RITA Intelligent Transportation Systems Joint Program Office

An Analysis of the Factors Influencing ITS Technology Adoption and Deployment

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U.S. Department of Transportation

Research and Innovative Technology Administration

RITA Intelligent Transportation Systems Joint Program Office

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Research and Innovative Technology Administration
U.S. Department of Transportation

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14. ABSTRACT (Maximum 200 words)
This study analyzes the factors influencing the adoption of Intelligent Transportation Systems (ITS) technologies in the U.S. amongst state and local transportation agencies. Using data from the ITS Deployment Tracking survey, insight is provided on how economic and demographic factors influence ITS adoption/deployment, the role safety or mobility problems play in the decision to adopt/deploy ITS technologies, and how policy can affect ITS adoption/deployment. In addition, this study examines the historical adoption patterns of ITS technologies as they entered the market place. Results indicate ITS markets are primarily made up of imitators (as opposed to innovators) and at the aggregate level the markets examined are mature. Key factors affecting the adoption and deployment of ITS include agency funding levels and the presence of a regional architecture. Based on these results, policy recommendations are presented on how best the USDOT might target its efforts to influence the pattern of ITS adoption. These recommendations include support for additional funding for state and local agencies, requirement of regional ITS architectures, knowledge sharing programs and continue to provide evidence, through operational and evaluation tests, of the effectiveness of ITS technologies.

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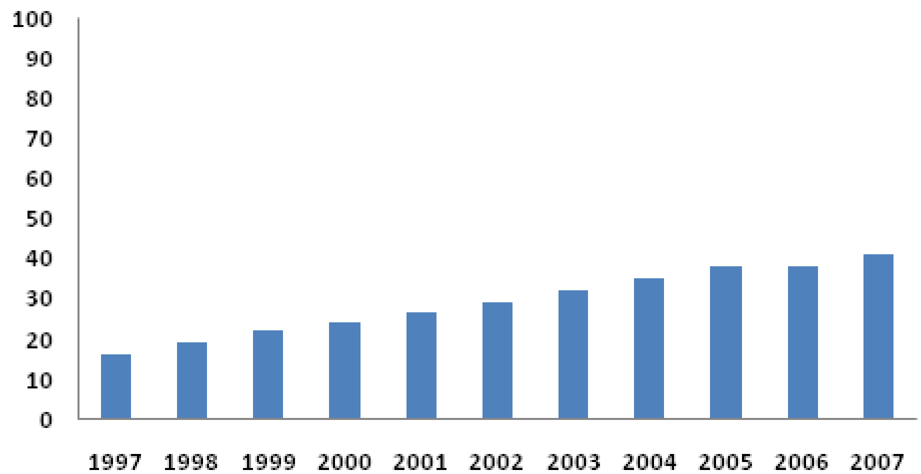
1. Executive Summary

1.1 Background

This study examines the historical diffusion patterns of Intelligent Transportation Systems (ITS) across the U.S. and attempts to quantify the factors that influence the adoption and deployment of these technologies.[1]

Since the late 1990s, there has been a relatively steady increase in the adoption and deployment of ITS technologies. For example, as shown in Figure 1, there has been steady growth in the deployment of real-time data collection technologies on Metropolitan Freeway Miles. A similar pattern exists for most long-standing ITS technologies.

Figure 1: Metropolitan Freeway Miles with Real-Time Data Collection Technologies (percent)



Source: ITS Deployment Database; Interpolated 1998, 2001, 2003. Note:Y-axis shows the percent of highway miles with real-time data collection technologies.

A 2010 study released by the Joint Program Office (JPO) presented a qualitative analysis of ITS adoption trends.[2] The focus of this report is on quantitatively examining the factors that might be influencing ITS adoption and deployment. To provide some consistency between this and the 2010 report, the ITS technologies studied are the same. These are:

- Electronic Toll Collection (ETC)
- Highway Data Collection (HDC)
- Traffic Management Systems (TMS)
- Vehicle Data Collection (VDC)

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[1] In this study, adoption is defined as the point in time at which an agency installs it first unit of ITS technology (previously having no units in operation). Deployment is defined as adding additional units of ITS technology after having made the initial decision to adopt.

[2] http://ntl.bts.gov/lib/34000/34900/34991/ITS_Deployment_Tracking_FINAL_508C_101210.pdf

- Transit Signal Priority (TSP)
- Emergency Vehicle Preemption (EVP)

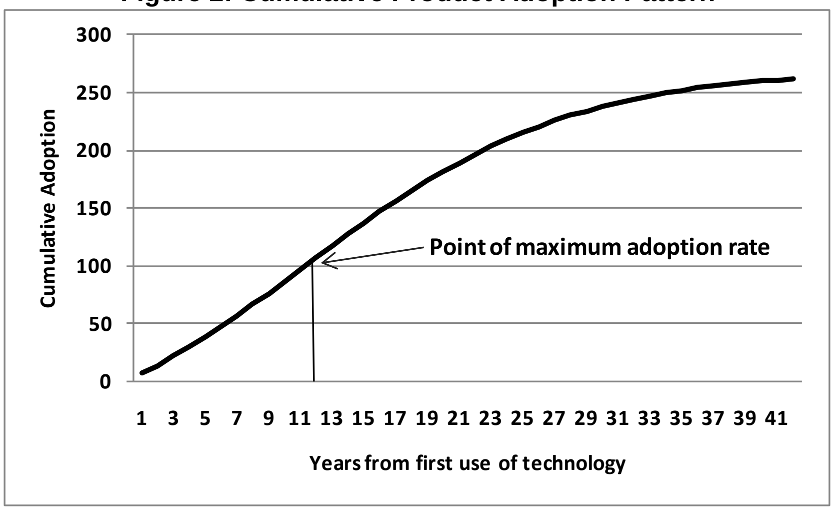
A key motivation for this effort is the desire to understand how external factors, and in particular those that are policy related, may affect ITS diffusion. Results from this analysis provide insight into intervention levers that could be used to positively affect adoption and deployment. This information can be used to inform future ITS JPO strategic planning and decision making, which is focused on improving safety, mobility and reducing the environmental effects of surface travel through the deployment of ITS technologies.

Using information from the ITS Deployment Tracking database, statistical diffusion models are estimated that allow for examining growth patterns of ITS adoption, providing insight into the diffusion and maturity of ITS markets.[3] A second analysis estimates the relationship between the economic, demographic and policy related characteristics associated with transportation agencies and the adoption and deployment of ITS technologies.

1.2 Methodology

Two statistical approaches are used to analyze information from the ITS Deployment Tracking database. In the first approach, the Bass model is used to identify the diffusion characteristics of ITS markets. Based on historical adoption, this model captures the rate of diffusion of a technology, the point of maximum adoption rate, whether the market is mature, and the relative importance of innovators and imitators. Figure 2 below depicts a diffusion pattern, representing cumulative ITS technology adoption.

Figure 2: Cumulative Product Adoption Pattern



To analyze the influence of external factors on ITS adoption and deployment a two-step process is used. This is because decision-making by a transportation agency in relation to ITS deployment is viewed as containing two distinct steps, with the second contingent upon the answer to the first: the first question is *whether* to adopt, and the second is *how much* to deploy. Given the need to model these fundamentally different considerations independently, separate

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3 http://www.itsdeployment.its.dot.gov/

econometric models, and distinct estimation procedures are utilized to optimally capture each of the two decisions. These models allow for examining how economic and other explanatory factors influence both adoption and deployment independently.

Variables were selected based on what is perceived as important to a transportation agency's decision making process and were classified into three broad groups: economic and demographic factors, control factors (providing insight into the magnitude of the problem being faced by an agency—e.g., congestion) and policy related factors.

- **Economic/Demographic Environment**
  - Agency budget
  - ITS equipment price
  - Population

- **Control Variables**
  - Congestion
  - Fatal Vehicle Crashes

- **Policy Influences**
  - Presence of Regional Architecture
  - Availability of Earmark Funding

A peer variable was also created allowing for examining whether ITS adoption by an agency's peers, (either nearby agencies, or those facing similar problems such as congestion) would have an influence on its decision to adopt.

1.3 Results

Results from this study provide insight in two areas: 1) historical diffusion patterns of ITS technologies and, 2) factors that influence their adoption and deployment.[4]

In terms of historical diffusion patterns, the Bass model results indicate the adoption of the ITS technologies under consideration is mainly driven by imitators, as opposed to innovators. In other words, these markets evolve slowly and the tendency is for agencies to wait until others have adopted before doing so themselves (i.e., they imitate other agencies' behavior). It is worth noting that due to the long time frame some of these technologies have been in use, other factors that are not captured in the Bass model, such as the falling price of technology, may also play an important role in influencing adoption.[5]

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[4] The construction of the final modeling datasets has an important bearing on how to interpret the results of this study. In particular, the model results are only applicable to agencies included in the datasets used for analysis. Consequently, these results are applicable to the 78 largest metropolitan areas, and state agencies where appropriate, but not smaller metro areas or rural areas. In addition, when interpreting the results it is important to be mindful that the external datasets do not line up directly with an agency (e.g., county level budget data is used as a proxy for agency budgets). This is primarily due to information at a more disaggregate level not being available, or able to be collected, within the scope of this work.

[5] Factors affecting the diffusion of ITS technologies are derived from the adoption and deployment econometric models. These results are technology specific, reflecting the different markets and attributes of each ITS technology under consideration. Electronic Toll Collection is not included as part of this analysis as almost all agencies in the dataset have adopted and deployed ITS technologies, leaving almost no variation for analysis.

Table 1 below presents the general effect of key external factors on either adoption and/or deployment of ITS technologies based on the results of the econometric models. While the effect of these external factors was not consistent across all technologies, there are some general implications that can be drawn from the model results, which have been highlighted in the table. Immediately following the table is a more detailed discussion of key results by technology, separated by adoption and deployment.

Table 1: Key Factors Affecting ITS Deployment and Adoption across all Technologies

	Regional Architecture	Budget	Earmarks	Price[6]	Complimentary Technologies
Adoption	Positive effect (more pronounced for technologies that are less mature)	Positive effect	No effect	Not examined	Positive effect
Deployment	Positive effect	Positive effect	Small, negative, or no effect	Negative effect	Mixed effects

Key results from the adoption model, by technology, are:

- **Highway Data Collection:** Regional architecture, increasing congestion and budgets all have a positive influence on adoption. The presence of an earmark also had a statistically significant, but negative, effect on adoption. Opposite to expectations, this outcome suggests additional funding, in the form of an earmark, may result in ITS spending being directed towards other ITS technologies.

- **Traffic Management Systems:** No external factors, outside of safety or mobility, have an impact on the decision to adopt. This appears to be due to the fact that most agencies in the sample have already adopted the technology.

- **Vehicle Data Collection:** Both the presence of a regional architecture and budget growth positively influence adoption. An increase in fatalities, a safety concern, leads to an increase in the probability of adoption, but the magnitude of this effect is negligible.

- **Transit Signal Priority:** The likelihood of adoption increases as the number of peers using the technology grows and budget levels rise.

- **Emergency Vehicle Preemption (Fire Rescue and Ambulance):** The presence of onboard vehicle navigation technologies, a regional architecture, budget growth and a change in the percentage of traffic signals equipped with EVP technology all increase the probability of an agency adopting this technology.

- **Emergency Vehicle Preemption (Law Enforcement):** Similar to Fire Rescue and Ambulance, the presence of vehicle navigation and a regional architecture had a positive bearing on adoption. In addition, the percent of signals in the metropolitan area that have EVP capabilities also affects the likelihood of adoption as does the level of congestion.

[6] The assumption is that a lower price for ITS technology will result in higher levels of deployment.

For deployment, key observations are as follows:

- **Highway Data Collection:** The presence of a regional architecture and an increase in budget levels positively affect the level of diffusion. Other factors, such as congestion, were not statistically significant.

- **Traffic Management Systems:** Whether considering the absolute number of signals equipped with TMS, or the percentage of all signals equipped as the deployment metric of interest, price of equipment and budget have a positive influence on deployment levels. When looking at the absolute number of signals equipped, the number of signals operated influences the level of deployment.

- **Vehicle Data Collection:** The level of deployment of data collection technology at signals is influenced negatively by equipment price and positively by changes in budget levels.

- **Transit Signal Priority:** Factors that have a positive influence on deployment are the presence of a regional architecture and earmarks. For this technology, budget was a significant factor, but with a negative effect. This counter-intuitive results appears to stem from the presence of five large transit agencies in the data (e.g., Los Angeles County Metropolitan Transportation Agency), that, although they have significant budgets, have relatively small deployment of TSP.

- **Emergency Vehicle Preemption (Fire Rescue and Ambulance):** Deployment is influenced negatively by equipment price and positively by the presence of navigation technology (i.e., how many vehicles have on-board navigation capability such as a digital map). The positive influence of navigation suggests there may be a complementary relationship between this technology and EVP.

- **Emergency Vehicle Preemption (Law Enforcement):** Counter-intuitive results were derived for this technology. The presence of navigation technology and earmarks result in a negative influence on the level of deployment. This outcome suggests that, in contrast to fire rescue vehicles, navigation may be a substitute for EVP (police vehicles don't respond from a fixed location, so a navigation tool may be more effective). In the case of earmarks, the negative effect may indicate that additional ITS funding results in a law enforcement agency using funds in other areas (perhaps new vehicle purchase takes a higher priority).

1.4 Observations

This study suggests several ways policy makers and legislators may be able to influence the pattern of adoption and deployment of ITS technologies. Policy related recommendations reflect the fact that budget, earmarks, regional architecture and the effect of peer behavior were factors affecting ITS adoption and deployment in one or more of the markets under consideration.

Considering how policy can influence the ITS marketplace, the study observes that the following may affect adoption and/or deployment:

1) **Additional transportation funding for state and local agencies.** In general, higher levels of budgets (or funding availability) translate into higher levels of adoption and deployment.

2) **Earmarks focused on expanding the use of adopted technology.** Earmarks do not appear to be a useful policy lever for increasing ITS technology use and, in particular, are not effective in moving an agency to adopt ITS.

3) **Emphasis on regional architectures.** The presence of a regional architecture exhibits a positive effect on ITS deployment and provides a framework for agencies to make effective use of planning.

4) **Research designed to produce evidence that better supports technology adoption.** The ITS market primarily consists of imitators, so research, operational tests and evaluation, particularly highlighting successful implementation, could be effective in encouraging adoption.

5) **Knowledge sharing among peers.** Because the ITS market primarily consists of imitators, the USDOT can positively influence adoption by promoting knowledge of how ITS technologies can be used effectively, presenting their benefits and connecting agencies that deploy complementary technologies.

The model results also provide some guidance on how best to target efforts:

1. **Focus most programmatic efforts for adoption toward technologies that have not yet been widely adopted.**
    a. Budgets and regional architectures have the most effect on additional adoption for technologies that are in an early stage of market diffusion. (As adoption reaches higher levels, the benefits from budgets and regional architecture dwindle).
    b. Deployment levels are also positively affected by budgets and regional architecture.
    c. Programs that increase adoption will also benefit from the imitation nature of the public sector ITS market, spurring further technology diffusion as adoption levels increase.

2. **Establishing programs, or developing technologies, that lower costs are most likely to positively affect deployment by local traffic agencies.**
    a. Technologies purchased by local traffic agencies had deployment positively affected by lower price.
    b. Deployment of technologies used on arterials or for managing traffic is also sensitive to changes in price.
    c. If the next generation ITS technologies, and in particular those related to the Connected Vehicle Initiative, are most likely to be deployed by local agencies, or used on arterials or for traffic management, then efforts that may moderate price increases would positively affect their deployment.

1.5 Summary

This study presents a unique and useful initial analysis of the diffusion of ITS technologies and the factors that influence adoption and deployment. Results from this analysis provide insight into intervention levers that policymakers and leadership may be able to use to positively affect adoption and deployment. This information validates program efforts and can be used to inform future USDOT strategic planning, which is focused on improving safety, mobility and reducing the environmental effects of surface travel through the deployment of ITS technologies.

Two statistical approaches are used to analyze the ITS Deployment Tracking data. First, the Bass model examines the historical diffusion pattern of ITS adoption. Second, a two-step econometric model considers the factors—economic, demographic, problem being faced—that influence levels of adoption and deployment.

The quantitative results reveal two key areas that would allow for policy intervention. In particular, the presence of a regional architecture has a positive influence on ITS deployment. This suggests that continuing and enhancing the policy for agencies to develop specific ITS related plans, would lead to higher levels of deployment.

Another channel of influence would be through an agency's budget. Increasing available, non-earmarked, funding would increase the level of adoption and deployment. Continuing to tie these funds to the development and maintenance of a regional architecture (as noted above), may further improve effectiveness.

Bass model results indicate the aggregate ITS markets examined are both mature and dominated by imitators. This implies that these markets are ready for the deployment of substitute or next generation technologies. Nevertheless, agencies will want to see evidence that new technologies are cost effective and provide clear benefits before adopting them. If, as discussed above, funding is used as a way to increase adoption and deployment, then targeting these funds at new technologies may act as a way to introduce innovation into the market place; imitators will be able to observe these new technologies in practice moving them toward adoption, although the diffusion process will unfold slowly.

2. Introduction

This report presents the results of a quantitative analysis of the factors that influence the deployment and diffusion of intelligent transportation systems (ITS) by state and local governments across the U.S. This analysis is based on the deployment tracking database maintained by the Joint Program Office (JPO) and examines the key historical influences on both the adoption and deployment of ITS technologies since the late 1990s. The results from this study provide the USDOT with statistical insight that can be used to guide future research and inform strategic and policy making. In addition, it provides insight into where the current ITS markets are in terms of market evolution, which can help to identify technologies that are mature and ready for replacement by next generation technologies.

To some degree, this study follows directly from the qualitative analysis captured in a related reported previously published by the JPO.[7] Focusing on market trends, the previous report provides a qualitative analysis of historical deployment trends for a number of ITS technologies:

- Electronic Toll Collection (ETC)
- Highway Data Collection (HDC)
- Traffic Management Systems (TMS)
- Vehicle Data Collection (VDC)
- Transit Signal Priority (TSP)
- Emergency Vehicle Preemption (EVP)

Historical trends and the current state of ITS technology diffusion in these markets were examined using information gained primarily through discussions with suppliers and purchasers of ITS technologies and deployment data from the ITS deployment tracking database. ITS technologies were originally selected to allow for examining a range of ITS markets. The scope of these technologies provides insight into how different objectives and characteristics associated with different technologies (e.g., data collection technologies vs. data use technologies) are being used in different segments of the market (e.g., highways vs. arterials).

The ITS technologies studied in this report are the same as those examined in the previous trend analysis study noted above. This was done to provide continuity between these two studies and to allow for leveraging the results from the qualitative market analysis in the quantitative analysis.

The information on the market dynamics observed in the qualitative deployment tracking study was used to inform and guide the development of the quantitative work presented in this report. In particular, the trend analysis provided insight into the possible influences on ITS deployment; for example, the effect peer groups have on an agency's decision whether or not to adopt and deploy ITS technologies. Measures of this peer effect were consequently examined as part of the development of the econometric models discussed in this report. Other factors examined as possible factors influencing ITS adoption and deployment include, ITS equipment prices (with higher prices expected to have a negative influence), agency budgets (higher levels would be

[7] ITS technology and market trends from ITS deployment tracking, October 2010 http://ntl.bts.gov/lib/34000/34900/34991/ITS_Deployment_Tracking_FINAL_508C_101210.pdf

expected to have a positive influence), the presence of a regional architecture for ITS (positive influence), ITS earmark funding (positive influence) and congestion and fatal vehicle accidents (these last two factors are expected to provide insight into the magnitude of the problem being faced by an agency. Higher levels of either would be expected to have a positive influence).

The report is divided into several sections. Following the introduction is a section that provides some historical context for the diffusion patterns being studied. This section presents geographic information on the evolution of ITS technology adoption over the years of the Deployment Tracking survey. After this, a brief overview of the modeling methodology is presented (a technical discussion of the methodology and data collection process can be found in the appendix). The methodology discussion is followed by three sections presenting results, policy implications and conclusions. Along with a more detailed discussion of the methodology, the appendix also contains a full set of ITS diffusion maps by technology.

3. Deployment Extent

3.1 Background

This section examines the ITS Deployment Tracking survey data to capture geographic variation in the deployment of ITS technologies across the U.S. Diffusion trends of ITS technologies, both spatial and temporal, are discussed, along with the characteristics of the deploying agency. Qualitatively examining the deployment data in this manner allows for understanding the types of agencies using a particular technology and how its diffusion has evolved over time. This information provides important context for examining the quantitative statistical results presented later in this report and informing expectations of how historical diffusion trends may translate into the deployment patterns of future technologies.

An important first step in examining the ITS Deployment tracking survey data is understanding how these data are constructed. Indeed, limitations that result from the data collection methods need to be carefully considered when interpreting historical diffusion patterns and what this may imply for the future of ITS Deployment. Of particular note is the fact that the sample of agencies responding to the ITS Deployment Tracking Survey varies across years. This makes presenting statistics that accurately portray the annual level of deployment for a given technology challenging. With a changing sample, deployment (in absolute or percentage terms) may vary not only because of additional deployment decisions, but also as an agency enters or exits the sample. Variation due to agencies entering and leaving the sample (which could be due to non-response to either a particular question or to the survey in general) can contribute to misleading statistics and interpretation of the deployment data.

The impact of varying sample size can be mitigated through restricting the sample of agencies examined to only those that answered the survey in all years. This approach provides a constant sample of agencies that have responded to the survey across all of the years it has been administered. Results garnered from this sample will avoid bias created due to agencies entering or leaving the survey. It should be noted, however, that restricting the sample in this way excludes agencies in smaller metro areas and agencies that may have neglected to respond in one or more years of our seven years of observation and hence may create a different kind of bias.

Statistics in this section of the report are presented in terms of both restricted and unrestricted samples. All of the information in the tables is for a restricted sample, while the accompanying maps are based on an unrestricted sample. Using an unrestricted sample for the maps provides a better representation of the diffusion of ITS technologies across the U.S., even if some agencies are not represented throughout the sample. Comparing the level of deployment in the last survey year (2007) against the first year (1999) reveals how the general pattern of deployment has changed during this period and where adoption has been most concentrated. As noted earlier, however, care must be taken in interpreting the results from the unrestricted sample beyond the broad trends, as changes in deployment may be due to agencies entering or leaving the survey, as opposed to a direct change in the level of deployment across all agencies.

3.2 Overview of geographic diffusion

While overall deployment has been growing, the pattern of deployment varies geographically and by technology. Older technologies such as TMS and VDC exhibit high adoption rates throughout both urban and suburban areas across the nation. Newer technologies such as TSP and EVP exhibit much lower adoption rates and adoption may vary between urban and suburban areas. Deployment statistics for each ITS technology market are presented and discussed below. Tables provide information on the number of agencies in the sample (for the restricted sample) along with a number of deployment metrics and are displayed in each technology's section following a short introduction. Deployment maps are included at the end of each technology section. As noted above, the maps do not restrict the sample to those agencies who have responded in all years. For the purposes of keeping the discussion manageable, only a selection of maps are shown and reviewed. These cities were selected to provide insight into diffusion patterns in different areas of the U.S., (East coast, West coast, South, etc.), but are not meant to be representative of any broader national patterns. A broader range of maps can be found in the appendix.

Notably absent from the following discussion are maps of ETC and HDC technologies. This is because of the nature of these technologies and the agencies that use them, and the possible misrepresentation that a map could generate. For instance, toll agencies are often separate agencies from their highway maintenance counterparts and few centerline miles in the U.S. are tolled. As a result there are few authorities that administer tolls. Of those that do administer tolls, almost all have ETC technology. A map would not be insightful because it would essentially display that most roads that are tolled have electronic toll collection. As a result, maps for these technologies have not been created.

Displaying a map for HDC on the other hand is more a matter of scope. HDC may be deployed in only a select location within a state, but the agency that handles deployment may be a centralized office either for an entire state or for a region. Displaying a map for this technology would indicate widespread adoption (for an entire state or region), due to the nature of the agency reporting deployment, but would misrepresent actual deployment and give the impression that deployment is more widespread than it actually is. As a result, it was decided to not include maps for these technologies.

Table 2: ITS Geographic Diffusion

Technology	National pattern	Metro area pattern
TMS	Widespread deployment nationwide	Higher percentage of signals equipped in suburbs than central cities
EVP	More deployment in the West	More deployment in suburbs than central cities and higher adoption than the related TSP technology
TSP	Low deployment nationwide	Adoption is more concentrated in larger metro areas and in the West
VDC	Nationwide deployment	Deployment more concentrated in densely populated urban centers.

Map Key

Each map in this section uses the same key to indicate adoption as a percent of all agencies responding in a given year. It is as follows:

No response to survey	0% adoption	>0% - 20% adoption	>20% - 40% adoption	>40% - 60% adoption	>60% - 80% adoption	>80% - 100% adoption

3.3 Traffic Management Systems (TMS)

National Overview

Overall, TMS is the ITS technology that shows the highest level of national deployment. When examining maps for the later years, it is clear that there are very few areas that are surveyed but respond as not having TMS technologies deployed. Much of this can be attributed both to the age and definition of the technology. The survey questions focus on centralized and closed loop signaling.

Adaptive control is the newest version of TMS and some additional descriptive statistics are included for this type of technology. However, standardized questions regarding adaptive control have only appeared on the deployment tracking survey in several years: 2000, 2006, and 2007. It is for this reason that adaptive technologies were not considered in the statistical analysis presented later in this report.

TMS appears to be a mature technology with wide deployment; as noted above, this is partly due to the type of TMS chosen for analysis (closed loop versus adaptive). It is important to keep in mind that these maps represent the fraction of signals equipped with TMS technology. While the deployment appears to be focused in the suburbs, rather than city centers, it is possible that cities have a greater absolute number of signals equipped.

Table 3

Year	Number of agencies	Number of Agencies with TMS	Number of signals equipped with TMS	Number of Signals Operated	Percentage of Agencies with TMS	Percentage of signals with TMS
1999	237	194	36,016	71,012	82%	51%
2000	237	196	38,667	73,317	83%	53%
2002	237	198	40,571	76,535	84%	53%
2004	237	201	42,559	76,755	85%	55%
2005	237	201	44,486	78,158	85%	57%
2006	237	200	46,468	81,761	84%	57%
2007	237	199	48,089	82,839	84%	58%

Deployment Patterns in Selected Cities

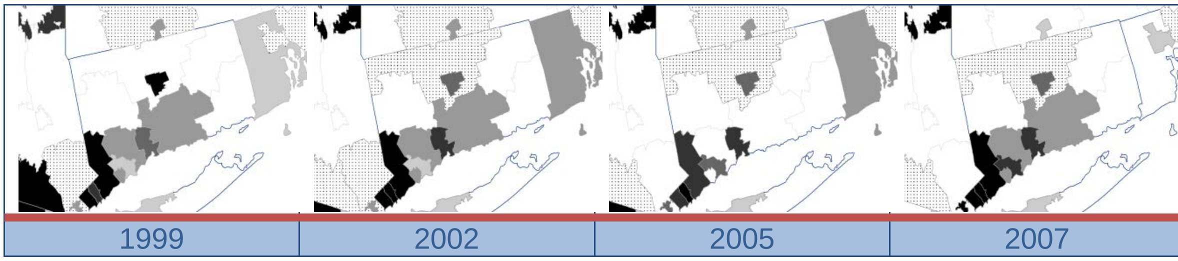
Albuquerque – Early heavy adoption is maintained across all years.

Atlanta – Atlanta shows moderate deployment across the various years. Suburban areas also see moderate deployment across years.

Chicago – Chicago sees moderate adoption and moderate to heavy adoption in the suburbs.

Hartford – Adoption appears to start off very heavily in 1999 and taper off to mid-level amounts by 2007. However, as stated before, it is important to note that the maps show percentages. There were agencies that were added to the sample as time went on. In addition, agencies present in the 1999 sample ended up heavily increasing the number of signals operated but only moderately changing the number of signals under TMS. Thus, there appears to be a “un-adoption” of TMS, when in reality, much of what is seen is an increase in number of signals operated with only a small change (increase or decrease) in the number of signals under TMS. The area immediately surrounding Hartford does not show adoption of the technology, but those communities that are closer to New York City do show adoption from 1999 through 2007.

Table 4: Hartford ITS Adoption



Los Angeles – Los Angeles sees moderate to heavy adoption. Los Angeles had no agencies respond to the survey in 2007 and thus shows up as white space on the map.

New York – New York exhibits moderate adoption throughout the timeframe under examination. Surrounding areas also exhibit use of the technology. Note that much of NYC does not appear covered because the central office of NYC DOT is located in ZIP-3 area “111”. This central office covers the entirety of New York City for all 5 boroughs.

Portland – Portland exhibits moderate adoption with light to heavy adoption shown by its neighbors.

Adaptive Technology

Although some information on adaptive TMS adoption was recorded in the early ITS Deployment Tracking surveys, continually standardized questions for this technology were not available until 2006. This makes it difficult to rigorously examine trends between the early and later surveys. Nonetheless, using survey data from 2000, 2006 and 2007 can provide a useful qualitative examination of trends in adaptive TMS (Figure 3, Figure 4, and Figure 5). Of particular note, there is some evidence of a reversal in adoption of TMS adaptive technology between 2006 and 2007.

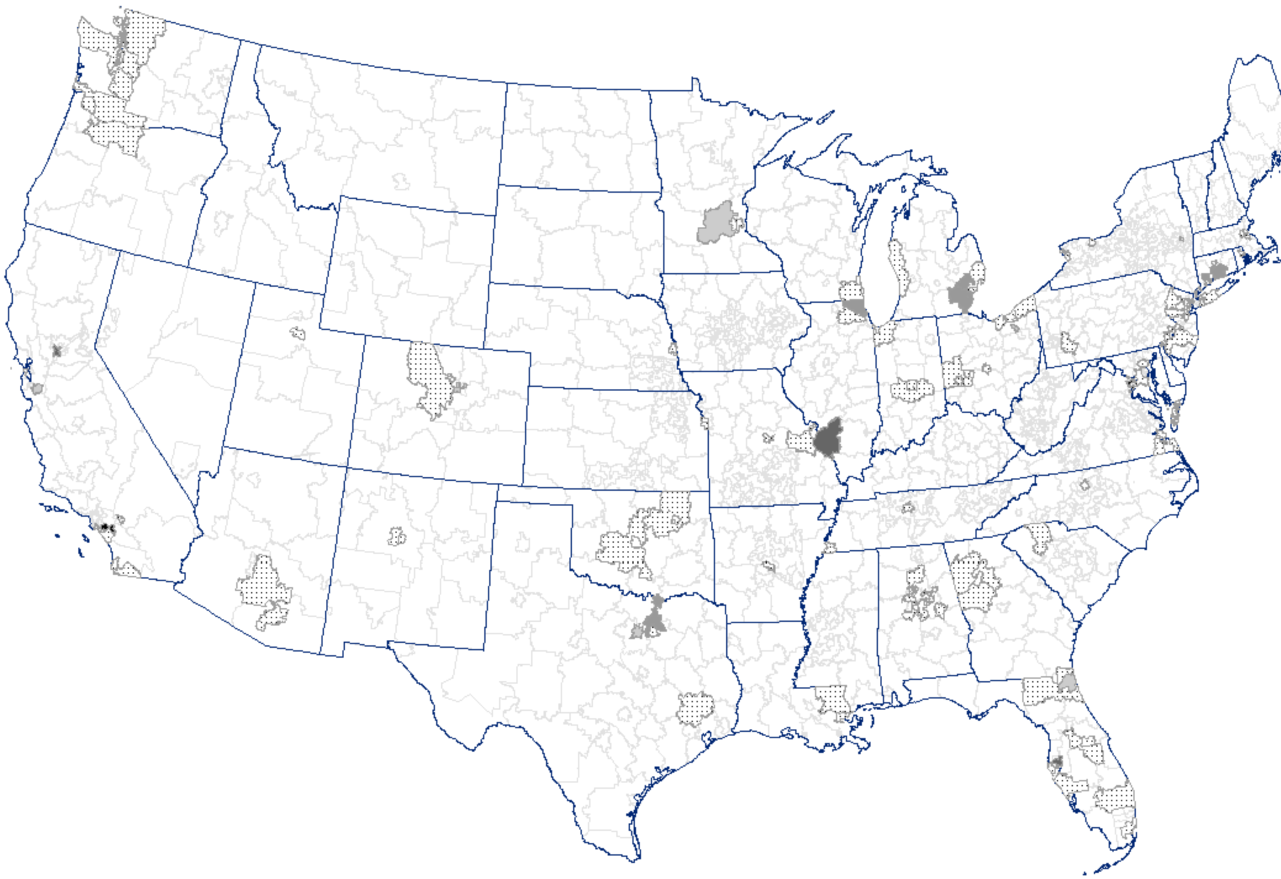
Conclusion

Overall, the data point to a general increase in the diffusion of the non-adaptive TMS. Figure 6 and Figure 7 depict national adoption of non-adaptive TMS in 1999 and 2007 (the first and last survey years) and show areas where there have been new levels of deployment. There are clear signs of new adoption (e.g., Nevada) and, although in some cases the density of adoption seems to have fallen (e.g., Colorado), the overall pattern is one of expanding deployment.

The statistics for adaptive TMS are more difficult to interpret. This is in part due to the issues regarding question consistency noted above. Keeping this in mind, however, there appears to be a general increase in technology diffusion through 2006. Between 2006 and 2007 the pattern changes to one of no change or even some reversal of adoption. Since these data only span one year, drawing conclusions from this is not possible; however, it does suggest an area worth further examination.

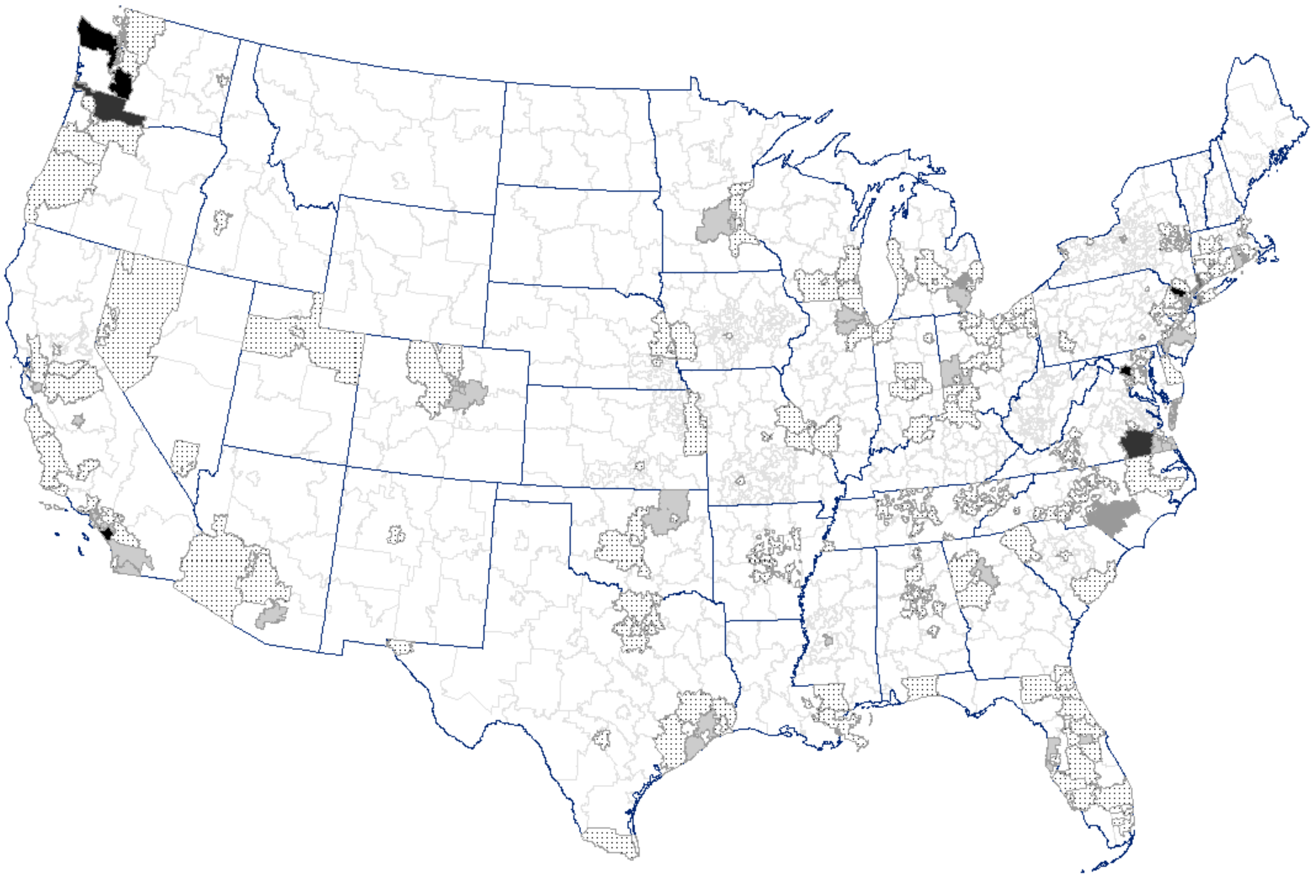
Adaptive TMS adoption in 2000

Figure 3



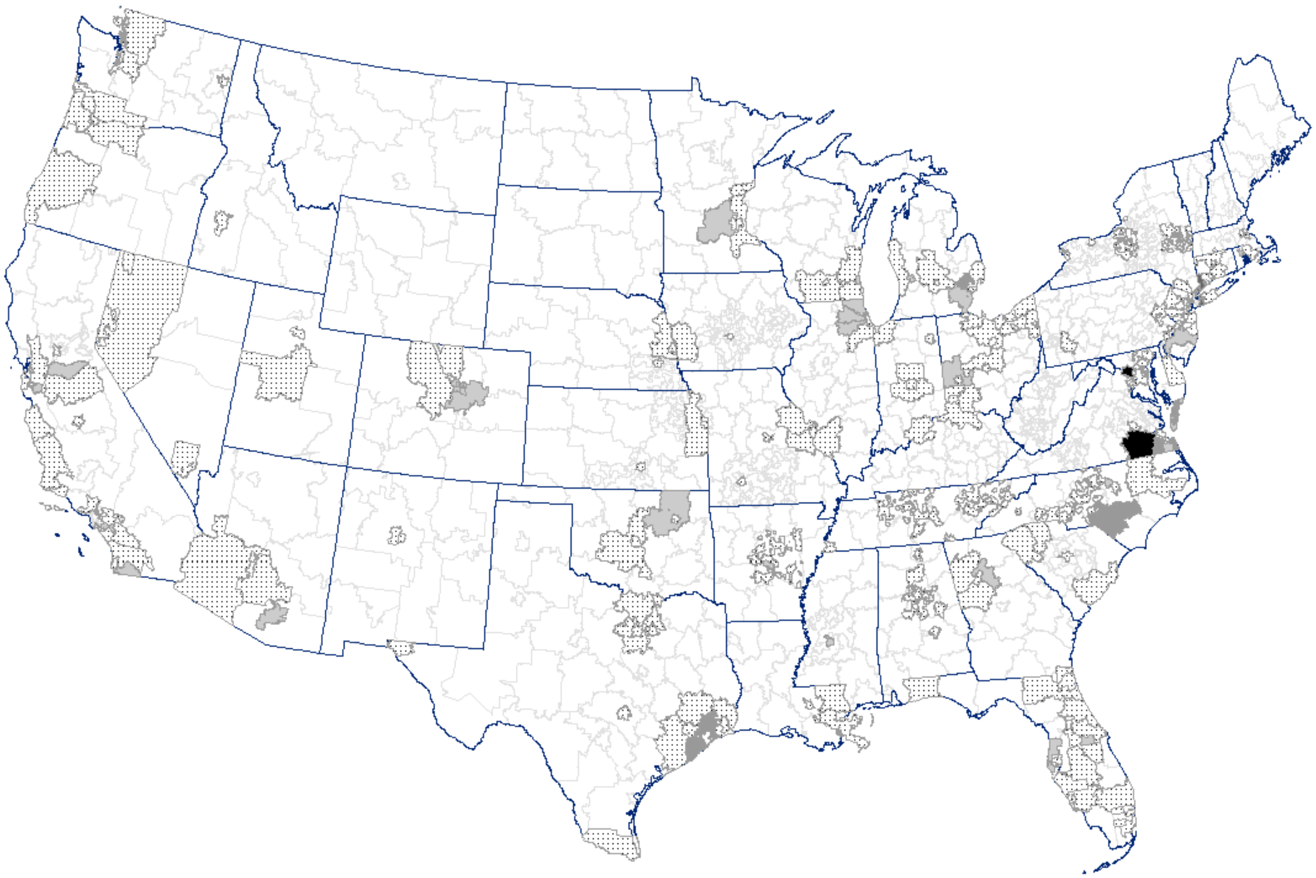
Adaptive TMS adoption in 2006

Figure 4



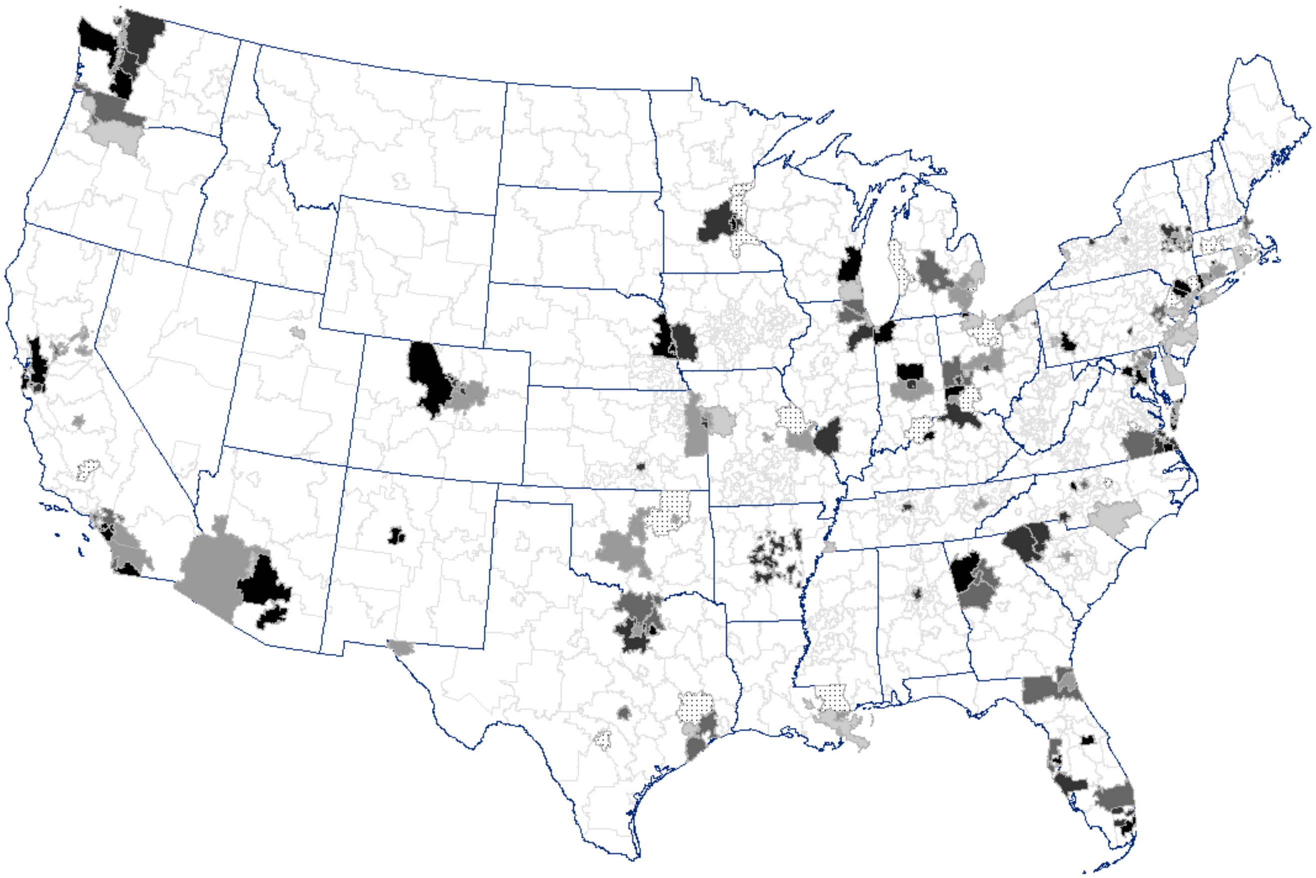
Adaptive TMS adoption in 2007

Figure 5



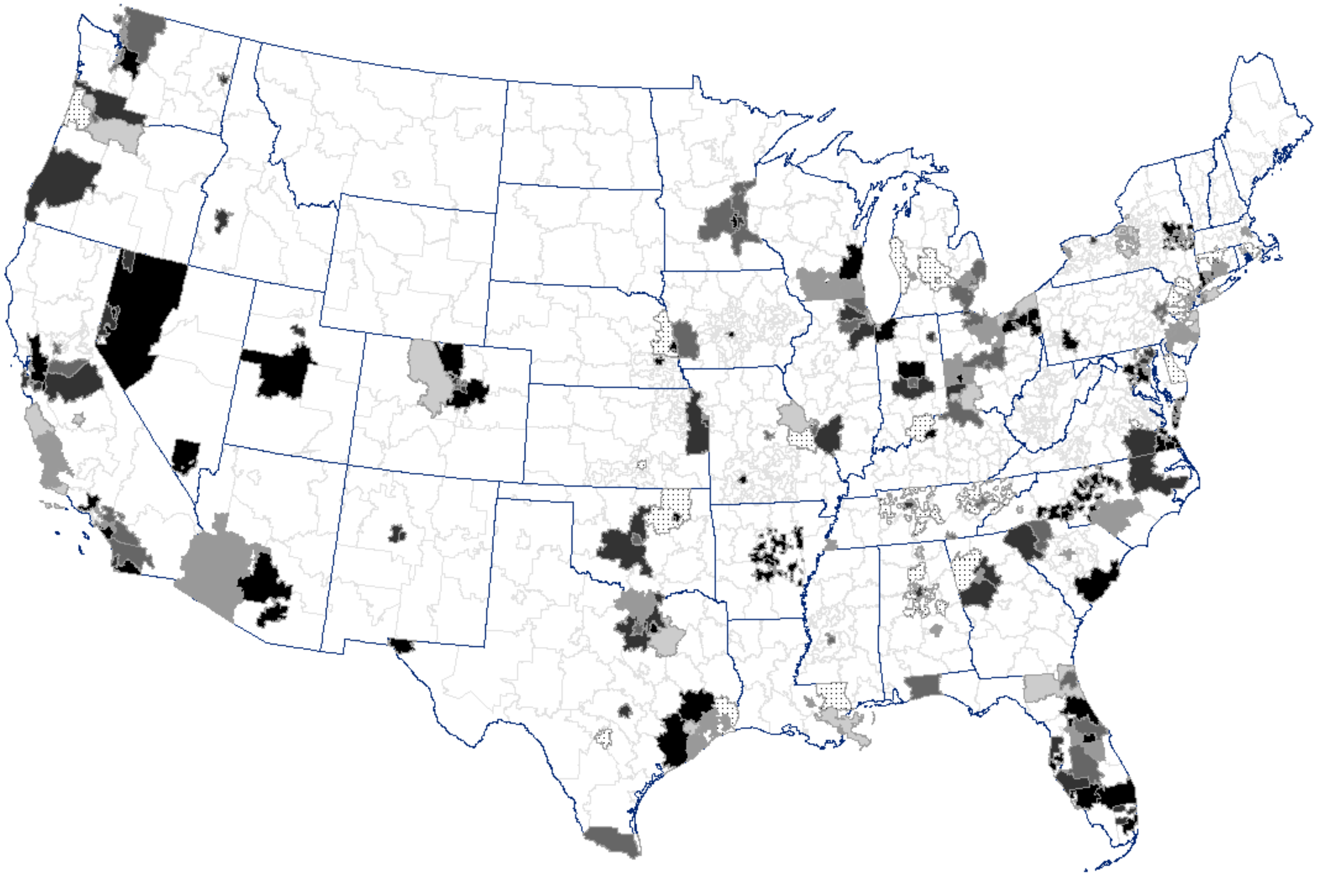
TMS (non-adaptive) adoption in 1999

Figure 6



TMS (non-adaptive) adoption in 2007

Figure 7



3.4 Preemption/Priority Technologies

Emergency Vehicle Preemption (EVP) and Transit Signal Priority (TSP) are two technologies that change traffic signals in order to speed passage of emergency vehicles or transit vehicles. Older versions of the technology used sound-based or infrared signals and more recently the technology has shifted to be GPS-based. EVP is an older technology and its adoption rates are much higher than TSP. Additionally, its deployment seems much more widespread as can be seen in Figure 9 and Figure 11.

Although EVP and TSP operate similarly, they do so in distinct markets, making it more useful to examine them individually. To this end, an overview of how these technologies are distributed by agency and how deployment has changed over time is depicted in Table 5, Table 6, and Table 7. These tables show deployment by three agency types: Arterials, Transit and Emergency Management. To function, these technologies need to be adopted and deployed by agencies that manage the vehicles that require preemption/priority and also by the agencies that control the traffic signal infrastructure that the technologies will affect.

In the case of EVP, there has been an increase in the number of emergency management agencies that have adopted this technology through 2007, rising from 23% to 37%. The increase in agency adoption is also reflected in a rise in the number vehicles equipped with EVP, although this number remains at a relatively low level (7%). Adoption of EVP by agencies that manage arterials has also increased (from 73% to 82% of agencies surveyed), while the deployment percentage of signals also increased (from 16% to 23%).

After increasing during the past decade, the deployment of TSP at the transit agency level has fallen back in more recent years and in 2007 was back to the level (41%) recorded in 1999. It should be noted that in the case of TSP, the restricted sample is extremely small compared to other markets and a change in one agency may contribute to a substantial change in the data underlying the statistics. Deployment as measured by the percent of buses with TSP has risen sharply through 2007, moving up from 2% to 26%. By contrast, the level of TSP deployment, as measured by percent of signals with TSP, amongst agencies that manage arterials has not increased beyond 2% throughout the survey period. This level remained unchanged, even though the percentage of agencies with TSP increased marginally from 14% to 19%.

