



BRIEFLY

Existing infrastructure funding falls short of what state and local agencies require to meet the next wave of growth. Failure to provide infrastructure capacity to accommodate growth will not bring that growth to a halt. Instead, it will create chaos not only for newcomers, but for those who live here already.

Infrastructure in Washington: Connecting to Growth

All signs point toward a period of sustained population growth in Washington in the second half of the decade, which the state's infrastructure is not prepared to handle. Every new household in the urbanized areas needs water and sewer hook-ups and transportation networks need the capacity to move these new people to their jobs and around their neighborhoods. Likewise, growing businesses need utility hook-ups and the ability to move freight and service vehicles. State, and especially local governments, however, have limited ability to extend the infrastructure networks that allow urbanized areas to function and grow. Failure to provide the capacity to connect growth into infrastructure will not bring that growth to a halt, but will, instead, create chaos not only for newcomers, but for those who live here already.

The passage in 2005 of the new 9½ cent fuel tax, and the failure of the attempt to repeal it, are certainly good signs that the leaders and voters of the state take seriously the need to address deficiencies in infrastructure. Helpful as it is, however, the new fuel tax, and its 2003 predecessor, the "Nickel" program, fall short of what state and local agencies require to meet the next wave of growth. Efforts must now turn toward three key strategic needs:

Highway capacity for growth. The Legislature and the Department of Transportation (WSDOT) have allocated a substantial portion of the new fuel tax revenue to projects that replace and refurbish existing highway capacity and relieve existing congestion, but do not add substantial new capacity in areas slated for growth. There is no question that the Alaskan Way Viaduct and the SR-520 bridge need replacing, and that chokepoints in the freeway system need attention, but these very expensive projects do not extend the system or provide enough expansion in heavily traveled corridors. We need a strategy that specifically adds new capacity for growing areas.

Local road needs. While the Legislature has given state highway programs a total of 14 cents-per-gallon of new fuel tax revenue, local governments have received only ½ cent, shared between cities and counties. The compact urban forms that the Growth Management Act (GMA) calls for require major expansions of local streets and arterials, and extension of arterials to newly-developing areas.



But in the face of this need, local governments have lost local option funding and seen inflation diminish the purchasing power of their share of the fuel tax. The aggressive funding, efficiency and accountability programs now in place at the state level need to move to the local level.

Water, sewer and stormwater systems. While transportation deficiencies get most of the attention, inadequacy of water, sewer and stormwater systems has greater potential to misdirect or distort growth. Irritating as traffic may become, it does not pose public health or environmental problems the way overloaded water, sewer and stormwater systems can. Currently, these systems are funded, built and operated at the local level, with state help only at the margins, and yet rising costs and increasing regulatory burdens place many local systems in jeopardy. We need a fresh look at how we can provide water and sewer hook-ups to growing areas of the state.

This policy brief looks at the challenges facing state and local agencies as they try to keep up with the infrastructure needs of a growing state. It begins with a look at growth trends and how they are likely to affect infrastructure networks. It continues with some specific policy dilemmas faced by state and local agencies, followed by a discussion of priority-setting processes that determine how money gets spent. The brief concludes with a review of funding sources now in use and the degree to which they can be used to fund system expansions and extensions needed for growth.

This brief makes a distinction between two types of infrastructure capacity expansion. The first, and currently most common, type of capacity expansion happens in already developed areas. Some of this capacity is aimed at encouraging and facilitating infill development, but much of it tries to remedy system overloads caused by insufficient investment in the past. The second, and more rare type of capacity expansion, extends systems into newly-developing areas to provide the infrastructure needed for new homes and businesses. As will be shown, this latter type of capacity expansion tends to fall to the bottom of the priority list, which both inhibits needed housing growth and points toward capacity overload in the future.

GROWTH IS COMING – AND IT FLUSHES A LOT

Like most coastal areas of the country, Washington State typically grows faster than the national average. While Washington’s natural population increase – births minus deaths – tracks the rest of the country, migration has caused the state’s population to surge. With the exception of a couple of years in the early 1980s, Washington has seen a net in-migration of people every year since the Boeing Bust of 1970. Two key features of this migration pattern play a role in demand for housing, and, therefore, for infrastructure to serve that housing.

