## Performance Measure Summary

There are several inventory and performance measures listed in the pages of this Urban Area Report for the years from 1982 to 2005. There is no single performance measure that experts agree "says it all." The best comparison of congestion levels and trends is done between regions of similar size, over several years, and with a few measures of congestion aspects. Examining a few measures over many years reduces the chance that data variations or the estimating procedures may have caused a "spike" in any single year. A few key points should be recognized by users of the Urban Mobility Report data.

**Use the Trends** – The multi-year performance measures are better indicators, in most cases, than any single year. (*5 years is 5 times better than 1 year*).

**Use several measures** – Each performance measure illustrates a different element of congestion. (*The view is more interesting from the top of a few measures*).

**Compare to similar regions** – Congestion analyses that compare areas with similar characteristics (for example population, growth rate, road and public transportation system design) are usually more insightful than comparisons of different regions. (*Los Angeles is not Peoria*).

**Compare ranking changes and performance measure values** – In some performance measures a small change in the value may cause a significant change in rank from one year to the next. This is the case when there are several regions with nearly the same value. (*15 hours is only 1 hour more than 14 hours*).

**Consider the scope of improvement options** – Any improvement project in a corridor within most of the regions will only have a modest effect on the regional congestion level. (*To have an effect on areawide congestion, there must be significant change in the system or service*).

**Comparison of Several Key Mobility Performance Measures**
**Very Large Group – over 3 million population urban areas**

| Urban Area | Delay per Traveler | Travel Time Index | Total Delay | 1982 to 2005 | |
|---|---|---|---|---|---|
| | | | | Delay per Traveler | Total Delay |
| New York-Newark, NY-NJ-CT | L | 0 | H+ | 0 | F+ |
| Los Angeles-Long Beach-Santa Ana, CA | H+ | H+ | H+ | S | F+ |
| Chicago, IL-IN | L | H+ | H | 0 | F+ |
| Miami, FL | L | 0 | L | 0 | 0 |
| Philadelphia, PA-NJ-DE-MD | L- | L- | L- | S- | S- |
| Dallas-Fort Worth-Arlington, TX | H | L | L | F+ | F |
| **Washington, DC-VA-MD** | **H** | **0** | **L** | **F+** | **S-** |
| Atlanta, GA | H | L | L | 0 | S- |
| San Francisco-Oakland, CA | H | H | L | F | S- |
| Boston, MA-NH-RI | L | L- | L- | 0 | S- |
| Detroit, MI | 0 | L- | L- | S | S- |
| Houston, TX | H | 0 | L- | S | S- |
| Phoenix, AZ | L | L | L- | S- | S- |
| Seattle, WA | L- | L- | L- | 0 | S- |

0 – Average congestion levels or average congestion growth
H Higher congestion; H+ Much higher congestion; F Faster congestion growth; F+ Much faster growth
L Lower congestion; L- Much lower congestion; S Slower congestion growth; S- Much slower growth

## Performance Measures and Definition of Terms

**Travel Time Index** – A measure of congestion that focuses on each trip and each mile of travel. The ratio of travel time in the peak period to travel time in free-flow. A value of 1.30 indicates a 20-minute free-flow trip takes 26 minutes in the peak.

**Peak Travelers** – Number of travelers (using any travel mode) who begin a trip during the morning or evening peak travel periods (6 to 9 a.m. and 4 to 7 p.m.).

**Annual Delay per Traveler** – A yearly sum of all the per-trip delays. This measure illustrates the effect of the per-mile congestion as well as the length of each trip. The extra time required to travel in the peak period is divided by the number of travelers who begin a trip during the peak period (6 to 9 a.m. and 4 to 7 p.m.).

**Total Delay** – The overall size of the congestion problem. Measured by the total travel time above that needed to complete a trip at free-flow speeds. The ranking of total delay usually follows the population ranking (larger regions usually have more delay).

**Free-Flow Speeds** (60 mph on freeways and 35 mph on arterials) – These values are used as the national comparison thresholds. Other speed values may be appropriate for urban areas or sub-regions.

**Excess Fuel Consumed** – Increased fuel consumption due to travel in congested conditions rather than free-flow conditions.

**Public Transportation** – Regular route service from all public transportation providers in an urban area.

**Operations Treatments** – Freeway incident management, freeway ramp metering, arterial street signal coordination and arterial street access management.

