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METRO TRANSPORTATION FINANCE: CAN DENVER AVOID A HOLLOW CORE?

By Rex Reed

RIDING ON OTHER PEOPLE'S MONEY
Introduction by the Editors

Rapid, efficient movement of people and goods is fundamental to the vitality and prosperity of any metropolitan area. Metro Denver faces growing pains as it seeks to modernize an overcrowded transportation system so that mobility is more nearly equal for everyone and costs are more directly allocated to users.

Policy analyst Rex Reed argues that the dozens of political units comprising Colorado's state capital region can best achieve that objective by a) looking beyond narrow self-interest to seize cooperative advantage and b) harnessing the revenue capacity of

(Continued on Page 2)

TOO MANY EYES ON THE SKY?
Foreword by Mark A. Emmert

History teaches us that the growth and decline of cities are, in large part, the result of transportation systems. Cities that have capitalized on transportation technologies, whether based on water, land, or air, have flourished. The metropolitan Denver area is certainly no exception.

Many are now staking our economic future on our geographic centrality and a new airport. Ironically, while we plan for a bright future as an international transportation center, we are confronted with immediate local transportation decisions that will dramati-

(Continued on Page 2)

THE SIBLING RIVALRY HEATS UP
By Rex Reed

Denver and its suburbs may be headed for an unpleasant falling-out like the biblical Joseph and his brothers. Sibling rivalries can turn hostile when one is perceived to wear the favored coat of many colors. What are now manageable differences between the needs of Denver and other communities may over the next few years grow into substantial conflicts.

In recent times, Denver has gone to the metropolitan communities asking for help in its pet projects. The convention center, airport, and the cultural taxing district are several examples. Some suburban officials have suggested that in return Denver should loosen its hammerlock on area water, but little has occurred to change the water status quo.

Denver continues to hoard its water because little is risked by doing so.

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Reed's Estimate of Taxpayer Cost
To Divert One Rider
From Existing Roads

Beltway?	Four cents.
Railway?	Four dollars-plus.
Busway?	Seven dollars-plus.

See table on page 9.

EDITORS: OTHER PEOPLE'S MONEY - Continued

individuals' preference for the automobile to help finance bus and rail routes into the car-choked urban core.

OPM, other people's money, is one way to evaluate transportation alternatives but not the only way. Motoring around the outer rim of the metro area on a toll highway, Reed calculates, might cost as little as four cents per trip in OPM tax subsidies, while zipping downtown from the Tech Center by train could cost over four dollars in subsidy per trip -- and heading for the hub along any of seven busway spokes could cost over seven dollars OPM per trip.

The trouble is, access to that hub is not optional: certainly not for the people of Denver, but not for county dwellers in Adams, Arapahoe, Jefferson, Boulder, and Douglas either, if they know their economic and cultural ABCs. No great city can really survive, even at the edges, if it goes hollow or dead at the center. Beltway/busway/railway are perhaps better seen as variable ingredients of a mutually interdependent mix, than as stark alternatives in an all-or-nothing conflict.

Financially, as Reed demonstrates, the mutual interdependence could prove quite attractive if there is enough metro statesmanship to overcome both the suburbs' suspicions and the core city's aloofness.

"Transportation planning is inherently political," the Rocky Mountain News pointed out in an editorial last November 17. Metro Denver, the News added, must beware "the mistaken belief that if we just took planning out of the hands of politicians and gave it to 'professionals' we could cut through red tape and do what needs to be done." Mobility politics were hot in the fall, when voters accepted a vehicle tag fee to start planning E-470, and they have gotten hotter this winter as a similar vote was debated for W-470 and the legislature has been asked to create a Metropolitan Transportation Authority that would absorb both of the latter entities along with the RTD bus system and the TCA rail plan.

Behind the political rhetoric and the jurisdictional horse-trading stand some rather dramatic numbers -- ridership and vehicle-mile figures, subsidy price tags, and metro demographic shifts. This issue paper provides a participant's (or spectator's) data reference guide to the transportation debates of 1989 and beyond.

EMMERT: EYES ON THE SKY - Continued

cally affect the economic health of Denver's central business district. Looking to the sky, we may ignore the more mundane issues of moving our own people into and around the metro area.

Rex Reed's research points out the potential impact of local transportation decisions. He reminds us that the City of Denver and surrounding suburbs can be differently influenced by transportation systems. What is good for downtown Denver is not necessarily good for Aurora or Jefferson County. It is now the case that more people commute from suburb to suburb rather than from the suburbs to the central business district. Future transportation systems will either promote this pattern or encourage movement in and out of the city.

This issue paper provides important grist for the public policy mill in the major debates of 1989. Reed's analysis demonstrates the great expense of transportation options currently under consideration and the need for carefully considered funding mechanisms. Additionally, he identifies the potential for Denver and its neighbor communities to pursue self-interest at one another's cost. Clearly, what is needed is a cooperative strategy. But, as is discussed here, quick action must be taken before inertia takes over and we make crucial decisions by default.

Denver has been able to achieve many enviable goals at the expense of the suburbs, and until the latter take a tougher negotiating stance, the core city will naturally seek to push ahead with other projects while saving its "water chip."[1]

Success belongs to those who take the initiative, and Denver, in the absence of suburban resistance, can hardly be expected to relinquish the initiative. The next big item on the Queen City's wish list appears to be a suburban-subsidized mass transit system.

Desire for Mass Transit

Denver's administration understands the need for mass transit.[2] Unable to annex new land, the City and County cannot look to raw real estate as its ticket to economic development. As it sits landlocked in the center of the metro area, it has to worry that the central business district (CBD) will be eclipsed by newer commercial centers evolving in the suburbs. Transportation thus becomes crucial.

Unless Denver can provide faster and easier access to the CBD for workers, shoppers, and entertainment-goers, downtown Denver may gradually lose its ability to compete with suburban business centers. The fact that the heart of the metro area could shift elsewhere and leave a gutted core is not lost on Denver officials.

Being a landlocked and already developed community, the core city knows that building new roads to serve the CDB is prohibitively expensive. So the car is an unlikely mode of moving more people in and out of the CBD.

If additional roads are not feasible people movers, the only other technology feasible for Denver planners is one borrowed from the 19th century: fixed-path, established-route mass transit. It should be no surprise that Denver's transportation hopes ride on light rail or fixed busways, given the priority any core city must place on the CBD. Nor should it be surprising that the suburbs view transportation differently.

CONTENTS: QUICK REFERENCE

The only transportation project that has evolved in the suburbs eschews the focus on the CBD. Instead, it was developed to match today's dominant travel pattern in the Denver metropolitan area. The largest number of trips in the metro area is not between the suburbs and the CBD but instead between suburbs and other suburbs.[3] Already, travel demand in the suburbs is growing faster than in the center of the metro area.[4] Consequently, the 470 beltway, which serves suburb-to-suburb travel, is the transportation project of choice for Adams, Arapahoe, Jefferson, Boulder, and Douglas Counties.

