

Reason Foundation

# Gridlock and Growth: Summary Results for Sample Cities

**By David Hartgen and Gregory Fields**

**Project Director: Adrian T. Moore**

This is a summary of results for sample cities from a Reason Foundation policy study no. 371, titled, *Gridlock and Growth: The Effect of Traffic Congestion on Regional Economic Performance*, available at [reason.org](http://reason.org).

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## Part 1

## Atlanta

Atlanta	Population within 25 mi. (2005)	Accessibility Under Current Trend (%)	Increase in Accessibility With Free-Flow Traffic by 2030 (%)	Increase in Worker Productivity with Free-Flow Conditions	Estimated Increase in Gross Regional Product Under Free-Flow Conditions (billions)	Potential New Tax Revenues From Free-Flow Conditions Over 20 Years at 7% (billions)
Five Points/CBD	1,458	-5 to -15	9 to 15	\$2,537	\$5.3	\$7.4
Emory University	916	-4 to -16	9 to 19	\$5,878	\$12.3	\$17.2
Cumberland Mall	1,890	-5 to -9	16 to 20	\$6,021	\$12.6	\$17.7
Panthersville	1,300	-3 to -11	10 to 20	\$7,334	\$15.4	\$21.5
Atlanta-Hartsfield	987	-5 to -7	10 to 17	\$2,618	\$5.5	\$7.7

Most growth in the Atlanta urbanized area (population 4.2 million people in 2005) will continue to be in the suburbs based on demographic and employment projections from the regional planning agency. Unless the region wisely invests between \$13 billion and \$15 billion dollars in the transportation network to eliminate severe congestion by 2030, accessibility to key areas of the region will fall dramatically, lowering productivity and income growth. Under current trends, the downtown and central business district will see access fall between 5 and 15 percent. The share of the region's jobs within 25 minutes of the downtown area will fall from 49 percent (in 2005) to 34 percent by 2030. Removing severe traffic congestion will increase access by between 9.2 percent and 15.1 percent, more than offsetting the decline in access caused by suburban growth. This would increase worker productivity by \$2,537 per worker and could add up to \$5.3 billion to the regional economy.

The largest benefits to the region would come from increasing access to major suburbs. This examined the economic impact of increased access to Panthersville. Eliminating severe congestion in the Atlanta region just to Panthersville would improve worker productivity by \$7,334 per worker, and could add up to \$15.4 billion to the regional economy.

Congestion removal would improve accessibility to all points within the region, including Emory University, Cumberland Mall and Atlanta-Hartsfield Airport.

### Downtown

- About 1,458,000 people (33.7 percent of the 2005 region) are within 25 minutes of Five Points. This will decrease slightly to 1,419,000, lowering to 23.2 percent of the 2030 region since most growth will be in the suburbs. This means that the Atlanta CBD will become relatively less accessible by about -10.5 percent.
- Similar results occur for employment access. The CBD will decline in relative access, from 49.0 percent of jobs to 34.0 percent of jobs within 25 minutes, between 2005 and 2030.
- Under free-flow conditions CBD accessibility will still decline due to suburbanization. The range is from -5.5 percent to -14.6 percent. But congestion removal would increase the Atlanta CBD access by 9.2 percent to 15.1 percent, more than offsetting the decline in access caused by suburban growth.
- Congestion removal would reverse the decline in access caused by suburban growth and allow the region's CBD to improve its accessibility by about 0.5 to 3.7 percent.

### University

- About 916,000 people (25.4 percent of the 2005 region) are within 25 minutes of Emory University. This will grow to about 1,097,000 people (15 percent of the 2030 region) by 2030. This means that the area will become less accessible by about -10.4 percent.
- Similar results occur for employment accessibility with reductions ranging from -4.3 percent to -16.4 percent.
- Congestion removal would yield an 8.5 to 18.7 percent increase in access.

## Major Malls

- About 1,189,000 people (27.5 percent of the 2005 region) are within 25 minutes of Cumberland Mall. This will grow to about 1,292,000 people (21.2 percent of the region) by 2030. This means that the area will become less accessible by about -.3 percent.
- Similar results occur for employment accessibility with reductions ranging from -5.0 percent to -9.2 percent.
- Congestion removal would yield a 15.5 percent to 20.2 percent increase in access, about two to three times the decrease in access due to growth.

