monies due under the service contract ought to be incumbent on the appropriating entity.

• Legal opinions must be rendered on the enforceability and assignment of all contracts; such opinions should cover bondholder and trustee rights in bankruptcy.

• Force majeure (uncontrollable circumstances such as changes in laws) events must be resolved as to risk in favor of the bondholders.

• The private partnership or entity engaged in the transaction with the public sector should be limited in purpose to the scope of the transaction.

• The contracting public agency must enter an agreement guaranteeing the payment of a fee for a service; service fees should be payable without set-aside or offset.

• The obligation to pay fees begins when the facility has passed acceptance tests; therefore, debt service on any issued bonds must be provided for until acceptance tests are met.

• The contracting private party must agree to provide the service and to guarantee such, save force majeure; liquidating damages at least equal to the amount required for debt service must be available for any interruption of service.

• Methods of providing for facility expansion or modification should be provided for in advance; provisions governing additional indebtedness must set certain affordability tests.

• Construction will be for a fixed price with completion on a date certain. Payment and performance bonds must back up construction guarantees, including liquidated damages covering debt service.

• Partnerships making guarantees must have substance to back up obligations and commitments. Partnership structure and right of substitution are important.

Public-Private Involvement in the Development of Roadways and Interchanges in Colorado

JOSEPH F. DOLAN

This paper is a history of private-sector involvement in the provision of roadways in Colorado. Major early developments are sketched to provide background for what has occurred since 1975. Financial and political problems associated with unmet present demand, land use planning for future growth and development, and quality-of-life issues are discussed. Three ways in which the private sector is involved in the provision of roadways are described: *(a)* private contributions to finance interchanges, *(b)* governmental associations to provide major transportation improvements, and *(c)* involvement of private interests with local governments to build major highways without the participation of state or federal government.

In 1821 William Becknell, a Missouri businessman who wished to further his trade with Mexican soldiers in what is now New Mexico, forged the first road through Colorado—the Santa Fe Trail. Forty years later a fur trapper built a shortcut on this same route over Raton Pass in southeastern Colorado, set up a booth, and established Colorado's first toll road: a dollar a wagon, funerals and Indians free.

One of Colorado's earliest and greatest state legislators, Otto Mears, made his fortune the same way, building and operating toll roads throughout the state. In all, he owned 383 mi of tolled "wagon roads," including the Million Dollar Highway between Ouray and Silverton, so named because supposedly a million dollars' worth of gold was discovered in the gravel used to surface the road.

As the free enterprise system crisscrossed Colorado with roads, other visionaries saw a dollar to be made in Denver transportation. Five full years before Colorado attained statehood in 1876, Denver had fixed-guideway transit: horse-drawn cars on 2 mi of track. By 1886, Denver was the second city in the world to have electric-powered streetcars; and by the 1890s, eight different companies were plying 156 mi of city lines with cable cars, streetcars, and trolleys.

Colorado Department of Transportation, 4101 South Colorado Boulevard, Englewood, Colo. 80110.

Stiff competition among these lines spurred the first major instance of public-private cooperation in Denver's history. One of the tram companies shared with the city the cost of building the 16th Street and Larimer Street viaducts in order to provide easier access for its streetcars over the Platte River into downtown Denver.

Government Takes Over Transportation

As was the case in many states, private enterprise built the majority of Colorado's early transportation systems. Private involvement in providing highways, however, did not last long. As a booming Colorado went careening into the 20th century, government stepped in to take over the task of integrating, connecting, and financing roads. By the middle of the century, the automobile had sufficiently enticed most riders away from transit companies, so privately run transportation was no longer a going concern. In just a few decades, both highways and mass transit had become the exclusive purview of the public sector.

There are a number of cogent reasons why the 1980s should witness a rebirth of private-sector involvement in providing transportation. Part of this renaissance is surely due to the Reagan administration's view that, whatever government can do (or cannot do), the private sector can do better.

However, the growing trend of private enterprise reentering the transportation business is mostly a matter of money: government at all levels can no longer afford to finance all needed transportation improvements.

The power of the Organization of Petroleum Exporting Countries in the 1970s, double-digit inflation, deferred maintenance, the design life of bridges and roads, more fuel-efficient automobiles, and government regulations that place government at a competitive disadvantage all have contributed to an inability of government to supply enough transportation improvements to meet the increasing need.