The beltway is also the project that best provides suburban access to the new airport and the land development bonanza that will follow. Under Denver's fixed guideway transit, all lines will lead to the CBD including the spur that runs to the airport.[5] Alternately, the beltway will provide the suburbs with a direct link to the airport.

Each area, the hub and the ring, places high hopes and vast economic stakes on its respective transportation vision. Those visions may appear competitive, even mutually exclusive. But there is no reason why they have to be. In fact, a mutually beneficial synergy may even be possible.

COSTS AND COMPARISONS

Tapping Metro Resources

Not only are the stakes high among transportation projects; so are the costs. All three major transportation proposals for the metro area (rail, bus, and beltway) will need to draw resources from almost the whole tax and economic base of the metropolitan area.

Because the money needed to build any of the three proposals will have to come <u>from</u> the entire area, an important standard of comparison is to ask which plan can do the most <u>for</u> the entire area at the lowest cost.

The Background and Definition of Cost

If the need for mass transit and beltway can be traced to any one problem, it would be today's highway congestion. At the beginning and the end of each workday, thousands of cars pack onto a grid of streets, roads, and highways overloaded with commuters. The average commuter already knows the costs of congestion, but it bears repeating that crowded roads add to air pollution, vehicle wear, road deterioration, stress-related health costs, and insurance expense.

Reducing congestion and associated costs requires increasing the capacity of the existing system or finding alternative methods of transportation. Consequently, it is appropriate to talk of mass transit and new highways when discussing solutions to congestion. Anytime someone would board an RTD bus, step on a TCA light-rail car, or turn onto a beltway, it would diminish some of the pressure on the existing grid.

Yet simply seeking a way to build all the major transportation projects currently under consideration would ignore the possibility that some systems are more efficient than others. An important value in any mass transit or beltway project is the cost associated with its ability to divert travel from the existing metro area grid.

The term cost has many meanings. Politicians and analysts, attempting to reduce (or induce) confusion, may throw around such terms as operating costs, capital costs, total costs, public costs, and social costs.

But for the purposes of this paper, cost is equated to public subsidy -- all expenses not covered by operating revenues. Operating revenues are those collections that users voluntarily exchange with a mass transit system or beltway for a service provided. Examples are farebox collections, advertising revenues from posters in buses or light-rail cars, and vehicle tolls. Our question in the next section, therefore, will be:

What is the subsidy, or burden on the taxpayer, needed to build and operate a transportation system that will help reduce congestion found on the metro area's existing roadway system?

RTD's Fastrack Proposal

Of the three proposed transportation projects, RTD's Fastrack (special bus lanes added to existing roads and highways) is undoubtedly the most expensive, both in absolute dollar costs and in costs per diversion, i.e., ride. Over the first 20 years of Fastrack's projected life, the average subsidy per ride will be $7.47. That calculation is taken from RTD's own projections (see spreadsheets in appendix, page 16). The total subsidy for RTD's Fastrack over the same time span is $3.4 billion, an average of $170 million per year.

If this entire subsidy were to be charged against RTD's existing sales tax base, the $78 million in tax revenues experienced in 1986 would have to more than triple.

Even if the burden were spread statewide (politically far-fetched, to say the least), the Highway Users Tax Fund revenue performance of $427 million in fiscal year 1987-88 would have to grow by 40% simply to finance the busway system.[6]

Such an illustration should help explain why it is impossible for a city like Denver to singlehandedly finance mass transit proposals -- and why it is a staggering burden for even a metrowide system to collect that quantity of revenue.

TCA's Light Rail Proposal

Financing a light rail system is an equally awesome task when viewed in perspective. Whereas the Fastrack proposal would fund seven transportation corridors, the Transit Construction Authority's Final Report proposes a funding and construction scheme to build only one corridor.[7] That would run from the downtown central business district south past the Denver Technological Center to Arapahoe Road, with a spur running to Parker Road.

This one corridor will cost -- that is, need subsidies -- approximately one-seventh of the Fastrack proposal or $457 million over 20 years. Although the Final Report projects lower ridership in that corridor than RTD's proposal,[8] TCA's cost per diversion is still somewhat less, $4.79. (See spreadsheets in the appendix, page 18).

However, one has to be very careful about comparing TCA's $4.79 subsidy per ride against RTD's subsidy because RTD includes debt service in its cost projections while TCA does not include debt service. Unless TCA finances a light-rail system on a pay-as-you-go basis, (which is very unlikely), its subsidy per ride will in all likelihood be substantially higher.

Although the TCA proposal has a lower diversion cost than Fastrack, it still is expensive and would drain a considerable amount of money from the metro area's economy. For example, if RTD had to increase its sales tax levy to cover the TCA rail line proposal, RTD would have to raise an additional $23 million a year. Since RTD's actual sales tax collections in 1986 were about $78 million (1988 facts and figures), this would require an increase in rates and/or base amounting to nearly 30 percent.

Moreover, the additional $23 million per year subsidy would only serve one corridor, give the community it serves a privilege denied less politically powerful communities, and carry no more than 0.8 percent of the metro area's population. In all -- a heavy price for a rather light return.

Federal Subsidies for Mass Transit

To meet the levels of subsidies outlined above would require an economic drain far beyond the ability of Denver to carry. It has to look elsewhere for the money. Some might be garnered from the federal government, but even that source will not nearly cover all that is needed.

According to RTD projections, federal grants will meet only about ten percent of their needs for Fastrack.[9] The TCA is more optimistic in their planning and hope to garner between 25% and 28% of their capital needs through federal grants.

But note that unlike RTD's figures, TCA's calculations exclude operating costs when projecting federal fund participation.[10] As a result, the percentage of federal offset for TCA's total financial need is probably much lower than suggested above.

Bus or Rail: The Bottom Line

The foregoing analysis makes it clear that Denver is going to have to look elsewhere for money to plan, build, and operate its transportation proposals. Again, the suburbs are a likely target.

The 470 Beltway and Its Segments

History records a proposal to ring Denver with a highway in the 1930s. A second proposal was made in the 1950s. More time passed, and Colorado's no-growth attitudes in the 1970s finally killed the chance to begin a beltway with federal interstate highway dollars during that decade.

Now in the 1980s, the beltway dream is closer to reality than ever before, yet its final form is uncertain. What is known is that the beltway will be a toll road. That is the only way local governments, which instigated the project in the absence of state or federal leadership, can afford to build the road. Currently, only local officials in the Denver area are directing the beltway project. As a result, unsurprisingly, no single entity is in charge of designing, constructing, and operating the beltway. Rather, the completed ring will require coordination among at least two entities and possibly three.

