## AT: Solvency

### 1NC – AT: Fed Key

#### States solve

**Roth 10** Gabriel Roth is a civil engineer and transportation economist. He is currently a research fellow at the Independent Institute. During his 20 years with the World Bank, he was involved with transportation projects on five continents Figueroa

<http://www.downsizinggovernment.org/transportation/highway-funding/#_edn0>

To make progress toward a market-based highway system, we should first end the federal role in highway financing. In his 1982 State of the Union address, President Reagan proposed that all federal highway and transit programs, except the interstate highway system, be "turned back" to the states and the related federal gasoline taxes ended. Similar efforts to phase out federal financing of state roads were introduced in 1996 by Sen. Connie Mack (R-FL) and Rep. John Kasich (R-OH). Sen. James Inhofe (R-OK) introduced a similar bill in 2002, and Rep. Scott Garrett (R-NJ) and Rep. Jeff Flake (R-AZ) have each proposed bills to allow states to fully or partly opt out of federal highway financing.[47](http://www.downsizinggovernment.org/transportation/highway-funding/" \l "_edn47" \o ")Such reforms would give states the freedom to innovate with toll roads, electronic road-pricing technologies, and private highway investment. Unfortunately, these reforms have so far received little action in Congress. But there is a growing acceptance of innovative financing and management of highways in many states. With the devolution of highway financing and control to the states, successful innovations in one state would be copied in other states. And without federal subsidies, state governments would have stronger incentives to ensure that funds were spent efficiently. An additional advantage is that highway financing would be more transparent without the complex federal trust fund. Citizens could better understand how their transportation dollars were being spent. The time is ripe for repeal of the current central planning approach to highway financing. Given more autonomy, state governments and the private sector would have the power and flexibility to meet the huge challenges ahead that America faces in highway infrastructure.

#### Government attempts to solve infrastructure fail, we should leave the transportation in the hands of the states

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Americans are frustrated by rising traffic congestion. In the period 1980 to 2008, the vehicle-miles driven in the nation increased 96 percent, but the lane-miles of public roads increased only 7.5 percent. The problem is that U.S. road systems are run by governments, which do not respond to the wishes of road users but to the preferences of politicians. Transportation markets need to be liberated from government control so that road users can directly finance the needed highway improvements that they are prepared to pay for. We need to recognize "road space" as a scarce resource and allow road owners to increase supply and charge market prices for it. We should allow the revenues to stimulate investment in new capacity and in technologies to reduce congestion. If the market is allowed to work, profits will attract investors willing to spend their own money to expand the road system in response to the wishes of consumers.

#### States solve

**Roth 05** Liberating the Roads Reforming U.S. Highway Policy, Gabriel Roth is a civil engineer and transportation economist. He is currently a research fellow at the Independent Institute. During his 20 years with the World Bank, he was involved with transportation projects on five continents Figueroa <http://www.cato.org/pubs/pas/pa538.pdf>

Before the federal government took on the role of financing highways in 20th century, that role was assumed entirely by state governments and, before that, the private sector. This study makes the case that there is no longer any role for the federal government in the construction and financing of roads. Significant reform must include phasing down the federal fuel tax and giving back to the states full responsibility for highway programs.

#### Federal spending fails—inefficient

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Today, the interstate highway system is long complete and federal financing has become an increasingly inefficient way to modernize America's highways. Federal spending is often misallocated to low-value activities, and the regulations that go hand-in-hand with federal aid stifle innovation and boost highway costs. The Department of Transportation's Federal Highway Administration will spend about $52 billion in fiscal 2010, of which about $11 billion is from the 2009 economic stimulus bill.[1](http://www.downsizinggovernment.org/transportation/highway-funding/" \l "_edn1" \o ") FHWA's budget mainly consists of grants to state governments, and FHWA programs are primarily funded from taxes on gasoline and other fuels.[2](http://www.downsizinggovernment.org/transportation/highway-funding/" \l "_edn2" \o ")Congress implements highway policy through multi-year authorization bills. The last of these was passed in 2005 as the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). Congress will likely be reauthorizing highway programs in 2011, and it is currently pursuing many misguided policy directions in designing that legislation. One damaging policy direction involves efforts to reduce individual automobile travel, which will harm the economy and undermine mobility choice. Another damaging policy direction is the imposition of federal "livability" standards in transportation planning. Such standards would federalize land-use planning and pose a serious threat to civil liberties and the autonomy of local communities. Finally, ongoing federal mandates to reduce fuel consumption have the serious side effect of making road travel more dangerous. The federal government pursues these misguided goals by use of its fiscal powers and regulatory controls, and by diverting dedicated vehicle fuel taxes into less efficient forms of transportation. This essay reviews the history of federal involvement in highways, describing the evolution from simple highway funding to today's attempts to centrally plan the transportation sector. It describes why federal intervention reduces innovation, creates inefficiencies in state highway systems, and damages society by reducing individual freedom and increasing highway fatalities. Taxpayers and transportation users would be better off if federal highway spending, fuel taxes, and related regulations were eliminated. State and local governments can tackle transportation without federal intervention. They should move toward market pricing for transportation usage and expand the private sector's role in the funding and operation of highways.

#### System flawed, the only way to invest in transportation adequately is not dismantle the federal government’s role in transportation infrastructure.

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The congressional deliberations on reauthorizing the federal financing of roads that took place in 2004 were mainly about how much to spend—not about policy. As Robert Puentes of the Brookings Institution noted: The differences are not arguments over

policy. As far as Washington is concerned, transportation is all about money—how much and who gets it. The sad fact is that the national transportation system is broken and in dire need of fundamental reform. That is why billions and billions of dollars of additional federal investments, without significant reform, will do precious little to ameliorate the transportation problems of the modern metropolis This study makes the case that the completion of the IHS removed any argument there might be to maintain federal control and financing of roads; that market pricing and investment principles, which govern the provision of most goods and services in free societies, could usefully be applied also to roads; and that significant reform should start with phasing out the federal role in road finance. This would require a phase-down of the federal fuel tax and would effectively turn back to the states full financial responsibility for their roads, allowing them to manage and finance highways and the transportation sector as they deem appropriate.

#### Federal transportation is incredibly inefficient—politicization and earmarking lead to senseless overspending.

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Federal politicians often direct funds to projects in their states that are low priorities for the nation as a whole. The Speaker of the House of Representatives in the 1980s, "Tip" O'Neill, represented a Boston district and led the push for federal funding of the Big Dig. More recently, Representative Don Young of Alaska led the drive to finance that state's infamous "Bridge to Nowhere," discussed below. The inefficient political allocation of federal dollars can be seen in the rise of "earmarking" in transportation bills. This practice involves members of Congress slipping in funding for particular projects requested by special interest groups in their districts. In 1982, the prohibition on earmarks in highway bills in effect since 1914 was broken by the funding of 10 earmarks costing $362 million. In 1987, President Ronald Reagan vetoed a highway bill partly because it contained 121 earmarks, and Congress overrode his veto.[23](http://www.downsizinggovernment.org/transportation/highway-funding/" \l "_edn23" \o ")Since then, transportation earmarking has grown by leaps and bounds. The 1991 transportation authorization bill (ISTEA) had 538 highway earmarks, the 1998 bill (TEA-21) had 1,850 highway earmarks, and the 2005 bill (SAFETEA-LU) had 5,634 highway earmarks.[24](http://www.downsizinggovernment.org/transportation/highway-funding/" \l "_edn24" \o ") The earmarked projects in the 2005 bill cost $22 billion, thus indicating that earmarks are consuming a substantial portion of federal highway funding. The problem with earmarks was driven home by an Alaska bridge project in 2005. Rep. Don Young of Alaska slipped a $223 million earmark into a spending bill for a bridge from Ketchikan—with a population of 8,900—to the Island of Gravina—with a population of 50. The project was dubbed the "Bridge to Nowhere" and created an uproar because it was clearly a low priority project that made no economic sense.