**Congestion Cost** – Value of travel delay for 2005 (estimated at $14.60 per hour of person travel and $77.10 per hour of truck time) and excess fuel consumption (estimated using state average cost per gallon).

**Annual Increase Needed to Maintain Constant Congestion Level** – Number of lane-miles that must be added to the road system each year – or – the number of new transit riders or carpoolers that must be added to keep congestion levels the same as the previous year.

**Urban Area** – The developed area (population density more than 1,000 persons per square mile) within a metropolitan region. The urban area boundaries change frequently (every year for most growing areas). The annual change in miles traveled, therefore, includes both new travel due to growth and travel that previously occurred in areas designated as rural.

**Number of Rush Hours** – Time when system might have congestion

### Key Mobility Performance Measure Labels

Note: Designation of an urban area congestion problem as “Much higher”, “Much faster growth”, etc. is determined using a general indicator of the accuracy of the congestion estimates. For regions with the same indicator label, there may be no difference in congestion levels. Different values are used for the indicators in regions over 1 million population and below 1 million population.

| Measures | Differences Within These Values May Not Indicate a Difference in Congestion Level | |
|---|---|---|
| **2005 Values** | **Above 1M Population** | **Below 1M Population** |
| Delay per Traveler - | 5 Hours | 3 Hours |
| Travel Time Index - | 5 Index Points | 3 Index Points |
| Total Delay - | 5 Hours x Average Population | 3 Hours x Average Population |
| **1982 to 2005 Trends** | | |
| Delay per Traveler - | 5 Hours | 3 Hours |
| Total Delay - | 5 Hours x Average Population | 3 Hours x Average Population |

**The Mobility Data for Washington, DC-VA-MD**

| Inventory Measures | 2005 | 2004 | 2003 | 2002 | 2001 | 2000 |
|---|---|---|---|---|---|---|
| **Urban Area Information** | | | | | | |
| Population (1000s) | 4,280 | 4,275 | 4,250 | 4,185 | 4,030 | 3,900 |
| Rank | 7 | 7 | 7 | 7 | 8 | 9 |
| Urban Area (square miles) | 1,310 | 1,310 | 1,305 | 1,270 | 1,230 | 1,200 |
| Popn Density (persons/sq mile) | 3,267 | 3,263 | 3,257 | 3,295 | 3,276 | 3,250 |
| Peak Travelers (1000s) | 2,131 | 2,120 | 2,100 | 2,072 | 1,999 | 1,938 |
| **Freeway** | | | | | | |
| Daily Vehicle-Miles of Travel (1000s) | 38,580 | 38,200 | 37,815 | 36,200 | 35,770 | 34,535 |
| Lane Miles | 2,050 | 2,050 | 2,040 | 1,970 | 1,970 | 1,960 |
| **Arterial Streets** | | | | | | |
| Daily Vehicle-Miles of Travel (1000s) | 41,195 | 40,960 | 40,395 | 38,385 | 36,000 | 35,395 |
| Lane Miles | 6,100 | 5,945 | 5,915 | 5,850 | 5,800 | 5,740 |
| **Public Transportation** | | | | | | |
| Annual Psgr-Miles of Travel (millions) | 2,195 | 2,267 | 2,193 | 2,156 | 2,055 | 1,854 |
| Annual Unlinked Psgr Trips (millions) | 462 | 443 | 434 | 430 | 415 | 381 |
| **Cost Components** | | | | | | |
| Value of Time ($/hour) | 14.60 | 14.10 | 13.75 | 13.45 | 13.25 | 12.85 |
| Commercial Cost ($/hour) | 77.10 | 74.60 | 72.65 | 71.05 | 69.95 | 68.00 |
| Fuel Cost ($/gallon) | 2.40 | 2.04 | 1.62 | 1.53 | 1.75 | 1.61 |
| **System Performance** | | | | | | |
| **Congested Travel** (% of peak VMT) | 81 | 81 | 81 | 80 | 79 | 74 |
| **Congested System** (% of lane-miles) | 63 | 63 | 63 | 63 | 63 | 59 |
| **Congested Time** (number of "Rush Hours") | 8.0 | 8.0 | 7.8 | 7.8 | 7.8 | 7.6 |
| **Annual Increase Needed To Maintain Constant Congestion Level:** | | | | | | |
| Lane-Miles | 218 | 219 | 204 | 152 | 94 | 82 |
| Transit Riders or Carpoolers (millions) | 74 | 75 | 70 | 51 | 30 | 26 |
| **Annual Excess Fuel Consumed** | | | | | | |
| Total Fuel (1000 gallons) | 90,861 | 90,260 | 88,867 | 83,650 | 77,626 | 70,687 |
| Rank | 9 | 8 | 7 | 7 | 7 | 7 |
| Fuel per Peak Traveler (gallons) | 43 | 43 | 42 | 40 | 39 | 36 |
| Rank | 5 | 5 | 3 | 4 | 5 | 6 |
| **Annual Delay** | | | | | | |
| Total Delay (1000s of person-hours) | 127,394 | 126,341 | 124,738 | 117,397 | 109,143 | 101,155 |
| Rank | 8 | 7 | 5 | 6 | 6 | 8 |
| Delay per Peak Traveler (person-hrs) | 60 | 60 | 59 | 57 | 55 | 52 |
| Rank | 2 | 3 | 3 | 4 | 5 | 6 |
| Delay due to Incidents (percent) | 51 | 50 | 50 | 50 | 50 | 50 |
| **Travel Time Index** | 1.37 | 1.37 | 1.37 | 1.36 | 1.35 | 1.33 |
| Rank | 7 | 5 | 4 | 4 | 3 | 4 |
| **Congestion Cost** | | | | | | |
| Total Cost ($ millions) | 2,331 | 2,210 | 2,099 | 1,927 | 1,783 | 1,596 |
| Rank | 8 | 7 | 6 | 7 | 7 | 8 |
| Cost per Peak Traveler ($) | 1,094 | 1,042 | 1,000 | 930 | 892 | 823 |
| Rank | 4 | 4 | 3 | 5 | 5 | 7 |