The E-470 Authority, a cooperative venture of local governments, controls the design, financing, and construction of the beltway segment east of Interstate Highway 25. The W-470 Authority, another intergovernmental co-op, oversees the beltway in the metro area's northwest quadrant. In the southwest quadrant C-470, a state freeway already partially built with federal and state money, is being considered as the last segment of the beltway.

However, C-470 may be an unwilling partner in the beltway if that would require conversion to a toll road. Area residents and officials are already opposing the conversion.[11] The Colorado Department of Highways, which owns and maintains C-470, has yet to take an official position on the beltway and C-470's contribution.

Beltway Financing

No single authority coordinates all beltway activity, but the two existing authorities have explored the possibility of a single financing mechanism for the entire beltway. A good source document is W-470 Highway Authority Plan of Finance.[12] In that plan, both Option Three and Option Four propose a financing mechanism that funds the entire beltway.

In contrast to RTD and TCA's transportation schemes, both options in the Plan of Finance are self-liquidating and then some. That is, each approach would generate more money than the beltway would consume. However, both options still propose subsidies.

Option Three proposes a $10 registration fee for vehicles in the six-county metro area and impact fees in the early years of beltway construction. That subsidy is used to generate a quicker cash flow that will strengthen bond ratings and accelerate construction schedules. In exchange, under this option, excess tolls would be returned to the six counties in the later life of the beltway as shared revenues.

Option Four assumes a much larger subsidy in the form of a $25 vehicle registration fee and a $.06 per gallon fuel tax (both of which would be levied throughout the six-county area now covered by RTD). This revenue stream would be shared not only with the beltway but also with the core city's mass transit projects. The considerable drain represented by sharing the subsidy with mass transit projects does have an impact upon beltway financing. It doubles the beltway's construction schedule. In turn, the longer construction time increases costs. Total construction cost would increase 69%, and total accumulated debt would increase 440%.

More significant to suburban local officials, the amount of shared revenue sent back to the suburban governments under Option Four would be cut in half and spread thinner over the years. Over time, participating governments could find themselves foregoing some $2.6 billion in all.

Perhaps most daunting to local officials is the amount of subsidy which their jurisdictions would be committed to raise under this option. Because Option Four commits the beltway authorities, which are backed by suburban governments, to subsidizing mass transit, the total amount of fee- and tax-funded subsidy they would need to pledge is thirty-fold larger than under Option Three.

Considered in the narrow fiscal and political context of suburban self-interest, Option Four is obviously less attractive than Option Three. Yet it does have the political advantage of buying the support of politically important special interest groups, such as the mass-transit, clean-air, and environmental groups, as well as the core-city political constituency.

Economically, Option Four may seem extravagant if not ludicrous. But politically, it is business as usual.

CHART COMPARING BELTWAY FINANCE
OPTIONS 3 AND 4

Point of Comparison	Option 3	Option 4	Increase (Decrease)	Percent Increase (Decrease)
Car registration	$ 10	$ 25	$ 15	150%
Fuel tax	0	.06	.06	N/A
Shared revenue going to participating governments (millions)	$ 5,508-a	$ 2,865-b	$(2,643)	(48)%
Time to completion in years	8	20	12	150%
Total debt over 30 years (millions)	$ 861	$ 4,645	$ 3,784	440%
Total construction cost (millions)	$ 1,057	$ 1,785	$ 728	69%
Total required subsidy (millions)	$ 114	$ 3,618	$ 3,504	3,079%

a - 22 years starting 1996
b - 30 years starting 1989

Beltway: The Bottom Line

Option Three is the most efficient use of subsidies to divert traffic from the existing transportation grid. As such, it has the greatest potential to reduce metro area congestion. Over the course of twenty years, its subsidy per

trip is $.04. (See spreadsheets in appendix, page 21). By 2010, conservative estimates suggest it would will carry over 12% of the metro area highway vehicle miles traveled (VMT). Each day, approximately 8% of the metro area's person-trips would ride on the beltway. Annually, that would equal over 323 million person-trips.

COMPARISON OF MAJOR METRO TRANSPORTATION PROPOSALS

System	Required Subsidy in Millions	Subsidy per Trip	% of 2010 Metro Area Person-Trips	Subsidies as % of Total Project Expenditure
RTD's Fastrack =	$ 3,408	$7.47	0.78%	89.25%
TCA's Light Rail =	$ 457	$4.79	0.25%	82.03%
470 Beltway = (using Option 3)	$ 114	$0.04	8.29%	4.11%

A GROWING CHALLENGE TO DENVER

As noted in the preceding section, Beltway Option Four appears best suited for a strategy aimed at strengthening the metro area's overall transportation system for both personal and collective modes of travel. Logically, Denver should support that option. However, the core city may no longer have the luxury to take anything for granted, including Option Four.

Fortunately for Denver, metro area residents still possess a collective instinct that Denver is the uncontested economic engine of the metro area. Denver would be well advised to capitalize on this perception without delay. Although Denver has recently succeeded with the new airport, convention center, and cultural tax, its continued success at tapping suburban resources is <u>not assured</u> -- because of its declining relative weight in the metro area.

Denver's pre-eminence has fallen drastically in recent decades. Today, the City and County is more an equal competitor with the other two powerful metro counties: Arapahoe and Jefferson. This makes the timing of implementing a mass-transit network -- using Denver as a hub with spokes radiating out into the surrounding communities -- all the more urgent.

Denver's need to push for mass transit as quickly as possible is not idle theory. The city's economic, demographic, and political clout is waning.[13] As portrayed in Denver Regional Council of Government figures (see chart on next page), Denver's weakening position in the area becomes plainly evident. In 1970, Denver accounted for 63% of area retail sales. By 1984, that share was cut almost in half; by then it was the surrounding counties that accounted for 64% of retail sales.

The demographic strength of Denver is also diminishing. Since the 1920s, Denver County's share of the metro population has been dropping. Since the 1950s, it has been plummeting. In the 1980s, Denver County has experienced the slowest growth among the area's six counties. Denver even experienced negative net migration during much of the '80s. As a result, Jefferson and Arapahoe counties are quickly gaining on Denver.

The last two decades have also seen a turn-around in metro employment. In 1970, 65% of the area's jobs were in Denver. By 1984, the counties surrounding Denver contained the majority of work environments with over 55% of metro area jobs.

Personal income also followed the shift in populations and jobs. In 1970, 56% of the total metro area personal income was located in the non-Denver counties. By 1984, that figure had grown to 72%.

Lastly, Denver's share of the area's assessed property valuation is shrinking. In 1961, 62% of the area's assessed valuation was found in Denver County. By 1987, Denver could count only 35% of the four-county region's assessed valuation.