TSP and EVP for Arterials

Table 5

Year	Number of Agencies	Number of agencies with TSP capabilities	Number of agencies with EVP capabilities	Total number of signals operated	Total number of signals under TSP	Total number of signals under EVP	Percentage of agencies with TSP	Percentage of agencies with EVP	Percentage of signals with TSP	Percentage of signals with EVP
1999	220	30	160	68,615	772	10,828	14%	73%	1%	16%
2000	220	35	161	70,419	956	11,704	16%	73%	1%	17%
2002	220	32	171	73,510	1,181	13,272	15%	78%	2%	18%
2004	220	33	170	73,608	978	15,539	15%	77%	1%	21%
2006	220	39	177	78,363	962	16,992	18%	80%	1%	22%
2007	220	42	181	79,502	1,013	17,890	19%	82%	1%	23%

TSP for Transit Agencies

Table 6

Year	Number of agencies	Number of agencies with TSP	Total number of buses operated	Total number of buses with TSP	Percentage of agencies with TSP	Percentage of buses with TSP
1999	17	7	6,836	107	41%	2%
2000	17	6	6,972	109	35%	2%
2002	17	8	6,838	1,069	47%	16%
2004	17	8	6,757	1,635	47%	24%
2005	17	8	6,734	1,579	47%	23%
2006	17	7	6,819	1,799	41%	26%
2007	17	7	6,978	1,819	41%	26%

EVP for Emergency Management Agencies

Table 7

Year	Number of agencies	Number of agencies with EVP	Total number of emergency vehicles	Total number of vehicles with EVP capabilities	Percentage of agencies with EVP	Percentage of vehicles with EVP
1999	479	109	51,276	2,058	23%	4%
2000	479	123	53,005	2,522	26%	5%
2002	479	130	54,843	2,633	27%	5%
2004	479	151	58,930	3,509	32%	6%
2005	479	159	59,942	3,737	33%	6%
2006	479	164	62,615	3,942	34%	6%
2007	479	175	65,855	4,880	37%	7%

3.5 Emergency Vehicle Preemption (EVP)

National Overview

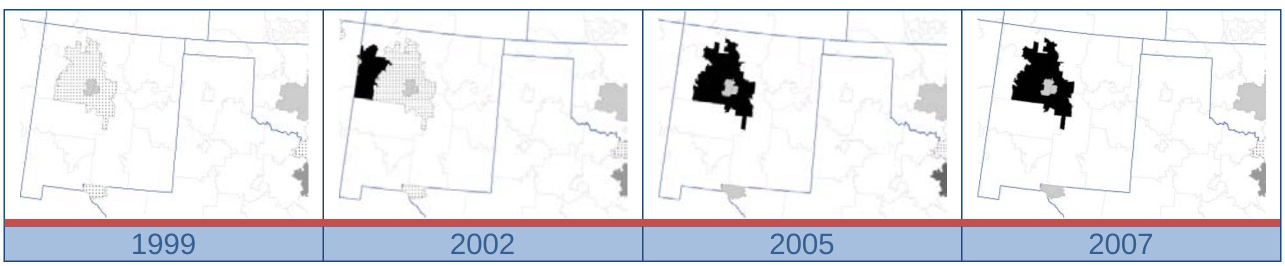
Overall, EVP technology is not heavily deployed across the US. Although this technology is older than the related TSP technology and its adoption rates are higher than TSP, it still only is used on a small percentage of vehicles.

Geographically, lower deployment levels appear in the east. It is important, however, to remember that the maps aggregate across 3-digit ZIP code tabulation areas. Thus, it is possible that in a western state only one agency of a certain type operates in a three-digit ZIP code area while in the east, with its higher population density, more agencies operate within a three-digit ZIP code boundary. Thus, it may appear as if western states have wider deployment than their eastern counterparts despite the same absolute level of deployment. In addition, western 3-digit ZIP codes tend to cover larger physical areas, exaggerating the geographical dispersion of technology. Nationally, suburban areas show higher deployment rates than the cities that they encircle (Chicago, Albuquerque, New York City). While New York City Suburbs do not show much deployment, the suburbs around Albuquerque and Chicago by contrast, exhibit relatively high adoption.

Selected Cities

Albuquerque – Albuquerque was an early adopter. However, by 2005, the percentage of adoption had been eclipsed by suburban deployment rates. Percentage adoption within Albuquerque stayed relatively constant.

Table 8: Albuquerque ITS Adoption



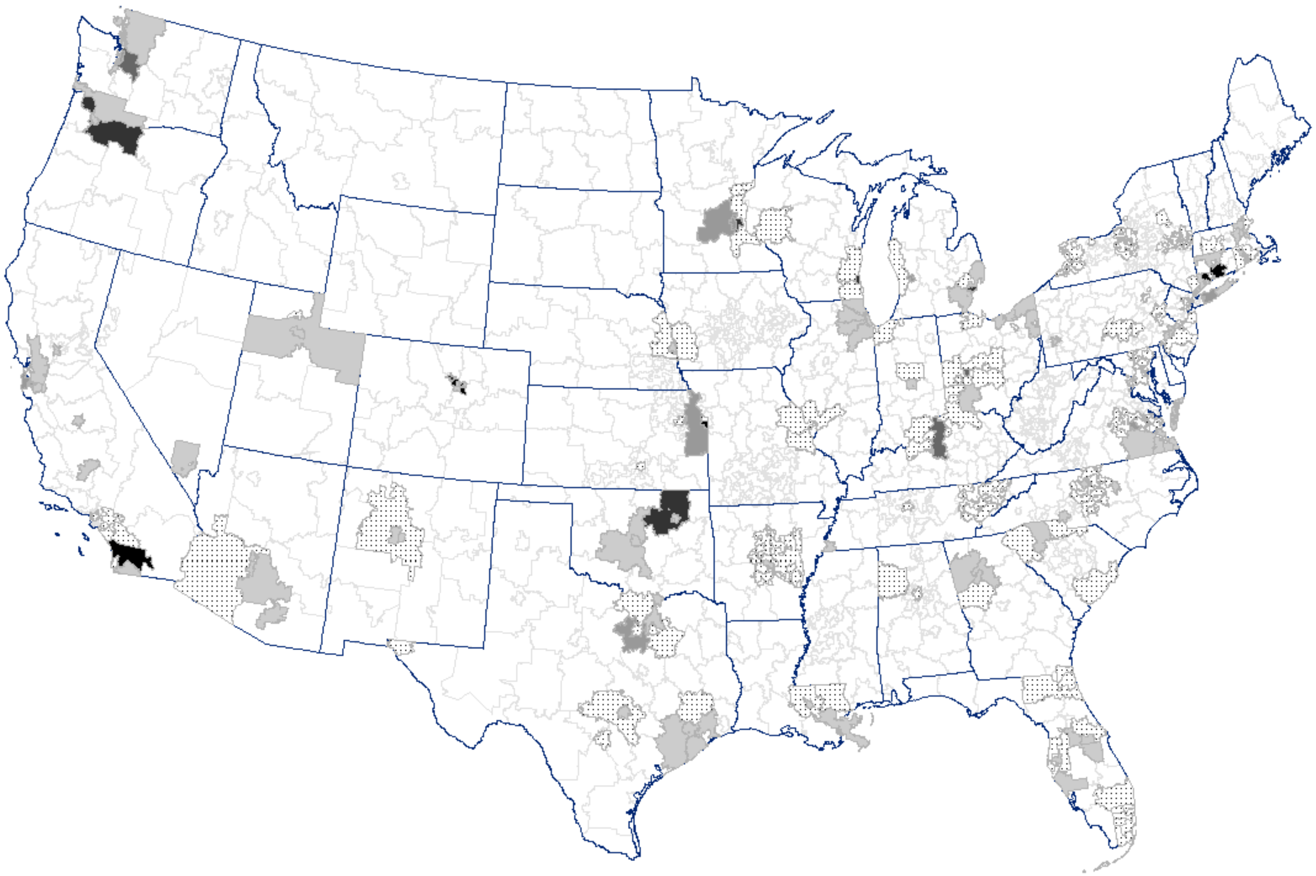
Chicago – The city of Chicago maintained a relatively constant level of adoption throughout the survey. In contrast, the suburbs of Chicago progressively adopted more and more than their counterparts within the city limits.

New York City – New York did not adopt this technology. Going further out on Long Island or into Connecticut is necessary in order to see adoption.

Portland – Portland has seen a small/moderate amount of deployment. It was an early adopter; however the percentage of vehicles that are equipped with EVP has stayed relatively steady.

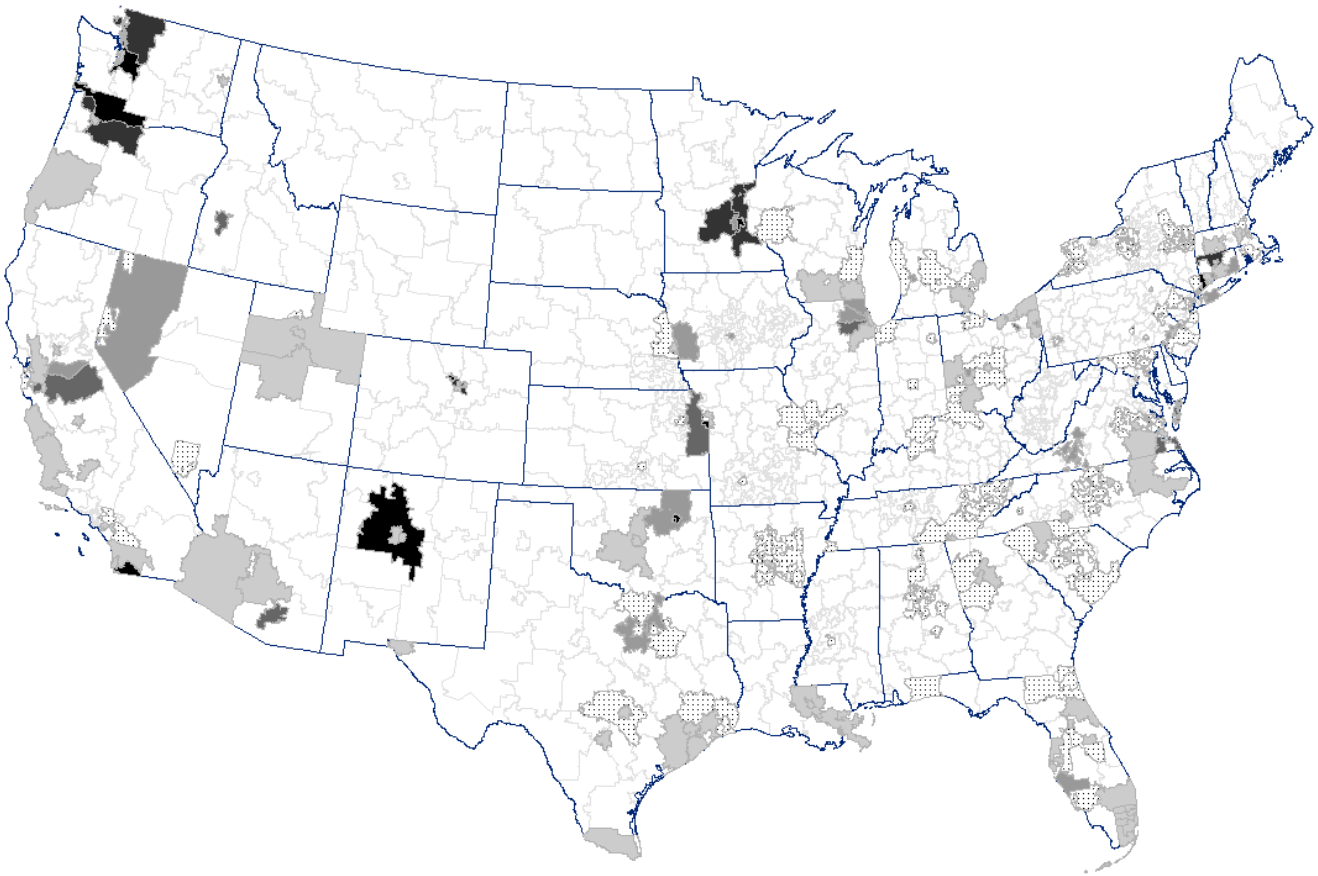
Emergency Management Agency Adoption in 1999

Figure 8



Emergency Management Agency Adoption in 2007

Figure 9



3.6 Transit Signal Priority (TSP)

National Overview

In general, there is very little adoption of this technology. Preemption technology was originally used for emergency vehicles. Its use in transit vehicles is a relatively recent innovation and may explain the lower adoption rates. The adoption of the technology is further complicated by the fact that it requires cooperation between the arterial management agency and the transit management agency. Transit agencies must buy the equipment for transit vehicles and arterial agencies must buy equipment to outfit signals. In addition, the technology that controls signals must be able to accommodate this type of override technology. While there has been an increase in the past few years of the use of the technology, adoption rates are very low both in comparison to the related EVP technology and ITS technologies in general.

Underserved Areas

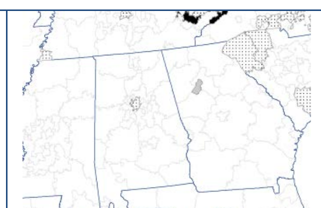
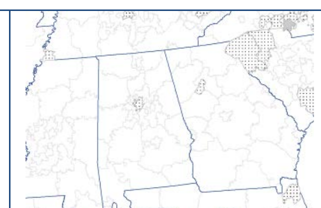
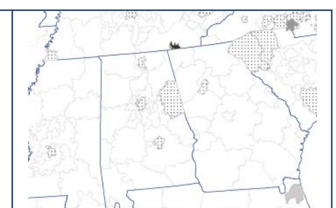
Examining the geographic distribution of TSP deployment reveals little about what areas are systematically underserved. TSP deployment is low across the country. Additionally, in those areas where there is deployment, it is often used in few places. There appear to be several heavily concentrated pockets – San Francisco, Chicago's northern suburbs, and Seattle to name a few – but the majority of the country has little to no TSP.

Selected Cities:

Albuquerque – Albuquerque adopts the technology in 2005, but only at a relatively modest level.

Atlanta – The Atlanta area is interesting in that in 2000 and 2002 the city area indicated adoption, but from 2004-2007, the city actually indicated lower adoption. That is, between 2002 and 2004 the transit agency in the area lowered its adoption of the technology and took it out of use (Note that this was also accompanied by a reduction in fleet size).

Table 9: Atlanta ITS Adoption

			
1999	2002	2005	2007

Chicago – Chicago showed a small amount of adoption in 1999 and 2000 (one agency in '99 and two in '00). However, Chicago lowered its adoption like Atlanta in 2002.

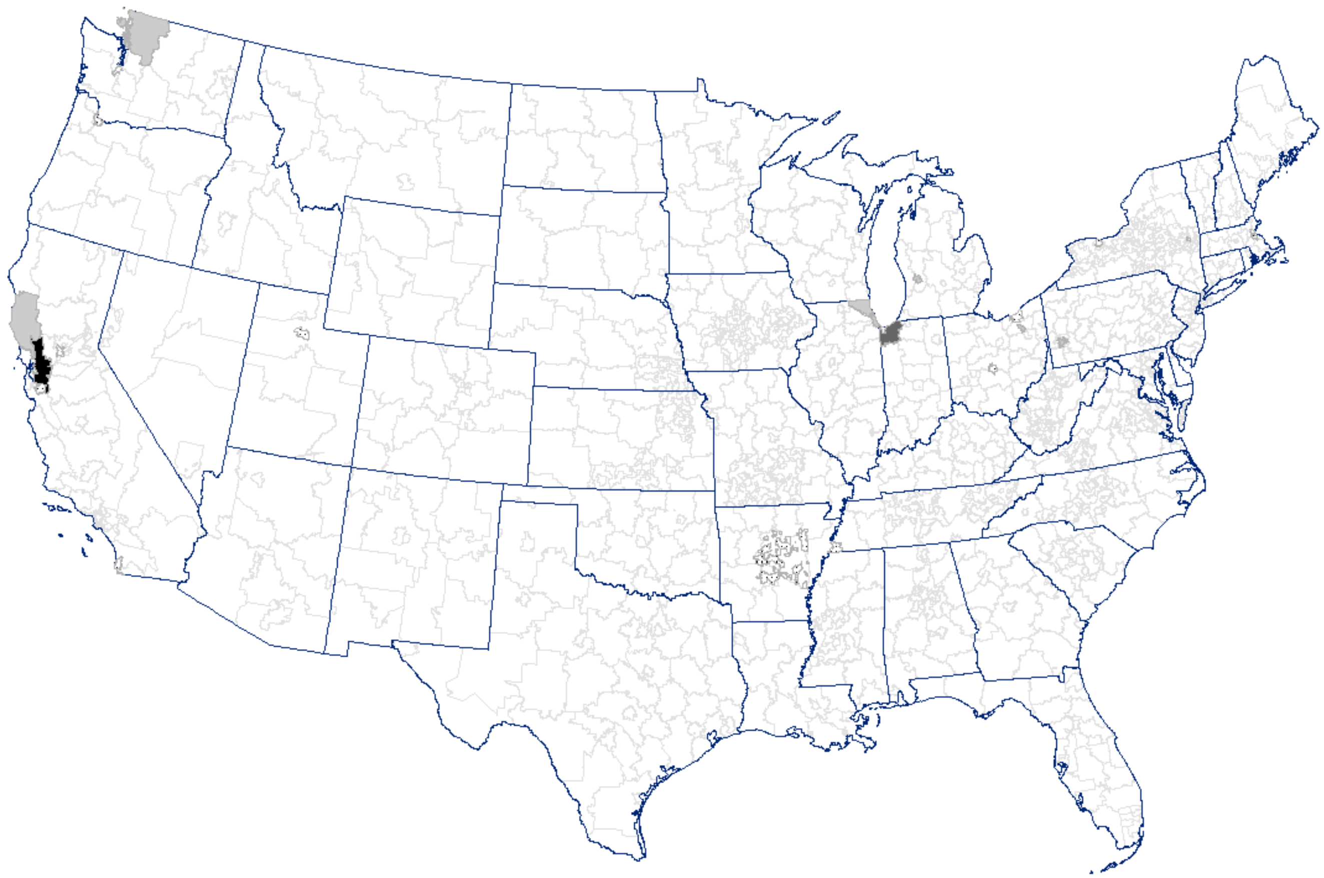
Hartford – Hartford did not adopt the technology ever. Other communities in Connecticut also elected not to use the technology.

Los Angeles – Los Angeles is interesting in that, while surrounding communities never adopt the technology, Los Angeles decided to adopt the technology between 2000 and 2002. From that point forward, adoption stays light in LA and also stays at no adoption in surrounding communities.

New York City – No adoption is present in New York City or in many surrounding areas. This may reflect the fact that New York is a densely populated area where TSP is not considered practical. There is slight adoption on Long Island in 2006 that continues into 2007.

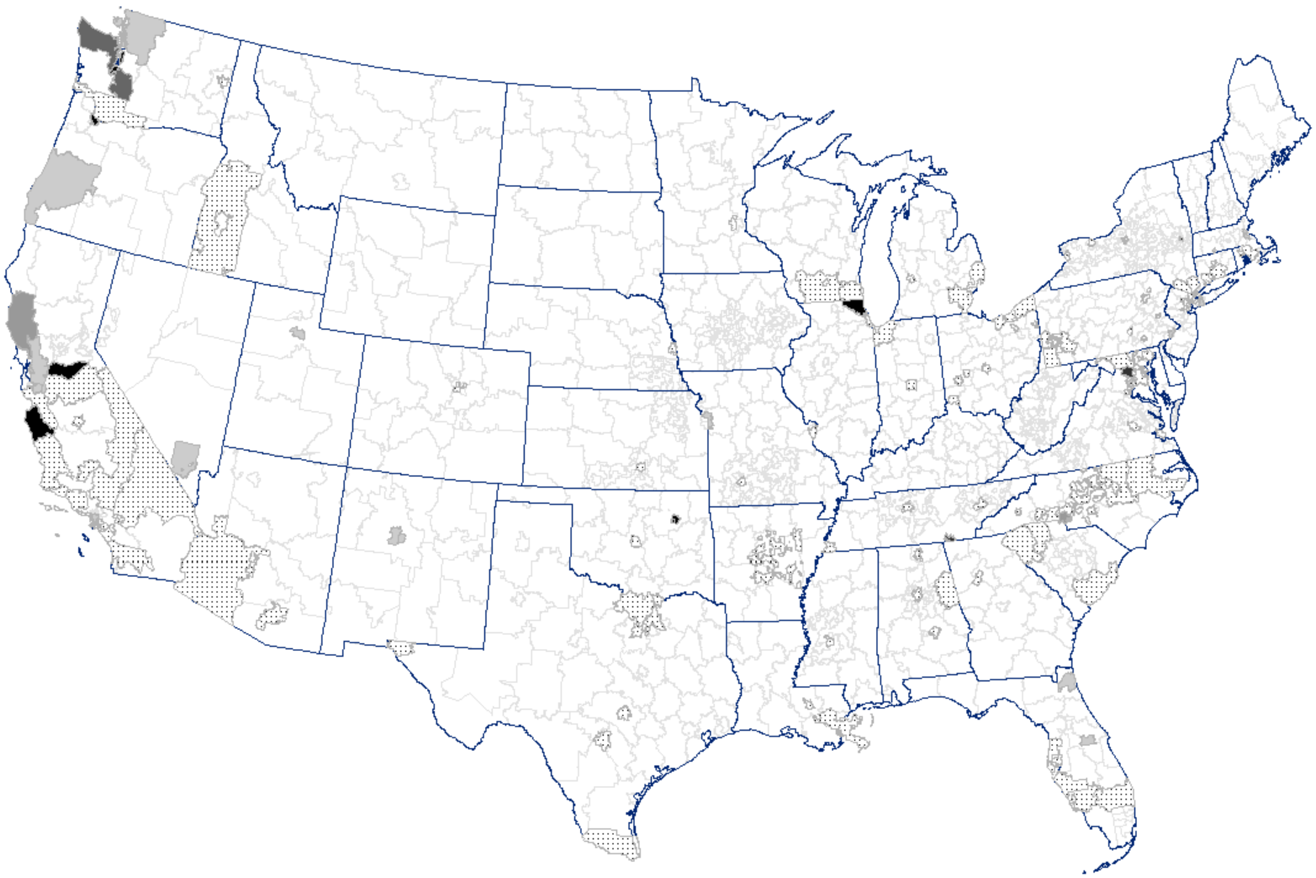
Transit Agency TSP Adoption in 1999

Figure 10



Transit Agency TSP Adoption in 2007

Figure 11



Conclusion

In broad terms, EVP and TSP technologies are deployed at relatively low levels across the U.S. In the case of TSP, despite some growth in the level of deployment, most of this has been focused in a few areas, while the majority of the country does not exhibit the same level of adoption. Most telling is the low level of deployment of TSP technology by arterial agencies, which is required for TSP to function. This disparity in deployment levels may point to the differing objectives of the two types of agencies and how they subsequently view the benefits of TSP.

The deployment of EVP, while higher than TSP, tends to be concentrated in suburban areas, although this is not uniformly consistent across the country. Deployment amongst arterial agencies is at a higher level than recorded for TSP—the willingness of arterial agencies to support EVP being a requirement to its deployment.

3.7 Vehicle Data Collection (VDC)

National Overview

The deployment of VDC has been increasing throughout the survey period. While the percent of agencies with VDC capability has been relatively constant at a high level, the percentage of signals equipped with VDC during this period has increased. By 2007, the diffusion of VDC was relatively widespread across the nation, although deployment levels do not reach those of TMS. It should be noted that the VDC here may refer to a variety of technologies. It does not take into account differences between technologies or the adoption rates of more advanced, newer technology such as microwave and probe data collectors. Table 10 depicts the pattern of adoption for VDC across the seven years of observation captured in the survey.

Table 10

Year	Number of Agencies	Number of Agencies with VDC	Number of signals equipped with VDC	Number of signals operated	Percentage of Agencies with VDC	Percentage of Signals with VDC
1999	97	88	8,821	33,062	91%	27%
2000	97	89	10,124	33,688	92%	30%
2002	97	91	11,960	33,133	94%	36%
2004	97	92	13,741	35,450	95%	39%
2005	97	90	14,948	36,045	93%	41%
2006	97	92	15,447	36,563	95%	42%
2007	97	92	15,656	37,147	95%	42%

Table 11 shows the percentage of agencies with TMS and VDC technologies while maintaining a constant sample.

Table 11

Year	Number of Agencies	Total number of agencies adopting VDC	Total number of agencies adopting TMS	Total number of signals	Total number of signals with VDC	Total number of signals with TMS	Percentage of agencies with VDC	Percentage of agencies with TMS	Percentage of signals with VDC	Percentage of signals with TMS
1999	96	90	88	33,466	8,879	17,878	94%	92%	27%	53%
2000	96	91	89	34,004	10,184	17,381	95%	93%	30%	51%
2002	96	92	90	35,548	12,011	19,482	96%	94%	34%	55%
2004	96	93	90	35,839	13,805	20,841	97%	94%	39%	58%
2005	96	91	90	36,532	15,060	21,862	95%	94%	41%	60%
2006	96	92	92	37,079	16,064	22,705	96%	96%	43%	61%
2007	96	87	87	35,575	15,295	22,750	91%	91%	43%	64%

Underserved areas

By 2007, the areas that do not have deployment are essentially the areas that are not dense urban centers. Around some of the larger municipalities, the suburbs have deployed VDC, but to a lesser extent than their center city counterparts. In addition, smaller municipalities appear to deploy less, such as Birmingham, AL.

Selected Cities

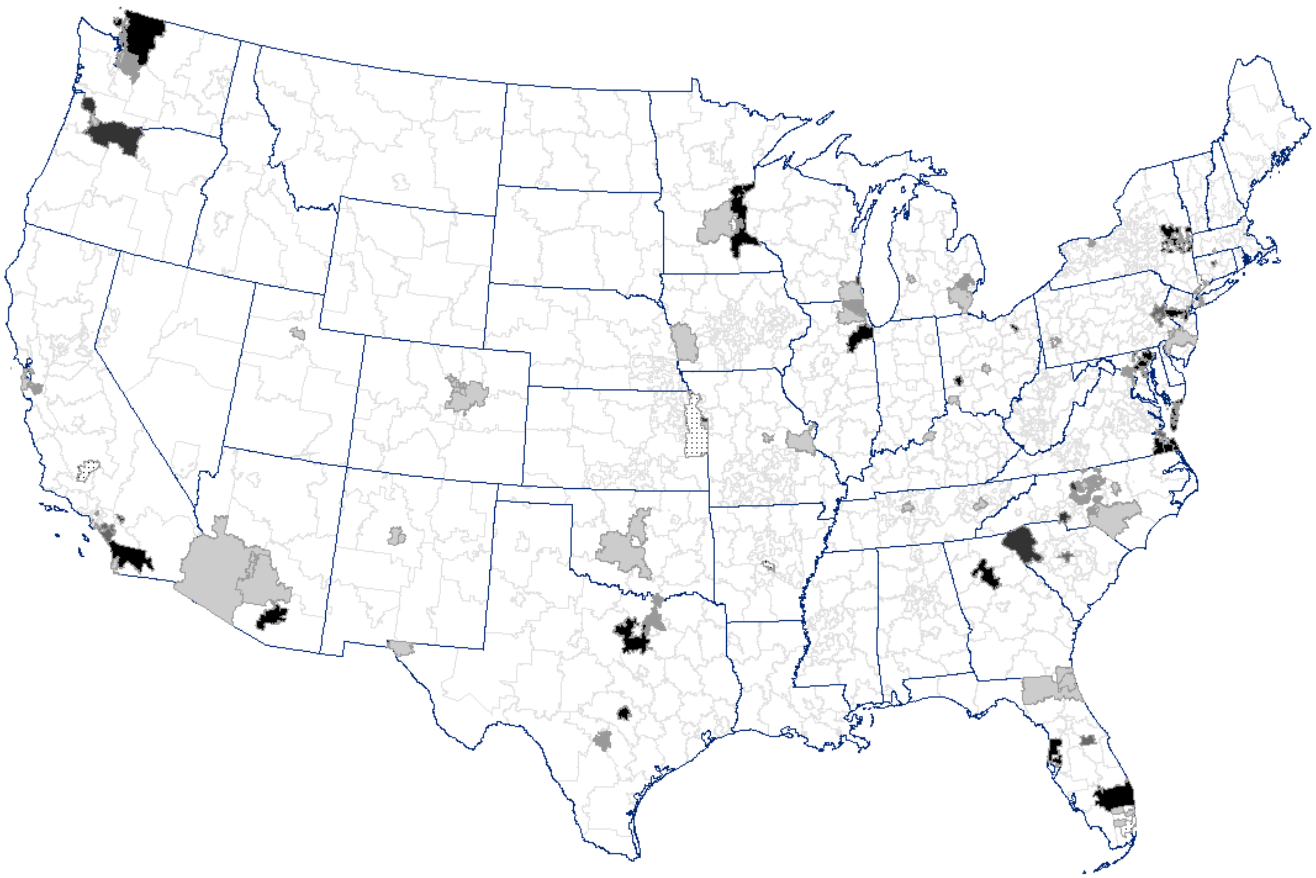
Atlanta – The city of Atlanta shows progressively more adoption throughout our period of analysis. It is noticeably absent from one suburban region by the end of the analysis period.

Chicago – While the suburban areas around Chicago show progressively more adoption as time progresses, the city either reports no adoption or very little consistently throughout the 7 years of observation.

Portland – Portland displays a moderate level of deployment that stays constant. The surrounding areas see a general increase in deployment over time resulting in fairly heavy deployment by 2007.

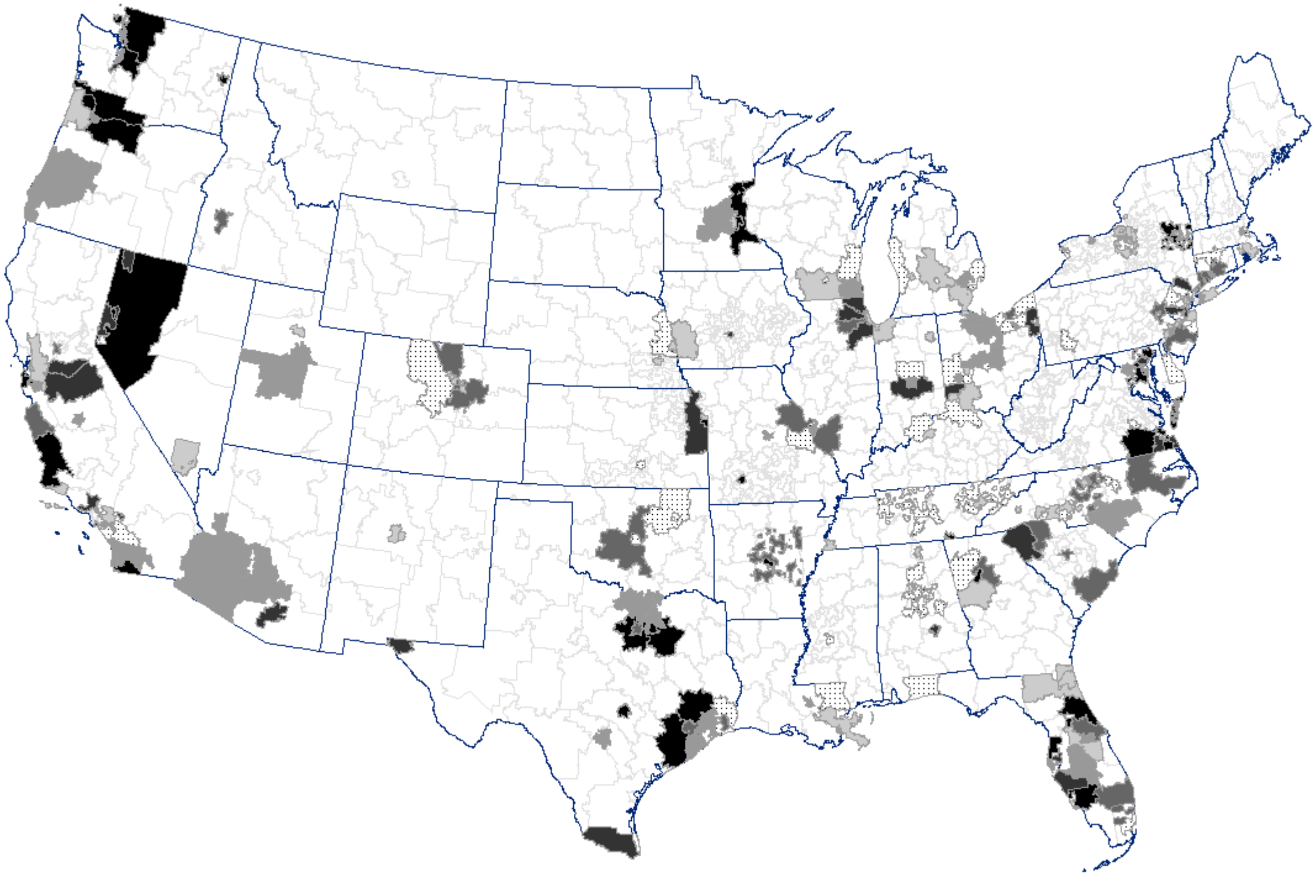
VDC adoption in 1999

Figure 12



VDC adoption in 2007

Figure 13



Conclusion

The diffusion of VDC technologies has been increasing relatively steadily during the observed survey years. The percentage of agencies with VDC has remained at a high level, indicating that the market is close to maturity. Nevertheless, it should be noted that this refers to VDC in general and not to a particular VDC technology. Some technologies such as probe data collection and microwave data collection still have comparatively low levels of VDC adoption in general. There has, however, been a rise in the percentage of signals with VDC, which suggests that agencies are increasing their use of this technology.

By 2007, the pattern of diffusion across the U.S. is fairly broad-based. Deployment appears to be focused in denser urban areas and to a lesser extent in the suburbs surrounding the urban population centers. Some smaller areas do show strong levels of deployment.

4. Modeling Approach and Methodology

4.1 Overview

The objective of this study is to describe the trends in ITS adoption and deployment, and to explore the sources of influence on adoption. To this end, two types of models are fit to the deployment tracking data. The first are Bass diffusion models. These models are intended to capture high-level adoption trends from the overall market perspective. The second is a series of econometric or behavioral models, which involve a more granular, agency-level perspective.[8]

Fitting econometric models to the data provides several advantages for characterizing adoption patterns. First, the modeling process allows for rigorously testing hypotheses about potential sources of influence on adoption and deployment, and to quantify the size and importance of their impact, by capturing these determinants of adoption as variables in an equation framework. Secondly, the model can be used to make informed predictions about what the future of adoption might look like, and how particular agencies' adoption behavior could be affected by given policy options.

Six technology markets are examined over the span of the Deployment Tracking survey distribution and data collection (1999 – 2007)[9]. The ITS Deployment Tracking database collects information from a number of agencies over the course of several years.

Such a dataset, containing both "cross-sectional" (agency-specific) and chronological information, is referred to as a panel dataset.[10] Ideally, all technologies covered by the Deployment Tracking survey would be subject to analysis; however, the modeling procedure requires the formulation of a consistent measure of adoption; information on agencies' adoption must be comparable between years. Furthermore, data must be available in a sufficient number of years to provide information on time-wise variation in adoption patterns. This requirement places limits on which technologies can be examined econometrically. Data may be missing for certain observations (agency-years) – whether because the survey was not conducted (such as in 2001, 2003), or because some agencies did not receive the survey in all years (or did not complete the survey). Thus, a complete profile of every agency that appears in the sample in every year is not available. As a result, the full set of data used in this analysis is referred to as an "unbalanced panel." A balanced panel, in which all cross-sections are observed in all time periods, is not a requirement for most econometric modeling procedures. As discussed below, however, a balanced panel is preferable in the case of the diffusion models.

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[8] This section presents abridged details of the model development procedure. A more detailed discussion of the models, their structures and the data collection process is presented in the appendix.

[9] Data has been collected in years prior to 1999, but standardization metrics to identify agencies were only outlined in 1999.

[10] For a detailed discussion of panel models, refer to Wooldridge (2003).

4.2 Bass Diffusion Models

Background

Estimating the historical adoption patterns for each ITS technology examined in this study is done through utilizing a Bass model of diffusion.[11] This model uses observed historical data (e.g., deployment levels as recorded in the ITS Deployment Tracking survey) to construct an S-curve representing the adoption trends of a particular ITS technology over time. The estimates and parameters of this adoption curve provide information about the market and the diffusion pattern specific to a particular product or technology.

The Bass model methodology differs from the panel models discussed in the next section in that it does not attempt to identify and isolate specific influences on ITS deployment. Rather, it examines the ITS markets at an aggregate level and looks at adoption trends over time. By taking the aggregate perspective, the time path of adoption can be used to estimate whether the product (or technology) has taken off quickly or slowly, and whether the market has peaked. In modeling the aggregate market, the Bass model is applied to a time series of deployment levels, which enables a description of patterns of growth, diffusion, and the relative importance of innovation and imitation in each of the ITS markets of interest.

The results from the Bass model can be used to inform decision making and strategies related to the deployment of future ITS. As noted, when estimated on current technologies, the model will reveal the pattern of diffusion (slow or fast), time to the peak change in adoption and whether the market is dependent on innovators or imitators to push adoption.

If a particular next generation technology just being introduced into the market is expected to exhibit similar characteristics as an existing technology, then a Bass model estimation of the existing technology can be used to provide insight into how the adoption and deployment of the new technology may evolve and what types of Federal programs would be best suited to promote diffusion. For example, if, based on the historical market used for comparison purposes, adoption of the new technology is expected to rely heavily on imitators, a policy to encourage adoption would bring imitators into contact with innovators that have already adopted the technology—imitators are influenced within the market through observing adoption by other users. In contrast, if innovation is determined to be a critical influence for diffusion, then, since innovators respond to external influences, policies directed at promoting the use of a new technology may be appropriate.

Finally, the Bass model provides insight into whether the markets being examined are mature. In this case, it would indicate opportunities for the adoption and deployment of next generation technologies.

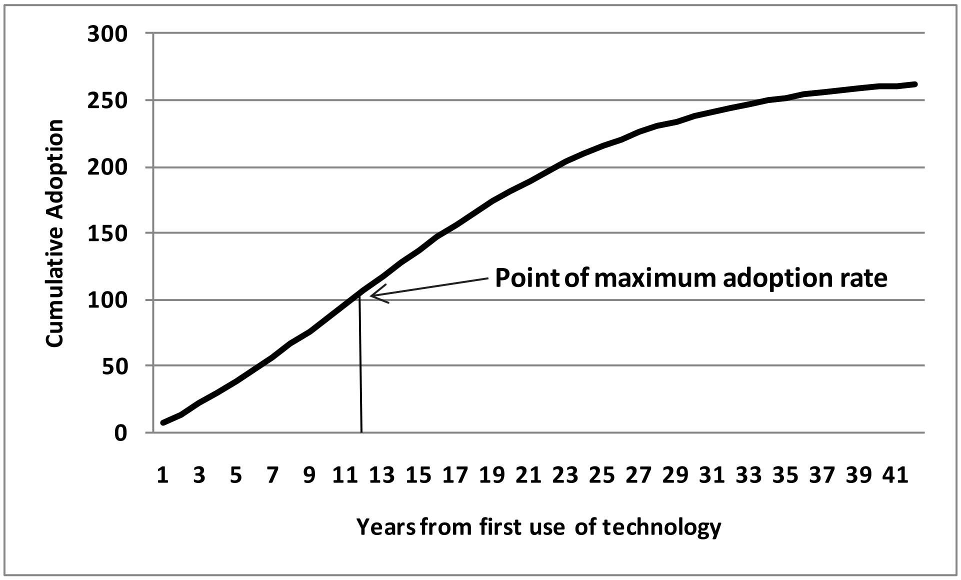
The Bass Model

The Bass model was developed to provide a quantitative method for estimating the growth, or adoption, patterns of products as they enter a market place.[12] These empirically estimated diffusion patterns can then be used to model and provide forecasts for the adoption of existing or new products. Figure 14 shows an example of a continuous adoption pattern depicting a product's progression from introduction into the market place through to the later stages of maturity. The adoption pattern is based on cumulative adoption of a product (generally thought of as an initial purchase by each consumer, or for the purposes of this study, a transportation

[11] Bass (1969)
[12] Ibid

agency). The point of maximum adoption rate, or inflection point, represents the point in time when the growth of product sales peaks, after which time growth rates begin to diminish.

Figure 14: Product Adoption Pattern (Cumulative)



An important component of the Bass model is that the rate of new adoption at a given point in time will be a function of the number of previous purchasers of the product. The rate of change in the number of new adoptions at time t is represented by the change in the adoption pattern. This series reflects the changing slope of the cumulative adoption curve and is shown graphically in Figure 15 below. In the early stages of introduction of a new product into a market place, adoption rate growth (or the change in cumulative adoption) is at its strongest. The inflection point (or point of maximum adoption rate) represents the peak level of new adoptions, after which the market moves towards maturity.

Using the hypothesis that the level of cumulative adoption directly influences the rate of adoption, the Bass model assumes that purchasers with imitator characteristics learn from the adoption of the product by others, and as the level of adoption grows so does the influence of the market on imitators who have yet to adopt. This dynamic allows the model to explicitly provide estimates for the relative intensity of innovation or imitation for a product through determining the coefficient of innovation (referred to as the value of p[13]) and the coefficient of imitation (referred to as the *q* value). These values are determined within the modeling structure and can be used to estimate the relative importance of either innovators or imitators within a market place.

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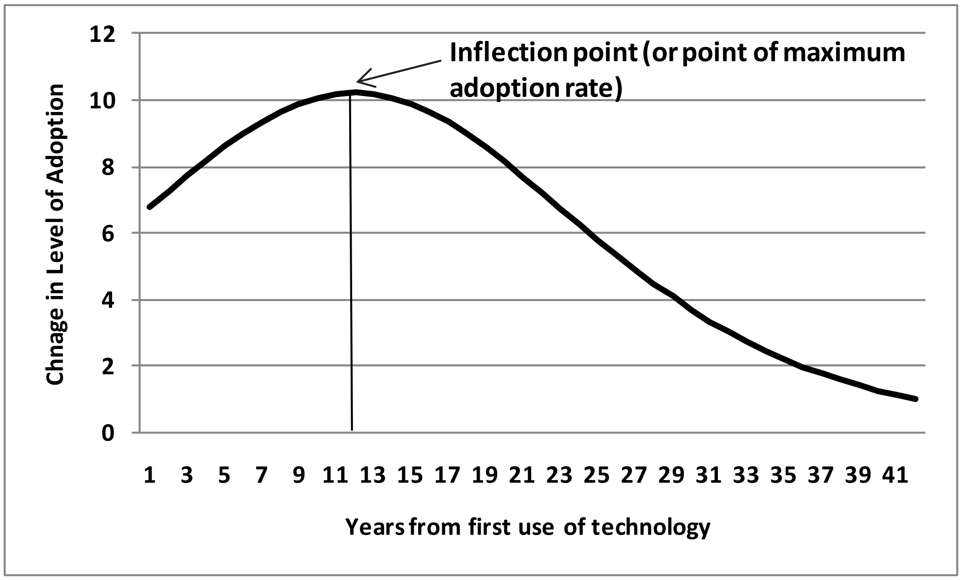
[13] Note that "value of p" refers to the value of the coefficient *p* in the Bass model. It should not be confused with *p-value*, the statistical concept.

Figure 15: New Product Growth



Innovators can be thought of as those market actors that do not rely on the input of others to make a decision to adopt; they act independently, though they do respond to external influences (e.g., promotion, advertising) in making their decision to adopt. Critically, the Bass model assumes that the probability of an additional innovator adopting is not influenced by increases in the overall level of adoption. By comparison, imitators rely on communication with those who have already adopted the product and the probability of their adopting increases as the overall level of adoption grows.

Estimates of the values of p and q not only provide insight into the dynamics of the market under consideration, but also allow for comparisons amongst related markets. Comparing these values between products can reveal similarities or differences in the key influences on their diffusion patterns. This allows for grouping products together based on whether they are driven by innovators or imitators. Doing this provides insight into which markets have similar dynamics and may reveal markets that, even though they would seem to be similar, exhibit different diffusion patterns.

The Bass model can also be used for forecasting the diffusion and adoption patterns for existing or new products or technologies. Since models are estimated using historical data, the model can provide forecasts beyond the observed dataset. In other cases, the Bass model estimates and adoption curves for existing products that are thought to be similar in nature to a new product to be introduced into the market can be used to provide a forecast for the introduction of the new product into the market.

4.3 Agency-Level Panel Models

The initial step in selecting an appropriate econometric model structure for analyzing the ITS markets is by characterizing the data-generation process. For each market in a given year, the survey sample consists of a quorum of agencies that have not adopted the technology of interest (perhaps they will in subsequent years in the panel; perhaps they will in the future). For the remaining subset of agencies – adopters – a non-zero value is observed, representing the extent of deployment. Thus, the data are populated by many observations lying at exactly zero, and a cluster of various positive values.

It might be expected that adopting agencies and non-adopting agencies differ from one another more fundamentally than do two agencies selected from within the group of adopters: For example, that the "distance" between an agency with zero loop detectors and an agency with 100 loop detectors is different in nature than that between an agency with 100 loop detectors and an agency with 200 loops detectors, despite the fact that the difference in terms of deployment is 100 loop detectors in both cases.

Initial adoption – even simply the purchase of a single loop detector – may involve significant start-up costs associated with choosing among competing suppliers, training staff to use a new technology, and establishing maintenance and replacement procedures. Adding to an existing deployment, on the other hand, might be as simple as finding space in the budget for the purchase price of the marginal piece of hardware.

The two decisions may involve fundamentally different considerations, and are best captured independently. Thus, an agency's decision-making process is considered to contain two distinct steps, the second contingent upon the answer to the first: the first question is *whether* to adopt, and the second is *how much* to adopt. As a result, separate models are utilized along with distinct estimation procedures, to optimally capture each of the two decisions.

As noted above, there may be factors that play an important role in only one of these two decisions. Furthermore, it is likely that some variables, while important in both steps, have a different effect in the context of the two decisions. For example, considering the bearing of congestion conditions on the decision to adopt a mitigating ITS technology such as traffic management systems: it is plausible to expect that an agency must reach a high threshold value of congestion before initially considering adoption of TMS (model step 1), but after having made an investment, the relatively marginal costs associated with additional deployment entail that additional person-hours of delay result in a quick and commensurate response via additional outfitted signals. A single coefficient would be insufficient to capture these two effects simultaneously. Modeling the two decisions separately allows for accommodating such hypotheses as threshold effects, declining marginal costs, or decreasing returns to scale. Thus, two relevant questions are posed separately, and in the following order: *To adopt or not to adopt?* And, given an affirmative response to the first question, *to what extent does deployment occur?*[14]

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[14] Procedures exist to capture multi-step data generation processes in a single model. The intended advantage of such models over employing multiple separate models is that the estimated coefficients can represent the sample at large (rather than simply the subset of adopters or non-adopters). Several such models were explored for this study; of particular note is the Heckman sample selection procedure (Heckman, 1976). Sample selection-type models, however, have not been credibly adapted to a panel-model framework making this methodology unsuited for the purposes of this study.

Variable Selection and Specification

As is further discussed below, the variable of interest, or dependent variable, in the first-step model for each technology is a simple indicator of adoption. In the second-step regression, the formulation of the dependent variable differs by technology; a measure of adoption is required that is indicative of each agency's existing investment relative to its potential use or demand for the technology. An example illustrates this point: it might be considered that the amount of highway data collection equipment per available highway mile makes a better metric for the level of adoption than does simply highway data collection equipment. Since agencies differ in size, two agencies that have outfitted 75% of their available highway miles might be considered to have made similar decisions, even if the first controls 100 miles of roadway and the second controls only 10 miles; more so, in fact, than to the decisions made by an agency that controls 100 miles of roadway, but has outfitted only 7.5 of these miles. This consideration is generally treated in one of two ways: first, a "normalized" measure of adoption can be utilized directly as the dependent variable (following this example, equipped highway miles per available highway mile might be chosen), or alternatively, the normalizing measure can be included independently as an explanatory variable on the right-hand side of the equation.

The distinction between these two methods is subtle; the former method imposes the restriction that explanatory variables have the same impact on the *percent* of deployment across all agency sizes. That is, an explanatory variable may increase deployment by 1%; however, this translates into different real world deployment (as measured in units) depending on the size of the agency. The latter, including the normalizing variable as an explanatory variable, imposes the restriction that explanatory variables have the same impact across all sizes of agencies. For example, if an explanatory variable increased highway data collection by 1 mile, that variable would have the same impact going from mile 1 to mile 2 as going from mile 99 to mile 100. In addition, this variable would have the same impact for an agency that controlled 10 miles of highway as one that controlled 1000 miles of highway. In addition to the dependent variables for certain technology markets, some explanatory variables are likewise ameliorated by normalization (see further discussion below).

Factors affecting ITS adoption and deployment are often suggested by theory, as conceptual notions rather than concrete measured quantities. Independent, or explanatory, variables represent our best efforts to translate these determinants appropriately for statistical modeling using existing data series; however, measures cannot always be found which are perfectly reflective of the behavioral determinant they are intended to capture. In some cases, data representing the theoretically preferable measure have not been collected or are unavailable; in some cases, it is questionable what that appropriate measure ought to be, even if data are available. In general, only the former obstacle is encountered when dealing with policy variables – that is, variables of direct interest, whose effect it is our objective to measure. However, selecting the appropriate control variables – characteristics of the observations that must be "controlled for", lest they confound the estimation of the variables of interest – is often less straightforward; theory is relied upon to inform initial selection of control variables, and econometric testing procedures to justify their inclusion or exclusion from particular models.

Demand for ITS technology is derived from safety, mobility, and environmental conditions and concerns. It is constrained by costs associated with the technology, and is tempered by the availability of information or demonstration of the technology. Ideally, information would be available on how each agency assessed safety conditions in its domain, how much discretionary funding it had available in a given year, and what information or review it had available regarding the technology in question, and so on. In reality, proxies are used to represent these quantities – the number of traffic-related fatalities in the county, the annual revenue collected by the municipal government to fund transportation expenditures, the existing deployment of the technology among neighboring agencies, and so on.

Explanatory, or independent, variables considered in the modeling procedure may explain variation in adoption patterns in one of three ways: over time, among agencies, or in both directions. For example, the market price for ITS video surveillance hardware may decrease over time, but be faced similarly by all agencies in a given year (time variation). Conversely, the existence or absence of a regional ITS architecture may differ among agencies in a given year but be unchanging for an individual agency over the entire span of the data (cross sectional variation). The majority of adoption determinants identified in this study (such as congestion, budget, traffic fatalities, etc.) exhibit variation both among cross sections and over time.

In the case of certain variables, it is hypothesized that the propensity to adopt changes not with the *level* of a particular variable (e.g., the agency's annual budget, in dollars) but rather with a *change* in this variable. For example, if it is believed that TMS adoption occurs primarily when agencies experience a surplus or a windfall in funding, it is plausible to speculate that TMS adoption patterns are explained not by the level of an agency's annual budget but by the growth in that budget relative to previous years. This assumption can be accommodated by performing a logarithmic transformation on the variable; the natural logarithm of the annual budget would be input as a variable in the regression equation, rather than the budget itself. The estimated coefficient, when interpreted, would then represent the *elasticity* of adoption with respect to budget – that is, a change in adoption expectations given for a given change in budget.