In Colorado, and in the Denver area in particular, unplanned and unchecked suburban growth probably is as responsible as any other factor for creating unmet transportation demands. That this monstrous growth should now rear its head is, of course, no surprise to urban observers, who long ago sounded the alarm over the implications of metropolitan development. Indeed, Colorado's present Governor, Richard D. Lamm, was elected in 1974 as a candidate who warned of the dangers of urban sprawl and the need to promote slower growth and preservation of Colorado's natural resources and beauty.

Soon after taking office in 1975, Governor Lamm tried to convert his campaign philosophy into state policy. Candidate Lamm was sure that highways were the chief cause of urban sprawl and so had vowed to kill Interstate 470, a proposed 26-mi beltway-type Interstate highway to encompass southwest Denver and connect the ends of the two major Interstates that cut through Denver like a plus sign. As governor, Lamm saw no plus in the proposed freeway. "I-470 is really a solution of the past," Lamm told the press, "and what we're looking for is a solution of the future. Interstate 470 is dead. If I have to drive a silver stake through its heart, I will do so."

What started out as a simple battle over a suburban freeway soon became a bitter and complex free-for-all over the future form of urban development. Governor Lamm eventually did succeed in winning some concessions, but for all intents and purposes, he lost on the overriding issue of planning the future of Colorado's growth. The proposed Interstate was changed to a proposed parkway, and was reduced from six to four lanes. By December 1985, 12 mi of CO-470 were open, and the entire 26-mi parkway should be completed by 1988.

As damaging as this war was to the governor, he had not yet fired his final shot. In 1979 Lamm launched his next salvo at unplanned urban development with a sensible, reasoned approach, ineptly and inaptly called Colorado's Human Settlement Policies. Again citing the dangers of "sprawling development patterns," Lamm said that his Human Settlement Policies were developed to provide direction for accommodating growth and facing the problems of the 1980s. Almost by the sheer weight of their name, the Human Settlement Policies soon sank from sight.

Governor Lamm was again bloodied but unbowed. Less than 6 months later, he initiated another major attempt at land use planning—The Front Range Project. The aim of this project was to examine how Coloradans might adjust to the expected population increase of 1.25 million more people by the year 2000 in the 13 Front Range counties yet maintain and enhance their way of life. The project was a nonpartisan, public-private sector cooperative effort, based on the principles of participatory democracy and extensive citizen involvement. More than 600 volunteers worked with a professional staff to examine the key issues facing the Front Range. Although the project itself was successful in involving the public in the issues of land use and open space, it failed to capture the support of the general assembly, and what the governor feared has come to pass. Today all of Denver's key indicators indicate trouble:

- Population: The city of Denver actually lost population between 1970 and 1980; population dropped 5 percent to 490,011. The population of suburban Denver increased by 59 percent, from 712,028 to 1,130,891. By 2010, the population of metropolitan Denver will have increased by more than 1 million people; 93 percent of the increase will occur in the suburbs.
- Employment: Employment in the city of Denver increased 19 percent last decade; during the same period, suburban employment leaped 110 percent. The Denver Tech Center, a southeast Denver activity center 15 mi from downtown Denver, now rivals the downtown central business district (CBD) as an employment center and is expected to become Colorado's largest employment district in the 21st century. In the next 30 years, 800,000 more employees will work in metropolitan Denver; 80 percent of them will work in the suburbs.
- Transportation: Vehicle miles of travel increase 5 percent a year, the number of vehicles 3.4 percent a year, and the automobile occupancy rate slides down closer and closer to 1. Denver has the second highest number of cars per capita ratio in the United States and the worst air pollution. Rush hour has ballooned from 3 hr a day to 4 ½ hr a day.

The Public Sector and Unmet Transportation Demand

A recent study by the Colorado Department of Highways (CDOH) identified $25 billion of highway and transit improvements needed in Colorado between now and the year 2001. The study projects only $15 billion of revenue over the same period, which leaves a forecast shortfall of $10 billion, without allowing for inflation.

The majority of the problems and much of the funding deficit fall in the Denver region. The Denver Regional Council of Governments (DRCOG) estimates that 1,062 lane miles of new highways and a 77-mi network of busways or light rail must be built in metropolitan Denver by the turn of the century to handle exploding traffic volumes. DRCOG projects that transportation revenue for necessary improvements will fall $3 billion short: total cost of needed transportation = $9.9 billion; total projected revenues = $6.9 billion; highway and transit revenue shortfall for the Denver area alone = $3 billion.