Note: System Performance statistics for 2000 through 2005 data reflect the effects of operational treatments.

Note: Zeroes in the table reflect values less than 0.5.

**The Mobility Data for Washington, DC-VA-MD, Continued**

| Inventory Measures | 1999 | 1998 | 1997 | 1996 | 1995 | 1994 |
|---|---|---|---|---|---|---|
| **Urban Area Information** | | | | | | |
| Population (1000s) | 3,885 | 3,800 | 3,660 | 3,570 | 3,510 | 3,480 |
| Rank | 9 | 10 | 10 | 10 | 9 | 9 |
| Urban Area (square miles) | 1,160 | 1,125 | 1,085 | 1,040 | 1,000 | 995 |
| Popn Density (persons/sq mile) | 3,349 | 3,378 | 3,373 | 3,433 | 3,510 | 3,497 |
| Peak Travelers (1000s) | 1,935 | 1,892 | 1,826 | 1,785 | 1,759 | 1,743 |
| **Freeway** | | | | | | |
| Daily Vehicle-Miles of Travel (1000s) | 33,975 | 33,930 | 33,340 | 33,045 | 32,460 | 31,565 |
| Lane Miles | 1,950 | 1,935 | 1,930 | 1,925 | 1,920 | 1,915 |
| **Arterial Streets** | | | | | | |
| Daily Vehicle-Miles of Travel (1000s) | 35,165 | 34,965 | 34,370 | 34,575 | 33,880 | 34,080 |
| Lane Miles | 5,665 | 5,600 | 5,550 | 5,440 | 5,385 | 5,270 |
| **Public Transportation** | | | | | | |
| Annual Psgr-Miles of Travel (millions) | 1,703 | 1,679 | 1,499 | 1,435 | 1,701 | 1,595 |
| Annual Unlinked Psgr Trips (millions) | 387 | 369 | 323 | 318 | 370 | 343 |
| **Cost Components** | | | | | | |
| Value of Time ($/hour) | 12.40 | 12.15 | 12.00 | 11.70 | 11.40 | 11.05 |
| Commercial Cost ($/hour) | 65.80 | 64.35 | 63.40 | 61.95 | 60.20 | 58.50 |
| Fuel Cost ($/gallon) | 1.10 | 1.11 | 1.21 | 1.32 | 1.24 | 1.10 |
| **System Performance** | | | | | | |
| **Congested Travel** (% of peak VMT) | 73 | 71 | 73 | 73 | 71 | 70 |
| **Congested System** (% of lane-miles) | 59 | 59 | 59 | 59 | 58 | 61 |
| **Congested Time** (number of "Rush Hours") | 7.6 | 7.6 | 7.6 | 7.6 | 7.6 | 7.4 |
| **Annual Increase Needed To Maintain Constant Congestion Level:** | | | | | | |
| Lane-Miles | 79 | 152 | 225 | 352 | 414 | 429 |
| Transit Riders or Carpoolers (millions) | 25 | 48 | 71 | 112 | 130 | 136 |
| **Annual Excess Fuel Consumed** | | | | | | |
| Total Fuel (1000 gallons) | 72,603 | 67,625 | 68,790 | 68,992 | 63,690 | 61,371 |
| Rank | 6 | 6 | 5 | 5 | 5 | 5 |
| Fuel per Peak Traveler (gallons) | 38 | 36 | 38 | 39 | 36 | 35 |
| Rank | 6 | 6 | 6 | 4 | 4 | 5 |
| **Annual Delay** | | | | | | |
| Total Delay (1000s of person-hours) | 106,382 | 97,902 | 100,519 | 100,555 | 93,939 | 91,314 |
| Rank | 6 | 7 | 4 | 5 | 5 | 5 |
| Delay per Peak Traveler (person-hrs) | 55 | 52 | 55 | 56 | 53 | 52 |
| Rank | 5 | 7 | 5 | 5 | 5 | 4 |
| Delay due to Incidents (percent) | 50 | 50 | 50 | 50 | 51 | 52 |
| **Travel Time Index** | 1.35 | 1.33 | 1.34 | 1.34 | 1.32 | 1.31 |
| Rank | 3 | 4 | 2 | 3 | 3 | 3 |
| **Congestion Cost** | | | | | | |
| Total Cost ($ millions) | 1,585 | 1,440 | 1,467 | 1,441 | 1,306 | 1,223 |
| Rank | 7 | 7 | 5 | 5 | 6 | 5 |
| Cost per Peak Traveler ($) | 819 | 761 | 803 | 807 | 743 | 702 |
| Rank | 7 | 8 | 6 | 6 | 7 | 7 |

Note: System Performance statistics for 2000 through 2005 data reflect the effects of operational treatments.

Note: Zeroes in the table reflect values less than 0.5.