## Major Suburbs

- About 1,300,000 people (30.1 percent of the 2005 region) are within 25 minutes of Panthersville. This will grow to about 1,350,000 people (22.1 percent of 2030 region) by 2030. This means that the area will become less accessible by -7.9 percent.
- Similar results occur for employment accessibility with reductions ranging from -2.9 percent to -11.2 percent.
- Congestion removal would yield a 10.1 percent to 20.2 percent increase in access.

## Airport

- About 987,000 people (22.8 percent of the 2005 region) are within 25 minutes of Atlanta-Hartsfield International Airport. This will grow to about 1,416,000 people (17.9 percent of the region) by 2030.
- This means that the area will become less accessible by about -4.9 percent.
- Similar results occur for employment accessibility with reductions ranging from -2.8 percent to -6.9 percent.
- Congestion removal would yield a 10.0 percent to 16.5 percent increase in access.

## Part 2

## Charlotte

Charlotte	Population (2005) within 25 mi	Accessibility Under Current Trend (%)	Increase in Accessibility With Free-Flow Traffic by 2030 (%)	Increase in Worker Productivity with Free-Flow Conditions	Estimated Increase in Gross Regional Product Under Free-Flow Conditions (billions)	Potential New Tax Revenues From Free-Flow Conditions Over 20 Years at 7% (billions)
CBD (Trade & Tryon)	441	1 to 3	20 to 28	\$4,178	\$3.3	\$4.6
UNC –Charlotte	294	2 to 8	29 to 35	\$18,499	\$14.5	\$20.3
Concord Mills Mall	402	5 to 7	20 to 22	\$5,468	\$4.3	\$6.0
Fort Mill	163	-1 to -2	24 to 35	\$28,638	\$22.5	\$31.5
Charlotte-Douglas Airport	361	-0.1 to 9	16 to 31	\$1,887	\$1.5	\$2.1

The largest regional benefits from removing congestion in the Charlotte region (population 855,000 in 2005) will come from increased access to the University of North Carolina at Charlotte and to major suburbs such as Fort Mill. Regional productivity would increase by \$18,499 per worker from improvements to university access, and by \$28,638 with improvements to Fort Mill access. The economic benefits are nearly four times higher than those from increased access to the downtown area and Concord Mills Mall. Notably, the benefits from increased access to the airport, while significant, are not as high.

The case of access to the University of North Carolina at Charlotte is particularly interesting. Current regional growth patterns will increase the number of residents and jobs within 25 minutes of the university. Removing congestion will accelerate the growth in productivity and regional income by expanding access to the university more broadly through the region.

Not surprisingly, the increased access to the university and major suburbs creates substantial direct economic benefits, boosting Gross Regional Product (GRP) by \$14.5 billion and \$22.5 billion, respectively. The regional cost of improving the road network to

eliminate severe congestion is just \$3 billion to \$5 billion by 2030. These costs are more than offset by improved access to every major point in the region except the airport.

### Downtown

- About 441,000 people (26.3 percent of the region) are within 25 minutes of the CBD. This will grow to 919,000 (29.5 percent of the region) by 2030. This means that the region will get more accessible, by about 3.2 percent, even with congestion.
- Similar results occur for employment accessibility with increases in the 1.4 percent to 5.3 percent range.
- Removal of congestion produces a 19.5 percent to 27.6 percent increase in access, about 8 to 10 times the increase occurring from regional growth.
- Congestion removal would significantly accelerate the already improving access.

### University

- About 294,000 people (17.5 percent of the 2000 region) are within 25 minutes of UNC Charlotte. This will grow to 777,000 people (25.0 percent of the region) by 2030. This means that the area will become more accessible by about 7.5 percent even with congestion.
- The results are similar for employment accessibility with results ranging from 2.0 percent to 7.5 percent increases.
- Congestion removal would produce a 28.6 to 34.8 percent increase in accessibility.
- Congestion removal would significantly accelerate the already improving access.

### Major Mall

- About 402,000 people (23.9 percent of the 2000 region) are within 25 minutes of Concord Mills Mall. This will grow to 980,000 people (31.3 percent of 2030 region) by 2030. This means that the mall area will become more accessible by about 7.4 percent even with congestion.



- The results are similar for employment accessibility with increases in the 4.7 percent to 5.5 percent.
- Congestion removal would produce a 19.6 percent to 27.6 percent increase in accessibility, about three to five times the increase from regional growth.