Another modification of the functional form of certain variables is motivated by their time stamp within the equation. If the effect of a change in a particular variable on the probability or extent of adoption is not expected to materialize for some significant span of time, the variable may be lagged one or more times. If lagged once, the previous year's value of that variable, rather than the current-year value, enters the equation.

As noted above, the expected sources of influence on adoption and deployment are drawn from demand theory. These influences were first characterized categorically; specific data series were then sought to represent them in the modeling procedure. In the case of certain categories below, multiple alternative measures were tested within the context of an individual technology. Categories of variables are divided into two subsets, policy variables and control variables.

Policy variables are variables of direct interest: measures that may be used to inform decision-making, or act as potential policy levers for decision-makers. Control variables enter the equation to facilitate the accurate estimation of policy variables, by isolating and removing the influence of potentially confounding factors in the estimation procedure. For the purposes of this study, several specific categories of policy variables were explicitly included, as noted below.

Policy Variables

There are several deliberate means of encouraging ITS adoption that warrant examination. Including variables that capture policy related influences on ITS in the regression analysis allows for isolating and interpreting the magnitude of their effect on deployment and provides insight that can be used to inform future policy and strategy decisions.

Regional Architecture

Regional "ITS architectures" have been instituted by agencies at various points throughout the span of the data, in order to facilitate technological collaboration. This ought to make adoption less costly: within groups of collaborating agencies in a region, there might be economies of scale, "spillover" effects in learning and associated decreased labor and training requirements, and risk and cost sharing. In effect, the presence of a regional architecture will encourage agencies to focus on ITS and move them closer to the point of adoption or additional deployment;

it is thought that this influence may be stronger in effecting an agency's decision of *whether to adopt* rather than *how much to adopt.*

Earmarks

A second means of direct policy influence in the past has been allocation of dedicated "earmark" funds for ITS projects. Earmark funding effectively expands an agency's budget constraints, but the probability of deployment is greater than simply uniformly increasing the budget: the opportunity costs for spending the funds are low since the money must be spent within the scope of the dedicated purpose.

Peer Effects

A related, though not deliberately implemented, influence may be adoption patterns of similar or neighboring agencies, whether or not a structure is in place for explicit collaboration. Agencies may "learn" from their peers, exchanging information and directly observing the effectiveness of ITS tools in other agencies' deployments. If this has been an important influence in the past, further facilitating communication and demonstration between peer agencies could be formulated as a deliberate policy initiative.

Cost

The cost of an ITS product certainly plays a role in both the initial decision to adopt as well as the decision of how much equipment to purchase, albeit in different ways. When deciding whether to adopt, agencies consider the full set of expected future costs: the immediate purchase price, plus the stream of costs stemming from expected maintenance, repair, and replacement. The expected continuing cost stream for any of the technologies considered in this study would be difficult to characterize – and, as noted above, may differ by purchaser. Nevertheless, to the extent that such differences are a product of agency characteristics captured elsewhere in the model (for example, network size or budget) lack of information about these costs will not confound the coefficient estimates. In fact, as is discussed in the appendix, fixed or random effects are specifically included in order to account for unobserved differences among cross sections. (Such differences may arise if, for example, agencies face different purchase prices or continuing costs by virtue of geographic location, number and competitiveness of suppliers, existing technological network, bargaining power, size, or continuing contract agreements.)

In addition to the expected cost stream, purchase price is generally a large part of the expected monetary cost of the system. Purchase price is difficult to capture, particularly in the case of technologies for which price is based primarily on services provided or intellectual property proffered by suppliers, rather than simply hardware and equipment. However, following first adoption, the initial purchase price of the system may generally be viewed as a sunk cost; thus, with regard to the amount of technology purchased, the relevant cost figure is the marginal cost associated with extension to an existing system. For many technologies, this may be less clear than the purchase price: often, a similar ITS function may have multiple possible technological implementations (for example, real-time vehicle data collection may be achieved via loop detectors, cameras, or sensors; emergency vehicle pre-emption may employ line-of-sight or GPS equipment; and so on). Furthermore, as noted above, the price associated with a similar equipment investment on the margin may differ among purchasers, depending on the nature of the relationship with supplier(s). Thus, price may be an imperfect measure of the true costs facing an agency. However imperfect the measure available at an agency level, it is nonetheless important to capture time trends affecting all agencies' costs, such as a decline in the price of an input material over time. Agencies' cost sensitivity may be used as a policy lever, if opportunities for subsidization or targeted research into low-cost alternatives are pursued.

Complementary Products

Another important means of influencing adoption is through the promotion of complementary technologies. Complementarities arise where, for example, equipment or training is useful for multiple technologies. If adoption of another ITS product is found to be positively related to adoption of the technology in question, encouraging the spread of the complementary product, or targeting agencies that have already deployed it, could indirectly encourage adoption of the technology in focus.

Budget

Agencies' investment decisions are inevitably constrained by available resources, a major component of which is the agencies' annual budget or funding. The relationship between budget and purchasing ability is not straightforward: While the overall size of the agency's budget may restrict its potential investments (it is unlikely that a very financially small agency could afford the initial and continuing costs associated with an advanced traffic management system, for example), the more relevant indicator of investment capability is more likely to be available or surplus funding, over and beyond existing commitments (labor costs, maintenance of existing operations and equipment, and so on). Unfortunately, neither metric is readily available in data; budget variables used in the agency-level regressions, with the exception of transit signal priority (budgets for transit agencies are available from the National Transit Database), are rough proxies for the desired quantities.

Census data for government revenues were used at the most appropriate geographic level (county or state), on the premise that the funding sources of many transportation agencies' annual operations are either derived directly from a subset of these revenues or are subject to similar fluctuations over time. Since it is being hypothesized that marginal investments (which determine the extent of adoption) may depend on the availability of surplus funds – indicated by the change in the budget from year to year – the inclusion of budget variables is tested in logarithmic form, particularly in the second-step regression models. Furthermore, it might be expected that the budget must be spread over the needs of the entire community; therefore budget is normalized by community size (population), and revenue per capita tested as the budget variable specification where relevant. However, in the case of expensive technologies, initial adoption decisions may be more related to the overall size of the budget, relative to other agencies. Estimating the effect of annual budget could indicate whether and how supplementing agencies' funding – be it through directly allocating funding, targeted financial assistance, subsidizations, or other options – could impact the adoption and deployment of particular technologies.

Control Variables

Mobility

A principal purpose of many ITS technologies is to increase mobility within the traffic network, whether by alleviating congestion, smoothing traffic patterns, reducing disruptive accidents, or coordinating equipment and modes. Agencies' demand for such technologies may thus depend on the severity of mobility impairments within their domain. One way to estimate the extent of network mobility impairments is to examine congestion within the area. The details of the congestion measure, which relies on the data and methodology provided by the Texas Transportation Institute, are documented in the appendix. The index constructed from these data is intended to control for the impact of congestion as a determinant of adoption. Implications from its estimated importance in each model would include the potential agencies implicitly assign particular technologies for easing network blockage.

Safety

Another concern that plays into agencies' demand for ITS technologies is their potential to mitigate safety problems. One indicator of how much an agency stands to gain from mitigating safety concerns – and, by extension, its potential demand for solutions designed to mitigate these problems – is the extent of crashes on its roadway network. To this end, a measure of fatal crashes in the agency's geographic area is used (using data from NHTSA's FARS database), often normalizing by population to make this measure comparable among agencies of variously sized domains.

Dependent Variable Normalization Measures

As discussed above, a normalization measure may be included, such that coefficient estimates are rendered transparent with respect to the "size" of the agency. Size is measured according to the technology: The relevant size of an agency considering vehicle data collection technologies might be the number of signals under its control; transit agencies might be ranked by the number of vehicles operated, and so on. Including normalization measures helps to ensure that coefficient estimates are applicable and not biased by the particular sample.

5. Results

5.1 Bass Model Results

The Bass model results reveal that the ITS technology markets examined in this study are primarily driven by imitators and are in a mature state. The magnitude of imitation in the market place is shown by the value of *q*, or the coefficient of imitation, while innovation is shown by the value of *p*, or the coefficient of innovation; both of these coefficients are estimated by the Bass model using a non-linear specification that has been adjusted to account for the fact that the early years of the introduction of these technologies into the marketplace are unobserved.

The Bass model estimation results for the six markets being investigated are shown in Table 12. These results include *p* (innovation) and *q* (imitation) values, along with constants for the market size and the year the technology was introduced. The introduction year refers to the estimated year when the technology became available or there was evidence of it first being used in the market.

In all markets, the coefficient of imitation, or value of q, is far higher than the coefficient of innovation, or value of p, indicating that imitation plays a dominant role in the diffusion of ITS technologies. This result can be seen most dramatically in the case of ETC, where the value of q is considerably greater than the next highest *q* estimate (HDC), and value of p is very close to zero.[15] Indeed, the ETC results are a particular outlier, with the value of q exceeding 1.00. This is much higher than the normal range within which the value of q lies (generally around 0.5) and suggests a marketplace with an extremely strong imitation dynamic. In essence, once a relatively small number of early adoptions were made, subsequent adoption of the technology grew extremely rapidly. This is likely related to the nature of the ETC marketplace, where there is a strong network element to the technology (both within an agency and between states) and direct revenue implications from deploying the technology.

For HDC, TMS, EVP and VDC, the value of q falls in a range between 0.29 and 0.39. This value is close to the typical range of values of q that tend to be observed from the Bass model for other technologies or products. The values of q for all technologies except TSP are statistically significant within at least a 10% threshold.

The value of p is not statistically different from zero in any of the technologies, except for TSP. The values of p observed here are below the typical values seen in other markets, (e.g., non-public sector markets), and the implication is clear that the ITS markets examined here do not exhibit a strong innovation dynamic—diffusion is driven by imitators as opposed to innovators or risk takers.

[15] The actual *p* estimate for ETC is 1.58×10^{-8}.

Table 12: Bass Model Results

Dependent variable: Change in adoption level

	p (Innovation)	q (Imitation)	m (Market Size)	t (Year Introduced)	R^2
ETC	.0000	1.2571***	58	1984	.91
p-value	.83	.01	-	-	-
EVP	.0001	.3420***	282	1970	.87
p-value	.50	.00	-	-	-
HDC	.0000	.3886*	82	1960	.49
p-value	.89	.10	-	-	-
TMS	.0026	.2875***	292	1977	.84
p-value	.28	.00	-	-	-
TSP	.0242*	.0973	270	1977	.32
p-value	.06	.14	-	-	-
VDC	.0000	.3248**	111	1960	.65
p-value	.79	.02	-	-	-

***$p < .01$, **$p < .05$, *$p < .10$

The one exception to the general results discussed above is TSP. For this technology, *p* is statistically significant at the 10% level, meaning it is statistically different from zero. Additionally, *q* is statistically indistinguishable from zero. This is an indication that, unlike the other markets, innovation is a more important factor in the diffusion process within the TSP market place. In addition, although imprecisely estimated, the value of q (imitation) is closer in magnitude to the innovation value, highlighting the importance of both of these factors in influencing technology diffusion for TSP.

The goodness of fit for the Bass model, as indicated by the R^2 value, varies across the technologies. It is highest for ETC, EVP, and TMS – the model accounts for more than 80% of the variation in annual deployment for those technologies. HDC and VDC exhibit lower goodness of fit (49% and 65% of variation explained, respectively), and TSP exhibits the lowest (32% of variation explained). The low goodness of fit value for TSP suggests that the Bass model has not been able to capture all of the variation in the historical deployment data for this technology, providing a weaker estimated model result than for other technologies.

The information derived from the Bass model — the values of q and p, market size and estimated year of introduction of the technology, allow for graphing both the cumulative adoption and annual adoption curves. These curves provide insight into the relative speed of the market diffusion for each of the technologies and an estimate of the inflection point, when the growth in deployment began to slow. These graphs are shown towards the end of this section.

When viewing these graphs it is important to note that the cumulative adoption curves are actually *derived* from the annual adoption curves, rather than estimated directly. This is due to the fact that the form of the Bass model used for the nonlinear estimation estimates annual adoption (i.e., annual adoption is the dependent variable in the model) and cumulative adoption is calculated from the estimated annual adoption numbers. As a result, the annual adoption curves exhibit a good fit with the observed data, while the cumulative adoption curves are not as precise.

Each estimated curve in the cumulative adoption graphs takes on roughly the same shape as the corresponding observed curve, but the estimated curve always lies *above* the observed curve. This means that the market size *m* – which represents the estimated total number of eventual adopters and has been *assumed* to be equal to the total number of agencies in the balanced panel used for estimating the Bass model – is greater than the market size suggested by the observed trend in annual adoption. In other words, not all agencies in the balanced panel are expected to eventually adopt – the market has reached saturation below the potential market size. The gap between the estimated and observed cumulative adoption curves is particularly wide in the case of TSP, suggesting this market has reached a mature level considerably below its potential size.

The maturity of the markets can be seen in the shape of the curves in the late 2000s and into the current decade. During this time, the cumulative adoption curves are flat and becoming flatter, indicating that adoption levels are reaching maturity. The annual adoption curves are flattening during this time, indicating that adoption rates are slowing nearly to a stop (consistent with a mature market).

Also note that the markets' peaks – the years where the estimated cumulative adoption curves are steepest and the estimated annual adoption curves highest – all occur during the mid-to-late 1990s. This again suggests that all of the technology markets are now in a mature state.

Figure 16: ETC Bass Curve – Cumulative Adoption

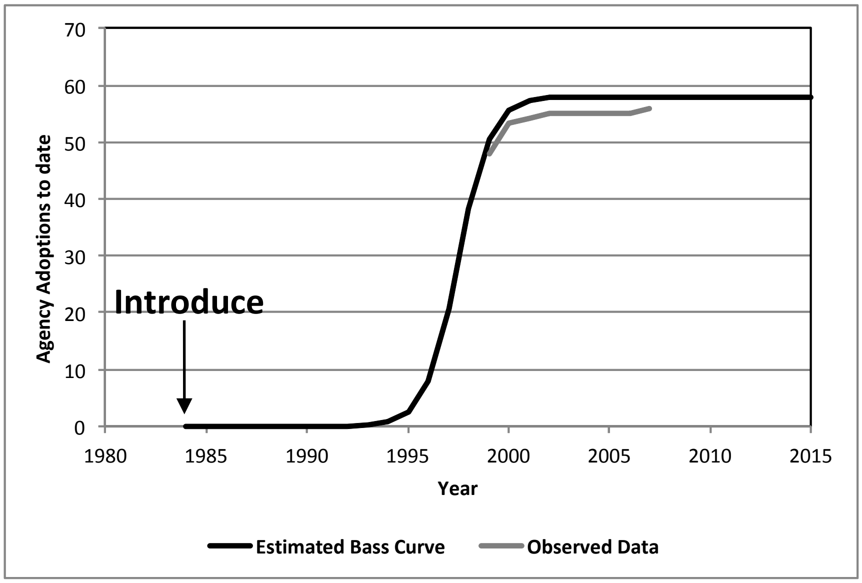


Figure 17: ETC Bass Curve – Annual Adoption

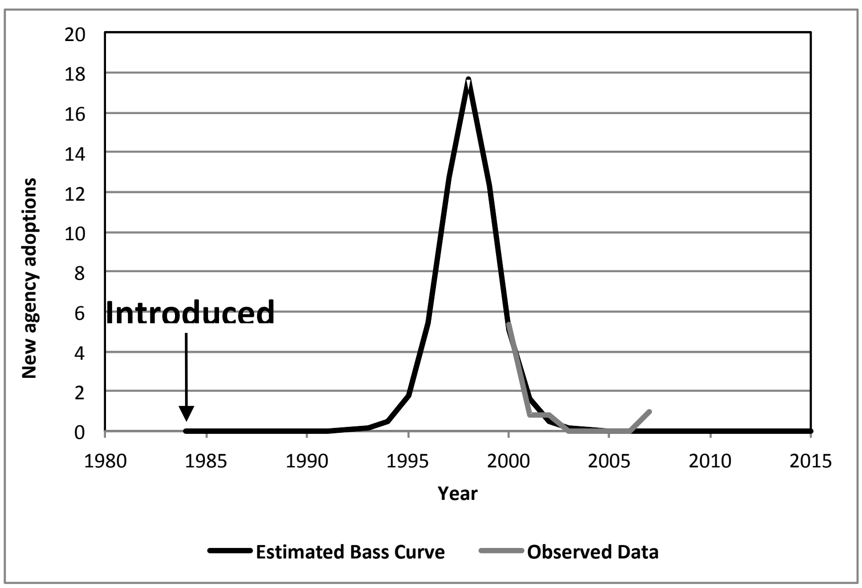


Figure 18: EVP Bass Curve – Cumulative Adoption

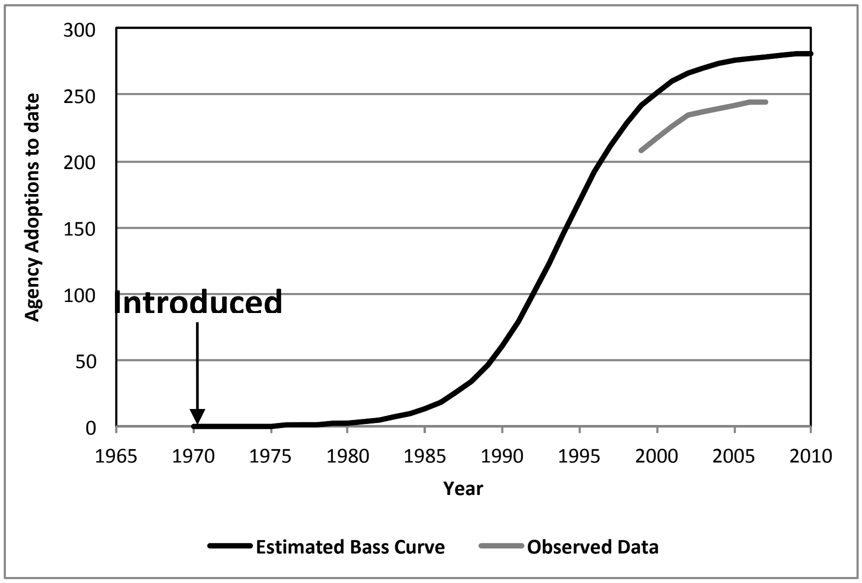


Figure 19: EVP Bass Curve – Annual Adoption

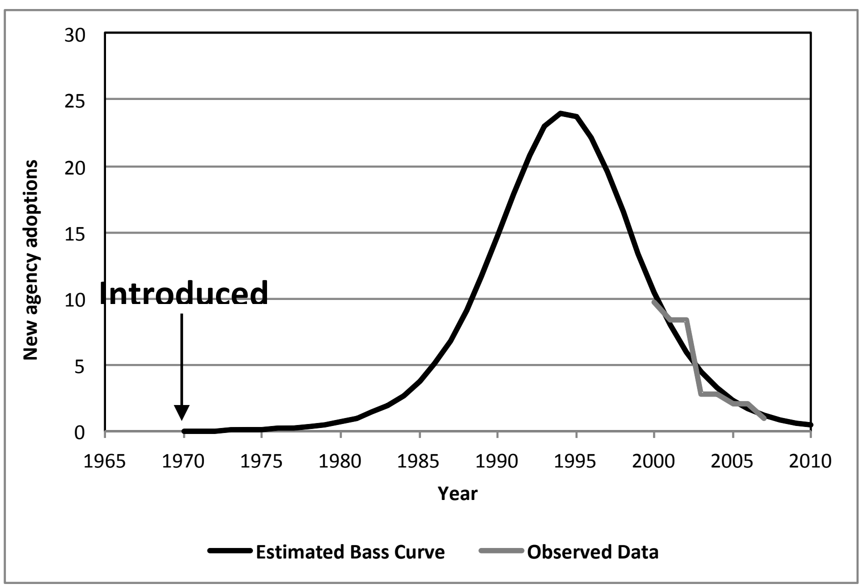


Figure 20: HDC Bass Curve – Cumulative Adoption

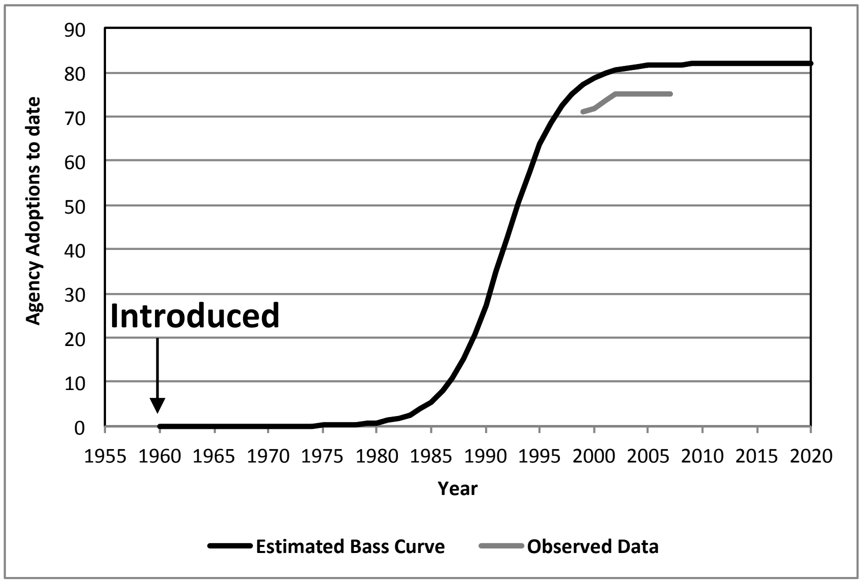


Figure 21: HDC Bass Curve – Annual Adoption

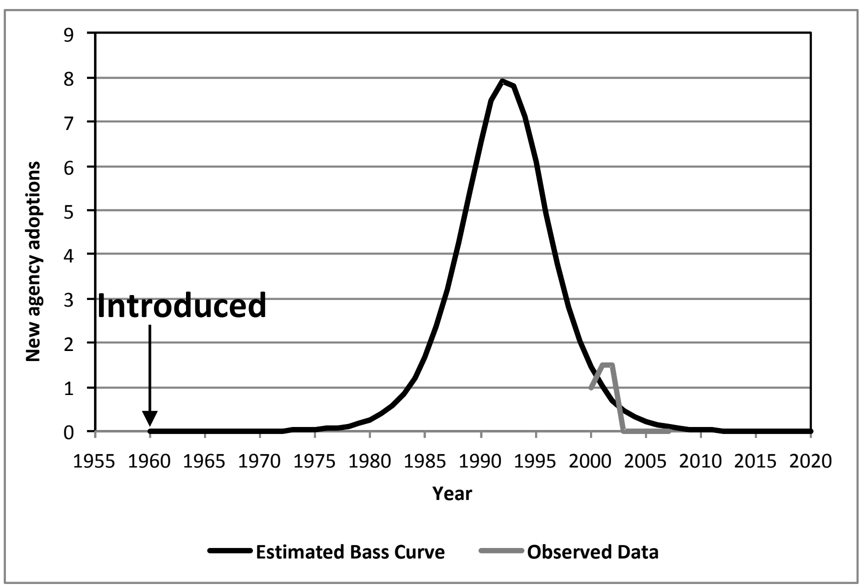


Figure 22: TMS Bass Curve -- Cumulative Adoption

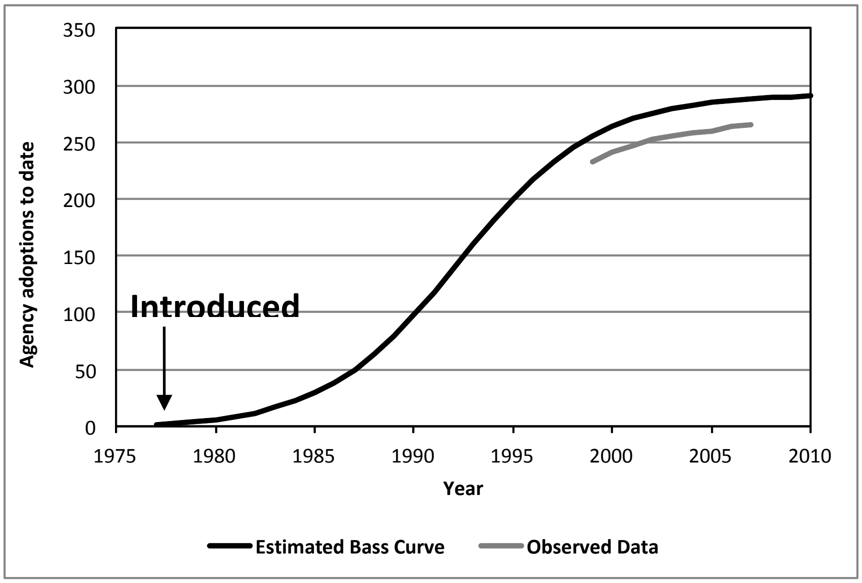


Figure 23: TMS Bass Curve – Annual Adoption

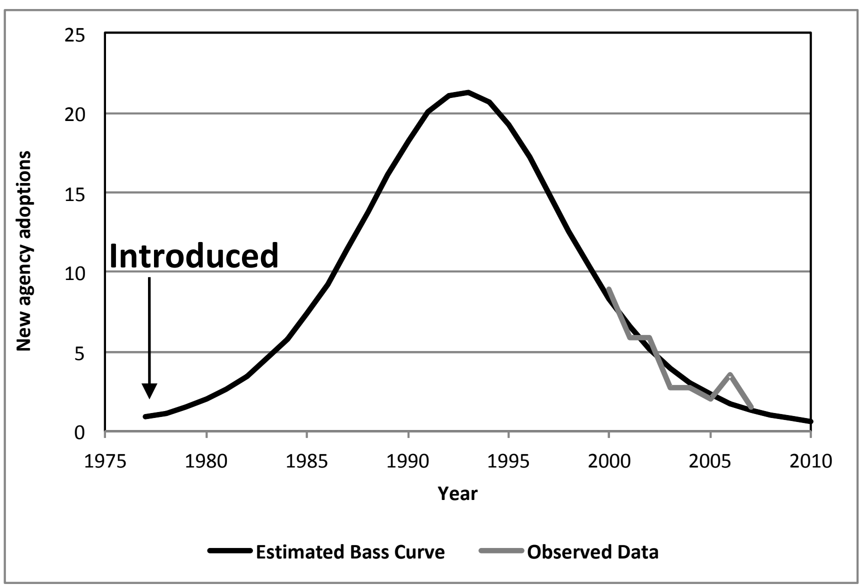


Figure 24: TSP Bass Curve – Cumulative Adoption

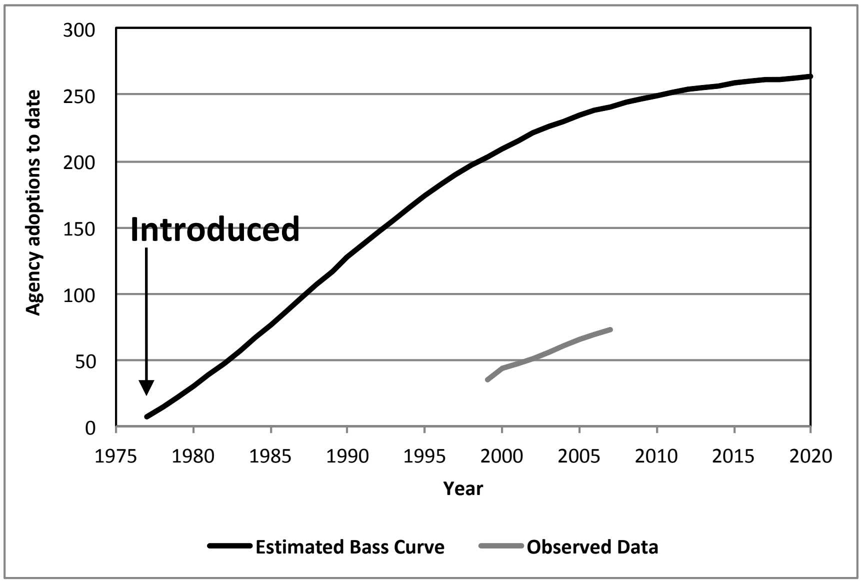


Figure 25: TSP Bass Curve – Annual Adoption

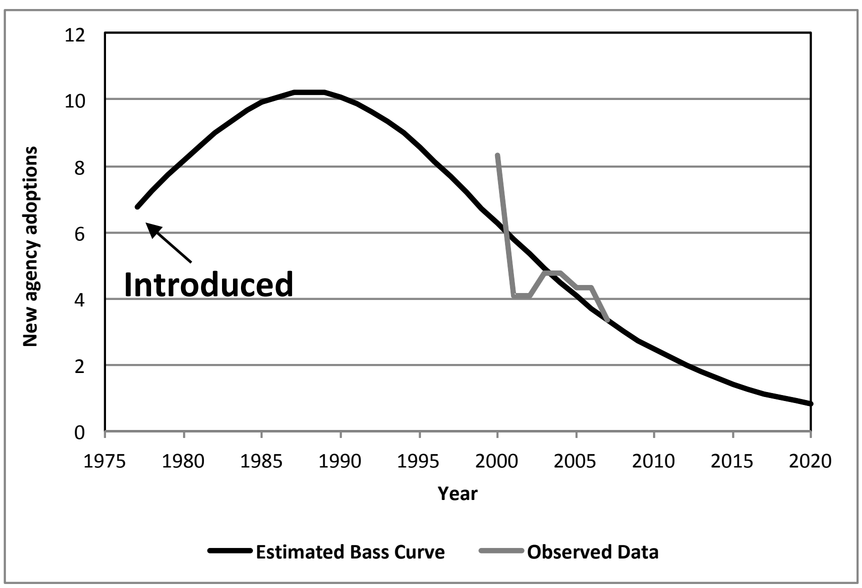


Figure 26: VDC Bass Curve – Cumulative Adoption

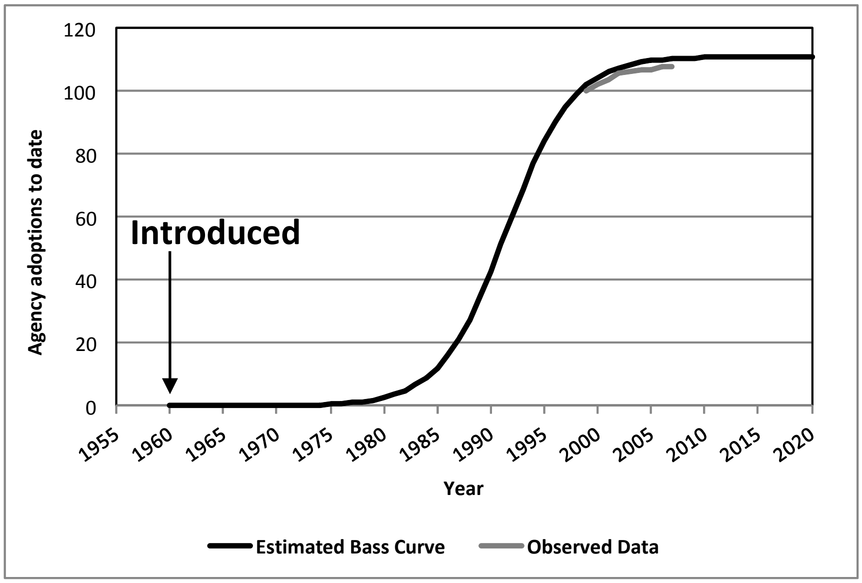
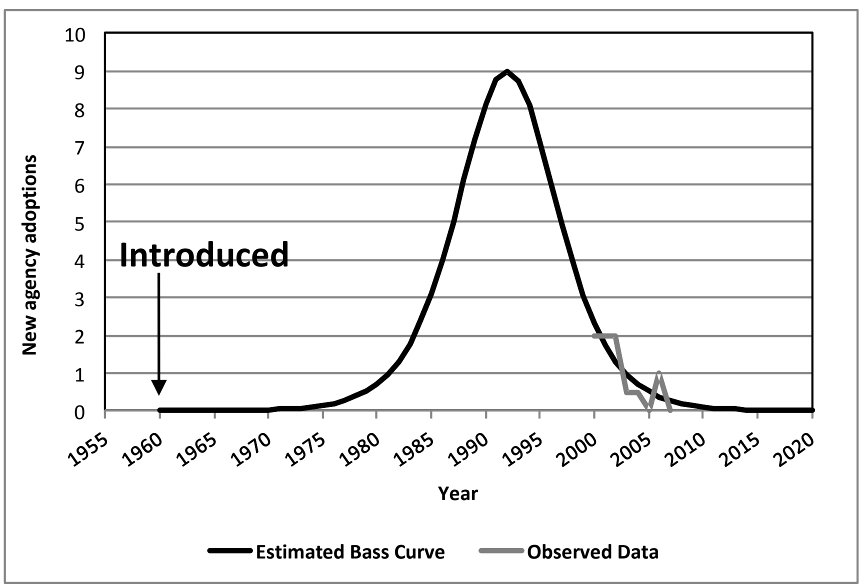


Figure 27: VDC Bass Curve – Annual Adoption



When viewing the Bass model results, it is important to note that the analysis was restricted to agencies in a balanced panel. As mentioned above, the results suggest that not all agencies in the balanced panel are eventual adopters. Thus, the Bass model results consider only a portion of the entire market. A more important consideration, however, is the concern that some agencies *not* included in the balanced panel *are* eventual adopters.

It is possible that agencies that only responded to the survey (or only received the survey) in the later years – and were thus not included in the balanced panel – tended to be the ones that were imitators. If these agencies tend to be among the later adopters, then the balanced panel model would possibly *overstate* market maturity and *understate q.*

Alternatively, the unobserved agencies could be among the *earlier* adopters, or innovators. In this case, the balanced panel model may be biased in the opposite direction – it would possibly *understate* market maturity and *overstate q*. This bias could potentially have greater policy implications, because it would undercut the conclusion that imitation dominates innovation, thus weakening the argument for focusing efforts on supporting innovators. However, the gap observed between innovation and imitation is so wide, and innovation is so low in magnitude, that the bias would have to be quite strong in order to provide a convincing argument for modifying policy recommendations noted later in this report. In addition, this situation would seem to be a more unlikely outcome based on what is known about market leaders from quantitative studies and agencies that have been participants in operational tests; these agencies have been identified as part of the survey since its inception.

To summarize, the Nonlinear Bass Model results reveal two key findings:

- The ITS technology markets analyzed for this report at the aggregate level are composed overwhelmingly of imitators rather than innovators.
- These markets are in a mature state.

It is important to recognize that these results are based on a balanced panel of agencies—only those that were surveyed and answered the survey in all years—and as such are only directly relevant to this sample. The results and implications from these models, however, can also be extrapolated to the broader ITS market for each technology outside of the balanced panel, if it can be assumed that the behavior of agencies outside of the balanced panel is the same as those within the panel. As noted above, if these agencies have a tendency to be late adopters then the Bass model results will be applicable, but likely biased downwards. In addition, the results are based on an aggregate view of these markets; it is likely that within each market there are subsets of new technologies with different adoption curves and *p* and *q* values compared with the aggregate market. Nevertheless, the aggregate ITS technologies examined in this study are systematically biased towards more mature technologies as these are what the deployment tracking study has consistently followed. Finally, another point worth recognizing is that other factors, such as falling technology prices may have influenced adoption, and these factors will not be directly reflected in these results.

Figure 28 depicts the spread of the values of p and q for the six ITS technologies. This shows the cluster of technologies in terms of imitation (*q*) and innovation (*p*) coefficients, suggesting that TMS, HDC, VDC and EVP all exhibit similar diffusion patterns. The outliers are ETC and TSP. This emphasizes the strong network attributes of ETC (once one state has ETC, the likelihood that a neighboring state will adopt it is very high) and the higher level of innovation amongst agencies adopting TSP.

Figure 28: Comparison of the Values of p and q[16]

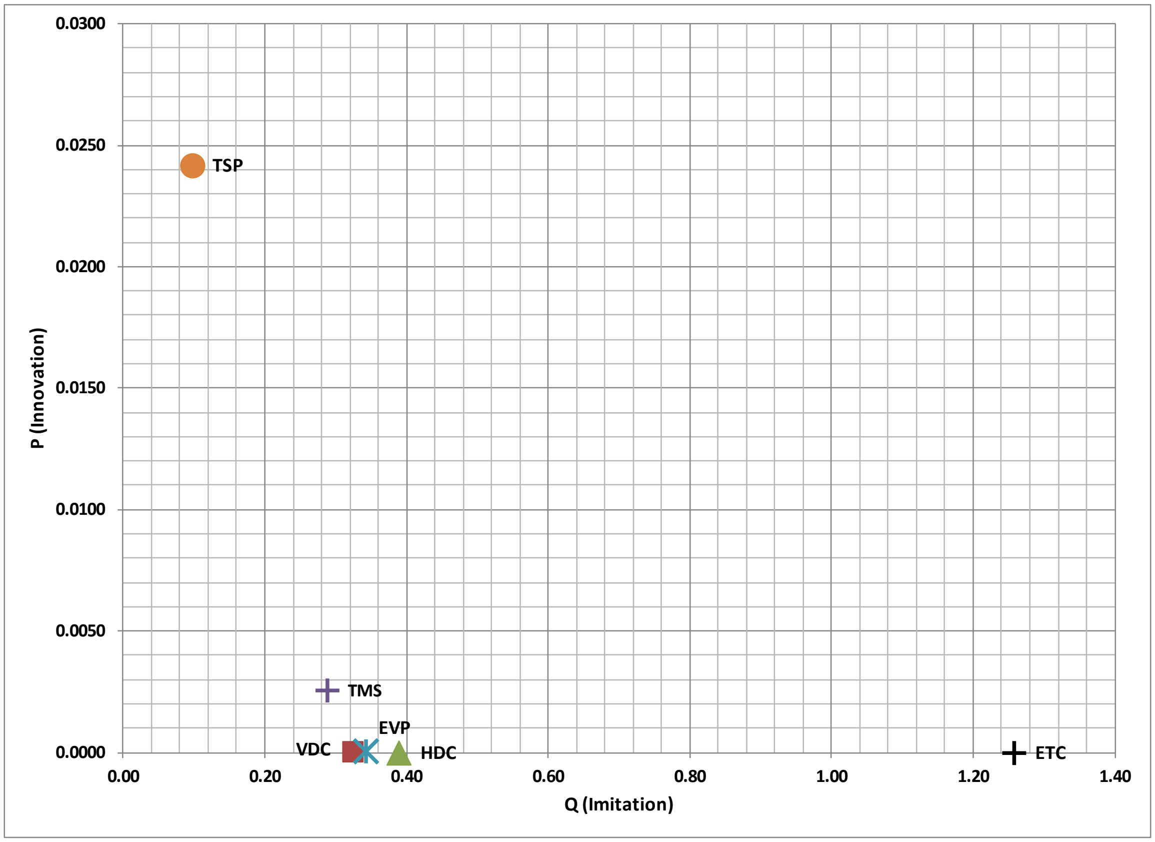


Figure 29 introduces values of q and p that have been estimated for other products.[17] This graph provides some context to how the diffusion pattern of the ITS technologies examined in the study compare with other products. The best comparison would be with other technology goods bought and used by the public sector, but data in this area are not readily available. As a substitute, other high-tech products were selected that had network attributes (e.g., ATMs), would require a large initial outlay (e.g., ultrasound machines), or involved some level of government support (hybrid corn). The average value of *p* and *q* across numerous markets is also included as well as the values for PC printers.

In general, the values of p and q estimated for the ITS technologies are close to the average and the values identified for ultrasound machines and ATMs. Hybrid corn, which has a very low value of p, exhibits a value of q close to, but at the higher end of the ITS technologies, suggesting that there are stronger imitation forces in this market similar to ETC—likely related to the revenue related implications of using these technologies. The clear outliers are TSP and PC Printers, which may reflect the different types of markets these products reside in—transit agencies and consumer and business markets respectively.

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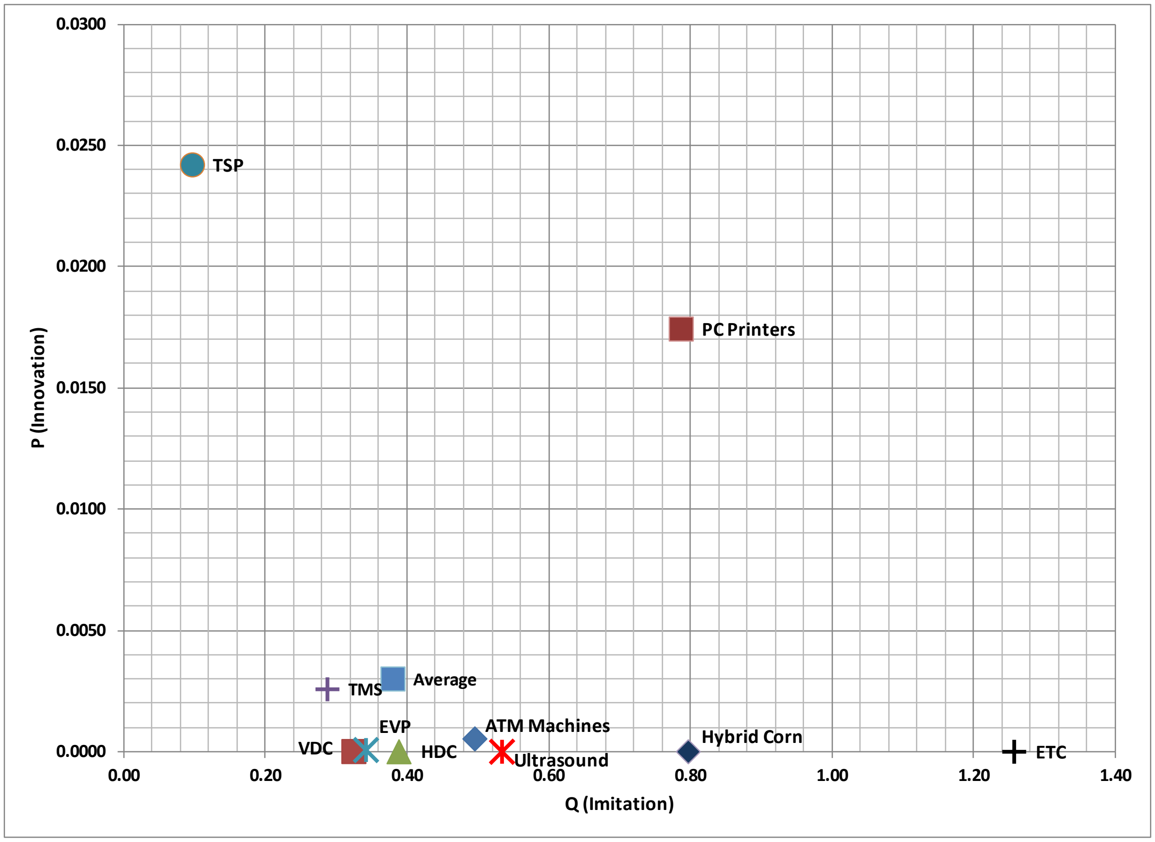
[16] Note: Care should be taken when viewing these graphs as the axes are not equal. This was done to give the reader a better resolution of the values of p and q on the graph.
[17] These estimates are from Jiang, Bass, & Bass, 2006 and Marketing Engineering, Revised 2nd Edition, Lilien and Rangaswamy.

Figure 29: External Market Comparison of p and q



5.2 Panel Model Regression Results

The findings from the panel model statistical analysis are presented in the following section. Results for adoption and deployment are discussed separately by technology to reflect the differences in the models developed to test the factors that may influence the decision by an agency to either adopt an ITS technology for the first time or deploy an additional unit of ITS.

Emergency Vehicle Preemption – Quantitative Results

The quantitative analysis for emergency vehicle preemption followed the same two-step process of the other technologies. However, emergency vehicle preemption was further broken down by type of agency – fire rescue (including ambulance response) and law enforcement. The pattern of exploring the decision to adopt followed by the amount adopted was performed for each set of agencies in turn.

Adoption Choice

The same approach was used for both fire rescue and law enforcement agencies. The analysis of the adoption choice was performed using a panel probit model, using information from all agencies available in the datasets and examines whether they chose to adopt.

Fire Rescue

The variables used as predictors included: an indicator variable for whether or not the agency uses a navigation device (e.g., GPS) in their vehicles, congestion (measured through the Texas Transportation Institute's travel time index), an indicator for the presence of a regional architecture, the revenue of the county the agency resides in, an indicator for the presence of one or more earmarks for that agency in that year, population in the county the agency resides in, the percent of signals equipped with EVP capabilities, and the number of fatal crashes involving emergency vehicles. Revenue was included in logged form. All other variables were included in level form in the current period. Fatal crashes involving emergency vehicles were included as the level from the previous period.

Table 13

Variable	Units	Coefficient	Standard Error
Navigation	Indicator	1.538***	(0.425)
Congestion (TTI)	TTI Travel Time Index	0.341	(2.478)
Architecture	Indicator	0.852***	(0.245)
Revenue	LN($000s)	0.501**	(0.211)
Earmark Flag	Indicator	-1.435	(1.775)
Population	000s of people	7.67e-05	(5.53e-05)
Percent of signals equipped	Fraction	6.819***	(1.094)

Variable	Units	Coefficient	Standard Error
Fatal Crashes involving emergency vehicles	Lagged level	0.0740	(0.114)
Constant		-9.35***	(3.293)
Observations		1,432	
Number of Agencies		363	
Standard errors in parentheses			
*** p<0.01, ** p<0.05, * p<0.1			

(Regression Log Likelihood (constant only): -785, Log Likelihood: -457)

Architecture, revenue, and percent of signals equipped all appear with the expected sign. Navigation also appears with a positive effect, indicating a positive relationship between navigation and EVP deployment. The coefficient on earmarks is negative; however, the coefficient itself is statistically insignificant.

Below is a table detailing the change in the probability of adoption that results from moving from the median value (50^{th} percentile) to the 99^{th} percentile. However, to evaluate the impact of one variable in isolation, all the other variables need to be held fixed. In the table below, the variables not being changed are being held at the median value for that variable. This will provide some indication of the magnitude of the effect of these variables.

Table 14

Variable	Median Value	99th Percentile	Change in Probability
Navigation	0	1	54.00%
Architecture present (flag)	0	1	27.42%
LN(Revenue ($000s))	13.67191	15.46805	29.30%
Percent of Signals Equipped	0.1141662	0.7755102	85.35%

The navigation and architecture flags are estimated to have a large impact on the decision to deploy. The navigation variable is defined as an indicator for the presence of navigation. That is, even if only one vehicle in the fleet were to be equipped, the navigation variable would be given a value of 1. With that in mind, it is important to note that these results merely represent correlations – that equipping one vehicle with navigation equipment will not magically make deployment of EVP occur. Rather, these results indicate a strong relationship between navigation and emergency vehicle preemption deployments. It is possible that this relationship is causal in one direction or another (or both). On the other hand, it is also possible that a third underlying condition drives deployment of both, such as the geometry of the city. More research would be required to arrive at a more definitive conclusion.

Law Enforcement

The model used here was the same as that used for fire and rescue agencies (EVP). The logic behind this specification choice is that the influences in adoption are the same, but that the magnitudes of the impacts will be different between fire rescue and law enforcement agencies.

Table 15

Variable	Units	Coefficient	Standard Error
Navigation	Indicator	1.222***	(0.313)
Congestion (TTI)	TTI Travel Time Index	7.065**	(2.984)
Architecture	Indicator	0.704***	(0.250)
Revenue	LN($000s)	-0.114	(0.179)
Earmark Flag	Indicator	-0.524	(1.356)
Population	000s of people	-0.000166	(0.000106)
Percent of signals equipped	Fraction	3.817***	(0.909)
Fatal Crashes involving emergency vehicles	Lagged level	0.181	(0.136)
Constant		-12.31	(3.798)***
Observations		1,737	
Number of Agencies		404	
Standard errors in parentheses			
*** p<0.01, ** p<0.05, * p<0.1			

(Regression Log Likelihood (constant only): -503, Log Likelihood: -323)

The results here are similar to the results from the fire rescue section. Navigation, architecture, and percent of signals equipped all appear in both places with positive signs. However, congestion appears with a significant impact here while revenue does not – the opposite of the outcome for fire rescue. Also note that revenue and earmarks appear with a negative sign. In both cases, the coefficient is less than the standard error, so little weight can be given to these estimates. These negative coefficients may reflect the fact that signal preemption is considered an inferior good by law enforcement agencies—they would prefer to substitute vehicles for technology when revenues increase or additional funds are available. Still, further research into the source of these negative estimates of coefficients might be warranted.

Table 16

Variable	Median Value	99th Percentile	Change in Probability
Navigation	0	1	0.01%
Architecture present (flag)	0	1	0.01%
Congestion (TTI)	1.23	1.45	0.03%
Percent of Signals Equipped	0.115922	0.850394	1.34%

Here the impacts on deployment are very modest compared to those seen for the fire and rescue agencies. This is particularly interesting because the magnitudes of some of the coefficients are similar (namely navigation, architecture, and percent of signals equipped) between the two agency types. The difference appears to lie in the values of the variables for the median agency. That is, in the case of law enforcement agencies, the median agency has a much lower chance of adopting (0.00%) when compared to the median fire rescue agency's probability of adopting (14.62%). One possible explanation for this is the use of fixed response routes. Fire and rescue agencies are more likely to use similar routes to a variety of places, as they are leaving from a fixed location in response to every fire. In addition, fire and rescue may involve transport to hospital, where a few minutes or seconds saved is highly valuable (improved police response is also valuable, but not necessarily at the same level).

Compare this to law enforcement agencies which are often dispersed through the coverage area. In addition, law enforcement agencies may have to quickly direct vehicles to alternate locations, depending on the nature of the enforcement action. The use of fixed routes could enhance the value of vehicle preemption as fewer units are needed to provide the proper clearance. Thus, if fire agencies view vehicle preemption as marginally more value – holding all else constant – they would be more likely to deploy at a given level of explanatory variables.

Deployment Level

The same approach was used for both fire rescue and law enforcement agencies. The analysis of the level of deployment was performed using a fixed effects panel model and examined only those agencies which chose to adopt.

Fire Rescue

The variables used in this analysis include: number of vehicles equipped with navigation, the amount of an earmark if one was received, the percent of signals equipped with emergency vehicle preemption, number of fatal crashes including emergency vehicles, county revenue, and price. Revenue was included in logged form while fatalities were lagged one period. The dependent variable in this equation is the number of vehicles equipped with emergency vehicle preemption.

Table 17

Variable	Units	Coefficient	Standard Error
Navigation	Indicator	0.367***	(0.132)
Earmark Amount	Dollars	5.97e-08	(2.17e-07)
Percent of signals equipped	Fraction	-4.184	(7.528)
Fatal crashes involving emergency vehicles	Number of Crashes	-0.0555	(0.436)
Revenue	LN($000s)	-1.083	(3.707)
Price	Index	-141.5***	(32.32)
Constant		110.4*	(61.40)
Observations		832	
Number of Agencies		232	

(Regression Within R-squared: 0.35)

Several of the coefficients appear with the opposite of expected signs: percent of signals equipped, fatal crashes, and revenue. However, all of these coefficients are smaller than their standard errors – an indication that the sign of the coefficient is of little import as the coefficient is not significantly different than zero. Navigation again appears with a positive sign, indicating some link between the deployment of navigation and emergency vehicle preemption.