**The Mobility Data for Washington, DC-VA-MD, Continued**

| Inventory Measures | 1993 | 1992 | 1991 | 1990 | 1989 | 1988 |
|---|---|---|---|---|---|---|
| **Urban Area Information** | | | | | | |
| Population (1000s) | 3,420 | 3,300 | 3,250 | 3,100 | 3,080 | 3,040 |
| Rank | 9 | 10 | 10 | 10 | 10 | 10 |
| Urban Area (square miles) | 975 | 925 | 920 | 840 | 835 | 830 |
| Popn Density (persons/sq mile) | 3,508 | 3,568 | 3,533 | 3,690 | 3,689 | 3,663 |
| Peak Travelers (1000s) | 1,717 | 1,660 | 1,638 | 1,566 | 1,540 | 1,505 |
| **Freeway** | | | | | | |
| Daily Vehicle-Miles of Travel (1000s) | 29,320 | 27,985 | 26,000 | 25,080 | 24,590 | 23,455 |
| Lane Miles | 1,900 | 1,825 | 1,750 | 1,675 | 1,600 | 1,500 |
| **Arterial Streets** | | | | | | |
| Daily Vehicle-Miles of Travel (1000s) | 33,035 | 30,420 | 27,525 | 25,305 | 24,530 | 24,045 |
| Lane Miles | 5,250 | 5,210 | 5,180 | 5,145 | 5,125 | 5,105 |
| **Public Transportation** | | | | | | |
| Annual Psgr-Miles of Travel (millions) | 1,447 | 1,559 | 1,642 | 1,713 | 1,640 | 1,607 |
| Annual Unlinked Psgr Trips (millions) | 353 | 354 | 383 | 376 | 370 | 354 |
| **Cost Components** | | | | | | |
| Value of Time ($/hour) | 10.75 | 10.50 | 10.25 | 10.00 | 9.25 | 8.80 |
| Commercial Cost ($/hour) | 57.05 | 55.40 | 53.80 | 51.60 | 48.95 | 46.70 |
| Fuel Cost ($/gallon) | 1.12 | 1.18 | 1.12 | 1.08 | 1.10 | 1.02 |
| **System Performance** | | | | | | |
| **Congested Travel** (% of peak VMT) | 69 | 70 | 67 | 66 | 69 | 67 |
| **Congested System** (% of lane-miles) | 61 | 61 | 61 | 61 | 62 | 61 |
| **Congested Time** (number of "Rush Hours") | 7.2 | 7.2 | 6.8 | 6.6 | 6.8 | 6.8 |
| **Annual Increase Needed To Maintain Constant Congestion Level:** | | | | | | |
| Lane-Miles | 400 | 335 | 269 | 300 | 383 | 442 |
| Transit Riders or Carpoolers (millions) | 121 | 96 | 72 | 77 | 97 | 110 |
| **Annual Excess Fuel Consumed** | | | | | | |
| Total Fuel (1000 gallons) | 58,458 | 55,584 | 46,952 | 41,965 | 41,857 | 38,163 |
| Rank | 6 | 6 | 6 | 6 | 6 | 6 |
| Fuel per Peak Traveler (gallons) | 34 | 33 | 29 | 27 | 27 | 25 |
| Rank | 6 | 7 | 8 | 9 | 9 | 7 |
| **Annual Delay** | | | | | | |
| Total Delay (1000s of person-hours) | 87,187 | 82,211 | 69,538 | 62,309 | 61,325 | 56,253 |
| Rank | 6 | 6 | 6 | 6 | 6 | 6 |
| Delay per Peak Traveler (person-hrs) | 51 | 50 | 42 | 40 | 40 | 37 |
| Rank | 7 | 6 | 8 | 9 | 9 | 8 |
| Delay due to Incidents (percent) | 52 | 52 | 52 | 52 | 53 | 53 |
| **Travel Time Index** | 1.31 | 1.31 | 1.29 | 1.27 | 1.28 | 1.26 |
| Rank | 3 | 3 | 4 | 5 | 4 | 5 |
| **Congestion Cost** | | | | | | |
| Total Cost ($ millions) | 1,138 | 1,048 | 866 | 750 | 691 | 600 |
| Rank | 6 | 6 | 6 | 6 | 6 | 6 |
| Cost per Peak Traveler ($) | 663 | 631 | 529 | 479 | 449 | 399 |
| Rank | 6 | 7 | 8 | 11 | 9 | 9 |

Note: System Performance statistics for 2000 through 2005 data reflect the effects of operational treatments.

Note: Zeroes in the table reflect values less than 0.5.