### Major Suburb

- About 163,000 people (9.7 percent of the 2000 region) are within 25 minutes of Fort Mill. This will grow to 278,000 pop (9 percent of 2030 region). This means that the area will become less accessible, by -0.7 percent.
- The results are similar for employment, with reductions in the -1.3 percent to -2.0 percent. Under free flow conditions, employment enjoys an increase of 2.5 percent.
- Congestion removal would produce a 23.6 percent to 34.7 percent increase in accessibility.

### Airport

- About 361,000 people (21.5 percent of the 2000 region) are within 25 minutes of Charlotte-Douglas International Airport. This will grow to 935,000 people (30.0 percent of the region) by 2030. This means that the area will become more accessible, by 8.5 percent, even with congestion.
- Since suburbanization is pushing more people and jobs out near the airport, even under congested conditions employment accessibility in the area will increase 5.3 percent.
- Congestion removal would produce a 15.9 percent to 31.3 percent increase in accessibility.
- Congestion removal would further accelerate the already improving access, and reverse any losses in access for free-flow conditions.

## Part 3

## Dallas

Dallas	Population (2005) within 25 mi	Accessibility Under Current Trend (%)	Increase in Accessibility With Free-Flow Traffic by 2030 (%)	Increase in Worker Productivity with Free-Flow Conditions	Estimated Increase in Gross Regional Product Under Free-Flow Conditions (billions)	Potential New Tax Revenues From Free-Flow Conditions Over 20 Years at 7% (billions)
Dallas Convention Ctr	2,129	-6 to -13	11 to 14	\$2,289	\$5.6	\$7.0
UT at Dallas	1,133	-0.3 to -4	14 to 26	\$18,651	\$46.0	\$64.4
North East Mall	1,280	-3 to -5	10 to 17	\$7,259	\$17.9	\$25.1
Duncanville	1,182	-3 to -6	12 to 18	\$9,392	\$23.2	\$32.4
DWF Airport	1,343	-3 to -6	14 to 25%	\$3,042	\$7.5	\$10.5

Removing severe congestion from the Dallas urbanized area (3.7 million people in 2005) would potentially generate tens of billions of dollars in higher output and productivity. Removing severe congestion by 2030 would require an additional investment in the road network of \$26 billion and \$30 billion. While these numbers appear large, the potential economic gains generated from improved access to the city's key areas would more than pay for the costs.

The economic impact of improved access to the university stands out as generating the most significant benefits. While under current plans and trends the university will become less accessible to the region, congestion relief reverses this trend and has the potential to boost productivity by an additional \$18,651 per worker.

Notably, improved access to the downtown area and Dallas-Fort Worth Airport, while significant, does not add to regional economic productivity or output at levels approaching those evident with the university, major suburbs or major shopping malls.

## Downtown

- Dallas has 2,129,000 people (43.9 percent of the region) within 25 minutes of the CBD. This will increase to 2,873,000 people (33.8 percent of the region) by 2030. This means that the CBD will become less accessible, by -10.0 percentage points.
- Similar results occur for employment accessibility with results ranging from -6.4 percentage points to -12.6 percentage points.
- Congestion removal would increase CBD access by 11.1 percentage points to 13.9 percentage points, just balancing the decline caused by suburban growth.
- Congestion removal would essentially balance the decline in access caused by suburban growth.

## University

- About 1,133,000 people (23.4 percent of the 2000 region) are within 25 minutes of the University of Texas at Dallas. This will grow to 1,681,000 (19.8 percent of 2030 region), which means that access will decline by -3.6 percent.
- Congestion removal would yield a 13.5 percent to 25.8 percent increase in accessibility.

## Major Mall

- About 1,280,000 people (26.4 percent of the 2000 region) are within 25 minutes of North East Mall. This will grow to 1,815,000 people (22.9 percent of the 2030 region) by 2030. This means that access will decline by -3.5 percent.
- Congested employment access is expected to increase by 1 percent.
- Congestion removal would yield a 9.6 percent to 17.2 percent increase in accessibility.

## Major Suburb

- About 1,182,000 people (24.4 percent of the 2000 region) are within 25 minutes of Duncanville. This will grow to 1,702,000 people (20.0 percent of the region) by 2030. This means that access will decline by -4.4 percent.
- Congestion removal would yield a 12.1 percent to 17.6 percent increase in accessibility.