Law Enforcement

The model used is the same as the model for fire rescue agencies. As in the probit analysis, the logic is that the same variables influence adoption for both types of agencies, but the variables may have differing impact.

Table 18

Variable	Units	Coefficient	Standard Error
Navigation	Indicator	-0.154*	(0.0917)
Earmark Amount	Dollars	-1.68E-05**	(6.76e-06)
Percent of signals equipped	Fraction	-15.35	(15.34)
Fatal crashes involving emergency vehicles	Number of Crashes	-0.553	(0.856)
Revenue	LN($000s)	4.395	(7.782)
Price	Index	-247**	(116.0)
Constant		110.2	(132.4)
Observations		214	
Number of Agencies		79	

(Regression Within R-squared: 0.15)

An important consideration when reviewing these results is the very small sample size. This likely contributes to the relatively imprecise nature of the coefficient estimates. The law enforcement results are surprising in some instances. Navigation has a negative impact on the level of deployment; whereas in the probit analysis, navigation increased the probability of deployment. This may indicate that a navigation system is a substitute for EVP for law enforcement agencies. Navigation may reduce travel time to the scene of an incident, providing an alternative to EVP; an agency may choose one or the other rather than both If this is the case, then the presence of a navigation system will reduce or eliminate the demand for EVP. Earmark amount also appears with a negative sign. This suggests that larger earmarks reduce the amount of EVP deployed for law enforcement agencies; while this seems counterintuitive, the explanation may be similar as with the probit model. Additional funding, if not specifically targeted at EVP, expands an agency's budget, allowing it to purchase something other than EVP – perhaps substituting vehicles for technology. As mentioned earlier, EVP may be considered an inferior good in this market; further research may provide additional insight into this area.

Highway Data Collection – Quantitative Results

Adoption Choices

The variables ultimately used as predictors included: a flag for the presence of an architecture, the earmark amount if one was given, annual hours of congestion per capita, the number of fatalities on highways in that county, and the total revenue of the state in which the agency exists. All variables are included in lagged form. The thought process behind this is that the decision to deploy highway data collection likely occurs some time before the deployment. Due to the annual nature of the data, and limited history, the only option for a *previous period* is the previous year.

Table 19

Variable	Units	Coefficient	Standard Error
Architecture flag	Indicator	0.642**	(0.312)
Earmark amount	Dollars	-1.20E-07*	(6.46e-08)
Annual hours of congestion per capita	Hours per person per year	0.252***	(0.0573)
Highway Fatalities	Fatalities	-0.00166	(0.00212)
Revenue	$000s	2.17E-08***	(9.94e-09)
Constant		-2.555***	(0.814)
Observations		562	
Number of agencies		112	
Standard errors in parentheses			
*** p<0.01, ** p<0.05, * p<0.1			

(Regression Log Likelihood (constant only): -267, Log Likelihood: -178)

Note that although the coefficient on fatalities is negative, the standard error is twice as large as the coefficient – implying that the coefficient is essentially indistinguishable from zero. Also of note is the coefficient on the earmark amount. It is also negative, but fairly precisely estimated. This is contrary to the expected sign on the variable – indicating that the larger the earmark, the less likely an agency was expected to adopt in that year. This suggests that given additional funding for ITS technologies, HDC would appear to be considered an inferior good—an increase in the budget may be directed towards a more complex technology, substituting for the cheap and simple technology of loops.

Below is a table detailing the change in probability of moving from the median value (50^{th} percentile) to the 99^{th} percentile on the given variables. However, to evaluate the impact of one variable in isolation, all the other variables need to be held fixed. In the table below, the variables not being changed are being held at the median value for that variable.

Table 20: Probability Change for HDC

Variable	Median value	99th Percentile	Change in probability
Architecture present (flag)	0	1	4%
Earmark Amount	0	$5.8 million	-12%
Annual Hours of congestion per capita	13.88	27.53	5%
Revenue (000s) (approximate)	$45,200,000	$264,000,000	5%

The impacts of architecture, congestion, and revenue all appear to be of the same magnitude. These changes may appear modest given the changes in the variables described. However, the median agency is estimated to have a 95% chance to adopt highway data collection technology. Thus, deviations from the median – even large ones – will have little impact on the overall chance of adoption.

In the face of the high predicted adoption for the median agency, perhaps a more interesting counterfactual for congestion and revenue are to look at the impacts of moving from the median downward, rather than increasing. For example, if congestion dropped to approximately 1.8 hours of congestion per person per year – a similar size drop to the increase from the median to the 99th percentile – you would see the predicted probability of adoption fall by 87%. A similar story can be told for revenue: if revenue fell by half from the median (from approximately $45.2 billion to $21.9 billion) the change in probability is -7%. This reduction represents an effect of similar magnitude to the increase from median to the 99th percentile, but over a much smaller change in budget. These results indicate the influence of architecture, congestion and agency budgets is important in the decision to adopt HDC; although, since this market is now mature, the magnitude of these effects is diminishing.

Deployment Choice

The analysis of deployment level was conducted using a fixed effects panel regression on adopters only. The variables used in this analysis include: earmark amount, a flag for the presence of a regional architecture, annual hours of congestion per capita, fatalities on highways, and the log of state revenue per capita. This is the exact same list of variables that was used in the discrete choice analysis outlined above with the exception of the budget variable, which was included in log and per capita form here. All variables are included as current period variables rather than as lags as in the probit analysis. Lastly, the dependent variable for this regression was the number of miles covered by highway data collection.

Table 21: HDC Deployment Choice

Variable	Units	Coefficient	Standard Error
Earmark Amount	Dollars	-4.74e-06	(3.33e-06)
Architecture Present	Indicator	18.84**	(7.392)
Annual Hours of Congestion	Hours per person per year	5.186	(3.915)
Fatalities	Fatalities	0.0979	(0.164)
Log(Revenue per capita)	$000s per person	26.37*	(15.64)
Constant		-71.27	(70.38)

Variable	Units	Coefficient	Standard Error
Observations		339	
Number of agencies		87	
Standard errors in parentheses			
*** p<0.01, ** p<0.05, * p<0.1			

(Regression Within R-squared: 0.17)

Here again there is an insignificant coefficient on fatalities and a negative (yet statistically insignificant) coefficient on earmarks. Fatalities were included, both here and in the probit, as a partial measure of the safety of the road network. The hypothesis being tested was, the more dangerous the roadway – the more fatalities – the more likely the agency was to want to monitor the network. The results of the probit and this stage of analysis seem to indicate that fatalities are unassociated with highway data collection.

Earmarks again appear with a negative coefficient, although the coefficient on the variable is statistically insignificant. It is unclear why the coefficient on earmarks is negative both here and in the probit model. While this could be an artifact of the data, it may warrant additional investigation with a more focused approach to understanding the impact of earmarks on deployment.

Simpler to interpret are the impacts of architecture, revenue, and congestion on deployment of highway data collection. The coefficient on architecture implies that the presence of a regional architecture is associated with almost 19 additional miles of highway data collection – a 36% increase for the mean agency.

A one percent increase in revenue per capita for the state is associated with an increase of approximately 0.26 miles covered by data collection. For the mean agency, a one percent increase in budget per capita is approximately an increase of $50 per capita. Thus, to put it another way, an increase of the annual revenue by $100 per capita is associated with an additional half mile of highway covered by highway data collection.

Lastly, congestion does not appear to have an effect on the number of miles covered by highway data collection. This is in contrast to the positive effect congestion had on the decision to adopt highway data collection. A possible explanation is that an agency decides to begin monitoring their network based on high congestion. However, the extent to which the network is monitored is controlled by other factors, such as budget or network geometry, rather than the congestion level. Further exploration of the relationship between congestion and highway data collection adoption may help illuminate the underlying decisions that the agencies are making.

Traffic Management Systems– Quantitative Results

Adoption Choice

The variables ultimately used as predictors included: a flag for the presence of an architecture, the amount of an earmark (if one was given), annual hours of congestion per capita, annual fatalities on arterials, and total revenue of the county per capita. All variables included were lagged one period. The thought process behind this is that the decision to deploy a traffic management system requires a large commitment and likely occurs some time before the deployment takes place.

Table 22: TMS Adoption Choice

Variable	Units	Coefficient	Standard Error
Architecture flag	Indicator	0.149	(0.169)
Earmark amount	Dollars	-3.23e-08	(1.65e-07)
Annual hours of congestion per capita	Hours per person per year	0.0605**	(0.0306)
Arterial Fatalities	Fatalities	0.00829***	(0.00284)
Revenue	$000s per capita	0.524	(0.319)
Constant		0.794	(0.551)
Observations		2010	
Number of agencies		399	
Standard errors in parentheses			
*** p<0.01, ** p<0.05, * p<0.1			

(Regression Log Likelihood (constant only): -1029, Log Likelihood: -549)

The dependent variable for this regression was an indicator variable that was one when adoption of closed loop or centralized timing on signals was greater than zero, and zero otherwise. Thus, this probit analysis captures the adoption of a fairly well established technology and does not include any adaptive systems. The fact that closed-loop timing is a well-established technology is borne out by the predicted probability of adoption for a median agency. The predicted probability of adoption for the median agency is approximately 99% - essentially guaranteed adoption. As such, the marginal impacts of the variables outlined below are seemingly quite small.

Of note are the coefficients on architecture, earmarks, and revenue. The architecture coefficient is statistically insignificant, indicating that architecture does not appear to be associated with adoption. The coefficient on earmark amount has a standard error an order of magnitude larger than the coefficient – and thus is essentially meaningless in magnitude and sign. Lastly, revenue per capita, while not significant at the traditional levels noted in the table, is on the margin. The p-value of the coefficient is 0.101 and thus can be considered along with the other, traditionally significant variables.

Table 23: TMS Probability Change

Variable	Median value	99th Percentile	Change in probability
Annual Hours of congestion per capita	14.90601	27.53019	1%
Arterial Fatalities	36	520	1%
Revenue per capita (000s)	0.87396	3.312473	1%

Clearly, none of the variables have an impact despite the large changes in the value of the variables. This is mostly due to the fact that predicted chance of adoption for the median agency is already quite high. A similar story appears when looking at decreases from the median. While the impact of the variables is larger when examining a decrease, none of the three variables has greater than a 5% impact on the probability of adoption when decreasing from the median to the minimum value in the sample. Thus, while there are clearly detected positive effects, these effects are quite minor in practice.

Deployment Level

The analysis of deployment level was conducted using a fixed effects panel regression on adopters only. The variables used in this analysis include: price, log of total revenue per capita, annual hours of congestion per capita, and the number of signals operated by an agency. All variables are current period, except revenue per capita, which is lagged one period. The hypothesis is that because traffic management systems require a large investment, with a lag between when the decision is made and adoption taking place, a better predictor of deployment would be the revenue from one period ago. Current period revenue was tested, but does not provide a noticeable difference in model fit or in the coefficients.

Table 24: TMS Deployment Level (Number of Signals)

Variable	Units	Coefficient	Standard Error
Price	Index	-28.15***	(8.324)
Revenue	LN($000s per capita)	24.15**	(11.86)
Annual hours of congestion per capita	Hours per person per year	1.084	(0.968)
Signals operated	Signals	0.365***	(0.0141)
Constant		179.5***	(47.64)
Observations		1,559	
Number of agencies		333	
Standard errors in parentheses			
*** p<0.01, ** p<0.05, * p<0.1			

(Regression Within R-squared: 0.48)

The dependent variable for this regression is the number of signals equipped with closed loop or centralized systems. Price appears with the expected negative sign. A 10% drop in the price level is associated with an additional 13 signals being equipped.

The log of per capita revenue appears with the expected positive sign. A $100 increase in revenue per capita for the average agency is associated with approximately three additional signals. For the average agency, these three signals represent an increase of approximately 4 percent for the mean agency. For a comparison of the effect to price, a 10 percent increase in revenue (or approximately $88 for the average agency) is associated with an additional 2.5 signals equipped – a much smaller effect than for price.

Annual hours of congestion per capita appears with an insignificant coefficient. Additionally, when tested as a previous period value, the results still hold. However, this does not imply that there is no relationship between congestion and deployments of closed loop or centralized systems – merely that one hasn't been detected. The detection of an effect may be confounded by the impact of deployment on congestion – that is there is a simultaneity issue between congestion and deployment. As signal timing is intended to reduce congestion, this is not entirely implausible.

Lastly, holding all else constant, approximately one third of marginal signals will be equipped with timers. That is, holding all else constant, if an agency adds 30 signals to its jurisdiction, the agency can be expected to equip ten of them with closed loop timers. The thought process behind including size on the right hand side was that agencies with a larger jurisdiction will deploy more signals in absolute terms. An alternative would be to change the dependent variable to a percent. Doing so does not change the major results (i.e. signs and significance of the coefficients), but the coefficients are not directly comparable. However, the interpretation of the coefficients differs between the two equations. Below are the results if the dependent variable is treated as a percent of deployment.

Table 25: TMS Deployment Choice (Percentage of Signals)

Variable	Units	Coefficient	Standard Error
Price	Index	-0.0617***	(0.0221)
Revenue	LN($000s per capita)	0.0645**	(0.0276)
Annual hours of congestion per capita	Hours per person per year	0.000892	(0.00250)
Constant		0.849***	(0.122)
Observations		1,559	
Number of agencies		333	
Standard errors in parentheses			
*** p<0.01, ** p<0.05, * p<0.1			

(Regression Within R-squared: 0.05)

When size is included on the right hand side, the coefficients on all the other variables are interpreted as holding size constant. That is, the coefficients describe the change in the number of adopted signals while holding total signals constant and this impact is the same for any number of total signals. If the number of signals is on the left (i.e., the dependent variable is percent adoption rather than absolute level) then the coefficients have varying impact depending on the number of total signals. That is, the coefficients represent the impact on the percent adopted and continue to have linear impacts across the range of zero percent deployment to full deployment. However, the absolute number of signals predicted to be deployed by changes in the variables now varies with the size of the agency. It is not that either interpretation is right or wrong, but they provide different insights into the impacts on deployment.

Traffic Signal Priority – Quantitative Results

The quantitative analysis for Traffic Signal Priority followed the same two-step process of the other technologies. First, the question of adoption or not was examined. Following that, the question of how much was adopted, conditional on being an adopter, was explored.

Adoption Choice

The analysis of the adoption choice was performed using a panel probit model. The probit model used information from all agencies available in the datasets and looked at whether or not they adopted. The variables ultimately used as predictors included: the presence of an architecture, the percent of signals in a metro area equipped with TSP, the amount of an earmark if one was given, and the 100 mile radius peer data. The architecture flag and percent of metro signals equipped represent data from the contemporaneous period while the earmark data and peer data are from the previous period. These decisions were partially motivated by the tradeoff between sample size and including the variables desired. Ideally, all variables would be lagged, but due to the structure of some of the data, this reduced the sample size to unacceptable levels.

Because of the presence of the peer technology, the sample is limited to essentially a balanced one (i.e., every agency in the sample has answered the survey in every year). This limits the estimation sample to examining only those 78 metro areas which were included in the survey in 1999. Nonetheless, the actual sample for TSP included only a few metro areas outside of the original 78, so the limitation does not appear to be strictly too binding.

Table 26: TSP Adoption Choice

Variable	Units	Coefficient	Standard Error
Architecture present	Indicator	0.707	(0.448)
Percent of metro area signals equipped	Fraction	11.59	(7.835)
Earmark Amount	Dollars	-2.06e-07	(1.42e-06)
Peer data	Percent	4.090***	(1.464)
Budget	LN($s)	0.622***	(0.241)
Constant		-14.94***	(4.809)
Observations		231	
Number of agencies		60	
Standard errors in parentheses			
*** p<0.01, ** p<0.05, * p<0.1			

(Regression Log Likelihood (constant only): -75, Log Likelihood: -56)

As noted earlier, the results of a probit estimation cannot be interpreted directly; as such, the above coefficients need to be interpreted within the range of the data. One thing of note is the coefficient and standard error on the earmark variable. The coefficient is negative; however, the standard error is an order of magnitude larger than the coefficient. Thus, the coefficient is essentially indistinguishable from zero (despite its already seemingly small value).

Below is a table detailing the change in probability of moving from the median value (50^{th} percentile) to the 99^{th} percentile on the given variables. However, to evaluate the impact of one variable in isolation, all the other variables need to be held fixed. In the table below, the variables not being changed are being held at the median value for that variable.

Table 27: TSP Probability Change

Variable	Median value	99th Percentile	Change in probability
Architecture present (flag)	0	1	0.01%
Percent of metro area signals equipped	0.00398	0.124	0.15%
Peer data	0	1	39.41%
LN(Budget ($))	16.393	21.316	5.10%

Architecture, despite having a positive effect, does not have very much of an impact. Because of the structure of the architecture variable (a binary flag), the coefficient has the interpretation of modifying the constant term in the equation. That is, those agencies with an architecture in place essentially have a higher (smaller absolute value since the estimated constant is negative) constant value. Having an architecture in place “amplifies” the impact of all the other variables.

The percent of signals equipped in a metro area also has little impact, even when moving to more than 12% of the signals being equipped. However, the impact of this variable will become pronounced when looking at extremely high levels of deployment. Additionally, this variable would have more impact if the median deployment level for signals was not so low.

The most pronounced effect is seen from the peer data. This large impact is due in part to the size of the coefficient estimated, but also to the dramatic shift in the value of the variable from the median to the 99^{th} percentile. The variable displays moderate impact until the high levels of the variable seen here. Consistent with the Bass model findings, this result suggest an imitation effect, whereby an agency is more likely to adopt (imitate) as the number of its peers using ITS increases.

Budget also appears to have a fairly strong positive effect. One important thing to keep in mind is that the coefficient was included in logged form. Thus, when moving from the median value of approximately 16 to the 99^{th} percentile value of approximately 21, the real change in dollars is much higher. For reference, the median budget is approximately $13 million while the 99^{th} percentile is approximately $1.8 billion. Thus, while the effect appears strong, the change in the relevant variable is also enormous. In other words, a signal agency will not experience this kind of shift in budget – this coefficient likely represents changes across agencies.

Deployment Level

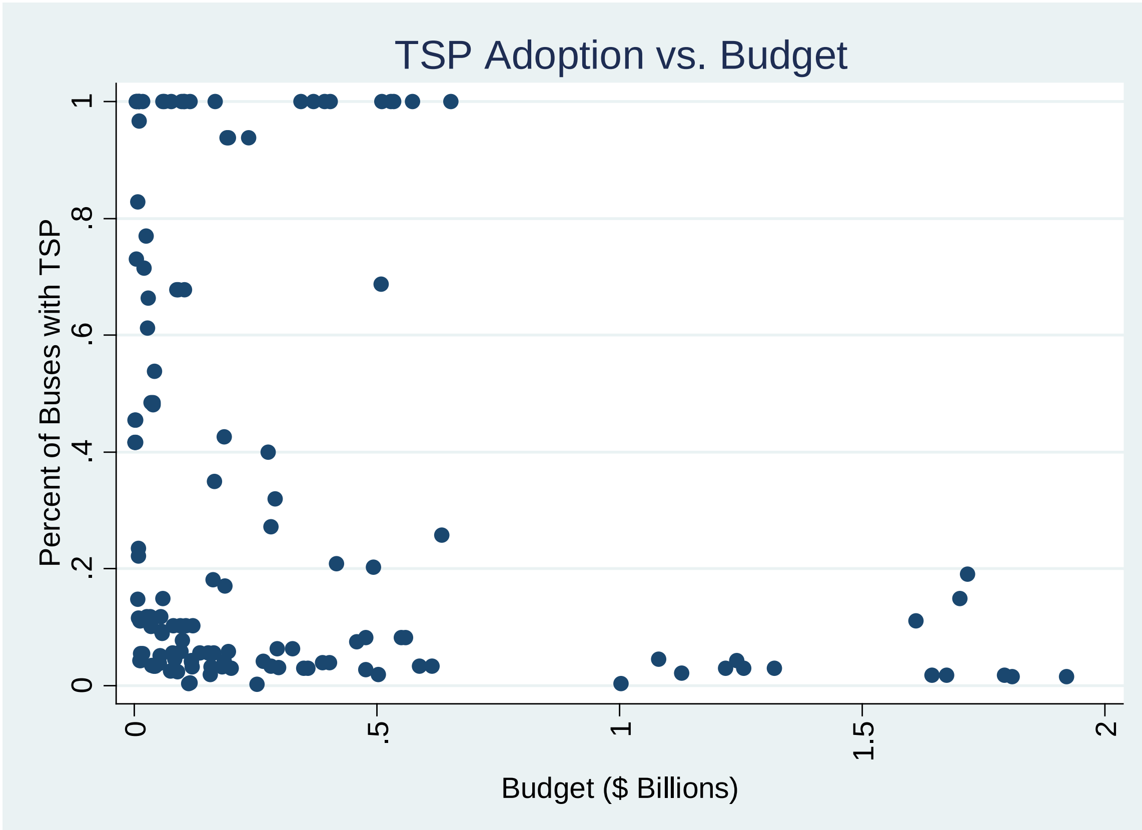
The analysis of deployment level was conducted using a random effects panel regression on adopters only. A fixed effects model was tested as an alternative but proved little different than the results provided by the random effects estimation. That is, the coefficients were not statistically different when a fixed effects estimator was used. Additionally, due to the small size of the sample for this regression, a random effects estimator may be preferable.

The variables used in this section of the analysis include the architecture flag, price, the percent of buses equipped with AVL technology, the TTI travel time index, earmark amount, the log of the agency's budget, and the percent of signals equipped in a metro area. All variables are current period (rather than lagged as in the probit) as the decision to adopt is assumed to be based upon an agency's current situation—budget, price etc. This also assumes that the reaction time to deciding to deploy a marginal unit is short. The dependent variable in this case is the percentage of buses equipped with transit signal priority.

Table 28: TSP Deployment Level

Variable	Units	Coefficient	Standard Error
Architecture present	Indicator	0.139*	(0.0732)
Price	Index	-0.13	(1.426)
Percent of buses with AVL	Fraction	0.263	(0.162)
Congestion	TTI Travel Time Index	-0.0455	(0.596)
Earmark Amount	Dollars	3.27E-07***	(6.10E-08)
Budget	LN($s)	-0.0964***	(0.0268)
Percent of metro area signals equipped	Fraction	1.31	(1.161)
Constant		1.972*	(1.198)
Observations		104	
Number of agencies		39	
Standard errors in parentheses			
*** p<0.01, ** p<0.05, * p<0.1			

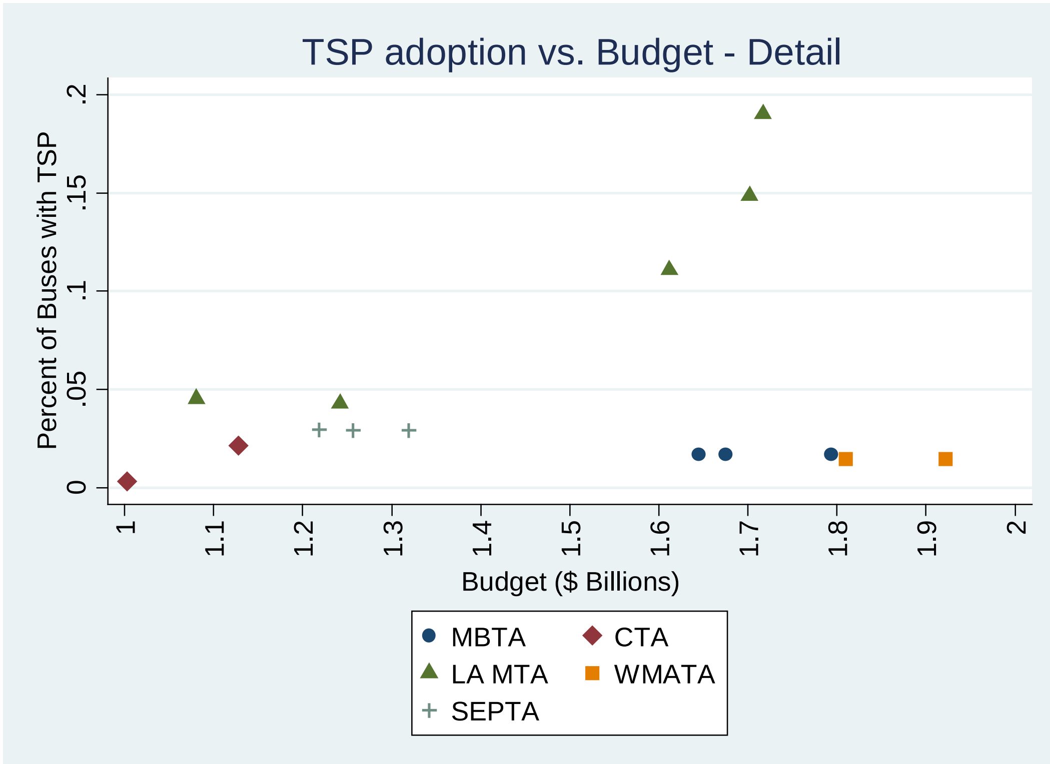
(Regression Overall R-squared: 0.20)



Before moving on to the interpretation of these coefficients, some discussion and explanation of the coefficients themselves is required. Perhaps the greatest surprise to come out of this regression is the negative coefficient on budget. The negative coefficient, implying that a higher annual budget is associated with lower adoption amounts, appears to be an artifact of the data. That is, among adopters, there appears to be a subgroup of agencies with very high budgets (relative to the rest of the population) that adopt a very small amount of transit signal priority. Each dot in the graph above represents an agency-year pairing flagged as an adopter – the given agency had adopted some positive amount of TSP on their buses in that year. As such, there are several agencies with budgets over $1 billion who appear to adopt very slight amounts of TSP. Below is a detail of the graph focusing on those agencies that fall into this subgroup.

The agencies within this subgroup (shown in the graph on the next page), are Massachusetts Bay Transportation Authority (MBTA), Chicago Transit Authority (CTA), Los Angeles County Metropolitan Transportation Agency (LA MTA), Washington Metropolitan Area Transit Authority (WMATA), and South Eastern Pennsylvania Transportation Authority (SEPTA). It is unclear why these agencies chose to adopt very small amounts of TSP relative to their fleet size. One possible explanation is that these agencies are deploying on selected corridors and may never intend for the TSP deployment to be system wide. Additional research into this area may provide insight into why these agencies are acting as they do and into TSP adoption in general.

Aside from revenue, the other policy variables in the equation (architecture and earmarks) are both significant and positive. The architecture variable indicates that, on average, an agency with a regional architecture will deploy approximately 14% more bus of their bus fleet with TSP. An average agency in our sample has approximately 530 buses in revenue service in any given year. Thus, architecture is associated with an increase of 74 buses equipped with TSP for the average agency.



Earmarks tell a similar story to architecture. The coefficient on earmarks indicates that an earmark of $3.25 million is associated with the deployment of an additional 1% of the fleet. For the average agency, this is approximately 5 buses. However, for agencies with larger fleets an earmark may be associated with a higher number of buses.

As interesting as the significant coefficients are the insignificant coefficients. Both price and congestion were found to be insignificant. While this is a compelling result, it cannot definitely be said that these two variables had no effect on deployment.

Lastly, of marginal significance was the percent of buses deployed with AVL technology. This variable was included as a (potentially) complementary technology and a measure of how interested the agency was in managing its network (i.e., how intensely the agency uses technology on their network to broadly improve performance). The positive coefficient indicates the higher levels of AVL are associated with higher levels of TSP deployment. One would expect an additional 1% of the fleet to have TSP for each 4% of the fleet that has AVL deployed.

Vehicle Data Collection – Quantitative Results

The quantitative analysis for Vehicle Data Collection followed the same two-step process as the other technologies. The influences on adoption were explored first. This was then followed by an examination of factors that might influence the level of deployment after an agency made the initial design to adopt ITS technology.

Adoption Choice

The analysis of the adoption choice was performed using a panel probit model. The probit model used information from all agencies available in the datasets and looked at whether or not they adopted. The variables ultimately used as predictors included: the presence of a regional architecture, the amount of an earmark if one was received, a measure of congestion (annual hours of congestion per capita in the previous year), and the number of fatalities on arterials in the previous year.

Table 29: VDC Adoption Choice

Variable	Units	Coefficient	Standard Error
Architecture present	Indicator	0.656***	(0.163)
Earmark Amount	Dollars	2.70E-07	(1.83E-07)
Congestion	Hours per person per year	0.0275	(0.0295)
Fatalities	Fatalities	0.00369*	(0.00215)
Revenue	$000s per capita	0.518*	(0.269)
Constant		0.265	(0.522)
Observations		1955	
Number of agencies		394	
Standard errors in parentheses			
*** p<0.01, ** p<0.05, * p<0.1			

(Regression Log Likelihood (constant only): -1259, Log Likelihood: -645)

All of these coefficients have the expected signs. The presence of a regional architecture increases the probability of deployment as does an increase in county revenue and fatalities attributable to vehicle accidents. Increasing levels of congestion and earmark amounts show an increase in the probability of adoption, though with less significance.

Below is a table detailing the change in probability of moving from the median value (50^{th} percentile) to the 99^{th} percentile on the given variables. However, to evaluate the impact of one variable in isolation, all the other variables need to be held fixed. In the table below, the variables not being changed are being held at the median value for that variable. This will provide some indication of the magnitude of the effect of these variables.

Table 30: VDC Probability Change

Variable	Median Value	99th Percentile	Change in Probability
Architecture present (flag)	0	1	7.58%
Earmark Amount	0	$2,500,000	7.70%
Revenue ($000s)	0.867723	3.361577	9.79%
Fatalities	37	520	10.21%

These variables have fairly large impacts on the probability of adoption. However, it is important to keep in mind that these changes in probability are also associated with fairly large changes in the variable values. Revenue per capita almost doubles while fatalities are more than ten times as high at the 99^{th} percentile when compared with the median. More modest changes in the variables produce far smaller impacts on the probability of adoption. Finally, it is notable the median agency examined had an approximate probability of adoption of 90%.

Deployment Level

The analysis of deployment level was conducted using a fixed effects panel regression on adopters only. The dependent variable was the percent of signals equipped with VDC technology. The variables used in this analysis include: price, total revenue per capita, and annual hours of congestion per capita. All variables are current period and included in logged form.

Table 31: VDC Deployment Level

Variable	Units	Coefficient	Standard Error
Price	Index	-1.069***	(0.277)
Revenue	LN($000s per person)	0.179***	(0.0646)
Congestion	LN(Hours per person per year)	-0.124	(0.108)
Constant		3.612***	(0.923)
Observations		1,148	
Number of Agencies		276	

(Regression Within R-squared: 0.13)

Price appears with a negative sign and has an approximate magnitude of 1. This indicates that deployment is approximately unit elastic with respect to price (i.e., a given a percent change in price increases/decreases demand by the same percent).

Revenue per capita appears with a positive elasticity. Note that the revenue measure is the county government revenue and may not accurately reflect the resources of the agency; this measure can be thought of as a proxy for changes in agency funding.

The coefficient on congestion is negative. However, the standard error of the estimate is almost as large as the coefficient itself – indicating that the estimate is not statistically significant. The negative coefficient may be explained by an interaction between deployment and congestion levels. Further research may illuminate the reason behind this negative coefficient.

6. Findings and Policy Opportunities

While the results of this study are interesting on their own, they also provide valuable insight into how the ITS program can modify its research to better influence the rate of adoption and diffusion of ITS technologies. This section summarizes how the ITS research and leadership actions can use the results of this study to influence adoption and deployment of the technologies studied.

Potential Leadership Actions

1. Make recommendations for surface transportation funding reauthorization, on topics such as:
    a. Access to federal funds for overall budgets for state or local transportation agencies
    b. Whether or how to include special targeted funds for projects ("earmarks")

2. Regulate, in conjunction with partner programs:
    a. Continued support, promotion and refinement of standards and planning requirements, such as regional architectures (which are already regulated under the Department of Transportation Regulation 23 CR Part 940 – Intelligent Transportation System Architecture and Standards; Final Rule[18]). Particular attention should be paid to how regulations align with new technologies
    b. Data collection or other functions that would directly or indirectly require technology purchases

Potential Research Actions

3. Support development of standards

4. Conduct research, testing and evaluation

5. Conduct outreach and capacity building

This study examined the effects of most of these categories of actions on the adoption and deployment of first generation ITS technologies, as summarized on the table on the next page.

[18] http://ops.fhwa.dot.gov/its_arch_imp/docs/20010108.pdf

Table 32

Potential actions	Policy variables
Make recommendations for surface transportation funding reauthorization related to access to federal funds for overall budgets for state or local transportation agencies	Budgets of state and local agencies
Make recommendations for surface transportation funding reauthorization related to whether or how to include special targeted funds for projects	Earmarks
Continued support, promotion and refinement of standards and planning requirements, such as regional architectures	Whether or not an agency has a regional architecture
Regulate, in conjunction with partner programs data collection or other functions that would directly or indirectly require technology purchases	Not examined
Support development of standards	Not examined
Conduct research, testing and evaluation	Not directly examined, but some implications from the Bass model results and dataset development
Conduct outreach and capacity building	Not directly examined, but some implications from examination of peer effects and related technologies

The potential actions that were not examined, or not directly examined were excluded from the model because of difficulty obtaining appropriate data. In some cases, future quantitative analyses will be able to include analysis of those actions. In other cases, a qualitative study may be more appropriate to develop a better understanding.

6.1 How do the results of this analysis inform policy and decision making?

Potential Action for Leadership: **Consider recommendations for surface transportation funding reauthorization related to access to federal funds for overall budgets for state or local transportation agencies**

In general, agencies with larger budgets appear to be more willing to deploy ITS technologies in general. The following table summarizes the results by market.

Table 33

Market	Adoption effect	Deployment effect
HDC	Small positive	Positive
VDC	Moderate positive	Positive
TMS	Positive but not meaningful	Positive
TSP	Small positive	Negative
EVP (Law Enforcement)	No effect	No effect
EVP (fire rescue)	Large positive	No effect

The recommendation of additional transportation funding for state and local agencies is likely to have positive effects in most ITS markets; the greatest effects on adoption associated with technologies that are not yet commonplace (e.g., EVP) and on deployment levels of more established technologies (e.g., HDC). There are some markets, such as traffic signal priority, where larger budgets may be related to less ITS technology deployment. It is not clear whether that statistical finding is an artifact of the data or if in some markets other solutions are preferred to ITS technologies if agencies can afford it.

Potential Action for Leadership: **Consider recommendations for surface transportation funding reauthorization related to whether, or how, to include special targeted funds for projects**

Earmarks appear to have little to no effect on adoption and deployment, and in the case of HDC, there is a small negative effect on adoption. The following table summarizes the results by market.

Table 34

Market	Adoption effect	Deployment effect
Highway data collection	Moderate negative	No effect
Vehicle data collection	No effect	Not examined
Traffic management systems	No effect	Not examined
Traffic signal priority	No effect	Small positive
Emergency vehicle preemption/police	No effect	Small negative
Emergency vehicle preemption/fire rescue	No effect	No effect

If there is legislative interest to create a deployment program, the program would be most effective at influencing deployment if it focuses on deployment of technologies that are already adopted by the agencies receiving the funds. The only positive effect of earmarks was found in that circumstance.

Overall, however, earmarks appear to be a weak policy lever with ambiguous effects (where there is any effect at all).

Potential Action for Leadership: Continue support, promotion and refinement of planning regulations, such as regional architectures, in conjunction with partner programs

Regional architectures increase adoption and possibly deployment to varying degrees dependent on the maturity of the market. Along with increasing agency budgets, the regional architectures most consistently encourage agencies to adopt new technologies. In this analysis, it is not possible to distinguish between the effect of an initial architecture development and an update. The following table summarizes the results by market.

Table 35

Market	Adoption effect	Deployment effect
Highway data collection	Small positive	Positive
Vehicle data collection	Moderate positive	Not examined
Traffic management systems	No effect	Not examined
Traffic signal priority	No effect	Moderate positive
Emergency vehicle preemption/police	Positive but not meaningful	Not examined
Emergency vehicle preemption/fire rescue	Large positive	Not examined

The continued support of planning regulations, such as regional architectures, is a potentially significant tool for affecting adoption. This may particularly be the case for new technologies, where planning requirements could affect adoption decisions made by new agencies or in new markets. Nevertheless, it would be important to gain an understanding of the effects of initial architecture development (as legislated under Regulation 23 CR Part 940 – Intelligent Transportation System Architecture and Standards; Final Rule) versus updates. It would also be important to understand how the regional architectures affected some markets but not others, so that requirements could be better tailored.

Potential Action for Leadership: **Regulate, in conjunction with partner programs, data collection or functions that would directly or indirectly require technology purchases**

This potential action was not examined because such activity during the time period under analysis. Nevertheless, taking this step would likely affect deployment of technologies not specifically targeted, as a result of related purchases of complementary technologies. If the scope of the requirement is targeted to a subset of agencies, it is also possible that there would be additional deployment as a result of imitation by peers.[19]

Potential Action for Research: **Support development of standards**

This potential action was not examined because of uncertainty about how to identify influential standards and measure agencies affected. This is a possible area for future research and analysis if appropriate data can be sourced.

Potential Action for Research: **Conduct research, testing and evaluation to stabilize technology and minimize deployment risk**

According to the Bass model results, ITS markets are strongly driven by imitation rather than innovation.

- The USDOT is more likely to be able to affect adoption when a technology has already been adopted by some critical number of agencies, but before it has become commonplace. During that time, agencies are evaluating whether or not they should

[19] It is worth noting that under rule 23CFR511, transportation agencies (State DOTs and other responsible agencies) will be required to provide real-time travel information on roadway conditions, including congestion, incidents and weather. These data will be made available to the public, other government agencies and other organizations delivering transportation information. Real time traffic information must be online in 2014 for interstate highway systems and in 2016 for designated MSA roadways of significance. Observing agencies ITS decisions resulting from this regulation may provide valuable insight into the effect regulating data collection requirements and standards has on ITS adoption and deployment.

adopt and can be influenced by policy variables. When there is very low adoption, it is a technology that has not convinced enough agencies of its usefulness, either because of inherent problems in the technology (when it has been on the market for a while), that its benefits may not outweigh the costs, or because it is too new to have gotten a good reputation. If the ITS JPO believes that these technologies have potential, additional research into the technology effectiveness and market would be necessary to determine appropriate interventions.

- After a technology has been thoroughly tested (through such procedures as operational tests), subsidize a group of agencies to, as a group, adopt a technology with technical support. In return for the subsidy (lower costs per unit rather than expanded budget), require additional evaluations to be done to provide other agencies with information that would lower the risk for them to adopt. Recruit agencies from different peer networks so that the technologies would diffuse through different populations of agencies. Alternatively, recruit agencies from networks that are important for policy reasons for the agencies to adopt.

The process of developing the analysis dataset highlights possible improvements for Deployment Tracking survey design and data collection:

- For a number of the technologies, the level of aggregation of the survey doesn't allow distinctions between different generations of technologies with different capabilities. The survey questions should be examined in this light and reworked to enable distinctions to be made.

- Despite data limitations, it appears that the price of ITS matters in deployment decisions. Both for the purposes of better understanding the effect it has and to help potential purchasers in planning and negotiating, it would be helpful for the ITS JPO to develop estimates of costs over time for targeted technologies. For instance, a better understanding of costs for different generations of technologies with different capabilities could be useful in understanding likely adoption of technologies that would support the connected vehicle initiative. The current effort to gather cost data, while useful, is somewhat ad hoc, which makes it difficult to generalize from the information.[20]

Potential Action for Research: **Conduct outreach and capacity building**

Bass model results show that for all ITS technologies, imitation of peers is more important to deployment than innovation by individual agencies. In the one market that this was analyzed for agency choices, transit agency choices for adoption of traffic signal priority were affected in a major positive way by the adoption decisions of other nearby transit agencies.

[20] Based on a phone discussion with Jim Bunch, October 4, 2010

Table 36

Market	Adoption effect	Deployment effect
Highway data collection	Not examined	Not examined
Vehicle data collection	Not examined	Not examined
Traffic management systems	Not examined	Not examined
Traffic signal priority	Major positive	Not examined
Emergency vehicle preemption/police	Not examined	Not examined
Emergency vehicle preemption/fire rescue	Not examined	Not examined

These findings indicate that the Knowledge and Technology Transfer Program can play a crucial role in affecting adoption of ITS in emerging market areas. The mechanism of how the peer effects work was not examined in the current research.

Research recommendations:

- Track Knowledge and Technology Transfer Program activities contacts with agencies (e.g., keep track of what agency staff participates in webinars). This information can be used in future statistical analyses to measure the magnitude of these effects on deployment. This information could also be useful for budget planning.

Conduct case studies of agencies for market areas of interest to develop an understanding of how they learn about other agencies' adoption decisions, and what they need to learn to inform their own decisions.

The following table describes the effect related technologies have on each other. In general, deploying complementary technologies has a positive effect on adoption and mixed effects for deployment.

Table 37

Market	Adoption effect	Deployment effect
Highway data collection	Not examined	Not examined
Vehicle data collection	Not examined	Not examined
Traffic management systems	Not examined	Not examined
Traffic signal priority	No effect	No effect
Emergency vehicle preemption/police	Moderate positive/small positive	Negative/no effect
Emergency vehicle preemption/fire rescue	Large positive/moderate positive	Small positive/no effect

This suggests that the ITS JPO may be able to encourage adoption through a knowledge sharing initiative. Connecting agencies which deploy complementary technologies (if it is not the same agency) and promoting knowledge about how technologies may be used together may be effective. For lack of a better example, a system that is akin to the "Other customers have also purchased…" feature seen on shopping websites may be valuable.

7. Conclusion

The research detailed in this study represents a promising first step in providing the ITS program with an understanding of the factors influencing the adoption and deployment of ITS technologies. Empirically based insight is presented into policy levers—such as agency budget—that have a statistically significant influence on the level of ITS deployment. The research also points to other intervention levers, such as earmarks, that appear not to be effective in influencing an agency's decision to adopt or deploy additional units of ITS technology.

These results, and the policy implications that can be derived from them, can be used to inform future strategic planning and decision making related to obtaining its goals of improving safety, mobility and reducing the environmental effects of surface travel through the deployment of ITS technologies.

Separate statistical methods were used to analyze ITS technology markets. One method involved building several panel regression models to estimate the influence of selected economic, demographic and policy related factors (e.g., agency budget, population, ITS prices) have on an agency's decision on either the adoption (i.e., going from no ITS to deploying ITS) or additional deployment of ITS technologies. Particular to the panel models is the use of data defined in geographic terms. As noted earlier, the deployment tracking survey uses a geographic definition that differs from the census definition that is used for population and some budget information. While it is unlikely that this geographical mismatch has much influence on the findings, it is worth noting.

The results from the panel regressions suggest that requiring the development of strategic plans by transport agencies, such as regional architecture, has a positive impact on deployment for the markets studied, with the exclusion of TMS and TSP. Increased revenue can be linked to increased deployment, as one might expect. Congestion shows an ambiguous effect on deployment, both hindering and helping depending on the technology. Lastly, there is little evidence that earmarks have any effect on deployment levels. There were also additional variables that had impacts on deployment for specific technologies, such as navigation technology for emergency vehicle prevention.

An implication from the panel data results is that policy makers can influence the adoption or deployment of ITS through two channels. This first is requiring that transportation agencies develop and articulate their goals and plans for ITS deployment (e.g., through a regional architecture). The second channel is allocating funding directly to agencies' budgets. To be clear, this wouldn't be through a one-time earmark, but rather an ongoing source of funds. These funds could be tied to the development and maintenance of a strategic plan, but the implication from the research is that the funding needs to be ongoing to have an influence on ITS deployment—the results indicate that one-time funding or grants have little influence on ITS diffusion.

The other statistical approach involved estimating a Bass diffusion model. This model allows for identifying historical diffusion patterns for the ITS technologies being investigated for this report. The Bass model results indicate that the majority of these ITS markets are dominated by imitators rather than innovators and are all in a mature state of adoption. This means that at the aggregate market level (which is the focus of this analysis) the ITS JPO's goal of promoting the adoption and deployment has been broadly successful—aggregate ITS deployment is now at a mature level. These markets are now ready for the deployment of substitute or next generation technologies.

Combining the results from the panel and Bass models suggests a productive way to promote future deployment may involve selecting one (or more) agencies and provide ongoing funding to them for the adoption, deployment and use of an ITS technology. Ongoing funding will support the deployment of ITS technologies, as noted in the results of the panel model, while promoting a full-scale deployment of a particular ITS technology will provide a lead for other agencies (generally imitators, as noted in the Bass model) to follow.

As intriguing as these results are, they must be interpreted with some level of care. One of the major caveats for these results is that they are only applicable to the samples that were studied. That is, for the panel models, the results are only interpretable in the context of medium to large metro areas. The results are most applicable to large metro areas, as those had the most complete data. For the Bass models, this means that the findings – mostly imitators and mature markets – only make sense in terms of the markets studied. One can make inferences about other markets by comparing them to known Bass results, but little else can be said beyond that.

An important consideration particular to the Bass models is the use of balanced panels for their estimation. It is thought that the balanced panel – consisting of only those metro areas who answered in all survey years – is representative of the market at large. The use of a restricted sample that may comprise mainly of large agencies, however, does not capture the influence of the mid and small sized metro areas, meaning the results may not be directly applicable outside of this sample and may have some “large” agency bias.

Despite the caveats mentioned above, this research provides some unique insights into the factors that affect deployment decisions. As noted, these results can begin to inform discussions on what are the most effective ways to influence ITS adoption. Further research into the relationships hinted at here can help develop and enhance understanding of these factors.

In the future, the 2010 deployment tracking survey results can be included in the quantitative models to provide additional details to the analysis conducted above. The additional year of data may present an opportunity to expand this kind of analysis to additional technologies. Another area for further exploration would be improving the data used in the above analysis to make it align more closely with each agency. Finally, including additional information on historical policy interventions in ITS markets would possibly improve insights from the panel model. For this round of research, insufficient data was available to examine all possibilities. Developing the data to examine additional policy interventions would be a valuable next step.

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Appendix A: Technical Discussion

Bass Model Methodology

The Bass Model Equation

Given a potential market size for the number of adopters, the Bass model represents the likelihood of adoption at time t as:

Equation 1

$$\frac{f(t)}{1 - F(t)} = p + [q \times F(t)]$$

Where: F(t) is the cumulative proportion of adopters at time t based on potential market size (probability distribution function), f(t) represents the change in proportion of adopters at time t (probability density function), *p* is the estimated coefficient of innovation, and *q* is the estimated coefficient of imitation

The coefficients of innovation (*p*) and imitation (*q*) are constants within the model. The coefficient *p* is independent of time, representing the external influences on adoption that do not change with the level of adoption; as F(t) increases the importance of innovation diminishes. The level of adoption at time t related to imitation is a function of the value of the coefficient *q* and the level of cumulative adoption up to time t. In other words, as adoption grows, the internal influence between adopters is magnified making imitators more likely to adopt.

To estimate the values of *p* and *q*, Bass (1969) originally proposed using a discrete form of the diffusion process that is represented in Equation 2 below. In this model the change in adoption is a function of the previous level of cumulative adoption, while the values of m, *p* and *q* enter as constants to be estimated.

Equation 2

$$at = (p \times m) + \left((q - p) \times A_{t-1}\right) - \left(\frac{q}{m} \times (A_{t-1})^2\right)$$

Where: a_t is new adoption at time t (or $A_t - A_{t-1}$), A_t is cumulative adoption at time t, A_{t-1} is cumulative adoption at time t-1, *p* is the estimated coefficient of innovation, *q* is the estimated coefficient of imitation, and m is the expected market size (total number of adopters).

The liner form of the model for OLS estimation is depicted in Equation 3.

Equation 3

$$at = \beta_1 + \beta_2(A_{t-1}) + \beta_3(A_{t-1})^2$$

This version of the model is linear in its parameters and once estimated the coefficients (β) from the OLS regression can be transformed to provide estimates of the parameters *p*, *q* and m. These transformations are detailed below:

Equation 4

$$p = \frac{\beta_1}{m}$$

Equation 5

$$q = -m\beta_3$$

Equation 6

$$m = (-\beta_2 - \sqrt{((\beta_2)^2 - 4\beta_1\beta_3))}/2\beta_3$$

An alternative form of the Bass model estimates the market size and diffusion coefficients m, *p* and *q*, directly using a non-linear specification (Equation 7). This version of the Bass model estimates the cumulative number of adopters and includes the total market size (potential adopters) as an explanatory variable. It does not, however, include adoptions as an explanatory variable, but rather, explicitly includes time in the calculation of the cumulative number of adopters

Equation 7

$$A(t) = m * \frac{1 - e^{-(p+q)(t)}}{1 + (\frac{q}{p}) * e^{-(p+q)(t)}}$$

Where, A(t) is the cumulative number of adopters at time t, *p* is the coefficient of innovation, *q* is the coefficient of imitation, m is the estimated market size (total number of adopters), and t is time.

There are other transformations of the Bass model detailed in the literature, including a specification that uses maximum likelihood estimation, and some that bring other factors into the model, including marketing mix variables such as prices and advertising. The lack of additional aggregate information on supplier prices and other marketing variables in the ITS market at the aggregate level meant that the option of including them was not pursued for the purposes of this study. If appropriate data becomes available, however, this area would be a potential topic for future research as it would allow for distinguishing the contribution of other influences, and perhaps even the role of policy levers, on the diffusion of ITS technologies.

While easy to implement and estimate, the linear OLS version of the Bass model does have some weaknesses. The presence of cumulative adoption twice as an explanatory variable makes multicollinearity a likely issue when estimating coefficients, and when used with a small number of observations, (as is the case in this study) the model can be unstable and the coefficients can have incorrect signs.[21] Another consideration is that the standard errors of the coefficients m, *p* and *q*, as opposed to the ones for the betas, cannot be determined from this model. The OLS

[21] Testing of the linear model found this to be the case.

model also has a time interval bias as a result of the fact that it is estimating a continuous time model using discrete time series data.

The non-linear version of the Bass model is appealing as it allows for directly estimating the diffusion parameters and their standard errors. The standard errors will be more realistic than in other Bass models due to the fact that the error term in the non-linear model will capture data sampling errors, model misspecification (i.e., excluded variables such as economic conditions and other variables related to product sales, such as advertising). A weakness of these models, however, is their sensitivity to the user specified starting values for the estimation of m, *p* and *q*, and the fact that they may not converge or reach a local rather than global maximum.