**The Mobility Data for Washington, DC-VA-MD, Continued**

| Inventory Measures | 1987 | 1986 | 1985 | 1984 | 1983 | 1982 |
|---|---|---|---|---|---|---|
| **Urban Area Information** | | | | | | |
| Population (1000s) | 2,980 | 2,920 | 2,860 | 2,810 | 2,780 | 2,700 |
| Rank | 10 | 9 | 9 | 9 | 9 | 9 |
| Urban Area (square miles) | 820 | 815 | 810 | 805 | 800 | 795 |
| Popn Density (persons/sq mile) | 3,634 | 3,583 | 3,531 | 3,491 | 3,475 | 3,396 |
| Peak Travelers (1000s) | 1,463 | 1,422 | 1,379 | 1,343 | 1,318 | 1,266 |
| **Freeway** | | | | | | |
| Daily Vehicle-Miles of Travel (1000s) | 22,365 | 21,345 | 19,460 | 18,015 | 16,255 | 15,200 |
| Lane Miles | 1,425 | 1,345 | 1,290 | 1,285 | 1,260 | 1,230 |
| **Arterial Streets** | | | | | | |
| Daily Vehicle-Miles of Travel (1000s) | 23,930 | 22,885 | 21,165 | 19,230 | 18,105 | 17,375 |
| Lane Miles | 5,065 | 5,015 | 4,960 | 4,940 | 4,900 | 4,850 |
| **Public Transportation** | | | | | | |
| Annual Psgr-Miles of Travel (millions) | 1,456 | 1,360 | 1,258 | 1,163 | 1,163 | 1,163 |
| Annual Unlinked Psgr Trips (millions) | 354 | 328 | 311 | 309 | 309 | 309 |
| **Cost Components** | | | | | | |
| Value of Time ($/hour) | 8.50 | 8.20 | 8.00 | 7.75 | 7.45 | 7.20 |
| Commercial Cost ($/hour) | 44.85 | 43.30 | 42.50 | 41.05 | 39.35 | 38.10 |
| Fuel Cost ($/gallon) | 1.02 | 0.99 | 1.30 | 1.31 | 1.34 | 1.41 |
| **System Performance** | | | | | | |
| **Congested Travel** (% of peak VMT) | 63 | 63 | 55 | 48 | 40 | 36 |
| **Congested System** (% of lane-miles) | 56 | 56 | 55 | 50 | 45 | 44 |
| **Congested Time** (number of "Rush Hours") | 6.8 | 6.8 | 6.2 | 5.4 | 4.6 | 4.2 |
| **Annual Increase Needed To Maintain Constant Congestion Level:** | | | | | | |
| Lane-Miles | 473 | - - | - - | - - | - - | - - |
| Transit Riders or Carpoolers (millions) | 117 | - - | - - | - - | - - | - - |
| **Annual Excess Fuel Consumed** | | | | | | |
| Total Fuel (1000 gallons) | 34,104 | 30,957 | 24,811 | 19,479 | 14,294 | 12,373 |
| Rank | 5 | 7 | 7 | 7 | 8 | 9 |
| Fuel per Peak Traveler (gallons) | 23 | 22 | 18 | 15 | 11 | 10 |
| Rank | 5 | 6 | 7 | 11 | 16 | 15 |
| **Annual Delay** | | | | | | |
| Total Delay (1000s of person-hours) | 51,164 | 46,325 | 38,635 | 30,651 | 23,043 | 20,011 |
| Rank | 6 | 7 | 7 | 7 | 8 | 9 |
| Delay per Peak Traveler (person-hrs) | 35 | 33 | 28 | 23 | 17 | 16 |
| Rank | 6 | 8 | 9 | 12 | 16 | 18 |
| Delay due to Incidents (percent) | 53 | 53 | 53 | 53 | 54 | 54 |
| **Travel Time Index** | 1.24 | 1.22 | 1.19 | 1.16 | 1.13 | 1.12 |
| Rank | 5 | 5 | 6 | 6 | 10 | 9 |
| **Congestion Cost** | | | | | | |
| Total Cost ($ millions) | 530 | 464 | 385 | 297 | 215 | 182 |
| Rank | 6 | 7 | 7 | 7 | 8 | 10 |
| Cost per Peak Traveler ($) | 362 | 326 | 279 | 221 | 163 | 143 |
| Rank | 7 | 8 | 9 | 12 | 16 | 18 |