## Airport

- About 1,343,000 people (27.7 percent of the 2000 region) are within 25 minutes of Dallas-Ft. Worth International Airport. This will grow to 2,060,000 people (24.2 percent of the region) by 2030. This means that access will decline by -3.5 percent.
- Congestion removal would yield a 14.3 percent to 25.2 percent increase in accessibility.

## Part 4

## Denver

Denver	Population within 25 min.	Accessibility Under Current Trend (%)	Increase in Accessibility With Free-Flow Traffic by 2030 (%)	Increase in Worker Productivity with Free-Flow Conditions	Estimated Increase in Gross Regional Product Under Free-Flow Conditions (billions)	Potential New Tax Revenues From Free-Flow Conditions Over 20 Years at 7% (billions)
Coors Field/CBD	1,181	-1 to -17	29 to 41	\$6,661	\$7	\$9.7
Univ of Denver	1,138	-2 to -17	25 to 46	\$8,884	\$9.3	\$13.0
Aurora Mall	595	-3 to -7	47 to 57	\$38,823	\$38.5	\$53.8
Lakewood	930	-5 to -17	36 to 48	\$13,809	\$14.4	\$20.2
Denver Int'l Airport	210	-2 to 6	13 to 23	\$8,558	\$8.9	\$12.5

Under current plans, almost all major areas of the Denver urbanized region (population 2.1 million in 2005) will be less accessible in 2030 without a dramatic shift in transportation priorities. Most notably, the University of Denver, as well as the downtown area, could experience as much as a 17 percent reduction in accessibility. If the region would commit to a transportation policy goal of free-flow travel by 2030, accessibility would improve for every major section of the region, and productivity per worker would dramatically increase. With free-flow travel conditions, Gross Regional Product would increase by tens of millions of dollars as well, with the greatest benefits concentrated around the region's shopping malls.

Notably, the biggest beneficiaries of free-flow traffic conditions will be suburban areas, suggesting rising congestion in the suburbs is a primary driver of reduced accessibility. While all major points within the Denver region significantly benefit from free-flow travel on a regional level and the regional economy experiences significant benefits as a result, lower benefits to the downtown and airport areas of the region suggest relatively high existing access to these points. Most of the region's growth will occur in the suburbs away from downtown area and the airport, suggesting improved accessibility in suburban areas

will reap larger benefits because they will address circulation in those areas (while also increasing access to downtown and the airport). Notably, downtown and the university are the most accessible points within the Denver urbanized area, with more than 1.1 million people living within 25 minutes of these points. The key will be maintaining this access while meeting the transportation needs of growing suburban areas.

### Downtown

- About 1,181,000 people (47.2 percent of the 2005 region) are within 25 minutes of the CBD. Growth will increase this to 1,244,000 people (29.9 percent of 2030 region) by 2030. Most of the growth will be in the suburbs, so downtown's accessibility will decline sharply (-17.3 percent points) according to growth location.
- Similar results (but a wide spread ranging from -0.8 percent points to -17.3 percent points) occur for employment and accessibility.
- Congestion removal would yield a 28.8 percent to 40.7 percent increase in access, about three times the decline caused by growth.
- Congestion removal would reverse the decline in access resulting from suburban growth.

### University

- About 1,138,000 people (43.2 percent of 2005 region) are within 25 minutes of the University of Denver. This will decrease to 1,027,000 people (26 percent of 2030 region) by 2030. This means that the area will become less accessible by about -17.2 percent.
- Similar results occur for employment accessibility with reductions varying widely between -2.2 percent and -17 percent.
- Congestion removal would yield a large 24.7 to 46.2 percent increase in access.
- Congestion removal would significantly reverse the projected decline in accessibility caused by growth.

### Major Mall

- About 595,000 people (22.6 percent of the 2005 region) are within 25 minutes of Aurora Mall. This will grow to 620,000 people (15.7 percent of the region) by 2030. This means that the area will become less accessible by about -6.9 percent.
- Similar results occur for employment accessibility with reductions of -2.5 percent to -4.9 percent.
- Congestion removal would yield a large 47.3 percent to 57.0 percent increase in access.
- Congestion removal would significantly reverse the projected decline in accessibility resulting from growth.

