencies and interest groups, however, has been relatively sparse.

Technical and Financial Oversight - Changes in the PHA Law could address the oversight issue, requiring increased technical and financial reporting to the legislature and legislative staff, for example. These entities would, in turn, retain outside expertise or use other state resources as necessary to carry out the oversight role.

Administrative and Managerial Effectiveness - Essentially the same as A1. It is unlikely that changes to the PHA Law would address administrative and managerial process matters.

Funding Flexibility and Capacity - Similar to A1. In addition, the PHA Law could be amended to provide greater flexibility in the means to raise

funds with or without voter approval. Or, on the other hand, it could place further restrictions on PHA funding sources and revenue capacity. As far as we can determine, however, most - though not all - area leaders apparently feel that the PHA Law strikes a reasonable balance between its financing creativity and the accountability and use of fund proceeds exercised by the PHAs.

Political Acceptance - Would satisfy some area leaders who support the maintenance of the PHA Law with changes, particularly in the oversight area and in the area of state and regional planning coordination. Could engender considerable debate on the nature and extent of preferred changes.

Legislative Changes - Multiple changes could surface vocal opposition not only to the institutional changes proposed but also to the PHA project(s) themselves. Results could be as expected and hoped for, or some variation thereof.

A3: Repeal the PHA Law as it may apply to new PHAs, but grandfather existing PHAs.

Public Accountability - Same as A1 as applies only to the E-470 and W-470 Authorities.

Technical and Financial Oversight - Same as A1 as applies only to E-470 and W-470 Authorities.

Administrative and Managerial Effectiveness - Same as A1 as applies only to E-470 and W-470 Authorities.

Funding Flexibility and Capacity - Same as A1 as applies only to E-470 and W-470 Authorities.

Political Acceptance - Essentially the same as A1 as applies only to the E-470 and W-470 Authorities.

Legislative Changes - Relatively simple legislative change in concept, but could have opposition similar to that noted in A2.

B1: Eliminate all PHAs and repeal the PHA Law; CDOT would take over existing PHA responsibilities.

Public Accountability - Would substantially increase public accountability, as CDOT is under continued public scrutiny from the legislature, local jurisdictions, the federal government, and the public at large.

Technical and Financial Oversight - Oversight functions would shift on a routine basis to CDOT executives and the Transportation Commission. Periodic reports could still be filed with the HLRC or other appropriate legislative committee, and/or advisory boards with technical and financial expertise drawn from the private and public sectors could be established to review staff proposals. The CDOT staff - and others, as appropriate - would retain oversight authority of the existing PHA contractors.

Administrative and Managerial Effectiveness - Comparatively, CDOT is a large, rather slow moving bureaucracy. It is alleged that decision making would be greatly encumbered and perhaps ineffective in the private financial environment of the PHAs. Obviously, in a typical major project development process in the CDOT, many players - technical, financial, and political - become involved over sometimes many years. There also are substantial public participation, environmental analysis, etc. requirements, most of which contributes to added project cost. While this process is admittedly slow, it is thorough, it balances competing objectives, and it ultimately reaches a (sometimes uneasy) successful consensus when the project is built. In other words, the CDOT process may not be a nimble, but it is a proven successful one.

If CDOT were to assume current PHA responsibilities, or some facsimile thereof, it would be desirable to create a public/private project development office at a reasonably high level to deal on a full time basis with PHA and other similar projects as they arose. A small staff of two or three experienced professionals would be sufficient; their experience would need to be in similar public/private financial ventures, and/or they would need to retain outside consulting assistance. Internal planing and engineering development would be handled like other major CDOT projects. There also would be an opportunity and a need for improved intergovernmental, regional transportation planning and coordination involving PHA project proposals.

Funding Flexibility and Capacity - The ability to put together a creative financing package of the ilk currently proposed under the PHA Law is not currently available to CDOT. While CDOT has the legislative authority to finance and construct toll-backed revenue bonds (as it has done once for the Boulder Turnpike), historically CDOT has funded projects on a pay-as-you-go basis. And, on the down side, this scenario would subject the state to potential - if not actual - liability for the current debt structure

of the PHAs. On the other hand, traditional sources of CDOT funding are relatively stable, depending primarily on the collection of state gasoline fuel taxes and the receipt of federal funds. (As noted elsewhere, federal funds under ISTEA are becoming much more flexible in their application.) Presumedly, CDOT could not assume current PHA financing liabilities - such as the letter of credit with UBS in the case of the E-470 Authority - without a change in its enabling legislation. Over the long run, becoming involved in PHA funding could pay off for the state and region, in that successful toll projects often produce excess revenue in the out years, and those revenues are sometimes used to fund other transportation projects and/or other modes, including operating subsidies for transit.

Political Acceptance - As in other scenarios, this approach would satisfy some political leaders and dissatisfy others. Many are legitimately concerned that the CDOT is not culturally or technically prepared to assume existing PHA responsibilities, particularly in the financing area.

Legislative Changes - Repeal of existing PHA Law is simple in concept, but it would engender extensive discussions and debate regarding appropriate additional powers required by CDOT in order to assume PHA responsibilities and authorities.

B2: Eliminate all PHAs and repeal the bulk of the PHA Law, but provide for the E-470 Authority to continue to operate Segment I.

Public Accountability - Would substantially increase public accountability for those activities assumed by CDOT. Unless changes were made to the contrary, public accountability for Segment I operations would be the same as exists today.

Technical and Financial Oversight - Same as B1, except the PHA could continue to operate Segment I absent periodic overview. Another option would require the E-470 PHA to report periodically to the CDOT staff and Transportation Commission regarding operations.

Administrative and Managerial Effectiveness - Same as B1. There probably are not substantial quality or cost differences regarding whether the PHA or CDOT were to operate Segment I.

Funding Flexibility and Capacity - CDOT would have responsibility for any new project development, but the E-470 Authority would continue to function solely as an operator of the existing Segment I. It would maintain its financial commitments pertaining to that project and continue to manage the collection of tolls and retirement of debt. No refinancing of

the current debt would be required, nor would CDOT become liable for any of the current debt load.

Political Acceptance - Similar to B1. However, it may have increased political palatability because some of the existing functions - and perhaps, liabilities - could be left with the PHAs until current indebtedness is paid in full out of toll and motor vehicle registration fee revenues.

Legislative Changes - Essentially the same as B1.

C1: Develop a "weak dotted line" relationship between the PHAs and the CDOT Transportation Commission.

Public Accountability - Would substantially increase public accountability, though not so great as in scenarios B1 and B2 (assuming that CDOT is entirely accountable to the public for its activities. CDOT also would report PHA activities to the legislature through it's normal committee structure and informally through it established channels of communication with the legislative leadership.

Technical and Financial Oversight - The Transportation Commission would review PHA proposals and programs on a routine (monthly or quarterly, as appropriate) basis. CDOT staff, advisory boards, and/or outside consultants, would provide oversight support for the Commission. The Commission would not have authority to alter PHA proposals and activities except through persuasion and political pressure. This scenario would expose the PHA to increased public oversight and participation - and, perhaps, to increased public support for the current projects - but it would limit the state's participation to persuasive strategies alone. The increased public oversight would be essentially incidental because of the PHAs higher profile and closer relationship to CDOT, rather than the creation of another formal public participation process.

Administrative and Managerial Effectiveness - Clearly, in calling for increased communication between the CDOT and the PHAs, this scenario encumbers the administrative and managerial effectiveness of both bodies to some degree. At the same time, this increased communication and cooperation in planning, funding, and overall project acceptance could result in a success story for the PHA and ultimately for CDOT. As discussed in scenario B1, there would need to be created within CDOT some substantially increased level of expertise to deal effectively with oversight of PHA type financing programs. This could be handled by a high level public/private project development office of several experienced

individuals who would serve as staff to the Executive Director and the Transportation Commission for PHA matters.

Funding Flexibility and Capacity - This scenario would attempt to bring together the best revenue generation capabilities and funding stability of the PHAs and CDOT to provide viable financing packages for PHA projects. An example of such cooperation is brewing: In November 1992, the E-470 PHA formally approached CDOT concerning a no-interest loan of $40 million plus $15 million in in-kind services, citing this support as "...the minimum amount necessary for the plan of finance [for Segments II and III only] to succeed." Presumedly, the CDOT - if it is to provide such support - will have to find some reasonable quid pro quo and/or some PHA oversight provision in order to make this financial arrangement palatable. Certainly, one concern on the part of the state will be to maintain sufficient arm's length to the Authority so as to avoid inheriting additional financial liability. Whether the Transportation Commission will agree to provide support at the level requested, or at all, without certain guarantees, is open to question.

Political Acceptance - Some leaders, including some of those responsible for highway authority activities, believe that PHAs need a "sponsor," or at least a closer tie to the on-going planning activities of the metropolitan planning organization (DRCOG) and the planning and project development activities of the CDOT. This approach may represent a political compromise between mutually beneficial activities of the PHAs and CDOT.

Legislative Changes - Relatively minor changes in the PHA Law would be required, although any proposed changes risks surfacing opposition to the PHAs, the proposed changes in the Law, and/or the PHA project(s). It will be necessary to generally describe the "weak dotted line" relationship in the statutes, however, in order to assure the intent of the new PHA/CDOT relationship is fulfilled.

C2: Develop a "strong dotted line" relationship between the PHAs and the CDOT Executive Director.

Public Accountability - Would provide a strong measure of public accountability because of the control exercised by the Executive Director, who reports directly to the Transportation Commission and serves at the behest of the Governor. PHA activities would also be reported independently (of PHA reporting) by the CDOT to the legislature.

Technical and Financial Oversight - The Executive Director would sit on the PHA board(s) as chairman and would have veto power of the agenda. He/she would report activities to the Transportation Commission for information and/or action, as appropriate, in similar fashion to current CDOT activities. CDOT staff, or outside consultants as required, would provide technical and financial analytical support to the Executive Director. Overall, CDOT would play a strong role in the production and review of technical and financial proposals.

Administrative and Managerial Effectiveness - Similar to C1, except that the CDOT public/private project development staff would have greater responsibility in exercising a stronger measure of control over PHA operations.

Funding Flexibility and Capacity - This scenario would immerse the CDOT in PHA funding in a substantial way. The state, through the CDOT Executive Director, would play a major role in developing and managing financing for PHA projects. It would be very difficult for the CDOT not to be drawn into the "underwriting" of the current indebtedness, even if not officially. At the same time, the strong participatory role envisioned in this scenario might open up other avenues for increased CDOT technical and financial assistance. Although it may not be possible under current statutes, this scenario might also allow for (or require) the full faith and credit of the state to stand behind any bond indebtedness, which would have the net effect of reducing the cost of financing, as commercial letters of credit presumedly would not be required. (This point also applies to scenarios B1 and B2.)

Political Acceptance - This scenario would connect the Governor in a direct way - through the CDOT Executive Director - with PHA operations. It would essentially give the Governor veto power over the PHA agenda. Certainly, this point alone will engender extensive discussion. On the other hand, for those who like the creative, non-traditional private financing potential of the PHA, and who at the same time desire strengthening of controls over the PHAs, this approach may have merit. One possible concern - although there is precedent in other areas - is that this approach would mix local elected officials and a state appointed official on the same decision making board.

Legislative Changes - Essentially the same as C1, although the changes, per se, would be somewhat more extensive to allow for a continual oversight function by the CDOT as well as probable merger of certain financial and technical analysis activities.

2.4.e. RECOMMENDATION

We recommend Scenario C1 - *Develop a "weak dotted line" relationship between the PHAs and the CDOT Transportation Commission.*

The primary rationale for our recommendation is as follows:

- Increased oversight of PHA technical and financial planning is needed for the following reasons:
  - The financial, technical, and political characteristics of the current E-470 project are very complex and thus require increased attention and public scrutiny.
  - The HLRC oversight function, while well intended, is limited.
  - There is a need for increased regional transportation planning and coordination in light of ISTEA, the Clean Air Act, and other mandates and opportunities.
- The E-470 project is not likely to be successful in the near term without CDOT assistance because the economy probably cannot support major projects without some public assistance.
- E-470 Authority has recently requested CDOT financial involvement in its project.
- The oversight by the Transportation Commission stops short of *compelling* changes in PHA programs and projects, but it opens the door for structured public debate and the power of political persuasion.
- Responsibility for staffing new public/private financial initiatives analyses would be a positive addition to CDOT capabilities for the future.
- If the PHA projects are ones which can be supported by the DRCOG and CDOT, then the PHA exists as a potential way of leveraging scarce state and local capital funds.
- If PHA toll projects are successful, excess revenues will become available in future years which may be made available to CDOT and other transportation agencies.

- Linkage to the Transportation Commission would give PHAs increased status vis-a-vis the state legislative and administrative leadership.

Admittedly, we are drawn to this solution partly by the current state of affairs with the W-470 and E-470 Authorities. In other words, if we were "working with a clean slate," so to speak, other options might have been preferred. At the same time, the legislature and other important players should not be unwilling to make a mid-course adjustment in the life of public highway authorities in Colorado; this is what our recommendation does, in our judgment.

Clearly, the E-470 Authority has made considerable progress in its objective of building and operating the eastern half of the Denver beltway. Also, the W-470 Authority and the BTBA have laid considerable ground work in support of possible future projects in their areas. Given the general level of acceptance - if not outright support - for an eventual circumferential facility, our decision was to not inflict fatal damage to the currently struggling institutions (PHAs). Rather, we searched for a practical solution to gaining a broader base of support at the political leadership and grass roots levels and, by so doing, facilitating the objectives of the PHAs.

The recommendation does not presuppose that the current request by the E-470 Authority that CDOT provide $55 million for Segments II and III will - or should - be realized. The recommendation is made regardless of the outcome of that current situation. However, in the event that CDOT *does* participate in this or other PHA funding plans, the recommendation does not preclude the provision of additional oversight commensurate with CDOT's evaluation of their contribution and the checks and balances they believe would be necessary under such circumstances. For example, in such a case, CDOT might request and/or conduct additional due diligence activities, or they might provide increased scrutiny of the design plans, forecasts, etc. One would expect CDOT to evaluate the nature and extent of their participation in a PHA project on a case-by-case basis.

One might legitimately inquire as to why PHAs need increased oversight, e.g., what is it about PHAs that they cannot function well enough without the level of oversight recommended? There are several responses to this matter. First, PHAs by their nature are multi-jurisdictional, joined by the voluntary association of local governmental units in the proposed project area. As such, they need the adhesion and stability provided by CDOT, *the* agency responsible for the state's transportation infrastructure. Second, the recommendation helps to assure that public interests are best

served regarding the provision of transportation facilities and services. Third, a closer association with CDOT will help ameliorate historical credibility problems of the PHAs. Finally, we believe the increased oversight will increase the communication and cooperation among all the transportation planning and coordination players in the metropolitan area.

We recognize that the proposed recommendation may be viewed by the PHAs as increased interference, added hurdles, and more bureaucracy. To some degree, that viewpoint is justified. At the same time, we urge a "kinder, gentler" perspective on behalf of the PHAs which recognizes the benefits that hopefully will ensue from a closer CDOT relationship. For CDOT and the state, as well as DRCOG and other regional bodies, we urge increased participation with the PHAs, bringing CDOT's technical capabilities, broader perspectives, and resources to the table. (Again, as was noted early on, this recommendation does <u>not</u> require the endorsement any specific project, current or future.)

Obviously, careful attention must be given to exactly <u>how</u> to implement this recommendation. Clearly, there are some variables and loose ends with which the PHAs, CDOT, and the legislature will have to deal. Accordingly, we believe there is considerable flexibility in describing the preferred day to day relationship among the parties.

None of this precludes the state from entering into much stronger controls via mutual interagency agreement, if, and when, CDOT has the funds to provide public assistance to the PHAs. The recommendation does not presuppose that the current request by the E-470 Authority that CDOT provide $55 million for Segments II and III will - or should - be realized. The recommendation is made regardless of the outcome of that current situation. However, in the event that CDOT *does* participate in this or other PHA funding plans, the recommendation does not preclude the provision of additional oversight commensurate with CDOT's evaluation of their contribution and the checks and balances they believe would be necessary under such circumstances. For example, in such a case, CDOT might request and/or conduct additional due diligence activities, or they might provide increased scrutiny of the design plans, forecasts, etc. One would expect CDOT to evaluate the nature and extent of their participation in a PHA project on a case-by-case basis.

CHAPTER 3
PUBLIC POLICY ISSUES

There are significant issues connecting the broad arena of public policy and toll financing policies. There presently exists an extensive body of federal and state laws that enable state and local governments in Colorado to plan, design, finance, construct, operate, and maintain toll-financed highways, bridges and tunnels. With the 1987 Public Highway Authority Act and the 1991 reauthorization of the federal surface transportation program (ISTEA), there have never been more *institutional* opportunities for toll financing in Colorado. This favorable[1] condition notwithstanding, there are a number of issues which merit discussion, including:

1. New federal law and emerging administrative policy.
2. Various state statutes affecting CDOT and the PHAs (see footnote, below).
3. State powers - strengths and limitations (see footnote, below).
4. Federal tollroad matching policy and attendant leveraging issues.
5. Intergovernmental coordination issues.
6. Privatization policy and legislative issues.
7. Policymaker opinions and views.

[1]The scope of this report was established and the report was prepared in draft form, prior to the passage of Amendment Number One. This new Amendment, passed in November, 1992, requires that new tax initiatives be taken to the affected taxpayers for referendum and approval prior to enactment of the tax. The full implications of this are unknown at the time of the preparation of this final report. For example, does Amendment Number One apply to tolls? Who would vote on tolls? What about special assessment districts? What about outstanding bond obligations and increases in special assessments required to satisfy extant debt service requirements? What are the political probabilities of successful passage of a toll policy on referendum basis? What does all of this do to the E-470 Authority? These, and many other possible impacts will have to be addressed when a more definitive legal understanding of Amendment One is available. The reader is cautioned to view all policy suggestions in this report in the context of possible serious Amendment One impacts. This Amendment has been added as an Appendix to this report and should be used to guide the interpretation of this report's conclusions.

8. General public opinion of tollroads.

Each of these significant public policy issues are discussed in order below. The following two sections present a summary of current federal and state laws concerning toll financing.

3.1 FEDERAL LAW

For the first time since the beginning of the national highway program, federal funds can be applied to a wide range of toll-financed projects, including rehabilitation of existing toll facilities and existing "free" highways, bridges, and tunnels. This new federal policy was implemented through Section 1012 of the Intermodal Surface Transportation Efficiency Act of 1991 (PL 102-240), otherwise known as ISTEA, and is codified in law as part of Title 23, Section 129, USC. Key provisions of the new law include the following:

Eligible Uses of Federal Funds on Toll Projects

- Construction of new non-interstate highways, bridges and tunnels.
- Reconstruction of existing tolled highways, bridges and tunnels.
- Reconstruction/replacement and conversion of existing "free" highways (except interstate), bridges or tunnels to a tolled facility. "Major" reconstruction is required for conversion. A Section 129(a)(3) toll agreement is required prior to project execution.
- Preliminary studies.

"Excess" Funds

- Tolls may remain in perpetuity and "excess" funds[2] used for Title 23 (transportation) purpose. State must certify that the facility is adequately maintained.

Federal Matching Shares

- Federal matching limits vary by type of project, but generally is 50 percent for new highways and reconstruction of existing toll

[2]Toll revenue available after debt service, operations and maintenance, and fair return on private investment.

highways, and 80 percent for toll bridges or tunnels. More detail on allowable federal match can be found in Table 3-1. (Note that shares for modifications to existing toll facilities are excluded, as none presently exist in Colorado.)

Funding For Toll Authorities

- Toll authorities independent of a state transportation agency may receive federal funds directly, provided that the state agency requests this direct pass-through of funds. Funds so apportioned will come from the state's overall apportionment.

TABLE 3-1
TOLL FACILITIES: FEDERAL AID MATCHING RATES

Project Type	Interstate		Non-Interstate	
	Roads	Bridges/ Tunnels	Roads	Bridges/ Tunnels
Initial Construction	--	--	50%	80%
Reconstruction/Conversion of Existing "Free" Highway	--	--	50%	--
Reconstruction/Conversion of Existing "Free" Bridge/Tunnel	--	80%	--	80%
Preliminary Feasibility Studies	50%	50%	50%	50%

Source: Federal Highway Administration

Loan Program

- States may loan federal funds to public or private sponsors of toll projects.

- Loan can be for any amount up to federal share limit. Loans of federal funds can be subordinated to private debt.

- Loaned funds may be drawn only after environmental clearance and all permits have been obtained.

- Loans are repaid to states. Repayment (of principal) must start within five years of opening and be completed within 30 years. Interest is average of state's pooled investment fund earnings for prior year.

- Loan payments (including interest) may be "recycled" to any use permitted under the original program category of the loaned funds.

Privatization

- **Private entities** may finance, design, construct, own and operate facilities assisted with federal funding. Public authority having jurisdiction must ensure various Title 23 and other requirements are met.

- Permitted facilities and activities are as listed under "Eligible Uses," above.

Congestion Pricing Pilot Program

- US DOT will create up five pilot projects to test the impact of such pricing practices on traffic, transit, air quality, and funding.

- Program will be funded at $25 million annually with federal share of 80 percent. Development and startup costs to be funded for up to three years.

- FHWA will monitor and report on projects for up to ten years.

Intelligent Vehicle Highway System (IVHS)

- Three to 10 corridors will be established to test IVHS concepts and methods. Selection criteria include: traffic level, air pollution level, presence of various modes, including toll- and tax-supported highways, bridges, tunnels.

- Federal funding will be at 50 percent of total cost.

Other Related Provisions

- Toll facilities are eligible to be included as part of the new National Highway System (NHS).

- Annual grants will be made to not less than three states which have implemented the most effective programs for increasing the percentage of funds spent for private contracts for engineering and design services.

- Toll revenue from non-federally-funded facilities (existing) may be used as a credit toward non-federal matching requirements. State must agree that it will maintain its non-federal capital outlay at a level at least equivalent to the average of the past three years. (Not applicable to Colorado. Provided for information only.)

It should be noted that minor revisions to clarify certain of these provisions were proposed as part of a "technical corrections" bill for ISTEA. That legislation was not successful in the 102nd Congress, but may be re-introduced in the coming 103rd Congress.