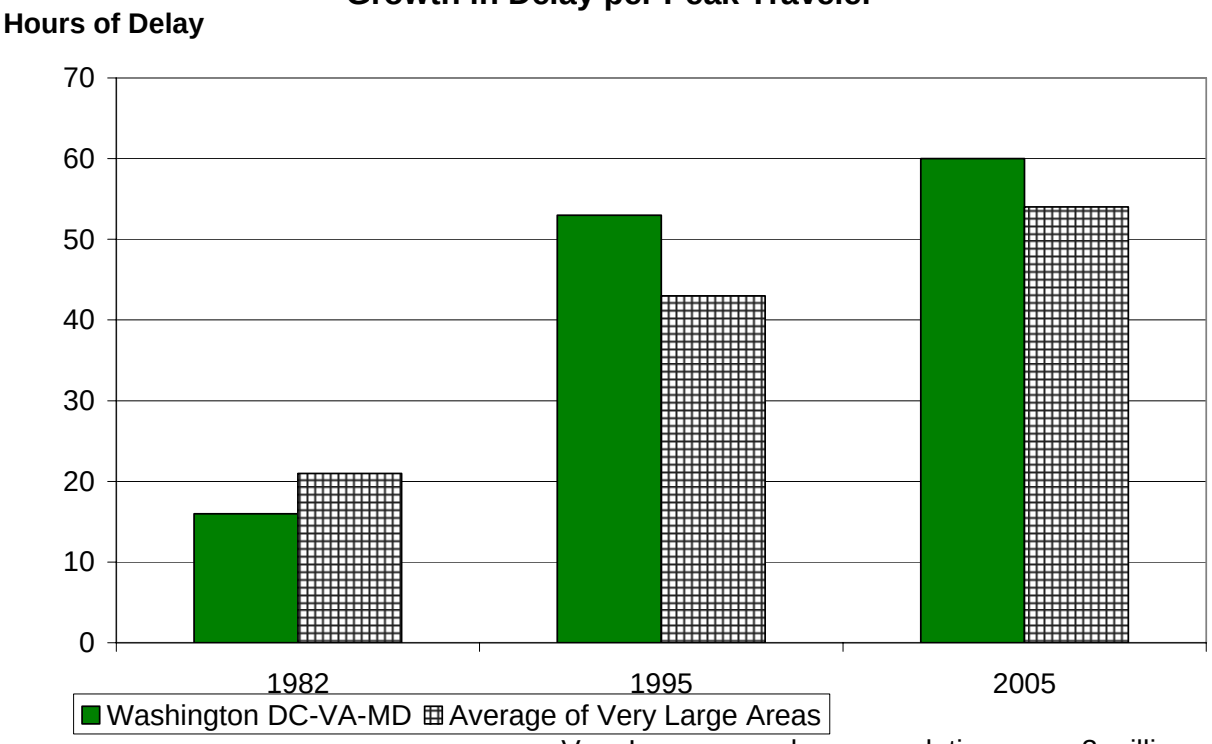
Note: System Performance statistics for 2000 through 2005 data reflect the effects of operational treatments.

Note: Zeroes in the table reflect values less than 0.5.