### Major Suburb

- About 930,000 people (35.3 percent of the 2005 region) are within 25 minutes of Lakewood. This will decline to 804,000 people (20.4 percent of the 2030 region) by 2030. This means that the area will become less accessible, by about -14.9 percent.
- Similar results occur for employment accessibility with reductions of -4.6 percent to -17.3 percent.
- Congestion removal would yield a large 35.7 to 48.4 percent increase in access.
- Congestion removal would significantly reverse the projected decline in accessibility caused by growth.

### Airport

- About 210,000 people (8 percent of the 2005 region) are within 25 minutes of Denver International Airport. This will grow to 250,000 people (6.3 percent of the 2030 region) by 2030. This means that the area will become less accessible by about -1.7 percent.
- Congestion removal would yield a 12.9 to 23.2 percent increase in access.
- Congestion removal would reverse the projected decline in accessibility resulting from growth.

## Part 5

# Detroit

Detroit	Population within 25 min	Accessibility Under Current Trend (%)	Increase in Accessibility With Free-Flow Traffic by 2030 (%)	Increase in Worker Productivity with Free-Flow Conditions	Estimated Increase in Gross Regional Product Under Free-Flow Conditions (billions)	Potential New Tax Revenues From Free-Flow Conditions Over 20 Years at 7% (billions)
Comerica Park/CBD	2,035	-3 to -6	1 to 6	\$1,726	\$3.2	\$4.5
U of Mich-Dearborn	1,454	-3 to -4	2 to 4	\$2,621	\$4.9	\$6.9
Twelve Oaks Mall	944	-0.1 to -3	4 to 8	\$2,051	\$3.8	\$5.4
Pontiac	901	-1 to 2	3 to 6	\$3,925	\$7.3	\$10.3
Detroit Metro Airport	1,038	-0.6 to -2	3 to 4	\$934	\$1.7	\$2.4

The Detroit urbanized area (population 3.9 million in 2005) remains one of the largest in the nation, although its traffic congestion is now largely a problem of the suburbs. Despite population loss over the last decade, the urbanized population of the region remains at four million people, about the size of the Atlanta urbanized area. Detroit is also expected to add 300,000 people by 2030, and its travel time index is expected to reach the levels of current-day San Francisco. (It already exceeds Dallas and is on par with Seattle-Tacoma.) Reducing congestion enough to achieve free-flow travel throughout the urbanized area would require an investment of between \$25 billion and \$30 billion by 2030.

Despite these costs, the economic benefits from achieving free-flow travel will be significant. In just the five access points identified for this report, the benefits of increased access will generate tens of billions of dollars in higher economic output over 20 years. The suburban city of Pontiac would benefit the most, experiencing an increase in output of \$7.3 billion and increased productivity of nearly \$4,000 per worker. Increased access to the University of Michigan at Dearborn will generate benefits of \$2,621 per worker, and nearly \$5 billion in increased economic output. Increased access to the Twelve Oaks Mall from reduced traffic congestion will generate similar benefits.



### Downtown

- Detroit has 2,034,000 people (41.2 percent of the 2000 region) within 25 minutes of the CBD. This will increase slowly to 2,207,000 people (37.0 percent of the 2030 region) by 2030. So the CBD will become less accessible by -4.2 percentage points.
- Similar results occur for employment accessibility ranging from -3.4 to -6.4 percentage points.
- Congestion relief would yield a 1.3 to 5.8 percent increase in access.
- Congestion removal would reverse and essentially offset modestly declining CBD access.

### University

- About 1,454,000 people (29.4 percent of the 2000 region) are within 25 minutes of University of Michigan at Dearborn. This will shrink to 1,448,000 people (26.8 percent of the 2030 region) by 2030. This means that the area will decline in access by -2.6 percent.
- Similar results occur for employment accessibility with reductions in access ranging from -2.5 percent to -4.0 percent.
- Congestion removal would yield a 1.8 percent to 4.0 percent increase in accessibility.
- Congestion removal would reverse the projected decline in accessibility caused by growth.

### Major Mall

- About 944,000 people (19.1 percent of the 2000 region) are within 25 minutes of Twelve Oaks Mall. This will grow to 910,000 people (16.8 percent of the 2030 region) by 2030. This means that the mall area will decline in access by -2.3 percent.
- Similar results occur for employment accessibility with reductions in access ranging from -0.10 percent to -2.9 percent.

- Congestion removal would yield a 4.0 percent to 7.9 percent increase in accessibility or just more than double the decline in access caused by growth.
- Congestion removal would reverse the projected decline in accessibility caused by growth.