3.2 STATE LAW[3]

State law can be divided into two categories: 1) State agencies, and 2) Public Highway Authorities. These are discussed below:

Powers Granted to State Agencies - Various Statutes

The Act creating the Colorado Department of Transportation (CDOT) in 1991 is codified in variety of locations within the Colorado Revised Statutes (CRS), principally including Titles 43 and 24, but also including Titles 2, 8, 11, 12, 16, 17, 25, 29, 31, 32, 33, 34, 35, 37, 39, 40, and 42. That Act created granted no new powers to the state in the area of toll-financing, but did incorporate, in full, existing law granting the state (i.e., CDOT) powers to construct and operate toll-financed facilities.

[3]This subject includes possible taxation issues that may be affected by Amendment Number One. The full impact of this Amendment is not fully known at this time. The reader is cautioned to consider the subject in the possible context of Amendment Number One and the new political realities that it suggests.

First enacted in 1947 and subsequently amended on several occasions, key elements of existing law granting CDOT toll-financing powers (Title 43, Article 3, §201 *et seq.*) include:

Legislative Intent (§201) - Additional powers are granted to the state Department of Transportation in order to better provide for the development and improvement of public highways and roads within the state.

Powers Granted (§202)

- To formulate plans for construction of "turnpikes" within the state, including conduct of engineering surveys and feasibility studies. "Turnpike includes: highway or express highway, tunnel, or toll tunnel, including all property and facilities necessary to operate such facilities.

- To construct, operate, maintain, improve, and reconstruct turnpikes.

- To take all steps necessary to enter into all necessary contracts or agreements with other states, the United States, or public corporations.

- To establish and collect fees, fares, and tolls for the privilege of traveling on said turnpikes.

- To establish a sinking fund and to pledge any and all revenue to payment of bond interest and principal.

- *With Senate and House approval*, establish a fund to pledge proceeds from: motor vehicle registration and license fees, and excise tax on gasoline in order to insure the payment of principal and interest on turnpike bonds. The total amount of such fund cannot exceed *one year's* payment of principal and interest plus and agreed-to reserve.

- To designate as a turnpike project a described territory or described portion of the highway system.

Authorization to Sell Debt (Bonds) (§203) - The Department is authorized, upon an affirmative vote of the Transportation Commission, the General Assembly and the Governor, is bonds for the purpose of

defraying all direct and incidental costs, secured with revenue as described above in §202. Significant details include:[4]

- Term of no more than 30 years
- Trust indenture not to pledge the facility itself as collateral
- Bonds shall be issued with call provisions, and refunding shall be permitted

Effect of Repayment of Bonds (§212) - After payment of all bond principal and interest (or after sufficient funds for same have been reserved) the state shall operate and maintain the turnpike facility *free of tolls*, and all other funds, equipment, materials, etc. not required for the payment of bonds shall be used and disposed of by the state.

Limited Obligation (§213) - "Nothing in this part shall be constructed as authorizing the contracting by the state of a debt by loan in any form nor the pledging of general taxes of the state.

Additional law was written in 1949 (Title 43, Article 4, §101 *et seq.*) granting the Department the authority to issue *revenue anticipation bonds*, a financing instrument that was not included in the original 1947 legislation. This statute is otherwise not significantly different than the Title 43, Article 3, Part 2 law just discussed.

Also, in 1956, the Colorado General Assembly enacted special legislation providing for construction of a toll-financed tunnel to connect "the east and west slopes of Colorado," either with or without the participation of the United States. That legislation is still codified in law as Title 43, Article 3 ("Special Highway and Construction"); however, the United States did designate US 6 as a future interstate route, and the Eisenhower Tunnel was constructed without toll financing. The provisions of this statute essentially duplicate those found in Title 43, Article 2, thus it does not add to the state's existing authority to construct toll-financed facilities.

Public Highway Authorities

The most extensive law governing locally-controlled toll facilities is the Public Highway Authority Act of 1987 (Title 43, Article 4, §501 *et seq.*). In summary, the key elements of this law include:

[4]In a departure from earlier versions of this statute, the present law does NOT place an interest rate cap on toll-backed revenue bonds sold by the Department.

Purpose (§502) - The legislation is intended to further the development "beltway and other transportation facilities" within the Denver metropolitan area by allowing a minimum of two local governments to form a special district whose sole purpose is to construct and operate such *toll-financed* facilities. The state may elect to be a party in a "public highway authority," but is not required to do so.

Creation (§504) - Public Highway Authorities (PHAs) are created by consenting local governments (cites and/or counties) by ratification of a contract specifying, among other things: name and purpose of the authority, establishment of a board of directors, boundaries, term of contract, limitations, and conditions governing changes in parties to the contract. A public hearing is required.

Board of Directors (§505) - Most standard powers of the board of any political subdivision are granted to the board of a PHA.

Powers of the Authority (§506) - Principal powers of a PHA include:

- To have perpetual existence (except as provided by contract)
- To enter into agreements and contracts
- To establish and collect fees, tolls, rates, and charges for the privilege of traveling on a public highway constructed and operated by the authority, without regulation of such tolls by any agency or official
- To issue debt (bonds) and pledge revenue to the payment of bonds
- To construct, finance, operate, or maintain public highways within the boundaries of the authority (and outside, with the consent of the local body having jurisdiction over the area in the project is located)
- To purchase and/or otherwise transact real or personal property
- To have and exercise the power of eminent domain for the condemnation of private property for public use

- To establish and collect "highway expansion fees" (development impact fees)

- To impose, with the consent of the electorate, one or more of the following: motor vehicle registration fee, sales and use tax, employee "head tax" (on employees and employers)

Power To Create Local Improvement Districts (§507) - A PHA has the authority to establish a local improvement district (LID) within the boundaries of the PHA unless it receives a majority protest petition.

Power To Create "Value Capture" Areas (§508) - A PHA may establish one or more "value capture" areas within its boundaries. Such areas are similar in concept to "tax-increment" districts used for redevelopment, except that all affected governments must approve their proposed shares of the diverted revenue, all of which can be negotiated. School districts are statutorily exempted.

Cooperative Powers - PHAs and local government units have powers to enter into cooperative agreements, transfer real estate, accept gifts, etc.

Other Laws

With the exception of the Public Highway Authority Act, there is no other significant body of law permitting local governments to create and operate toll highways, bridges, or tunnels. Existing law governing *private* toll roads dates from the mid-to-late 19th Century and has little applicability today. Other archaic statutes permitting home rule cities to operate toll roads do exist; these have been essentially supplanted by the PHA Act (at least for the Denver metro area).[5]

This concludes the discussion of federal and state law. Next, we focus on the strengths and limitations of the states' powers.

[5]Indeed, it is interesting to note that the Public Highway Authority Act does not permit true privatization of toll facilities. Any authority constituted under the PHA Act remains the owner-operator of record.

3.3 STATE POWERS - STRENGTHS AND LIMITATIONS[6]

Colorado statutes authorizing the construction and operation of new toll-financed transportation facilities are drawn fairly broadly, and could, with few limitations, be invoked by the Transportation Commission and CDOT in their present form. Certain problem areas do exist, however, and of the two most important issues affecting CDOT's ability to undertake new projects, one stems directly from the law, the other from practice and experience.

- **Credit Support - No Backup Revenue Pledge Available** - Adequate credit support is the most significant issue affecting the State's ability to successfully implement tollroad projects in today's financial environment. In years past it was possible to construct new facilities and obtain financing with limited or no collateral guarantees; however, modern toll projects are finding such pure "project financing" arrangements tough going. (E-470 is only the most obvious example of this problem.) While tolls are and should be the primary security and revenue source for repayment of bonded indebtedness, the state is precluded under present law from pledging either the Highway Users' Tax Fund (primarily fuel tax and truck fees) or the general revenues of the state as a secondary, or backup, security for bondholders. The 1947 statute (as amended) does provide for a state-funded reserve of approximately one year's payment of principal and interest; however, in its present form, this mechanism does not offer an ironclad guarantee that the state will replenish the fund when necessary.

- **Debt Issuance - Limited Experience** - State government in Colorado has very limited experience with debt-financing, the result of a strong "pay-as-you-go" philosophy. Indeed, with the exception of the Boulder Turnpike, CDOT, as an institution, has no modern experience with issuing and servicing debt. This inexperience, though less significant than the credit support issue just discussed, should be given close attention prior to undertaking new toll-financed projects.

[6]This subject includes possible taxation issues that may be affected by Amendment Number One. The full impact of this Amendment is not fully known at this time. The reader is cautioned to consider the subject in the possible context of Amendment Number One and the new political realities that it suggests.

The creation of a State Revolving Fund (SRF) credit enhancement facility is one of the key financial recommendations of this report.

3.4 FEDERAL MATCH/LEVERAGING ISSUES

The toll road provisions of ISTEA represent a quantum change in the federal government's attitude toward toll facilities. For the first time in the history of the national highway program, federal funds may be co-mingled, or "leveraged," with toll revenue on a permissive, or programmatic basis. Permitted federal shares for toll projects are in many instances competitive with the shares offered for other non-toll projects (i.e., 80 percent), though in some instances, only 50 percent federal participation is permitted.

From the perspective of maximizing development of toll facilities, the toll road provisions of ISTEA are limited in two respects:

(1) No funding above a state's total earmark for Interstate Completion, NHS, and STP is earmarked for toll projects, and so funds for these projects must be diverted from other projects already in the pipeline; and

(2) Of particular importance to Colorado, toll-financed *highway* projects are not permitted on the existing Interstate System. Given the high proportion of Interstate mileage in the state's freeway system, this limitation precludes (at least for the time being) toll-backed investments on most of the state's most congested facilities.[7] One exception to this is the *addition* of lanes to the interstate system and the placement of tolls only on the added lanes.

Federal law is clear, however, in sanctioning the use of privatization and public/private partnerships for toll projects. Given certain changes in state law to clarify state policy on privatization, this flexibility could be turned to considerable advantage. Privatization is discussed in more detail, below, after the discussion of intergovernmental issues.

[7]See Chapter 1, where locations for possible investments in toll facilities are discussed.

3.5 INTERGOVERNMENTAL COORDINATION ISSUES

The myriad layers of federal, state, and local law, particularly with regard to regional coordination of planning and investment, pose a challenge to anyone contemplating a new toll-financed project, whether on an existing facility or on a new alignment. The federal provisions are best tied to mandated planning programs through new requirements spelled out in ISTEA and through US DOT implementing guidelines. The PHA Act, by contrast, makes few demands on public highway authorities to coordinate their projects with other metropolitan plans. This limitation, evidenced by some of the controversy surrounding W-470 and E-470, is one of the concerns most frequently expressed by those interviewed for this study.[8]

Environmental impact is another aspect of intergovernmental and regional coordination which is not clearly addressed by present law. Local traffic, air quality, and development are the three project-related impacts that typically generate the most controversy. Toll facilities can cause unexpected results: (1) due to traffic diversion effects, localized congestion on local streets can occur; (2) total travel on a regional basis may be altered in ways that produce ambiguous air quality effects; and, (3) standard land use outcomes associated with freeways may be subtly altered by the presence of tolls. State policy governing the interrelationships of transportation investment with traffic flow, air quality, and land use should, most likely, be scrutinized and modified as necessary to accommodate toll-financed investments.

3.6 PRIVATIZATION

Present federal law now evidences strong support for a policy of privatization of transportation facilities wherever possible. As practiced by federal agencies, the term "privatization" can include the full gamut of private sector involvement from traditionally-separated design and construction services to a full "concession" tollroad or transit operation where a privately-owned and operated facility may function much as a regulated private utility. Indeed, as described above, Section 1012 of ISTEA specifies that private concerns may develop and operate tollroads using federal funds provided that a public entity with appropriate jurisdiction can certify that all relevant federal requirements are being met.

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[8]See Chapter 2 for a discussion of views expressed on PHAs and other topics.

State law, by contrast, provides only very limited guidance on the role of the private sector in toll-financed projects. Statutes governing projects undertaken by the state appear to provide no opportunity for private sector participation other than through standard design and construction services. The PHA Act, while implicitly granting public highway authorities greater freedom to utilize private sector resources, stops well short of permitting full-service "concession" operations.[9]

The state might wish to consider implementation of one or more "models" of fully-privatized toll facilities now found in various states.[10] Alternatively, the state might wish to consider a more limited program encouraging more privatization of the project *delivery* process (e.g., design-build, turnkey, super-turnkey, etc.), but leaving policy control firmly in public hands.

Generally, both the public and private sector bring significant possible benefits to a project financing. These are summarized in Table 3-2, below.

[9]The E-470 Authority has been self-described as an experiment with privatization; however, while a private design-build contractor has now assumed considerable responsibility for the E-470 project (and financial risk), that project remains unambiguously under direct public operational control.

[10]For example, California has chosen an approach that vests free ownership of facilities and general oversight responsibilities with the state transportation agency (Caltrans), but leaves concession companies with broad latitude to act, including freedom to set rates (subject to an overall cap on rate of return). Virginia has chosen to treat tollroad privatization as a utility subject to control of the state utility commission. Their rates are subject to review and acceptance, much as any regulated utility. Arizona has recently enacted a law designed to test both the California and Virginia models.

TABLE 3-2
BENEFITS OF PARTNERS

Public Sector:	Private Sector:
+ Credit support: leveraged financing; more project per revenue dollar	+ Turnkey or superturnkey project delivery: expedited delivery of public benefits
+ Eminent Domain	+ Creative approaches
+ Existing equity: public right-of-way; highway assets, etc.	+ Private capital
+ Capital assistance on loans	+ Venture capital
+ Tax-exempt financing	+ Risk-taking
+ Value capture revenues	+ Outside intellectual equity: business approaches

The following sections contain the various types of "public-private" and "fully" private, legal and institutional options. The state should create sufficient latitude, where necessary, for public and private entities to enjoy these relationships where deemed appropriate by the public partner.

3.6.a. PUBLIC-PRIVATE PARTNERSHIP OPTIONS

Probably one of the best discussions of the legal implications of public-private partnerships was delivered by Roger Feldman[11]:

> "Privatization is a legal issue -- in the sense that all of the physical and engineering requisites for constructing a transportation facility are the same, regardless if it is privately owned, publicly owned or a public-private venture. It is all a question of what rules apply to the process of development, construction financing, ownership and operation - and whether it is financially competitive. But, there never was a legal issue of any magnitude that was not

[11]Feldman, Roger D., "Legal Issues in Privatization" paper presented to the Fifth National Conference of the Privatization Council, copyright June 1991, Washington, D.C.; used by permission of the author.

ultimately a political issue. Transportation privatization, candidly, is a matter of the greatest political magnitude.

As a consequence, the principal type of privatization we will see for infrastructure in the United States are so-called "public-private ventures." Unlocking its alternative legal meanings of this term is the key to analyzing how to realize potential private sector contributions and to create markets. Analysis of the four issues, which I will discuss --

- The alternative types of legal relationships between the state and private parties;
- The issues surrounding the contractual arrangements into which they can enter;
- The interfacing of privatization with project finance;
- How these developments will assist the entire construction industry, regardless of firm size.

Creation of public-private ventures will pick up speed in the next decade, as these legal fundamentals are increasingly understood.

Types of Legal Relationships

First of all, it is becoming understood that the label "privatization" may be applied to a variety of legal relationships, as distinguished from formal ownership arrangements -- which frequently will be commingled in particular undertakings and jurisdictions. The nature of the relationship affects the nature of the contracts. It is essential that the parties have the same concept of what their relationship should be. These include the following:

- Principal and Agent. The private party is acting on behalf of the state which remain the state's responsibility and the private party has fiduciary duties on behalf of the state as to its conduct. The limitations on the liability of either under those circumstances remains to be seen.
- Service Purchaser and Service Provider. The private party is providing, as an independent contractor through facilities it constructs, a service or asset which the state is (directly or indirectly) the consumer, and to which, in some measure, it may therefore apply its procurement rules. In a lease purchase, the asset is in State hands from the beginning of the relationship, and

it enjoys various warranties as to quality of goods from the private supplier.

- Regulator and Regulated. The private party is performing a quasi-monopoly, utility-type service, and consequently is subject to in-depth regulation of the reasonability of its rates and other management practices. This may or may not be handled by traditional regulatory or transportation government regulatory bodies, utility commissions or some commingling of both. Regulated utilities, of course, have a body of public service obligations.
- Partner and Partner. The private party and the public party (in each case, directly or through a specially created entity) each are making financial or in-kind contributions toward development of the transportation facility, and receive associated ownership type rights to participate in management and economic returns from the venture. This may be the case through a corporate or joint venture framework; or some form of quasi-governmental corporation may have to be established.
- Lender and Borrower. Through a variety of means - including revenue bonding by special authorities or general obligation debt - a public institutions may serve as actual or conduit lender to the private sector. Its relationship with private parties may be delineated by the terms of the financing arrangements, which include lenders rights to affect management and exercise foreclosure.
- Delegator and Privatizer. The state is turning over an activity or difficulty from a legal standpoint, divesting itself of an asset to a private party, which assumes full responsibility with respect to it - having only such rights against the state, on matters such as liability protection as may be contractually agreed to. This is the more typical model overseas.
- Value Capture Creator and Value Capture Beneficiary. The state as either (i) collector from project beneficiaries of special assessments, of

funds or taxes applicable to infrastructure development or (ii) enactor of a legal framework for dedication of private contributions to facility development, may condition the availability of such value capture on revenues acceptable undertakings by the developer-value capture beneficiary. It may itself have in addition, instituted other private value capture activities.

Types of Legal Issues

Public-private ventures therefore embrace a wide range of possible legal relationships. The areas of technical legal questions which must be explored typically are not presented as sharply in either conventional public or conventional private financing. Three broad categories deserve special attention:

- Authority of the Private Party
  Issues related to the authority of the state to procure and otherwise to enter into the type of arrangement in question;
- Legal Status of the Private Party
  Issues related to the legal status of the private party as a privatizer as compared with the status which the public would have for performing the same functions.
- Enforceability and the Credit Structures
  Issues related to enforceability of the benefits which State seeks to confer upon private parties, whether in terms of direct conveyance of assets and other benefits, or in terms of contractual undertakings.

Out of the resolution of these legal policy questions comes the framework of the legislative and resulting contractual mechanics for privatization arrangements."

The contractual mechanics for a public-private partnership can be sculpted into one of several franchise arrangements.

The ten franchise structures below[12] are described based on the relationship between a private firm and a government entity such as a PHA. The degree of private involvement is highest for the first on the list

[12]The concepts presented herein are taken from various work published by the Privatization Council.

and decreases toward the end of the list. The degree of risk which is shared between the parties, as well as the ownership and structure of each partnership is described for each concept in the section following.

1. **Perpetual Franchise**

   - The title, financing and operation of the system are permanent responsibilities of the private firm.
   - Ferries and their port facilities are good examples.
   - Government usually regulates the safety, quality of service, and sometimes, prices or profits.

2. **Buy - Build - Operate (BBO)**

   - A private firm buys an existing facility from the government, expands it, and operates it.
   - It is publicly used and regulated.
   - Could become the most prevalent model because there are so many potential projects.

3. **Build - Operate - Transfer (BOT)**

   - Private company receives a franchise to finance, build and operate the facility for 30 to 40 years, after which, it is given to the government at no cost.

4. **Build - Transfer - Operate (BTO)**

   - The private firm designs, finances and builds the facility, then transfers title to the government immediately after construction is finished.
   - The facility is leased from government by the private firm.
   - Operated by the private firm.
   - Private firm collects revenues 30 to 40 years.

5. **Wrap-Around Addition**

   - Private firm expands an existing government-owned core facility and holds title to the addition only.
   - Private firm operates the entire facility.
   - Advantage: Both parties have an ownership stake in the final product and the financing/grants in the core do not have to be repaid.

6. **Lease - Develop - Operate (LDO)**

- Private firm leases existing facility and surrounding land from government and expands, develops and operates.
- Revenue sharing contract with the government for 30 to 40 years.
- Government holds title.
- Advantage: Private entrepreneurial expansion without transferring ownership or repaying debt to grants.

7. **Temporary Privatization**

- Existing non-toll facility is expanded or repaired and operated as a toll facility until the firm recovers its costs (including return on capital invested) or until its temporary franchise (2 to 10 years) expires.
- Title is held by government.
- Good for bridge repair.

8. **Developer/Landowner Contribution**

- Developers or Landowners contribute land, money or services to support a public highway project.
- Usually done to enhance the value of their remaining property or spur future development.

9. **Speculative Planning and Development**

- Private firm identifies public need and plans and permits project at its own risk.
- Done with consent of sponsoring government.
- Once a "feasible" project is developed, government is invited to contract for "turn-key," or "super turn-key" construction, or to help finance.

10. **Special District Value Capture**

- Diversion of increased property values, higher retail sales or other increase in commercial activity added by a transportation project to help pay for it.
- "Involuntary partnership."
- Utilizes special tax or assessment districts (i.e. impact fees, special assessments, or tax increment financing).

Naturally, combinations of the above can also be considered. Any structure that can be developed which allows for the accomplishment of each party's goals can provide a successful framework for project success.

3.6.b. REAL ESTATE RELATED PUBLIC-PRIVATE PARTNERSHIP

- **Leasing or Sale of Public Property** - This funding method entails the leasing of publicly owned land or property to a private enterprise for private or public-private use. The term of the lease is generally 75 years (for private lending purposes), and the deal can be competitively bid, or negotiated. Specific conditions of the lease can vary widely, but will generally be controlled by the revenue-potential of the real estate product offered on the site.

- **Multiple/Joint Venture Developments** - This technique involves a series of public-private agreements to develop publicly owned property by private developers. The property may be leased over equal or unequal monthly or annual payment series, or payment series plus certain percentages of the developer's gross revenue, gross profits, or net profits during each year of the enterprise. A good deal allows the developer to get a good price for the real estate, and the local government to acquire a bondable revenue stream.

- **Cost Sharing Donation of Right of Way or Capital** - This funding technique provides a project with either necessary capital or land. Private landowners may donate property to the public agency for use as right-of-way for proposed highways. Earmarked monetary donations to the public sector (or its franchisee) for use in a specific improvement project (i.e. a tollroad) is another form of cost sharing.