#### Federal funding allocations have no clear purpose

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Under the most recent highway authorization—SAFETEA-LU of 2005—transportation scholar Randal O'Toole figures that only about 59 percent of highway trust fund dollars will be spent on highways.[25](http://www.downsizinggovernment.org/transportation/highway-funding/" \l "_edn25" \o ") Funds from the FHTF will go to mass transit (21 percent), earmarks (8 percent), and a hodge-podge of other activities such as bicycle paths (12 percent). Note, however, that some of the earmark funds will also go to highways. The main diversion is to rail transit, which can be a very inefficient mode of transportation, [as discussed in a related essay](http://www.downsizinggovernment.org/transportation/urban-transit). Most Americans do not use rail transit and should not have to subsidize expensive subways and rail systems in a small number of major cities that prohibit the use of more modern and effective transit methods, such as shared taxis. As the FHWA table ([www.fhwa.dot.gov/safetealu/safetea- lu\_authorizations.xls](http://www.fhwa.dot.gov/safetealu/safetea-%20lu_authorizations.xls)) indicates, Congress allocates highway money to truck parking facilities, anti-racial profiling programs, magnetic levitation trains, and dozens of other non-road activities. O'Toole finds that the House version of upcoming transportation authorization legislation would reduce the highway portion of FHTF spending to just 20 percent. It would add high-speed rail at 10 percent, fund transit at 20 percent, and provide about 50 percent of the funds to the states to spend on "flexible" projects and earmarks.[26](http://www.downsizinggovernment.org/transportation/highway-funding/" \l "_edn26" \o ")

#### Federal Intervention Increases Highway Costs

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The flow of federal funding to the states for highways comes part-in-parcel with top-down regulations. The growing mass of federal regulations makes highway building more expensive in numerous ways. First, federal specifications for road construction standards can be more demanding than state standards. But one-size-fits-all federal rules may ignore unique features of the states and not allow state officials to make efficient trade-offs on highway design. A second problem is that federal grants usually come with an array of extraneous federal regulations that increase costs. Highway grants, for example, come with Davis-Bacon rules and Buy America provisions, which raise highway costs substantially. Davis-Bacon rules require that workers on federally funded projects be paid "prevailing wages" in an area, which typically means higher union wages. Davis-Bacon rules increase the costs of federally funded projects by an average of about 10 percent, which wastes billions of dollars per year.[27](http://www.downsizinggovernment.org/transportation/highway-funding/" \l "_edn27" \o ")Ralph Stanley, the entrepreneur who created the private Dulles Greenway toll highway in Virginia, estimated that federal regulations increase highway construction costs by about 20 percent.[28](http://www.downsizinggovernment.org/transportation/highway-funding/" \l "_edn28" \o ") Robert Farris, who was commissioner of the Tennessee Department of Transportation and also head of the Federal Highway Administration, suggested that federal regulations increase costs by 30 percent.[29](http://www.downsizinggovernment.org/transportation/highway-funding/" \l "_edn29" \o ")Finally, federal intervention adds substantial administrative costs to highway building. Planning for federally financed highways requires the detailed involvement of both federal and state governments. By dividing responsibility for projects, this split system encourages waste at both levels of government. Total federal, state, and local expenditures on highway "administration and research" when the highway trust fund was established in 1956 were 6.8 percent of construction costs. By 2002, these costs had risen to 17 percent of expenditures.[30](http://www.downsizinggovernment.org/transportation/highway-funding/" \l "_edn30" \o ") The rise in federal intervention appears to have pushed up these expenditures substantially.

### 1NC – AT: Solvency – Crowds Out Private Groups

#### **Infrastructure spending crowds out private investment and creates deflationary pressure on the economy**

Dodge ‘9 Everson Dodge, Capital Market Investment Firm, “Global Crisis: Fiscal Stimulus Packages and Crowding-Out,” 2009 <http://www.dodgeglobal.com/Articles/EDI_article_Subnational_Infrastructure_Financing_a_better_road_to_be_taken.pdf>

Reactions from developing countries have included measures like the following. Policy rates were lowered in response to weakening economic prospects, although less aggressively than in mature markets in view of concerns about pressure on the external accounts from a reversal in capital flows.7 And more directly, national authorities have worldwide announced fiscal stimulus packages consisting of a one-time cash handouts to poor households, increased infrastructure spending, tax cuts, interest subsidies for working capital credits, and credit guarantees for loans to small- and medium-size enterprises, among other fiscal easing to support demand. All in all, approaches to deal with global deflationary pressures and collapsing external demand and weakening domestic economic activities. Helped by multilateral funding, authorities in many countries are implementing social programs and cash transfers to assist those most in need, as well as other actions in order to answer urgent social and economic requirements. “Where possible, policymakers have responded quickly with expansionary monetary and fiscal policies, including fiscal stimulus packages, although in most cases these measures will only mitigate, not overcome, the contradictary forces operating on their economies”, the World Bank concluded.8 The authorities in most countries in the region have also moved to alleviate the shortage of trade financing. But in most countries, the Bank said in April 2009, fiscal stimulus packages can only partially offset the negative impact of the crisis on growth.9. In short, “the road taken”: a remarkable increase in government spending, with the consequent crowding out.

#### States and private companies solve, empirics prove.

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<http://www.downsizinggovernment.org/transportation/highway-funding/#_edn0>

Before the federal government began financing highways in the 20th century, that role was assumed by state governments and the private sector. Private turnpike companies built thousands of miles of toll roads across the states during the 18th and 19th centuries. The first private turnpike connected Philadelphia and Lancaster in 1794 and, by 1800, 69 turnpike companies had been chartered in New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Virginia, and Maryland.[3](http://www.downsizinggovernment.org/transportation/highway-funding/" \l "_edn3" \o ") The movement continued throughout the 19th century, with many toll roads created in the mining states of Colorado, Nevada, and California. The financing of turnpike companies was entirely voluntary, except in Ohio, Pennsylvania, and Virginia where some state subsidization occurred.

#### **Aff causes centralization of economic policy**

Dodge ‘9 Everson Dodge, Capital Market Investment Firm, “Global Crisis: Fiscal Stimulus Packages and Crowding-Out,” 2009 <http://www.dodgeglobal.com/Articles/EDI_article_Subnational_Infrastructure_Financing_a_better_road_to_be_taken.pdf>

And now, when we might be exiting the “worst days” and keeping in mind the crowding-out it provoked, the remaining question is all about the necessary reforms in banking systems and capital markets to recapture the confidence of private investors, who have “flown to quality”. What is happening with decentralization, privatization and outsourcing, all critically important for sub-national infrastructure financing, must be one of the inevitable questions. Apparently the process during the crisis has been the opposite, increasingly centralized around the fiscal and multilateral funds and public banks, almost all managed from the central authorities. Consequently, further inquiry should be: getting out of this situation, is it possible to develop models based on municipal initiatives, operational independence, decentralized responsibilities and, above all, market-oriented activities?