**Benefits From Public Transportation Service and Operations Strategies for Washington, DC-VA-MD**

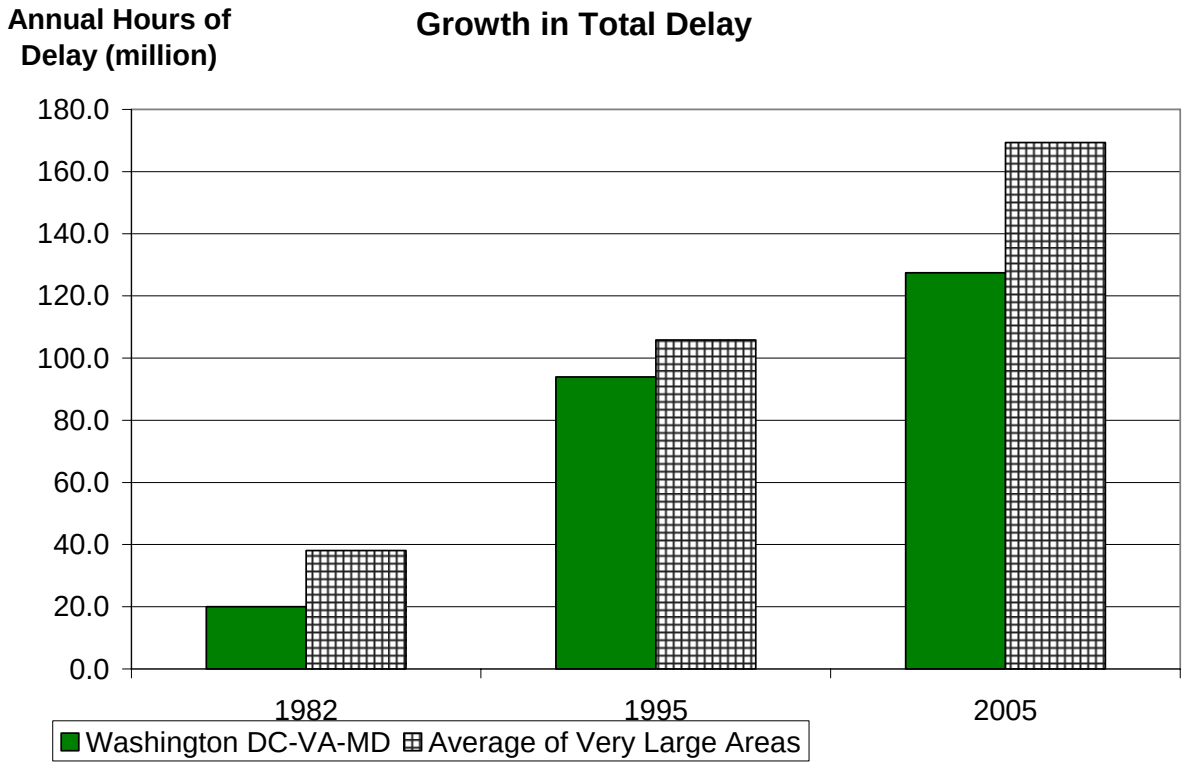
| Operations Strategies | 2005 | 2004 | 2003 | 2002 | 2001 | 2000 |
|---|---|---|---|---|---|---|
| **Freeway Ramp Metering** | | | | | | |
| Percent of Roadway Miles | 6 | 6 | 6 | 6 | 6 | 6 |
| Annual Delay Reduction (1000 hours) | 112 | 116 | 97 | 93 | 141 | 139 |
| **Freeway Incident Management** | | | | | | |
| **Cameras** | | | | | | |
| Percent of Roadway Miles | 66 | 66 | 67 | 69 | 57 | 44 |
| **Service Patrols** | | | | | | |
| Percent of Roadway Miles | 54 | 54 | 54 | 56 | 72 | 93 |
| Annual Delay Reduction (1000 hours) | 2,002 | 1,996 | 2,009 | 1,899 | 2,161 | 2,553 |
| **Arterial Signal Coordination** | | | | | | |
| Percent of Roadway Miles | 54 | 56 | 48 | 46 | 46 | 45 |
| Annual Delay Reduction (1000 hours) | 785 | 768 | 589 | 619 | 626 | 467 |
| **Arterial Access Management** | | | | | | |
| Percent of Roadway Miles | 34 | 35 | 36 | 34 | 31 | 27 |
| Annual Delay Reduction (1000 hours) | 2,660 | 2,801 | 2,638 | 2,188 | 2,174 | 1,499 |
| **HOV Lanes** | | | | | | |
| Daily Passenger-miles of Travel (1000s) | 2,774 | 2,523 | 2,294 | 2,087 | 1,898 | 1,726 |
| HOV User Delay Savings | 3,384 | 3,135 | 2,777 | 2,461 | 2,003 | 1,696 |
| **Total Effect of Operations Treatments** | | | | | | |