Clearly, existing revenue sources will not be adequate to finance metropolitan Denver's transportation needs. Several options have been considered to overcome this large deficit, including a motor fuel tax increase, a statewide sales tax increase, a sales tax on motor fuel, a regional sales tax increase, bond financing, toll road financing, ton-mile tax increases on trucks, and a grade crossing tax on railroads.

The 1986 Colorado General Assembly spent a good share of its time addressing this matter during its just completed session. The legislature passed two key pieces of legislation: a statewide increase of 6 cents a gallon in the gasoline tax (7.5 cents a gallon on diesel fuel) to expire in 1989 and enabling legislation that allows the six-county Denver metropolitan region to ask voters to approve a 3-cent regional fuel tax for transportation improvements. The governor allowed the first to become law without his signature but vetoed the second arguing that a Denver regional fuel tax would undermine the concept of a state highway department and would make statewide increases in the fuel tax more difficult in the future. However, the new 6-cent statewide fuel tax increase will generate about $306 million during its 3-year life and thus will reduce the expected statewide highway and transit needs shortfall from $10 billion to $9.7 billion.

Obviously, given the expected growth in Denver's traffic, the public's attitudes toward tax increases, and the federal government's announced support for "privatization," the private sector's role in planning and building public-sector infrastructure must become more significant in the future.

The private sector in Colorado has a long history of participation, through direct contributions, in financing construction of local capital improvements, such as utility easements and dedicated local street rights-of-way. The state or local government has provided necessary road improvements. In recent years, private-sector participation has expanded in Colorado to include financing the construction of intersections, access roads, interchanges on major state highways, and highway widenings.

Since the late 1970s, the CDOH has been inundated with requests from the private sector and local governments for new highways as well as additional or better access to the state highway system. Frequently, these requests are for the rebuilding of existing interchanges or the construction of new interchanges (or entire new highways). Today there are more than 50 interchanges proposed for Colorado's state highway system, at a cost of more than $300 million, which is far more than the available funding.

Requests for new interchanges and highways on the state system are submitted to the Colorado Highway Commission, a nine-member group that sets policy for the state highway system in Colorado. A cornerstone policy of the commission, called the Five Year Program of Projects, establishes a multiyear set of priorities for highway construction and rehabilitation. A new fifth year is added each state fiscal year, and the first year of the Five Year Program of Projects is substantially reflected in the annual construction budget.

The present policy of the Colorado Highway Commission is to concentrate revenue on maintaining the present system and thus avoid the need for more costly rehabilitation in the future. Because of this emphasis, the commission realizes that there are many capital needs on the highway system that cannot be met through present state funding sources.

In response to the growing role of the private sector and local governments in financing transportation improvements on the state system, the commission in October 1982 adopted Policy Directive 1686 called Non-State Financing of State Highway Improvements. This directive was created "to establish standards for nonstate financing of highway improvements where the proposed improvements are primarily of benefit to a particular private development or local governmental entity." Policy Directive 1686 provides:

> Requests by local governments or developers to have a proposed project budgeted for construction out of sequence or inconsistent with the current annual construction budget or Five Year Plan shall be considered by the Highway Commission as follows:
>
> a. If the proposed project is included in the latest Five Year Plan, the project may be considered for budgeting provided an appropriate share of the cost is provided from sources other than the State Highway Fund. The exact amount to be borne by sources other than the State Highway Fund shall be negotiated on a case-by-case basis, using criteria to be promulgated pursuant to a procedural directive.
> b. If the proposed project has a prior construction commitment, i.e., inclusion in the Interstate Cost Estimate, both the transportation improvement program and the long-range element of the transportation plan of the urban transportation planning area which have been concurred in by the Highway Commission, or if the project has been identified as one of the top three priority projects by a County in its annual request before the Highway Commission, the project may be considered for budgeting provided sources other than the State Highway Fund represent over one-half the estimated project cost.
> c. If no prior construction commitment can be documented, the project may be considered for budgeting provided all or nearly all of the project cost is borne by sources other than the State Highway Fund and if located in an urbanized area, the project is included in both the transportation improvement program and the long range element of the transportation plan of the urban transportation planning area which have been concurred in by the Highway Commission.

With this policy directive, the Colorado Highway Commission and the CDOH took the first steps necessary to deal with the anticipated problems associated with growing private involvement in financing public highways.