An important consideration in the selection of the appropriate Bass model is the lack, or left-truncation, of data on ITS deployment prior to 1999 (which is when the first survey used in this study was administered[22]). The deployment data run from 1999 through 2007, with no information being available for 2001 and 2003 when there was no survey. The lack of historical information prior to 1999 does not allow for directly capturing the early adoption characteristics for the deployment of the ITS technologies being examined. If the left-truncation of the deployment data is not addressed during the quantitative analysis, then the results obtained from the Bass model will be biased. The longer the gap between the introduction of a technology and adoption levels being observed the greater the potential bias. For example, there is a long period between the introduction of highway data collection technologies (i.e., loop detectors) and when adoption levels are observed in the survey data.

While both of the versions of the Bass model noted above were considered as candidates for examining ITS technology diffusion patterns the non-linear version was used for estimation purposes. This specification of the model is considered to perform better than the OLS model. [23] In addition, the issue of left-truncated data was an overriding consideration in the selection of the appropriate Bass model. In particular, there is some evidence in the literature on Bass models pointing to the fact that the discrete OLS version of the model, even though it is time invariant, is not appropriate for left-truncated data.[24] The non-linear form of the Bass model, however, can be adjusted to directly account for missing historical data and reduce bias due to left-truncated data.[25] This version of the model (Equation 8) adjusts the parameter estimates of *p*, *q* and m for the unobserved time period.

Equation 8

$$A(t) = m * \frac{1 - e^{-(p+q)(\tau+t)}}{1 + (\frac{q}{p}) * e^{-(p+q)(\tau+t)}}$$

This is the same form of the Bass model as depicted in Equation 7, but with the inclusion of the constant τ. This constant represents the time interval between the introduction of the technology into the market and the first observed data. In this way, the model accounts for the left-truncation of the data allowing for unbiased estimates. The version of the model is based on the symmetrical properties of the Bass model diffusion curve around the time of peak sales, or the inflection point; this characteristic of the model allows for estimating the unobserved portion of the diffusion curve.

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[22] Data is available prior to this year, however, it was not until 1999 when the databases were standardized
[23] Mahajan, Mason and Srinivasan (1986)
[24] Jiang, Bass, Bass, 2006.
[25] Ibid

The actual estimation of the Bass model used in this study is done using a differenced version of Equation 8. The variable of interest being estimated in the model is the change in adoption ($A_{(t)}$-$A_{(t-1)}$) rather than the cumulative level of adoption.

Estimating the non-linear least squares Bass models was done in the statistical software package E-Views. Initial starting values were set at 0.01 and examined to determine whether changing the initial values would affect the model results. All of the models converged during the estimation process and the statistical results presented in the results section are asymptotically valid.[26]

Technology Introduction Dates

An important component of this model is the inclusion of the constant τ, which captures the time from when the technology is introduced into the market place to when the survey was first administered. While it is difficult to exactly establish the date when each of the ITS technologies under consideration for this study was actually introduced, estimates for when these technologies entered the marketplace were informed by research performed for a previous qualitative study on ITS Deployment and some additional investigation.[27]

The introduction dates shown in Table 38 are the ones used in the estimation of the results presented earlier in this document. During the estimation process other start dates close to the ones above were also examined. In some instances, particularly for those models with more recent introductions, the Bass model was sensitive to the start date and the estimation results changed—this means the results in this study are dependent upon the start dates selected above and would have to be re-calculated for different introduction dates.

Table 38: ITS Technology Introduction Years

ITS Technology	Year Introduced
ETC	1984
HDC	1960
EVP	1970
TSP	1977
TMS	1977
VDC	1960

Missing Survey Years

The Deployment Tracking Survey was not administered in 2001 and 2003. To provide a continuous data series that would allow for estimation by the Bass model, missing data (number of adopters) for these years were linearly interpolated between the two surrounding years.

[26] EViews Nonlinear Least Squares Documentation
[27] ITS technology adoption and observed market trends from ITS deployment tracking, October 2010

Bass Model Estimation Data

The Bass curve was fitted on a time series of cumulative adoption levels, i.e. a set of data points indicating the number of agencies that had adopted by each given year.[28] In order to produce this dataset, agency deployment panel data were converted to binary agency adoption panel data, which indicate whether or not each given agency had adopted a technology by each given year.

Taking into account that the Bass curve models cumulative adoption levels, the method for converting the data from deployment to adoption was formulated based on the following fundamental principle:

> **An agency is said to "have adopted" a technology by year t <u>if and only if</u> it has reported a positive deployment level in some year t*, where t* ≤ t.**

In other words, agencies that reported positive deployment either in or before a certain year are said to have adopted by that year; agencies that have not are said *not* to have adopted. For example, in general, if an agency first reports positive deployment in 2002, then the agency is said to have adopted for all years 2002-2007, and it is said *not* to have adopted for all years 1999-2001.

The principle entails that in cases where an agency reports a *positive* deployment number in a certain year and then reports *zero* deployment in a later year, the agency should still be treated as having adopted by the later year. This data coding practice was based on the idea that there are two reasons why zero deployment would be reported despite earlier reports of positive deployment:

a) The agency rolled back deployment:
   - Since the Bass model is concerned only with *adoption,* or *initial* purchases, any decisions an agency makes *after* adopting are irrelevant. Thus, for the purposes of the Bass model, an agency that rolls back deployment, even to zero, should still be considered to "have adopted" in all subsequent years.

b) The agency's survey response in one or more years did not reflect the actual deployment level at the time, presumably due to respondent error:
   - In this case, it was reasoned that respondents were far more likely to have erroneously reported zero deployment than to have supplied a fictional positive deployment number. Thus it was assumed that in cases of case b), if those cases did exist, the *zero* response was erroneous and the prior *positive* response was correct, meaning the agency had in fact adopted by the year of the *zero* response.

Thus, since both of these cases support the same data coding practice – namely, the one entailed by the fundamental principle above – it was unnecessary to determine which of these two cases actually applied to any given instance in the data.

[28] For the purposes of this task, survey responses were assumed to reflect agencies' deployment levels at the start of the survey year. This assumption has no significant effect on the Bass estimates – it is made here simply for convenience, to allow for (or clarify) the use of the phrase "adopted by [year]."

Balancing the data

It was important to ensure that the adoption levels used for the Bass estimation were based on balanced data. This means the sample had to be restricted to agencies that had data points in every year.[29]

The raw dataset was unbalanced because some agencies were not surveyed in every survey year, and some agencies did not respond to the survey (or to the pertinent question within the survey) every year they received it. This resulted in "missing data."

Because the adoption levels used for the Bass estimation were to be calculated as the number of agencies that had adopted by each year, dropping a missing data point would be equivalent to converting it to a zero and assuming the agency had not adopted by that year. If this assumption fails – if the agency has in fact adopted by that year – then the aggregate adoption level for that year will be underestimated.

In some cases, a value could be inferred for a missing data point on the basis of a reasonable assumption and in accordance with the fundamental principle given above. In the remaining cases, where a missing value could not be reasonably inferred, the agency was eliminated from the dataset and excluded from the sample altogether. The result was a balanced dataset.

In carrying out this procedure, missing data points[30] were divided into two categories:

1) Missing data points that were temporally "bounded" by *non*-missing data (e.g., where an agency reported data in 2004 and 2006, but not 2005). Values were inferred for these data points.

2) Missing data points that were temporally "unbounded*"* by non-missing data (i.e., where an agency did not report data in the first and/or last year(s) of the data series). In these cases, the agency was eliminated from the dataset.

The following discussion covers both of these categories. "Sub-cases" within each category are defined in terms of agency responses in the year(s) immediately surrounding the missing-data.

"Bounded" missing data (inferences made):

- **Positive deployment before, positive deployment after:** Agency was assumed to have adopted by missing year(s).
    - This is a straightforward consequence of the fundamental principle.
- **Positive deployment before, zero deployment after:** Agency was assumed to have adopted by missing year(s).

[29] This does not apply to the two non-survey years, 2001 and 2003, in which no data exist for *any* agency. The non-survey years are a separate issue – as mentioned above, adoption levels for the non-survey years were linearly interpolated between the two surrounding years.
[30] This discussion applies equivalently to cases of a single "isolated" missing year and to cases of multiple consecutive missing years.

    - This follows from the "fundamental principle," incorporating the assumption discussed above regarding cases where reported positive deployment precedes reported zero deployment.

- **Zero deployment before, zero deployment after:** Agency was assumed *not* to have adopted by missing year(s).

    - Although as discussed above, there is reason to treat zeros as "have adopted by" in certain cases, in the absence of evidence to the contrary it is safe enough to assume that zeros indicate "have *not* adopted by."

- **Zero deployment before, positive deployment after:** Linear interpolation used for missing years(s).

    - In other words, since there is uncertainty as to which year the agency adopted, and there is no prima facie reason to suspect that it adopted in one year rather than another, a simple calculation was made that reflects this uniform probability – and minimizes the expected impact on the Bass curve – by spreading the statistical footmark of the adoption evenly across time. For example, if an agency reports zero deployment in 2004 (appearing as 0 in the data), does not respond in 2005, and reports positive deployment in 2006 (appearing in binary form as 1 in the data), then the 2005 data point is coded as 0.5. There is no satisfactory real-world interpretation of this procedure – it is simply a statistical procedure carried out based on the above rationale. It is in some sense a violation of the "fundamental principle," but the exception is justified based on the above rationale.

"Unbounded" missing data (agencies eliminated):

- **Unbounded before, positive after:** Since nothing at all was known or could be assumed about the agency's deployment level *prior* to the missing year(s), no reasonable inference or interpolation procedure could be applied to the missing data themselves. Thus, the agency was eliminated from the dataset.

- **Unbounded before, zero after:** It would probably be reasonable to assume that the agency had not adopted by the missing years. However, coding the data in this way would introduce a "rightward" bias, against early adoption, given that agencies in the "unbounded before, positive after" case were being eliminated from the dataset, as noted above. Thus, agencies in these cases were eliminated as well.

- **Zero before, unbounded after:** This case is analogous to the "unbounded before, positive after" case. Since nothing at all was known or could be assumed about the agency's deployment level *after* the missing year(s), no reasonable inference or interpolation procedure could be applied to the missing data themselves. Thus, the agency was eliminated from the dataset.

- **Positive before, unbounded after:** This case is analogous to the "unbounded before, zero after" case. Although the irreversible nature of an agency's "having adopted" has been the underlying principle of this methodology, an exception must be made here. In this case, coding the data according to that principle would introduce a "leftward" bias, against late adoption, given that agencies in the "zero before, unbounded after" cases were being eliminated from the dataset, as noted above. Thus, agencies in these cases were eliminated as well.

Estimating Market Size

As part of the Bass model estimation process, the size of the market (m) was established as the number of agencies contained within the balanced dataset (regardless of whether they had adopted or not). This value was entered as a constant during the estimation process as it allowed for establishing the actual market size for the dataset being examined; if this value wasn't included during the estimation process, the model would tend to solve to the selected start value provided for m. Since the expected market size was known, it was determined that setting the value of m during estimation would provide a more realistic estimate of the potential market size, compared with the values being determined within the model.

Econometric Panel Model Methodology

Agency-Level Model Step 1: Discrete Choice

The question of whether to adopt a particular technology has only two potential outcomes: adoption or non-adoption. Thus, in the first modeling step, the dependent variable is binary (taking on a value of 1 to indicate adoption and 0 to indicate no adoption). There are several widely used alternatives to model such a binary "discrete choice". Chief among these are the logit and probit models, both of which produce predicted values for each unit bounded between 0 and 1, which are typically interpreted as representing the probability of a positive (non-zero) outcome for each observation.

In the context of the ITS deployment data, for which the unit of observation is the agency-year, such results would be interpretable as the predicted probability of adoption for each agency in a given year. When such models are employed for their predictive value (for example, to examine the likelihood that a new agency of known characteristics will be an adopter), the modeler typically selects a threshold probability value, above which the model is considered to have predicted a positive outcome. For example, if this threshold is set at 50%, an agency for which the model yields a prediction of 0.7 would be considered an adopter, whereas an agency of value 0.2 would be considered a non-adopter. The selection of this threshold is subjective; when used for predictive purposes, a model's predictions are typically tested for sensitivity to the threshold.

The probit model, under which the dependent variable is assumed to follow a normal distribution, was chosen as the preferred discrete-choice specification.[31]

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[31] In practice, the logit and probit produce similar estimations and predicted values. The theoretical choice among these two model frameworks typically depends on the underlying structure of the data, though the relative mathematical and computational simplicity of logit model often makes it the default when either structure is deemed appropriate. The logit is frequently chosen when the observed binary distribution is a direct product of the data-generating event (e.g., whether an individual has cancer). The dependent variable is assumed to follow a logistic distribution.

The probit, by contrast, presumes that the dependent variable follows a standard normal distribution, and is often considered preferable when the true underlying data-generation actually involves a proportion (e.g., the weight of an individual relative to his or her medically optimal body

Letting a_{it} be an indicator variable, which takes a value of 1 if an agency has adopted the technology and 0 otherwise, the probit expresses the probability of adoption given the explanatory characteristics, Prob (a_{it} = 1 | X_{it}), thus:

Equation 9

$$\text{Prob}\,(a_{it} = 1 \mid X_{it}) = \Phi(X_{it}\beta)$$

That is, the probability of adoption for a particular observation (agency-year) is a function of the characteristics $\boldsymbol{X_{it}}$ of the agency-year, multiplied by a vector of estimated coefficients β. The coefficient parameters β are obtained via maximum likelihood estimation.

The form of this function is the cumulative distribution function of the standard normal distribution Φ:

Equation 10

$$\Phi(X_{it}\beta) = \int_{-\infty}^{X_i\beta} \frac{1}{\sqrt{2\pi}} \exp\left(-\frac{X_{it}\beta^2}{2}\right)$$

Interpretation of Probit Results

The interpretation of regression results from a probit model is a multi-step process. The estimated probit coefficients on the explanatory variable express the expected change in a statistic called the z-score, given a one-unit change in the explanatory variable. The z-score refers to the cumulative normal probability of achieving a 1. In the context of the ITS regressions, this is the cumulative probability of technology adoption.

Unlike for simpler regression procedures, such as Ordinary Least Squares (OLS), the effect of a one-unit change in the variable is not constant across the range of the data. For this reason, the elasticity with respect to each explanatory variable must be evaluated at individual data points. A standard practice in interpreting probit results is to calculate *marginal effects* at several points of interest in the data; that is, observe the marginal contribution of each variable of interest to a change in the expected probability of adoption at the chosen point in the data.

Alternative probit model specifications were evaluated by examining the sign, magnitude, and statistical significance of the estimated coefficients, as well as relevant diagnostics for binary choice models (notably the likelihood ratio test).

Agency-Level Step 2: OLS Regression

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weight), but is observed only as a binary outcome (whether the individual is overweight). In the present context, it is hypothesized that the propensity to adopt a particular ITS technology is dependent upon a continuous utility function associated with each agency; the adoption decision is the manifestation of decisions based upon this underlying function. With this in mind, the probit specification is preferred.

The second step of the modeling procedure was the implementation of a panel linear regression performed *only on adopting agencies.* As in the discrete choice model, the unit of observation is the agency-year; however, only those observations that have adopted enter the equation. This modeling step responds to the conditional question, *given that an agency has adopted the ITS technology, how* much *of that technology will it choose to invest in?*

The second-step models are estimated on the panel of adopters using Ordinary Least Squares (OLS) regression. The general specification for each individual technology is:

Equation 11

$$a_{it} = \mathbf{X}_{it}\beta + \varepsilon_{it}$$

where a_{it} is the amount of particular technology adopted (expressed in units or as a percentage, as discussed above) by agency *i* at time period *t*, X_{it} is the set of explanatory variables, β is the vector of estimated coefficients for these variables, and ε_{it} is the residual term.

Regression specifications for all technology markets include either fixed or random effects. A vector of fixed effects entails a set of cross-section-specific (agency-specific) constants, and is commonly featured in panel models to alleviate omitted variable bias. A vector of fixed effects is typically used to control for unobserved variation between cross-sections (for example, motivation, predisposition or aversion with regard to new technologies, institutional factors, and so on). The residual term is separated into an unobserved agency-specific effect α_i and a residual η_{it} that varies over cross-sections:

Equation 12

$$\varepsilon_{it} = \alpha_i + \eta_{it}$$

Fixed effects allow correlation between the set of explanatory variables and the agency-specific constant (that is, α_i may be correlated with X_{it}); random effects restrict the correlation to be zero by assumption. A Hausman test can generally be employed to indicate whether fixed or random effects are preferred in the context of a given model specification. However, datasets in which the number of cross-sections is large relative to the number of time period observations frequently lack sufficient information to estimate fixed effects and a vector of random effects must be estimated instead.

Unlike the first-step model, the interpretation of the estimated coefficients is straightforward. For variables entered in levels, the raw coefficient of variable *X* represents the expected change in the dependent variable given a one-unit change in *X*. If *X* enters the equation in logarithmic form, its coefficient is interpreted as the anticipated change in the dependent variable given a one percent change in *X* (that is, the elasticity with respect to *X*, as noted above). OLS regression results were examined for expected sign, magnitude, and statistical significance in the estimated coefficients, examined for evidence of multicollinearity and autocorrelation (using, notably, the Durbin-Watson statistic), and compared against alternative model specifications using traditional diagnostics for the fit of linear models (such as the adjusted R-squared statistic and the log likelihood).

Appendix B: Data Development

Model Data Development

This section of the report discusses the process through which the datasets for analysis were created. These datasets are unique for each ITS technology and contain the deployment and adoption data used as the dependent variable in the panel data and Bass models. They also contain the exogenous data used in the analysis that has been mapped to each agency identified in the dataset.

Deployment and Adoption Data

Raw data for measuring ITS deployment was sourced from the ITS Deployment Tracking database.[32] These data were collected for each survey year, from 1999 through 2007.

The initial task was combining all of these sources into one master database which was done to provide a central repository for all of the ITS adoption variables. Once all data was merged into a central Microsoft Access database, queries were created allowing for exporting the data to another program such as SAS or Stata with only the information required for analysis.

A separate query for each technology-year pairing was constructed. This required matching 3 tables: a contacts table to obtain the agency address, an agency survey table which specified which surveys an agency received, which surveys were sent, and which surveys were returned to the ITS JPO. The resulting datasets thus contained one line per agency that filled out a particular survey that gave an agency identifier (the agencynumber field), which survey they filled out and whether it was sent and/or completed, and finally the actual attributes of the agency such as how many signals the agency operated or how many fixed-route busses were in service.

An important issue in building the analysis datasets was the presence of blank values in many of the survey fields. To reduce the chance of creating bias in the analysis dataset, it was decided that blank values would be treated as missing values rather than 0s. For example, if a question asked an agency how many signals the agency operated and they responded 100 and a subsequent question asked how many signals were transit signal priority-capable and the response was blank, it was not inferred that this meant zero signals were equipped. Rather this was coded as a non-response and thus this agency would have been excluded from regression analysis if the variable was used in the regression functional form. The reasoning behind this was that, while an agency who left a blank answer may have had no signals of a particular type, there was no way to know whether this was the case or the question had either been skipped in error or purposefully.

Once the data had been exported, each technology-year dataset was imported into SAS. The data were merged across all years within a given technology such that all fields for a given technology in all years were in one complete dataset.

[32] http://www.itsdeployment.its.dot.gov/

Mapping to Metro Areas

Each agency in the ITS JPO sample was assigned a metro area that was used in the analysis. For this purpose, the 2007 metro area information for each agency furnished by the ITS JPO was used as the standard for the metro agency over all years of observation. This eliminated the problem of any agencies that may have changed their metro area designation (this only occurred in one case in which the agency under consideration was roughly the same distance between two different metro areas).While this made a simplifying assumption, it was necessary to do in order to ensure consistency in applying external information to the agency. In the EVP models, deployment of the technology was used in regression analysis (e.g., attributes from each agency in a metro area were aggregated in order to generate a peer effect variable). Additionally, some of the exogenous data received corresponded to metro areas (roughly). Both population data from IHS Global Insight (GI) and congestion information from the Texas Transportation Institute (TTI) came in this form.

Congestion data arrived with each observation being for an urbanized area, while IHS GI data arrived with an MSA designation for each observation. While urbanized areas and MSAs do not have any exact equivalency to metro areas in the deployment tracking database, most areas are roughly the same and a matching between urbanized areas and metro areas was created along with a matching between MSAs and metro areas.

ZIP Code Assignment

Some information in the deployment tracking dataset was specified on the county level that for purposes of mapping with exogenous data required a Federal Information Processing Standards (FIPS) code. While a FIPS code was not available in ITS JPO deployment data, each agency had a ZIP code available.

ZIP code information, however, was not consistent across all survey years and agencies often reported multiple ZIP codes during the 7 years of survey data. In order to standardize these data, the ZIP code from the latest year that data was collected was used to identify each agency. In the event that there were multiple ZIP codes, only the first record in the sort order was used. The reasoning for picking one ZIP code is analogous to the selection of one metro area as explained above in that it was necessary to ensure an agency was consistently associated with one county across all survey years.

Geographical Data Matching

Mapping county level data with agency data was done through matching the FIPS with agency ZIP codes. This mapping was done using information from the U.S. Census Bureau that aligns FIPS codes with ZIP codes.

The Census mapping file provides a link between a given ZIP code and the related county – with one caveat. Due to differences in their definitions, the area a ZIP code represents and the area a FIPS code represents may not be the same. It may be the case that a ZIP code falls within several FIPS code areas or that a ZIP code is entirely contained in a FIPS code area. This poses a problem as only one county (FIPS code) can be matched to a ZIP code. For the purposes of this study, the first ZIP code-FIPS code pairing that appears in the Census mapping was used. An important consideration here is that the order of the list in which entries appear will influence the mapping and changes in this order would affect these relationships. For the purposes of being consistent for this study, before mapping, the ZIP code list was sorted according to the nine digit zip code.

Another consideration with mapping ZIP and FIPS codes is that neither may represent the jurisdiction of the agency in question. For example, an arterial agency may manage a corridor that spans several zip codes and counties. Nonetheless, for lack of a better standard geographical construct that is more similar to the jurisdiction of the agency, this mapping was determined to be the best option.

Once ZIP codes were matched with FIPS codes it was possible to merge exogenous data, such as population, that is measured at the county level with each agency.

Exogenous Variable Development

Population Data

Information on county population was sourced from the Census Bureau. These data were merged into the technology dataset using FIPS codes. This process assigned each agency with a corresponding county population. County level population was used as normalization variable in the panel models.

In addition, for the purposes of developing a congestion metric, population data were also collected at the MSA level (Census Bureau data sourced through IHS Global Insight). MSA data is roughly equivalent to the urbanized area measure used by TTI; these population data were used in conjunction with TTI data in order to establish congestion hours per capita.

FARS Data

Since improving safety is an important consideration when deploying ITS technologies, it is important to include a variable capturing this relationship in the panel models. For this purpose, information from the Fatality Analysis Reporting System (FARS) was collected. These data recorded fatal accidents that result in fatalities at the county level; (FARS does not have information on non-fatal accidents and the database that contains this information—GES[33]—does not have the level detail that would allow for mapping crashes at the agency level).

The FARS data were merged into the dataset using FIPS codes. As a result, an agency is assigned county-wide fatal accident data given the county that it is located in. For all regressions except emergency vehicle preemption (EVP), the combined number of all fatal accidents in the county was used. For the EVP dataset, after conducting research examining the causes for adopting EVP, it was elected to only use accidents involving emergency vehicles. Some preliminary literature reviewed indicated that accidents involving emergency vehicles as a reason why an agency may choose to adopt EVP.

Price Data

The price data used in the panel models is sourced from the ITS JPO's cost database. These data are provided as point estimates, which are of little value to time series regression analysis. Indices that could be used to adjust the prices to a time series are included in the cost database and these were used to create a time series from the point cost estimates. It is important to note, however, that this process does come with some drawbacks.

[33] General Estimates System (NHTSA)

To construct a time series out of the estimate, the following formula was used:

$$Cost_t = Cost_{2008}\left(\frac{Index_t}{Index_{2008}}\right)$$

Firstly, it is clear from this equation that the price series only varies according to the variation in the index. Additionally any costs that use the same index will ultimately have the same variance structure associated with their growth rates.

Secondly, the question of which index to use for which price is important. The cost database provides information on the indices it recommends for creating a time series. These indices, broadly construed, represent manufactured electronic equipment, although this category certainly encompasses products unrelated to ITS.

Many of the products listed in the ITS cost database were assigned the same index. In addition, most of the indices suggested in the cost database tend to have a high degree of correlation. As a result, the choice of a particular index over another is rendered moot in most instances. Since each agency in a dataset receives the same ITS technology price in a given year, all of the factors noted above make it difficult to discern the true, agency-specific, effect of a change in price on deployment.

Peer Data

To examine the hypothesis that an agency's choice to adopt is influenced by its peers, data capturing this relationship was developed. Peer data was built on two separate premises: agencies with a geographical proximity would influence each other and agencies facing the same problem (e.g., similar levels of congestion) would also influence one another. The development of these variables is discussed below, but an important consideration is that they were built using a balanced panel. That is to say only agencies that responded to the survey in all years and gave non-null responses to the questions were included. Using a balanced panel ensured that agencies entering and leaving the survey did not create inconsistencies in the peer measure, particularly as they would affect the denominator when calculating the ratio of adopters to non-adopters in the peers group (this is the measure used to estimate the influence of peer groups in the regressions).

Distance Based Peer Data

For the purposes of creating distance based peer data, each agency's location is defined as the center of the associated Metropolitan Statistical Area (MSA), as given by the Census Bureau[34]. An agency's peer group is defined as the set of all agencies located within 100 miles of that agency.[35] Note that no agency is considered to be a member of its own peer group. Also note that agencies associated in the same MSA – and thus considered to be at the same location – all belong to each other's peer group.

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[34] 2009 TIGER/Line(R) Shape files, [machine-readable data files], prepared by the U.S. Census Bureau, 2009.

[35] Calculated as great-circle distance from the center of the MSA that each agency is in to the center of all other MSAs. That is to say that agencies A and B are considered peers if they are located in MSAs whose centers are within 100 miles from each other. It does not necessarily mean that the agencies are within 100 miles of each other.

The peer group variable is defined as:[36]

$$\text{fr\_t\_inter\_100\_200\_l1}_{it} = \frac{A_{i(t-1)}}{G_i}$$

where $A_{i(t-1)}$ is the number of agencies in agency i's peer group that adopt the technology at time t-1 or earlier, and G_i is the total number of agencies in agency i's peer group. In other words, fr_t_inter_100_200_l1$_{it}$ is the proportion of agency i's peers that have already adopted before year t.

This variable was constructed using a balanced panel (i.e., only those agencies that were surveyed and responded to the given question in all years were used).[37] Thus, $\mathbf{G_i}$ is time-invariant – agency i never gains or losses peers over time, because all agencies in the dataset are present in all years (and the agency locations are fixed).

Additional versions of the variable were created using different distance thresholds, but the 100-mile threshold was ultimately chosen because 100 mile was decided to be a suitable distance for a circle of influence. It was judged that geographic influence between peer agencies would not extend beyond 100 miles.

Congestion Based Peer Data

The second peer data set was built on the premise that agencies facing similar congestion problems may influence each other in making ITS deployment decisions. This measure placed each agency into a quintile based on its congestion (either measured through the TTI index or the TTI measure of number of annual congestion person-hours). Once each agency was placed into a quintile, the congestion peer measure was created. For an agency, all other agencies in the same quintile that had adopted the particular ITS technology under investigation were defined as its peer group.

Budget Data

The U.S. Census of Governments was the source for agency budget data.[38] Budget data was matched with agencies at the county level for all agencies, with the exception of transit agencies. For transit agencies, NTD budget data is available on the agency level, providing a more accurate representation of funding available for a transit agency in a given year.[39] A direct mapping between a transit agency and its budget was possible through using the NTD identification number.

The budget information used for the purposes of this study was the total annual budget (or revenues) for a given agency.

Budget (and earmark) data were included in the datasets in nominal terms. Nominal data was used as using an aggregate level deflator across agencies would not have added any useful information to the models. In addition, converting the nominal data into real data over a seven year span would have little effect on the data or results of the analysis, compared with nominal

[36] For TSP, this variable looks at all technologies across bus, light rail and demand responsive technologies when creating a peer group.
[37] For the years in which the survey was not administered, the variable was linearly interpolated across the two surrounding years.
[38] http://www.census.gov/govs/
[39] http://www.ntdprogram.gov/ntdprogram/

data. Since the panel models capture cross-sectional variation, what is important for the purposes of the analysis is the relative size of the agency budgets (or earmarks), which would remain similar whether measured in real or nominal terms. In addition, the price data in the models are in index form and although they account for changes in prices, they cannot be directly used as a comparison with the budget or earmark data. Finally, since agencies would make decisions on ITS adoption or deployment based on nominal budgets, then nominal data would reflect this constraint.

Congestion Data

Congestion data was obtained from the Texas Transportation Institute's (TTI) Urban Mobility Report. These congestion data were collected at the urbanized area level, which does not match directly with the information in the deployment tracking database. TTI congestion data were incorporated into the analysis datasets matching the urbanized area definition as closely as possible with an agency's metro area.

The congestion metrics used in this study were annual hours of congestion per capita and the travel time index. Annual hours of congestion per capita is defined as the total hours of congestion in an area divided by the population of that area. The travel time index is defined as the ratio of travel time in peak periods to travel time in free flow. The index, by definition, can be no smaller than one. Additionally, the index is equal to one as long as the travel times are the same during peak and off peak hours. This may occur because of low congestion during the peak, but also due to constantly high congestion.

TTI's Urban Mobility Report includes congestion information pertaining to 90 urbanized areas. These 90 urbanized areas represent all urbanized areas with a population greater than over 500,000 people and a selection of areas under that threshold. Ultimately, a metro area (as defined in the deployment tracking survey) was matched to an urbanized area by matching and aligning the two areas as closely as possible through pairing those areas with the same name. For example the urbanized area that TTI refers to as "Boston MA-NH-RI" was matched to the metro area that the deployment tracking database refers to as "Boston, Lawrence, Salem". Obviously both are referring to the Boston area, but the boundaries may not exactly line up.

Another example is the "Cleveland, Akron, Lorain" metro area, which was matched to a combination of information from the "Akron OH" and "Cleveland OH" urbanized areas from TTI (Lorain did not have information from TTI). In the case of annual hours of congestion, the sum was used; for the travel time index, the average of the included urbanized areas was used, using judgment as to what these areas are. While this provided congestion information for most of the areas in the deployment tracking survey, some smaller areas were left out.

Regional Architecture Information

The architecture information is sourced from an internal Federal Transit Administration program document titled *"FTA Transit ITS Architecture Consistency Review – 2010 Update."* This information is presented at the metro area level, making it relatively easy to match to the metro areas in the deployment tracking database.

The report provides the date of the last ITS architecture drafted for each metro area. It does not, however, indicate if there was any architecture plans drafted prior to one reported. This lack of information presents an issue in that the date given in the report may not represent the date of any original ITS architecture draft. As such, the data does not reveal whether an agency already has an architecture in place when it drafted the one captured in the report; this means the data will treat all observations of an architecture being put in place as a discrete event and not, as will be the case for some agencies, a cumulative observation. Without a more exhaustive investigation of ITS architectures, which was not within the scope of this study, it is unclear for how many agencies the data may not be representative.

Earmark Data

Information on ITS specific earmarks was sourced from the Library of Congress THOMAS legislation database. Using this database, ITS earmarks were identified by city, county, state government or individual agency (in a given FFY) and subsequently mapped into the analysis database. In most instances, the earmark data were not technology specific, but rather attributable to an agency. As a result, this variable captures how the presence of an earmark will affect adoption of deployment. The earmark variable was tested in either the dollar amount or as a dummy variable, set at 1 when an earmark was present and 0 otherwise.

Specialized Data

For some markets, there was the need for creating specialized data. As a starting point, it was necessary to ensure that statewide population, FARS, and budget data was applied in the HDC and ETC datasets because of their statewide nature. Regarding EVP, qualitative literature has suggested that, for some agencies, the decision to adopt EVP may be driven by a concern that emergency vehicles are or could be involved in accidents and the necessary and urgent tasks that these vehicles assist with. Thus, this is a primary reasoning for the installation. The FARS database has a field indicating whether the vehicle involved in the crash was an emergency vehicle; this field was selected in order to provide information specific to the EVP market.

The TSP dataset also uses specialized data from the National Transit Database as mentioned above.

A brief summary and review of the data sources is provided below in Table 39. A more extensive overview of the data used for modeling purposes, including units, is presented in the data dictionary in the next section.

Table 39: Data Summary

Type of Data	Source
Budget Data	Budget data was obtained from the U.S Census Of Governments for state, county and city governments. For the TSP regressions, data from the National Transit Database (NTD) was used.
FARS Data	The FARS database provided data at the county level and data was summed across all available counties in a state to yield state-wide data. An exception to using all fatalities within a county is the EVP dataset. In this case, the FARS variables used were restricted to only including fatal crashes that involved an emergency vehicle.
Population Data	Two population datasets were used: Census data at the county level was used for some parts of the estimations Global Insight (GI) data was used to match to TTI congestion data because of the similarity in the areas that were covered. That is, TTI data was compiled at the urbanized area and GI data was at the MSA level for which it was possible to generate an approximate mapping.

Type of Data	Source
Congestion Data	Congestion data was obtained from TTI.
Price Data	Price data was constructed using static, singular-year estimates from the ITS JPO ITS Cost database; missing years' data was constructed using indices from the Bureau of Labor Statistics (BLS)
Peer data	Distance-based peer data was constructed from the deployment tracking datasets. Congestion peer data included the TTI congestion data.
Regional Architecture	The architecture information is sourced from the "FTA Transit ITS Architecture Consistency Review – 2010 Update."
Earmark Data	Earmark data was obtained from the Library of Congress THOMAS legislation

Data Dictionary

This section details the data used in the development and testing of the econometric panel data models. A description of each variable is provided, along with the units of measurement, source of the data and whether it is used in log or lagged form in the model.

Variable name	units	Log form	Lag form	Description	Source
annhourscong_pc	hours per person per year	ln_annhourscong_pc	annhourscong_pc_l1	Annual hours of congestion per capita	TTI and IHSGlobal Insight
architecture_present	binary	--	lag_arch OR architecture_present_l1	Indicates presence of ITS regional architecture within agency jurisdiction: 1 = present 0 = not present	FTA Transit ITS Architecture Consistency Review – 2010 Update
capcoster_sigprepriemit	$000s	--	--	Capital Cost - Signal Preemption/Priority Emitter - Emergency Response	ITS Cost Database
earmark_amount	$	--	earmark_amount_l1	Total amount of federal ITS funding earmarked for agencies within given city, county, or state government, or individual agency (in given FFY)	Library of Congress THOMAS legislation database

Variable name	units	Log form	Lag form	Description	Source
earmark_flag	binary	--	--	Indicates whether federal ITS funding was earmarked for agency in given FFY: 1 = funding earmarked 0 = no funding earmarked	Library of Congress THOMAS legislation database
fars_hwy	level	_	fars_hwy_l1	Number of Fatal Crashes on interstate Highways and Freeways (both urban and rural)	FARS
fars_pc	fatalities per person	--	--	Statewide motor vehicle fatalities per capita	FARS and Census Bureau

Variable name	units	Log form	Lag form	Description	Source
fr_t_inter_100_200_l1	ratio	--	Appears in lag form only: fr_t_inter_100_200_l1	Proportion of peer agencies that have adopted in or before given year. Equals zero for agencies with no peers. "Peer agencies" defined as being at some distance d, in miles, where d ≤ 100. In years with no data, previous year's value is used.	ITS Deployment Tracking Database
lag_emer	level	--	Appears in lag form only: lag_emer	Number of fatal crashes involving emergency vehicles in the previous period	FARS
ln_ntd_budget	$	Appears in log form only: ln_ntd_budget	ln_ntd_budget_l1	Transit agency budget information	National Transit Database
ln_total_revenue_t2_pc	$000s/person	Appears in log form only: ln_total_revenue_t2_pc	--	Total state revenue per capita	Census Bureau
log_rev	$000s/person			Total county revenue per capita	Census Bureau

Variable name	units	Log form	Lag form	Description	Source
nav_choice	binary	--	--	Whether or not an agency uses navigation on their fleet	ITS Deployment Tracking Database
Navigation	level	--	--	number of vehicles with NAV	ITS Deployment Tracking Database
pct_avl_bus	ratio	--	--	Proportion of total agency-operated buses that are AVL-equipped	ITS Deployment Tracking Database
pct_metro_priority	ratio	--	pct_metro_priority_l1	Proportion of signals within a metro area with TSP	ITS Deployment Tracking Database
pct_tsp_bus	ratio	--	--	Proportion of total agency-operated buses that are TSP-equipped	ITS Deployment Tracking Database
per_evp	ratio	--	--	Proportion of signals within a metro area with EVP	ITS Deployment Tracking Database
perc_equipped_signals	ratio	--	--	Proportion of total agency-operated signals that are VDC-equipped	ITS Deployment Tracking Database
Pop	000s	--	--	Population at the Metropolitan Area/Division Level as designated by OMB	IHSGlobal Insight/Census Bureau
Preemption	level	--	--	number of vehicles with EVP	ITS Deployment Tracking Database

Variable name	units	Log form	Lag form	Description	Source
totalrevenue_pc	$000s/person	lag form: ln_totalrevenue_pc_l1 non-lag form: ln_totalrevenue_pc	log form: ln_totalrevenue_pc_l1 non-log form: totalrevenue_pc_l1	Total county revenue per capita	Census Bureau
totcoster_sigprepriemit	$000s	--	--	Total cost of a preemption/priority emitter.	ITS Cost Database
totcostloopsurvinter	$	ln_totcostloopsurvinter	--	Capital Cost - Inductive Loop Surveillance on Corridor	ITS Cost Database
tti	index	--	--	Travel Time Index	Texas Transportation Institute
yr_arterial_l1	level	--	Appears in lag form only: yr_arterial_l1	Number of crashes on arterials, by county	FARS

Appendix C: ITS Deployment Maps

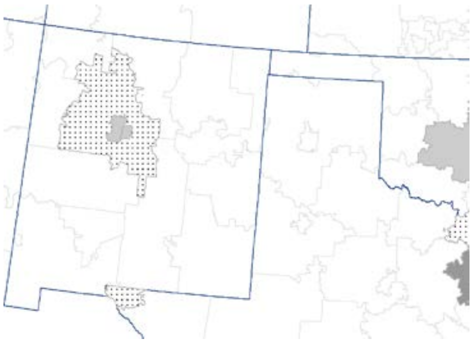
This section shows all maps for all technologies. The first set of maps displays the select markets that were chosen to examine in detail in the Deployment Extent section (descriptive statistics). This is followed by national maps. Maps of Hawaii are presented following maps of the 48 contiguous states. Maps of Alaska are not shown because no area in Alaska was surveyed for the 4 technologies under observation. Note that unless specified, TMS maps reflect general TMS and not specifically adaptive TMS or non-adaptive TMS technology.

Map Key

Each map in this section uses the same key to indicate adoption. It is as follows:

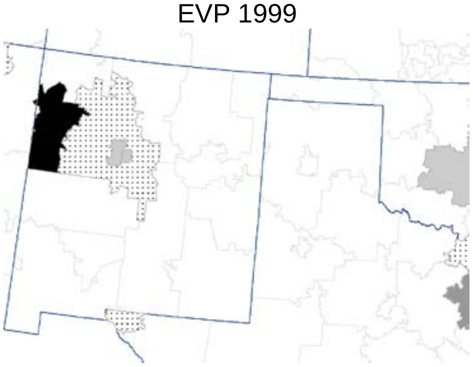
No response to survey	0% adoption	>0% - 20% adoption	>20% - 40% adoption	>40% - 60% adoption	>60% - 80% adoption	>80% - 100% adoption

Albuquerque



EVP 1999

EVP 2000



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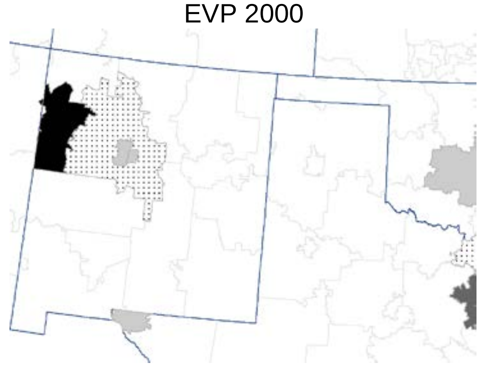

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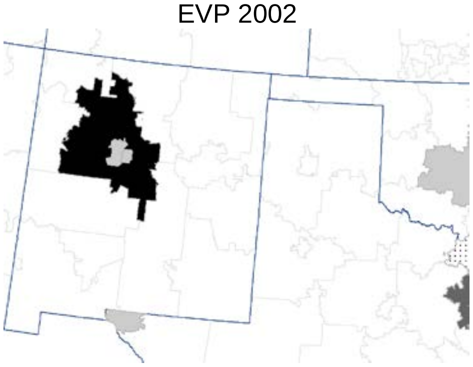

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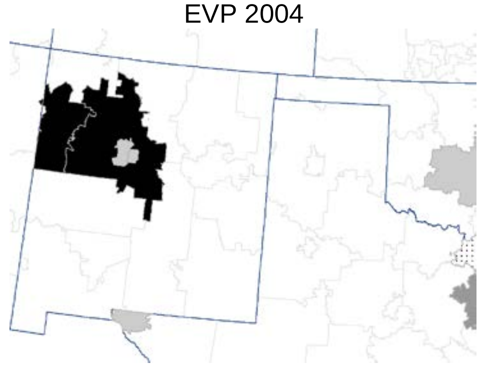

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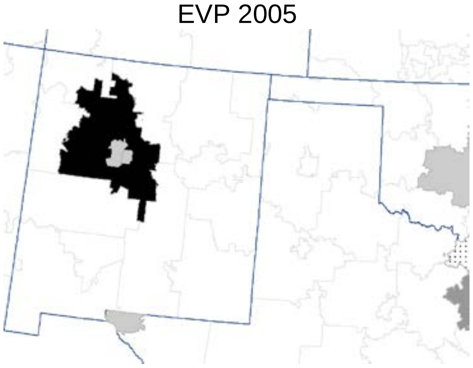
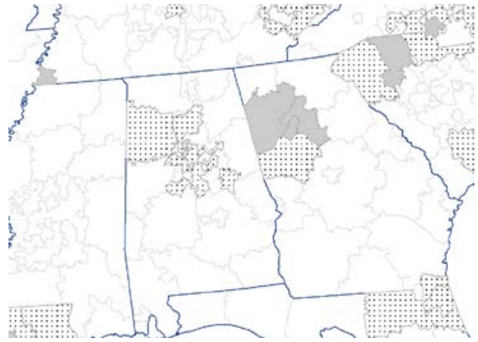


EVP 2007

Atlanta

EVP 1999



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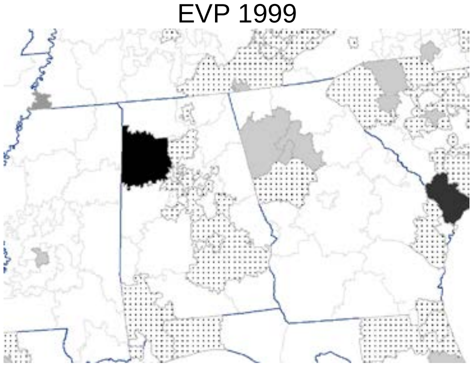

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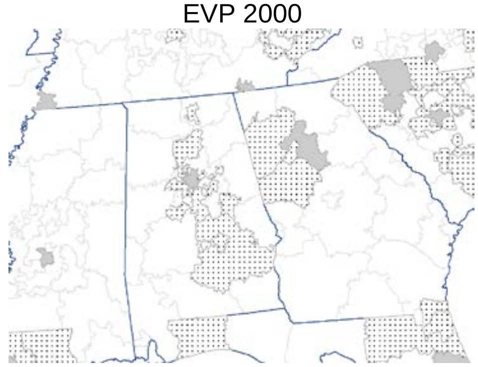

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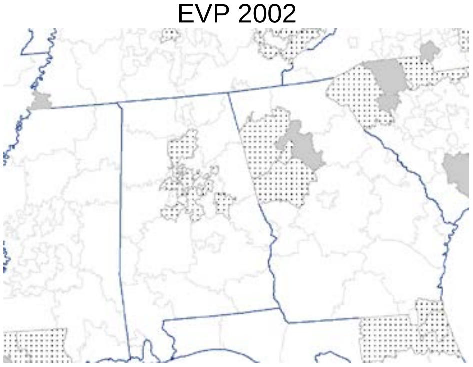

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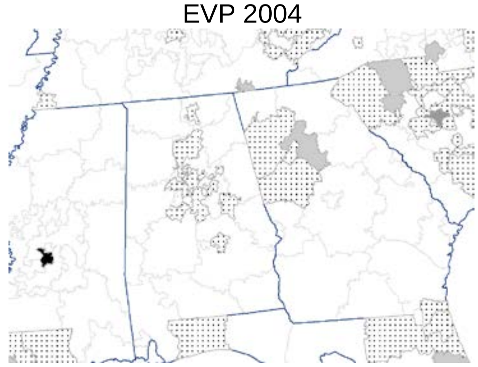

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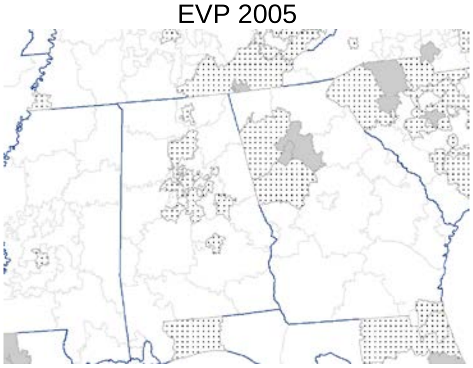
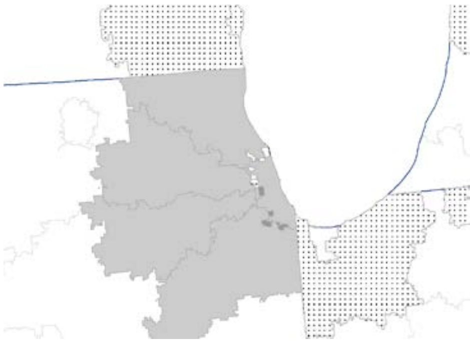


EVP 2007

Chicago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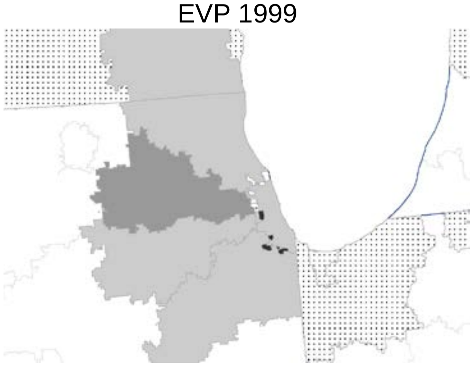
EVP 2000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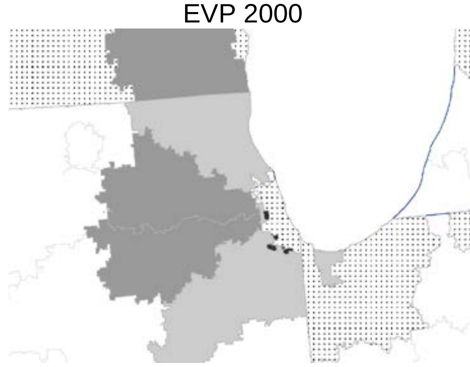
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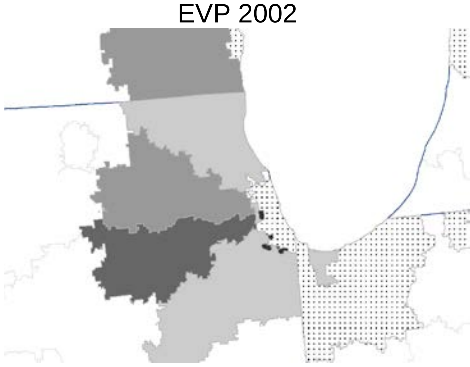
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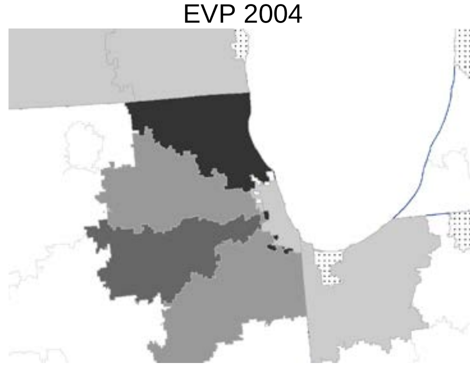
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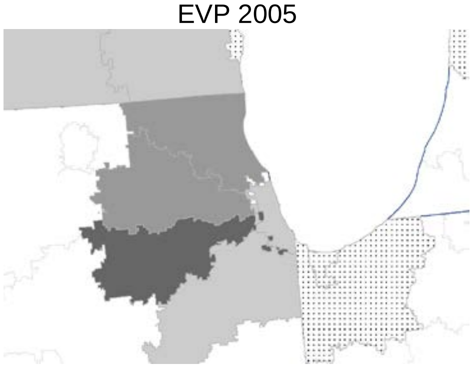
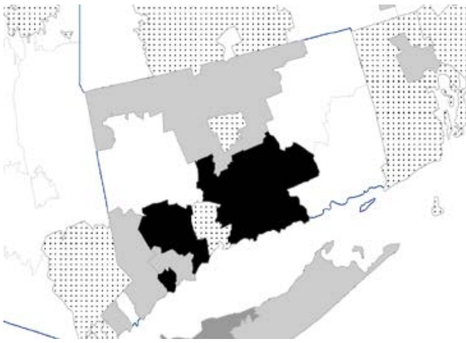
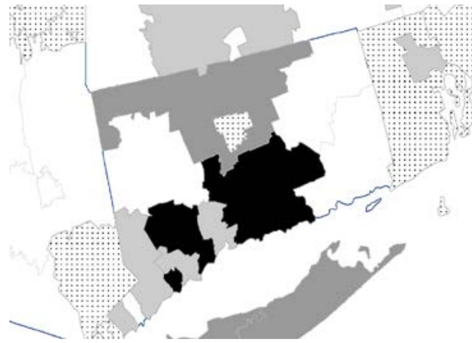

EVP 2007

Hartford



EVP 1999



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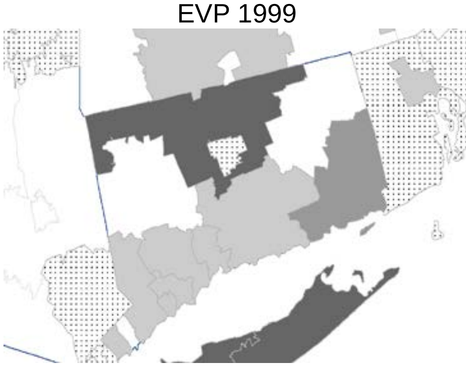