CHART COMPARING DENVER'S SHARE OF ECONOMIC INDICATORS TO THE REMAINING METRO AREA

		1961	1970	1984
Retail Sales	Denver*	n/a	63%	36%
	Others	n/a	37%	64%
Personal Income	Denver*	n/a	44%	72%
	Others	n/a	56%	28%
Employment	Denver*	n/a	65%	45%
	Others	n/a	35%	55%
Assessed Valuation	Denver**	62%	n/a	35%
	Others	38%	n/a	65%

*as part of six-county metro area
** as part of four-county metro area

Whether using a four- or six-county metro area for comparison purposes, the relative strength of Denver has been declining. Potentially, the privileges that Denver enjoys as the premier county are threatened. It can no longer claim that what benefits Denver will automatically benefit all. Jefferson and Arapahoe counties have now grown in stature enough to claim that money they send to subsidize Denver projects diminishes their own resources or, even more likely, makes them forego their own beneficial projects.

If that realization has not yet dawned in Arapahoe or Jefferson counties, it soon will, for the size and strength of those two counties make them very real competitors to Denver. When that happens, many of the relationships Denver takes for granted may abruptly end. Even the core city's grip on the Denver Water Board will not necessarily be a saving grace. Over recent years, the suburbs have gained control of a growing percentage of metro water. That is why there is an urgency for Denver to lock in its mass transit projects now, by dealing for the suburban subsidies necessary to make them a reality.

RECOMMENDED STRATEGY FOR MASS TRANSIT (CORE CITY VIEWPOINT)

Of the three transportation projects that have realistic chances in the metro area, only the 470 Beltway is persuasive on purely economic grounds. The beltway will not only pay for itself but also generate surplus funds. (Even though the Options 3 and 4 assume a subsidy from fees and fuel taxes to help bootstrap the early construction outlays, that subsidy is more than offset by net toll revenues, which in turn are paid out as revenue sharing under both options and also as a mass transit payment under Option 4. See first chart on page 8.)

The other two projects, TCA rail and RTD busways, cannot meet a marketplace justification, as they are money consumers that rely upon political hopes and strategies to command the subsidies they need. Fortunately for Denver, two circumstances exist that will improve the chances of finding the resources it lacks to develop expanded mass transit.

This paper proposes that Denver maneuver to claim a portion of beltway revenues for its own and use them to subsidize mass transit which feeds into the CBD. That is probably the only way by which mass-transit can be financed in the metro area.

As noted earlier the idea of using beltway revenues to subsidize mass-transit is currently under discussion among politicians, planners, and developers in the form of W-470's Option Four. Over the course of 30 years, Option Four could generate over $2.8 billion for mass transit (see first chart on page 8). While that is not enough to pay for everything on the mass-transit wish list, it would certainly bridge the gap for RTD/TCA funding schemes that find themselves subsidy-short from other sources.

The use of beltway revenues is a very real financing source; however, unless Denver acts quickly, the political opportunity to draw upon those funds may slam shut.

The Need to Act Before the Suburbs

Beltway Option Three, in contrast to Option Four, is the much more attractive plan for the suburbs according to some criteria of cold jurisdictional self-interest. It can be argued that every suburb will lose if Option Four is implemented. If they all formed a bloc against Denver -- the only municipality or county seeing a direct dollar benefit from Option Four -- the fate of mass-transit would be sealed.

Under Option Three, all metro area governments, including Denver, would share equally in $5.51 billion over 22 years. Under Option Four, those same governments would share only $2.8 billion over 30 years because half the shared revenue would first go to mass transit. Option Four has two ramifications. First, it reduces the suburban shared revenue by one-half. Second, it delays completion of the beltway and so hurts the suburbs' ability to benefit from the economic development spreading out from the new airport.

Viewed from Colfax and Broadway, on the other hand, Option Four offers Denver vast benefits at negligible cost and risk. Under that option, Denver does not have to give up any asset in return, such as water. Denver does not have to risk any more subsidy than will its neighboring counties; all would impose the same vehicle registration fees and fuel taxes. If it could successfully lobby for Option Four, Denver would in essence receive something of inestimable value to its own

community for a proportionately smaller risk than the risks borne by other communities. That posture is the envy of many communities out to capture advantages and economic gain. Will the city be able to cash in on it?

Time is Running Short

It is to Denver's advantage that many of the suburban communities sponsoring the beltway still seem unaware of what they might potentially lose to the transit projects favored by the CBD. To some extent, this has allowed Denver to put an informal "first claim" on that money (figuratively similar to a prior appropriation in Colorado's water vernacular.) And Denver politicians must feel lucky that the suburbs have not asked for a resolution of the metrowide water question in return.

The suburbs could easily lock Denver out of the beltway revenue stream, or they could insist on some kind of quid-pro-quo. Technically, Denver has no control over the beltway process, and the suburbs are not required by law to give up any of their funds. Yet as matters now stand, Denver has a good chance to participate in the vast beltway revenues without exchanging anything of equal value. Those revenues will for all intents and purposes be free, and from Denver's perspective, the money if used to subsidize mass transit will be going to a good cause.

Thus Denver City officials would be well advised to press an agenda somewhat as follows:

1. Lobby the state legislature to create a metrowide transportation authority. This will allow them an avenue to tap into suburban resources.

2. Push for a governing board on the metrowide transportation authority that favors the central city.

3. Insist that all the beltway projects come under the control of the metrowide transportation authority.

4. Work to have Option Four adopted by the metrowide transportation authority with the provision that half or more of the excess revenue generated by the beltway be dedicated to mass transit projects.

The suburbs' self-interest, on the other hand, might well lead them to oppose each of the above points -- or at least to seek a more balanced set of compromises. Advantageous short-run politics for one side or the other does not always equate beneficial long-run public policy for all sides inclusively.

CONCLUSION

Well into the 1990s, the metro area will continue to struggle with transportation problems and investigate solutions. Metro residents will have to decide if they will move ahead with the automobile, return to mass transit, or mix their solution between the two.

It can be argued that the straightest path to building a better transportation system in the future is to bet on the personal automobile. Political considerations, however, may well override the economic efficiency of the car and secure a future for mass transit.

There is irony in the outlook for metrowide mass transit: success is linked to the automobile. The funding needed to finance additional mass transit in the Denver area will only come from some combination of levies against the automobile: gas tax, vehicle registration fees, and beltway tolls. Of those, the most politically feasible is beltway revenues, yet the feasibility of beltway revenues is of limited duration. Timely execution by Denver is needed to advance the political teamwork and agreements permitting it to exploit that coveted "cash cow."

If Denver takes too much time, the suburbs (rightly or wrongly) may grow jealous of their forsaken bonanza. Should that happen, the chance for mass transit will dissolve. An even more interesting consequence is the possibility that leadership in metrowide projects will shift from Denver to the surrounding counties. If that should happen, the demise of metro mass transit may usher in a new era of Denver history -- one in which Denver becomes no more than a county among equals, perhaps a poor relation pitied by prosperous upstarts.