### Major Suburb

- About 901,000 people (18.2 percent of the 2000 region) are within 25 minutes of Pontiac. This will grow to 1,018,000 people (18.8 percent of the region) by 2030. This means that the area will increase in access by 0.6 percent, even with congestion.
- Similar results occur for congested employment, with increases in access of 2.2 percent.
- Congestion removal would yield a 2.7 percent to 6.1 percent increase in accessibility.

### Airport

- About 1,038,000 people (27.7 percent of the 2000 region) are within 25 minutes of Detroit Metropolitan Airport. This will grow to 1,053,000 people (19.5 percent of the region) by 2030. This means that the area will decline in access by about -1.5 percent.
- Congested employment access shows an increase of 0.5 percent.
- Congestion removal would yield a 2.5 percent to 3.8 percent increase in accessibility.

## Part 6

## San Francisco

San Francisco	Population within 25 min.	Accessibility Under Current Trend (%)	Increase in Accessibility With Free-Flow Traffic by 2030 (%)	Increase in Worker Productivity with Free-Flow Conditions	Estimated Increase in Gross Regional Product Under Free-Flow Conditions (billions)	Potential New Tax Revenues From Free-Flow Conditions Over 20 Years at 7% (billions)
AT&T Park/CBD	1,868	0 to -3	4 to 5	\$1,714	\$3.4	\$4.8
Stanford University	1,050	-1 to -4	2 to 5	\$2,316	\$4.6	\$6.5
Southland Mall	1,489	-0.1 to -3	4 to 11	\$5,329	\$10.7	\$15
Berkeley	1,408	0.4 to -3	4 to 7	\$2,539	\$5.1	\$7.1
San Fran Int'l Airport	1,319	-1 to -3	5 to 7	\$1,475	\$3	\$4.1

The San Francisco urbanized area includes more than three million people and ranks among the most congested regions in the nation. But its downtown ranks among the most accessible now, with more than half of the urbanized area's population living within 25 minutes. Over the next 20 years, traffic congestion is expected to erode accessibility moderately for all major points within the region. Eliminating region-wide traffic congestion would boost accessibility between 2 percent (for Stanford University) to 11 percent (Southland Mall). Eliminating severe traffic congestion in the San Francisco-Oakland area by 2030 would require an investment of \$30 billion by 2030.

These costs would be more than compensated for by regional economic benefits. Increasing access to the Southland Mall via free-flow traffic would likely boost productivity more than \$5,300 per worker, increasing regional output by \$10.7 billion.

Since most of the region's growth is expected to occur outside of downtown San Francisco, the costs of rising traffic congestion are likely to be most severe in suburban

areas around the city. Similarly, these areas of the region should be expected to experience the greatest benefits.

### Downtown

- San Francisco has 1,868,000 people (27.6 percent of the region) within 25 minutes of CBD. This will increase to 2,179,000 people (24.9 percent of the region) by 2030. This means that the region is getting slightly less accessible by -2.7 percent.
- Similar modest results occur for employment accessibility with results ranging from -1.8 percent to -2.6 percent.
- Congestion removal would yield a 3.7 to 4.6 percent increase in accessibility.

### University

- About 1,050,000 people (15.5 percent of the 2005 region) are within 25 minutes of Stanford University. This will grow to about 1,244,000 people (14.2 percent of the region) by 2030. This means that the area will decline in access by -1.3 percent.
- Similar results for employment accessibility with a decline of -3.5 percent.
- Congestion removal would yield a 2.2 percent to 5.0 percent increase in accessibility.

### Major Mall

- About 1,489,000 people (22 percent of the 2005 region) are within 25 minutes of Southland Mall. This will grow to about 1,707,000 people (19.5 percent of the region) by 2030. This means that the mall area will decline in access by -2.5 percent.
- Similar results for employment accessibility with a decline of -3.2 percent.
- Congestion removal would yield a 4.4 to 10.9 percent increase in accessibility, about twice the amount of decrease due to growth.
- Congestion removal would reverse the projected decline in accessibility caused by growth.

## Major Suburb

- About 1,408,000 people (20.8 percent of the region) are within 25 minutes of Berkeley. This will grow to about 1,614,000 people (18.4 percent of the region) by 2030. This means that the area will decline in access by -2.4 percent.
- Similar results occur for employment accessibility with reductions ranging from -1.0 percent to -2.7 percent.
- Congestion removal would yield a 3.7 percent to 6.9 percent increase in accessibility, about twice the amount of decrease due to growth.
- Congestion removal would reverse the projected decline in accessibility caused by growth.