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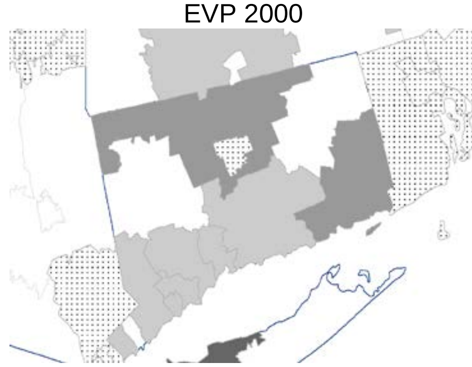

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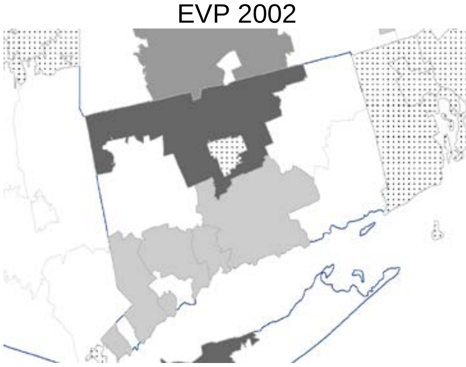

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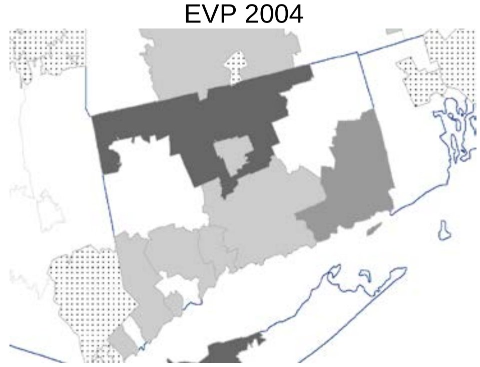

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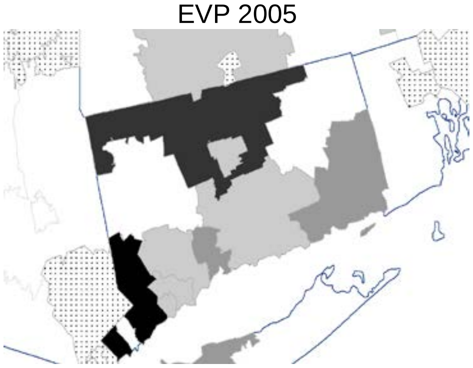


EVP 2007

Los Angeles

EVP 1999

EVP 2000

EVP 2002

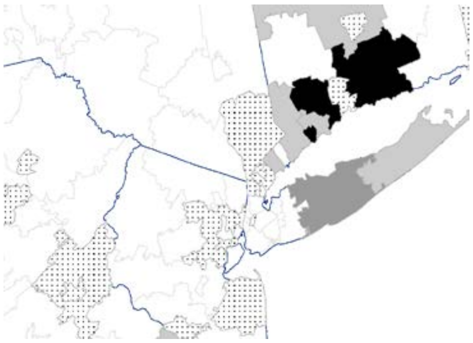
EVP 2004

EVP 2005

EVP 2006

EVP 2007

New York City



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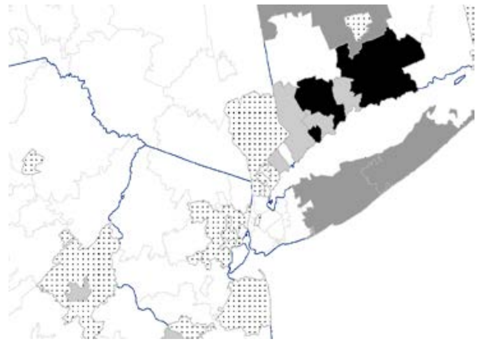

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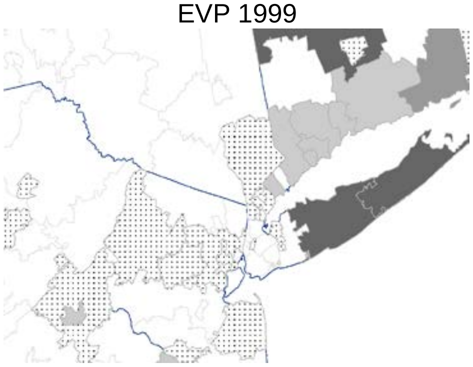

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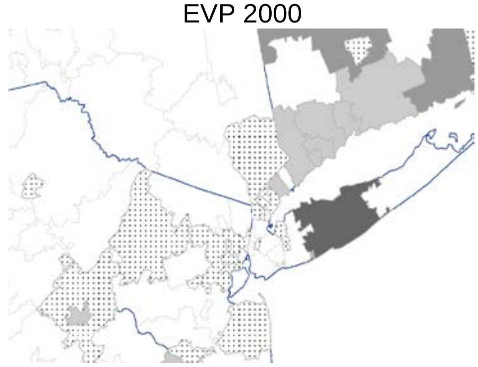

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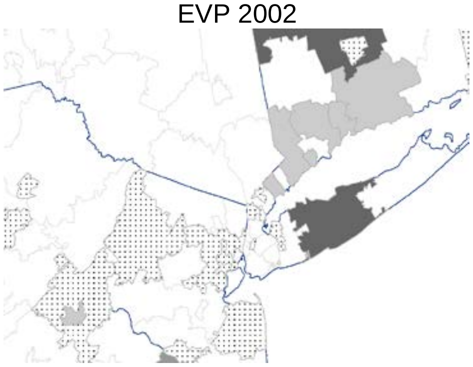

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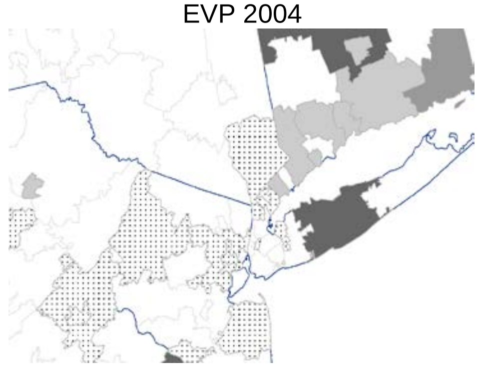

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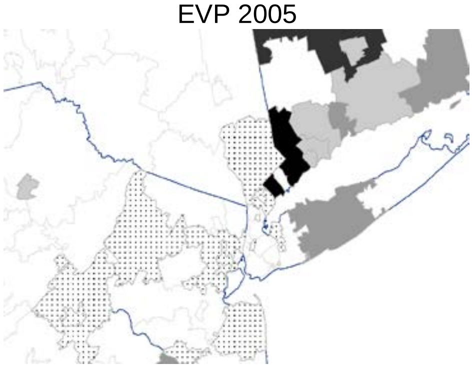

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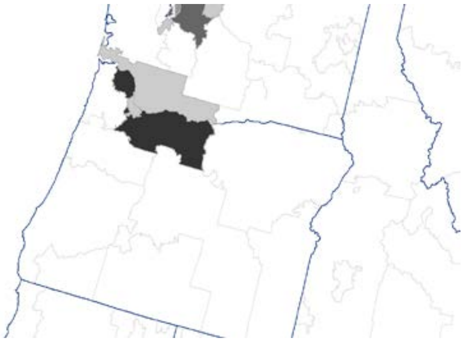
Portland



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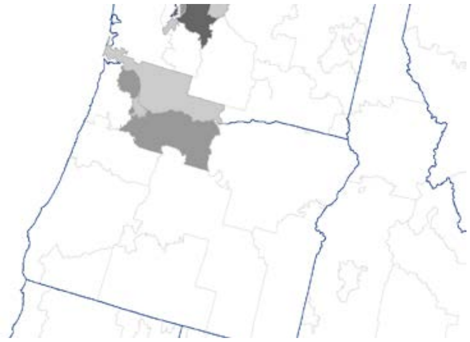

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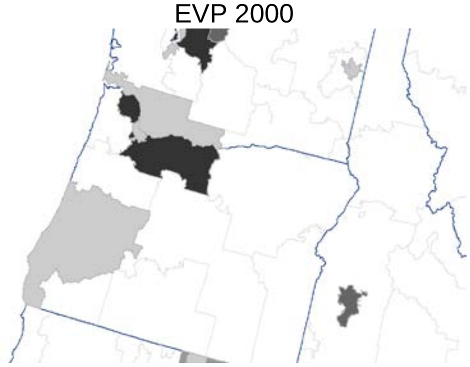

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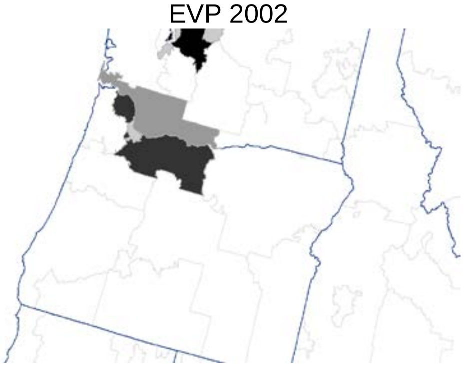

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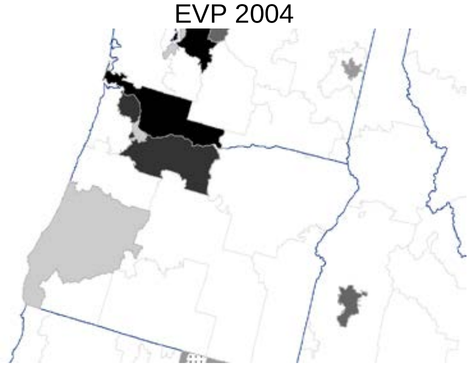

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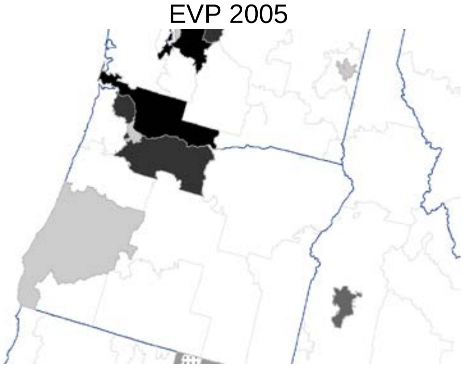
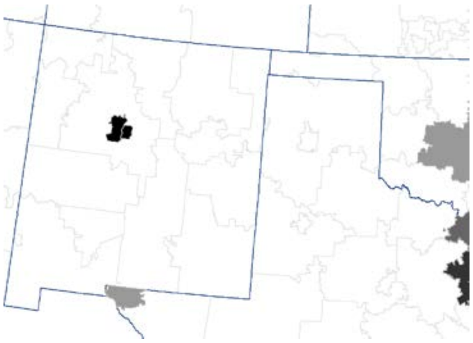


EVP 2007

Albuquerque



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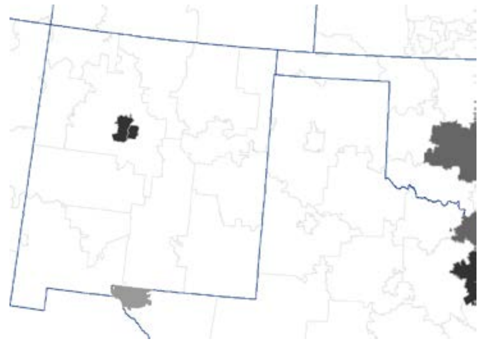

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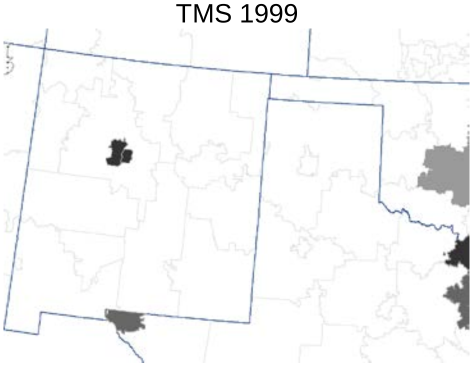

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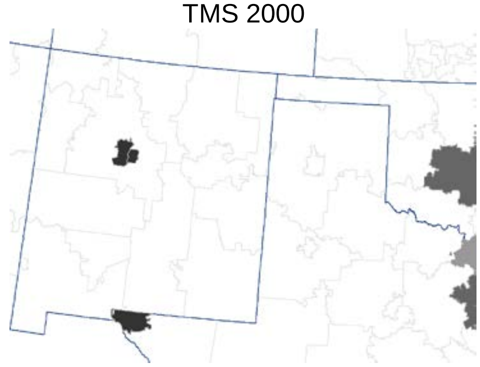

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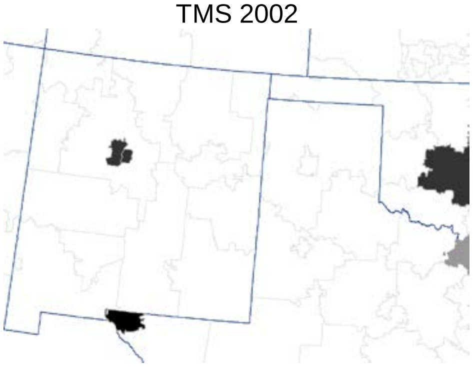

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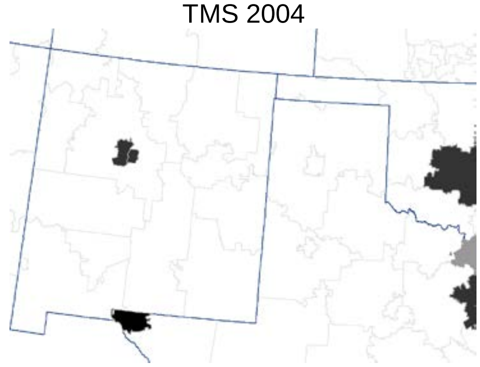

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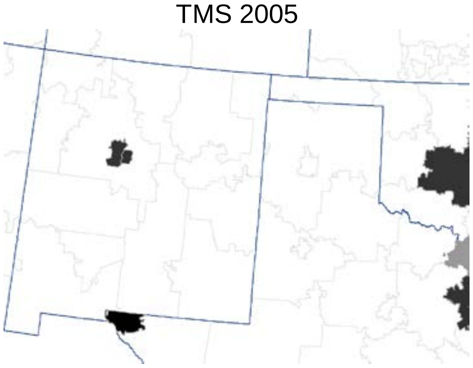
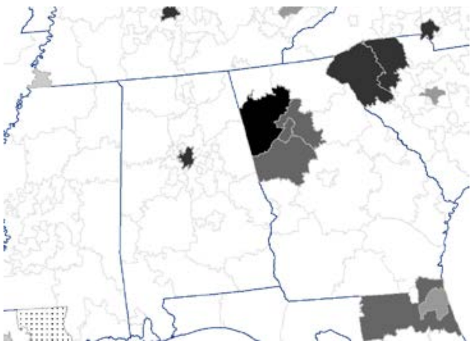


TMS 2007

Atlanta



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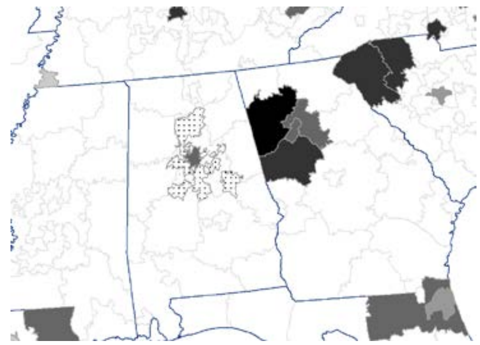

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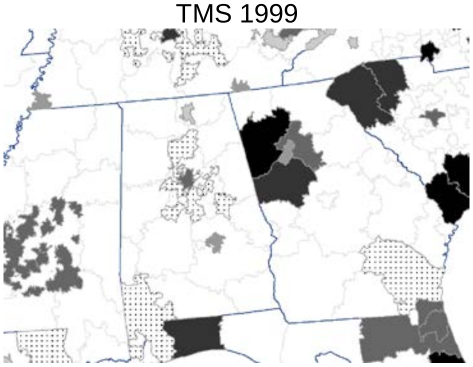

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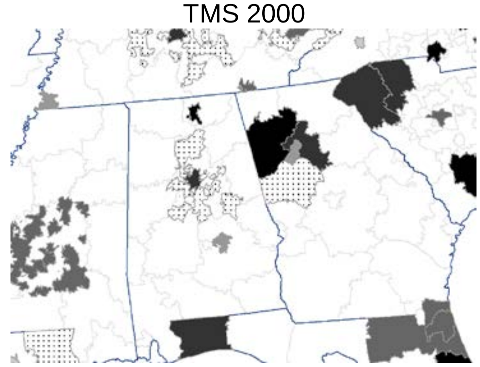

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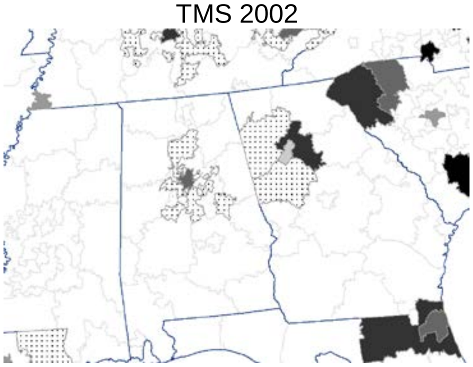

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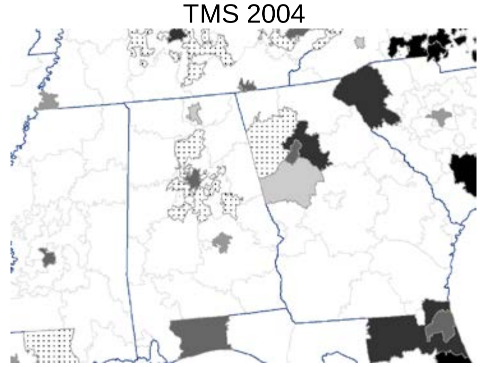

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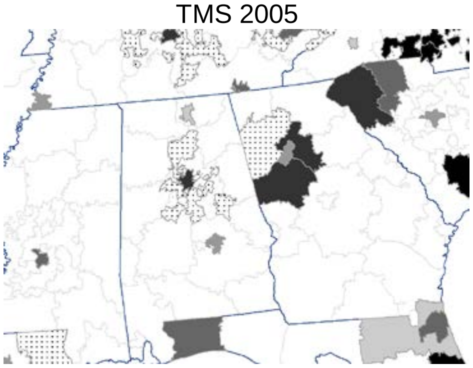
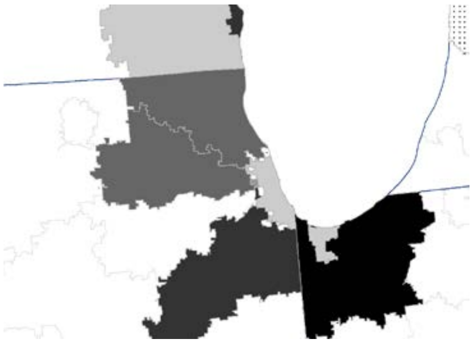
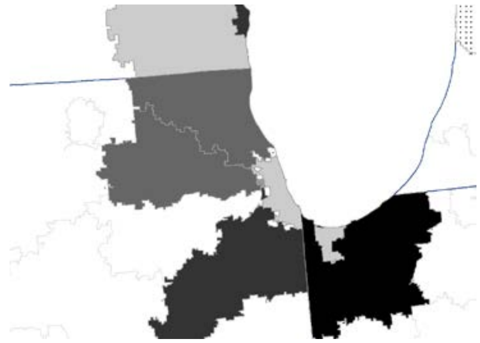


TMS 2007

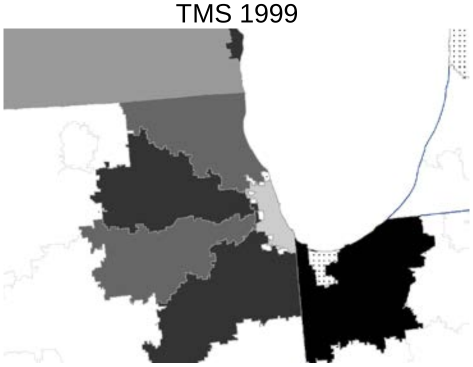
Chicago



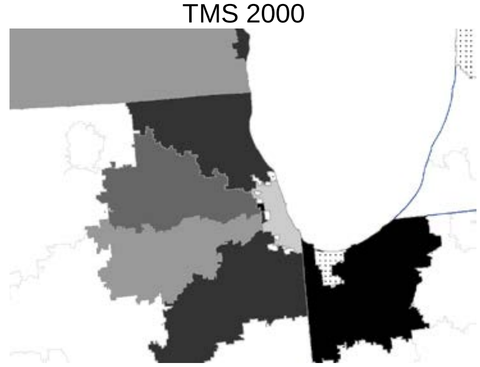
TMS 1999



TMS 2000



TMS 2002



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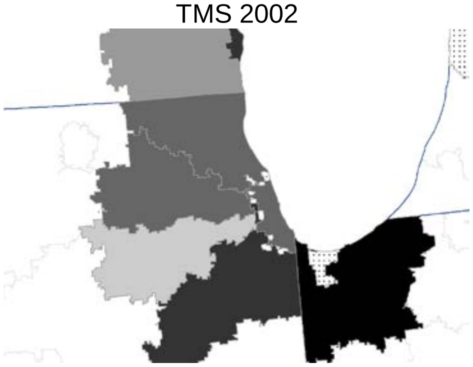

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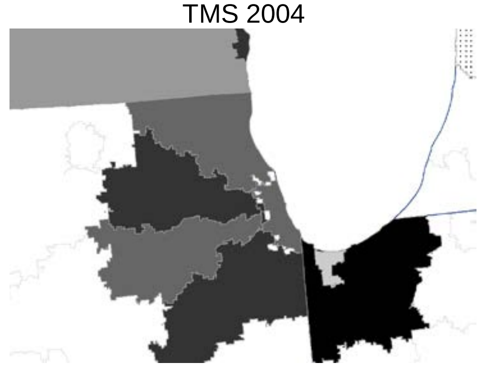
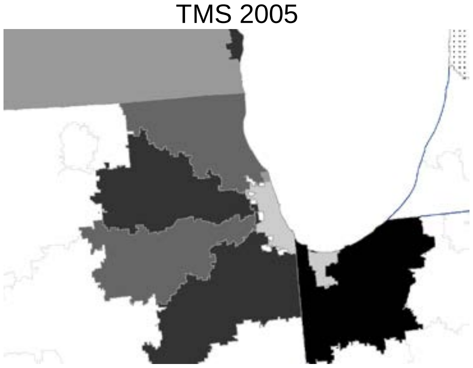
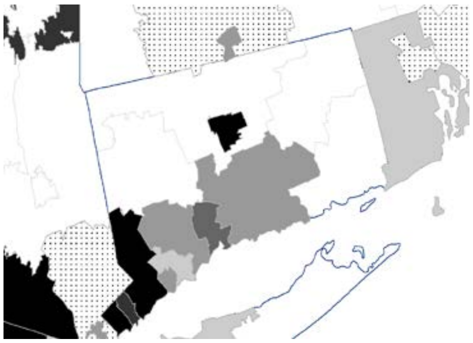


TMS 2006

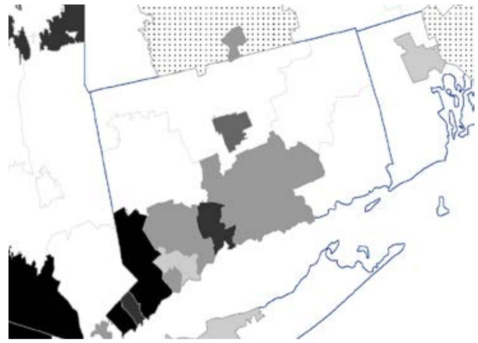


TMS 2007

New Haven



TMS 1999



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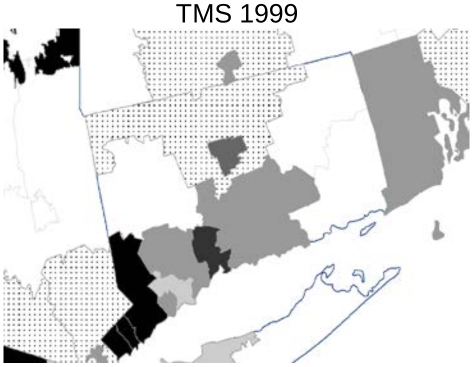

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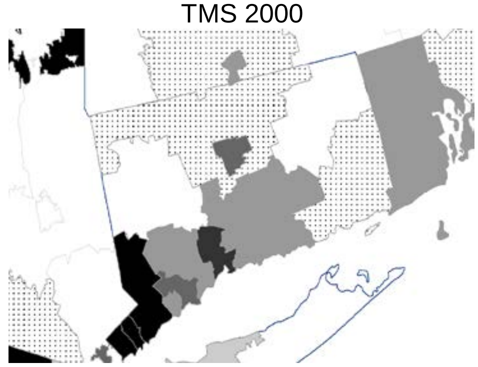

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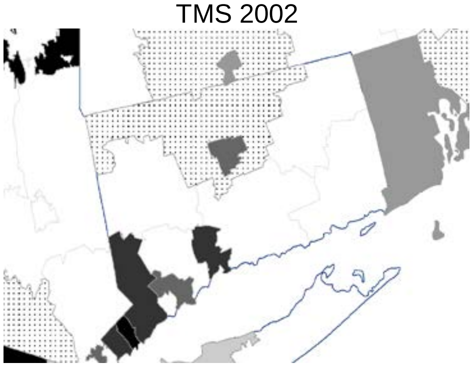

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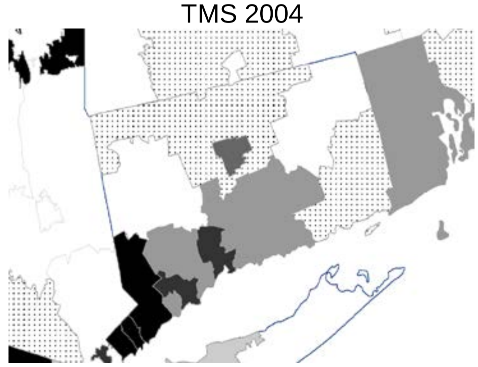

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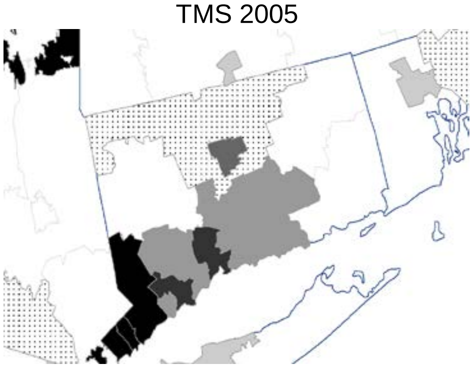
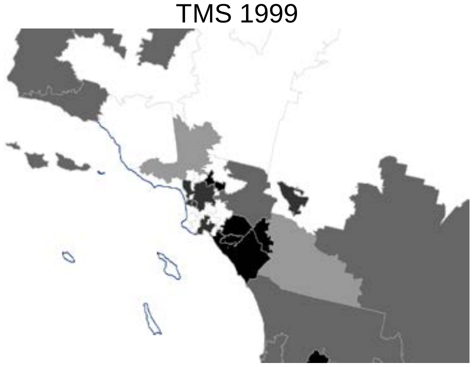


TMS 2007

Los Angeles

TMS 1999

TMS 2000



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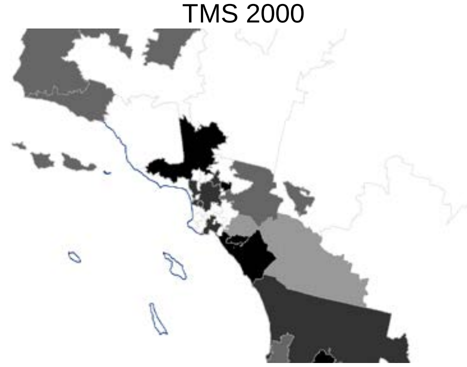

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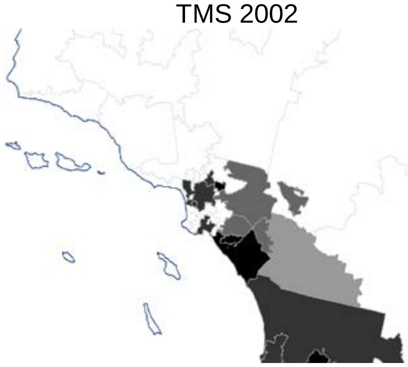
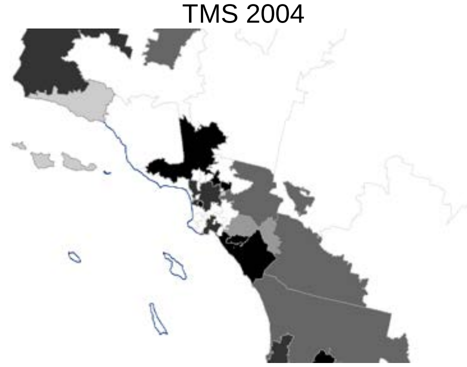
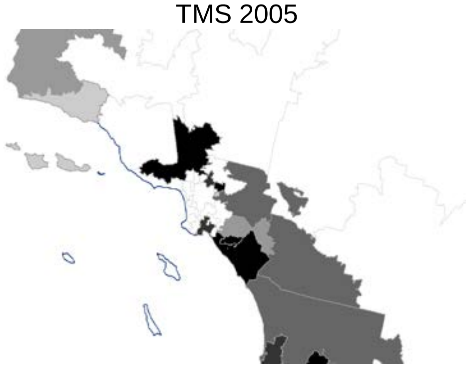


TMS 2005

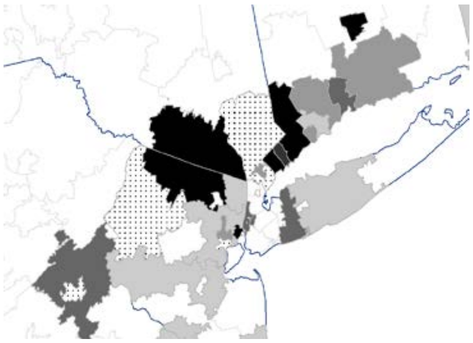


TMS 2006

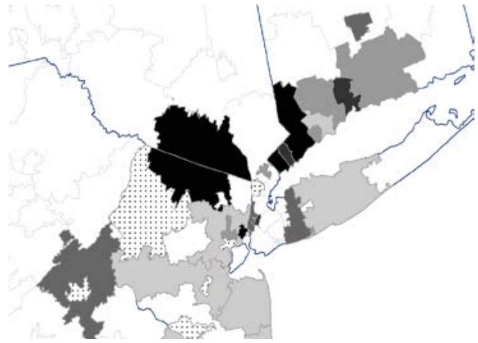


TMS 2007

New York City



TMS 1999



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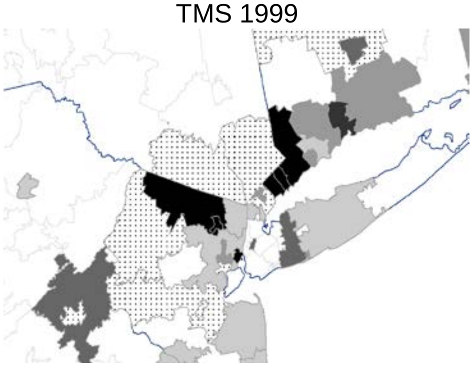
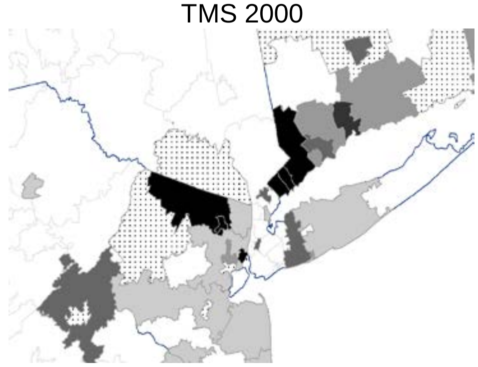
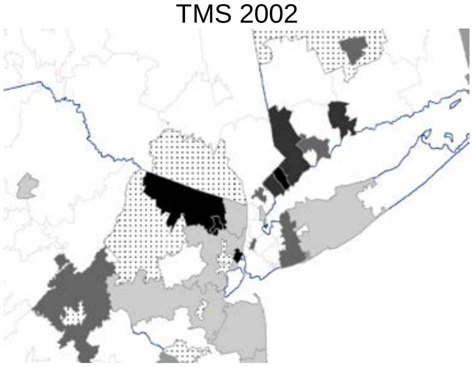