First, in-migrants tend to be younger, well-educated and high-earning. (Franklin, 2003) A migrant is much more likely to be a young software engineer recruited by Microsoft or a botanist recruited by Weyerhaeuser than to be a middle-aged laborer with a high school diploma. While major contributors to economic vitality, these migrants will place strains on the state’s housing stock and infrastructure, since they will look for family-



style housing and have the money to pay high prices for it.

Second, migrants come from California more often than anywhere else. In fact, one-in-eight Washingtonians was born in the Golden State. The northern migration of Californians does not come from an aversion to sunshine and surf, but rather because the economies of Washington and California have many parallels. The California workforce has abundant skills that Washington employers demand.

Thus, migration from California follows the relative fortunes of the two states' economies, especially aerospace and high tech. Recent trends and projections from the states of California and Washington indicate that we could be in for a new wave of in-migration. First, while overall employment in California is expected to grow at about the national average of 1.5 percent in the next two years, Washington's employment is expected to grow at around 2.5 percent. But more significantly, Boeing is gearing up production in Washington, while the California aerospace industry has yet to recover from sharp job losses in the past five years. Similarly, the California software and internet industries show flat growth over the next few years, while these industries will grow in Washington. (Washington State Economic and Revenue Forecast Counsel, 2005; California Department of Finance, 2005).

If the Washington economy does keep up a pace of employment growth in the 2.5 percent range, and the rest of the country is bumping along at 1.5 percent, we can expect to see not only Californians coming to Washington, but also well-qualified people from elsewhere. After all, the people who lost their jobs in the last recession are not necessarily candidates for the new jobs being created today. And if the trends noticed by the Census bureau hold true, the in-migrants will sooner or later gravitate toward detached housing in areas with good schools for their children. Those software engineers who move into the urban lofts have a habit of becoming soccer moms and dads before too long, placing a full complement of strains on infrastructure with their high number of daily trips and multiple bathrooms.

So, while our growth strategies emphasize infill and higher densities, with their lower demands on infrastructure, actual population growth trends point toward continued demand for conventional single family development which requires high capacity infrastructure retrofit and extensions.

POLICY CHALLENGES

Deficiencies in state and local infrastructure cannot be blamed on a lack of planning. The state DOT has a detailed investment plan, metropolitan transportation planning organizations all have regional plans, and local jurisdictions have infrastructure elements in their comprehensive plans. Plans, however, do not generate revenue, and the actual process of deciding what projects to build and how to pay for them is fraught with policy and political challenges. Those challenges include:

Assessing local needs. Local governments face a dilemma when describing their infrastructure needs. The vehicle to outline those needs is the capital facilities element of the local comprehensive plan which, in turn,



drives the jurisdiction's capital improvement plan. These documents, however, do not allow jurisdictions to keep up with infrastructure needs of growth for two reasons.

First, the process looks out only six years, whereas the rest of the land use planning process looks out 20 years. In the world of land development, six years is not a very long time, so developers can never know for certain if and when areas slated for development within the 20 year planning horizon will have road and utility extensions. The Buildable Lands Process promises developable land, but infrastructure plans cannot indicate if much of that land will be served. (Washington Research Council, 2005)

Second, the whole process must be "resource constrained," listing only those projects that have identified funding. This helps prevent irresponsible planning, but also ensures that many "needs" will never see the light of day, since they exceed known funding within the six-year CIP timeframe.

To gain additional resources from the Legislature it would be helpful to know the magnitude of the challenge facing local governments. The systems for gathering and aggregating information about local infrastructure needs are, however, not adequate to the task. Previous studies have provided only an incomplete snapshot of needs, and a comprehensive information system, known as LINAS, remains incomplete and unreliable. A recent study placed the statewide local infrastructure funding gap at between \$2.3 billion and \$5.5 billion, which is too wide a range for effective resource planning. (Freund, 2006).

Freeway capacity: the elephant in the room. When the current freeway network was laid out in the 1950s, Washington had a population of about 2.5 million, or less than half of today's population. Moreover, fewer households owned cars (let alone three or four) and fewer women commuted to work. In the past 50 years, population, car ownership and individual vehicle-miles traveled have all exploded in the state, with very few new lane miles added to the freeway system. The results show: chronic traffic congestion throughout the urbanized areas of the state, which spills over onto local arterials.