## Airport

- About 1,319,000 people (19.5 percent of the 2005 region) are within 25 minutes of San Francisco International Airport. This will grow to about 1,494,000 people (17.1 percent of the region) by 2030. This means that the area will decline in access by -2.4 percent.
- Similar results occur for employment accessibility with reductions ranging from -1.3 percent to -2.5 percent.
- Congestion removal would yield a 4.8 percent to 7.3 percent increase in accessibility.
- Congestion removal would reverse the projected decline in accessibility caused by growth.

## Part 7

## Salt Lake City

Salt Lake City	Population within 25 min.	Accessibility Under Current Trend (%)	Increase in Accessibility With Free-Flow Traffic by 2030 (%)	Increase in Worker Productivity with Free-Flow Conditions	Estimated Increase in Gross Regional Product Under Free-Flow Conditions (billions)	Potential New Tax Revenues From Free-Flow Conditions Over 20 Years at 7% (billions)
EnergySolutions Arena/ CBD	801	-6 to -9	0.5 to 1	\$15	\$0	\$0
Brigham Young University	350	0.5 to 3	0.0 to 1.2	\$57	\$0	\$0
Fashion Place Mall	817	-3 to -7	2 to 4	\$210	\$0.1	\$0.2
American Fork	489	2 to 4	3 to 6	\$1,155	\$0.7	\$1
Salt Lake City Int'l Airport	774	-4 to -7	0.1 to 2	\$6	\$0	\$0

Salt Lake City is a mid-size urbanized area (population 970,000 in 2005) that currently faces relatively low levels of severe congestion. Even though current transportation plans suggest Salt Lake's traffic congestion could increase to levels similar to today's San Francisco by 2030, the limited extent of current severe congestion suggests the benefits of removing congestion on a regional level will be less dramatic than in the other urbanized areas in this study.

Eliminating severe congestion on a regional level over the next 20 years will cost between \$1 billion and \$2 billion. The economic benefits, while not as dramatic as in other urbanized areas in this study, are still important, particularly in suburban areas. Indeed, in the major suburb of American Fork alone, eliminating severe congestion would boost productivity by about \$1,155 per worker and add \$700 million to the whole region's output. In other words, even in a region facing relatively low levels of severe congestion on a regional scale, targeted improvements in key locations such as growing suburbs and retail centers, can generate substantial regional benefits.

## Downtown

- About 801,000 people (54.6 percent of the 2005 region) are within 25 minutes of the CBD. This will grow to about 1,081,000 (45.4 percent of the 2005 region) by 2030. (a -9.2 percent change). This means that the region will become less accessible, as most growth will be in the edges. The decline in access is -6.8 percent to -9.2 percent.
- Similar results occur for employment accessibility with reductions in the -6.4 percent to -8.9 percent range.
- This region is not severely congested (TTI 1.28, future 1.59) relative to size. Removal of congestion produces only about a 0.5-1.1 percent improvement in access.

### University

- About 350,000 people (24.1 percent of the 2001 region) are within 25 minutes of Brigham Young University.
- This will grow to 580,000 people (24.6 percent of the region) by 2030. This means that the area will become more accessible by about 0.5 percent.
- Similar results occur for employment and accessibility with increases ranging from 1.3 percent to 3.1 percent.
- Congestion removal would produce a 0 to 1.2 percent increase in access.

### Major Malls

- About 817,000 people (55.4 percent of 2001 region) are within 25 minutes of Fashion Place Mall. This will grow to 114,700 people (48.1 percent of the 2030 region) by 2030. This means that the mall area will become less accessible by about -7.3 percent.
- Similar results occur for employment and accessibility with reductions ranging from -2.6 percent to -5.9 percent.
- Congestion removal would produce a 1.5 to 3.5 percent increase in access.

## Major Suburbs

- About 489,000 people (33.3 percent of the 2001 region) are within 25 minutes of American Fork. That will grow to 839,000 (35.3 percent of the 2030 region) by 2030. This means that the area will become more accessible by about 2 percent, even with congestion.
- Similar results occur for employment and accessibility with increases ranging from 3.0 percent to 4.0 percent.
- Congestion removal would further increase accessibility by 2.6 percent to 6.0 percent.