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Footnotes

(1) Mayor Federico F. Pena and City Councilman T.J. "Ted" Hackworth, Letter to Governor Roy Romer and State Senator Dave Wattenburg expressing their concern with lack of interest in mass transit and requesting time to present its case before the Metro Sub-group of the Colorado Governor's Transportation Roundtable, letter dated August 9, 1988, on Mayor Pena's letterhead, City and County of Denver, City and County Building, Denver, CO 80202.

(2) Pena and Hackworth letter.

(3) Transportation Committee, 2010 Regional Transportation Plan, Denver, CO: Denver Regional Council of Governments, adopted July 15, 1987.

(4) Transportation Committee, Mobility '85, Denver, CO: Denver Regional Council of Governments, no date listed, p. 3.

(5) Regional Transportation District, House Bill 1249 Implementation Program Summary Report: Fastrack, Denver, CO: Regional Transportation District, January 1988, p. 4, Figure 1.1.

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Transit Construction Authority, Final Report, Denver, CO: Transit Construction Authority, 11-28-88, p. 11.

(6) Colorado Department of Highways, Overview of the Colorado Department of Highways Fiscal Year 1987-1988, Denver, CO: State of Colorado, January 1988, pp. 34-39.

(7) Final Report, pp. 3 & 10-47.

(8) Final Report, pp. 54-55, Figure 0-3 & 0-4.

(9) Fastrack, p. 12, Figure 2.3.

(10) Final Report, pp. 62-6.

(11) "E-470 Short $104 Million." Littleton Sentinel Independent, August 10, 1988, p. 6.

(12) Board of Directors, W-470 Highway Authority Plan of Finance, Golden, CO: W-470 Highway Authority, adopted 8-17-88, pp. 3-4f.

(13) Denver Regional Council of Governments, Demographic and Economic Data Series, 1970-1984, Denver, CO: Denver Regional Council of Governments, June 1986.

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Appendix

SPREADSHEETS ON MAJOR PROPOSALS

Note on Sources and Methodology: Presented here is what the editors believe to be the first apples/apples comparison of the three projects' cost-efficiency in terms of subsidies required per rider diverted from existing roads. The calculations are based entirely on proponents' own published figures; no estimates by the author were required. Light rail operating costs were derived by applying TCA's stated cost-recovery percentage for each route segment to the Authority's anticipated revenue for that segment. Beltway person-trips, yielding the four-cent diversion cost figure, were derived by applying DRGOG's assumptions for average trip length to W-470's projections of total vehicle-miles travelled.

RTD SUBSIDY PER RIDE REQUIRED BY "FASTRACK" PROPOSAL
*source: HB 1249 Implementation Program, Summary Report: Fastrack
by Regional Transportation District, January, 1988

		::	1990	1991	1992	1993	1994	1995	1996
	: capital	::	$135,450,000	$138,360,000	$95,620,000	$144,260,000	$147,240,000	$150,400,000	$153,490,000
	: operating	::	$0	$0	$0	$0	$20,100,000	$26,150,000	$29,450,000
COSTS	: principle &	::							
	: interest	::	$660,000	$4,740,000	$5,890,000	$11,570,000	$16,680,000	$25,010,000	$35,510,000
	:	::							
	: total costs	::	$136,110,000	$143,100,000	$101,510,000	$155,830,000	$184,020,000	$201,560,000	$218,450,000
FARES	: ridership	::	0	0	0	0	17,500,000	20,000,000	25,000,000
	: collections	::	$0	$0	$0	$0	$15,750,000	$18,000,000	$22,500,000
SUBSIDY	: annual	::	$136,110,000	$143,100,000	$101,510,000	$155,830,000	$168,270,000	$183,560,000	$195,950,000
	: per ride	::	<DIV 0>	<DIV 0>	<DIV 0>	<DIV 0>	$9.62	$9.18	$7.84

		::	1997	1998	1999	2000	2001	2002	2003
	: capital	::	$156,740,000	$160,030,000	$163,360,000	$166,820,000	$70,306,000	$70,306,000	$70,306,000
	: operating	::	$33,300,000	$36,700,000	$37,250,000	$37,140,000	$41,481,000	$41,481,000	$41,481,000
COSTS	: principle &	::							
	: interest	::	$43,280,000	$46,070,000	$49,570,000	$52,020,000	$76,637,000	$76,637,000	$76,637,000
	:	::							
	: total costs	::	$233,320,000	$242,800,000	$250,180,000	$255,980,000	$188,424,000	$188,424,000	$188,424,000
FARES	: ridership	::	29,000,000	29,000,000	30,500,000	30,500,000	30,500,000	30,500,000	30,500,000
	: collections	::	$26,100,000	$26,100,000	$27,450,000	$27,450,000	$27,450,000	$27,450,000	$27,450,000
SUBSIDY	: annual	::	$207,220,000	$216,700,000	$222,730,000	$228,530,000	$160,974,000	$160,974,000	$160,974,000
	: per ride	::	$7.15	$7.47	$7.30	$7.49	$5.28	$5.28	$5.28

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RTD SUBSIDY PER RIDE REQUIRED BY "FASTRACK" PROPOSAL
*source: HB 1249 Implementation Program, Summary Report: Fastrack
by Regional Transportation District, January, 1988

		2004	2005	2006	2007	2008	2009	TOTALS
COSTS	capital	$70,306,000	$70,306,000	$70,306,000	$70,306,000	$70,306,000	$70,306,000	$2,244,524,000
	operating	$41,481,000	$41,481,000	$41,481,000	$41,481,000	$41,481,000	$41,481,000	$593,419,000
	principle & interest	$76,637,000	$76,637,000	$76,637,000	$76,637,000	$76,637,000	$76,637,000	$980,733,000
	total costs	$188,424,000	$188,424,000	$188,424,000	$188,424,000	$188,424,000	$188,424,000	$3,818,676,000
FARES	ridership	30,500,000	30,500,000	30,500,000	30,500,000	30,500,000	30,500,000	456,000,000
	collections	$27,450,000	$27,450,000	$27,450,000	$27,450,000	$27,450,000	$27,450,000	$410,400,000
SUBSIDY	annual	$160,974,000	$160,974,000	$160,974,000	$160,974,000	$160,974,000	$160,974,000	$3,408,276,000
	per ride	$5.28	$5.28	$5.28	$5.28	$5.28	$5.28	

RECAP

Twenty Years of Capital Costs	$2,244,524,000
Twenty Years of Operating Costs	$ 593,419,000
Twenty Years of P & I	$ 980,733,000
Twenty Years of Revenue	$ 410,400,000
Twenty Years of Subsidy	$3,408,276,000
Twenty Years of Ridership	456,000,000
Subsidy/Ride	$ 7.47