THE PRIVATE SECTOR AND METROPOLITAN DENVER TRANSPORTATION

Although private involvement in transportation is now occurring statewide, the private sector is most active in transportation financing in the Denver metropolitan area. Thus far this activity has taken three forms:

1. Private contributions to finance interchanges. Since 1983 the CDOH has been involved with the private sector in constructing or modifying nine interchanges on the state highway system in the Denver region. Nineteen additional interchanges for metropolitan Denver have been requested.
2. Intergovernmental associations to provide major transportation improvements. The major example of this type of association in Colorado is the Joint Southeast Public Improvement Association (JSPIA) in southeast Denver.
3. Involvement of private interests with local governments to build major highways without the participation of state or federal government. E-470, a proposed 50-mi beltway to skirt metropolitan Denver on the east side, is now being planned without the state's involvement.

Private Contributions to Build Interchanges

The Colorado Highway Commission's recently adopted Policy Directive 1601, Interchange Approval Process, took effect on April 1, 1985. The aim of this directive was to establish consistent guidelines for reviewing and evaluating requests for new interchanges and improvements to existing interchanges on major state highways. The highway commission recognized that controls had to be placed on the location of interchanges in order to prevent deterioration of level of service. Policy Directive 1601 provides:

> It is the policy of the Commission that all requests for interchange construction or improvements will be reviewed and evaluated in a fair and consistent manner. Since each request for an interchange has its own unique circumstances, the Commission will take into account these unique circumstances in judging the relative merits of each request. Further, in evaluating each request, the Commission will consider the system feasibility study, the project level feasibility study, the environmental assessment and any other impacts and consequences of the interchange.
>
> So that each interchange request is treated fairly and consistently, it is deemed necessary by the Commission that general guidelines be established. These guidelines will stipulate what material must be provided to the Department and Commission so that a determination can be made on the request . . . [The interchange request process] is general in nature and each interchange request may necessitate slight variations from this process. No attempt is made in this Policy Directive to account for all possible variations. The District offices are directed to notify the requesting party of these variations as soon as possible to minimize any delays.
>
> The costs of preparing all studies required by the guidelines to this directive shall be the responsibility of the applicant. The financing of the interchange request is governed by the standards set forth in Policy Directive 1686.

The "guideline" steps include

1. The applicant must be a governmental entity, and the CDOH must follow the guideline steps.
2. Traffic impacts must be examined in a system feasibility study. To be studied are alternate routes, accident history, congestion effects on the existing system, effects on adjacent interchanges, economic development impact analysis, and local commitment to improving local roadways.
3. The proposal must be in the local transportation plan and transportation improvement program.
4. A project-level feasibility study must be conducted.
5. Federal approval must be obtained if the proposed interchange is to be on the federal-aid system.
6. An Environmental Assessment (EA)—Finding of No Significant Impact (FONSI) or an Environmental Impact Statement (EIS) must be completed.
7. A funding package must be proposed.

The words sound fine, but all that is established is a stated intention to require all applicants to jump through the same hoops.

Policy Directive 1601 is of some help in evaluating a proposed interchange. However, because it lacks specific criteria for evaluating proposed improvements, such as interchange spacing, traffic volume requirements, interchange design, and other threshold values, it is still perceived as being insufficient by those who follow the process.

Intergovernmental Associations to Provide Major Transportation Improvements

Interstate 25 runs through the Front Range area east of the continental divide from the Wyoming to the New Mexico borders. Eighty percent of Colorado's population lives along it. It was begun in 1947 as a Denver freeway (known as the Valley Highway). The Valley Highway, completed in 1962, snakes through Denver and ends in the southeastern part of the city. The next large city to the south is Colorado Springs, 70 mi away. The Denver–Colorado Springs portion of I-25 was completed in 1960.

Middle-class residential areas lie north, west, south, and east of Denver's downtown. The industrial area is to the northeast, and the highest income area is to the southeast. Residential subdivisions soon sprang up close to the new I-25 and were annexed to Denver. New suburban-type office park developments, the largest of which is the Denver Tech Center, also sprang up around the interchanges of the Valley Highway in the southeast part of town. There were dramatic increases in traffic volume as the metropolitan area spread to the southeast.

The data in Table 1 indicate that in the 25 years between 1960 and 1985, the average annual daily traffic volume went from 8,100 vehicles a day to 148,100 on I-25. The traffic volume on a cross street, Arapahoe Road (CO-88), increased from 300 vehicles a day to 51,900. These increases produced tremendous public demand for improvements, and the lack of improvements threatened to stall commercial growth in the corridor along I-25. JSPIA was the outgrowth.