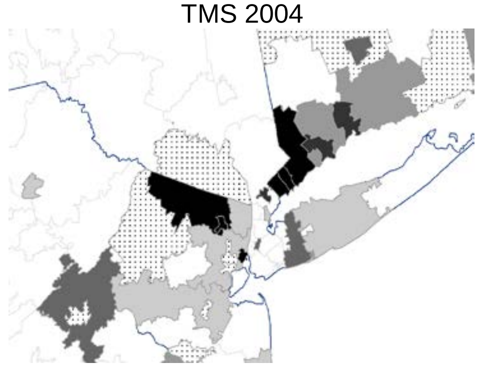
TMS 2002



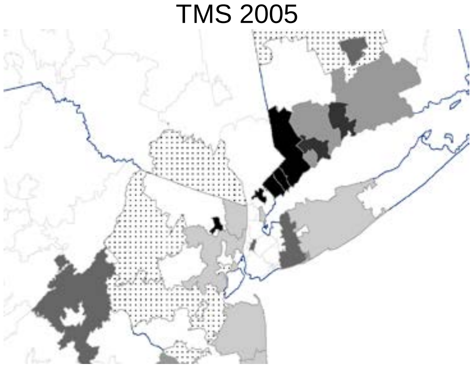
TMS 2004



TMS 2005

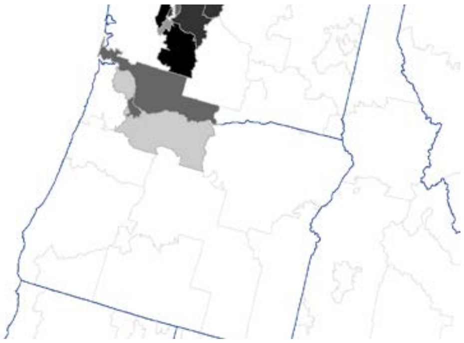


TMS 2006

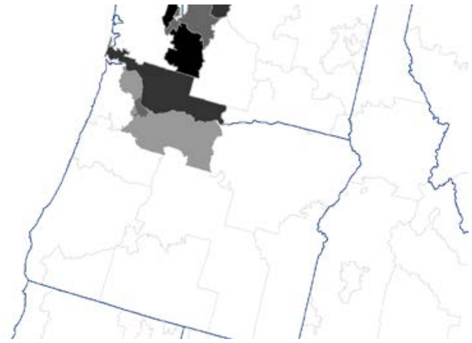


TMS 2007

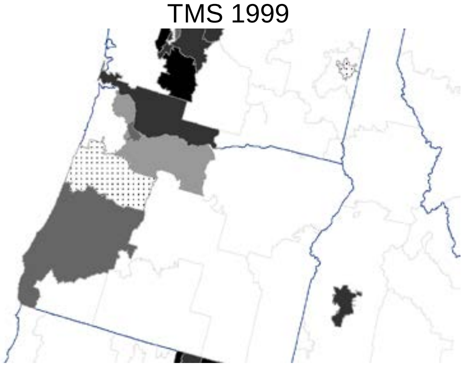
Portland



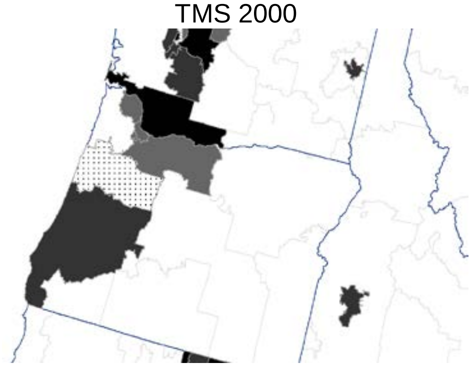
TMS 1999



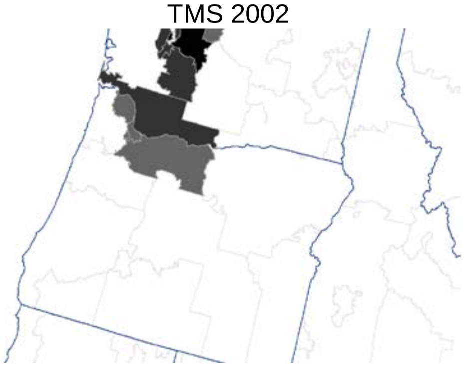
TMS 2000



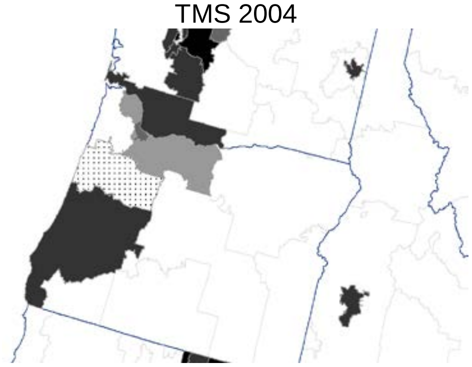
TMS 2002



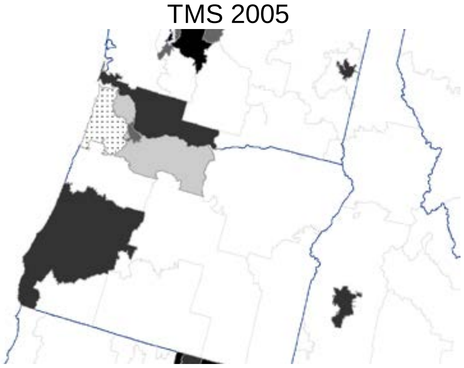
TMS 2004



TMS 2005

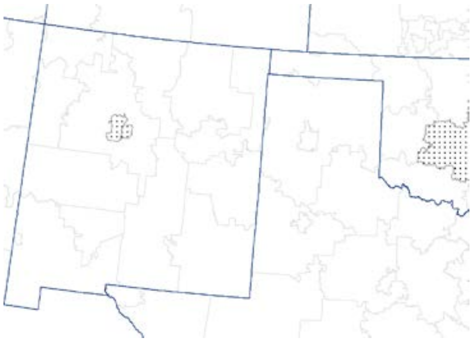


TMS 2006

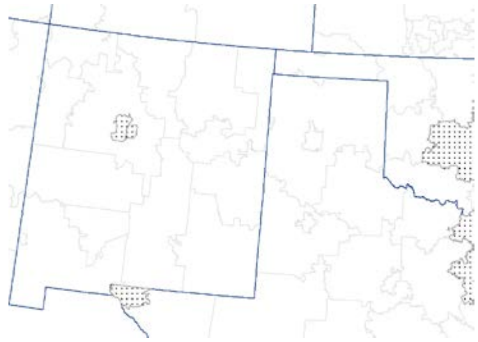


TMS 2007

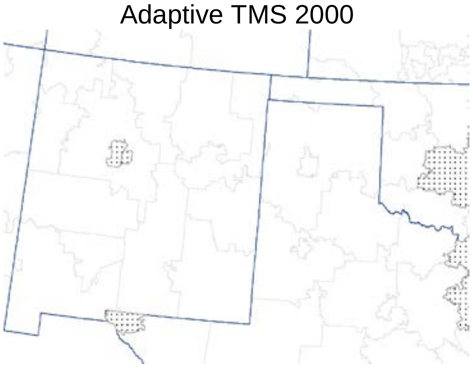
Albuquerque



Adaptive TMS 2000



Adaptive TMS 2006

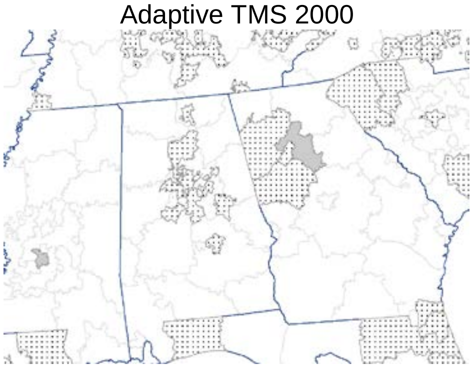


Adaptive TMS 2007

Atlanta

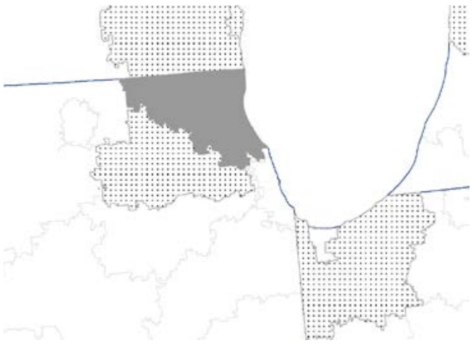
Adaptive TMS 2000

Adaptive TMS 2006

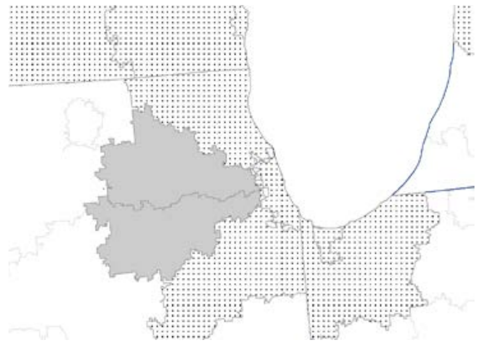


Adaptive TMS 2007

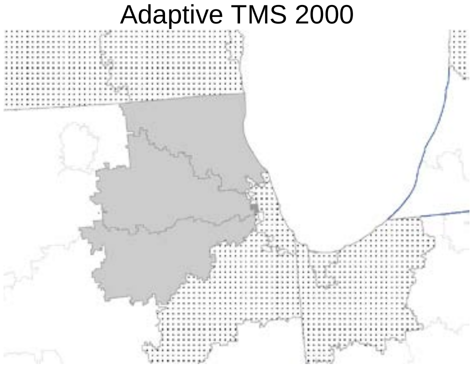
Chicago



Adaptive TMS 2000



Adaptive TMS 2006

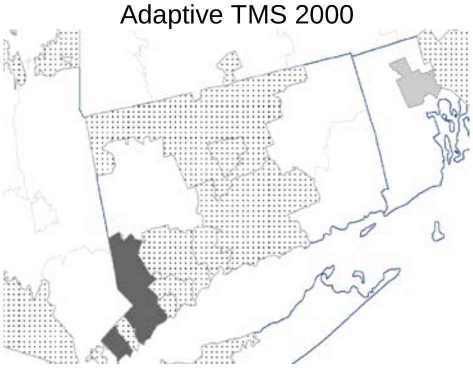


Adaptive TMS 2007

Hartford

Adaptive TMS 2000

Adaptive TMS 2006

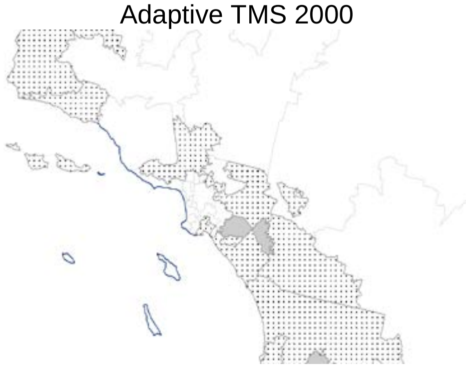


Adaptive TMS 2007

Los Angeles

Adaptive TMS 2000

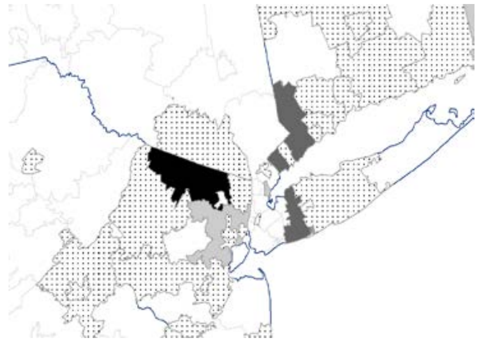
Adaptive TMS 2006



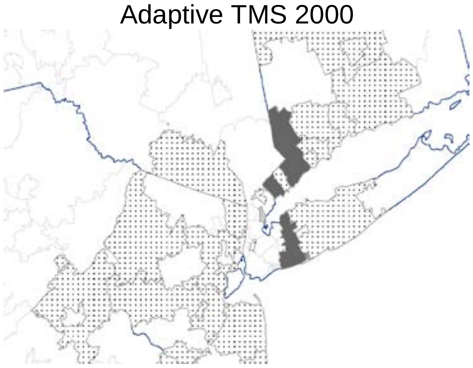
Adaptive TMS 2007

New York City

Adaptive TMS 2000



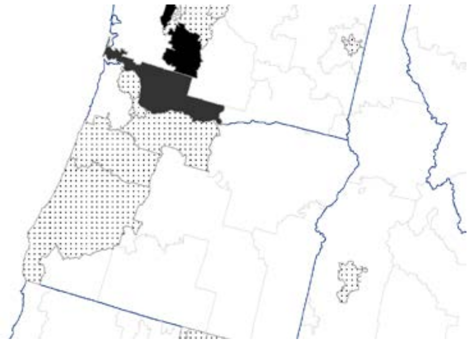
Adaptive TMS 2006



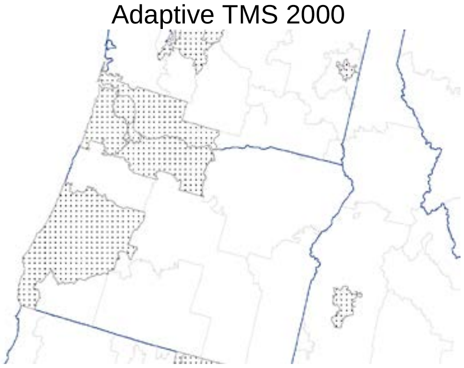
Adaptive TMS 2007

Portland

Adaptive TMS 2000

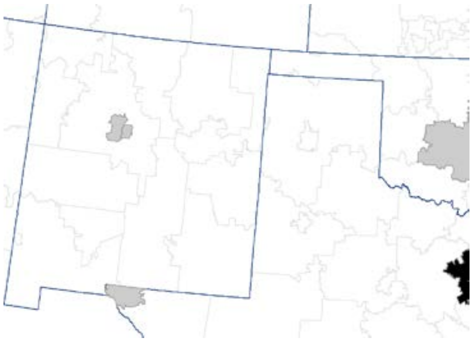


Adaptive TMS 2006

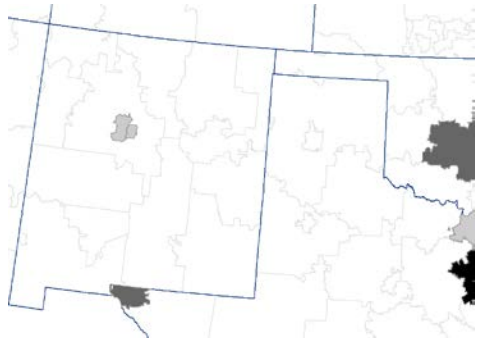


Adaptive TMS 2007

Albuquerque

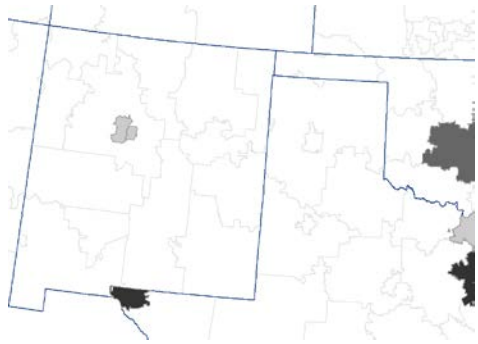


VDC 1999

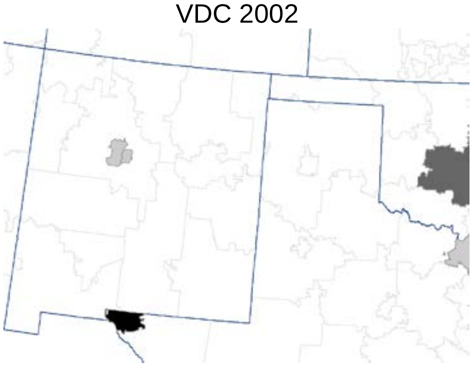


VDC 2000

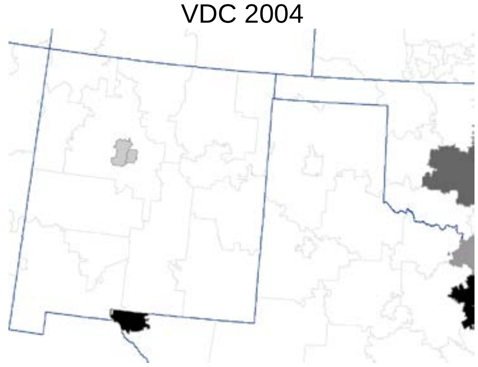
VDC 2002



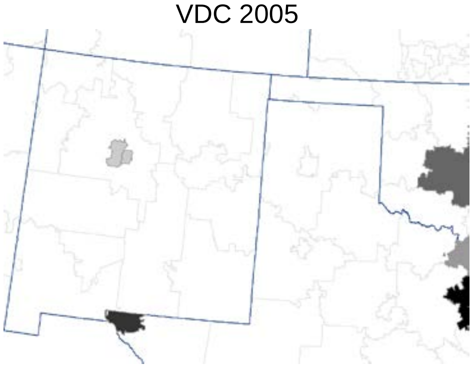
VDC 2004



VDC 2005



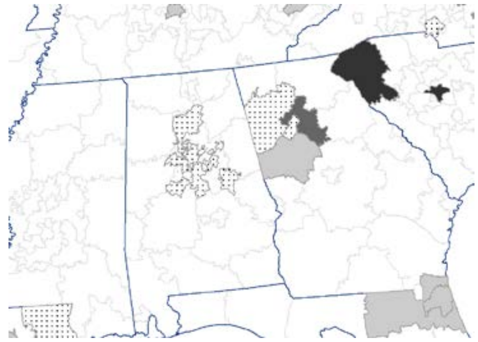
VDC 2006



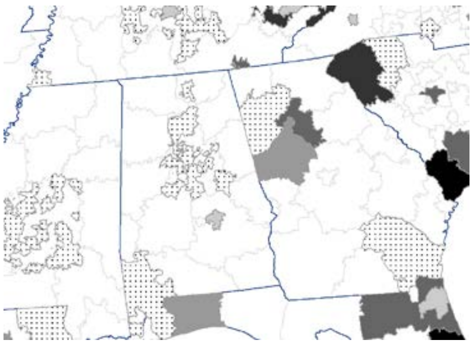
VDC 2007

Atlanta

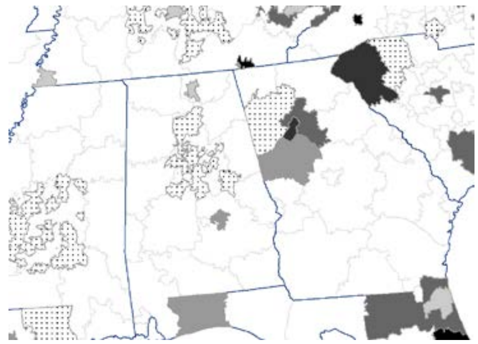
VDC 1999



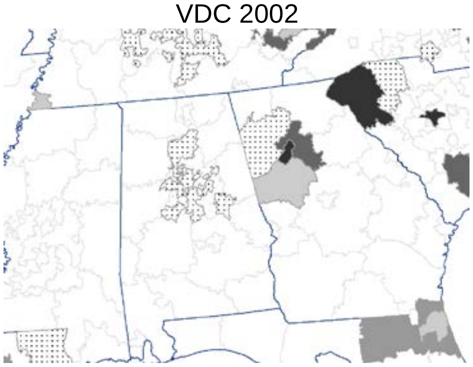
VDC 2000



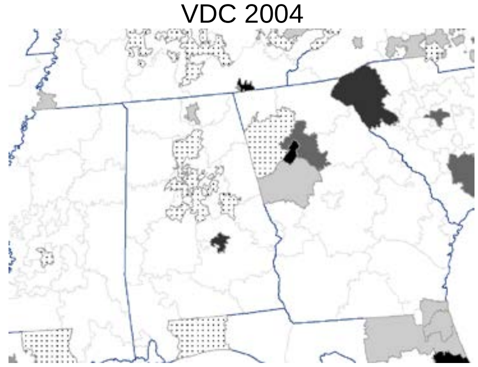
VDC 2002



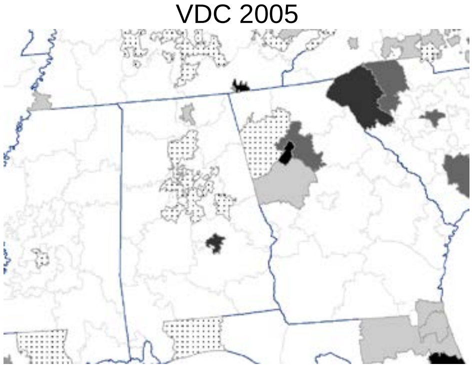
VDC 2004



VDC 2005



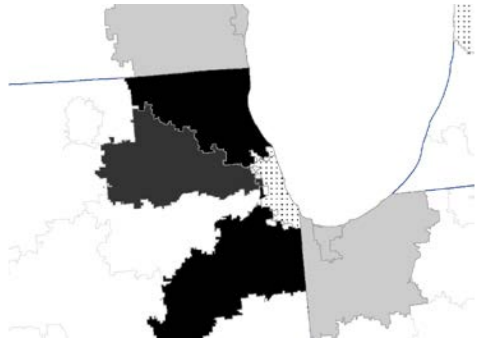
VDC 2006



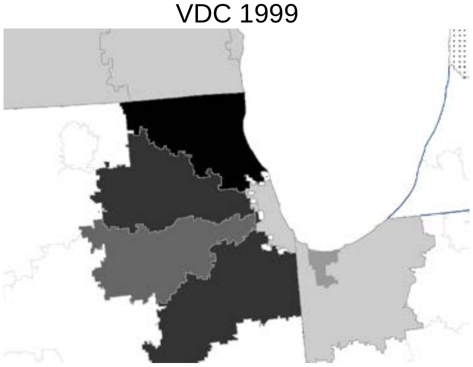
VDC 2007

Chicago

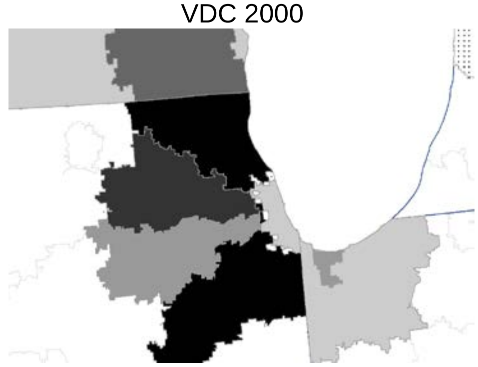
VDC 1999



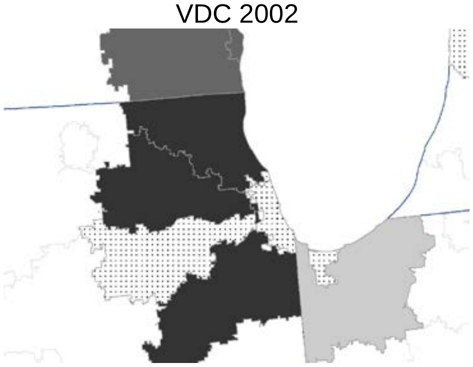
VDC 2000



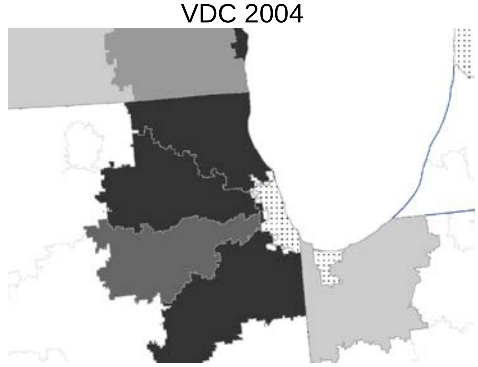
VDC 2002



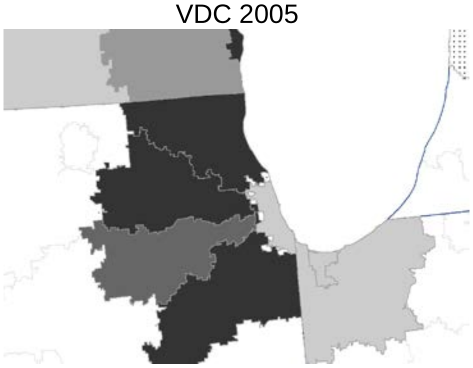
VDC 2004



VDC 2005



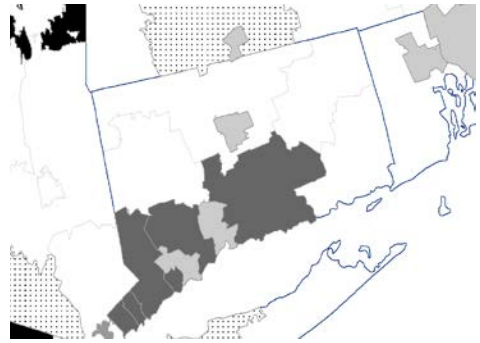
VDC 2006



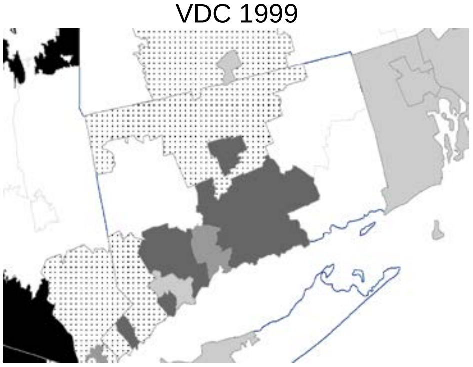
VDC 2007

Hartford

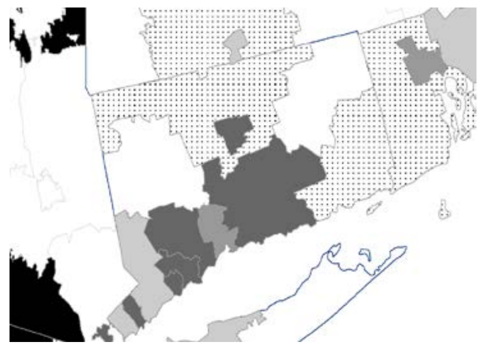
VDC 1999



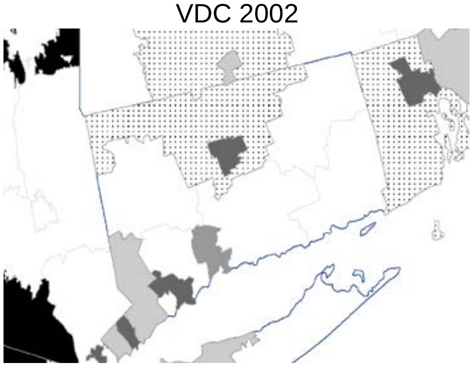
VDC 2000



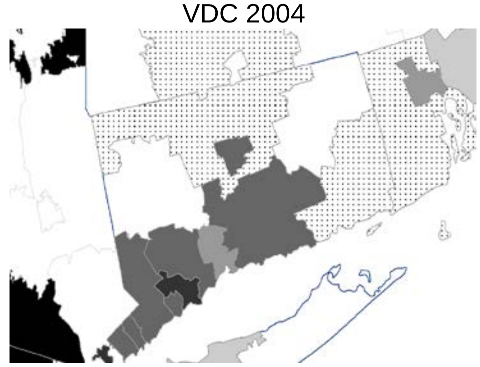
VDC 2002



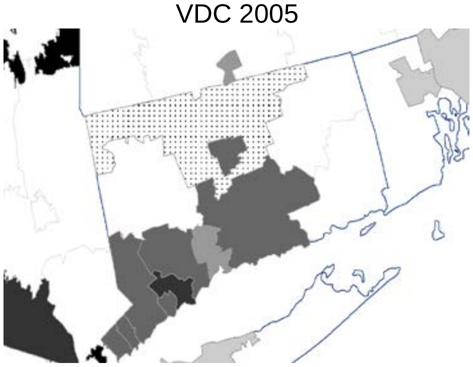
VDC 2004



VDC 2005



VDC 2006

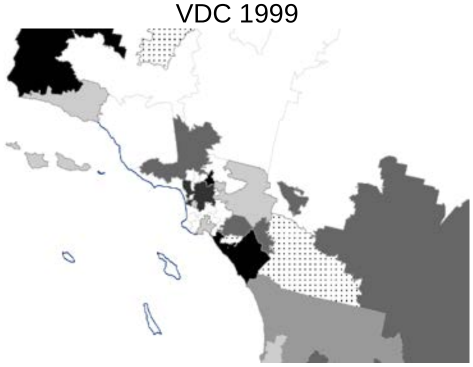


VDC 2007

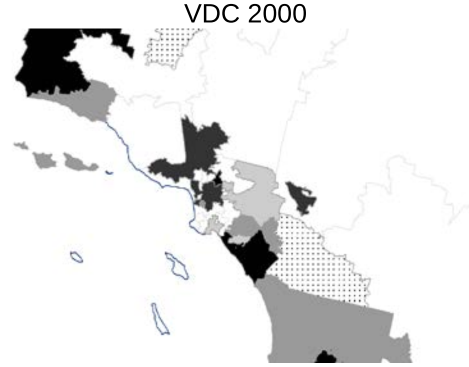
Los Angeles

VDC 1999

VDC 2000



VDC 2002



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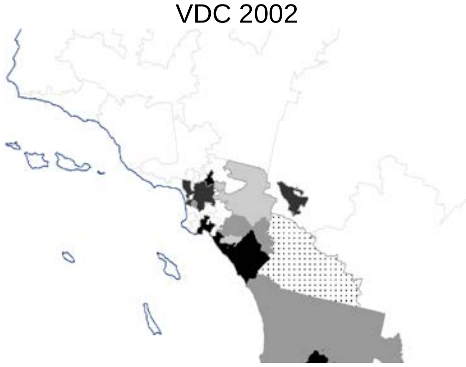
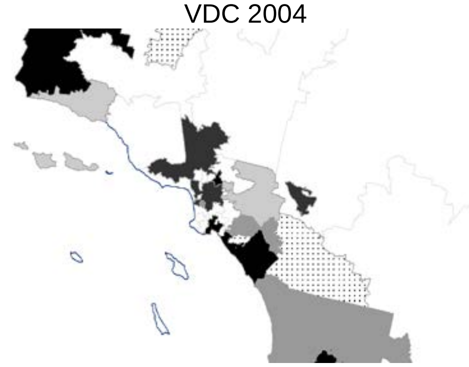


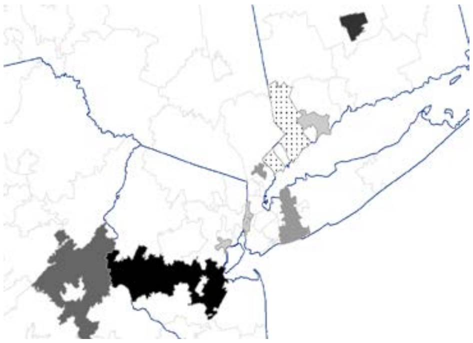
VDC 2005



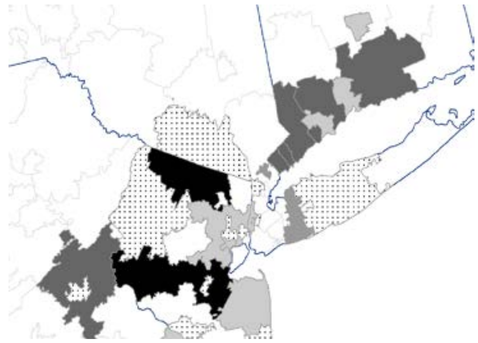
VDC 2006

VDC 2007

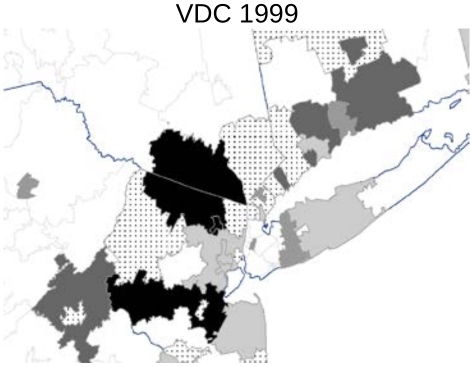
New York



VDC 1999



VDC 2000



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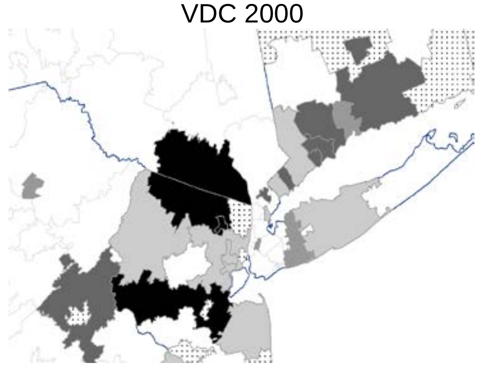

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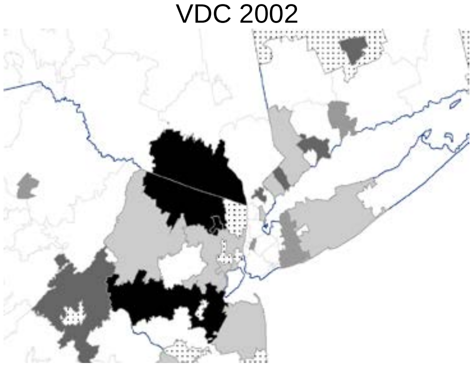

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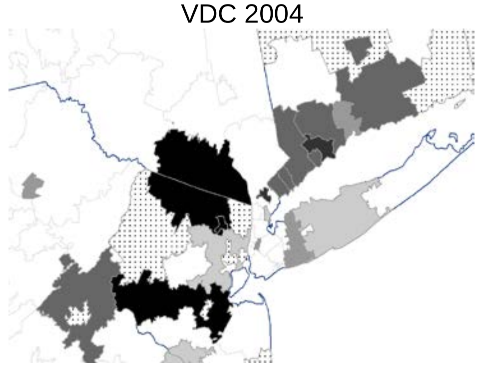

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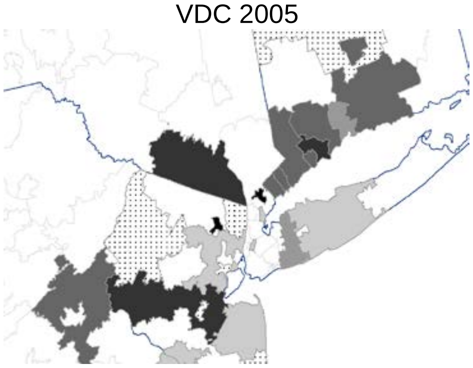
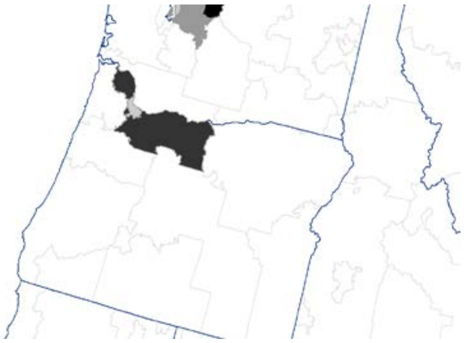


VDC 2007

Portland



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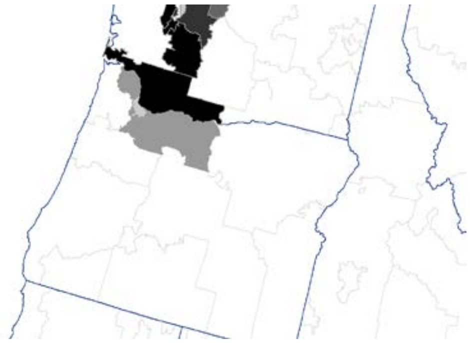

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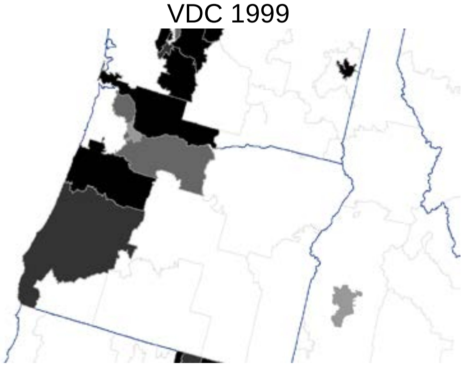

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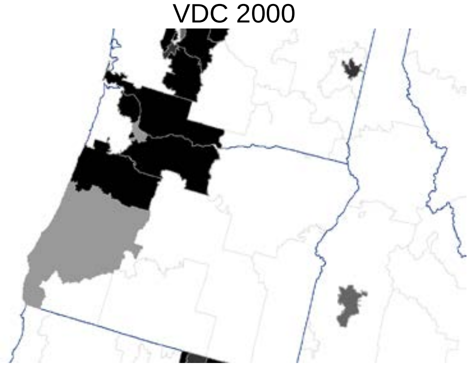

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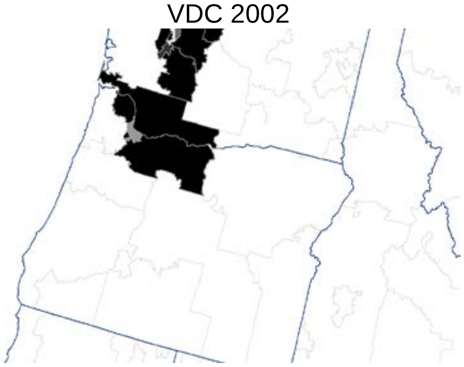

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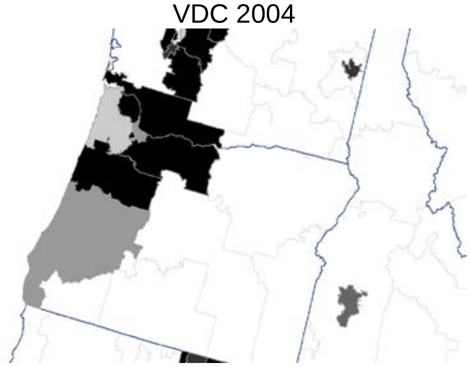

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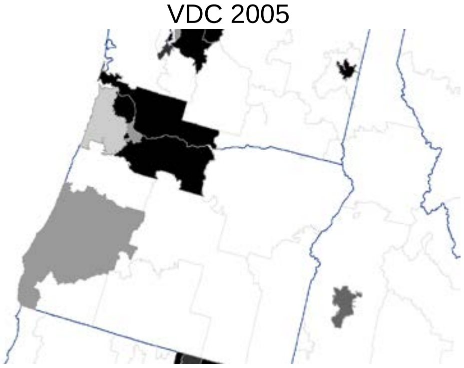
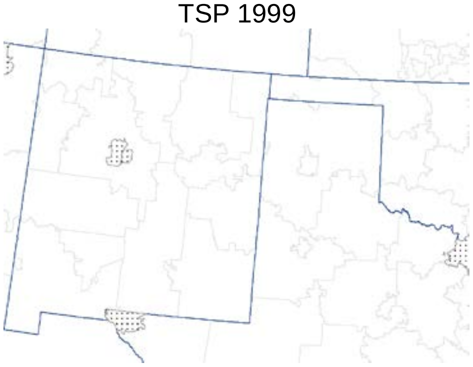


VDC 2007

Albuquerque

TSP 1999

TSP 2000



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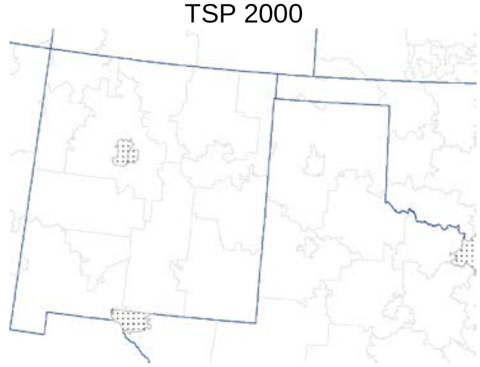

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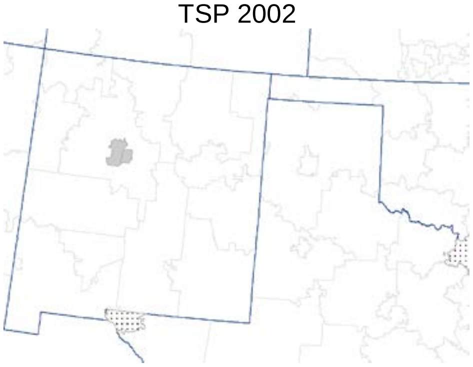

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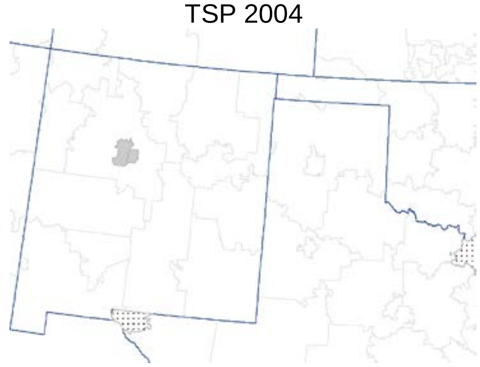

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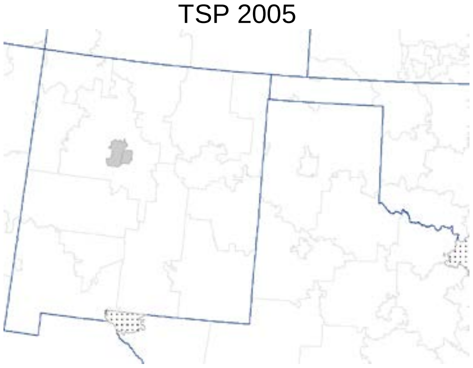
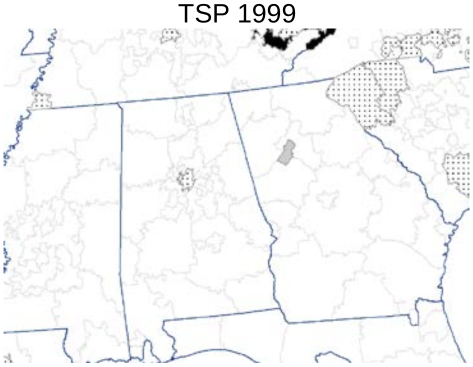


TSP 2007

Atlanta

TSP 1999

TSP 2000



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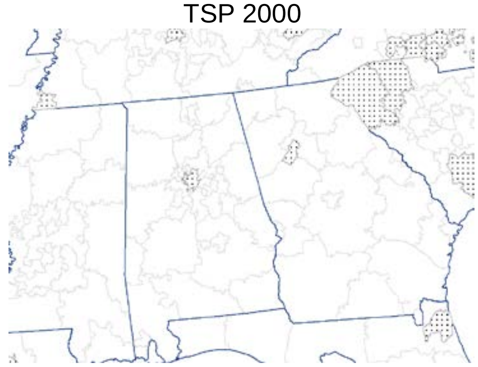

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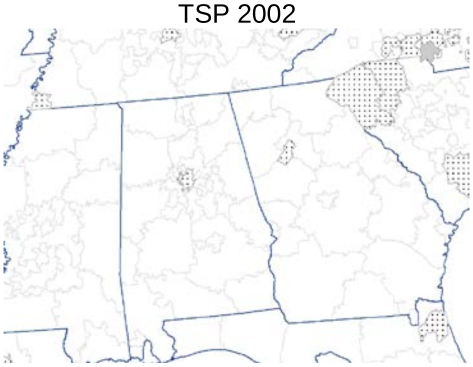

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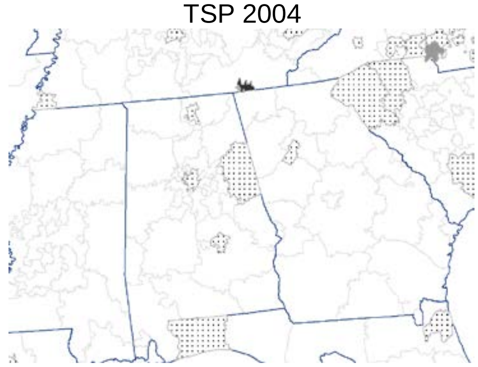

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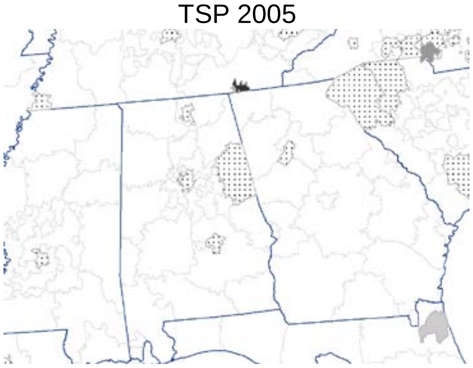
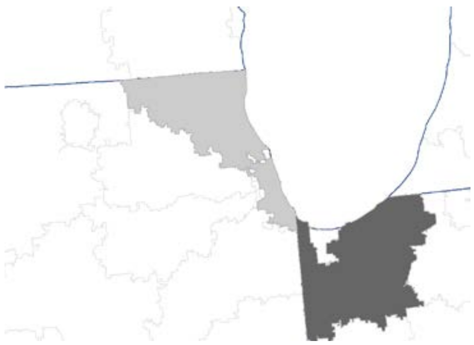


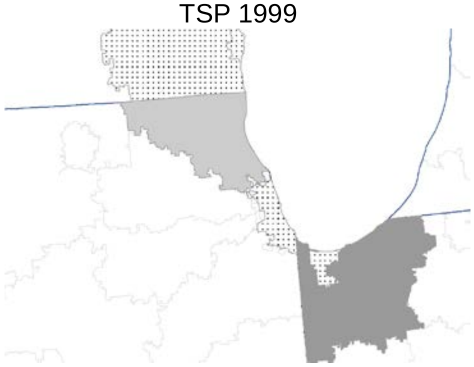
TSP 2007

Chicago



TSP 1999

TSP 2000



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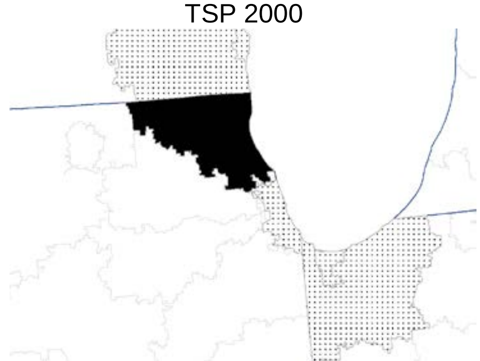

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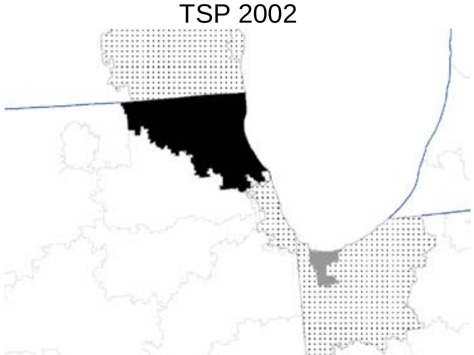

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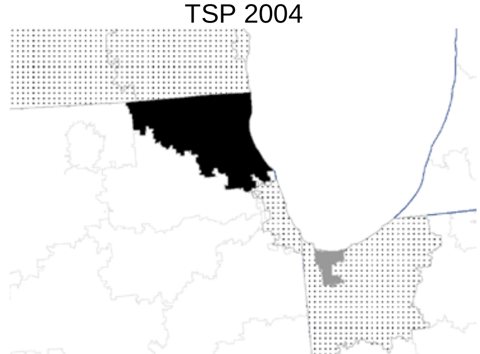

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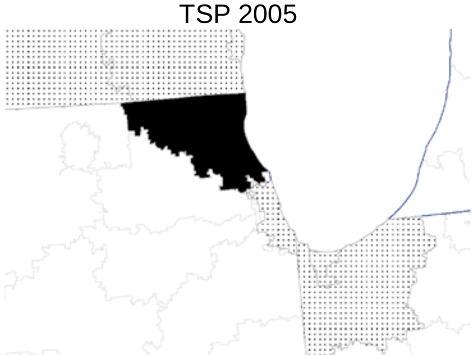
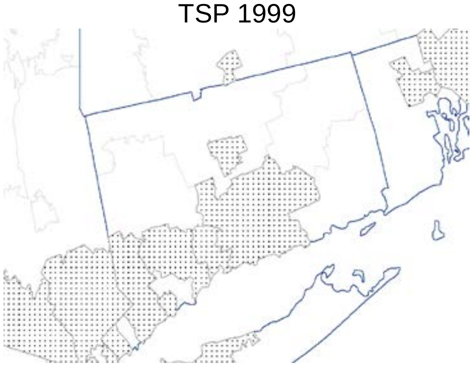


TSP 2007

Hartford

TSP 1999

TSP 2000



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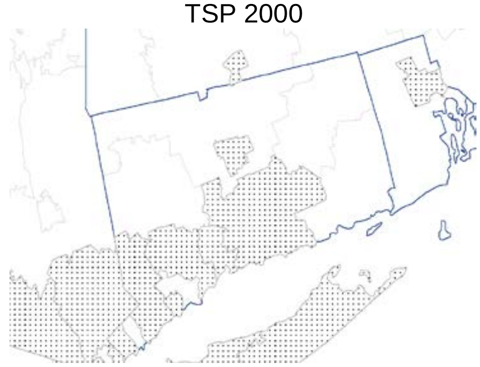

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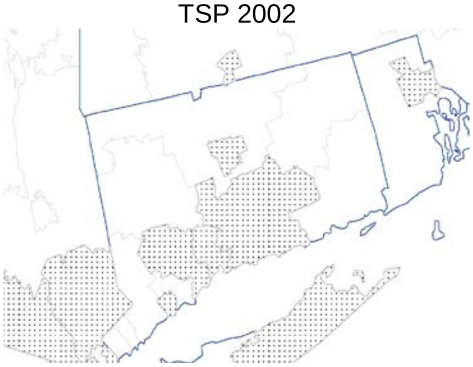

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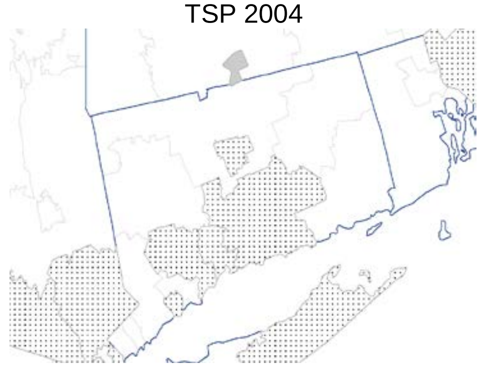

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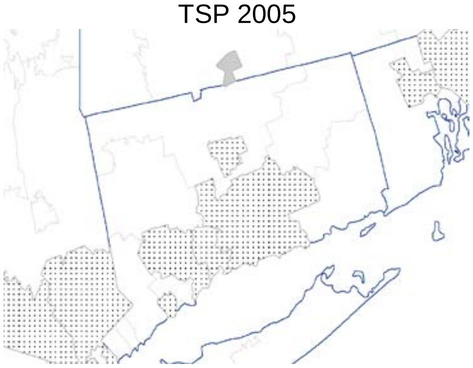


TSP 2007

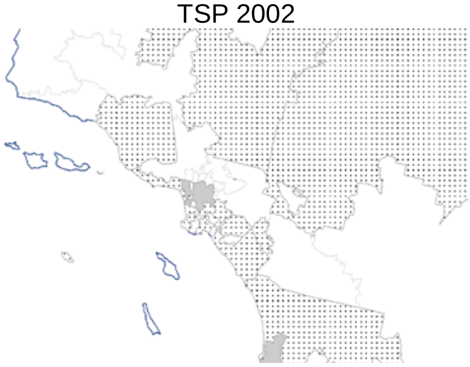
Los Angeles

TSP 1999

TSP 2000

TSP 2002

TSP 2004



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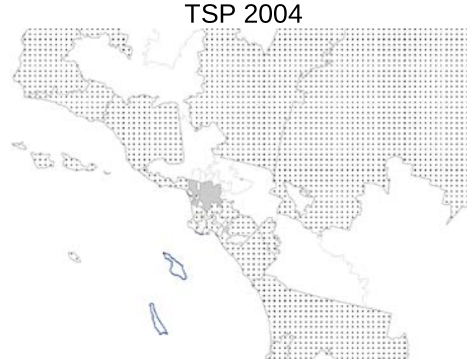

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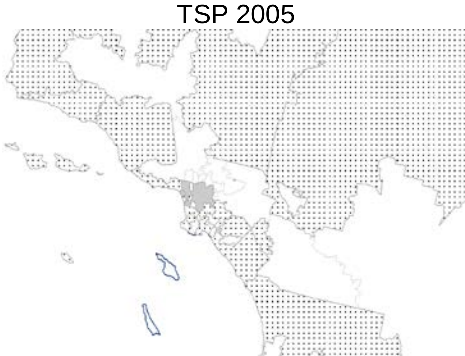
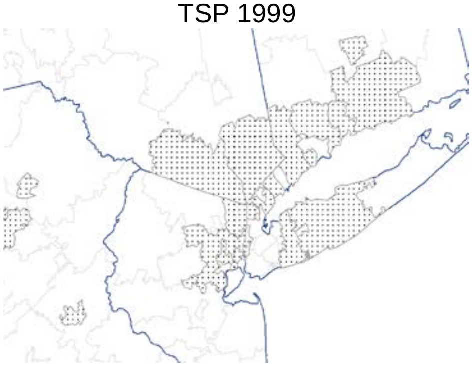


TSP 2007

New York

TSP 1999

TSP 2000



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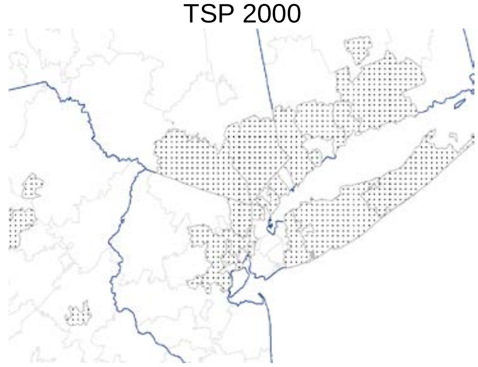

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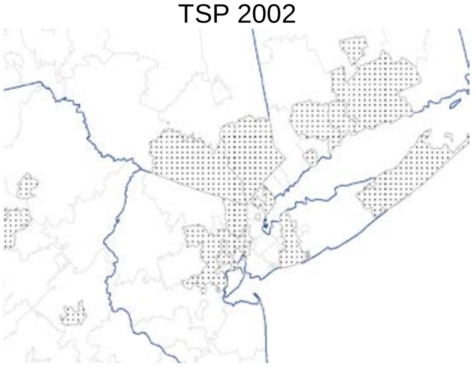

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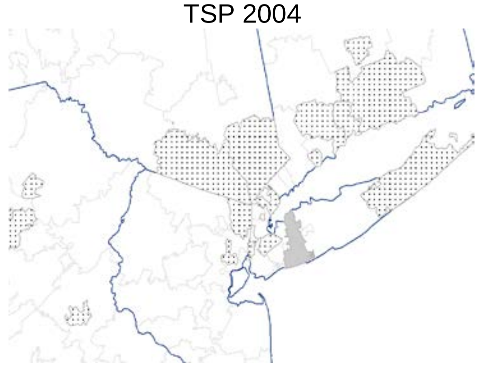
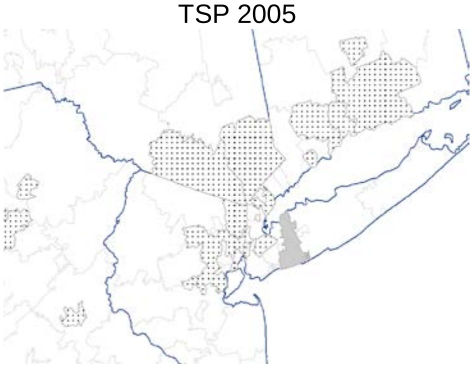


TSP 2006

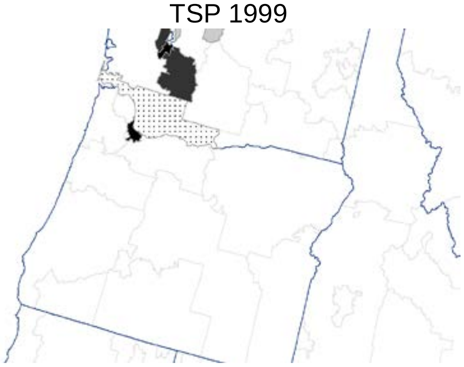


TSP 2007

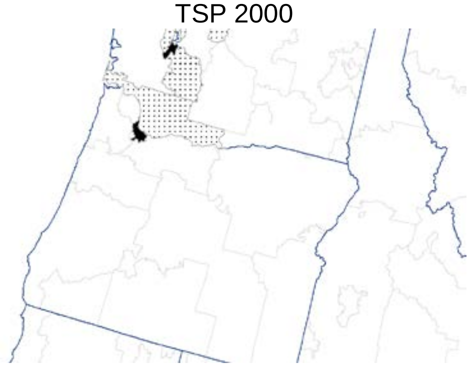
Portland

TSP 1999

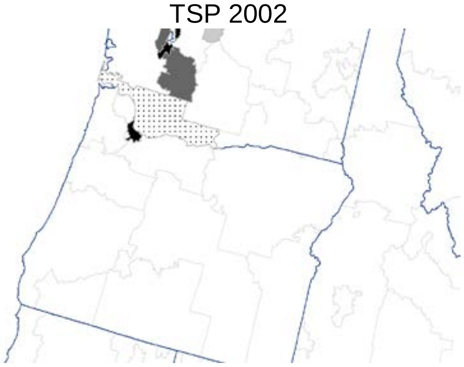
TSP 2000



TSP 2002



TSP 2004



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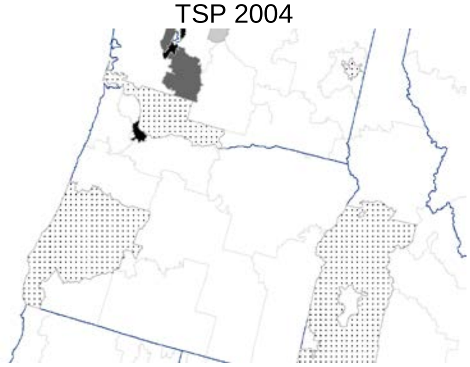

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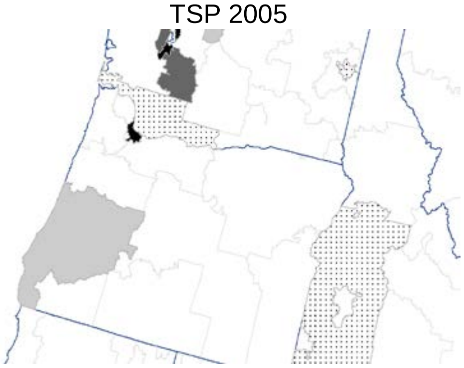
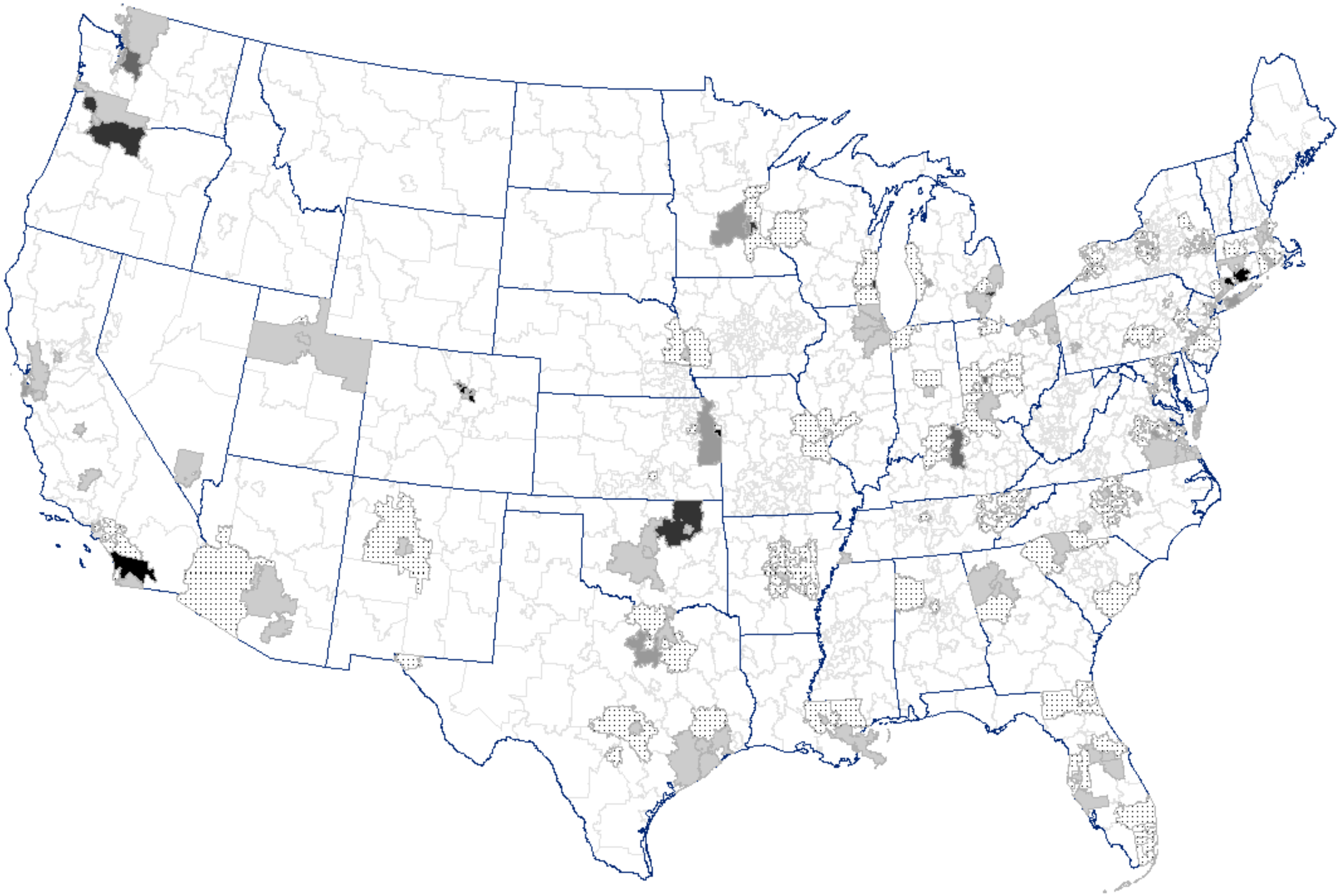
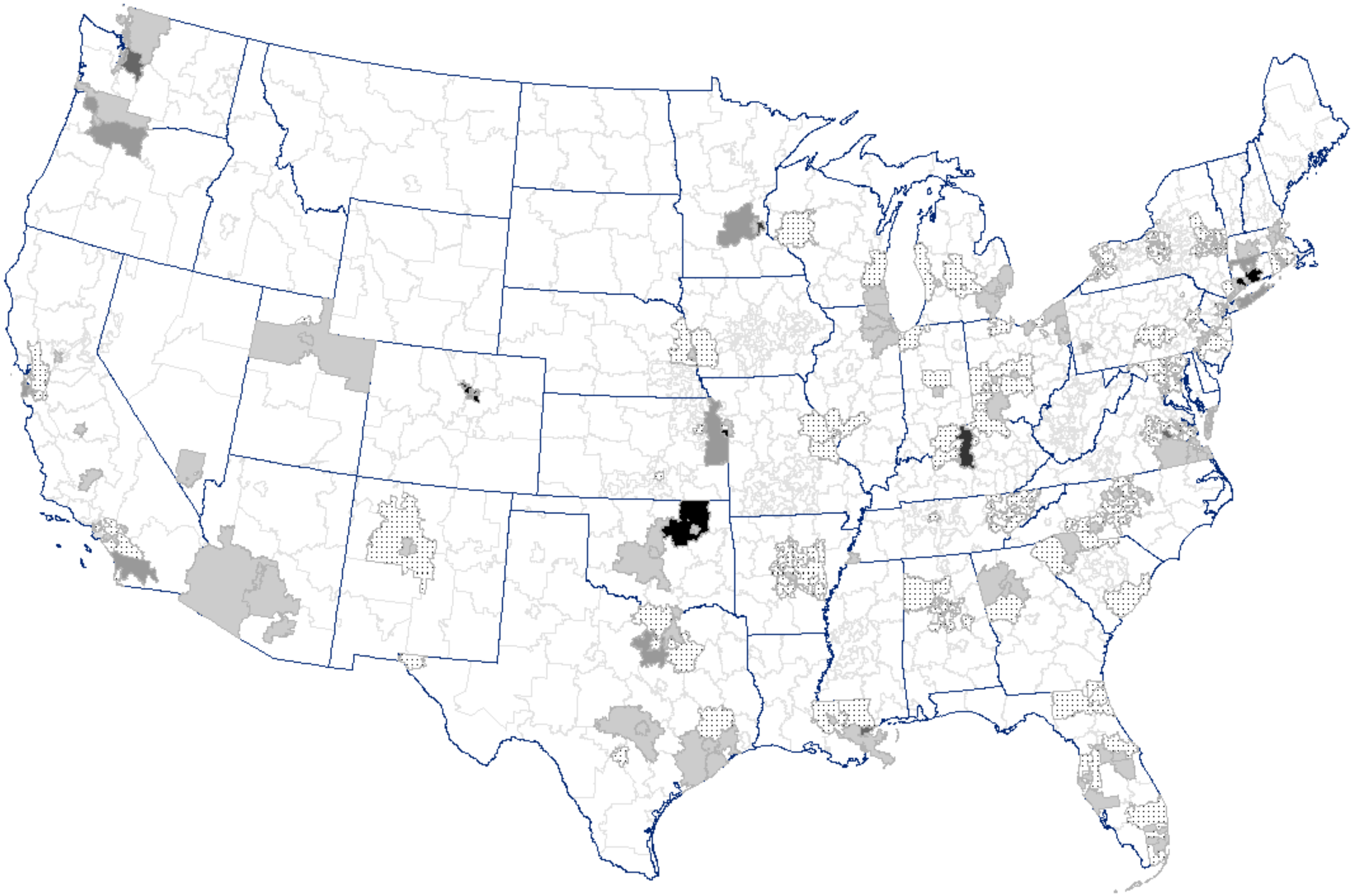