#### Private companies solve highways, Milage-based tolls solve

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Looking ahead, there are no technical or economic reasons why the highways of the 21st century should not be private toll roads once again. Modern GPS-based technology enables mileage-based tolls to be debited to road users, and the revenues credited to road providers, without vehicles having to stop, and without invading the privacy of road users. One such tolling method has already been successfully demonstrated in Oregon, where those taking part had the option to pay for roads either by fuel taxes or by the new mileage charge. GPS-based methods are also used to charge truck tolls on the German Autobahn. Also, the congressionally appointed National Surface Transportation Infrastructure Financing Commission unanimously recommended in 2009 that the United States proceed to finance its roads by means of mileage charges rather than fuel taxes.[8](http://www.downsizinggovernment.org/transportation/highway-funding/" \l "_edn8" \o ")

### 1NC – AT: Solvency – Cost Overruns

#### The statistics are stacked against them – massive overruns empirically and predictively proven

Flyvbjerg 9 (Bent, professor of planning @ Aalborg university in Denmark + Oxford graduate, “Delusion and deception in large infrastructure projects,” California Management Review, 2009)

Unfortunately, the private sector, the public sector, and private/public sector partnerships have a dismal record of delivering on large infrastructure cost and performance promises. Consider the following typical examples. 6 In January 2003, Toll Collect—a consortium of DaimlerChrysler, Deutsche Telekom, and Coﬁroute of France—was scheduled to start tolling heavy trucks on German motorways for the Federal government. The new toll- ing system was designed to be a showcase for public-private partnership in infrastructure management. A year later the project was falling apart. The developers had been too optimistic about the software that would run the system. **The government was losing** toll **revenues** of `156 million ($244m) a month, **caused by delays**, and estimated to total `6.5 billion before problems could be ﬁxed. **For lack of funds, all new road projects in Germany and related public works were put on hold, threatening 70,000 construction jobs**. Politicians and members of the media were calling for prosecution of Toll Collect for deceiving the government. Finally, the Ger- man transport minister cancelled the contract with Toll Collect and gave the company two months to come up with a better plan, including how to ﬁll the revenue shortfall. By the time tolling at last started, after further delays in 2005, “Toll Collect” had become a popular byword among Ger- mans used to describe everything wrong with the national economy. 6 **In 1987, Eurotunnel**, the private company that operates the tunnel under the English Channel, **went public to raise funds for the project**. The Chan- nel Tunnel was Prime Minister Margaret Thatcher’s ﬂagship project **to show the world how private business could effectively provide public infrastructure. Eurotunnel told investors that building the tunnel**—the longest of its kind in Europe—**would be relatively straightforward and that 10% “would be a reasonable allowance for the possible impact of unforeseen circumstances on construction costs.”**2 **Once built, the real cost of the project was double the forecasted costs in constant dollars. Initially, the misinformation about costs and risks served the purpose of getting the project started**. From the 1987 IPO **until cost overruns hit the project one and a half years later, share prices more than triples. Then they fell by two-thirds and, when it became clear that revenue projections were as biased as cost forecasts, by another two-thirds**. In 1995, **Eutotunnel stopped interest payments on its loans** and began a decade-long, tumultuous process of financial restructuring from which it did not recover until 2007. the intended flagship of privatization became a scare story for business and set back the process of infrastructure privatization by at least a decade. **In 1959, the construction of the Sydney opera house started before either drawings or funds were fully available. The initial budget** of seven million Australian dollars **was a political, low-balled budget designed for project approval before the coming elections**.3 Eventually **the Opera House was opened in 1973, 10 years later than the original planned completion date**, at a cost of 102 million Australian dollars. It holds the world record for **cost overrun at 1,400 percent** and this was for a scaled-down version of the original design. This ﬁgure does not include 45 million dollars allocated in 2002 in part to bring the building more in agreement with the architect, Jørn Utzon’s original plans**. Over Budget, Over Time, Over and Over Again There are some phenomena that have no cultural bounds** such as maternal love and a healthy fear of large predators. We can add to this list the fact that**, across the globe, large infrastructure projects almost invariably arrive late, over-budget, and fail to perform up to expectations. Cost overruns and beneﬁt shortfalls of 50 percent are common; cost overruns above 100 percent are not uncommon**. For example, **in one study** of major projects in 20 countries, **nine out of ten projects had cost overruns**.4 Similarly, a study of 44 urban rail projects—in North America, Europe, and developing nations, including London’s Tube and the metros in Washington, D.C., and Mexico City—found that the average construction cost overrun in constant prices was 45 percent; for a quar- ter of the projects, cost overruns were at least 60 percent. **In addition, passenger ridership was, on average, 50 percent lower than forecast**. Furthermore, for a quarter of the projects, ridership was at least 70 percent lower than estimated.5 An appropriate slogan seems to be “over budget, over time, over and over again.” As comforting as it is to know that we are not alone in our folly, it **would be even better to minimize the gap between expectations and performance for projects that consume such a large share of the** private and, especially, public **purse**.

#### Politicians and decisionmakers deliberately misrepresent estimates to ensure their projects go through

Flyvbjerg 9 (Bent, professor of planning @ Aalborg university in Denmark + Oxford graduate, “Delusion and deception in large infrastructure projects,” California Management Review, 2009)

**Executives typically attribute project underperformance to** numerous **uncertainties** such as project complexity, technological uncertainty, demand uncertainty, lack of scope clarity, unexpected geological features, and nega- tive plurality (i.e., opposing stakeholder voices).6 No doubt, **all of these factors at one time or another contribute to cost overruns, beneﬁt shortfalls, and time delays**. The goal of this article, however, is not to explain, for example, how to implement complex projects more efﬁciently by over-coming these uncertain- ties. Rather, we explain why **costs, beneﬁts, and time forecasts for more complex projects are systematically over-optimistic in the planning phase** in comparison to less-complex projects. In other words, “**why do project planners, on average, fail to anticipate the greater costs of complex projects or those based on new technologies?” The underlying reasons** for all forecasting errors can usefully be grouped into three categories: **delusions or honest mistakes; deceptions or strategic manipulation of information or processes; or bad luck**.7 Bad luck or the unfortunate resolution of one of the major project uncertainties is the attribution typically given by management for a poor outcome.8 While not denying such a salient explanation, this article explores the **underlying psychological and gover- nance reasons for mis-estimation rather than proximate engineering causes. Deliberately or not, risks of scope changes, high complexity, and unex- pected geological features are systematically underestimated during project preparation. Both delusion and deception see the high failure rates for ventures as a consequence of ﬂawed decision making.** According to the ﬁrst explana- tion—delusion—**the ﬂaw consists in executives falling victim to** what psycholo- gists call the **planning fallacy**.9 In its grip, **managers make decisions based on delusional optimism rather than on a rational weighting of gains, losses, and probabilities. They overestimate beneﬁts and underestimate costs and time. They involuntarily spin scenarios of success and overlook the potential for mistakes and miscalculations.** **As a result, managers pursue initiatives that are unlikely to come in on budget or on time, or to ever deliver the expected returns**. These biases are often the result of the inside view in forecasting: **decision makers have a strong tendency to consider problems as unique and thus focus on the particu- lars of the case at hand when generating solutions**.10 **Adopting an outside view of the problem has been shown to mitigate delusion. It is applied by ignoring the speciﬁc details of the project at hand and uses a broad reference class of similar projects to forecast outcomes for the current project**. According to the second explanation—deception—**decision making is ﬂawed by strategic misrepresentation** or the presence of what economists refer to as principal-agent problems. Whereas the ﬁrst explanation is psychological, the second is due to the **different preferences and incentives of the actors** in the system.11 In this situation, **politicians, planners, or project champions deliber- ately and strategically overestimate beneﬁts and underestimate costs in order to increase the likelihood that their projects, and not their competition’s, gain approval and funding**. **These actors purposely spin scenarios of success and gloss over the potential for failure. This results in managers promoting ventures that are unlikely to come in on budget or on time, or to deliver the promised ben- eﬁts**. However, this misrepresentation and failure can be moderated by measures that enhance transparency, provide accountability, and align incentives. In what follows, **delusion and deception are jointly considered and are speciﬁcally applied to infrastructure problems** in such a way that both academ- ics from diverse ﬁelds and, more importantly, practitioners can understand and implement the suggested corrective procedures. **This** article **provides a frame- work for analyzing the relative explanatory power of delusion and deception in such a way that it is possible to disentangle whether non-accurate forecast are more likely to be due to one or the other explanation**, or both. Moreover, it sug- gests a simpliﬁed framework **for analyzing the complex principal-agent relation- ships that are involved in the approval and construction of large infrastructure projects.**