JSPIA, a coalition of 11 statutory metropolitan districts, was established in 1981 to plan, design, and construct regional

TABLE 1 AVERAGE DAILY TRAFFIC

Highway	Location	Average Annual Daily Traffic				Increase (%)		
		1960	1971	1981	1985	1960–1971	1971–1981	1981–1985
I-25	North of Arapahoe Rd.	7,600	22,500	75,000	97,900	+196	+233	+30
I-25	North of Belleview Ave.	8,100	31,200	114,600	148,100	+285	+267	+29
CO-88	West of I-25	2,500	11,300	27,800	35,600	+352	+146	+28
CO-88	East of I-25	300	7,250	23,200	51,900	+2317	+220	+124

transportation facilities to relieve the growing traffic and access problems being experienced 15 mi southeast of the Denver CBD adjacent to the I-25 corridor between I-225 and (Arapahoe-Douglas) County Line Road.

The legal basis for JSPIA is the Intergovernmental Relations Act (CRS 29-1-201). This act permits and encourages governments to make the most effective use of their powers and responsibilities by cooperating and consulting with other governments. Governments under this act include any political subdivision of the state, any agency or department of the state or of the United States, and any political subdivision of an adjoining state. Such association of governmental entities carries the metropolitan district concept further by allowing for the financing of regional transportation improvements that could not be undertaken by individual districts. More important, it also allows JSPIA to deal with other governmental agencies—in this instance, the CDOH and Denver and Arapahoe counties—in working out financial plans and construction schedules.

Specifically, governments may cooperate or contract with one another to provide any function, service, or facility lawfully authorized to each of the cooperating units of government. This includes sharing costs, imposing taxes, or incurring debt to provide these services.

In 1985 total assessed valuation within JSPIA's boundaries was nearly one-quarter of a billion dollars. Commercial office space in the southeast corridor is expected to approximate the commercial office space in the Denver CBD sometime early in the 21st century. JSPIA's territory is 6,000 acres, nearly 15 times the size of the downtown Denver CBD, and includes 85 percent of the commercial office space in the southeast corridor.

JSPIA has a board of directors composed of a member from each metropolitan district and a member at large, the chairman, who is chosen by the board. Action by the 12-member board requires a two-thirds majority in all matters except decisions involving financing, in which case total agreement is required. Dissolution of JSPIA would require a two-thirds vote. However, dissolution would not free any member from any preexisting financial obligations.

JSPIA provides the framework within which money is raised to build capital improvements. Although it does not legally commit its members to participate in any specific capital project, in practice they all do. The actual commitment to capital projects is provided for under a separate financing agreement among the 11 participating metropolitan districts.

The cost of various regional transportation capital improvements is shared in a unique manner. Initially, money is raised through the sale of bonds by member districts. The debt service on the bond is calculated annually on the basis of each district's assessed valuation relative to the total. The result is a floating obligation that reflects the differing rate of growth in each district. Any new member of JSPIA will become a part of the financing agreement and share in the cost of JSPIA transportation capital projects.

The most interesting aspect of this agreement is that all members share in capital improvement projects, even though they are not necessarily constructed in or adjacent to their district. The assumption is that any transportation capital improvement in the JSPIA area is likely to provide indirect benefits to all associated districts.

Since 1981 JSPIA has cooperated in six major highway projects along the southeast I-25 corridor. All of these projects were in the Denver Metropolitan Planning Organization (MPO) Year 2000 Regional Transportation Plan and were considered priority transportation projects in the Denver metropolitan area. In addition, JSPIA has recently committed to cooperating on three additional projects within JSPIA's boundaries.

The total cost of these nine projects is \$21.6 million. The 11 member districts of JSPIA have contributed or will contribute \$14.4 million. The balance of funds comes from CDOH (state funds), \$1.2 million; federal 4R funds, \$5.5 million; federal primary funds, \$260,000; and federal-aid urban systems funds (Arapahoe and Denver counties), \$294,000. Also, on some projects, there was supplemental funding from the individual metropolitan districts that make up JSPIA. The projects are