Yet transportation plans show only fragmented sections of general purpose lane being added to this dysfunctional system. These plans will relieve congestion at choke points but will not allow major growth in use of the system. Conventional wisdom suggests the futility of trying to expand the freeway system, since the enormous costs would not yield major improvements in congestion. But with large segments of the freeway system operating at capacity for much of the day, it has no further capacity to absorb the growth that is coming to the state.

A second part of conventional wisdom about the freeway system is that transit will absorb much of the new travel demand. But current plans do not indicate that transit ridership will grow much beyond its current market share. The Puget Sound Regional Council estimates that if all the projects in its Destination 2030 plan are completed, transit's share of all trips in the region will grow from 2.8 percent to 5.1 percent, and transit's share of commute trips will grow from 7.3 percent to 11.8 percent. Most of this modest ridership growth, however, will consist of trips to and from Downtown Seattle, with the rest of the region seeing minimal growth in transit.



The high cost and disruptive nature of major freeway expansion make it a difficult topic. Who really wants to contemplate an expansion of Interstate 5 across the Lake Washington Ship Canal? But it is hard to imagine the state and its urbanized areas growing by millions of people in the next decades without new capacity in the spine of the roadway system.

Retrofitting for infill. With the supply of undeveloped land in the peripheral parts of urban growth areas becoming scarce, housing development has moved towards infill areas, just as growth management anticipated. While growth management theory suggests that infill development saves money on infrastructure, it turns out that much of the infrastructure in these infill areas cannot accommodate growth, and retrofitting it is costly and difficult. Consider three problems with infill and infrastructure.

First, the capacity of the infrastructure serving a particular parcel, especially underground utilities, reflects the land use originally designated for the area. Pipes with capacity for single family housing may not have capacity for higher density multi-family housing, and many areas still use septic systems. Low density neighborhoods can function well without curbs, gutters and sidewalks, whereas those structures are necessary for higher densities.

Second, many areas slated for infill have badly deteriorated infrastructure that requires replacement, regardless of whether it has capacity. Many systems were built inexpensively in the first place and have reached the end of their useful life. Other systems, especially stormwater systems, fail to meet current performance standards. School districts across the state are replacing entire schools as little as 40 years old since they cannot support today's technologies and educational programs.

Third, trunk systems like arterials cannot accommodate additional growth, and are difficult or impossible to expand without huge cost and disruption. Many areas designated for high density infill already have substantial residential populations and retail and commercial uses which are absorbing transportation and utility capacity.

Funding the retrofit of infrastructure for infill presents some major political and social problems. In most areas designated for infill the existing infrastructure works fine for the current uses, and the residents and businesses in the area have little to gain by paying for upgrades. Some owners may recognize the increase in property values that would result from infrastructure upgrades, but others will have little interest in paying today for financial benefits they will not see until they sell their property. At the same time, the developer who puts the back-breaking straw on the camel and tips a system into overload should not have to pay to upgrade the entire system.

Many jurisdictions have recognized the need to upgrade infrastructure in infill areas, but most of these upgrades are associated with designated urban centers. Many other areas with good potential for infill do not have the high profile of urban centers or potential profitability high enough to induce developers to undertake infrastructure investments themselves. Such areas can languish for years and fail to meet their potential to accommodate growth.



Waiting for greenfield extensions. As will be discussed further below, so much effort and money goes toward rebuilding crumbling infrastructure and catching up with capacity deficiencies of the past, that not much is left to build road and utility extensions to undeveloped areas within urban growth boundaries. But as noted above, the kind of population growth we will experience suggests continued strong demand for traditional detached housing, and the easiest and most cost effective places to build those new neighborhoods are beyond the last sidewalk and sewer line.

This is where the problem of planning horizons comes in. The short time-frame for capital facilities planning, and the uncertainty of funding for capacity extensions, hampers the ability of developers to plan new subdivisions. The length of time from when a developer takes an option on a piece of property until the first toilet flushes in the development can be many years. For developers to be willing to risk money on property they need assurances that the city, county or utility district will have infrastructure finished on time. With new capacity extensions having low priority in most capital budgets, and concurrency requirements demanding new capacity to serve new development, growth on the periphery will slow, and prices of single family housing will continue to rise.