### 1NC – AT: Solvency – Government Subsidies Fail

#### Government subsidized public transit isn’t efficient- transit uses as much energy per passenger mile as driving

**O’Toole, ’09** (Randal O'Toole **Senior Fellow Cato Institute, Washington DC before the Subcommittee on Housing, Transportation and Community Development Committee on Banking United States Senate**) <http://www.cato.org/testimony/ct-ro-20090707.html>

**Transit Is Not Significantly Cleaner than Driving** Even if more subsidies to transit could attract significant numbers of people out of their cars, it would not save energy or reduce greenhouse gas emissions because transit uses as much energy and generates nearly as much greenhouse gas per passenger mile as urban driving. As described in my Cato Institute Policy Analysis no. 615 (http://www.cato.org/pubs/pas/pa-615.pdf), the following data are based on the Department of Energy's Transportation Energy Data Book, the Federal Transit Administration's National Transit Database, and the Federal Highway Administration's *Highway Statistics*. In 2006, the nation's transit systems used an average of 3,444 BTUs and emitted 213 grams of CO2 per passenger mile. The average passenger car used 3,445 BTUs—just 1 BTU more**—and emitted 245 grams of COsup>2 per passenger mile, just 15 percent more.** While transit appears slightly cleaner than autos, as shown in figure three, auto and light truck energy efficiencies have rapidly improved, while transit energy efficiencies have declined.Since CO2 emissions are proportional to energy consumption, these trends hold for greenhouse gas production as well. We can expect these trends to continue. If auto manufacturers meet the Obama administration's new fuel-economy standards for 2016—even if they fail to improve energy efficiencies beyond that—by 2025 the average car on the road will consume only 2,600 BTUs and emit only about 186 grams of CO2 per passenger mile—considerably less than most transit systems (figure four). This rapid improvement is possible because America's auto fleet almost completely turns over every 18 years. By comparison,cities that invest in rail transit are stuck with the technology they choose for at least 30 years. This means potential investments in transit must be compared, not with today's cars, but with cars 15 to 20 years from now. In much of the country, the fossil-fuel-burning plants used to generate electricity for rail transit emit enormous amounts of greenhouse gases. Washington's Metrorail system, for example, generates more than 280 grams of CO2 per passenger mile— considerably more than the average passenger car. **Light-rail systems in Baltimore, Cleveland, Denver, Philadelphia, and Pittsburgh all emit more greenhouse gases per passenger mile than the average SUV. In places, such as the West Coast, that get much of their electricity from renewable sources, it would be wiser and more cost-effective to apply that electricity to plug-in hybrids or other electric cars that can recharge their batteries at night when renewable power plants generate surplus energy. As Professor Lave said, the "law of large proportions" dictates that "the biggest components matter most." In other words,** since more than 90 percent of urban travel is by auto and only 1.6 percent is by transit, small improvements in autos can be far more significant than large investments in transit.

#### Government subsidized public transit isn’t efficient- several external factors

**O’Toole, ’09** (Randal O'Toole **Senior Fellow Cato Institute, Washington DC before the Subcommittee on Housing, Transportation and Community Development Committee on Banking United States Senate**) <http://www.cato.org/testimony/ct-ro-20090707.html>

Transit has several other disadvantages as a way of reducing greenhouse gas emissions. First, even where electric-powered rail transit generates less greenhouse gases than cars or buses, the trains are supported by feeder bus systems that emit lots of greenhouse gases. While the trunk line buses that new rail transit lines replace typically run fairly full, the feeder buses that support rail transit run fairly empty because many rail riders drive to transit stations. The result is that greenhouse gas emissions on many transit systems increase after opening rail transit lines. After opening its first light-rail line, CO2 emissions from St. Louis' transit system climbed from 340 to 400 grams per passenger mile, while Houston's grew from 218 to 263 grams per passenger mile. Construction of rail transit also consumes huge amounts of energy and releases enormous amounts of greenhouse gases. Portland planners estimated that the energy cost of constructing one of the city's light-rail lines would equal 170 years worth of energy savings. Highway construction also generates greenhouse gases, but because highways are much more heavily used than most rail transit lines, the emissions per passenger mile are far lower. Contrary to claims that rail transit can carry as many people as four or more freeway lanes, the New York City subway is the only rail transit line in America that carries more passenger miles per rail mile than one urban freeway lane mile. Outside of New York, the average urban freeway lane mile carries 12 times as many passenger miles as the average commuter rail mile, 7.5 times as many as the average light-rail mile, and 2.4 times as many as the average subway/elevated mile. Further, as we tragically learned in the recent Washington Metrorail crash, rail transit systems must be completely rebuilt or rehabilitated every 30 years or so. The energy costs and greenhouse gas emissions from such reconstruction must be taken into account when considering rail transit. As a recent Federal Transit Administration report calculated, rehabilitation of rail lines in the nation's seven largest transit systems will cost at least $50 billion—money those agencies don't have. This is just one more indication that rail transit is not financially sustainable. In the rare case where a transit investment really will reduce greenhouse gas emissions, the cost is exorbitantly high. McKinsey & Company says the United States can cut its greenhouse emissions roughly in half by 2030 by investing in technologies that cost no more than $50 per ton of CO2 equivalent. But transit investments, if they reduce emissions at all, do so at costs of $5,000 per ton or more. The American Transit Model Is Broken Transit's poor performance is symptomatic of government-subsidized transit systems. Transit agencies that typically get three-quarters of their funds from taxpayers and only a quarter from transit users are politically obligated to run transit throughout their taxing districts no matter how few people want to use transit. The result is that the average transit vehicle, whether bus, light rail, subway, or commuter-rail car, runs an average of only one-sixth full. Far from being short of funds, transit agencies have too much money, which they spend in the wrong places. Instead of providing economical transportation to users, they spend it on urban monuments such as light-rail and streetcar lines whose transportation value is negligibly different from buses. Agencies often go heavily into debt building these lines and are also obligated to huge operations and maintenance costs. Almost inevitably, they suffer budget crises that force them to significantly curtail service. On a passenger-mile basis, transit buses typically consume as much energy and emit as much CO2 per passenger mile as SUVs. By comparison, private bus companies have an incentive to fill as many seats as possible, so they typically operate half to two-thirds full and consume little more than 10 percent as much energy per passenger mile as public transit buses. Between Boston and Washington, for example, at least 14 bus companies carry more passengers each day than Amtrak and do so using less than half as much energy and emitting about half as much greenhouse gases. To make transit more environmentally friendly, we need to completely redesign our transit systems. This means either privatizing transit systems or, at the least, operating them entirely out of user fees rather than subsidies. If states feel the need to support people who have no access to automobiles, they can give such people transportation vouchers that they can use on any public conveyances.

#### Government subsidized public transit isn’t efficient- low per-capita ridership

**O’Toole, ’09** (Randal O'Toole **Senior Fellow Cato Institute, Washington DC before the Subcommittee on Housing, Transportation and Community Development Committee on Banking United States Senate**) <http://www.cato.org/testimony/ct-ro-20090707.html>