1. Belleview Street–I-25 interchange: This project was completed in 1983 and included restriping, signalization, and intersection modification at East Belleview and Quebec Streets. The total cost of the project was \$763,000; \$294,000 came from federal and urban system funds, \$84,500 from state funds, and \$384,000 from member districts of JSPIA.
2. Yosemite overpass: This overpass over I-25, providing continuity for Yosemite Street, was completed in 1983. The total cost of the project was \$5.5 million. JSPIA paid for the entire project.
3. County Line Road–I-25 interchange: This project was completed in 1984 and included construction, structures, and widening on and adjacent to the I-25–County Line Road interchange area. The total cost of the project was \$1.34 million: \$1.1 million came from federal 4R funds; \$107,000 from state funds; and \$131,000 from JSPIA member districts.
4. Arapahoe Road–I-25 interchange: The project was completed in 1985 and included bridge widening, construction of a partial cloverleaf, ramp metering, and additional lanes on Arapahoe Road. The cost of the project was \$6.1 million: \$3.8 million came from federal 4R funds, \$713,000 from state funds, and \$1.6 million from JSPIA districts.
5. Orchard Road–I-25 interchange: This project was started

in 1985 and will include curbs, gutters, pier removal, and additional lanes on Orchard Road. The total expected cost of the project is $1.3 million: $1.2 million from the member districts of JSPIA and the balance from state funds.

6. Dry Creek Road–I-25 interchange: This project was started in 1985 and will include a full diamond interchange at I-25 and Dry Creek Road. The total expected cost of the project is $5.4 million. JSPIA will be the sole financial contributor to this project.

Three additional projects have been initiated within the JSPIA geographic area:

7. Union Street overpass: This project is to examine the feasibility of constructing Union Street as an overpass over I-25 to serve commercial development. JSPIA has contributed $30,000 for the preliminary engineering of this project.

8. Dry Creek–County Line Road–I-25 interchanges: This project is to design and construct ramp metering at the Dry Creek and County Line Road interchanges. The total projected cost of the project is $661,000, to come from federal 4R funds, state funds, and the member districts of JSPIA.

9. Arapahoe Road–Belleview Street–I-25 interchanges: This project will analyze spot capacity improvements in the vicinity of the Arapahoe and Belleview interchanges on I-25. The total projected cost of the project is $492,000, to come from federal primary funds, 4R funds, state funds, and the member districts of JSPIA.

Private contributions to build interchanges and the activities of JSPIA have clearly demonstrated that privatization can be perceived, if it is on a relatively small scale, as profitable. What has not been established is that large-scale privatized projects can be profitable.

Private Sector–Local Government Highway Construction

E-470 is a proposed 50-mi, $500 million beltway-type freeway to be built around eastern metropolitan Denver to connect with the I-25–CO-470 interchange in south Denver and with the I-25–158th Avenue interchange in north Denver.

Planning this road is the E-470 Authority, an intergovernmental agency formed in 1985. The consortium consists of Adams, Arapahoe, and Douglas counties, the city of Aurora, and private interests.

The 10-member Board of Directors of the E-470 Authority is made up of the three county commissioners from each of the three counties and an Auroran city councilwoman. The authority's yearly operating budget is $400,000: $50,000 comes from each of the four governmental jurisdictions, and $200,000 is donated by private interests.

Pursuant to the orders of Governor Lamm, the state of Colorado has taken no active role in the development of this project; the extent of the CDOH's participation is to act as an observer at E-470 meetings.

The authority intends to have those who benefit from E-470—users, land owners, and developers—pay for the highway's construction; the entire road will be built without state or federal money.

To develop financing strategies for the construction of the highway, the E-470 Authority recently selected Public Financial Management of Philadelphia as financial adviser and Shearson Lehman and George K. Baum & Co. as bond underwriters. A number of public-private financing alternatives, both to retire bonds issued to pay for E-470 and to reduce the overall cost of the project, are being considered by the authority's financing team:

- Tax increment financing: additional taxes collected due to the increase in value of land adjacent to E-470 would be applied to pay off road construction bonds.
- Lease-purchase: parts of the highway would be paid for by private developers and then leased back to the E-470 Authority; developers would be able to take advantage of investment tax credits and depreciation.
- Special districts: assessments or property taxes from special districts would be used to pay off bond debt.
- Dedicated right-of-way: twenty-five percent of needed E-470 right-of-way has already been dedicated by land owners, and the authority is projecting that more than two-thirds of total right-of-way will be dedicated.
- Land banking: the E-470 Authority could acquire more land than needed for right-of-way, and then resell this surplus land at market value when the highway has been finished.
- Tolls: the authority envisions the possibility of eventually using tolls when traffic levels are sufficient; the most promising section of E-470 to be tolled would be near the new Denver regional airport, which is proposed to be completed in the early 1990s.