TCA SUBSIDY PER RIDE (capital costs spread over 20 years from beginning of project)
*source: Transit Construction Authority November 28, 1988, Final Plan

CAPITAL PROJECT		YEARS 1989	1990	1991	1992	1993	1994	1995	1996
DOWNTOWN TO EVANS	capital cost	$10,155,000	$10,155,000	$10,155,000	$10,155,000	$10,155,000	$10,155,000	$10,155,000	$10,155,000
	operating cost	$0	$0	$0	$0	$2,253,481	$4,595,189	$4,624,979	$4,654,770
	subtotal	$10,155,000	$10,155,000	$10,155,000	$10,155,000	$12,408,481	$14,750,189	$14,779,979	$14,809,770
						-0.0192	-0.0128	-0.0064	0
	ridership	0	0	0	0	919,788	1,875,587	1,887,747	1,899,906
	fare revenue	$0	$0	$0	$0	$965,777	$1,969,367	$1,982,134	$1,994,901
	total subsidy	$10,155,000	$10,155,000	$10,155,000	$10,155,000	$11,442,703	$12,780,822	$12,797,845	$12,814,868
	subsidy/ride	<DIV 0>	<DIV 0>	<DIV 0>	<DIV 0>	$12.44	$6.81	$6.78	$6.75
EVANS TO ARAPAHOE	capital cost	$7,315,000	$7,315,000	$7,315,000	$7,315,000	$7,315,000	$7,315,000	$7,315,000	$7,315,000
	operating cost	$0	$0	$0	$0	$0	$0	$0	$0
	subtotal	$7,315,000	$7,315,000	$7,315,000	$7,315,000	$7,315,000	$7,315,000	$7,315,000	$7,315,000
	ridership	0	0	0	0	0	0	0	0
	fare revenue	$0	$0	$0	$0	$0	$0	$0	$0
	total subsidy	$7,315,000	$7,315,000	$7,315,000	$7,315,000	$7,315,000	$7,315,000	$7,315,000	$7,315,000
	subsidy/ride	<DIV 0>	<DIV 0>	<DIV 0>	<DIV 0>	<DIV 0>	<DIV 0>	<DIV 0>	<DIV 0>
ARAPAHOE TO PARKER RD.	capital cost	$3,625,000	$3,625,000	$3,625,000	$3,625,000	$3,625,000	$3,625,000	$3,625,000	$3,625,000
	operating cost	$0	$0	$0	$0	$0	$0	$0	$0
	subtotal	$3,625,000	$3,625,000	$3,625,000	$3,625,000	$3,625,000	$3,625,000	$3,625,000	$3,625,000
	ridership	0	0	0	0	0	0	0	0
	fare revenue	$0	$0	$0	$0	$0	$0	$0	$0
	total subsidy	$3,625,000	$3,625,000	$3,625,000	$3,625,000	$3,625,000	$3,625,000	$3,625,000	$3,625,000
	subsidy/ride	<DIV 0>	<DIV 0>	<DIV 0>	<DIV 0>	<DIV 0>	<DIV 0>	<DIV 0>	<DIV 0>
AGGREGATE TOTALS	capital cost	$21,095,000	$21,095,000	$21,095,000	$21,095,000	$21,095,000	$21,095,000	$21,095,000	$21,095,000
	operating cost	$0	$0	$0	$0	$2,253,481	$4,595,189	$4,624,979	$4,654,770
	subtotal	$21,095,000	$21,095,000	$21,095,000	$21,095,000	$23,348,481	$25,690,189	$25,719,979	$25,749,770
	ridership	0	0	0	0	919,788	1,875,587	1,887,747	1,899,906
	fare revenue	$0	$0	$0	$0	$965,777	$1,969,367	$1,982,134	$1,994,901
	total subsidy	$21,095,000	$21,095,000	$21,095,000	$21,095,000	$22,382,703	$23,720,822	$23,737,845	$23,754,868
	(cost check)	$21,095,000	$21,095,000	$21,095,000	$21,095,000	$22,382,703	$23,720,822	$23,737,845	$23,754,868
COST PER RIDE		<DIV 0>	<DIV 0>	<DIV 0>	<DIV 0>	$24.33	$12.65	$12.57	$12.50

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CAPITAL PROJECT		YEARS 1997	1998	1999	2000	2001	2002	2003
DOWNTOWN TO EVANS	capital cost	$10,155,000	$10,155,000	$10,155,000	$10,155,000	$10,155,000	$10,155,000	$10,155,000
	operating cost	$4,684,560	$4,714,351	$4,744,141	$4,773,932	$4,803,722	$4,833,513	$4,863,303
	subtotal	$14,839,560	$14,869,351	$14,899,141	$14,928,932	$14,958,722	$14,988,513	$15,018,303
		0.0064	0.0128	0.0192	0.0256	0.032	0.0384	0.0448
	ridership	1,912,065	1,924,225	1,936,384	1,948,544	1,960,703	1,972,862	1,985,022
	fare revenue	$2,007,669	$2,020,436	$2,033,203	$2,045,971	$2,058,738	$2,071,506	$2,084,273
	total subsidy	$12,831,892	$12,848,915	$12,865,938	$12,882,961	$12,899,984	$12,917,007	$12,934,031
	subsidy/ride	$6.71	$6.68	$6.64	$6.61	$6.58	$6.55	$6.52
EVANS TO ARAPAHOE	capital cost	$7,315,000	$7,315,000	$7,315,000	$7,315,000	$7,315,000	$7,315,000	$7,315,000
	operating cost	$1,379,239	$2,780,120	$2,797,687	$2,815,255	$2,832,823	$2,850,391	$2,867,959
	subtotal	$8,694,239	$10,095,120	$10,112,687	$10,130,255	$10,147,823	$10,165,391	$10,182,959
	ridership	1,499,173	3,021,869	3,040,965	3,060,060	3,079,156	3,098,251	3,117,347
	fare revenue	$1,574,131	$3,172,963	$3,193,013	$3,213,063	$3,233,113	$3,253,164	$3,273,214
	total subsidy	$7,120,108	$6,922,157	$6,919,675	$6,917,192	$6,914,710	$6,912,227	$6,909,745
	subsidy/ride	$4.75	$2.29	$2.28	$2.26	$2.25	$2.23	$2.22
ARAPAHOE TO PARKER RD.	capital cost	$3,625,000	$3,625,000	$3,625,000	$3,625,000	$3,625,000	$3,625,000	$3,625,000
	operating cost	$1,207,207	$2,399,060	$2,414,220	$2,429,380	$2,444,540	$2,459,700	$2,474,860
	subtotal	$4,832,207	$6,024,060	$6,039,220	$6,054,380	$6,069,540	$6,084,700	$6,099,860
	ridership	1,244,543	2,473,258	2,488,886	2,504,515	2,520,144	2,535,773	2,551,402
	fare revenue	$1,306,771	$2,596,920	$2,613,331	$2,629,741	$2,646,151	$2,662,561	$2,678,972
	total subsidy	$3,525,437	$3,427,139	$3,425,889	$3,424,639	$3,423,388	$3,422,138	$3,420,888
	subsidy/ride	$2.83	$1.39	$1.38	$1.37	$1.36	$1.35	$1.34
AGGREGATE TOTALS	capital cost	$21,095,000	$21,095,000	$21,095,000	$21,095,000	$21,095,000	$21,095,000	$21,095,000
	operating cost	$7,271,006	$9,893,530	$9,956,049	$10,018,567	$10,081,085	$10,143,604	$10,206,122
	subtotal	$28,366,006	$30,988,530	$31,051,049	$31,113,567	$31,176,085	$31,238,604	$31,301,122
	ridership	4,655,782	7,419,351	7,466,235	7,513,119	7,560,003	7,606,886	7,653,770
	fare revenue	$4,888,571	$7,790,319	$7,839,547	$7,888,775	$7,938,003	$7,987,231	$8,036,459
	total subsidy	$23,477,436	$23,198,211	$23,211,502	$23,224,792	$23,238,082	$23,251,373	$23,264,663
	(cost check)	$23,477,436	$23,198,211	$23,211,502	$23,224,792	$23,238,082	$23,251,373	$23,264,663
COST PER RIDE		$5.04	$3.13	$3.11	$3.09	$3.07	$3.06	$3.04