**On Transit and Climate July 7, 2009 Urban transit is important for those who lack access to automobiles. But the history of the last four decades shows that transit cannot and will not play a significant role in saving energy or preventing climate change. Forty years ago, American cities were choked with air pollution, so Congress passed the Clean Air Act of 1970 and created the Environmental Protection Agency (EPA) to administer the law. The EPA adopted two strategies to reduce pollution. First, it required automakers to make cars that polluted less. Second, it also encouraged cities to promote transit and adopt other policies aimed at getting people to drive less. Today, we know what worked and what did not. Automotive air pollution has declined by at least two-thirds since 1970. This entire decline was due to technological changes in automobiles. Far from responding to transit investments by reducing driving and taking transit more, Americans today drive far more than they did in 1970. As the late University of California (Irvine) economist Charles Lave demonstrated in the October, 1979 *Atlantic Monthly,* investing in transit fails to save energy or reduce air pollution for two reasons: First,** spending more money on transit does not significantly reduce driving. Second, transit uses just about as much energy as cars, so even if we could persuade people to take transit it would not save energy(see http://www.theatlantic.com/doc/197910/197910). Dr. Lave's arguments are as valid today as they were in 1979, and as valid for greenhouse gas emissions as for energy and other pollutants. The difference between 1979 and today is that today we have much more evidence to back up Dr. Lave's points. Transit Investments Do Not Significantly Increase Transit RidershipTransit subsidies have historically had only a trivial effect on ridership. Between 1987 and 2007, annual subsidies in real dollars grew by 68 percent. Yet annual ridership grew by only 18 percent. **While capital subsidies are sketchy before 1987, operating subsidies increased by 1240 percent since 1970. Yet ridership grew by only 45 percent. More importantly,** despite total real subsidies of well over three-quarters of a trillion dollars since 1970, per-capita transit ridership and passenger miles actually declined. Figure one (on page 8) shows that per-capita transit travel declined more-or­-less steadily from 1970 through 1995. **Although per-capita transit usage has grown a little since 1995, it remains below 1988, and far below 1970, levels. Moreover, as figure two shows, while** per-capita transit travel was declining, per-capita urban driving grew by 120 percent. Transit carried more than 4 percent of urban travel in 1970; but it fell below 2 percent in 1990 and now stands at 1.6 percent.My former hometown of Portland, Oregon has invested more than $2 billion in light rail and streetcars. Yet this has had almost no effect on Portland travel habits. In 1980, before Portland built its first light-rail line, the census found 9.8 percent of Portland urbanized area commuters took transit to work. Today, Portland has four light-rail routes and a streetcar line, yet the Census Bureau's American Community Survey says only 6.5 percent of Portland commuters take transit to work. The number of Portland-area residents taking transit to work actually declined between 2000 and 2007. These census numbers are confirmed by a 100-percent census of downtown employers conducted by the Portland Business Alliance in 2001 through 2007. More than two-thirds of all Portland-area transit commuters work in downtown Portland, but this census found that 7 percent fewer downtown workers took transit to work in 2007 than in 2001.

### 1NC – AT: Solvency – Overestimation

#### Overoptimisim and overruns psychologically unavoidable – estimated numbers serve as arbitrary “anchors”

Flyvbjerg 9 (Bent, professor of planning @ Aalborg university in Denmark + Oxford graduate, “Delusion and deception in large infrastructure projects,” California Management Review, 2009)

**In one set of experiments, Bue- hler, Grifﬁn, and Ross assessed the accuracy of psychology students’ estimates of completion times for their year-long honors thesis** project.14 In the experiments, **the students’ “realistic” predictions were overly optimistic: 70% took longer than the predicted time**, even though the question was asked toward the end of the year. On average, students took 55 days to complete their thesis, which was 22 days longer than predicted. **Similar results have been found with various types of subjects and for a wide variety of tasks** such as holiday shopping, ﬁling taxes, and other routine chores.15 **These ﬁndings are not limited to the laboratory. Cost and time overruns in large infrastructure projects have been studied** by considering numerous con- tractual arrangements. In the case of conventional procurement, in which the public entity separately engages with several private companies, each of them providing a speciﬁc part of the service, **costs and times overruns have been sys- tematically observed** in a wide range of projects.16 In business, **executives and entrepreneurs seem to be highly susceptible to this bias. Studies that compared the actual outcomes of capital investment projects, mergers and acquisitions, and market entries with managers’ original expectations for those ventures show a strong tendency towards overoptimism**.17 An analysis of start-up ventures in a wide range of industries found that **more than 80% failed to achieve their market-share target**.18 Anchoring **and adjustment is another consequence of the inside view thinking** that leads to optimistic forecasts.19 Anchoring on plans is one of the most robust biases of judgment. **The ﬁrst number that is considered as a possible answer to a question serves as an “anchor.” Even when people know that the anchor is too high or too low, their adjustments away from it are almost always insufﬁcient. A classic experiment revealed the power of anchoring and insuf- ﬁcient adjustment. People were asked to estimate various percentages**, such as the percentage of African countries in the United Nations.20 **For each quantity, a number was determined by spinning a wheel of fortune in the presence of the subject. The subjects were ﬁrst asked to indicate whether the number was higher or lower than the percentage of African countries and then to estimate the percentage by moving upward or downward from the arbitrary number. The arbitrary number had a substantial effect on the estimates**. For instance, **the median estimate** of the percentage of African countries in the United Nation **was strongly related to the starting points**: individuals who received 10, estimated 25% whereas those that received 65, estimated 45%. **These subjects started from a random anchor and then insufﬁciently adjusted away from it.**

#### Planned estimates serve as overestimated “anchors” –fail to adjust to overruns

Flyvbjerg 9 (Bent, professor of planning @ Aalborg university in Denmark + Oxford graduate, “Delusion and deception in large infrastructure projects,” California Management Review, 2009)

**In the context of planning for a large infrastructure project, there is always a plan, which is very likely to serve as an anchor**. Furthermore**, the plan that is developed is almost always seen as a “realistic” best or most likely case. Executives know that events may develop beyond the best or most likely case so they generally attempt to capture unforeseen costs by building in a contingency fund that is proportional to the size of the project** (e.g., for cost overruns in capi- tal investment projects). However, **when compared with actual cost overruns, such adjustments are clearly and signiﬁcantly inadequate**.22 Furthermore, **the initial estimate serves as an anchor for later-stage estimates, which never sufﬁciently adjust to** the reality of the project’s **performance**. The power of these heuristics and biases is well illustrated in a ﬁeld study where the Rand Corporation examined 44 chemical process plants (Pioneer Pro- cess Plants), owned by ﬁrms such as 3M, du Pont, and Texaco. **Actual construction costs were over twice as large as the initial estimates**.23 Furthermore, **even a year after start-up**, about half of the **plants** (21) **produced at less than 75% of their design capacity**, with a quarter of the plants producing at less than 50% of their design capacity. Many of the plants in this latter category had their perfor- mance expectations permanently lowered. As illustrated in Figure 1, the typical initial estimate is less than half the ﬁnal cost. Furthermore, **at every subsequent stage of the process, managers underestimate the cost** of completing the construction of Pioneer Process Plants.

#### Misleading estimates for transportation projects stem from systematic bias aimed at justifying policy implementation- the affirmative is no different

Flyvbjerg et al, ’03 (BENT FLYVBJERG\*, METTE K. SKAMRIS HOLM and SéREN L. BUHL Department of Development and Planning, Aalborg University, Fibigerstraede 11, DK-9220, 71±88”Aalborg, Denmark, “TRANSPORT REVIEWS, 2003, VOL. 23, NO. 1, <http://flyvbjerg.plan.aau.dk/COSTFREQ4.pdf>)