The authority intended to have between $100 million and $200 million worth of bonds issued by September 1, 1986, and thus avoid problems associated with possible congressional changes in the status of tax-exempt bonds. Revenue from these government-backed bonds will be placed in escrow until long-term funding mechanisms are in place. The interest earned on the escrow account, above what is needed to pay off the bonds, will be used to pay for authority activities.

The E-470 Authority also plans to pursue innovative ways of maintaining the highway after it is constructed, including packaging a construction contract with a multiyear maintenance contract.

THE FUTURE OF PRIVATE-SECTOR FINANCING: ROSY OR RISKY?

In June 1986 three major stories dealing with the private sector and transportation financing appeared in Denver's daily newspapers: On June 5 the *Rocky Mountain News* printed a story entitled Debt Weakens Douglas, Analysts Warn in which it was asserted that

> Douglas County has gone deeply in debt financing its "astounding growth," making it vulnerable to an economic downturn and costing taxpayers thousands of additional dollars to repay local bonds.

> The county school district this week fell victim to growing concern about Douglas County's rising debt when Moody's Investors Service of New York lowered the school district's bond rating.
>
> Analysts at Moody's said they dropped the bond rating because of a $375 million debt racked up by developers who form special districts in Douglas County, then sell tax-free bonds to finance certain improvements, such as roads.

On June 12 the *Denver Post* carried a story, Hitting Below the Metro Beltway? School District Revenues Could Be Frozen To Pay for E-470, in which it was reported:

> Officials may try to finance the E-470 highway—a 50-mile beltway to be built around eastern metro Denver—under a plan that would deprive two school districts of badly needed tax revenues. . . . As property values and tax revenues increase along E-470 as it is built, tax increment financing would guarantee that these additional revenues would be used to pay off road construction costs. But the Aurora and Cherry Creek school districts are counting on using increased tax revenues from E-470 development to expand education facilities for the area's burgeoning student population.

On June 22 the *Denver Post* carried another story, Voters' Concern About City Sprawl Runs High, in which it was said that

> urban sprawl and other growth-related problems are of major concern to many Coloradans and very likely will affect the outcome of this year's election. . . . A surprising 39 percent of Coloradans across the state say they believe their quality of life will be "ruined" if their communities continue to grow at present rates.

John Arnold, the executive director of the E-470 Authority, summed up well the problem facing many public-private ventures across the country: "It's the kind of thing that hasn't been done before, and there aren't any models. It raises all kinds of institutional questions and public policy questions that we're going to try to work our way through and handle."

JSPIA, the E-470 Authority, and public-private interchange agreements are likely to be replicated throughout Colorado. Such arrangements do indeed raise fundamental public policy questions that have not been successfully addressed and cannot be successfully addressed by the Colorado Highway Commission or Colorado's governor, and they have not been addressed at all by the state legislature.

Land use planning in Colorado is not carried on by the state government. The nastiest words that can be heard around the general assembly, after "tax increase," are "land use planning." Land use planning is left to local government and done principally by private developers.

There are some in Colorado who believe that private-sector financing of transportation is not only counterproductive but dangerous. They make three points:

- First, it creates the false illusion that public-private agreements can solve long-term transportation problems.
- Second, it allows developers to plan highways and interchanges, which may not be in the public interest.
- Third, private financing only results in more interchanges and more highways so that developers can generate more unplanned growth, which increases the dependence on the car, which increases the demand for more highways, and so on and so on and so on. Cities become wall-to-wall sprawl and highways become wall-to-wall crawl. As voters are painted into a corner by this vicious cycle, instead of questioning how they got here, they are concerned about how to buy the second coat of paint.

In the past few years, major and bitter battles have been waged in Colorado over these questions. When local jurisdictions in 1984 requested two additional interchanges on CO-470, Governor Lamm angrily threatened to veto any highway department construction budget that contained new interchange funds for CO-470. As mentioned earlier, Governor Lamm has also refused to allow any state involvement in the E-470 project.

But, also in the past 3 years, the Colorado Highway Commission has entered into 15 separate funding agreements with private interests to expedite the construction of highway interchanges in exchange for sizable private contributions. When all of these interchanges are completed, the private sector will have funded $48 million of the total $64 million cost.

CONCLUSION

No doubt Colorado's land wars will continue to be fought as forays are made across new financing frontiers. But it is important to remember that the private sector in other parts of the world has for decades been a partner with government in providing transportation facilities. Ten thousand miles of Western Europe's major highways were built as toll roads under various public-private agreements that provide that concessionaire firms construct, operate, and maintain the roads.