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CAPITAL PROJECT		YEARS 2004	2005	2006	2007	2008	2009	2010
DOWNTOWN TO EVANS	capital cost	$10,155,000	$10,155,000	$10,155,000	$10,155,000	$10,155,000	$0	$0
	operating cost	$4,893,094	$4,922,884	$4,952,675	$4,982,465	$5,012,256	$5,042,047	$5,071,837
	subtotal	$15,048,094	$15,077,884	$15,107,675	$15,137,465	$15,167,256	$5,042,047	$5,071,837
		0.0512	0.0576	0.064	0.0704	0.0768	0.0832	0.0896
	ridership	1,997,181	2,009,341	2,021,500	2,033,659	2,045,819	2,057,978	2,070,138
	fare revenue	$2,097,040	$2,109,808	$2,122,575	$2,135,342	$2,148,110	$2,160,877	$2,173,644
	total subsidy	$12,951,054	$12,968,077	$12,985,100	$13,002,123	$13,019,146	$2,881,169	$2,898,193
	subsidy/ride	$6.48	$6.45	$6.42	$6.39	$6.36	$1.40	$1.40
EVANS TO ARAPAHOE	capital cost	$7,315,000	$7,315,000	$7,315,000	$7,315,000	$7,315,000	$0	$0
	operating cost	$2,885,527	$2,903,095	$2,920,663	$2,938,231	$2,955,799	$2,973,366	$2,990,934
	subtotal	$10,200,527	$10,218,095	$10,235,663	$10,253,231	$10,270,799	$2,973,366	$2,990,934
	ridership	3,136,442	3,155,538	3,174,633	3,193,729	3,212,824	3,231,920	3,251,016
	fare revenue	$3,293,264	$3,313,315	$3,333,365	$3,353,415	$3,373,466	$3,393,516	$3,413,566
	total subsidy	$6,907,262	$6,904,780	$6,902,298	$6,899,815	$6,897,333	-$420,150	-$422,632
	subsidy/ride	$2.20	$2.19	$2.17	$2.16	$2.15	-$0.13	-$0.13
ARAPAHOE TO PARKER RD.	capital cost	$3,625,000	$3,625,000	$3,625,000	$3,625,000	$3,625,000	$0	$0
	operating cost	$2,490,019	$2,505,179	$2,520,339	$2,535,499	$2,550,659	$2,565,819	$2,580,979
	subtotal	$6,115,019	$6,130,179	$6,145,339	$6,160,499	$6,175,659	$2,565,819	$2,580,979
	ridership	2,567,030	2,582,659	2,598,288	2,613,917	2,629,546	2,645,174	2,660,803
	fare revenue	$2,695,382	$2,711,792	$2,728,202	$2,744,613	$2,761,023	$2,777,433	$2,793,843
	total subsidy	$3,419,638	$3,418,387	$3,417,137	$3,415,887	$3,414,636	-$211,614	-$212,864
	subsidy/ride	$1.33	$1.32	$1.32	$1.31	$1.30	-$0.08	-$0.08
AGGREGATE TOTALS	capital cost	$21,095,000	$21,095,000	$21,095,000	$21,095,000	$21,095,000	$0	$0
	operating cost	$10,268,640	$10,331,159	$10,393,677	$10,456,195	$10,518,714	$10,581,232	$10,643,750
	subtotal	$31,363,640	$31,426,159	$31,488,677	$31,551,195	$31,613,714	$10,581,232	$10,643,750
	ridership	7,700,654	7,747,538	7,794,421	7,841,305	7,888,189	7,935,073	7,981,956
	fare revenue	$8,085,687	$8,134,915	$8,184,142	$8,233,370	$8,282,598	$8,331,826	$8,381,054
	total subsidy	$23,277,954	$23,291,244	$23,304,535	$23,317,825	$23,331,115	$2,249,406	$2,262,696
	(cost check)	$23,277,954	$23,291,244	$23,304,535	$23,317,825	$23,331,115	$2,249,406	$2,262,696
COST PER RIDE		$3.02	$3.01	$2.99	$2.97	$2.96	$0.28	$0.28

Twenty Years of Capital Costs	$421,900,000.00	Twenty Years of Subsidy	$457,364,970.76
Twenty Years of Operating Costs	$135,668,785.90	Twenty Years of Ridership	95,430,281
Twenty Years of Revenues	$100,201,795.13	Subsidy /Ride	$4.79

470 BELTWAY: SUBSIDY PER TRIP

Source: W-470 Authority Plan for Finance, pp. 3a-3f, dated: 8/10/88 and DRCOG VMT projections for 2010.