- **Sale of Air/Ground Development Rights** - This option enables a public agency to obtain land free of charge, or at a discounted price, from a landowner. This is in exchange for the "transfer of development rights." This is the right to build the same number of units per acre (which can no longer be built on the donated land) on another piece of land. This number of units per acre is added to the existing number of units than can already by lawfully built there.

- **Right of Way Rental Revenue** - Surplus rights-of-way can be ground-leased to private entities, or corridor rights-of-way can be rented to utility companies.

- **Ground Leases** - This technique provides for the public agency or agency's franchisee to lease unused development rights, for under-developed public or private property, to nearby landowners.

3.6.c. LEGISLATIVE POLICY GUIDELINES FOR PRIVATIZATION

The following are types of government support needed to help make public/private projects financially feasible. This mutual commitment is the essence of a public/private partnership.

Positive Legislation for Public/Private Partnerships:

1. **Private Proposal Development**

   - Allows the private partner to propose financially viable projects (rather than choose from a list of already developed projects).

2. **Active Government Assistance**

   - With planning, permitting, land acquisition and overcoming intergovernmental/interagency disputes.

3. **Provision of Enforcement**

   - Government provision (free or via contract) of law enforcement services.

4. **Exemption/Deferral of Property Taxes**

   - Property taxes are exempt or deferred until project debt is retired.

5. **Trust Fund - Credit Support**

   - Establish a trust fund with sales tax receipts on supplies, equipment, land, labor, et cetera.

- Used as secondary credit support for the project.

6. **Delayed Billing**

   - Bills for services provided by government are delayed until construction financing is arranged.

7. **Limiting Liability**

   - Tort liability is limited, at least to the level borne by government-owned facilities.

8. **Use of Land**

   - Government-owned land or right-of-way acquired by eminent domain is given to private group for free or discounted (lease or sale).

9. **Allowance for Ancillary Development**

   - Commercial/office/retail development is allowed on the project site to produce additional revenues.

Legislative Pitfalls:

In addition to the positive suggestions listed above, the following "pitfalls" should be avoided if the intent is to create legislation that will promote privatization.

1. **Second Legislative Approval**

   Requiring a second approval process puts the infrastructure developer at risk for millions of dollars in planning, design and permitting that are expended on the front-end of projects.

2. **Excessive Bonds**

   Requiring the posting of excessive bonds that may be forfeited for reasons not entirely within the developer's control.

3. **Excessive Private Insurance**

   Requiring excessive private insurance in an amount that may not be commercially available, or not available at a reasonable cost.

4. **Uninhibited Competition**

   Allowing relatively uninhibited competition from future projects before the privately-developed facility is at capacity.

5. **Ad Hoc Regulation of Toll Rates and Rates of Return**

   An investment should be agreed upon in advance of planning and construction. Ad Hoc rates are undesirable.

6. **State prohibition Against Local Participation**

   Local government usually has the greatest stake in the success of the project, therefore, should have a choice of providing financial support.

7. **Limiting Private Firms to Government Methods**

   Private firms must be free to choose what they believe to be the most cost-effective subcontracting and procurement methods.

8. **Bypassing of Environmental Approvals**

   It should NOT be implied that the government selection/negotiation of a project bypass regular environmental approvals. Attempts to avoid approvals will jeopardize the project.

9. **Restriction of Design-Build**

   Holding up construction until the government has approved very detailed design specifications eliminates the use of cost-saving design-build techniques.

The principles described above should be used to craft legislative and administrative policy relative to privatization.

This concludes the discussion of privatization policy. The next section will address policymaker opinion research conducted by the consultant team.

3.7 POLICYMAKER SURVEYS AND OPINIONS

State Representatives, members of the State Transportation Commission, Legislators, and PHA Board members were interviewed for input into this study. Table 3-3 contains a list of those leaders surveyed.

Due to the confidential nature of these interviews, detailed breakdowns of these interviews are not presented. Let it suffice to say however, that key policymakers within the legislature and transportation commission were more flexible and outright progressive in their attitudes toward tollroads and value capture policy, than were the general citizenry and local policymakers. For the most part, most policymaker attitudes and opinions are incorporated into the vast majority of the text, where appropriate.

The questions asked during the policy-maker interviews basically dealt with the public policy issues presented in this report. An example of some of the issues explored were their receptivity to:

- tolls in general
- tolls in various specific applications
- value capture as a funding source
- privatization
- the Colorado DOT as the leadership vehicle for tolls and privatization
- PHA's in general
- the E-470 PHA
- State assistance to PHA's
- State assistance to tollraods, in general
- enabling power and its interagency location
- the role of the MPO's in general and DRCOG, specifically

The next section will address general public opinion research conducted by the consultant team.

3.8 COLORADO TOLL ROADS SURVEY - PUBLIC OPINION SURVEY

This section contains a brief summary and analysis of the Colorado Toll Roads Survey conducted by Talmey-Drake. The complete set of analyses and results can be found in Appendix D of this report. The following sections discuss: 1) methodology, 2) overview, 3) perceptions of transportation, 4) attitudes toward tolls, 5) use of toll revenue, and 6) related issues.

TABLE 3-3
SUMMARY OF INTERVIEWS

NAME	AFFILIATION	NAME	AFFILIATION
• Bonnie Allison	State Senate (R), Transportation Committee Chairman	• Jeanne Faatz	State H.R. (R), HLRC Co-Chairman
• Norma Anderson	State H.R. (R), Transportation Committee Chairman	• Jeff May	DRCOG
• Peter King	Transportation Commission, Chairman; Dist.9	• Steve Ruddick	State H.R. (D), Transportation Comm./Aurora
• Flodie Anderson	Transportation Commission, Dist.2/Jeff.Co.	• Sam Williams	State H.R. (D), Jeff./Gilpin/Summit Cos.
• Brad Brockbank	Governor's Office, Transportation Policy	• Pete Mirelez	Transp. Comm., Dist.4/Adms & Bldr. Cos.
• Ray Chamberlain	CDOT - Executive Director	• Edie Bryan (for Tico Embruy)	Cit. for Bal. Transp.
• Dwight Bower	CDOT - Deputy Executive Director	• Bill Neal	Transp. Comm., Dist.5, Weld, Larimer, Morgan
• Bob Clevenger	CDOT - Chief Engineer	• Fred Pundsack	Transp. Comm., Dist.3, Douglas & Arapahoe Cos.
• Harvey Atchinson	CDOT - Director Planning & Policy	• Steve Hogan	E-470 PHA, Executive Director (also Aurora)
• Tom Talmadge	CDOT - Acting Director/Finance	• Leon Wurl	W-470 PHA Executive Director
• Dave Wattenberg	State Senate (R), (Fmr.Transp.Comm.Chrm., PHA Legis. Sponsor	• Ron Drake	Berthoud Tunnel Auth., Director
• Debra Baskett	Denver Chamber, Transportation Staff	• Tom Eggert	E-470 PHA, Board Chairman
• George Schuerenstuhl	DRCOG, Director of Transportation	• Mike Dino	Aide to Mayor, Wellington Webb of Denver
• Dan Chapman	Colorado Legis. Council	• Jan Gerstenberger	Muncipal League, Legis. Liaison
• Scott Nachtrieb	Colorado Legis. Council	• Jennifer Finch	CDOT - Engr. Dist.6, Env. Mgr.
• Karen Kudebeh	CO Dept. of Health, Air Branch	• Jim Ryan	Denver Chamber, Surface Transportation Comm.
• Annette Liebe	Env. Def. Fund		

3.8.a. BACKGROUND AND METHODOLOGY

In order to measure attitudes about toll roads in Colorado, Kimley-Horn and Associates, Inc., on behalf of the Colorado Department of Transportation, commissioned Talmey-Drake Research & Strategy, Inc., a public opinion and market research firm in Boulder, Colorado, to conduct a survey among Colorado residents age 18 or older. The results of this survey are based on 319 random telephone interviews, conducted from October 8 to October 13, 1992. The sample of telephone numbers for the study was obtained by random-digit dialing. Quotas were established to obtain equal representation for men and women, and representation of county in proportion to population. A random sample of 319 has a 95% confidence interval of plus or minus 5.5% about any one reported percentage.

3.8.b. OVERVIEW[1]

Slightly more than half of all Coloradans are moderately receptive to the judicious use of toll roads, although they are not eager to see them proliferate throughout the state.

Almost half (47%) of the respondents to this survey have lived or spent a fair amount of time in a part of the country where toll roads were relatively common, and they express no more opposition to tolls in Colorado than do those who have not lived with toll roads. Opposition, in fact, is somewhat limited. A quarter are against tolls under any circumstances, while 72% either favor tolls in general or support them on a case by case basis. Almost a third of all respondents have used the toll road south of Denver, and 2 out of every 3 of them have a favorable impression of it.

Demand for greater expenditures on the transportation system in Colorado is moderate, with just under half believing the state should spend more to improve it. But only 27% feel the state should spend more tax dollars to expand and improve the *highway* system. As many as 42% of those opposed to increased spending on highways, however, say they would change their minds and support spending more if the funds were collected from tolls.

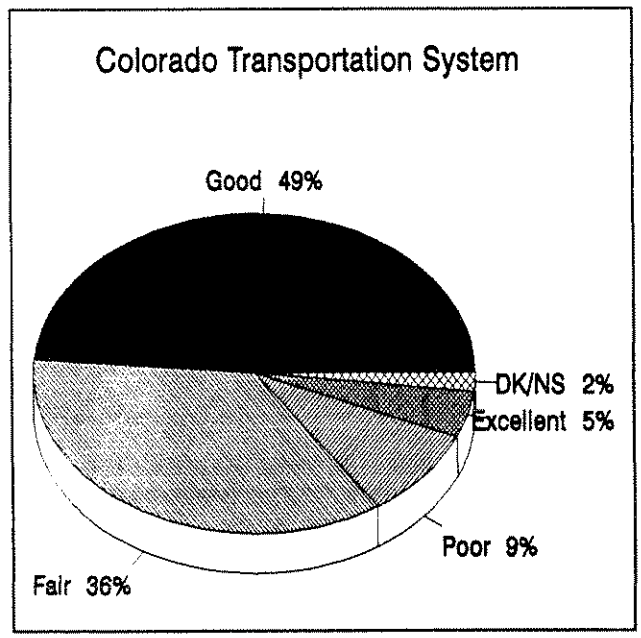
[1]Sections 3.8.b through 3.8.f were authored by Talmey-Drake with minor modifications by Kimley-Horn.

The main reasons about half of all Coloradans moderately support tolls -- and the strongest argument in their favor -- are that users of the highways pay directly and that tolls are preferable to taxes as a source of revenue.

Toll roads, then, are not only moderately acceptable, but, to some degree, are moderately desirable as an alternative way to pay for improvements to the highway system. There are, however, two important caveats: that funds be applied to the roads from which they are collected, and that private companies not own and operate them.

3.8.c. PERCEPTIONS OF TRANSPORTATION IN COLORADO

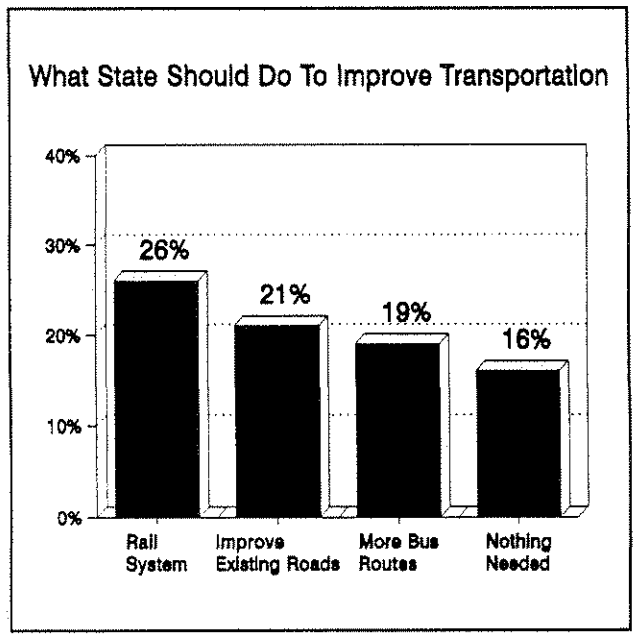
In order to put the results of this study in proper perspective, it is important to note that transportation issues are not currently of immediate or urgent concern to Coloradans. Only 2% said highways, streets, roads, or transportation was the most important problem or issue facing the state today. This suggests that Coloradans are not overly concerned about the current condition of their transportation system, and have given little thought to possible improvements to it.



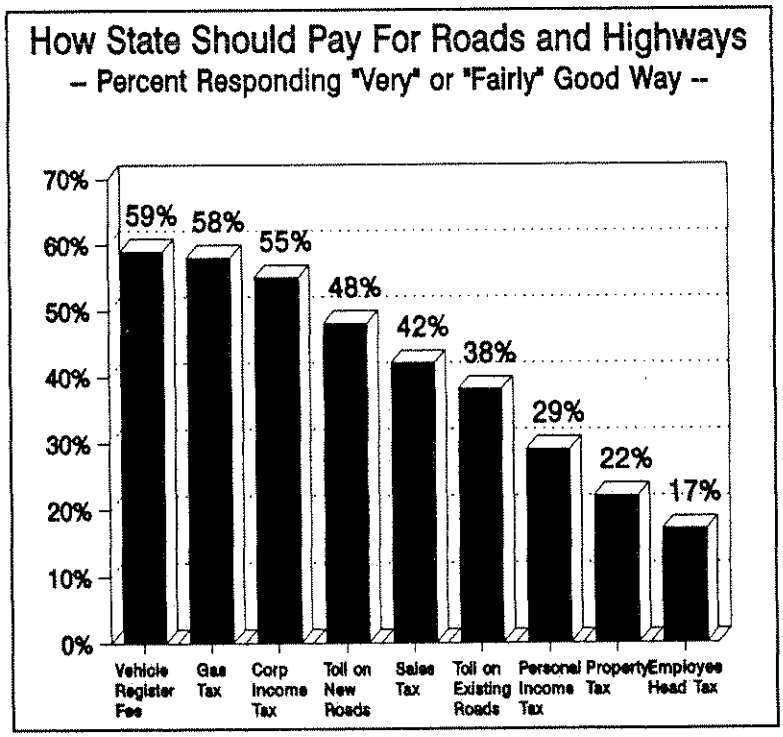
Indeed, the overwhelming majority of Coloradans think the transportation system -- including highways, streets, public transport, bike paths, and other methods -- is at least adequate, if not satisfactory or outstanding: 5% say it is excellent, 49% say it is good, and 36% say it is fair. Only 9% rate the transportation system as poor. In addition, 54% disagree with the statement that new major highways will have to be built to maintain the quality of life in Colorado, and 61% disagree with the statement that a lack of adequate highways is hurting the state's economic growth.

Nevertheless, 49% feel the state should be spending more tax dollars on improving the transportation system. But Coloradans are not clamoring for new roads and highways. On the contrary, over two-thirds (67%) of them

oppose increased state spending on highways. Rather, they want a transportation system that addresses the needs of a growing population by employing mass transit solutions and by increasing the capacity of old roads instead of building new ones. They want their tax dollars spent on enhancing the rail system, establishing more bus routes, and improving existing roads. Indeed, using state money to develop mass transit systems such as light rail and buses is preferred by a 55% to 31% margin over using the money to build new highways.



Given a choice of ways to pay for improving existing roads and highways and building new ones, Coloradans tend to favor those that directly relate to use of the roads. Thus, vehicle registration fees and gasoline taxes receive the most support, and property taxes and employee head taxes receive the least. Tolls are neither embraced nor militantly shunned.

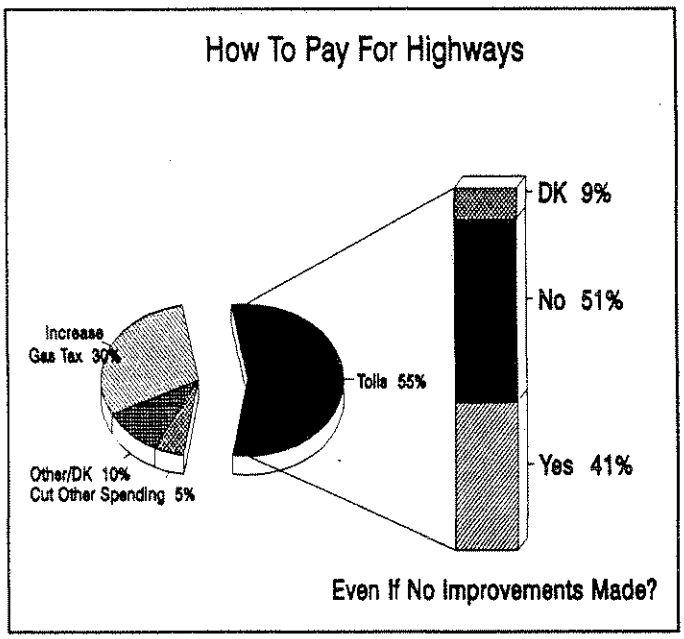

How State Should Pay For Roads and Highways
-- Percent Responding "Very" or "Fairly" Good Way --
70%
60%
50%
40%
30%
20%
10%
0%
59%
58%
55%
48%
42%
38%
29%
22%
17%
Vehicle Register Fee
Gas Tax
Corp Income Tax
Toll on New Roads
Sales Tax
Toll on Existing Roads
Personal Income Tax
Property Tax
Employee Head Tax

3.8.d. ATTITUDES TOWARD TOLLS

While there is little enthusiasm in Colorado for tolls, there is also no great resistance to them. And while Coloradans' limited experience with toll roads has not inspired passionate support, neither has it fomented outraged opposition[2]. Indeed, almost a third (30%) of all respondents have driven on the E-470 toll road south of Denver, and 67% of them have a good impression of it.

Tolls appeal to Coloradans primarily as an alternative, and less painful, way of paying for their roads. Although over two-thirds of those surveyed feel the state should either continue to spend the same amount on highways or aren't sure about spending more, 42% of them say they would change their minds and support increased spending if the revenues were to come only from tolls collected from the users of the highways. And of the 6% who feel the state should spend less on the highways, 32% support increased spending if the revenues come from tolls.

Not surprisingly, most of the 27% who feel the state should spend more on the highways do not change their minds if the revenues spent come only from tolls on the new and expanded highways. Sixty-one percent would still favor increased spending, while 29% would oppose it. A majority (51%) of these same respondents, however, oppose increased spending if tolls are also collected

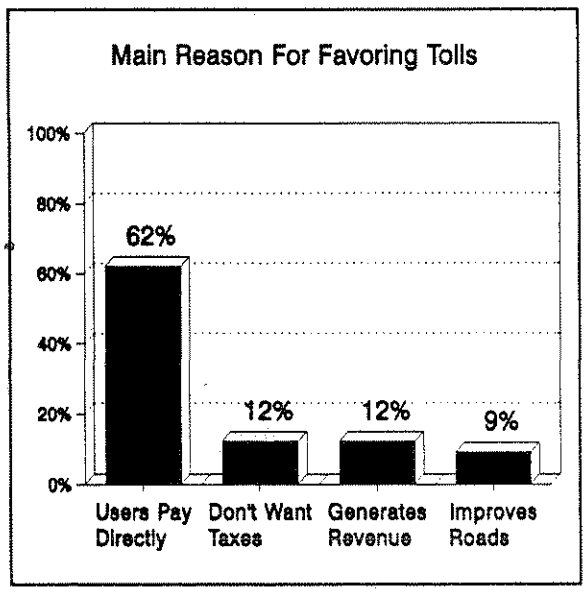


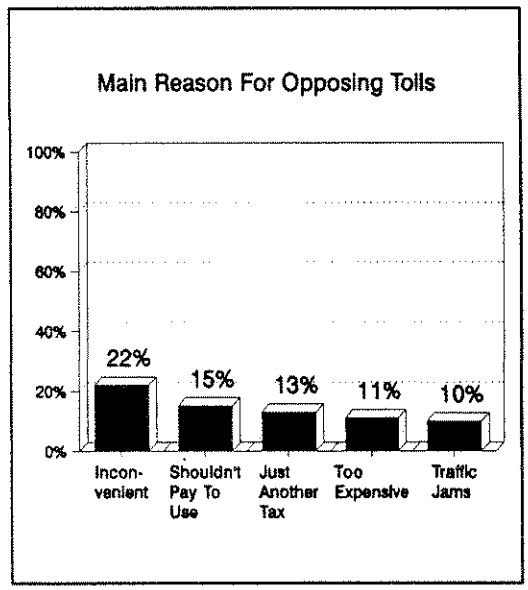
[2] *It should be noted that the consultant team's recommendations are not 100% consistent with the public opinion survey, nor should they be.* ***Professional*** *opinion,* ***political*** *opinions and* ***public*** *opinions will almost always differ, and that is good, and that is reflected in this report. At the same time, the professional opinions contained herein are "colored" by public and political opinion. There is a* ***strong*** *professional desire to be politically practical, but* ***not*** *politically controlled. The professional opinions in this report are most consistent with state legislative and state transportation commission policy-makers, and less consistent with other groups. We believe this is coincidentally due to greater understanding of the issues possessed by these groups.*

on highways that are not improved.

Regardless of their feelings about increasing or decreasing state spending on highways, *respondents prefer tolls to increased gasoline taxes by a 55% to 30% margin* if the state *does* decide to build or expand highways[3]. But again, they *oppose* tolls if collected on highways that are not improved.

Clearly, Coloradans moderately favor the use of tolls only when they perceive that the collected funds are being directly applied, and this is reflected in their overall predisposition toward tolls. While only about a quarter of the respondents favor tolls in general and another quarter are against them in general, half support tolls in some cases and oppose them in others. The main reason Coloradans favor tolls is that the users of the roads are the ones who pay for them. The main reasons for opposing tolls include the inconvenience[4] and the feeling that they are just another tax that shouldn't be levied.