Today the French and Spanish are planning to link their countries by highways and tunnels through the Pyrenees Mountains. A significant portion of the cost is to be borne by private investors. The French and English have agreed to build twin rail tunnels under the English Channel at a cost of $2.3 billion. The entire project is to be privately financed.

Brazil, Argentina, and Venezuela have all constructed toll roads using the European concessionaire model and a mixture of public and private funds.

The Cross-Harbour Tunnel in Hong Kong was privately constructed in the early 1970s, and a private Japanese group was recently selected to build a second tunnel under the Hong Kong harbor for $450 million.

Portions of the private sector have clearly demonstrated a willingness to pay their share of Colorado's transportation costs. It is government's responsibility to ensure that the public good is served in the process, and that means that

- Taxpayers of tomorrow should not be unduly burdened by capital and maintenance obligations undertaken today;
- Transportation decisions should not be based solely on the availability of private money;
- The physical environment and Coloradans' way of life should be enhanced, not hampered, by new transportation facilities; and
- Additional transportation facilities and services should mesh with and not undermine the overall transportation network.

From the gold rush days of the 1800s to the rush hours of today, Coloradans have been in a hurry. The race continues to be to the swift, but rapid growth and slowed government spending threaten the quality of the transportation systems and way of living.

Syndicated columnist Neal Pierce, in his 1983 book, *The Book of America, Inside the Fifty States Today,* said that

> Coloradans have never become serious in deciding how they are going to accommodate their love of unfettered growth with their love of the outdoors. . . . Its people may have been lulled into thinking there will be no crisis, that a solution can be found to all growth problems. But we see a gathering crisis of deeply disturbing proportions: the gradual decline in the quality of life, a steady loss of agricultural land, open space, wildlife habitat, landscape diversity, all accompanied by worsening traffic and deteriorating air quality. If this is the model of the "developed" Western state in America, then it will not be just one politician or another who appears a failure: a once-in-a-generation opportunity to build a resilient, conserving society in one of the most exquisite places on earth will have been forsaken.

Transportation decisions will determine, literally and figuratively, the direction of Colorado's development during the next decade. How the state and federal governments work with the private sector to finance highways may well be the key to deciding, once and for all, which road Colorado intends to travel down.

The outlook for successful privatization certainly has not been improved by the actions of the Reagan administration, the Congress, or the Colorado legislature in recent years. A penetrating analysis of the *Rules of Governmental Accounting* and the *Internal Revenue Code* is needed to allow the establishment of rules that would make privatization on a larger scale profitable. Until the would-be practitioners of privatization are able to turn a profit, the privatization picture is, to quote Liza Doolittle, nothing but "words, words, words."

Arterial Road Funding for Southeastern Jefferson County: Equity Based on Traffic Impact

VALDIS ZEBAUERS AND AL ZEIKUS

Rapid development has resulted in a sudden deterioration of traffic conditions in southeastern Jefferson County, Colorado. This has led to an intensive effort to develop a funding and construction program to alleviate the deficiencies and provide for future needs. Traffic projections were used to size the needed roadway system and derive improvement costs, which were apportioned to each land use category on the basis of traffic generation. This apportionment became the main parameter for establishing a 20-year funding plan made up of three revenue sources: property tax, sales tax, and traffic impact fees on a 1/3, 1/3, 1/3 basis. The total revenue target was set at $120 million in present value. Property tax revenue by land use was projected and credited toward the funding responsibility of each land use. Sales tax revenues were credited toward only the retail responsibility. Traffic impact fees on new development were used to ensure that the projected revenue from all three sources by land use was equal to the total revenue responsibility by land use. The amount generated by existing land use would be approximately equal to the cost of presently needed improvements. The Board of County Commissioners of Jefferson County adopted the fees at a reduced level for the first year during which implementation of both the property tax district and the sales tax district is being processed through the state legislature.

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Sometimes known as the gateway to Colorado ski country, Jefferson County makes up the western portion of the Denver metropolitan area and extends into the mountains (Figure 1). Spectacular rock formations, stands of Ponderosa Pine, and magnificent views of Denver and the plains as well as the peaks of the continental divide have long attracted visitors and enticed people from all over the United States to establish residence in this setting.

The county has historically been one of the fastest growing counties in the United States. The population has increased