PRIORITIES FOR INFRASTRUCTURE FUNDING

Building, operating and maintaining an infrastructure system is a hugely complex undertaking, with needs always exceeding available funding. As much as administrators would like to think they have objective methods of setting priorities for the financial demands on their systems, decisions about where to put the next dollar have a political component (Sanders, 1984). The demands of present users will often outweigh the need to provide infrastructure for growth.

Following are the basic types of infrastructure work along with a sense of their relative priority within jurisdiction and agency budgets. These categories often overlap, with two or more types of work being accomplished in the same project.

Maintenance and operations. Agencies try to keep their systems operating within a set of performance standards. Road agencies have goals for pavement quality, timely pothole filling, signal reliability etc. Utilities need to fix leaks, keep pumping facilities operating and ensure water quality. These basic activities generally receive first call on funds. With utilities, maintenance funding comes through rates, and many cities can meet their basic maintenance and operations goals with dedicated funds such as fuel tax distributions.

Rebuild and replacement. Eventually facilities wear out and must be replaced to ensure reliability. Utilities can fund these projects either with pay-as-you go money from rates or with revenue bonds backed by rates. Transportation projects can be bonded at the state or local level, or funded through programs such as the Transportation Improvement Board. Ideally, deteriorating facilities should be rebuilt or replaced before catastrophic failure, but this does not always happen. In any case, rebuild and replacement tend to fall in a high priority category as well, since the integrity of the system depends on it.



Upgrades to new standards. Performance standards for infrastructure operate with a ratchet-effect. They tend to become gradually more stringent, and rarely less. New federal water quality standards and efforts to save endangered species have necessitated upgrades at water, sewer and stormwater utilities. Across the state, blighted urban roads are being transformed into attractive streetscapes with new sidewalks, plantings and trees. Neighborhood streets bounded by open ditches may receive the full curb-gutter-sidewalk treatment. The level of priority given to these projects varies, depending on the need to comply with legal requirements or whether a compelling case can be made for safety improvements.

Catch up with capacity deficiencies. Much of the new infrastructure capacity being added in the state today is intended to serve existing development. Demand has outstripped the capacity of the freeway and arterial systems in many areas, and those roads are now being expanded. “Congestion relief,” which has become a major emphasis of the state DOT, typically means adding capacity that should have been built 10, 20 or 30 years ago. The high priority given to remedying deficiencies can be seen in the project lists accompanying both the 2003 Nickel and the 2005 Transportation Partnership programs.

System extensions for growth. The types of projects that typically fall to the lowest priority level are those that provide new capacity ahead of growth. This can mean extending arterials or utilities into undeveloped areas, or adding the capacity that low density areas need to become higher density. An example of such a project is the proposed Cross-Base Highway in Pierce County. This new corridor would connect the Parkland/Fredrickson area, which has huge housing and commercial development potential, to Interstate 5, vastly increasing its attractiveness as a development area. Although the project has received enthusiastic support for 20 years, it has only received design funding so far.

This general sense of priorities, whether exercised through formal standards or through politically-generated project lists, has both political and administrative logic. Emphasizing the integrity of the existing system, through maintenance, preservation, and replacement, as well as safety, makes perfect sense. So does addressing chokepoints and bottlenecks that plague the system, as so many of the projects in both the Nickel and new Transportation Partnership programs do. The problem is, however, that these types of expenditures can easily eat up all the available money, leaving little to add capacity for the future.

The concurrency provision of the GMA dictates that infrastructure be in place at the time new residential and commercial developments get built. If infrastructure capacity for growth must compete for funding with maintenance, replacement, congestion relief and safety, it will tend to come out on the short end. After all, what is the political constituency for growth, as compared to the constituencies that use the current system? As will be discussed below and in the next paper in this series, capacity for growth needs its own funding mechanisms at the state and local level, based on the revenues generated by growth.