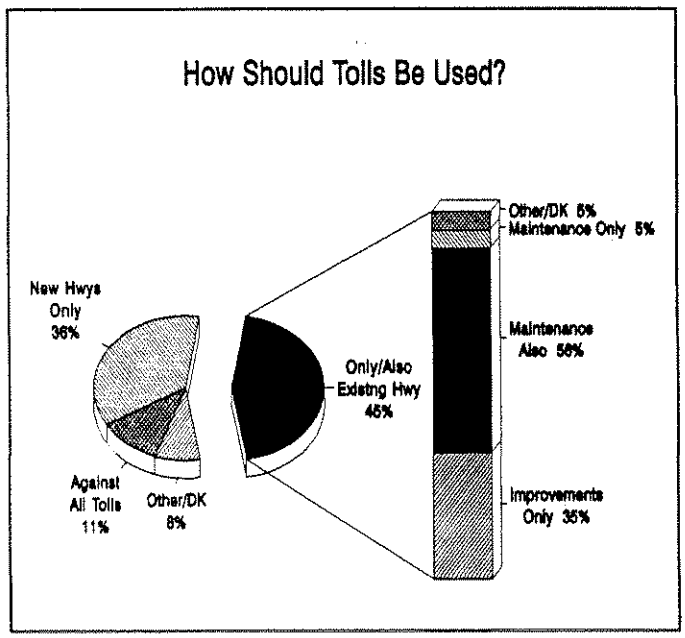
[3]This differs from the preceding chart because respondents were asked to assume the decision to build more highways was a foregone conclusion.

[4]The "inconvenience problem" could be overcome with electronic toll collection systems.

3.8.e. USE OF TOLL REVENUES

Although Colorado has historically used tolls only to pay for initial construction of new highways, respondents are receptive to using the revenues collected to also improve existing highways. Whereas 36% say the funds should only be used to build new highways, 39% say they should also be used to improve and expand existing highways. Moreover, 6% say the funds should *only* be spent on existing highways.

Respondents are even more flexible concerning the nature of the improvements on which the toll revenues are spent. Among those who would like the money to be spent on existing highways, about a third think it should be used exclusively for major improvements such as adding lanes, while 56% favor using it also for maintenance such as routine resurfacing, filling potholes, and other repair work.



They do, however, want to see direct results manifested in better roads: 56% of Coloradans believe the revenues collected from tolls should be used strictly for highways and roads, while only 37% believe they should also be used for other transportation projects such as light rail, buses, or bike paths. Furthermore, a greater percentage feel the revenues should be spent only on the highway from which they were collected (43%) than feel they should be spent on any highways in the state (32%) or any in the area (17%).

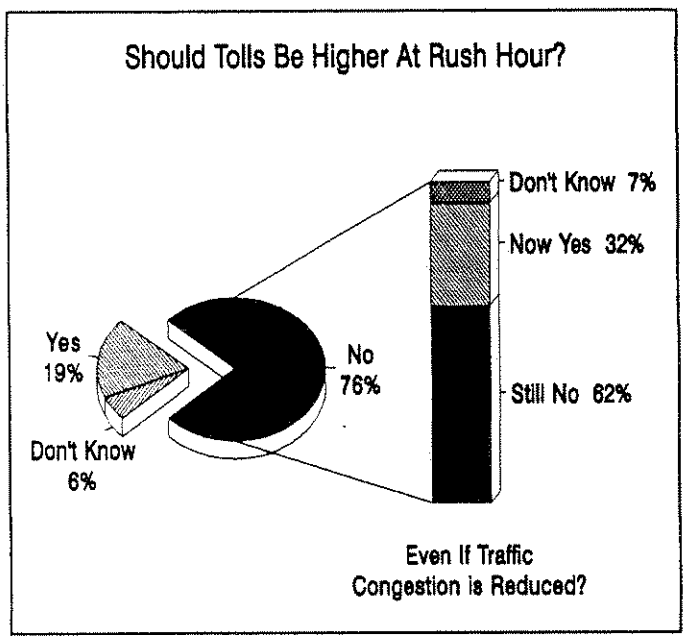
3.8.f. RELATED ISSUES

As seen in Jerry Brown's 1992 primary victory and in the (initial) strength of Ross Perot's support, Coloradans revel in their independence and mistrust of the political establishment. In fact, 70% of the respondents to this survey say they trust elected state officials to do what is right only some of the time or almost never.

Nevertheless, 70% are also against allowing private firms to build, own, and operate toll roads in Colorado.

A comparable percentage (69%) prefers the state to continue its policy of building highways only as fast as it collects the revenues, rather than issue bonds to speed up construction. Given the attention currently paid to state and federal debts and deficits, this reluctance to further run up costs incurred by interest is not surprising. And since there is little feeling that highway needs are urgent or critical, the speed of construction is not of great enough concern to override this reluctance.

There is also strong resistance to the idea of varying toll charges at different times of day, with over three-quarters of the respondents favoring the same toll regardless of the hour. Even if a higher toll at rush hour did in fact reduce traffic congestion, 62% of these respondents still say they oppose the varying rates.



<u>Concluding Remarks</u> - Generally speaking, state-level policymakers show a greater appetite for tollroad development than the general public. At the same time, the resistance by the general public is not strong enough to warrant outright dismissal of the concept. To some degree, greater public education could sway some of the weak negative opinions to the neutral or positive columns. At the same time, there is a reasonable level of support for toll financing at the grassroots level.

APPENDIX A

CASH*STAR INFRASTRUCTURE FINANCING MODELLING SYSTEM

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CASH*STAR INFRASTRUCTURE FINANCING MODELLING SYSTEM

The Kimley-Horn CASH*STAR model was developed to simulate the combined revenue and bond sizing effects of toll financing coupled with a variety of public/private and value capture financing methods. This model is capable of testing a variety of parameters to determine the "margin of feasibility" for selected categories of projects in various urban/rural settings throughout the state. This user-friendly model is designed to enable users to:

- evaluate a potential tollroad corridor, or set of corridors
- input its unrestrained average traffic volume
- input its functional category and geographic setting
- instantly see the project's rough margin of feasibility (based on the policy assumptions selected).

Some relationships exercised within the CASH*STAR model are shown in Figure 1-1 and Figure 1-2.

CASH*STAR's financial modelling and policy-analysis capabilities can be divided into several key policy analysis groups: financial policy, value capture policy, public assistance policy, and privatization policy:

Financial Policy

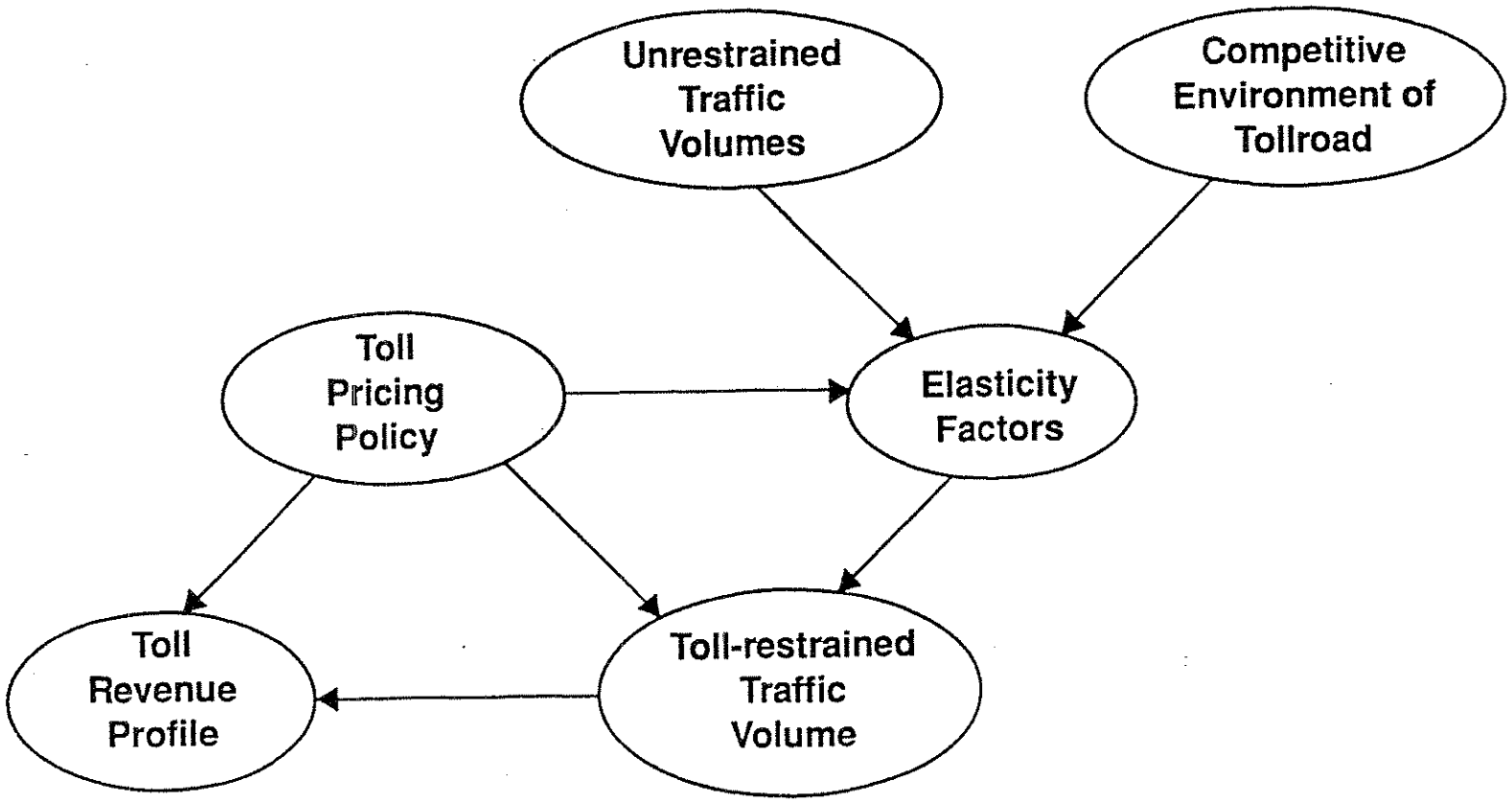
a. alternative multilevel debt financing strategies and policies
b. leveraged credit support policies
c. privatization policies
d. user pricing options including congestion pricing
e. state revolving fund and state loan bank policy
f. congestion pricing policy
g. legislative policy

Value Capture Policy

a. multi-tiered value-capture policy options
b. traffic impact fee district pricing policy
c. transportation utility fee district policies
d. tax increment financing policy
e. sales tax increment financing policy
f. fractional tax increment policy

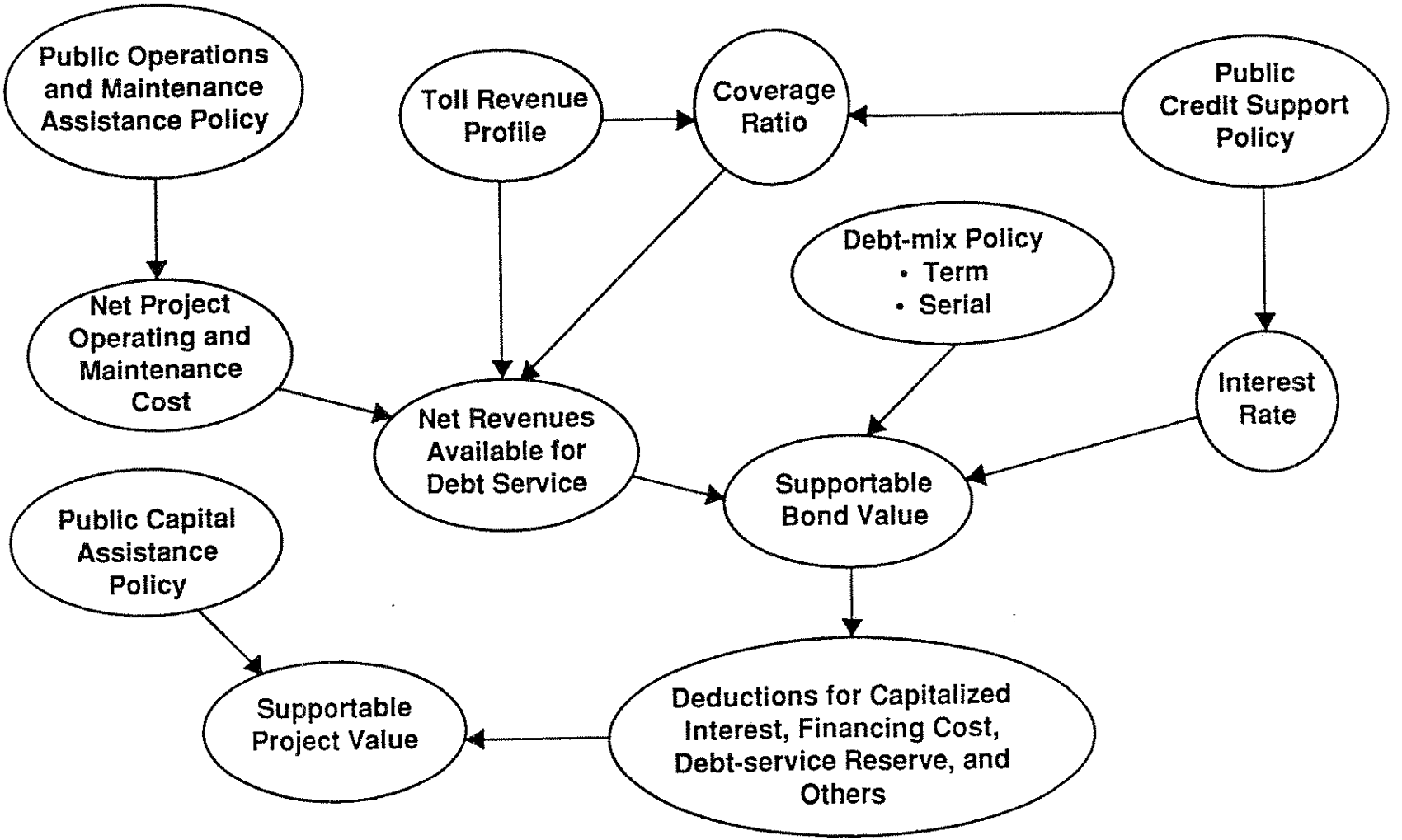
RELATIONSHIP OF KEY VARIABLES TO TOLL REVENUE

Figure 1-1



RELATIONSHIP OF KEY FINANCING POLICIES TO PROJECT SIZING

Figure 1-2



Public Assistance Policy

a. federal ISTEA loan and tollroad grant options
b. state/local matching policy
c. state operating and maintenance (O&M) assistance policy

Privatization Policy

a. joint public-private financing policy options
b. joint development policy
c. strategic options for structuring public-private ownership and risk-taking

CASH*STAR is a complex multi-tasking set of integrated systems that can simultaneously model cost, pricing, forecasting, feasibility, financial, and policy data in a matter of seconds using contemporary computer platforms. The CASH*STAR model is a second generation computer-based financial simulation model developed expressly for the simultaneous analysis of:

1. transportation project capital and operating cost analysis,
2. prediction of multiple revenue streams,
3. analysis of multilevel debt structures,
4. privatization and public-private financing policy evaluations, and
5. feasibility testing.

Few, if any, financial models incorporate all five sub-systems into a single overall system that can instantaneously answer the project feasibility question while simultaneously considering input variables from such a diverse array of policy arenas. In short, this model "bridges" the engineering, financial, and strategic policy arenas.

The project cost analysis module permits sensitivity testing of alternative capital costs and operating cost profiles on project feasibility.

The revenue prediction model automatically estimates value capture revenues, user revenues, user elasticities, tax increment revenues, impact fees, transportation utility fees, special district fees, joint development revenues, parking revenue, real estate entitlement revenue, advertising revenue, leasing fees, concession fees, and other real estate-related and system concession revenues.

The multilevel debt structure analysis system allows the user to specify up to three levels of debt financing: senior, mezzanine and subordinate debt. The model simulates debt service requirements for both serial and structured debt service profiles. The use of taxable private debt or tax exempt public debt can be evaluated. The use of private equity can also be tested along with variable terms, percentage of participation, and yields for debt and equity.

These issues are significant because they can materially affect the feasibility of projects and the feasibility of state assistance policies relative to intermodal projects. The ability to simulate alternative mixtures of public debt and private debt/equity structures creates a powerful tool for the analysis of public-private partnership options -- another key subsystem.

The model also permits quick analysis of strategic policies: the use of state-local and federal-state matching funds, alternative operating subsidy levels, federal-state loans, state credit supports, special "pledge" funds strategies, and other public-assistance vehicles.

The model also quickly provides a "bottom line" estimate of shortfall or surplus capital created for a specific transportation project or program using the specified policy set. Often, marginally unfeasible projects can be found to be feasible by increasing the aggressiveness of selected policy choices. The "bottom line" is also expressed in terms of the "percentage of capital requirement covered."

Finally, a powerful subroutine is incorporated into the model which permits the user to specify three complex policy-sets, and three sets of technical data. Ranges of facility usage are also provided. The model automatically produces a rich array of capital cost coverages in matrix form for the multivariant sets analyzed. This provides policy makers with a powerful array of policy choices coupled with the attendant consequences of each choice. Fine adjustments to a policy set can also be easily analyzed and finalized to meet the unique requirements of a specific project or program; or, the unique appetite and preferences of a policy group can be translated into a policy-set designed to meet strategic objectives in a very specific and carefully crafted manner. An example of a CASH*STAR analysis is presented on the following pages.

I. FINANCIAL DATA

a) No. of Years of Amortization		30
b) No.of Yrs of Amortization-equity		40
c) Capitalized Interest Rate		8.00%
d) Cost of Issuance		0.50%
e) No.of Yrs of Capitalized Interest		2
f) Underwriters Discount		2.00%
g) Year 1		1995
h) Interest Rate on Cash Reserves		6.00%
i) Int. Rate on Shrt Term Borrowing		12.00%
j) Fed/State Cap. Assistance (%)		0.00%
k) State O & M Assistance (%)		0.00%
-No.of Yrs of State O&M Assis.		0
l) Local Capital Assistance (%)		0.00%
m) Capital Reserve Sinking Fund (%)		0.00%
-No.of Yrs of Cap.Res.Sink.Fund		0
n) State Revolving Fund Assist. ?	Y	

II. TRAFFIC IMPACT FEE DATA

a) Residential Impact Fees ($/Unit)	1,000
b) NonRes Impact Fees ($/1000 sf)	1,000
c) Impact Fee Growth Rate	3.00%

III. PROJECT DATA

a) Capital Cost per Mile	7,103,000
b) O & M Cost per Mile	239,000
c) Avg Unrestrained Traffic Year 1	48,000
d) Traffic Growth Rate	2.37%
e) Level of Elasticity(1=very high)	3
f) Roadway VMT (intern. computed)	18,240,000
g) Toll Rate per Mile	$0.1000
h) % Increase in Tolls Fm Trucks	10.00%
i) Elasticity (proprietary,computed)	0.565
j) Growth Rate w/Elasticity(computed)	2.06%
k) O & M Cost Growth Rate (%)	3.00%
l) Highway Const. Cost Growth Rate	3.00%
m) No. of Miles of Project	380
n) Toll Rate Growth Rate	3.00%
o) Service Plaza Revenues ($/vmt)	$0.0040
p) Other Revenues ($/vmt)	$0.0025

IV. JOINT DEVELOPMENT DATA

a) New NonRes. Const. Value ($/sf)	65
b) New Res. Const. Value ($/DU)	115,000
c) Joint Dev. Proceeds (%)	2.00%
d) No. of Joint Dev. Prjcts per District	0.25
e) No. of Res. Joint Dev. Prjcts. per District	0.13
f) No of NonRes Joint Dev Prjcts per District	0.13
g) Avg Sq Footage of NonRes Project	200,000
h) Avg No. of Units Resid. Project	200
i) Construction Cost Growth Rate	3.00%
j) Non-Res Avg. Lease Rate	8
k) Growth Rate for Lease	2.50%
l) % Capture of Gross Lease Revenue	2.00%
m) Duration of Joint Dev Pgms (yrs)	10

V. TAX INCREMENT DATA

a) City Advalorem Tax Rate	0.000000
b) County Advalorem Tax Rate	0.023000
c) School Advalorem Tax Rate	0.000000
d) Other Advalorem Tax Rate	0.000000
- Total Advalorem Tax Rate	0.023000
e) Tax Increment Capture Rate (%)	50.00%
f) Property Value Growth Rate	3.00%
g) Prop.Value Increase Imputed by Project	25.00%

VI. SALES TAX INCREMENT DATA

a) Sales Tax Proceeds in District	0
b) Sales Tax Proceeds Growth Rate	0.00%

VII. SPECIAL ASSESSMENT DATA

a) Value of All Property(computed)	$2,605,504,000
b) Special Assess Rate ($/$1000)	$7.26
c) Special Assess Growth Rate	0.00%
d) Property Value per Acre in Dist.	22,000
e) No. of Acres per District	640
f) No. of District(Int.) per mile	0.4869736842
g) Special Assess Capture Ratio	50.00%

VIII. REAL ESTATE DATA

a) Res. Absorp. Rate (unts/yr)	3,701
b) Non-Res. Absorp. Rate (sf/yr)	925,250
c) Growth Rate - Absorption	1.00%
d) Res.Absorp.Rate(unts/yr-dist.)	20
e) Non-Res.Absorp.Rate(sf/yr-dist.)	5,000
f) No. of Years of Absorption	15

IX. PUBLIC-PRIVATE FINANCIAL STRUCTURE

	Coverage Ratio	Interest Rate	% of Cap.Cost
a) Senior Debt	1.5	8.00%	159.25%
b) Mezzanine Debt	1.5	13.00%	51.54%
c) Subordinant Debt	1	5.00%	50.00%
d) Equity	1	18.00%	0.00%
e) Total		8.41%	260.79%

X. SUMMARY OF RESULTS

	Desired NPV	Affordable NPV
a) Total Bond Proceeds	$7,039,012,510	$7,039,012,510
-Senior Debt	$4,298,405,109	$4,298,405,109
-Mezzanine Debt	$1,391,037,401	$1,391,037,401
-Subordinant Debt	$1,349,570,000	$1,349,570,000
-Equity	$0	$0
		260.79%
b) Probable Project Cost		$2,699,140,000
c) Affordable Project Cost	199.84%	$5,393,873,182
d) Cash Excess (Deficiency)		$2,694,733,182