Despite the enormous sums of money being spent on infrastructure development around the world, surprisingly little systematic and reliable knowledge exists about the costs, benfits and risks involved. The objective of the study reported here is to produce such knowledge. More specifically, the objective is to provide answers to the question of whether transport infrastructure projects perform as promised in terms of costs and benefits, or whether costs and benefits are highly uncertain phenomena involving significant elements of risk? The present paper covers the cost side of transport infrastructure development, based on a sample of 258 projects worth approximately US$90 billion (constant 1995 prices). The answer to this question is, with overwhelming statistical significance, No, transport infrastructure projects do not perform as promised, and, Yes, costs are highly uncertain involving substantial elements of downside risk. The main findings from the study are (all highly significant, and most likely conservative) the following: . Nine out of 10 transport infrastructure projects fall victim to cost escalation. . For rail average cost escalation is 45% (SD=38). . For fixed links (tunnels and bridges) average cost escalation is 34% (SD=62). . For roads average cost escalation is 20% (SD=30). . For all project types average cost escalation is 28% (SD=39). . Cost escalation exists across 20 nations and five continents; it appears to be a global phenomenon. . Cost escalation appears to be more pronounced in developing nations than in North America and Europe (data for rail only). . Cost escalation has not decreased over the past 70 years. No learning seems to take place. Or, alternatively, project promoters and forecasters have learned what there is to learn, namely that cost escalation pays off; Cost overruns in transport infrastructure projects are the simple consequence of cost underestimation and underestimation is used tactically to get projects approved and built. We conclude that cost estimates used in public debates, media coverage and decision-making for transport infrastructure development are highly, systematically and significantly deceptive. Cost ± benefit analyses are typically centrally placed in infrastructure decision-making to calculate viability and to rank projects. However, cost ± benefit analyses will be as misleading as the estimates of the costs and benefits that enter into such analyses, which in turn will result in the misallocation of scarce resources. Moreover, the risks generated from misleading cost estimates are typically ignored or underplayed in infrastructure decision-making, to the detriment of social and economic welfare. Risks, therefore, have a doubly negative effect in this particular policy area, since it is one thing to take on a risk that one has calculated and is prepared to take, much as insurance companies and professional investors do, while it is quite another matter Ð that moves risk-taking to a different level Ð to ignore risks, especially when they are of the magnitude we have documented here. Such behaviour is bound to produce losers among those financing infrastructure, be they taxpayers or private investors. If the losers, or, for future projects, potential losers, want to protect themselves, then our study shows that the risk of cost escalation, and related risk assessment and management, must be placed at the core of decision-making. Our goal with this paper has been to take a first step in this direction by producing the type of knowledge that is necessary to initiate such risk assessment and management.

#### Misleading cost estimates have several negative policy implications- you as a policy maker should evaluate them

Flyvbjerg et al, ’03 (BENT FLYVBJERG\*, METTE K. SKAMRIS HOLM and SéREN L. BUHL Department of Development and Planning, Aalborg University, Fibigerstraede 11, DK-9220, 71±88”Aalborg, Denmark, “TRANSPORT REVIEWS, 2003, VOL. 23, NO. 1, <http://flyvbjerg.plan.aau.dk/COSTFREQ4.pdf>)

The policy implications of our findings are clear. First, the findings show that a major policy problem exists for this highly expensive field of public policy. The problem is the pervasiveness of misinformation in the planning of transport infrastructure projects, and the systematic bias of such misinformation toward justifying project implementation. Second, the size and perseverance over time of the problem of misinformation indicate that it will not go away by merely pointing out its existence and appealing to the good will of project promoters and their forecasters to make less deceptive forecasts. The problem of misinformation is an issue of power and profit and must be dealt with as such, using the mechanisms of accountability we commonly use in liberal democracies to control power and rent-seeking behaviour that have got out of hand. Institutional checks and balances must be put in place to curb misinformation, including financial, professional or even criminal penalties for ignoring or giving misleading information about risk and for consistent or foreseeable estimation `errors'. The work of developing such checks and balances has been begun in Bruzeliuset al. (1998) and Flyvbjerget al. (2003), with a focus on four basic instruments of accountability in transport infrastructure planning and policy-making: (1) increased transparency, (2) the use of performance specifications, (3) explicit formulation of the regulatory regimes that apply to project development and implementation and (4) the involvement of private risk capital, even in public projects.

#### Statistics show price costs for transportation projects are almost always underestimated, and cost escalation happens in 9 of 10 projects

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Figure 1 shows a histogram with the distribution of construction cost escalation for all 258 projects in the sample. Cost development is calculated, as mentioned, as actual cost minus forecast cost as percentage of forecast cost. A cost development of zero for a project means that the forecast costs for the project were correct and thus equaled actual costs. If errors in forecasting costs were small, the histogram would be narrowly concentrated around zero. If errors in overestimating costs were of the same size and frequency as errors in underestimating costs, the histogram would be symmetrically distributed around zero. Neither is the case. We make the following observations regarding the distribution of cost development (figures rounded o to nearest integer value): Cost escalation happens in almost nine out of 10 projects. For a randomly selected project, the likelihood of actual costs being larger than forecast costs is 86%. The likelihood of actual costs being lower than or equal to forecast costs is 14%. . Actual costs are on average 28% higher than forecast costs (SD=39). . We reject with overwhelming significance the thesis that the error of overestimating costs is as common as the error of underestimating costs (p50.001; two-sided test, using the binomial distribution). Forecast costs are biased and the bias is caused by systematic underestimation. We reject with overwhelming significance the thesis that the numerical size of the error of underestimating costs is the same as the numerical size of the error of overestimating costs (p 50.001; non-parametric Mann ± Whitney U-test). Costs are not only underestimated much more often than they are overestimated or correct, costs that have been underestimated are also wrong by a substantially larger margin than costs that have been overestimated.

#### Empirics-focused studies prove that cost overruns on transportation projects are almost guaranteed

**Flyvbjerg et al ’03** (BENT FLYVBJERG\*, METTE K. SKAMRIS HOLM and SéREN L. BUHL Department of Development and Planning, Aalborg University, Fibigerstraede 11, DK-9220, 71±88”Aalborg, Denmark, “TRANSPORT REVIEWS, 2003, VOL. 23, NO. 1, <http://flyvbjerg.plan.aau.dk/COSTFREQ4.pdf>)

Despite the hundreds of billions of dollars being spent on infrastructure development **Ð from roads, rail and airports to energy extraction and power networks to the Internet Ð surprisingly little reliable knowledge exists about the performance of these investments in terms of actual costs, benefits and risks. This paper presents** results from the first statistically significant study of cost performance in transport infrastructure projects. **The sample used is the largest of its kind,** covering 258 projects in 20 nations worth approximately US$90 billion **(constant 1995 prices). The paper** shows with overwhelming statistical significance that in terms of costs transport infrastructure projects do not perform as promised. The conclusion is tested for different project types, different geographical regions and different historical periods. Substantial cost escalation is the rule rather than the exception. **For rail, average cost escalation is 45% (SD=38), forfixed links (tunnels and bridges) it is 34% (62) and for roads 20% (30).** Cost escalation appears a global phenomenon, existing across 20 nations on five continents. Cost estimates have not improved and cost escalation not decreased over the past 70 years. Cost estimates used in decision-making for transport infrastructure development are highly, systematically and significantly misleading. Large cost escalations combined with large standard deviations translate into large financial risks. However, such risks are typically ignored or underplayed in decision-making, to the detriment of social and economic welfare.

### 1NC – AT: Solvency – Public Fails

#### Technological projects that fail to address public thinking and behavior fail – public support, compliance

Pike 10 (Cara, the social capital project at the climate leadership initiative, “Climate communications and behavioral change,” University of Oregon, 2010, www.theresourceinnovationgroup.org/...)

At its heart, **global warming is a cognitive and behavior change challenge**. Public support for taking action to address global warming is declining **just as it is needed most to implement emission reductions and climate preparedness programs and push for new policies. Even if new climate policies are enacted, in the short term they are unlikely to stabilize emissions due to their long ramp-up periods and many challenges involved with implementation**. This is particularly concerning given recent evidence that indicates global warming is ocurring more quickly than originally projected. Carbon dioxide and other heat-trapping gas emissions must be dramatically reduced as soon as possible. **To address global warming there must be a shift in thinking and behavior that motivates people and organizations to engage in emissions reductions and climate preparedness activities and support new policies. Mounting evidence shows that this shift is not only possible, but an important part of a national strategy. Even simple actions taken at the household and organizational levels can rapidly and significantly reduce carbon emissions.**1 **Making these changes would buy time and build public support for new policies that could spur greater reductions. In order to motivate people to alter their views and behaviors related to global warming, leaders** within all levels of government, the private sector, non-profits and communities **must become aware of and utilize the fundamentals of effective climate communications, outreach, and behavioral change mechanisms.**

#### Focus on technological change devalues the need for social and systemic change in cognition

Pike 10 (Cara, the social capital project at the climate leadership initiative, “Climate communications and behavioral change,” University of Oregon, 2010, www.theresourceinnovationgroup.org/...)