## Major Airports

- About 774,000 people (53 percent of the 2001 region) are within 25 minutes of Salt Lake City International Airport. This will grow to 1,097,000 people (46.2 percent of the region) by 2030. This means that the area will become less accessible, by about -6.8 percent.
- Similar results occur for employment and accessibility conditions with results ranging from -3.9 percent to -5.8 percent.
- Congestion removal would improve accessibility by .10 percent to 1.7 percent.



## Part 8

## Seattle

Seattle	Population within 25 min.	Accessibility Under Current Trend (%)	Increase in Accessibility With Free-Flow Traffic by 2030 (%)	Increase in Worker Productivity with Free-Flow Conditions	Estimated Increase in Gross Regional Product Under Free-Flow Conditions (billions)	Potential New Tax Revenues From Free-Flow Conditions Over 20 Years at 7% (billions)
Columbia Center/CBD	966	-1 to -3	14 to 21	\$3,214	\$4.7	\$6.6
University of WA-Seattle	838	-1 to -3	21 to 24	\$9,081	\$13.2	\$18.5
Factoria Sq Mall	998	-1 to -2	14 to 22	\$3,233	\$4.7	\$6.6
Redmond	630	-0.6 to -2	22 to 24	\$9,216	\$13.4	\$18.8
SEA-TAC Airport	750	-1 to -3	18 to 21	\$2,495	\$3.6	\$5.1

The Seattle urbanized area includes nearly three million people and suffers significant congestion. Over the next 20 years, traffic congestion is expected to erode accessibility moderately for all major points within the region. Eliminating region-wide traffic congestion would boost accessibility between 14 to 24 percent. Eliminating severe traffic congestion by 2030 would require an investment of \$5 billion dollars.

These costs would be more than compensated by regional economic benefits. Increasing access to Redmond and to the University of Washington area via free-flow traffic would likely boost productivity more than \$9,000 per worker, increasing regional output by over \$26 billion.

Since most of the region's growth is expected to occur outside downtown, the costs of rising traffic congestion are likely to be most severe in suburban areas. Similarly, these areas of the region should be expected to experience the greatest benefits. Thus, increased access to Redmond, the University, and to a lesser extent Factoria and SEA-TAC, would benefit substantially from increased access.

## Downtown

- About 966,000 people (54.1 percent of the 2005 region) are within 25 minutes of the CBD. This will grow to 1,653,000 people (51.9 percent of the 2030 region) by 2030. So, the region will become less accessible by about -2.4 percent points.
- Similar results occur for employment accessibility with reductions in the -1.3 to -2.7 percent range.
- Congestion removal would yield a 14.1 to 21.0 percent point increase in accessibility, about six times the decline in access caused by growth.

## University

- About 838,000 people (25.6 percent of the 2005 region) are within 25 minutes of the University of Washington–Seattle. This will grow to 1,065,900 people (23.5 percent of 2030 region) by 2030. This means that the area will become less accessible by about -2.1 percent.
- Similar results occur for employment and accessibility with reductions of -1.1 to -2.8.
- Congestion removal would yield a 20.8 to 23.5 percent increase in accessibility.

## Major Mall

- About 998,000 people (30.5 percent of the 2005 region) are within 25 minutes of Factoria Square Mall. This will grow to 1,294,000 people (28.6 percent of the 2030 region) by 2030. This means that the mall will become less accessible, by about -1.9 percent.
- Similar results occur for employment and accessibility with reductions of -1.00 to -2.3 percent.
- Congestion removal would yield a 13.7 to 22.1 percent increase in accessibility.

### Major Suburb

- About 630,000 people (19.3 percent of the 2005 region) are within 25 minutes of Redmond. This will grow to 839,000 people (18.6 percent of the 2030 region) by 2030. This means that the area will become less accessible by about -0.7 percent.
- Similar results occur for employment and accessibility with reductions of -0.6 to -1.7 percent.
- Congestion removal would yield a 21.6 to 23.5 percent increase in accessibility.

### Airport

- About 750,000 people (22.9 percent of the 2005 region) are within 25 minutes of Seattle-Tacoma International Airport. This will grow to 1,399,000 people (21.5 percent of the 2030 region) by 2030. This means that the area will become less accessible by about -1.4 percent.
- Similar results occur for employment and accessibility with reductions of -1.6 to -3.1 percent.
- Congestion removal would yield an 18.2 to 21.4 percent increase in accessibility.