PROJECT NAME: URBAN-C1

Run Number Run 1

17-Nov-92

	1995	1996	1997	1998	1999	2000
BEGINNING CASH BALANCES						
Operating & Maintenance Reserve	22,705,000					
Debt Service Reserve	720,156,500					
Total Beginning Cash Balance	742,861,500	729,315,944	743,026,055	787,289,851	835,988,192	887,698,802
CASH RECEIPTS						
Fed/State O&M Assistance	0	0	0	0	0	0
Traffic Impact Fees	4,626,250	4,812,688	5,006,639	5,208,407	5,418,306	5,636,663
Toll Revenue	340,215,652	357,631,561	375,939,003	395,183,618	415,413,380	436,678,720
Service Plaza Revenue	21,888,000	22,338,315	22,797,894	23,266,928	23,745,612	24,234,145
Other Revenue	13,680,000	13,961,447	14,248,684	14,541,830	14,841,008	15,146,340
Tax Increment Fees	5,586,197	12,688,727	20,238,529	28,258,460	36,772,441	45,805,509
Sales Tax Increment Fees	0	0	0	0	0	0
Special Assessment Fees	27,189,845	31,676,724	36,446,158	41,512,586	46,891,121	52,597,578
Joint Development Revenue	1,739,470	1,791,284	1,844,643	1,899,594	1,956,183	2,014,460
Interest on Cash Reserves	44,165,323	44,170,260	45,909,477	48,698,341	51,710,610	54,909,204
Total Cash Receipts	459,090,737	489,071,005	522,431,027	558,569,764	596,748,660	637,022,619
TOTAL CASH AVAILABLE	1,201,952,238	1,218,386,949	1,265,457,083	1,345,859,615	1,432,736,853	1,524,721,421
CASH DISBURSEMENTS						
O & M Expenses	90,820,000	93,544,600	96,350,938	99,241,466	102,218,710	105,285,271
Debt Service - Senior Debt	381,816,293	381,816,293	381,816,293	381,816,293	381,816,293	381,816,293
Debt Service - Equity	0	0	0	0	0	0
Debt Service - Subord. Debt	0	0	0	0	0	0
Debt Service - Mezzanine Debt	0	0	0	28,813,663	61,003,047	95,011,849
Interest on Short Term Debt	0	0	0	0	0	0
Capital Reserve Sinking Fund	0	0	0	0	0	0
Total Cash Disbursement	472,636,293	475,360,893	478,167,231	509,871,423	545,038,050	582,113,414
CASH BALANCE DESIRED	742,861,500	742,861,500	742,861,500	742,861,500	742,861,500	742,861,500
Total Cash Required	1,215,497,794	1,218,222,394	1,221,028,732	1,252,732,923	1,287,899,551	1,324,974,915
CASH EXCESS (DEFICIENCY)	(13,545,556)	164,555	44,428,351	93,126,692	144,837,302	199,746,506
Total Ending Cash Balance	729,315,944	743,026,055	787,289,851	835,988,192	887,698,802	942,608,007
NET OPERATING INCOME	(13,545,556)	13,710,111	44,263,796	48,698,341	51,710,610	54,909,204
ANNUAL NPV	353,533,605	327,345,931	303,098,084	298,318,333	292,967,763	286,244,983
Total NPV/Approximate Bond Size	7,039,012,510					

	2001	2002	2003	2004	2005	2006
BEGINNING CASH BALANCES						
Operating & Maintenance Reserve						
Debt Service Reserve						
Total Beginning Cash Balance	942,608,007	1,000,913,656	1,062,825,841	1,128,567,646	1,198,375,954	1,272,502,302
CASH RECEIPTS						
Fed/State O&M Assistance	0	0	0	0	0	0
Traffic Impact Fees	5,863,821	6,100,133	6,345,968	6,601,711	6,867,760	7,144,530
Toll Revenue	459,032,649	482,530,893	507,232,032	533,197,641	560,492,450	589,184,502
Service Plaza Revenue	24,732,728	25,241,569	25,760,878	26,290,872	26,831,769	27,383,795
Other Revenue	15,457,955	15,775,980	16,100,549	16,431,795	16,769,856	17,114,872
Tax Increment Fees	55,383,861	65,534,911	76,287,339	87,671,148	99,717,726	112,459,901
Sales Tax Increment Fees	0	0	0	0	0	0
Special Assessment Fees	58,648,507	65,061,226	71,853,854	79,045,344	86,655,524	94,705,135
Joint Development Revenue	2,074,475	2,136,280	2,199,928	2,265,475	94,752	97,121
Interest on Cash Reserves	58,305,650	61,912,185	65,741,805	69,808,308	74,126,348	78,711,483
Total Cash Receipts	679,499,645	724,293,177	771,522,352	821,312,293	871,556,183	926,801,338
TOTAL CASH AVAILABLE	1,622,107,652	1,725,206,834	1,834,348,193	1,949,879,939	2,069,932,137	2,199,303,639
CASH DISBURSEMENTS						
O & M Expenses	108,443,830	111,697,144	115,048,059	118,499,501	122,054,486	125,716,120
Debt Service - Senior Debt	381,816,293	381,816,293	381,816,293	381,816,293	381,816,293	381,816,293
Debt Service - Equity	0	0	0	0	0	0
Debt Service - Subord. Debt	0	0	0	0	0	0
Debt Service - Mezzanine Debt	130,933,872	168,867,554	208,916,195	251,188,191	293,559,057	340,557,441
Interest on Short Term Debt	0	0	0	0	0	0
Capital Reserve Sinking Fund	0	0	0	0	0	0
Total Cash Disbursement	621,193,996	662,380,992	705,780,547	751,503,985	797,429,836	848,089,855
CASH BALANCE DESIRED	742,861,500	742,861,500	742,861,500	742,861,500	742,861,500	742,861,500
Total Cash Required	1,364,055,496	1,405,242,493	1,448,642,048	1,494,365,485	1,540,291,336	1,590,951,355
CASH EXCESS (DEFICIENCY)	258,052,156	319,964,341	385,706,146	455,514,454	529,640,801	608,352,284
Total Ending Cash Balance	1,000,913,656	1,062,825,841	1,128,567,646	1,198,375,954	1,272,502,302	1,351,213,784
NET OPERATING INCOME	58,305,650	61,912,185	65,741,805	69,808,308	74,126,348	78,711,483
ANNUAL NPV	278,440,976	269,804,659	260,548,239	250,851,935	240,284,621	230,193,110
Total NPV/Approximate Bond Size						

	2007	2008	2009	2010	2011	2012
BEGINNING CASH BALANCES						
Operating & Maintenance Reserve						
Debt Service Reserve						
Total Beginning Cash Balance	1,351,213,784	1,434,794,018	1,523,544,164	1,617,784,009	1,717,853,123	1,824,112,079
CASH RECEIPTS						
Fed/State O&M Assistance	0	0	0	0	0	0
Traffic Impact Fees	7,432,455	7,731,983	8,043,582	0	0	0
Toll Revenue	619,345,322	651,050,099	684,377,869	719,411,714	756,238,968	794,951,439
Service Plaza Revenue	27,947,178	28,522,151	29,108,954	29,707,830	30,319,026	30,942,797
Other Revenue	17,466,986	17,826,345	18,193,096	18,567,393	18,949,391	19,339,248
Tax Increment Fees	125,932,011	140,169,964	155,211,312	160,991,275	166,944,637	173,076,599
Sales Tax Increment Fees	0	0	0	0	0	0
Special Assessment Fees	103,215,866	112,210,403	121,712,469	125,363,843	129,124,758	132,998,501
Joint Development Revenue	99,549	102,037	104,588	107,203	109,883	112,630
Interest on Cash Reserves	83,580,234	88,750,145	94,239,845	100,069,114	106,258,956	112,831,675
Total Cash Receipts	985,019,601	1,046,363,128	1,110,991,715	1,154,218,371	1,207,945,620	1,264,252,890
TOTAL CASH AVAILABLE	2,336,233,385	2,481,157,147	2,634,535,879	2,772,002,380	2,925,798,743	3,088,364,969
CASH DISBURSEMENTS						
O & M Expenses	129,487,604	133,372,232	137,373,399	141,494,601	145,739,439	150,111,622
Debt Service - Senior Debt	381,816,293	381,816,293	381,816,293	381,816,293	381,816,293	381,816,293
Debt Service - Equity	0	0	0	0	0	0
Debt Service - Subord. Debt	0	0	0	0	0	0
Debt Service - Mezzanine Debt	390,135,469	442,424,458	497,562,178	530,838,363	574,130,931	619,493,300
Interest on Short Term Debt	0	0	0	0	0	0
Capital Reserve Sinking Fund	0	0	0	0	0	0
Total Cash Disbursement	901,439,367	957,612,983	1,016,751,870	1,054,149,257	1,101,686,664	1,151,421,215
CASH BALANCE DESIRED	742,861,500	742,861,500	742,861,500	742,861,500	742,861,500	742,861,500
Total Cash Required	1,644,300,867	1,700,474,483	1,759,613,370	1,797,010,758	1,844,548,164	1,894,282,715
CASH EXCESS (DEFICIENCY)	691,932,518	780,682,663	874,922,509	974,991,623	1,081,250,579	1,194,082,254
Total Ending Cash Balance	1,434,794,018	1,523,544,164	1,617,784,009	1,717,853,123	1,824,112,079	1,936,943,754
NET OPERATING INCOME	83,580,234	88,750,145	94,239,845	100,069,114	106,258,956	112,831,675
ANNUAL NPV	220,044,873	209,929,298	199,920,011	186,560,170	175,084,566	164,196,642
Total NPV/Approximate Bond Size						

	2013	2014	2015	2016	2017	2018
BEGINNING CASH BALANCES						
Operating & Maintenance Reserve						
Debt Service Reserve						
Total Beginning Cash Balance	1,936,943,754	2,056,754,708	2,183,976,648	2,319,067,988	2,462,515,492	2,614,836,038
CASH RECEIPTS						
Fed/State O&M Assistance	0	0	0	0	0	0
Traffic Impact Fees	0	0	0	0	0	0
Toll Revenue	835,645,633	878,422,994	923,390,162	970,659,235	1,020,348,049	1,072,580,473
Service Plaza Revenue	31,579,401	32,229,103	32,892,171	33,568,881	34,259,513	34,964,354
Other Revenue	19,737,126	20,143,189	20,557,607	20,980,550	21,412,196	21,852,721
Tax Increment Fees	179,392,521	185,897,920	192,598,481	199,500,059	206,608,685	213,930,569
Sales Tax Increment Fees	0	0	0	0	0	0
Special Assessment Fees	136,988,456	141,098,110	145,331,053	149,690,984	154,181,714	158,807,165
Joint Development Revenue	115,446	118,332	121,290	124,323	127,431	130,616
Interest on Cash Reserves	119,810,954	127,221,941	135,091,339	143,447,504	152,320,546	161,742,435
Total Cash Receipts	1,323,269,536	1,385,131,588	1,449,982,103	1,517,971,537	1,589,258,133	1,664,008,334
TOTAL CASH AVAILABLE	3,260,213,290	3,441,886,296	3,633,958,751	3,837,039,524	4,051,773,624	4,278,844,372
CASH DISBURSEMENTS						
O & M Expenses	154,614,971	159,253,420	164,031,022	168,951,953	174,020,512	179,241,127
Debt Service - Senior Debt	381,816,293	381,816,293	381,816,293	381,816,293	381,816,293	381,816,293
Debt Service - Equity	0	0	0	0	0	0
Debt Service - Subord. Debt	0	0	0	0	0	0
Debt Service - Mezzanine Debt	667,027,318	716,839,934	769,043,448	823,755,786	881,100,782	941,208,478
Interest on Short Term Debt	0	0	0	0	0	0
Capital Reserve Sinking Fund	0	0	0	0	0	0
Total Cash Disbursement	1,203,458,582	1,257,909,647	1,314,890,764	1,374,524,032	1,436,937,587	1,502,265,898
CASH BALANCE DESIRED	742,861,500	742,861,500	742,861,500	742,861,500	742,861,500	742,861,500
Total Cash Required	1,946,320,083	2,000,771,148	2,057,752,264	2,117,385,533	2,179,799,087	2,245,127,399
CASH EXCESS (DEFICIENCY)	1,313,893,207	1,441,115,148	1,576,206,487	1,719,653,992	1,871,974,537	2,033,716,973
Total Ending Cash Balance	2,056,754,708	2,183,976,648	2,319,067,988	2,462,515,492	2,614,836,038	2,776,578,473
NET OPERATING INCOME	119,810,954	127,221,941	135,091,339	143,447,504	152,320,546	161,742,435
ANNUAL NPV	153,882,804	144,127,016	134,911,378	126,216,617	118,022,502	110,308,192
Total NPV/Approximate Bond Size						

	2019	2020	2021	2022	2023	2024
BEGINNING CASH BALANCES						
Operating & Maintenance Reserve						
Debt Service Reserve						
Total Beginning Cash Balance	2,776,578,473	2,948,325,595	3,130,696,251	3,324,347,565	3,529,977,311	3,748,326,423
CASH RECEIPTS						
Fed/State O&M Assistance	0	0	0	0	0	0
Traffic Impact Fees	0	0	0	0	0	0
Toll Revenue	1,127,486,716	1,185,203,652	1,245,875,165	1,309,652,501	1,376,694,648	1,447,168,736
Service Plaza Revenue	35,683,696	36,417,837	37,167,083	37,931,743	38,712,135	39,508,582
Other Revenue	22,302,310	22,761,148	23,229,427	23,707,339	24,195,084	24,692,864
Tax Increment Fees	221,472,110	229,239,896	237,240,717	245,481,562	253,969,633	262,712,345
Sales Tax Increment Fees	0	0	0	0	0	0
Special Assessment Fees	163,571,380	168,478,522	173,532,877	178,738,864	184,101,030	189,624,060
Joint Development Revenue	133,882	137,229	140,660	144,176	147,781	151,475
Interest on Cash Reserves	171,747,122	182,370,655	193,651,314	205,629,746	218,349,112	231,855,243
Total Cash Receipts	1,742,397,215	1,824,608,941	1,910,837,243	2,001,285,931	2,096,169,422	2,195,713,306
TOTAL CASH AVAILABLE	4,518,975,688	4,772,934,536	5,041,533,494	5,325,633,496	5,626,146,733	5,944,039,729
CASH DISBURSEMENTS						
O & M Expenses	184,618,361	190,156,912	195,861,619	201,737,467	207,789,592	214,023,279
Debt Service - Senior Debt	381,816,293	381,816,293	381,816,293	381,816,293	381,816,293	381,816,293
Debt Service - Equity	0	0	0	0	0	0
Debt Service - Subord. Debt	0	375,690,577	1,139,508,016	1,212,102,424	1,288,214,425	1,368,018,490
Debt Service - Mezzanine Debt	1,004,215,439	694,574,503	0	0	0	0
Interest on Short Term Debt	0	0	0	0	0	0
Capital Reserve Sinking Fund	0	0	0	0	0	0
Total Cash Disbursement	1,570,650,093	1,642,238,285	1,717,185,929	1,795,656,185	1,877,820,310	1,963,858,063
CASH BALANCE DESIRED	742,861,500	742,861,500	742,861,500	742,861,500	742,861,500	742,861,500
Total Cash Required	2,313,511,594	2,385,099,786	2,460,047,429	2,538,517,685	2,620,681,810	2,706,719,564
CASH EXCESS (DEFICIENCY)	2,205,464,095	2,387,834,750	2,581,486,065	2,787,115,811	3,005,464,923	3,237,320,166
Total Ending Cash Balance	2,948,325,595	3,130,696,251	3,324,347,565	3,529,977,311	3,748,326,423	3,980,181,666
NET OPERATING INCOME	171,747,122	182,370,655	193,651,314	205,629,746	218,349,112	231,855,243
ANNUAL NPV	103,052,523	186,233,779	353,013,674	353,457,363	353,946,351	354,472,513
Total NPV/Approximate Bond Size						

	2025	2026	2027	2028	2029	2030
BEGINNING CASH BALANCES						
Operating & Maintenance Reserve						
Debt Service Reserve						
Total Beginning Cash Balance	3,980,181,666	6,116,599,248	8,475,627,332	11,075,437,598	13,935,544,624	17,076,899,972
CASH RECEIPTS						
Fed/State O&M Assistance	0	0	0	0	0	0
Traffic Impact Fees	0	0	0	0	0	0
Toll Revenue	1,521,250,449	1,599,124,463	1,680,984,909	1,767,035,857	1,857,491,820	1,952,578,296
Service Plaza Revenue	40,321,415	41,150,971	41,997,594	42,861,635	43,743,453	44,643,412
Other Revenue	25,200,885	25,719,357	26,248,496	26,788,522	27,339,658	27,902,133
Tax Increment Fees	271,717,339	280,992,483	290,545,881	300,385,881	310,521,081	320,960,337
Sales Tax Increment Fees	0	0	0	0	0	0
Special Assessment Fees	195,312,782	201,172,166	207,207,331	213,423,551	219,826,257	226,421,045
Joint Development Revenue	155,262	159,144	163,122	167,200	171,380	175,665
Interest on Cash Reserves	302,903,427	437,766,797	586,531,948	750,329,467	930,373,338	1,127,966,779
Total Cash Receipts	2,356,861,560	2,586,085,381	2,833,679,282	3,100,992,113	3,389,466,987	3,700,647,666
TOTAL CASH AVAILABLE	6,337,043,226	8,702,684,629	11,309,306,614	14,176,429,710	17,325,011,611	20,777,547,639
CASH DISBURSEMENTS						
O & M Expenses	220,443,978	227,057,297	233,869,016	240,885,086	248,111,639	255,554,988
Debt Service - Senior Debt	0	0	0	0	0	0
Debt Service - Equity	0	0	0	0	0	0
Debt Service - Subord. Debt	0	0	0	0	0	0
Debt Service - Mezzanine Debt	0	0	0	0	0	0
Interest on Short Term Debt	0	0	0	0	0	0
Capital Reserve Sinking Fund	0	0	0	0	0	0
Total Cash Disbursement	220,443,978	227,057,297	233,869,016	240,885,086	248,111,639	255,554,988
CASH BALANCE DESIRED	742,861,500	742,861,500	742,861,500	742,861,500	742,861,500	742,861,500
Total Cash Required	963,305,478	969,918,797	976,730,516	983,746,587	990,973,139	998,416,488
CASH EXCESS (DEFICIENCY)	5,373,737,748	7,732,765,832	10,332,576,097	13,192,683,124	16,334,038,472	19,779,131,150
Total Ending Cash Balance	6,116,599,248	8,475,627,332	11,075,437,598	13,935,544,624	17,076,899,972	20,521,992,651
NET OPERATING INCOME	2,136,417,582	2,359,028,084	2,599,810,266	2,860,107,026	3,141,355,348	3,445,092,678
ANNUAL NPV	0	0	0	0	0	0
Total NPV/Approximate Bond Size						

Run 1 — CASH*STAR 2.0 - Toll Facility Financial Analysis Syst

17-Nov-92 — MULTIYEAR CASHFLOW ANALYSIS

	2031	2032	2033	2034
BEGINNING CASH BALANCES				
Operating & Maintenance Reserve				
Debt Service Reserve				
Total Beginning Cash Balance	20,521,992,651	24,294,956,378	28,421,684,099	32,929,950,237
CASH RECEIPTS				
Fed/State O&M Assistance	0	0	0	0
Traffic Impact Fees	0	0	0	0
Toll Revenue	2,052,532,324	2,157,603,077	2,268,052,486	2,384,155,887
Service Plaza Revenue	45,561,887	46,499,259	47,455,915	48,432,253
Other Revenue	28,476,180	29,062,037	29,659,947	30,270,158
Tax Increment Fees	331,712,771	342,787,777	354,195,034	365,944,509
Sales Tax Increment Fees	0	0	0	0
Special Assessment Fees	233,213,676	240,210,087	247,416,389	254,838,881
Joint Development Revenue	180,056	184,558	189,172	193,901
Interest on Cash Reserves	1,344,508,471	1,581,499,214	1,840,549,030	2,123,384,742
Total Cash Receipts	4,036,185,365	4,397,846,009	4,787,517,973	5,207,220,332
TOTAL CASH AVAILABLE	24,558,178,015	28,692,802,386	33,209,202,073	38,137,170,569
CASH DISBURSEMENTS				
O & M Expenses	263,221,638	271,118,287	279,251,835	287,629,391
Debt Service - Senior Debt	0	0	0	0
Debt Service - Equity	0	0	0	0
Debt Service - Subord. Debt	0	0	0	0
Debt Service - Mezzanine Debt	0	0	0	0
Interest on Short Term Debt	0	0	0	0
Capital Reserve Sinking Fund	0	0	0	0
Total Cash Disbursement	263,221,638	271,118,287	279,251,835	287,629,391
CASH BALANCE DESIRED	742,861,500	742,861,500	742,861,500	742,861,500
Total Cash Required	1,006,083,138	1,013,979,787	1,022,113,336	1,030,490,891
CASH EXCESS (DEFICIENCY)	23,552,094,877	27,678,822,599	32,187,088,737	37,106,679,678
Total Ending Cash Balance	24,294,956,378	28,421,684,099	32,929,950,237	37,849,541,178
NET OPERATING INCOME	3,772,963,727	4,126,727,722	4,508,266,138	4,919,590,941
ANNUAL NPV	0	0	0	0
Total NPV/Approximate Bond Size				

URBAN-C1

	1995	1996	1997	1998	1999	2000
Annual Revenue before debt services	324,105,414	351,356,145	380,170,612	410,629,957	442,819,340	476,828,143
Debt service - Senior Bond	381,816,293	381,816,293	381,816,293	381,816,293	381,816,293	381,816,293
Annual NPV of Senior Debt	353,533,605	327,345,931	303,098,084	280,646,374	259,857,754	240,609,031
Total NPV of Senior Debt	4,298,405,109					
Annual Rev. after Senior Debt Service	(57,710,879)	(30,460,149)	(1,645,681)	28,813,663	61,003,047	95,011,849
Annual NPV available for equity	0	0	0	14,861,767	26,664,994	35,195,386
Sum	866,478,585	866,478,585	866,478,585	866,478,585	851,616,819	824,951,825
Annual NPV of Equity Return	0	0	0	0	0	0
Total NPV of Equity Return	0					
Annual NPV Available for Subord.Debt	0	0	0	23,705,072	47,797,483	70,899,305
Sum	5,932,612,509	5,932,612,509	5,932,612,509	5,932,612,509	5,908,907,437	5,861,109,954
Annual NPV of Subord. Debt Service	0	0	0	0	0	0
year count 5	0	0	0	0	0	0
Total NPV of Subord.Debt Service	1,349,570,000					
Annual NPV Avail. for Mezzanine Debt	0	0	0	17,671,959	33,110,010	45,635,952
Sum	1,391,037,401	1,391,037,401	1,391,037,401	1,391,037,401	1,373,365,441	1,340,255,432
Annual NPV of Mezzanine Debt Service	0	0	0	17,671,959	33,110,010	45,635,952
year count 23	0	0	0	1	1	1
Total NPV of Mezzanine Debt Service	1,391,037,401					
TOTAL BOND PROCEEDS	7,039,012,510					