CURRENT INFRASTRUCTURE FUNDING SOURCES

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The discussion above on priority setting suggests that the current system of funding infrastructure is biased against new capacity aimed at growth. Following is an outline of current major state and local sources of infrastructure funding and an assessment of the degree to which they are now, or could be, used



to fund new system extensions to serve growing areas. This section covers original sources of funds, and notes where those funds can be leveraged with various kinds of debt.

Motor fuel tax. The state DOT receives the largest share of the motor fuel tax, with money going into several pots. The largest share – revenue from 11 cents per gallon – goes into the general DOT budget which funds primarily maintenance and replacement. The next share – the Nickel – funds projects on a legislatively-mandated list, many of which add new capacity. State DOT has bonded heavily against the Nickel revenue to accelerate construction of projects on the list. The new Transportation Partnership program, funded with 8.5 cents of the newest fuel tax, also works off project lists that include new capacity. As noted above, however, most of the projects in the Nickel and Partnership programs represent catch-up and congestion relief, rather than extensions to newly-developing areas.

The Transportation Improvement Board receives revenue from 3.0 cents per gallon of fuel tax, and uses this money to pay for city and county road improvements throughout the state. Among the various TIB categories, the Urban Arterial Program has the most promise for funding new capacity for growth. A look through the recent project list shows a number of projects that will have the effect of opening new areas to development. Many projects do, however, fall more into the category of upgrades or congestion relief.

Cities and counties receive a direct distribution from motor fuel tax as well. Currently, cities receive revenue from 2.5 cents per gallon, and counties receive revenue from 4.4 cents per gallon, with the revenue divided among jurisdictions by formulas. The last fuel tax increase included an additional 0.5 cents per gallon for both cities and counties. There may have been a time when these funds could help build new capacity, but since the fuel tax does not grow with inflation, and the recent increase is the first in 15 years, cities and counties have seen their fuel tax revenue shrink in purchasing power to the point where it falls short of meeting even maintenance and rebuilding needs. Most cities use some general fund revenues to supplement fuel tax revenues for their transportation operating budgets, and counties have a special transportation property tax levy to draw on.

Licenses and fees. The state DOT collects funds from a variety of licenses and fees. Some of this revenue goes toward the DOT road budget, but because these revenues are not bound by the 18th Amendment (which requires that fuel taxes be spent on roads only) they can be used for non-highway expenses such as the State Patrol. The funds that do go toward roads will be lumped in with the 11-cent portion of the fuel tax which largely funds maintenance and operations.

Property taxes. At the state level, property taxes go exclusively to fund education. At the local level, property taxes do fund transportation to some degree. Counties have a road levy that is intended to be used exclusively for transportation budgets. Since most of the undeveloped land that needs infrastructure extensions is found in unincorporated areas, these funds should be used for road extensions into those areas. In cities, property taxes go into the general fund, and most cities use some general fund revenues to supplement fuel tax distributions for their transportation budgets.

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The large arterial extension projects needed to open new areas for growth can-



not, however, be funded on a pay-as-you-go basis. Cities and counties will typically finance these projects with bonds which are repaid through property taxes. Smaller projects may be financed with “councilmanic” bonds which do not require a vote or a tax increase, but are retired through general fund budgets. Larger projects will require a voter-approved general obligation bond issue, which comes along with a property tax increase to retire the debt.

To the extent that cities and counties have unused regular property tax capacity, they can ask their voters for a “levy lid lift,” providing a property tax revenue stream dedicated to transportation. Although a lid lift does not generate the huge up-front cash that a bond sale does, it requires only a 50 percent majority vote, whereas bond issues require a 60 percent majority.

Other methods of extracting money from property owners to fund infrastructure include local improvement districts (LIDs) and road improvement districts (RIDs). These mechanisms fund specific infrastructure improvements through special assessments paid by the benefiting properties. Cities and utility districts often use LIDs to pay for new sewer extensions through low-density areas that have relied on septic systems. RIDs can fund improvements such as curb-gutter-sidewalk upgrades to residential streets. In all cases, however, the LID or RID must demonstrate that the improvement will increase the value of each property by at least as much as the amount paid by the property owner. Although they can be awkward and difficult to implement, LIDs and RIDs are perhaps the best tool for funding extensions of infrastructure capacity through low density areas.