Even if it is in the future, **many Americans believe that experts will eventually come up with technological solutions to global warming. This reduces the need for changes in behavior or the enactment of new policies now. This is not surprising given the rapid pace of technological development that Americans have experienced and the benefits of that development most have experienced. The problem is that this notion reduces the sense that we need to make lifestyle and systemic changes in our culture.**

#### To change public behavior and destructive thinking models, we must change our assumptions about the world and our role in it

Pike 10 (Cara, the social capital project at the climate leadership initiative, “Climate communications and behavioral change,” University of Oregon, 2010, www.theresourceinnovationgroup.org/...)

**How do changes in thinking and behavior come about? What does it take for individuals, organizations or society to shift their practices? Despite their common use, guilt, fear, and shame do not often motivate people to change their behavior and support effective policies**. If these tactics don’t work, what does? The **behavior of each one of us is shaped by deeply held core beliefs and assumptions about how the world works and our place in it. Many people believe that nature has an infinite capacity to provide resources for humans and an unlimited capacity to absorb waste**, which has helped to deeply embed the Take-Make-Waste model in our culture. **People who hold this view automatically respond to information that appears contradictory by ignoring, denying, or challenging it and continue doing what they are doing such as emitting carbon, even if it is self-destructive. To help people, organizations, and societies challenge their automatic thoughts and behaviors**, outreach strategies must incorporate three fundamental elements of change. From smoking cessation to promoting corporate sustainability, **successful behavior change programs illustrate that there must be sufficient tension, efficacy, and benefits present to make deep-seated shifts.**

#### Self-assessment key to fundamental change on warming

Pike 10 (Cara, the social capital project at the climate leadership initiative, “Climate communications and behavioral change,” University of Oregon, 2010, www.theresourceinnovationgroup.org/...)

**Deep-seated personal or organizational self-assessments are often at the heart of the deliberation about whether or not to make a fundamental change. People and groups must ultimately decide whether they are happy with the current state of affairs and able to live out their values. They are often frightened about change because they are unclear what they would need to give up to engage in activities to address global warming. Climate leaders should develop and use straight- forward tools to help people through the self-evaluation process** and to determine the upsides of action.

### 1NC – AT: Solvency – Time Overruns

#### Statistical hypothesis testing confirms that the longer the longer a project takes to complete, the larger the cost escalation from the initial estimate is

**Flyvbjerg, ‘04**

(BENT FLYVBJERG, METTE K. SKAMRIS HOLM AND SØREN L. BUHL, Department of Development and Planning, Aalborg University, Aalborg, Denmark, “What Causes Cost Overrun in Transport Infrastructure Projects?” Transport Reviews, Vol. 24, No. 1, 3–18, January 2004)

Are Sluggish Projects More Expensive? The Commission of the European Union (1993, p. 76) recently observed that the ‘inherent sluggishness’ of the preparation, planning, authorization and evaluation procedures for large infrastructure projects creates obstacles to the implementation of such projects. There is a fear that obstacles in the planning and implementation phases translate into cost escalation, if they do not block projects altogether (Ardity et al., 1985; Morris and Hough, 1987; Snow and Dinesen, 1994; Chan and Kumaraswamy, 1997). We decided to test whether such fear is corroborated by the empirical evidence. More specifically, we decided to test the thesis that projects with longer implementation phases tend to have larger cost escalations. We define here the length of the implementation phase as is common, i.e. as the period from the decision to build to construction is completed and operations have begun. Cost development is defined as the difference between actual and forecast construction costs as a percentage of forecast construction costs. Information about the length of the implementation phase is available for 111/258 rail, fixed link (bridges and tunnels) and road projects for which we have data on cost development (38/58 rail, 33/33 fixed link, 40/167 road projects). Figure 1 shows the dependence of cost escalation on the length of the implementation phase. It suggests that there is a statistical relationship between the length of the implementation phase and the cost escalation where a longer implementation phase tends to result in a larger cost escalation. Statistical tests corroborate this impression. The tests have been carried out with and without projects with implementation phases of 13 years and longer. The reason for the 13-year cut-off is that the assumptions for the regression analysis do not seem to be fulfilled for projects of longer duration, mainly linearity and homoscedasticity. Projects with implementation phases of 13 years and longer can be considered as statistical outliers. This is revealed by residual plots and is most obvious for bridges and tunnels. For uniformity, the cut-off has been done for all groups. When the outliers are included, the results of analyses are less sharp owing to higher statistical error. For the 101 projects with implementation phases known to be less than 13 years, we find a highly significant dependence of cost escalation on the length of the implementation phase (p < 0.001, t-test). The null hypothesis that the length of the implementation phase has no effect on cost escalation is falsified. Longer implementation phases significantly tend to translate into larger percentage cost escalations. The influence of the length of the implementation phase on cost escalation is not statistically different for rail, fixed link (bridges and tunnels) and road projects, respectively (p = 0.159). We have chosen to treat the three types of projects on aggregate. Three regression lines could be given, one for each project type. However, the null hypothesis of a common regression line is in conformity with the data and gives a simpler model. p is low but not close to 0.05. The regression line for cost escalation as a function of the length of the implementation phase is shown in Figure 1.

#### Big transportation projects never run on time schedule—just orient to goals

Flyvbjerg et al, ’03 (BENT FLYVBJERG\*, METTE K. SKAMRIS HOLM and SéREN L. BUHL Department of Development and Planning, Aalborg University, Fibigerstraede 11, DK-9220, 71±88”Aalborg, Denmark, “TRANSPORT REVIEWS, 2003, VOL. 23, NO. 1, <http://flyvbjerg.plan.aau.dk/COSTFREQ4.pdf>)

The planning phase of project development has a significantly longer time horizon than the other phases, usually greater than 20 years.The individual agency approaches to this phase vary significantly. While some SHAs identify major projects, or even unique minor projects,most long-range plans do not identify specific projects, but rather establish strategic directions for state investment in the transportation system. Statewide plans often identify areas where more detailed planning is required. However, regional transportation plans are very different. These plans do identify specific projects that are to be implemented over the next 20 years.The fundamental purpose of planning cost estimates that support long-range plans is to provide an order-of-magnitude estimate of the funds needed over a 20-year planning horizon. Planning-phase cost estimates by nature involve the use of conceptual estimating techniques due to the limited project information available at the point in time when they are prepared.Projects lack definition and their scope is not finalized; therefore, many project risks are unknown and cannot be readily identified.With this in mind, some SHAs often include a predetermined percentage of the project cost as contingency in the estimates to accommodate these unknowns. Other SHAs determine contingency percentages using historical data from similar past projects. In any case, planningcost estimates are best presented in a range of costs rather than a single number. A range more appropriately reflects the low level of definition associated with planning estimates.During the planning phase,cost estimation management focuses primarily on updating planning dollar amounts and communicating the cost updates through the long range plan.

### 1NC – AT: Warming – Cant Solve

#### Social projects on warming must target people’s self-worth – recent fatalism encourages inaction

Pike 10 (Cara, the social capital project at the climate leadership initiative, “Climate communications and behavioral change,” University of Oregon, 2010, www.theresourceinnovationgroup.org/...)

**In addition to re-envisioning our economic model, we also need to re-evaluate some of our worldviews. The majority of Americans may accept that global warming is occurring yet they are increasingly fatalistic about their own lives, let alone our ability to address global warming. Even people who already care have a hard time imagining how they can make a dent in such a massive global challenge and they question governments’ ability to do the same. To increase public support** for taking action on global **warming**, **the public’s role in creating change must be reframed by tapping into people’s basic need to feel that their lives have meaning. Successful public engagement in global warming requires connecting people to one another through a shared sense of purpose.**

#### Personal identity key to solve warming – associations, fatalism, meaning

Pike 10 (Cara, the social capital project at the climate leadership initiative, “Climate communications and behavioral change,” University of Oregon, 2010, www.theresourceinnovationgroup.org/...)