	2001	2002	2003	2004	2005	2006
Annual Revenue before debt services	512,750,166	550,683,848	590,732,488	633,004,484	675,375,350	722,373,735
Debt service - Senior Bond	381,816,293	381,816,293	381,816,293	381,816,293	381,816,293	381,816,293
Annual NPV of Senior Debt	222,786,140	206,283,463	191,003,206	176,854,821	163,754,464	151,624,503
Total NPV of Senior Debt						
Annual Rev. after Senior Debt Service	130,933,872	168,867,554	208,916,195	251,188,191	293,559,057	340,557,441
Annual NPV available for equity	41,103,420	44,925,214	47,101,424	47,993,138	47,532,801	46,731,130
Sum	789,756,439	748,653,019	703,727,805	656,626,380	608,633,242	561,100,442
Annual NPV of Equity Return	0	0	0	0	0	0
Total NPV of Equity Return						
Annual NPV Available for Subord.Debt	93,052,259	114,296,208	134,669,242	154,207,759	171,637,901	189,635,126
Sum	5,790,210,649	5,697,158,390	5,582,862,182	5,448,192,940	5,293,985,181	5,122,347,280
Annual NPV of Subord. Debt Service	0	0	0	0	0	0
year count 5	0	0	0	0	0	0
Total NPV of Subord.Debt Service						
Annual NPV Avail. for Mezzanine Debt	55,654,836	63,521,196	69,545,033	73,997,114	76,530,157	78,568,607
Sum	1,294,619,480	1,238,964,644	1,175,443,448	1,105,898,415	1,031,901,301	955,371,144
Annual NPV of Mezzanine Debt Service	55,654,836	63,521,196	69,545,033	73,997,114	76,530,157	78,568,607
year count 23	1	1	1	1	1	1
Total NPV of Mezzanine Debt Service						
TOTAL BOND PROCEEDS						

	2007	2008	2009	2010	2011	2012
Annual Revenue before debt services	771,951,763	824,240,751	879,378,471	912,654,656	955,947,225	1,001,309,593
Debt service - Senior Bond	381,816,293	381,816,293	381,816,293	381,816,293	381,816,293	381,816,293
Annual NPV of Senior Debt	140,393,059	129,993,573	120,364,419	111,448,536	103,193,089	95,549,157
Total NPV of Senior Debt						
Annual Rev. after Senior Debt Service	390,135,469	442,424,458	497,562,178	530,838,363	574,130,931	619,493,300
Annual NPV available for equity	45,367,969	43,600,455	41,554,422	37,570,778	34,436,327	31,489,117
Sum	514,369,311	469,001,342	425,400,887	383,846,464	346,275,687	311,839,360
Annual NPV of Equity Return	0	0	0	0	0	0
Total NPV of Equity Return						
Annual NPV Available for Subord.Debt	206,897,169	223,454,415	239,335,915	243,183,170	250,491,424	257,412,262
Sum	4,932,712,154	4,725,814,985	4,502,360,570	4,263,024,655	4,019,841,484	3,769,350,061
Annual NPV of Subord. Debt Service	0	0	0	0	0	0
year count 5	0	0	0	0	0	0
Total NPV of Subord.Debt Service						
Annual NPV Avail. for Mezzanine Debt	79,651,814	79,935,725	79,555,591	75,111,633	71,891,477	68,647,485
Sum	876,802,537	797,150,723	717,214,998	637,659,407	562,547,774	490,656,297
Annual NPV of Mezzanine Debt Service	79,651,814	79,935,725	79,555,591	75,111,633	71,891,477	68,647,485
year count 23	1	1	1	1	1	1
Total NPV of Mezzanine Debt Service						
TOTAL BOND PROCEEDS						

	2013	2014	2015	2016	2017	2018
Annual Revenue before debt services	1,048,843,612	1,098,656,228	1,150,859,742	1,205,572,079	1,262,917,075	1,323,024,771
Debt service - Senior Bond	381,816,293	381,816,293	381,816,293	381,816,293	381,816,293	381,816,293
Annual NPV of Senior Debt	88,471,441	81,918,001	75,850,001	70,231,483	65,029,151	60,212,176
Total NPV of Senior Debt						
Annual Rev. after Senior Debt Service	667,027,318	716,839,934	769,043,448	823,755,786	881,100,782	941,208,478
Annual NPV available for equity	28,733,298	26,168,694	23,791,878	21,597,044	19,576,697	17,722,201
Sum	280,350,243	251,616,944	225,448,251	201,656,373	180,059,329	160,482,632
Annual NPV of Equity Return	0	0	0	0	0	0
Total NPV of Equity Return						
Annual NPV Available for Subord.Debt	263,965,360	270,169,432	276,042,274	281,600,809	286,861,132	291,838,546
Sum	3,511,937,799	3,247,972,439	2,977,803,007	2,701,760,733	2,420,159,924	2,133,298,792
Annual NPV of Subord. Debt Service	0	0	0	0	0	0
year count 5	0	0	0	0	0	0
Total NPV of Subord.Debt Service						
Annual NPV Avail. for Mezzanine Debt	65,411,362	62,209,015	59,061,376	55,985,134	52,993,351	50,096,016
Sum	422,008,812	356,597,449	294,388,435	235,327,058	179,341,924	126,348,573
Annual NPV of Mezzanine Debt Service	65,411,362	62,209,015	59,061,376	55,985,134	52,993,351	50,096,016
year count 23	1	1	1	1	1	1
Total NPV of Mezzanine Debt Service						
TOTAL BOND PROCEEDS						

	2019	2020	2021	2022	2023	2024
Annual Revenue before debt services	1,386,031,732	1,452,081,374	1,521,324,310	1,593,918,717	1,670,030,718	1,749,834,784
Debt service - Senior Bond	381,816,293	381,816,293	381,816,293	381,816,293	381,816,293	381,816,293
Annual NPV of Senior Debt	55,752,015	51,622,236	47,798,367	44,257,747	40,979,396	37,943,885
Total NPV of Senior Debt						
Annual Rev. after Senior Debt Service	1,004,215,439	1,070,265,080	1,139,508,016	1,212,102,424	1,288,214,425	1,368,018,490
Annual NPV available for equity	16,024,213	14,473,020	13,058,798	11,771,807	10,602,541	9,541,832
Sum	142,760,431	126,736,218	112,263,198	99,204,400	87,432,593	76,830,053
Annual NPV of Equity Return	0	0	0	0	0	0
Total NPV of Equity Return						
Annual NPV Available for Subord.Debt	296,547,603	301,002,138	305,215,307	309,199,616	312,966,955	316,528,628
Sum	1,841,460,246	1,544,912,644	1,243,910,506	938,695,199	629,495,583	316,528,628
Annual NPV of Subord. Debt Service	0	105,659,494	305,215,307	309,199,616	312,966,955	316,528,628
year count 5	0	1	1	1	1	1
Total NPV of Subord.Debt Service						
Annual NPV Avail. for Mezzanine Debt	47,300,508	28,952,049	0	0	0	0
Sum	76,252,557	28,952,049	0	0	0	0
Annual NPV of Mezzanine Debt Service	47,300,508	28,952,049	0	0	0	0
year count 23	1	1	0	0	0	0
Total NPV of Mezzanine Debt Service						
TOTAL BOND PROCEEDS						

	2025	2026	2027	2028	2029	2030
Annual Revenue before debt services	1,833,514,155	1,921,261,287	2,013,278,318	2,109,777,560	2,210,982,010	2,317,125,900
Debt service - Senior Bond	0	0	0	0	0	0
Annual NPV of Senior Debt	0	0	0	0	0	0
Total NPV of Senior Debt						
Annual Rev. after Senior Debt Service	1,833,514,155	1,921,261,287	2,013,278,318	2,109,777,560	2,210,982,010	2,317,125,900
Annual NPV available for equity	10,837,823	9,624,146	8,546,683	7,590,116	6,740,855	5,986,836
Sum	67,288,221	56,450,399	46,826,253	38,279,570	30,689,454	23,948,599
Annual NPV of Equity Return	0	0	0	0	0	0
Total NPV of Equity Return						
Annual NPV Available for Subord.Debt	0	0	0	0	0	0
Sum	0	0	0	0	0	0
Annual NPV of Subord. Debt Service	0	0	0	0	0	0
year count 5	0	0	0	0	0	0
Total NPV of Subord.Debt Service						
Annual NPV Avail. for Mezzanine Debt	0	0	0	0	0	0
Sum	0	0	0	0	0	0
Annual NPV of Mezzanine Debt Service	0	0	0	0	0	0
year count 23	0	0	0	0	0	0
Total NPV of Mezzanine Debt Service						
TOTAL BOND PROCEEDS						

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	2031	2032	2033	2034
Annual Revenue before debt services	2,428,455,256	2,545,228,507	2,667,717,107	2,796,206,199
Debt service - Senior Bond	0	0	0	0
Annual NPV of Senior Debt	0	0	0	0
Total NPV of Senior Debt				
Annual Rev. after Senior Debt Service	2,428,455,256	2,545,228,507	2,667,717,107	2,796,206,199
Annual NPV available for equity	5,317,357	4,722,919	4,195,092	3,726,395
Sum	17,961,763	12,644,406	7,921,487	3,726,395
Annual NPV of Equity Return	0	0	0	0
Total NPV of Equity Return				
Annual NPV Available for Subord.Debt	0	0	0	0
Sum	0	0	0	0
Annual NPV of Subord. Debt Service	0	0	0	0
year count 5	0	0	0	0
Total NPV of Subord.Debt Service				
Annual NPV Avail. for Mezzanine Debt	0	0	0	0
Sum	0	0	0	0
Annual NPV of Mezzanine Debt Service	0	0	0	0
year count 23	0	0	0	0
Total NPV of Mezzanine Debt Service				
TOTAL BOND PROCEEDS				

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SOURCES OF FUNDS

Senior Debt	$4,298,405,109
Mezzanine Debt	$1,391,037,401
Subordinate Debt	$1,349,570,000
Equity - Private:	
Shareholder Equity	$0
Equity - Public:	
Fed/State Capital Assistance	$0
Local Capital Assistance	$0
State Revolving Fund	$147,432,060
TOTAL FUNDS AVAILABLE	$7,186,444,570
TOTAL BOND PROCEEDS	$7,039,012,510

USES OF FUNDS

Project Cost Acount.....	$5,393,873,182
Underwriters Discount.....	$140,780,250
Cost of Issuance.....	$35,195,063
Bond Insurance.....	$137,453,866
Debt Service Reserve.....	$572,724,440
Coverage Reserve - Senior Debt..	$127,272,098
Coverage Reserve-Mezzanine Debt.	$20,159,962
Coverage Reserve - Subord.Debt..	$0
Operating Reserve.....	$22,705,000
Capitalized Interest.....	$736,280,708
TOTAL FUNDS AVAILABLE	$7,186,444,570

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PRELIMINARY FEASIBILITY TEST

PROJECT COST ACCOUNT	$5,393,873,182
PROBABLE PROJECT COST	$2,699,140,000
CASH EXCESS(DEFICIENCY)	$2,694,733,182

APPENDIX B

OTHER FINANCING OPTIONS
NON-TRADITIONAL METHODS

APPENDIX B

OTHER FINANCING OPTIONS
NON-TRADITIONAL METHODS

There are four basic categories of non-traditional funding methods. They are Value Capture/Special Districts, System Revenues, and Vendor Financing techniques. Not all of these techniques can be utilized without legislative action. In many cases, the proper enabling legislation needs to be created.

A. VALUE CAPTURE/SPECIAL DISTRICTS

Value capture, as the name implies, means to recapture some of the benefits that are realized by local property owners and developers, as a result of new transportation investments. By "capturing" some of these benefits (or the value added to areas due to a new facility), the revenues necessary to support the investment are strengthened. Special districts are areas which encompass properties that benefit from new infrastructure developments. A special district is a local unit of special purpose government within a limited boundary. Special districts are the nation's most rapidly growing form of government. These districts are often created by general law, special act local ordinance, or by rule of the Governor and Cabinet. Special districts may be thought of as financing "vehicles" within which special assessments, fees, and in some cases, taxes may be levied in order to help fund an infrastructure improvement project. The four types of Special Districts are described below. They are:

- Tax increment financing districts
- Special assessment districts
- One time exaction districts
- Joint development districts

<u>Tax Increment Financing Districts</u>

In a tax increment financing district, anticipated tax revenues that will be received from increased assessed valuations resulting from the development are pledged to pay for infrastructure improvements that development will require. The increase in tax receipts is the "increment". Ad valorem or fractional ad valorem tax increments, as well as sales tax or fractional sales tax increments, can be collected within such a district.

Because this increment will occur annually, it can be, only at steep discount, capitalized. Capitalizing such an increment is known as tax increment finance. In the case of a transit system, the increased valuation in property usually occurs near a system station. In the case of a toll road, the growth usually occurs in the area of the interchanges.

A tax increment would be that amount of tax revenue collected in future years that exceeds current, or base year, levels of revenue. The tax increment could be computed on the basis of 100 percent of the future increment, or a lesser percentage, depending on other demands on these resources.

Tax increment financing districts are appropriate for use in areas where substantial new development is fairly certain to occur upon development of the infrastructure. New development is expected when there is a significant upgrading in value and/or density of residential units.

Special Assessment Districts

A special assessment district is a defined area of land subject to additional charges above the jurisdiction-wide imposed taxes. The fee imposed must be proportional to, and no greater than, the benefit realized. The assessment may only be levied on land, and is usually based solely on benefits to a parcel, not on the value of the parcel. The formation of a special assessment district sometimes requires some form of approval by landowners within the district. Special assessments usually cannot be made a personal liability of the person assessed, and they are also exceptional in time and locality.

- **Transportation Utility Fee Districts** - All property provided with utilities (i.e. water, sewer, electric) within the established district could be assessed a flat fee each month that could be invoiced and collected in conjunction with the utility bill. These funds could help to finance transportation infrastructure.

- **Motor Vehicle Taxing Districts** - The E-470 Public Highway Authority (PHA) legislation (Title 43, Article 4, Section 506K) provides for a motor vehicle tax in the form of an annual vehicle registration fee on vehicles registered by persons residing within the District. The registration fee is in addition to any tax or fee imposed by any other governmental unit but may not exceed $10.00 per year. If two or more Districts overlap, the total of all fees imposed cannot exceed $10.00. The Authority may apply such registration fees only to the financing, construction, operation or maintenance of public highways.

- **Sales Tax Districts** - The E-470 PHA legislation also provides the Authority with power to levy a sales or use tax at a rate not to exceed four-tenths of one percent upon transactions within the District, for those items eligible for the sales tax levied by the State. This sales or use tax is in addition to any other sales or use tax imposed by law. If a member is located in more than one Authority, the total sales or use tax cannot exceed four-tenths of one percent. Revenue is collected by the director of the Department of Revenue and then distributed to the Authority. Proceeds may be used only for the financing, construction, operation or maintenance of public highways.

- **Employment and Business Tax Districts** - Legislation previously enacted by the State of Colorado for the E-470 PHA includes provision for an employment tax within the District. This tax is levied on the privilege of employment and may not exceed $2.00 per employee per month. If a member is located in more than one District, the tax levied cannot exceed a total of $2.00 per employee per month. This same tax rate may also be applied to any person conducting any trade, business, occupation or profession within the Authority and with the same limitations.

One Time Exaction Districts

Exactions could be collected from developers involved in the transfer, purchase and development of land within a benefit district.

- **Real Estate Transfer Tax District** - This tax could be a flat fee collected when any real estate was sold within the district.

- **Real Estate Windfall Profits Tax District** - Profits made on real estate transactions within the benefit district after a specified date, exceeding specified margins, would be taxed at a rate designed to recapture some of the value imparted to the property by the "public" investment in the new infrastructure.

- **Traffic Impact Fee Districts** - This concept calls for earmarking existing impact fees within a district or for an increase in the traffic impact fees within the special district. The fee would be charged to developers and collected by the local jurisdiction. The funds would help pay for the infrastructure to serve additional traffic generated by the new developments. It is a one-time fee, whose rate is based on traffic studies that determine future roadway needs.

- **Surcharged Impact Fee Districts** - In places where local impact fees are already in place, it is possible to place an additional impact fee (surcharge) on top of the local fee. This is designed to recoup some of the added benefits produced by a special infrastructure investment.

Joint Development Districts

There is opportunity for local agencies to work together with developers who will reap the benefits of a transit station or an interchange adjacent to their property. In joint development deals, the Expressway/Transit Agency, the City/County and selected developers engage in and execute well-conceived real estate projects adjacent to stations or interchanges. The developer then shares a reasonable increment of added profits created by this development with the Expressway/Transit agency. This is of course, in return for development "rights". The rights may include increased densities or special zoning exceptions.

VALUE CAPTURE POLICY

It is important to consider the use of value capture as a supplemental source of revenue for tollroad projects. In many ways, the E-470 Public Highway Authority law has become a model for other states that are interested in pursuing value capture programs for expressway projects. This particular model also takes advantage of the Florida High Speed Rail Act, which empowered the State to "sell" extensive real estate development rights as part of a franchise to construct the $2 billion Florida High Speed Rail program. We strongly recommend that value capture not be ignored in the evaluation of toll project feasibility issues and policies in Colorado. As is the case with the other policy sets, value capture policies can be aggressive, moderate, or conservative. For example, the E-470 law provides some fairly aggressive powers to the E-470 Authority. One of these involves the use of real estate acquisition outside the "public need" envelope, as long as eminent domain is not deployed. This tactic provides the Authority with the ability to engage in speculative real estate transactions that can yield substantial benefits to equity investors in the project. To our knowledge, the E-470 Authority has not taken advantage of this particular vehicle to date. However, such a policy could be simulated in fairly broad terms within the model construct that we have at our disposal. An aggressive policy would deploy all, or almost all, of the powers currently available to the E-470 Authority for value capture purposes. Additional concepts might be added, such as the creation of local improvement districts (LIDs) around each interchange similar to those envisioned for the Robert E. Lee Beltway in Florida. The creation of transportation utility districts and corridors are also concepts that could be included in an aggressive policy framework for value capture policy analysis.

Colorado's Public Highway Authority Law and Private Value Capture: The Colorado Public Highway Authority Law, as amended, provides in Part 5, Section 43-4-506 (powers of the authority) paragraph (g), that the Public Highway Authority may" . . . purchase, trade . . . sell, lease, lease with an option to purchase, dispose of, and encumber real or personal property and any interest therein, including easements and rights-of-way, without restriction or limitation by other statutory or charter provisions."

As long as eminent domain is avoided, the Authority may engage in real estate transactions for its own benefit. This suggests that a very serious examination should be made to determine the revenue potential of private value capture options, including:

- Surplus real estate acquisition
- Ground leasing
- Vertical development, sale of property, or retail leasing
- Purchasing real estate options, rezoning/permitting and selling the options

Purchasing property, acquiring permits, providing horizontal development of backbone infrastructure and selling the property.

It should be noted that the Florida High Speed Rail Act envisioned precisely those types of activities as a key part of the financing of the $2 billion Florida High Speed Rail project. In this case, the concept called for the execution of these activities via a privately-executed real estate developer franchise arrangement. The plan also called for the granting of certain undefined "real estate development rights" to the franchise.

Real Estate Development Rights: An additional and significant area that could be tapped to finance a transportation project could include "real estate development rights." First introduced in Florida in the High Speed Rail Act of 1984, these rights could create significant additional "private value capture" opportunities not discussed earlier. There are five areas comprising the real estate development rights spectrum that have the potential for measurable and substantive financial benefits. These could include the following general categories or revenue classifications:

- **Regulatory streamlining revenue** - the increment of profits created by reduction of carrying costs due to time-certain improvements in the substantive requirements for and the schedule of regulatory approvals. This can include advantages offered by permit bundling, or the increment of profits created by packaging a large group of time-critical permits into a single submittal for "one-stop" approval.

- **Creditation mechanisms** - creditation certificates or devices that are "granted" to the franchisee in exchange for all or part of the private capital (or capacity) and other contributions provided. These "credits" can be used by the franchisee to offset all, or part of, the impact fees or other regulatory fees normally imposed on real estate developers. (This is roughly equivalent to "offsite mitigation banking" concepts in the environmental arena.)

- **Modification of regulatory standards** - a public agency may, in recognition of a higher LOS standard produced by the franchisee's contributions, allow a lower LOS standard at the local level for development approval. This can have a substantive effect on real estate project liabilities associated with offsite highway improvements.

- **Methodological concessions** - regulatory agencies may grant methodological concessions that have the effect of mitigating development liabilities. Examples could include:

  - substitution of transit capacity for highway capacity deficiencies

  - use of subarea LOS analysis instead of link-specific LOS as a measure of project impact

- **Land use classifications and density modifications** - typically, the introduction of a new transportation asset into the landscape produces certain land use

plan and zoning amendments. These changes accommodate the unique interrelationships between a new transportation corridor and the surrounding property. This is particularly true in the vicinity of new expressway interchanges and transit stations. These changes can produce literally millions of dollars in windfall profits that could be harnessed for financing the asset that catalyzes the effect. This concept calls for "setting aside" the density bonus and entitlements allowed by the asset for sale to developers for the benefit of the asset's financing.

Review of Joint Development and Other Revenues: We could divide the review of non-toll revenues into two main categories: Operations-related revenues and development-related revenues. The operations-related revenues such as advertising and retail concessions are fairly straight-forward and can be rather easily checked against current turnpike experience in other states. Roadside advertising can be estimated in general terms.

Joint development revenues could first be broken down into their various components and then examined for reasonableness in light of development patterns, and in cities actually realizing the potential of joint development revenues. The review will include the yield of the revenue source, its timing (i.e., up-front, delayed, or continuing support) and any restrictions or limitations on its use and applicability (i.e., capital costs, operating support, in-lieu services, etc.).