| Annual Delay Reduction (1000 hours) | 8,942 | 8,816 | 8,110 | 7,260 | 7,105 | 6,354 |
| Annual Delay Saved per Peak Traveler (hours) | 4 | 4 | 4 | 4 | 4 | 3 |
| Annual Congestion Cost Savings ($million) | 162.8 | 153.4 | 136.0 | 119.0 | 115.8 | 100.6 |
| Travel Time Index with Strategies | 1.367 | 1.369 | 1.369 | 1.365 | 1.351 | 1.325 |
| Travel Time Index (Base) | 1.397 | 1.398 | 1.396 | 1.390 | 1.376 | 1.347 |
| **Public Transportation Service** | | | | | | |
| **Existing Service** | | | | | | |
| Annual Passenger-miles of Travel (million) | 2,195 | 2,267 | 2,193 | 2,156 | 2,055 | 1,854 |
| Unlinked Passenger Trips (million) | 462 | 443 | 434 | 430 | 415 | 381 |
| Travel Time Index (combined road and transit) | 1.327 | 1.327 | 1.328 | 1.323 | 1.311 | 1.292 |
| **Condition if Public Transportation Service were Discontinued** | | | | | | |
| Travel Time Index | 1.436 | 1.443 | 1.443 | 1.445 | 1.430 | 1.388 |
| Annual Delay Increase (1000 hours) | 25,655 | 27,551 | 26,565 | 27,996 | 25,685 | 20,371 |
| Annual Delay Increase per Peak Traveler (hours) | 12 | 13 | 13 | 14 | 13 | 11 |
| Annual Congestion Cost Increase ($million) | 456.4 | 471.4 | 436.5 | 451.6 | 411.6 | 313.1 |

## Growth in Delay per Peak Traveler




Very Large areas have populations over 3 million

## Growth in Total Delay




Very Large areas have populations over 3 million