**It is hard for most people to understand how global warming will impact their lives and even more difficult to see how working to address it could benefit them**. Part of the reason for this is that **most outreach campaigns fail to connect with people’s identities and the type of benefits that are meaningful to them. This failure is related to the fact that global warming is associated with environmentalists who are seen as either rich white urbanities or as extremists who are out of touch with the needs and interests of mainstream Americans. This environmental elitism is problematic because many people who care about global warming don’t see themselves as the type of person who gets involved. Environmental actions are also often associated with pricey green consumer choices that most cannot afford.** Another component of the identity challenge is **the tendency for people to view global warming through a partisan lens. Those who tend to deny or discount global warming are typically conservative Republicans, and they are likely to reject claims of benefits when they come from Democratic political leaders or liberals championing the issue**. **3. Environmental Fatalism Challenge** **Isn’t it too late to address global warming? Why should I act when no one else is going to bother? If everything is so screwed up, I may as well get my piece of the pie while I can. Fatalism comes in many forms but the bottom line is that you might care about global warming but if you don’t think anything can be done to make things better, you are not likely to act. Fatalism is particularly high among younger Americans who have little faith that anyone can address the issue**, from government, business and civic leaders to scientists and academics. They do not see the benefit to engaging in civic life**. Yet it is younger Americans who are going to have to deal with increasing climate impacts and who ultimately need to be engaged.**

### 1NC – AT: Decision Calc

#### Risk perception key – it frames our decisions to act

Pike 10 (Cara, the social capital project at the climate leadership initiative, “Climate communications and behavioral change,” University of Oregon, 2010, www.theresourceinnovationgroup.org/...)

**Dealing with risk is something people do all the time. People’s perception of risk is not just based on factual data but on their values and worldviews. As a result, the ways in which risks are framed and how people within our social networks respond to those frames greatly influence the decision to act. Framing is not simply messaging; it is a conceptual exercise that involves tying ideas together into a comprehensive picture that makes it easier for people to organize information and sort out its relevance to their lives. When it comes to global warming, framing requires fundamentally rethinking how we live and the resources necessary to power those lifestyles.**

# Rail Neg

#### Rail projects always go over cost, studies prove

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Statistical analysis of the figures in the table show that means and standard deviations are significantly different for different project types. Projects, therefore, should not be pooled; each project type should be considered separately. The table shows: [1] . Rail has the largest cost escalation with an average of 44.7%, followed by bridges and tunnels with 33.8%, and finally roads with 20.4%. [2] . For rail, 75% of all projects have cost escalations of at least 24%. [3] 25% of projects have cost escalations of at least 60%. . [3] The hypothesis that type of project has no effect on cost escalation is rejected at a very high level of statistical significance (pB0.001). The hypothesis that the error of underestimating costs is as common as the error of overestimating costs, or is numerically of the same size, is rejected with very high significance (p B0.001). For a randomly selected project the frequency of cost escalation is 86% whereas the frequency of correct forecasts or cost savings is 14%. The size and frequency of cost escalation shown here, and the large standard deviations for forecasts of costs, documents a high level of uncertainty and risk as regards construction costs for transportation infrastructure projects in general, and particularly for rail, bridges, and tunnels.

#### Data proves, Rail ridership is vastly exagerated

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For all urban rail projects, excluding the two German outliers, the following applies: Actual ridership is on average 50.8% lower than forecast. . Only two projects out of 22 achieved the forecast ridership. Three-quarters of projects achieved a ridership that was at least 40% lower than forecast. One-quarter of projects achieved a ridership that was at least 68% lower than forecast. In sum, for urban rail projects forecast ridership is routinely far from achieved. Low actual ridership combined with a high standard deviation show that uncertainty and risk are very high for ridership forecasts for urban rail. To the extent that ridership is the basis for revenues, which is almost always the case, then the high risk regarding ridership translates into an equally high economic risk. The figures show this risk should be taken very seriously in urban rail projects and should occupy a central placein preparing, deciding, and operating such projects.

#### Rail doesn’t generate revenue

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The analysis of construction costs show that urban rail projects on average turn out substantially more costly than forecast. At the same time the analysis of ridership show urban rail to achieve considerably fewer passengers than forecast and thus lower revenues. Urban rail is therefore economically risky on two fronts, both as regards costs and as regards revenues. Urban rail is doubly risky and the possibilities for financing cost escalations incurred during construction through increased revenues from more passengers during operations will often be limited. In order to analyze the double risk of urban rail in a more systematic fashion, all urban rail projects were identified for which data were available both for the difference between forecast and actual costs and for the difference between forecast and actual ridership. This is 14 projects, of which eight are located in North America and six in Europe. Table 7 shows the data for the 14 projects. The double risk with both cost escalation and lower-than-forecast ridership is exceedingly clear for these projects. However, the two German projects mentioned above, which should be considered statistical outliers, are included in the 14 projects in Table 7. Table 8 shows the data if the two German projects are excluded as statistical outliers, as they should be. The double risk is now even more pronounced with an average cost escalation of 40.3% combined with an actual ridership that is on average 47.8% lower than forecast. With only 12 observations reservations must be made for small numbers. Yet, the numbers are so significant and are supported so distinctly by the larger number of observations in other parts of the analysis that the conclusion stands firm that urban rail projects are high-risk ventures because revenue risks amplify cost risks and create projects that are risky to the second degree.

#### Poorly estimated right-of-way costs routinely contribute to cost escalation in transportation infrastructure projects

Anderson et al, ‘08

(Stuart Anderson Texas Transportation Institute College Station, TX Keith Molenaar University of Colorado Boulder, CO And Cliff Schexnayder Del E. Web School of Construction Arizona State University Temple, AZ, “Right of way methods and Tools to Control Project Cost Escalation”)

The NCHRP Project 8-49 findings, based on a critical review of estimating literature, recent estimating research, and current estimating practice, suggest that a component of project cost escalation is related to right-of-way cost. Specific findings related to right-of-way from the Project 8-49 research are: • Actual expenditures for project right of way are frequently greater than the cost estimate produced during the initial phase of project development due to influencing factors such as poor estimating methods (difficulty with damages and condemnations), inconsistent application of contingency, and difficulty in accounting for future appreciation and other market conditions; 1• Management of these influencing factors and the right-of-way estimating process has the potential to significantly contribute to cost estimate consistency and accuracy throughout the project development process; • There is an opportunity to develop right-of-way specific cost estimating process steps based on successful SHA practices from around the country; and • There is a need to provide specific guidance on how to minimize controllable influencing factors and implement strategies, methods, and tools such that right-of-way estimates are improved. These findings established the initial basis and need for this research project. As part of this project a number of SHAs were interviewed about their right-of-way estimating practices. From those interviews it was clear that: 1. Cost escalation is a common occurrence related to right-of-way (confirming the first statement from the previous list); and 2. The right-of-way cost estimation and cost estimate management processes generally lack structure and definition as compared to the other areas of cost estimation; 3. There is a lack of integration and communication between those responsible for right-of-way cost estimating and those responsible for the overall project cost estimate. These three issues are further compounded by uncertainties specific to right-of-way estimating, which include: • Future highest and best use of the property; • Damages due to partial takings of properties; • Subsequent development of the property during the time interval between the cost estimate and actual acquisition; • The number of parcels that proceed to Eminent Domain and the associated costs of such takings; and • Inadequate project scope definition and information on parcels during the planning and programming phases of project development. Complicating the uncertainties listed above is the human factor related to acquiring property for highway projects. The “human factor” can be defined as the uncertainty and unpredictability related to dealing with property owners when a public agency is attempting to acquire a property. The reaction of individuals affected by the proposed project is difficult to predict. Moreover the impacts of all these factors are intensified because of appreciating land values. Therefore, this research developed a structured process approach for right-of-way estimating that addresses these important issues.