Probably one of the more interesting issues the Colorado DOT will face is the value capture financing of tollroads. One possible policy scenario that could be constructed would allow the absorption of the current E-470 powers into the Colorado DOT. If this were to happen, some interesting difficulties could arise.

Special District Taxing Issues

First, the Colorado DOT, as a member of the executive branch of state government, is not run or operated by locally elected officials. It is precisely these types of elected officials who customarily hold the power to tax local land owners. While there is some conceptual political difficulty, special benefit assessment district taxation in the hands of non-elected local officials is not a totally alien concept[1]. Most if not all special benefit district assessments must meet the test of demonstrated benefits equaling or exceeding the cost imposed upon the beneficiaries. In such cases, the court system serves as the taxpayers' source of protection against unfair or inequitable uses of taxation powers by the special district authorities. The Colorado DOT might also have an aversion or lack of appetite for such special district taxing powers in view of the rather substantial political liabilities that go along with such power. In this case, a significant issue is whether a value capture policy creates a

[1]*See, for example, Community Development District legislation, Florida Statutes.*

substantial increase in toll project revenues. If this contribution to project revenues is substantial enough, the Colorado DOT may wish to maintain some local form of public highway authority, or perhaps a state-local-private partnership, to administer the more onerous elements of the value capture policy. This would enable the CDOT to maintain political distance from the special assessment business.

B. SYSTEM REVENUES

The following system revenues are revenues generated by the transportation system or investment itself. Six types of system revenues are described below.

- **Highway Connection Fees** - These fees are collected when development wishes to have direct access (connection) to the roadway facility.

- **Retail Space Lease Revenues** - Retail space lease revenues are generated by leasing the retail space which serves and supports the transportation corridor. In the case of a transit system, this space would be located at the transit stations. In the case of a toll road, the retail space would be located at the concession plazas.

- **Advertising/Concession Revenues** - Advertising revenues are generated by the sale of advertising space in the vehicles or stations of a transit system. In the case of a roadway facility, revenues collected from billboard advertising as well as rest area advertising may be realized. A percent of the large profits realized at concession stands around the facility may also be collected in return for discounted lease rates.

- **License Fees** - Motor vehicle operator registration and license fees are a source of funds which could be generated by charging an additional fee to drivers for their initial license and for their renewals.

- **Freight Permit Revenue** - A fee can be charged to freight companies which permits them to use the facility.

- **Sales of Surplus HOV Lane Capacity to "Authorized Vehicles"** - Another relatively new and interesting development in the tollroad business is the use of ETTM technology to "sell" surplus capacity in High-Occupancy Vehicle (HOV) lanes to Single-Occupancy Vehicles (SOVs). This particular concept has been proposed for the Orange Lanes project in California. The concept is attractive because HOV lanes are often underused. By allowing single occupancy vehicles to use the HOV lanes, the passenger throughput of the HOV lane and the facility as a whole is improved. At the same time, an attractive revenue stream is generated which can be used to finance a portion of the new HOV lane construction or, in some cases, these revenues might be used to fund the construction of a Freeway Management System (FMS).

C. VENDOR FINANCING

Financing by manufacturers is a common method of financing transit equipment. The loan, which is secured by the equipment and repaid with tax or operating revenues, can usually be arranged for any amount up to the value of the equipment. Vendors often use loan terms, loan guarantees, and other credit devices to increase their chances of success in a competitive bid. Since vendors are anxious to demonstrate their equipment, they often offer financing at lower rates. However, vendor financing may be a substitute for a lower purchase price.

Vendor financing that is backed by the purchased equipment does not generally require a specific revenue pledge; however, transportation agencies need authority to issue such long-term debt. Construction contractors may also participate in tollroad project financing by placing their profits at risk via equity position or subordinated loan.

Technology Provider/Farebox Risk

The vendor of new technology (i.e., AVI equipment) may choose to contribute their goods to a highway project. The easiest way to develop a highly publicized, well known product is to have people see it working in a successful system. Besides obtaining the exposure, the vendor may chose to risk recovering their cost by obtaining a percentage of the farebox revenues. They may also negotiate a lump sum amount and/or an annual fee. Maintenance and operating cost risks could also be assigned to the technology provider via a guaranteed maximum price O & M services contract.

Builder/Profit Risk

Schedule, design, construction cost, and permitting risks can be assigned to the builder-vendor through a guaranteed maximum price, time-certain contract.

Developer/Real Estate Risk

A joint real estate developer could absorb a portion of the real estate development revenue risks, in return for an exclusive franchise agreement to be the joint developer/agent for the project.

APPENDIX C

COLORADO TOLLROADS SURVEY

I. Background and Methodology

In order to measure attitudes about toll roads in Colorado, Kimley-Horn and Associates, Inc., on behalf of the Colorado Department of Transportation, commissioned Talmey-Drake Research & Strategy, Inc., a public opinion and market research firm in Boulder, Colorado, to conduct a survey among Colorado residents age 18 or older. The results of this survey are based on 319 random telephone interviews, conducted from October 8 to October 13, 1992. The sample of telephone numbers for the study was obtained by random-digit dialing. Quotas were established to obtain equal representation for men and women, and representation of county in proportion to population. A random sample of 319 has a 95% confidence interval of plus or minus 5.5% about any one reported percentage.

II. Overview

Coloradans are receptive to the judicious use of toll roads, although they are not eager to see them proliferate throughout the state.

Almost half (47%) of the respondents to this survey have lived or spent a fair amount of time in a part of the country where toll roads were relatively common, and they express no more opposition to tolls in Colorado than do those who have not lived with toll roads. Opposition, in fact, is limited. Only a quarter are against tolls under any circumstances, while 72% either favor tolls in general or support them on a case by case basis. Furthermore, almost a third of all respondents have used the toll road south of Denver, and 2 out of every 3 of them have a favorable impression of it.

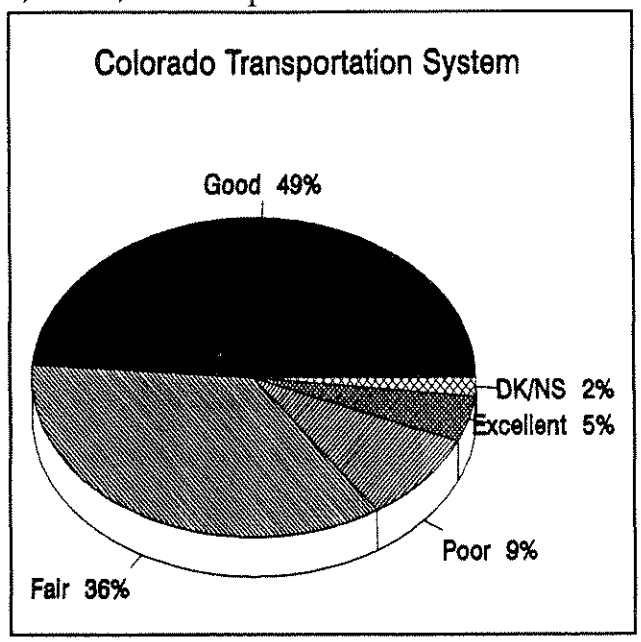
Demand for greater expenditures on the transportation system in Colorado is moderate, with just under half believing the state should spend more to improve it. But only 27% feel the state should spend more tax dollars to expand and improve the *highway* system. As many as 42% of those opposed to increased spending on highways, however, say they would change their minds and support spending more if the funds were collected from tolls.

The main reasons Coloradans support tolls -- and the strongest arguments in their favor -- are that users of the highways pay directly and that tolls are preferable to taxes as a source of revenue.

Toll roads, then, are not only acceptable, but, to a certain degree, desirable as an alternative way to pay for improvements to the highway system. There are, however, two important caveats: that funds be applied to the roads from which they are collected, and that private companies not own and operate them.

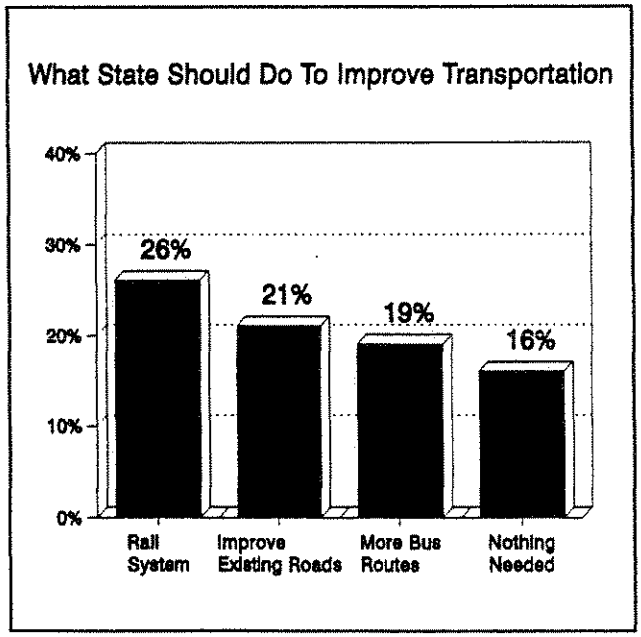
III. Perceptions of Transportation in Colorado

In order to put the results of this study in proper perspective, it is important to note that transportation issues are not currently of immediate or urgent concern to Coloradans. Only 2% said highways, streets, roads, or transportation was the most important problem or issue facing the state today. This suggests that Coloradans are not overly concerned about the current condition of their transportation system, and have given little thought to possible improvements to it.

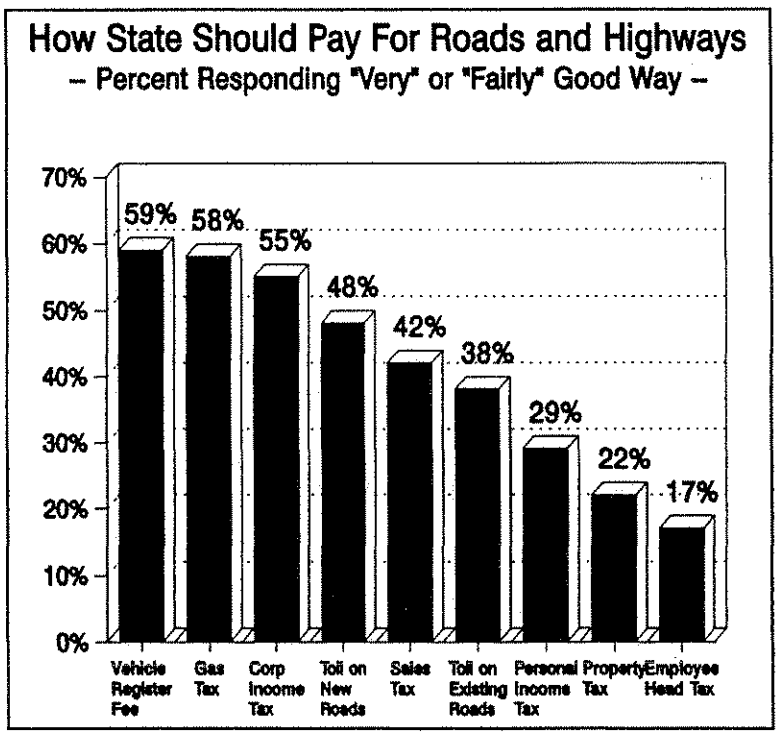


Indeed, the overwhelming majority of Coloradans think the transportation system -- including highways, streets, public transport, bike paths, and other methods -- is at least adequate, if not satisfactory or outstanding: 5% say it is excellent, 49% say it is good, and 36% say it is fair. Only 9% rate the transportation system as poor. In addition, 54% disagree with the statement that new major highways will have to be built to maintain the quality of life in Colorado, and 61% disagree with the statement that a lack of adequate highways is hurting the state's economic growth.

Nevertheless, 49% feel the state should be spending more tax dollars on improving the transportation system. But Coloradans are not clamoring for new roads and highways. On the contrary, over two-thirds (67%) of them oppose increased state spending on highways. Rather, they want a transportation system that addresses the needs of a growing population by employing mass transit solutions and by increasing the capacity of old roads instead of building new ones. They want their tax dollars spent on enhancing the rail system, establishing more bus routes, and improving existing roads. Indeed, using state money to develop mass transit systems such as light rail and buses is preferred by a 55% to 31% margin over using the money to build new highways.



Given a choice of ways to pay for improving existing roads and highways and building new ones, Coloradans favor those that directly relate to use of the roads. Thus, vehicle registration fees and gasoline taxes receive the most support, and property taxes and employee head taxes receive the least. Tolls are neither zealously embraced nor assiduously shunned.



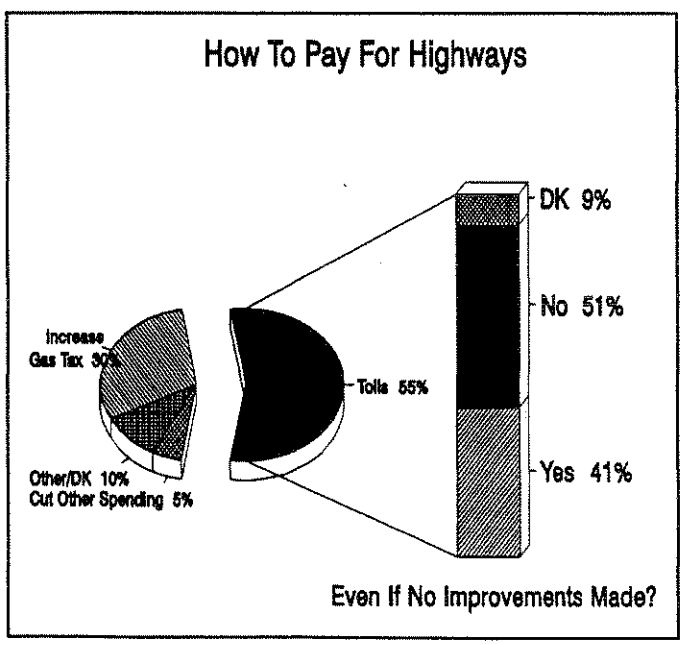
IV. Attitudes Toward Tolls

While there is little enthusiasm in Colorado for tolls, there is also no great resistance to them. And while Coloradans' limited experience with toll roads has not inspired passionate support, neither has it fomented outraged opposition. Indeed, almost a third (30%) of all respondents have driven on the E-470 toll road south of Denver, and 67% of them have a good impression of it.

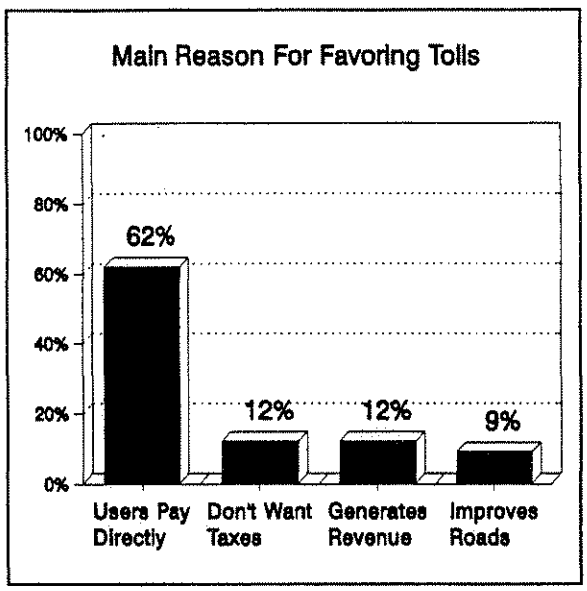
Tolls appeal to Coloradans primarily as an alternative, and less painful, way of paying for their roads. Although over two-thirds of those surveyed feel the state should either continue to spend the same amount on highways or aren't sure about spending more, 42% of them say they would change their minds and support increased spending if the revenues were to come only from tolls collected from the users of the highways. And of the 6% who feel the state should spend less on the highways, 32% support increased spending if the revenues come from tolls.

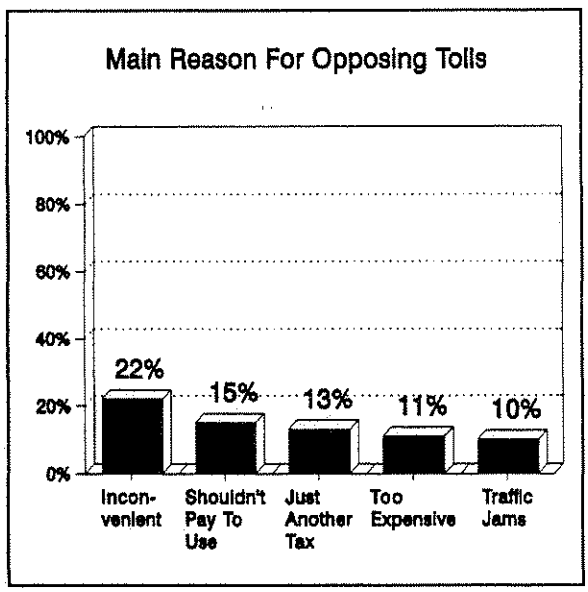
Not surprisingly, most of the 27% who feel the state should spend more on the highways do not change their minds if the revenues spent come only from tolls on the new and expanded highways. Sixty-one percent would still favor increased spending, while 29% would oppose it. A majority (52%) of these same respondents, however, oppose increased spending if tolls are also collected on highways that are not improved.

Regardless of their feelings about increasing or decreasing state spending on highways, respondents prefer tolls to increased gasoline taxes by a 55% to 30% margin if the state does decide to build or expand highways. But again, they oppose tolls if collected on highways that are not improved.



Clearly, Coloradans favor the use of tolls only when they perceive that the collected funds are being directly applied, and this is reflected in their overall predisposition toward tolls. While only about a quarter of the respondents favor tolls in general and another quarter are against them in general, half support tolls in some cases and oppose them in others. The main reason Coloradans favor tolls is that the users of the roads are the ones who pay for them. The main reasons for opposing tolls include the inconvenience and the feeling that they are just another tax that shouldn't be levied.

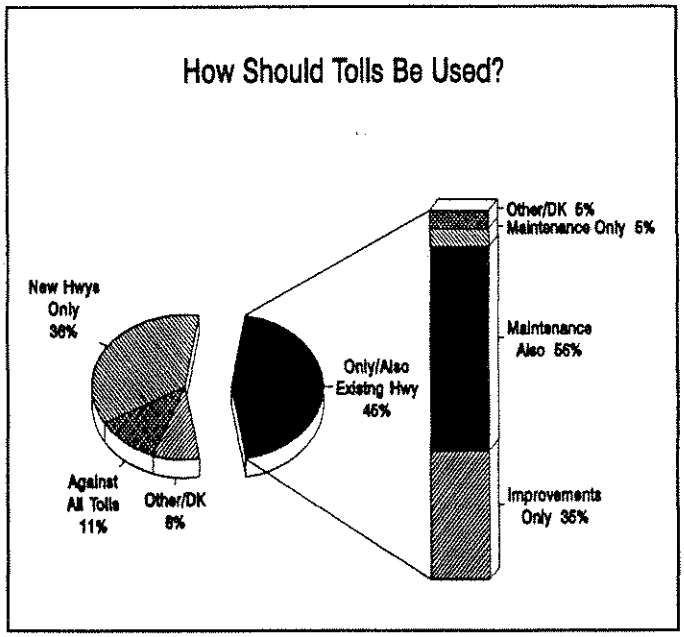




V. Use of Toll Revenues

Although Colorado has historically used tolls only to pay for initial construction of new highways, respondents are receptive to using the revenues collected to also improve existing highways. Whereas 36% say the funds should only be used to build new highways, 39% say they should also be used to improve and expand existing highways. Moreover, 6% say the funds should *only* be spent on existing highways.

Respondents are even more flexible concerning the nature of the improvements on which the toll revenues are spent. Among those who would like the money to be spent on existing highways, about a third think it should be used exclusively for major improvements such as adding lanes, while 56% favor using it also for maintenance such as routine resurfacing, filling potholes, and other repair work.



They do, however, want to see direct results manifested in better roads: 56% of Coloradans believe the revenues collected from tolls should be used strictly for highways and roads, while only 37% believe they should also be used for other transportation projects such as light rail, buses, or bike paths. Furthermore, a greater percentage feel the revenues should be spent only on the highway from which they were collected (43%) than feel they should be spent on any highways in the state (32%) or any in the area (17%).

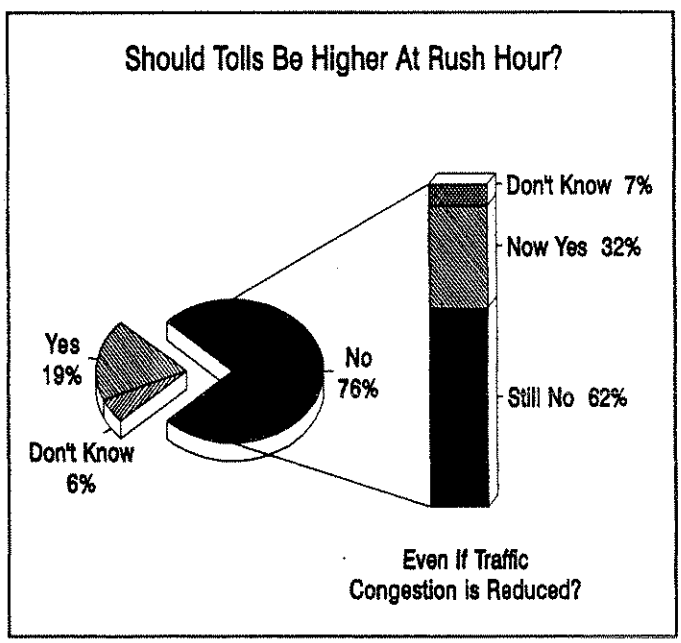
VI. Related Issues

As seen in Jerry Brown's 1992 primary victory and in the (initial) strength of Ross Perot's support, Coloradans revel in their independence and mistrust of the political establishment. In fact, 70% of the respondents to this survey say they trust elected state officials to do what is right only some of the time or almost never.

Nevertheless, 70% are also against allowing private firms to build, own, and operate toll roads in Colorado.

A comparable percentage (69%) prefers the state to continue its policy of building highways only as fast as it collects the revenues, rather than issue bonds to speed up construction. Given the attention currently paid to state and federal debts and deficits, this reluctance to further run up costs incurred by interest is not surprising. And since there is little feeling that highway needs are urgent or critical, the speed of construction is not of great enough concern to override this reluctance.