Although the success of statewide initiatives to limit property taxes may scare some leaders away from considering bond issues, levy lid lifts or LIDs, those very initiatives have provided the capacity to use property taxes. After all, with property tax collections lidded at a one-percent annual increase, and with inflation and personal income in the state growing at a higher rate, most homeowners have experienced a real property tax cut in recent years. If properly approached, they may be willing to invest some of that tax cut in the infrastructure needed to keep their communities growing gracefully.

Sales taxes. The state sales tax in Washington goes to the state general fund, which does not contribute very much to infrastructure extensions. The bulk of cities’ and counties’ local sales taxes also go directly into general funds. As noted above, most cities use some general fund revenues for road budgets, although this will generally be limited to maintenance and operation costs. Transit agencies in the state have access to the sales tax, but use it primarily for operation costs. As discussed below, the Regional Transportation Investment District has access to the sales tax for transportation system expansion.

Utility rates. Although utilities occasionally fund capital projects through general obligation bonds and property taxes, they more typically fund expansion through revenue bonds backed with rates paid by their customers. Revenue bonds have the advantage of not requiring a vote or a tax increase, and the city or utility district issuing them can raise rates to retire the debt. Utilities can use their system-wide rate-base to fund upgrades and major system improvements (such as adding secondary sewage treatment to an existing treatment plant) but will tend not to use this method for system extensions.

King County’s approach to funding its massive new Brightwater treatment plant loads the entire cost of that plant onto new customers throughout the sys-



tem. Since Brightwater will free up capacity in the other two King County plants (Renton and West Point) all new homes and businesses hooked up to the King County system will pay through initial hook-up charges and higher monthly bills. These fees will retire the revenue bonds sold for construction.

Development and hook-up fees. Most infrastructure extensions or upgrades in peripheral areas rely to a large degree on fees imposed on new development. Such fees can be imposed as mitigation under the State Environmental Policy Act, as impact fees under the Growth Management Act or as hook-up charges by utilities. Although the existence and magnitude of these fees varies widely among jurisdictions, the cumulative total can be quite high and add major costs to land development.

While development and hook-up fees can help pay for marginal improvements to systems – a short sewer or water line extension or a nearby intersection expansion – they do not always provide a reliable and large enough source of funding for major system extensions. It may be risky to bond against anticipated mitigation and hook-up fees since the pace of development cannot always be anticipated, and revenues may fall short if development slows. Furthermore, the requirement that all mitigation fees demonstrate a nexus between the development and the infrastructure improvement funded by fees means that jurisdictions cannot “bank” fee income for large projects.

RTID Package. In 2002 the Legislature authorized King, Snohomish and Pierce counties to create a Regional Transportation Investment District (RTID) to fund major system improvements in the Puget Sound region. The RTID can, subject to voter approval, levy the following taxes and fees throughout the three-county region:

Sales tax. Up to 0.5 percent

Vehicle license fee. Up to \$100 per vehicle

Parking tax. The existing local option parking tax can be used region-wide

Motor Vehicle Excise Tax. Up to 0.3 percent of vehicle value

Employer Excise Tax. Up to \$2.00 per employee per month

Tolls.

The current RTID project list shows a combination of congestion relief projects and new capacity in growth areas, especially in Pierce and Snohomish Counties (e.g. Cross-Base Highway in Pierce County and SR-9 expansion in Snohomish County).

CONCLUSION

This review of priority processes and funding sources indicates that, while some system extensions may get funded, administrative and political dynamics will still bias funding toward the existing network. With traffic congestion reigning as the most often-identified public policy problem in the state, and with the GMA emphasis on infill development, remedying deficiencies in existing systems makes sense. But such improvements should not come at the



near total exclusion of system extensions. The whole reason that agencies must play catch-up on capacity in developed areas is because they failed to expand systems during times of growth. Putting more funding into system expansion now will help prevent future system overloads in growing areas.

Recent studies have indicated that residential growth throws off a huge amount of money and that capturing that money allows growth to pay for itself. The next paper in this series describes ways that the revenues from growth – in both infill and newly-developed areas – can fund the infrastructure needed for growth. With new funding strategies, state and local governments can get ahead of the growth curve and stop playing catch-up.

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