Daily Vehicle-Miles Traveled, by Year

BELTWAY SEGMENT	1989	1990	1991	1992	1993	1994	1995
C470	0	0	516,189	673,228	801,590	929,952	1,058,314
E470: I-25 S to Parker	0	0	0	52,198	106,239	136,113	165,987
E470: Parker to I-70	0	0	0	0	0	0	109,828
E470: I-70 to 120th Ave	0	0	0	82,692	168,303	215,629	262,955
E470: 120th Ave to I-25	0	0	0	0	0	0	57,715
W470: I-70 W to Wash.(93)	0	0	0	0	0	0	0
W470: I-25 to U.S. 287	0	0	0	0	0	0	24,905
W470: U.S. 287 to S.H. 128	0	0	0	0	0	0	0
W470: S.H. 128 to S.H. 72	0	0	0	0	0	0	0
W470: S.H. 72 to Wash.(93)	0	0	0	0	0	0	0
Daily Total	0	0	516,189	808,119	1,076,132	1,281,694	1,679,705
Annual Total	0	0	188,408,894	294,963,253	392,788,217	467,818,347	613,092,179
Equivelant number of trips	0	0	20,934,322	32,773,695	43,643,135	51,979,816	68,121,353

ANNUAL SUBSIDY							
$10 Vehicle Registration Fee	$10,200,000	$10,400,000	$10,600,000	$10,800,000	$11,200,000	$11,400,000	$11,600,000
Corridor Impact Fee	$700,000	$1,100,000	$2,100,000	$3,500,000	$4,200,000	$4,900,000	$4,900,000
Total Annual Subsidy	$10,900,000	$11,500,000	$12,700,000	$14,300,000	$15,400,000	$16,300,000	$16,500,000
ANNUAL SUBSIDY PER TRIP	<DIV 0>	<DIV 0>	$0.61	$0.44	$0.35	$0.31	$0.24

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Daily Vehicle-Miles Traveled, by Year

BELTWAY SEGMENT	1996	1997	1998	1999	2000
C470	1,186,676	1,315,038	1,443,400	1,571,762	1,700,124
E470: I-25 S to Parker	195,861	225,735	255,609	285,483	315,357
E470: Parker to I-70	223,533	299,859	376,185	452,511	528,837
E470: I-70 to 120th Ave	310,281	357,607	404,933	452,259	499,585
E470: 120th Ave to I-25	117,467	157,577	197,687	237,797	277,907
W470: I-70 W to Wash.(93)	0	27,149	55,256	77,268	99,280
W470: I-25 to U.S. 287	50,689	67,997	85,305	102,613	119,921
W470: U.S. 287 to S.H. 128	23,196	47,212	64,573	81,934	99,295
W470: S.H. 128 to S.H. 72	0	23,528	47,886	66,962	86,038
W470: S.H. 72 to Wash.(93)	0	23,562	47,956	67,060	86,164
Daily Total	2,107,704	2,545,264	2,978,790	3,395,649	3,812,508
Annual Total	769,311,924	929,021,397	1,087,258,460	1,239,411,995	1,391,565,530
Equivelant number of trips	85,479,103	103,224,600	120,806,496	137,712,444	154,618,392

ANNUAL SUBSIDY					
$10 Vehicle Registration Fee	$12,000,000	$0	$0	$0	$0
Corridor Impact Fee	$4,300,000	$0	$0	$0	$0
Total Annual Subsidy	$16,300,000	$0	$0	$0	$0
ANNUAL SUBSIDY PER TRIP	$0.19	$0.00	$0.00	$0.00	$0.00

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Daily Vehicle-Miles Traveled, by Year

BELTWAY SEGMENT	2001	2002	2003	2004	2005
C470	1,628,486	1,956,848	2,085,210	2,213,572	2,341,934
E470: I-25 S to Parker	345,231	375,105	404,979	434,853	464,727
E470: Parker to I-70	605,163	681,489	757,815	834,141	910,467
E470: I-70 to 120th Ave	546,911	594,237	641,563	688,889	736,215
E470: 120th Ave to I-25	318,017	358,127	398,237	438,347	478,457
W470: I-70 W to Wash.(93)	121,292	143,304	165,316	187,328	209,340
W470: I-25 to U.S. 287	137,229	154,537	171,845	189,153	206,461
W470: U.S. 287 to S.H. 128	116,656	134,017	151,378	168,739	186,100
W470: S.H. 128 to S.H. 72	105,114	124,190	143,266	162,342	181,418
W470: S.H. 72 to Wash.(93)	105,268	124,372	143,476	162,580	181,684
Daily Total	4,229,367	4,646,226	5,063,085	5,479,944	5,896,803
Annual Total	1,543,719,065	1,695,872,600	1,848,026,135	2,000,179,670	2,152,333,205
Equivelant number of trips	171,524,341	188,430,289	205,336,237	222,242,186	239,148,134

ANNUAL SUBSIDY

$10 Vehicle Registration Fee	$0	$0	$0	$0	$0
Corridor Impact Fee	$0	$0	$0	$0	$0
Total Annual Subsidy	$0	$0	$0	$0	$0

ANNUAL SUBSIDY PER TRIP

	$0.00	$0.00	$0.00	$0.00	$0.00

Concluded - from page 23

Daily Vehicle-Miles Traveled, by Year

BELTWAY SEGMENT	2006	2007	2008	2009	2010	Totals
C470	2,470,296	2,598,658	2,727,020	2,855,382	2,983,750	35,257,424
E470: I-25 S to Parker	494,601	524,475	554,349	584,223	614,100	6,535,231
E470: Parker to I-70	986,793	1,063,119	1,139,445	1,215,771	1,292,100	11,477,061
E470: I-70 to 120th Ave	783,541	830,867	878,193	925,519	972,850	10,353,030
E470: 120th Ave to I-25	518,567	558,677	598,787	638,897	679,000	5,031,263
W470: I-70 W to Wash.(93)	231,352	253,364	275,376	297,388	319,400	2,462,415
W470: I-25 to U.S. 287	223,769	241,077	258,385	275,693	293,000	2,602,579
W470: U.S. 287 to S.H. 128	203,461	220,822	238,183	255,544	272,900	2,264,007
W470: S.H. 128 to S.H. 72	200,494	219,570	238,646	257,722	276,800	2,133,981
W470: S.H. 72 to Wash.(93)	200,788	219,892	238,996	258,100	277,200	2,137,093
Daily Total	6,313,662	6,730,521	7,147,380	7,564,239	7,981,100	81,254,084
Annual Total	2,304,486,740	2,456,640,275	2,608,793,810	2,760,947,345	2,913,101,500	29,657,740,532
Equivelant number of trips	256,054,082	272,960,031	289,865,979	306,771,927	323,677,944	3,295,304,504

ANNUAL SUBSIDY						
$10 Vehicle Registration Fee	$0	$0	$0	$0	$0	$88,200,000
Corridor Impact Fee	$0	$0	$0	$0	$0	$25,700,000
Total Annual Subsidy	$0	$0	$0	$0	$0	$113,900,000

ANNUAL SUBSIDY PER TRIP					
	$0.00	$0.00	$0.00	$0.00	$0.00

RECAPITULATION	
Twenty Years of Subsidy	$113,900,000
Twenty Years of Trips	2,971,626,559
Subsidy Per Trip	**$0.04**

Beltway Trips as % of 2010 Metro Area person-trips: 8.3%

Beltway VMT as % of 2010 Metro Area Highway VMT: 12.28%

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