There is also overwhelming resistance to the idea of varying toll charges at different times of day, with over three-quarters of the respondents favoring the same toll regardless of the hour. Even if a higher toll at rush hour did in fact reduce traffic congestion, 62% of these respondents still say they oppose the varying rates.



Percentages

Talmey-Drake Research & Strategy
Project 92087
October 1992

COLORADO TOLL ROADS SURVEY

Hello, my name is _____, and I'm with Talmey-Drake Research, a public opinion and market research firm in Boulder, Colorado. We have been commissioned to conduct interviews with Colorado residents concerning local issues. Your responses to this survey will influence taxes and government spending for transportation in the state. This interview is entirely voluntary, but because your telephone number was selected in our random sample we would very much appreciate interviewing you. It takes about 10 to 15 minutes. Is now a good time for you to take this interview, or would it be better for me to call back later? [IF NOT A GOOD TIME ARRANGE CALLBACK, OTHERWISE PROCEED.]

First, I would like to confirm . . .

SCREENER

A. That you are over 18 years old and live in Colorado.

Yes . . . . . 1 --->> SKIP TO C
No. 2

B. Is there someone in this household, who is 18 years old or older, with whom I might speak?

Yes. 1
No . . . . . 2 --->> TERMINATE INTERVIEW

C. Because your phone number was randomly selected by a computer, would you please tell us what county you live in?

ADAMS . . . 8%	Dolores . . -	Lake. . . . *	Pitkin. . . 1%
Alamosa . . 1%	DOUGLAS . . *	La Plata. . 1%	Prowers . . 1%
ARAPAHOE. .10%	Eagle . . . 1%	LARIMER . . 6%	PUEBLO. . . 4%
Archuleta . -	Elbert. . . *	Las Animas. *	Rio Blanco. *
Baca. . . . *	EL PASO . .11%	Lincoln . . -	Rio Grande. *
Bent. . . . *	Fremont . . 1%	Logan . . . *	Routt . . . 1%
BOULDER . . 7%	Garfield. . 1%	MESA. . . . 3%	Saguache. . *
Chaffee . . *	Gilpin. . . -	Mineral . . -	San Juan. . -
Cheyenne. . -	Grand . . . *	Moffat. . . *	San Miguel. *
Clear Crk . -	Gunnison. . 1%	Montezuma . *	Sedgwick. . *
Conejos . . *	Hinsdale. . -	Montrose. . 1%	Summit. . . *
Costilla. . -	Huerfano. . *	Morgan. . . 1%	Teller. . . *
Crowley . . -	Jackson . . *	Otero . . . 1%	Washington. -
Custer. . . -	JEFFERSON .15%	Ouray . . . -	WELD. . . . 3%
Delta . . . 1%	Kiowa . . . *	Park. . . . *	Yuma. . . . *
DENVER. . .15%	Kit Carson. *	Phillips. . *	

* less than one percent - not sampled

D. Sex [DO NOT ASK]

Male. 50%
Female. 51%

CONTINUED ON NEXT PAGE

SCREENER

[CONTINUED]

READ THE FOLLOWING CONFIDENTIALITY STATEMENT

Before we start, I would like to assure you that this interview is confidential and completely voluntary. Your answers will only be used when combined with hundreds of other surveys, and if we should come to any question which you don't want to answer, just let me know and we'll go on to the next question.

1. First of all, would you say that things in Colorado are generally going in the right direction, or do you feel things here have pretty seriously gotten off on the wrong track in the past few years?

Right direction	56%
Wrong track	33%
No opinion	11%

2. And thinking for a moment about the future of Colorado, what would you say is the one most important problem or issue facing the state of Colorado, today?
[DO NOT READ LIST -- MARK ONLY ONE ANSWER]

	Q2	Q3
Growth/Urban sprawl/Too many people	7%	6%
Pollution/Environment	8%	15%
Economy/Unemployment	28%	20%
Taxes/Gov. Spending/budget	11%	10%
Transportation issues/streets/roads	2%	13%
Education/Higher Education	24%	13%
Water/Water rights/need water	4%	5%
Agricultural problems	1%	1%
High cost of living	0%	3%
Housing	1%	3%
Poverty/Lack of social programs	2%	5%
Crime	2%	8%
Drug abuse/alcoholism	0%	2%
Problems of the elderly/Social Security	0%	1%
Moral/Religious decline	2%	3%
Gambling	1%	2%
Health care costs	1%	3%
Abortion	1%	1%
Other	2%	3%
DK/NS/None	4%	20%

3. What are some of the other problems facing Colorado today?
[PROBE] Any others? [RECORD ABOVE]

4. And generally speaking would you say you can trust the elected officials in state government to do what is right all of the time, most of the time, only some of the time or almost never?

All of the time	1%
Most of the time.	26%
Some of the time.	58%
Almost never.	12%
DK/NS	2%

5. Generally speaking would you say that taxes you pay to state and local governments here in Colorado are way too high, high but acceptable, about right or would you say that they are lower than you would expect for the services state and local governments provide.

Way too high.	23%
High but acceptable	42%
About right	30%
Lower than expected	3%
No opinion/DK/NS.	2%

6. Now thinking about transportation needs, both locally and throughout Colorado, what one thing could the government do to make it easier and more convenient for you to get around?

	Q6	Q7
Nothing needed	16%	36%
DK/NS	9%	18%
More bus routes	19%	15%
Rail system	26%	14%
Finish C-470 beltway	0%	1%
Improve existing roads	21%	15%
More bike paths	2%	1%
Lower gas prices.	3%	2%
Handicap transportation	2%	0%
Lower insurance premiums.	1%	1%
Other	2%	3%

7. And is there anything else the government could do about transportation, either locally or throughout Colorado, to make it easier and more convenient for you to get around? [RECORD ABOVE]

8. And overall, how would you rate the transportation system -- including highways, streets, public transportation, bike paths and any other transportation methods -- in Colorado? Would you say we have an excellent, good, only fair or poor transportation system here in Colorado?

Excellent	5%
Good.	49%
Fair.	36%
Poor.	9%
No opinion/DK/NS.	2%

9. And generally speaking should we be spending more tax dollars or fewer tax dollars on improving the state's transportation system?

More	49%
Fewer	13%
Same as today [NO PROMPT]	28%
No opinion/DK/NS	10%

10. I am now going to read you some statements about a variety of transportation issues. As I read each statement, please tell me if you strongly agree, somewhat agree, somewhat disagree or strongly disagree with the statement. If you don't have any feeling about the statement, one way or the other, just say so. [PROBE TO DISTINGUISH BETWEEN "DK/NS" AND "NEUTRAL."]

[ROTATE]

	----Agree--- Strong	Some	N	--Disagree-- Some	Strong	DK/ NS
[a] If the quality of life in Colorado is to be maintained or improved, new major highways will have to be built in the state.	16%	24%	3%	31%	23%	3%
[b] Lack of adequate highways in Colorado is hurting the state's economic growth.	13%	16%	3%	33%	28%	7%
[c] If new major highways are built in Colorado they should be toll roads.	11%	19%	3%	16%	46%	3%
[d] It would be better to spend the available transportation tax dollars for mass transit systems such as light rail or buses, than to spend it on new highways.	29%	26%	8%	16%	15%	7%
[e] Generally speaking, the Colorado Department of Highways is poorly managed.	17%	21%	10%	25%	7%	21%
[f] Building more highways in the state will just make air pollution worse.	27%	25%	3%	21%	20%	3%
[g] Whether or not new highways are built in Colorado won't really have much effect on you or your family.	22%	25%	2%	25%	23%	3%
[h] The state government should be spending more to improve Colorado's existing roads, streets and highways, even if it means increasing taxes.	14%	30%	3%	24%	25%	3%
[i] The state's highway system just can't handle the traffic it needs to.	19%	28%	3%	33%	12%	5%

[CONTINUED NEXT PAGE]

[CONTINUED]	----Agree--- Strong	Some	N	--Disagree-- Some	Strong	DK/ NS
[j] It is unfair to make people who live in one part of the state pay for transportation improvements in other parts of Colorado.	26%	21%	4%	26%	19%	4%
[k] Even if the state government had more money to build highways and mass transit systems in Colorado, they would just waste it.	24%	27%	6%	27%	10%	6%
[l] The state government just doesn't have enough money to build the transportation system Colorado needs.	12%	21%	5%	23%	21%	19%
[m] Colorado already has enough highways and roads, it doesn't need to build any more.	22%	27%	3%	23%	19%	6%
[n] Colorado has more than enough tax revenue to fund highway and other transportation projects the state needs.	26%	26%	5%	18%	4%	20%

11. And would you say that in the next few years that the money the state of Colorado spends on building new transportation facilities should go primarily to building and improving roads and highways, or should it primarily go to other forms of transportation such as mass transit, car-pool lanes, or bike paths? If you feel that the state should not build any new transportation facilities of either type in the next few years, please just say so.

Primarily roads & highways. . . . 28%
Primarily alternative modes . . . 41%
No new facilities 12%
Both equal. 14%
DK/NS 5%

12. I am now going to read you a list of the type of taxes or fees that might be used to pay for building new roads and highways or making improvements on existing roads and highways in Colorado. After I read each one, please tell me if you think it is a very good, fairly good, fairly bad or very bad tax with which to pay for road and highway construction or improvements. We are only interested in your reaction to the type of the tax, not the amount. [INTERVIEWERS WILL HAVE EXPLANATION OF "TOLLS" IF RESPONDENT DOESN'T UNDERSTAND TERM.]

[ROTATE]	----Good---- Very	Fairly	----Bad----- Fairly	Very	DK/ NS
[a] Sales tax	7%	35%	26%	29%	3%

[CONTINUED NEXT PAGE]

[ROTATE]	----Good---- Very	Fairly	----Bad----- Fairly	Very	DK/ NS
[b] Gasoline tax.	24%	34%	19%	21%	2%
[c] Vehicle registration fees.	15%	44%	15%	22%	3%
[d] Colorado corporate income tax	21%	34%	19%	14%	12%
[e] Colorado personal income tax.	4%	25%	30%	36%	5%
[f] Employee head tax where each employee has a fixed amount deducted from his or her pay check.	3%	14%	24%	55%	4%
[g] Putting tolls on some of the existing major highways in the state	11%	27%	19%	39%	5%
[h] Putting toll charges on new highways as they are built	21%	27%	18%	30%	3%
[i] Property tax.	2%	20%	28%	45%	5%

13. Some people say that the State of Colorado should be spending more to improve and expand the state's highway system. Others say that state's highway system is pretty much OK the way it is, and Colorado should not be spending more on it? What do you think, should the State of Colorado spend more, less or about what it spends now on improving and expanding the state's highway system?

More.	27%	--->> ASK Q13a
Less.	6%	--->> ASK Q13c
About the same as now	61%	--->> ASK Q13d
DK/NS	6%	--->> ASK Q13d

13a. What if the additional revenue to pay for constructing new highways, or adding lanes to existing highways, came only from tolls collected from the users of the new or expanded highways? Would you still be in favor of the state spending more on highway construction or would you then be against it spending more?

Yes, still favor more spending. . . .	61%	--->> ASK Q13b
No, now against spending more	29%	-->> GO TO Q14
Spend same as today	2%	
DK/NS	7%	

13b. And what if the additional revenue to pay for constructing new highways, or adding new lanes to existing highways, came also from putting tolls on existing highways -- even if there were no plans to expand the capacity or otherwise improve those highways in the foreseeable future? Would you still be in favor of the state spending more on highway construction or would you then be against it spending more?

Yes, still favor more spending. .	42%	
No, now against spending more . .	52%	ALL GO TO Q14
Spend same as today	0%	
DK/NS	6%	

13c. What if the additional revenue to pay for constructing new highways, or adding lanes to existing highways, came only from tolls collected from the users of the new or expanded highways? Would you then still be in favor of the state spending less on highway construction or would you then be in favor of it spending more?

Still spend less.	47%	
Then spend more	32%	ALL GO TO Q14
Spend same as today	5%	
DK/NS	16%	

13d. What if the additional revenue to pay for constructing new highways, or adding lanes to existing highways, came only from tolls collected from the users of the new or expanded highways? Would you then be in favor of the state spending more on highway construction or would you then want it to spend less?

In favor of spending more	42%	
In favor of spending less	25%	ALL GO TO Q14
(Still) spend same as today	22%	
DK/NS	11%	

14. Regardless of how you feel about increasing or decreasing state government spending on highways, if the state government decides to build new highways or expand existing highways would you prefer the state to pay for this highway construction by increasing the gasoline tax or by placing tolls on the new or expanded highways?

Increase the gas tax.	30%	
Tolls	55%	--->> ASK Q14a
Cut other spending.	5%	
Other	5%	
DK/NS	5%	

14a. And would you still prefer tolls over increasing the gas tax to pay for highway construction, even if the tolls were also placed on existing highways with no plans to expand the capacity or otherwise improve those highways?

Yes, still prefer tolls	41%
No	51%
DK/NS	9%

15. Some people are generally against toll-roads under any circumstances and regardless of how the revenue is spent. Others generally favor using tolls to finance highways and other transportation. And still others feel that sometimes tolls are a good way to finance transportation and other times they are not. How do you feel? Would you say you are generally against using tolls, generally in favor of using tolls or do you feel that sometimes it's a good idea to use tolls to finance transportation needs and sometimes it is not?

Against tolls	25%	--->> ASK 15a
Favor tolls	22%	--->> ASK 15b
Sometimes for tolls, sometimes against	50%	
DK/NS	4%	

15a. And what would you say is your number one reason for being against tolls? [PROBE] Anything else?

Traffic jams	10%
Another tax/people	13%
Inconvenient	22%
Shouldn't pay/roads	15%
Too expensive	11%
No improvement/road	11%
Will bypass roads	9%
Other	11%
DK/NS/No opinion	8%

15b. And what would you say is your number one reason for being in favor of using tolls?

Don't want taxes	12%
User pay directly	62%
Improves roads	9%
Generates revenue	12%
Other	10%
DK/NS/No opinion	1%

16. Historically in Colorado, tolls have only been used to pay for the initial construction of the highway from which the toll is collected. Some people have suggested that tolls could also be placed on existing highways to pay for adding lanes and other major improvements to those highways. What do you think? If Colorado decides to use tolls, should their use be limited only paying for the construction of brand new highways or should they also be used on existing highways to pay for the construction of new lanes and other major improvements?

New highways only	36%	
Existing highways also	39%	---->> ASK 16a
Only existing highways	6%	---->> ASK 16a
Against tolls in all cases	11%	
Other	3%	
DK/NS	5%	

16a. Some people have suggested that tolls be added to existing highways not just for major improvements such as adding lanes, but also to pay for maintenance such as routine resurfacing, filling potholes or other repair work. Again, what do you think? Should tolls on existing highways only be use to pay for the construction of major improvements such as added lanes, or could tolls on existing highways also be used to pay for maintenance on those highways, even if there are no major improvements to them.

Major improvements only	35%
Maintenance also	56%
Maintenance only	5%
Other	1%
DK/NS	4%

17. Historically, the money collected from tolls has only been used to pay for the highway from which it was collected. Now some people are saying that the toll revenue from a particular stretch of highway should not have to be spent on that highway, but could also be spent on highways in the same geographical area. Still others say that toll revenue should be available to be spent on any highway or road in the state. What do you think? Should the use of toll revenue be limited to the highway from which it was collected, spent in the same area from where it was collected, or should it be available to be spent on any highway or road in the state?

Only highway from which collected	43%
Highways in area	17%
Any highway in state	32%
Other	4%
DK/NS	4%

18. In addition to where toll revenue could be spent, some people have suggested that revenue from tollroads should also be used for other types of transportation such as light rail, buses, and in some cases bike paths. Others say that tollroad revenue should only be used for highways and roads. What do you think? If the State of Colorado does decide to use tolls, should the toll revenue only be used for highways and roads, or should it also be used for other transportation projects?

Only highways and roads	56%
Other transportation also	34%
Only other transportation only	3%
Other	4%
DK/NS	3%

19. Some people have suggested that if tolls are put on Colorado's highways, the amount of the toll should vary depending on the time of day. At rush hour the toll would be higher than at other times when there is not so much traffic. Generally speaking, if tolls are implemented in Colorado, do you favor increasing the toll at peak traffic times and lowering it during off-peak hours, or do you favor keeping the amount of the toll the same throughout the day?

Higher at peak traffic times	19%	
Keep toll the same all day	76%	--->> ASK 19a
DK/NS	6%	

19a. The purpose of increasing the toll during rush hour would be to discourage driving and reduce congestion at peak traffic times. If, in fact, increasing the toll during rush hours reduced traffic congestion would you still be against increasing the amount of the toll at peak traffic times or would you now be for it?

Still against peak tolls	62%
Now for raising tolls	32%
DK/NS	7%

20. Recently some transportation policy makers have suggested letting private companies build and operate toll roads for profit in the state. The state would regulate these companies, but still these tollroads would be owned and operated by private firms. Generally speaking, would you say you are in favor of letting private firms own and operate tollroads in Colorado, or would you say you were against private companies owning and operating tollroads in the state?

In favor	20%
Against	70%
DK/NS	9%

21. On a related subject, today the most of the tax revenue that is used to pay for highway construction comes from the gasoline tax. And so far it has been the policy of state government to build new highways on a pay-as-you-go basis. That means that the highways are built only after the state has collected the revenue from the gas tax. However, instead of waiting for enough revenue to be collected before building a section of highway, it has been suggested that the state issue bonds to speed up the construction. The advantage of issuing bonds is the road gets built faster; the disadvantage is that interest has to be paid and thus the total cost is more. In general do think the state should stick to its policy of building highways only as fast a it collects the gasoline tax, or would you favor the state issuing bonds so that it could build highways faster even if it would cost more in the long run?

Stick to pay-as-you-go.	69%
Issue bonds	23%
Against anymore highways.	2%
Other	1%
DK/NS	6%

22. And finally, how interested are you in whether or not the State of Colorado starts using highway tolls to pay for highway construction or other transportation projects in the state? Would you say you are very interested, somewhat interested or not at all interested in this issue?

Very interested	32%
Somewhat interested	50%
Not very interested at all. . . .	17%
DK/NS	1%

Our last questions are about you and your family. The answers to these questions help us statistically classify the results we obtain. Your responses to these questions, as well as all others in this survey, will be kept strictly confidential, and only used when statistically combined with the hundreds of other interviews conducted for this survey.

D1. Some people are always following what's going on in politics and public affairs. Others just aren't that interested. Do you follow what's going on politically and in government all of the time, most of the time, some of the time or almost never?

All of the time	15%
Most of the time.	51%
Some of the time.	30%
Almost never.	3%
DK/NS/Refused	1%

D2. Approximately how long have you lived in Colorado?

Less than 1 year	4%
1 to 3 years	5%
4 to 10 years	13%
11 to 20 years	19%
21 to 30 years	25%
31 years or more	33%
DK/NS/Refused	1%

D3. And would you say that you are better off or worse off financially than you were a year ago?

Better off	42%
No change	29%
Worse off	28%
DK/NS	2%

D4. Are you employed, either full-time or part-time, at a job away from your home?

Yes	64%
No	36% --->> SKIP TO D5

D4a. Do you, generally, use a car to commute to work?

Yes	91%
No	9%

D5. And how many cars do you own that are registered at this address?

None	7%
One	36%
Two	35%
Three	15%
Four	3%
Five	2%
Six	0%
Seven or more	0%
DK/NS/Refused	1%

D6. Have you ever lived or spent a fair amount of time in a part of the country where toll-roads were relatively common?

Yes	47%
No	52%
Don't remember	1%

D7. [ASK ONLY IF R LIVES IN METRO AREA] About a year ago the first part of the E-470 toll road was opened to traffic. Have you had a chance to drive on it?

Yes	30% --->> ASK D7a
No	68%
Don't remember	2%

D7a. And after driving on it, would you say you have a good impression of E-470 or would you say you have a bad impression of it?

Good	67%
Bad	15%
Neither good nor bad	17%
Other	2%
DK/NS	0%

D8. And are there children under the age of 18 living in this household?

Yes	38%
No	60%
Refused	2%

D9. Are you married, separated, divorced, widowed or have you never been married?

Married	63%
Separated/divorced	13%
Widowed	5%
Single [NEVER MARRIED]	17%
Refused	3%

D10. And do you consider yourself an environmentalist?

Yes	78%
No	22% ---->> SKIP TO D11

D10a. And are you a member of any environmental organization such as the Sierra Club, The Wilderness Society, Greenpeace or other similar group?

Yes	16%
No	84%

D11. What was the last grade in school you had the opportunity to complete? [DO NOT READ LIST]

Less than HS degree	6%
HS grad/voc ed	24%
Some college	30%
College graduate	23%
Post grad. degree or study	18%

D12. May I ask how old you are?

18-24 years	8%
25-34 years	24%
35-44 years	27%
45-54 years	16%
55-64 years	9%
65 years or older	14%
Refused	3%

D13. What is your ZIP Code? _____ _____ _____ _____ _____

D14. Finally, which of the following income groups includes your family's total annual income from all sources in 1991?
[READ LIST EXCEPT "REFUSED"]

Under $10,000	9%	
$10,000 to $20,000	17%	
$20,000 to $30,000	16%	
$30,000 to $40,000	14%	
$40,000 to $50,000	15%	
$50,000 to $75,000	11%	
Over $75,000	8%	
Refused	10%	<<--- DO NOT READ

THANK YOU FOR TAKING OUR SURVEY.
YOUR ANSWERS WERE EXTREMELY HELPFUL.

Methodology

The COLORADO TOLL ROADS SURVEY was conducted for KIMLEY-HORN AND ASSOCIATES, INC. on behalf of THE COLORADO DEPARTMENT OF TRANSPORTATION, by Talmey-Drake Research & Strategy, Inc., a public opinion and market research firm in Boulder, Colorado. The results of this survey are based on 319 random telephone interviews with Colorado residents age 18 or older, conducted from October 8 to October 13, 1992. The sample of telephone numbers for the study was obtained by random-digit dialing. Quotas were established to obtain equal representation for men and women, and representation of county in proportion to population. A random sample of 319 has a 95% confidence interval of plus or minus 5.5% about any one reported percentage.