TSP 2007

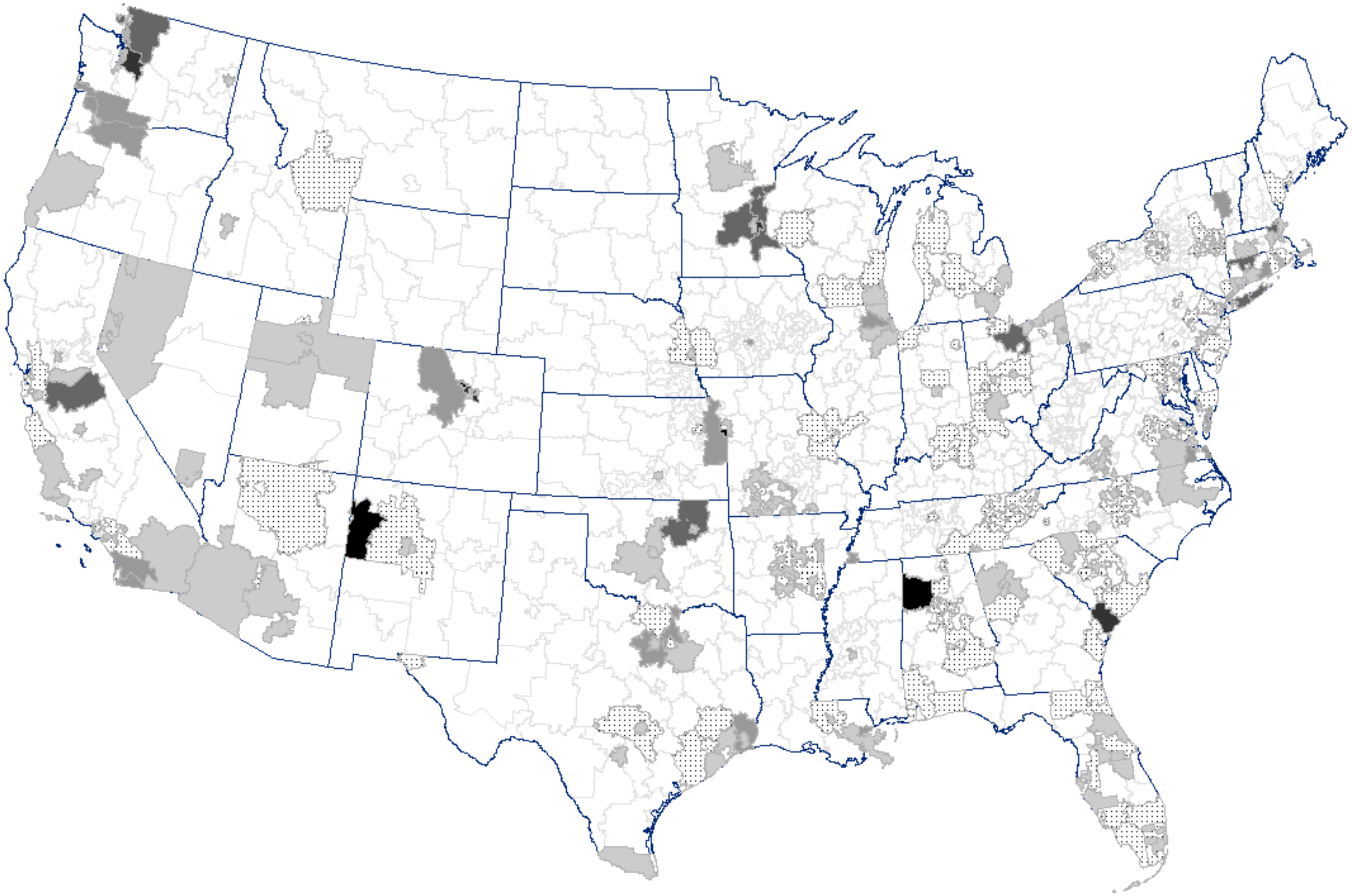
National Map – EVP 1999



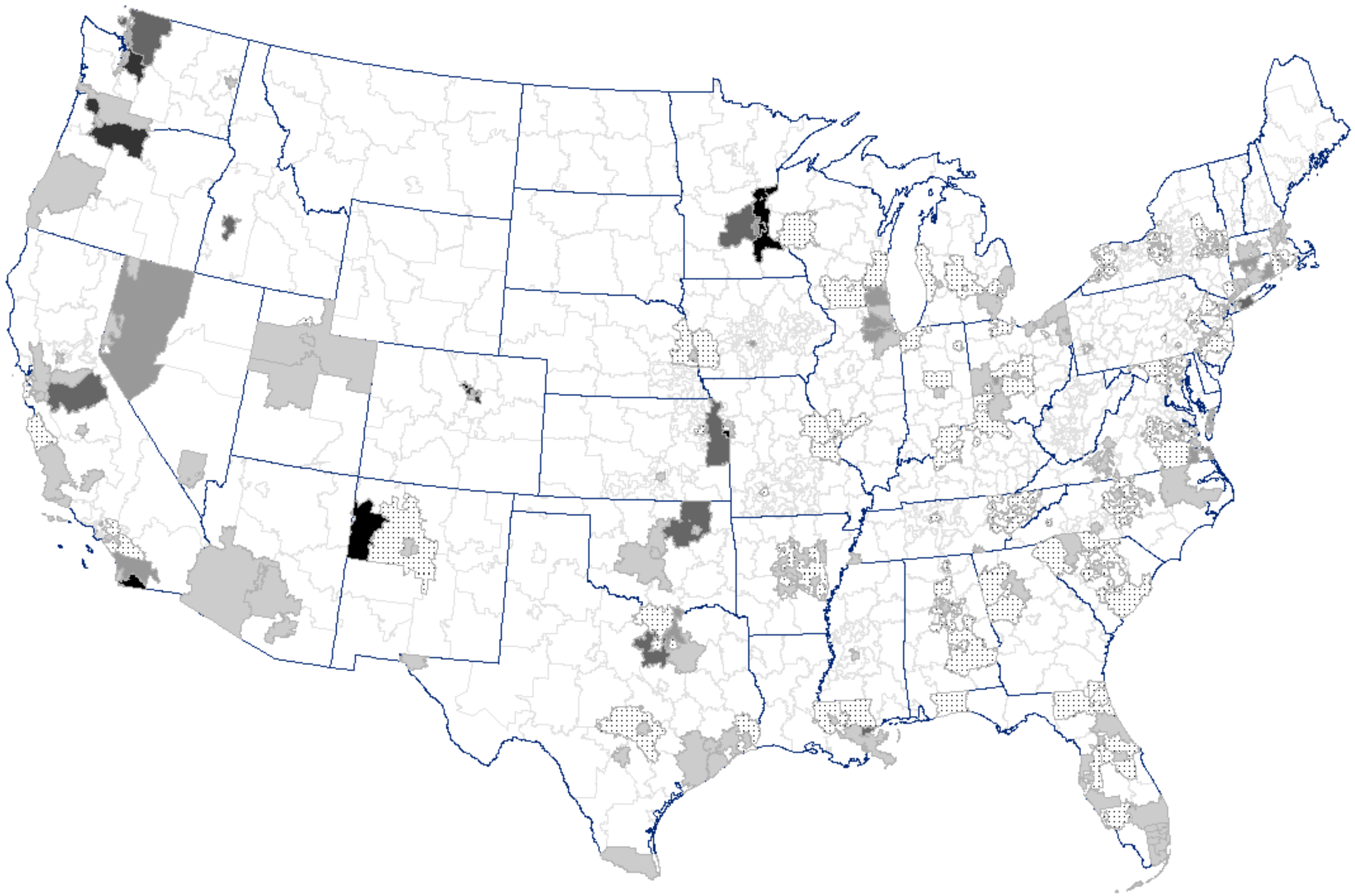
National Map – EVP 2000



National Map – EVP 2002



National Map – EVP 2004



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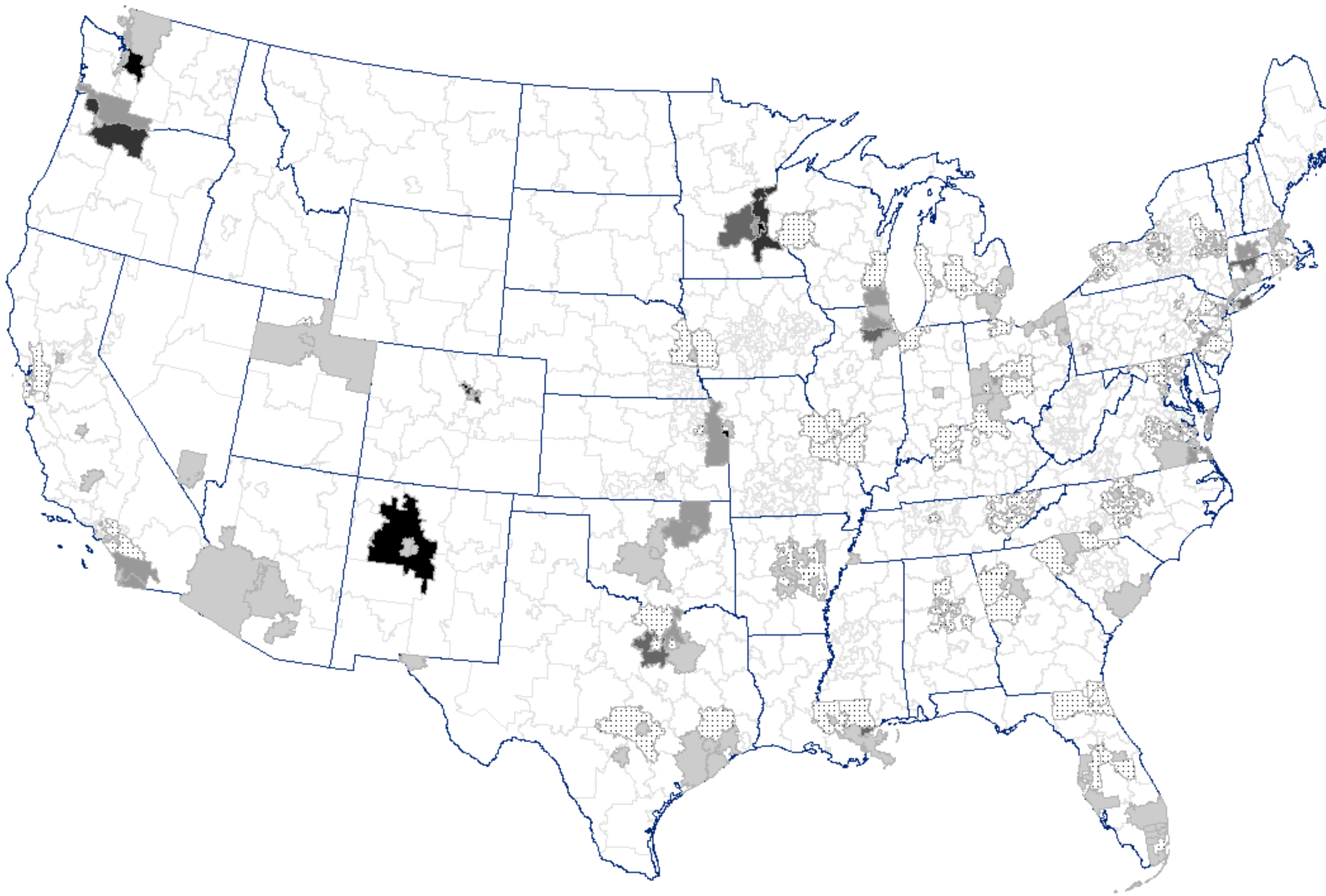
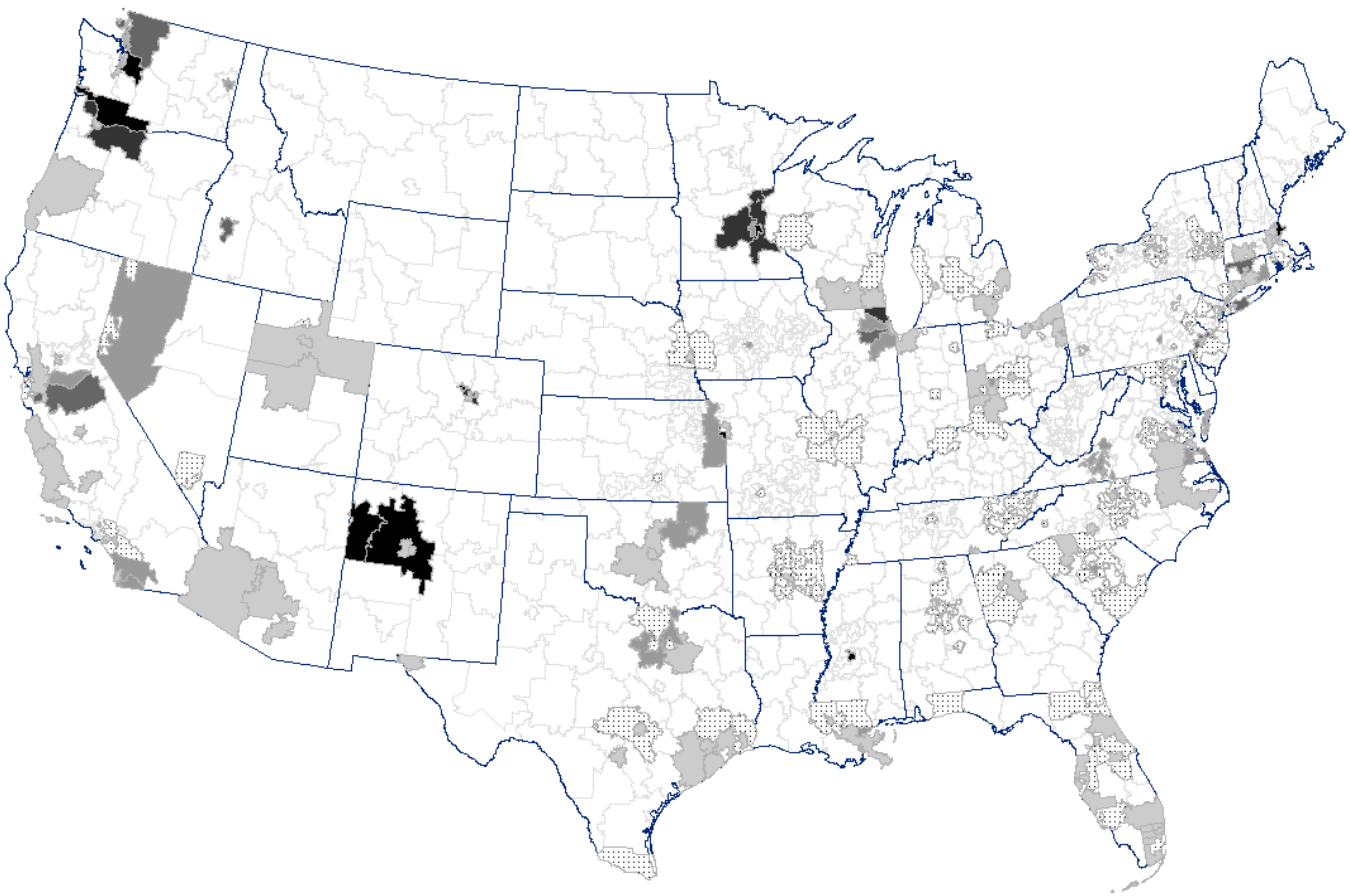
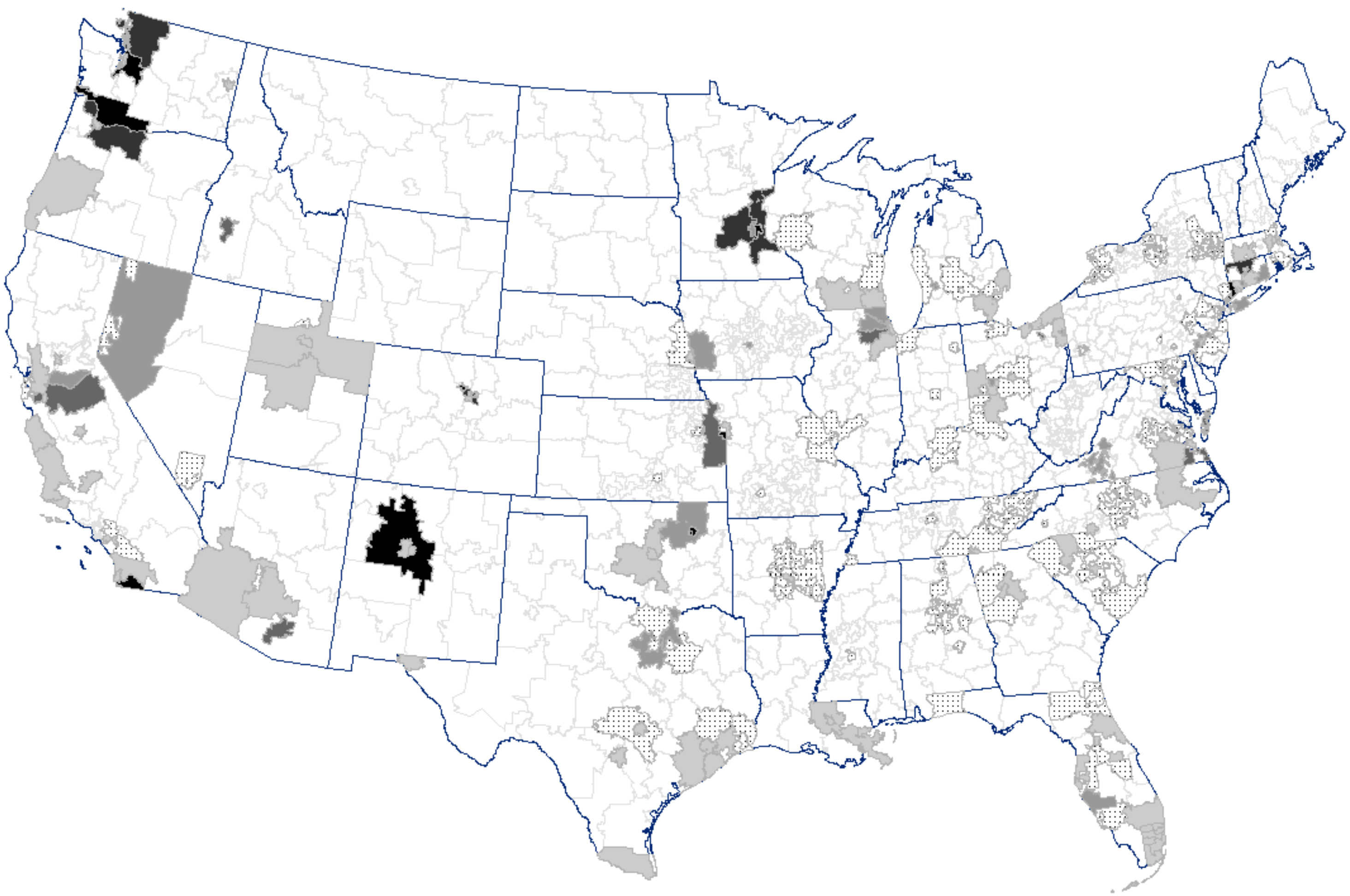


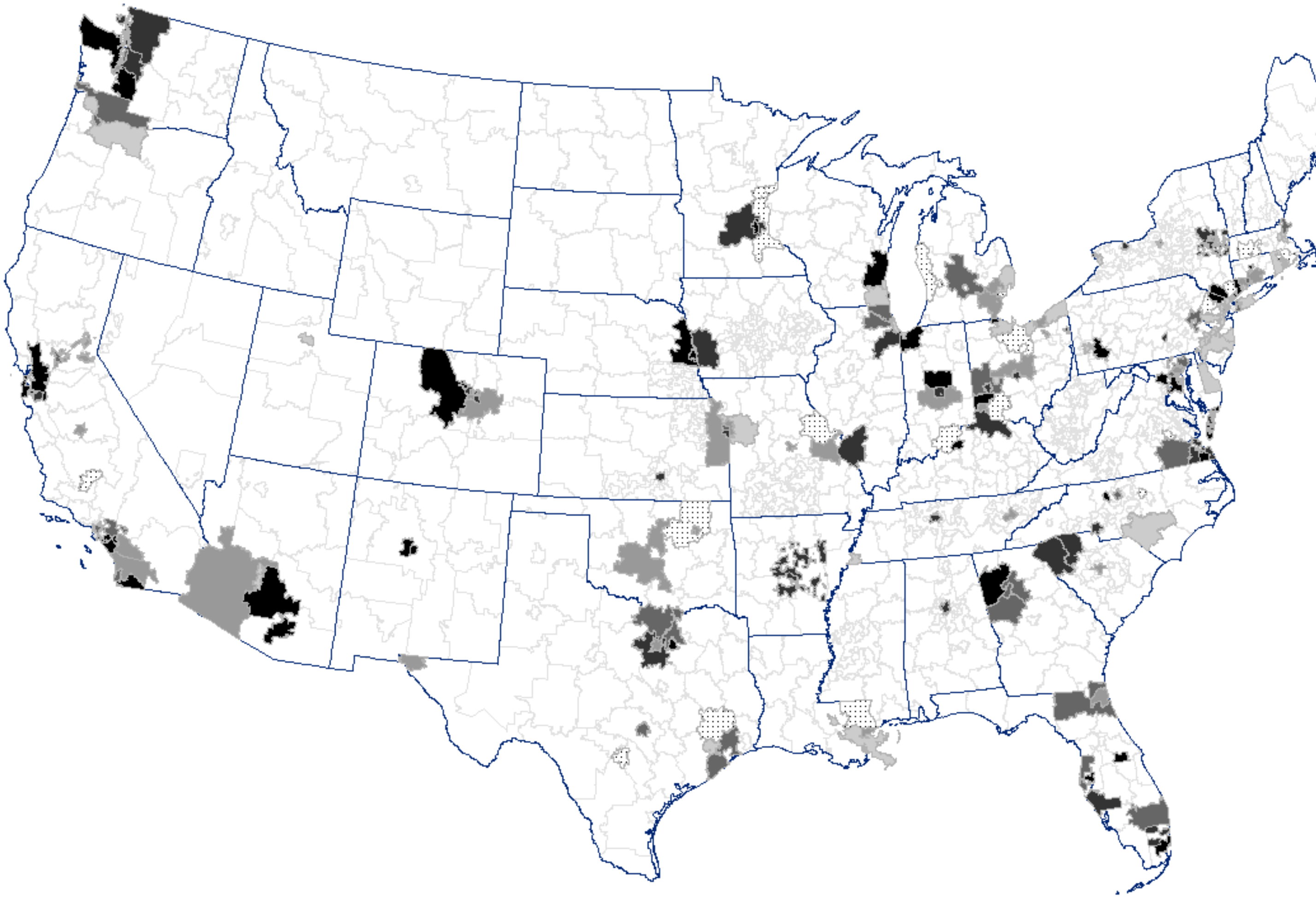
National Map – EVP 2006



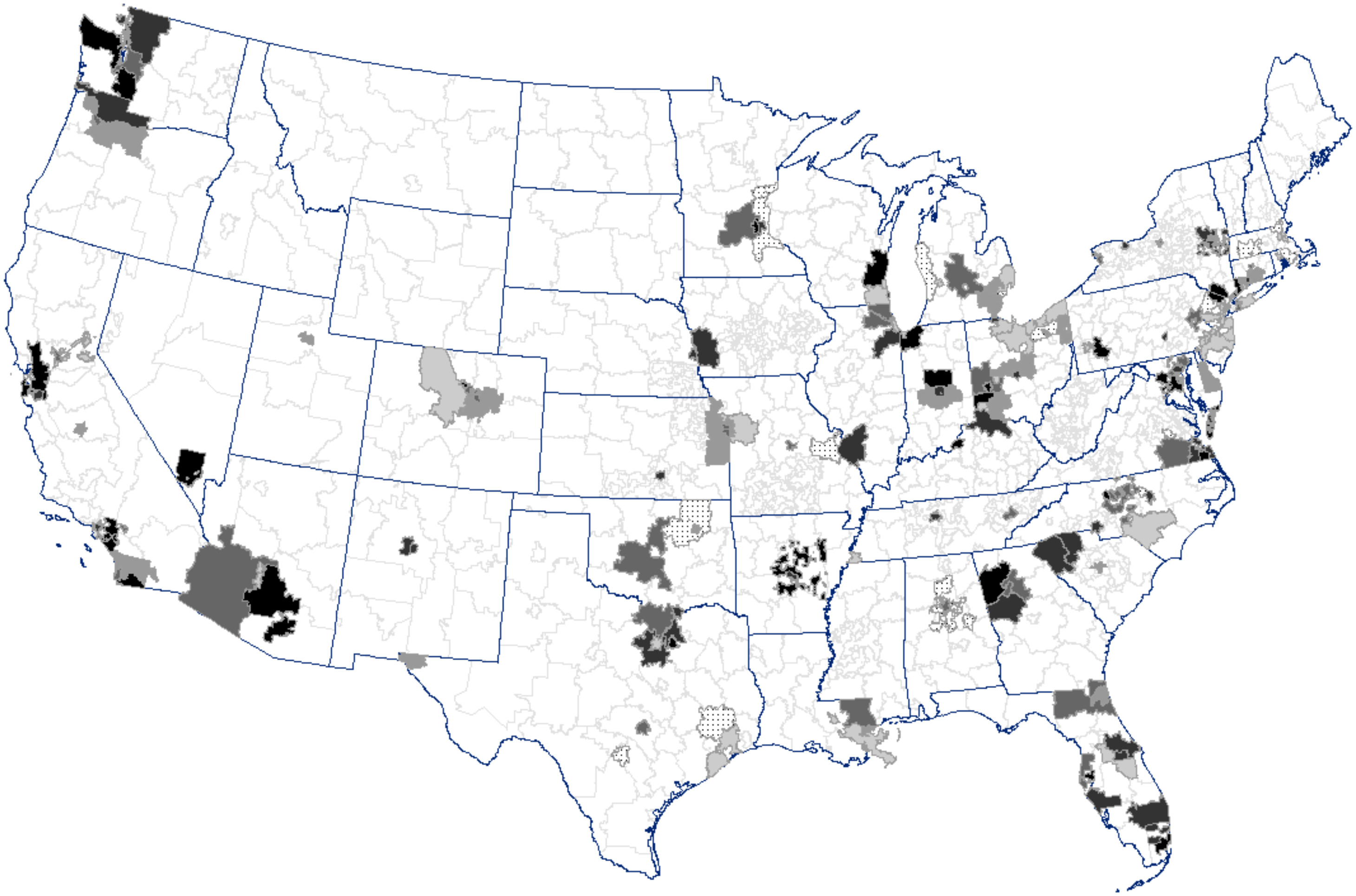
National Map – EVP 2007



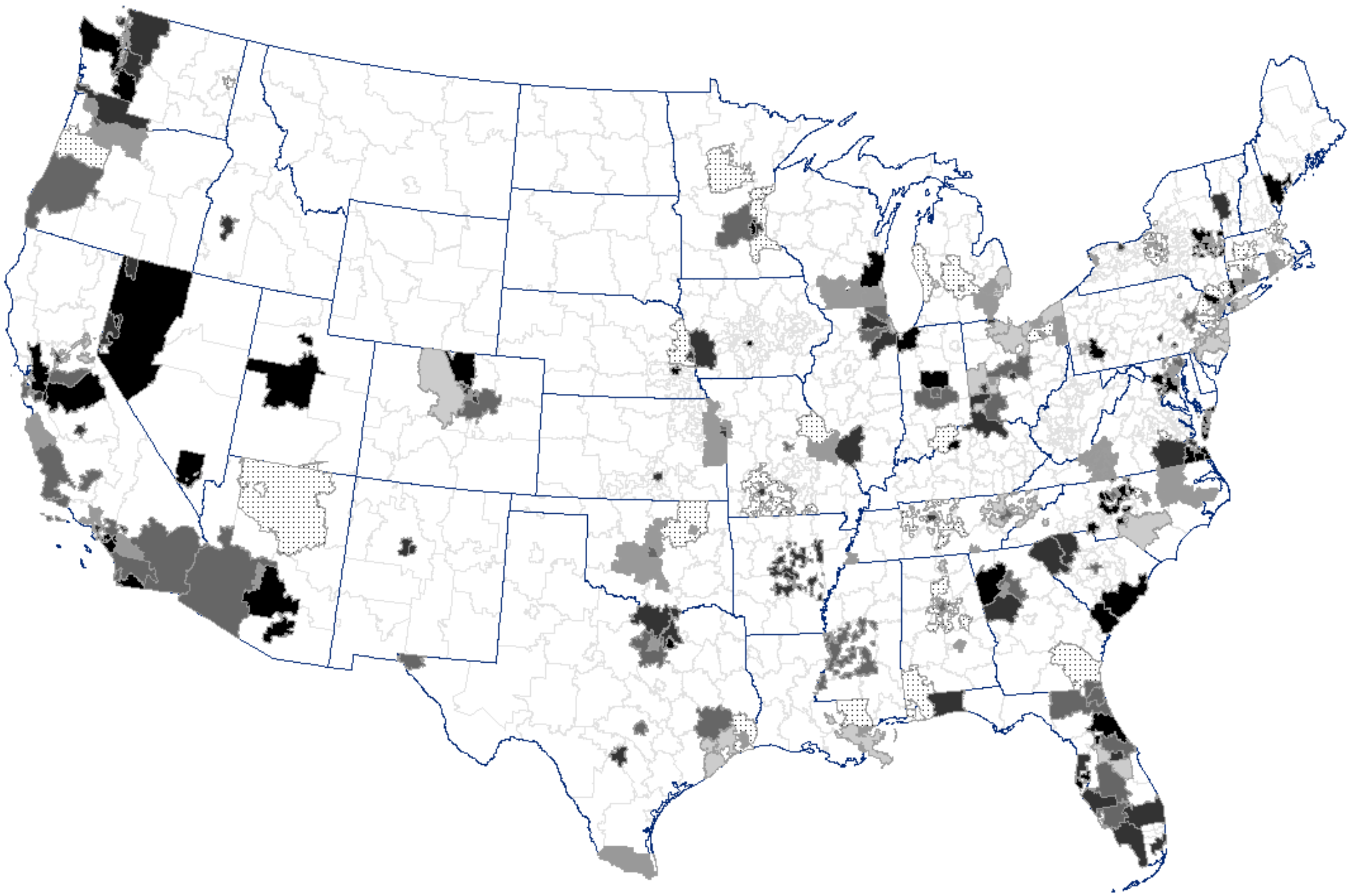
National Map – TMS 1999



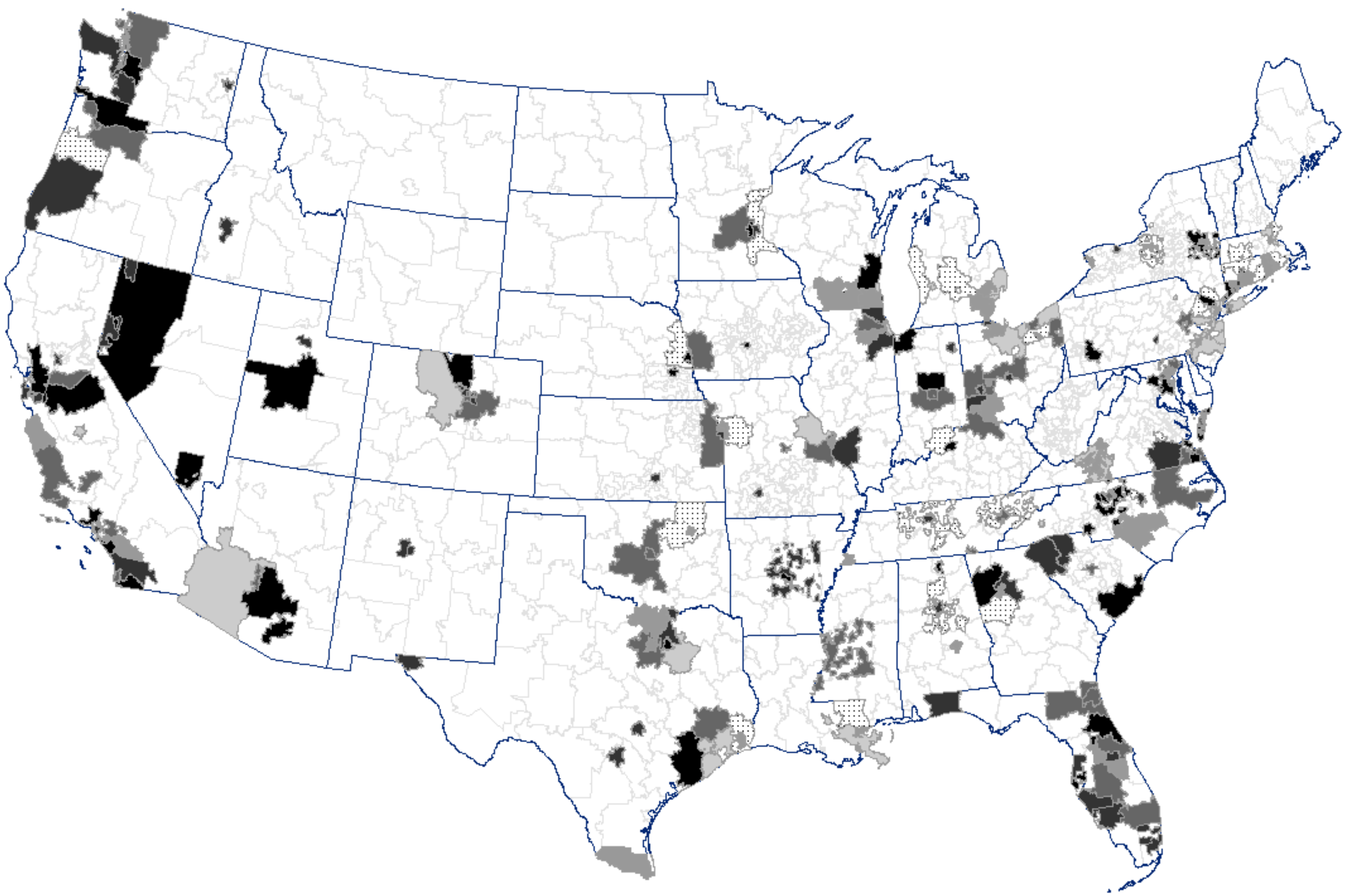
National Map – TMS 2000



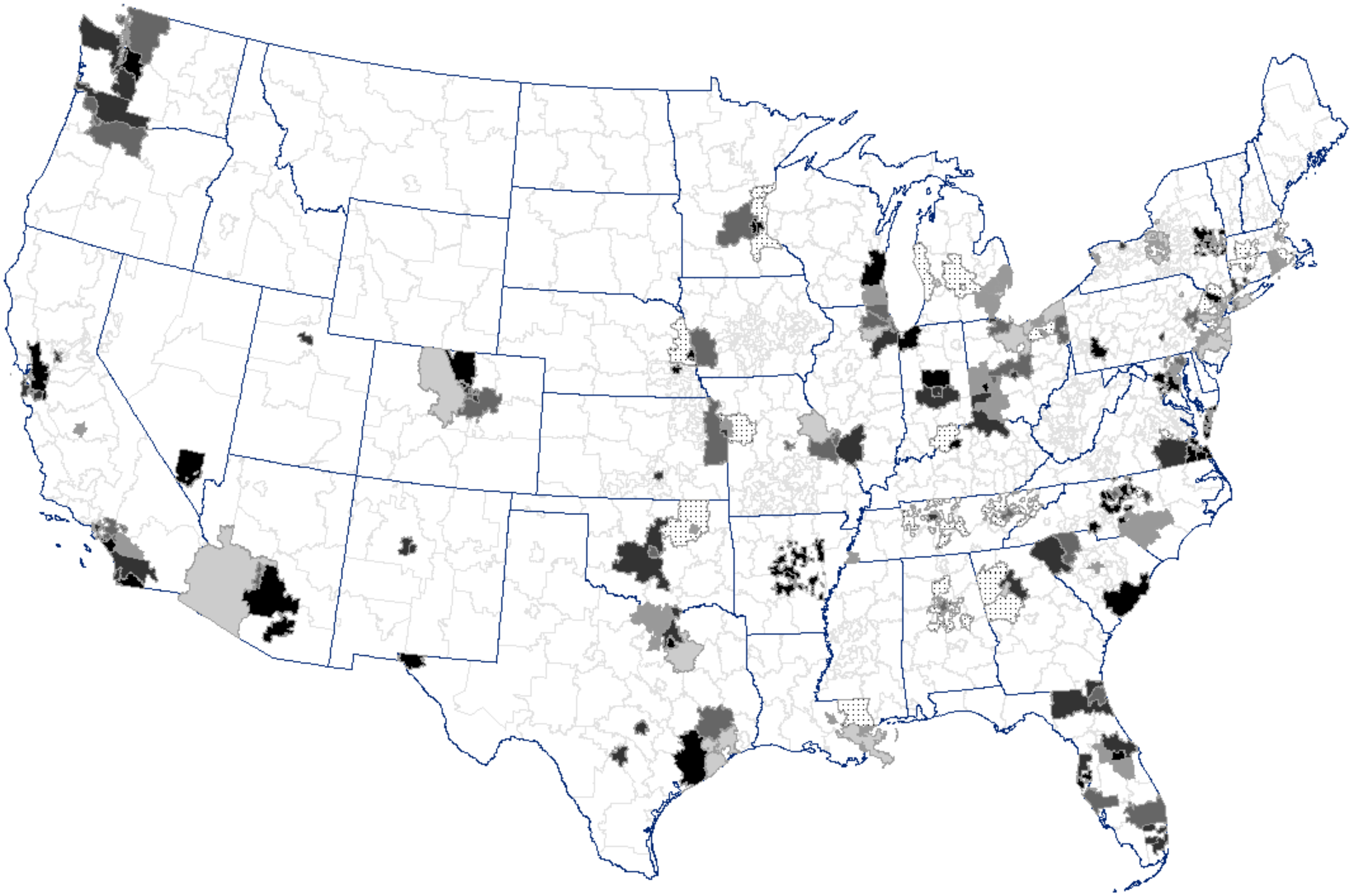
National Map – TMS 2002



National Map – TMS 2004



National Map – TMS 2005



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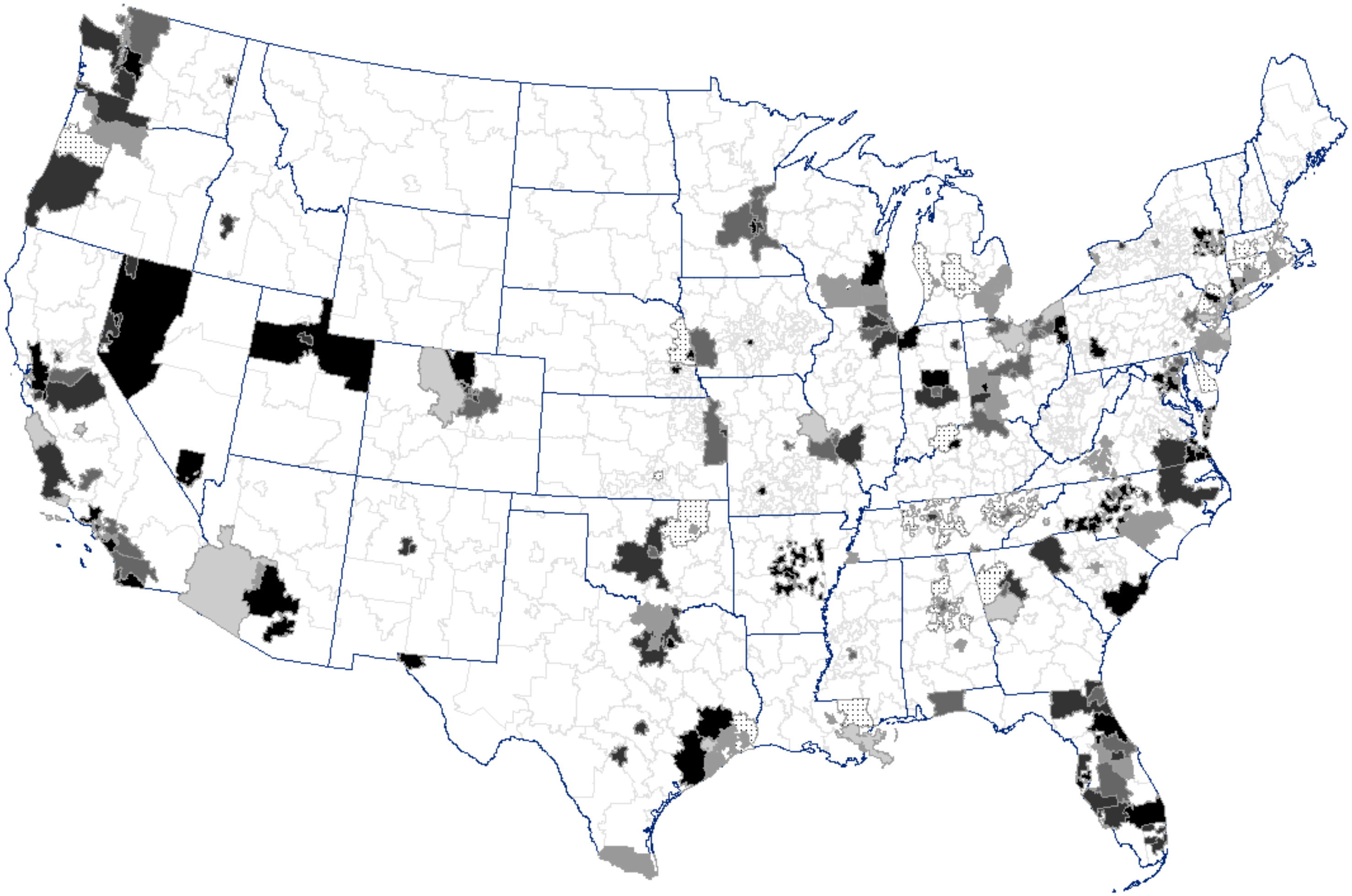
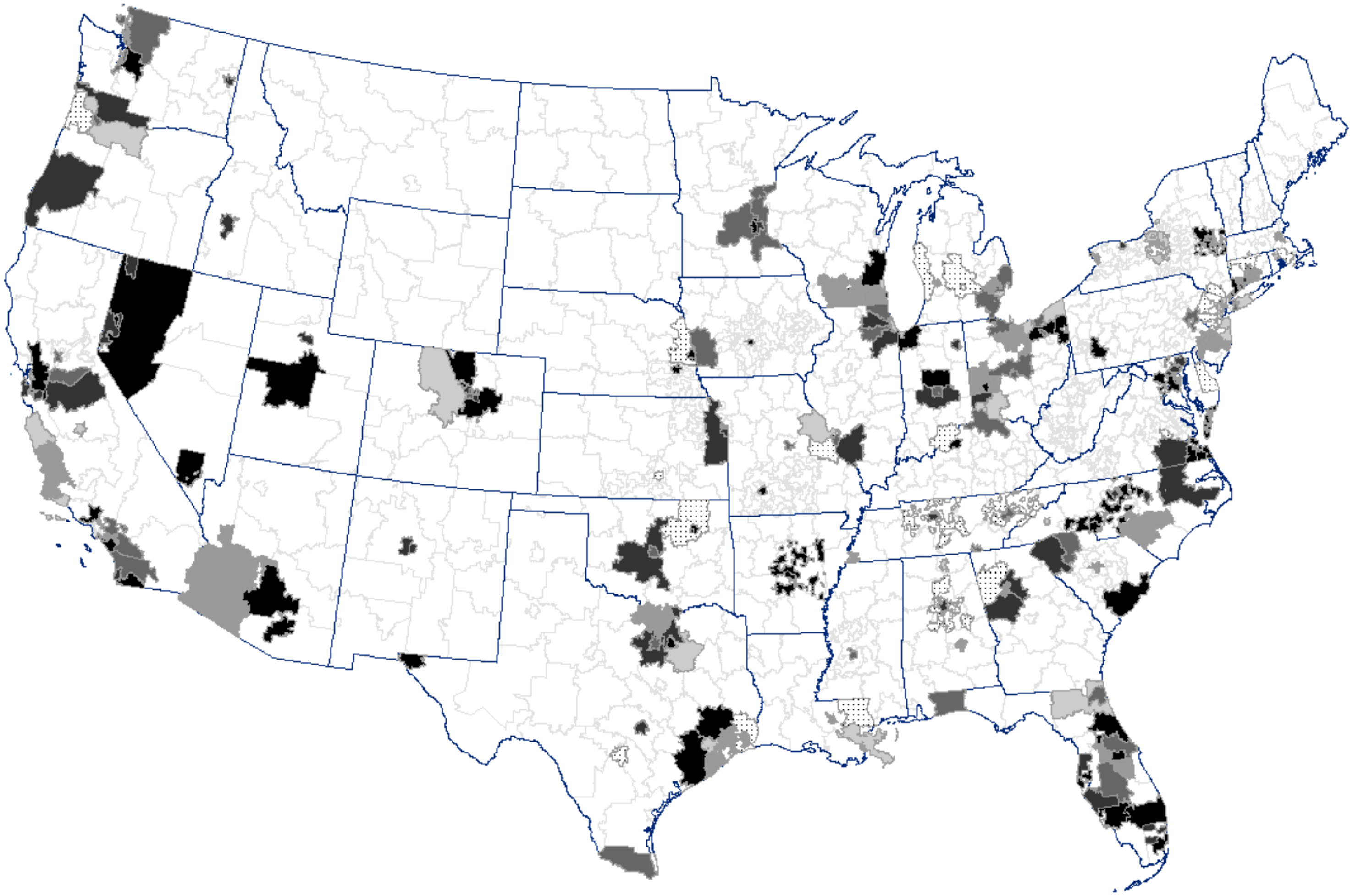
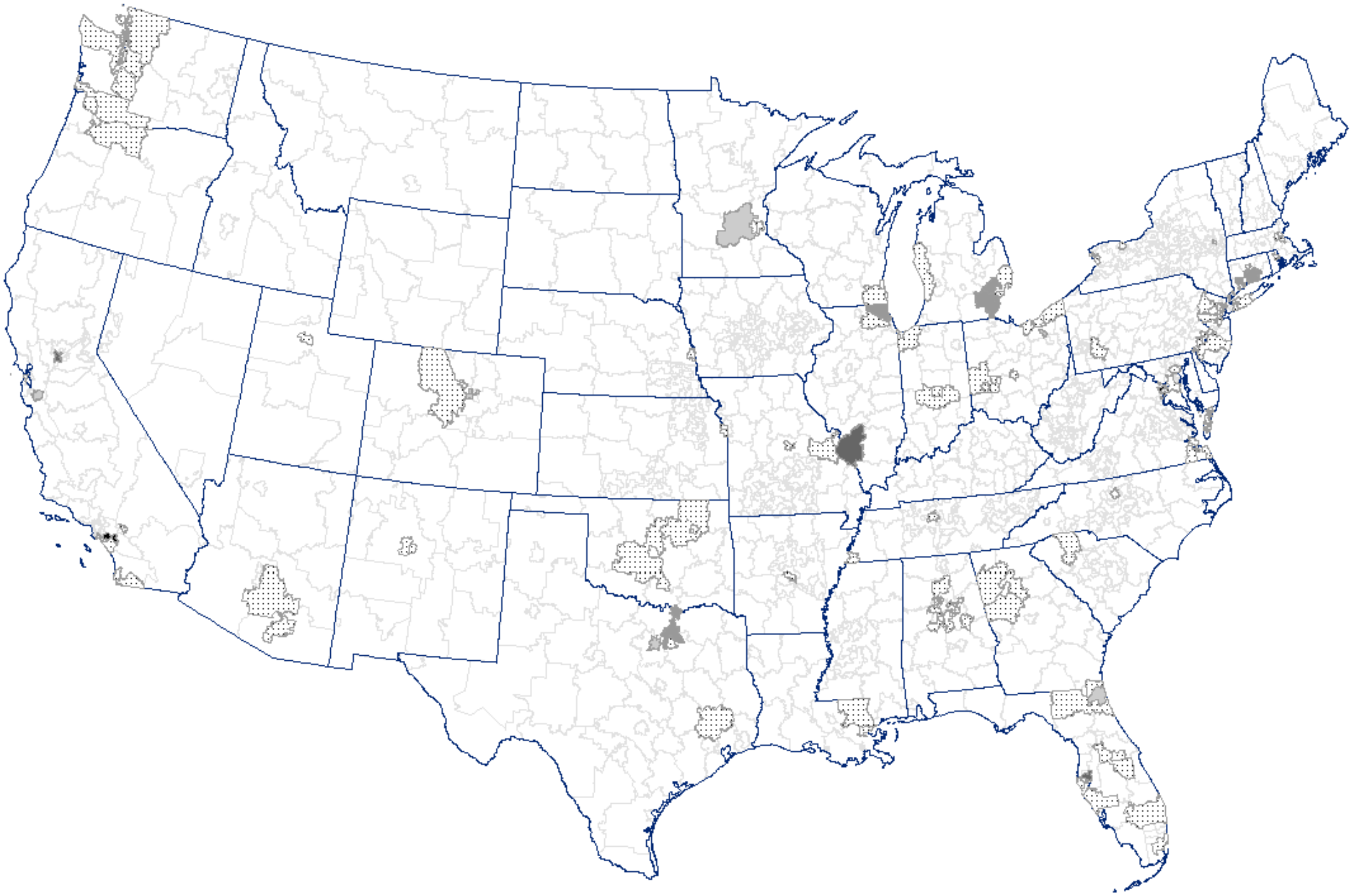


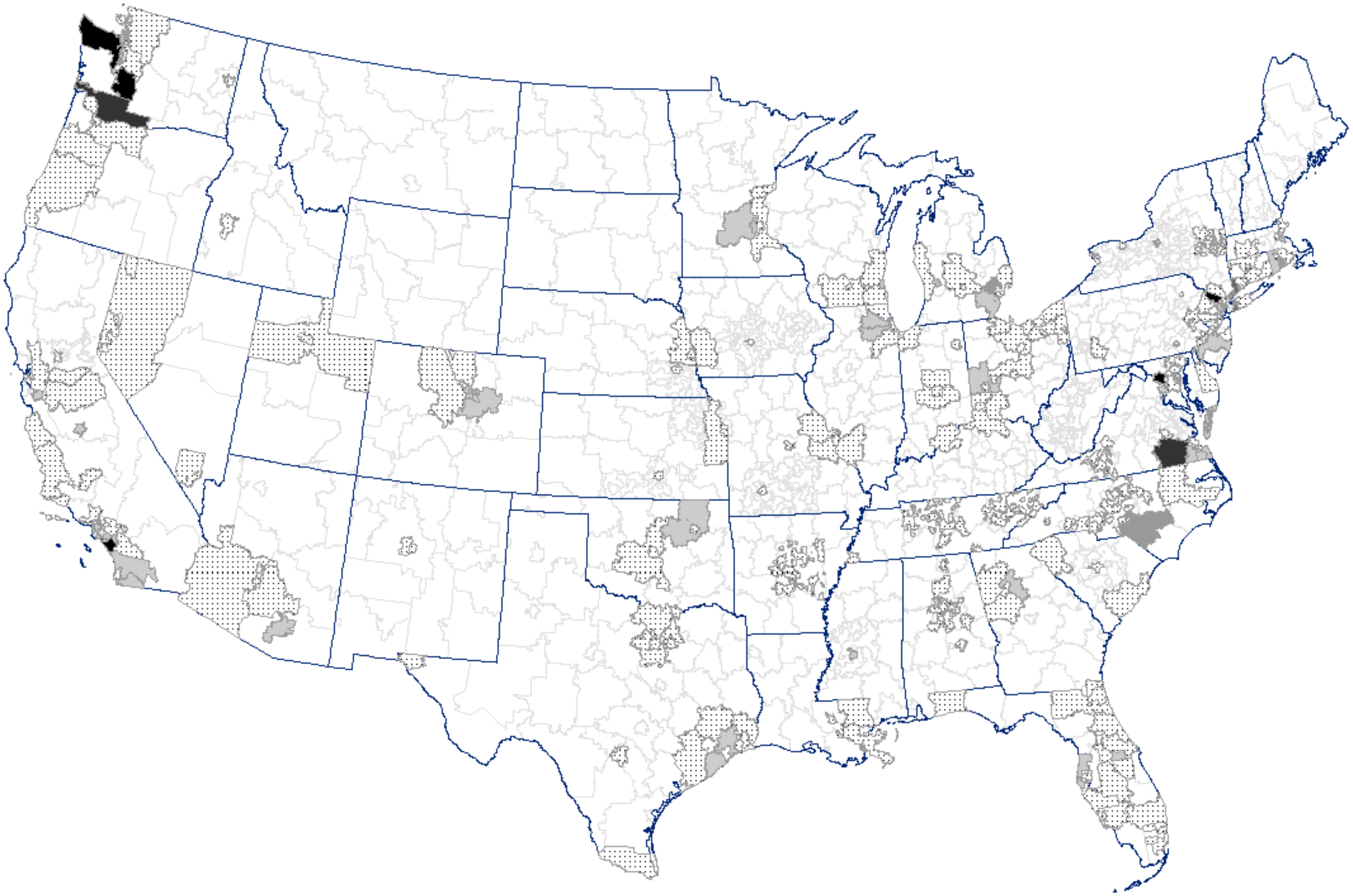
National Map – TMS 2007



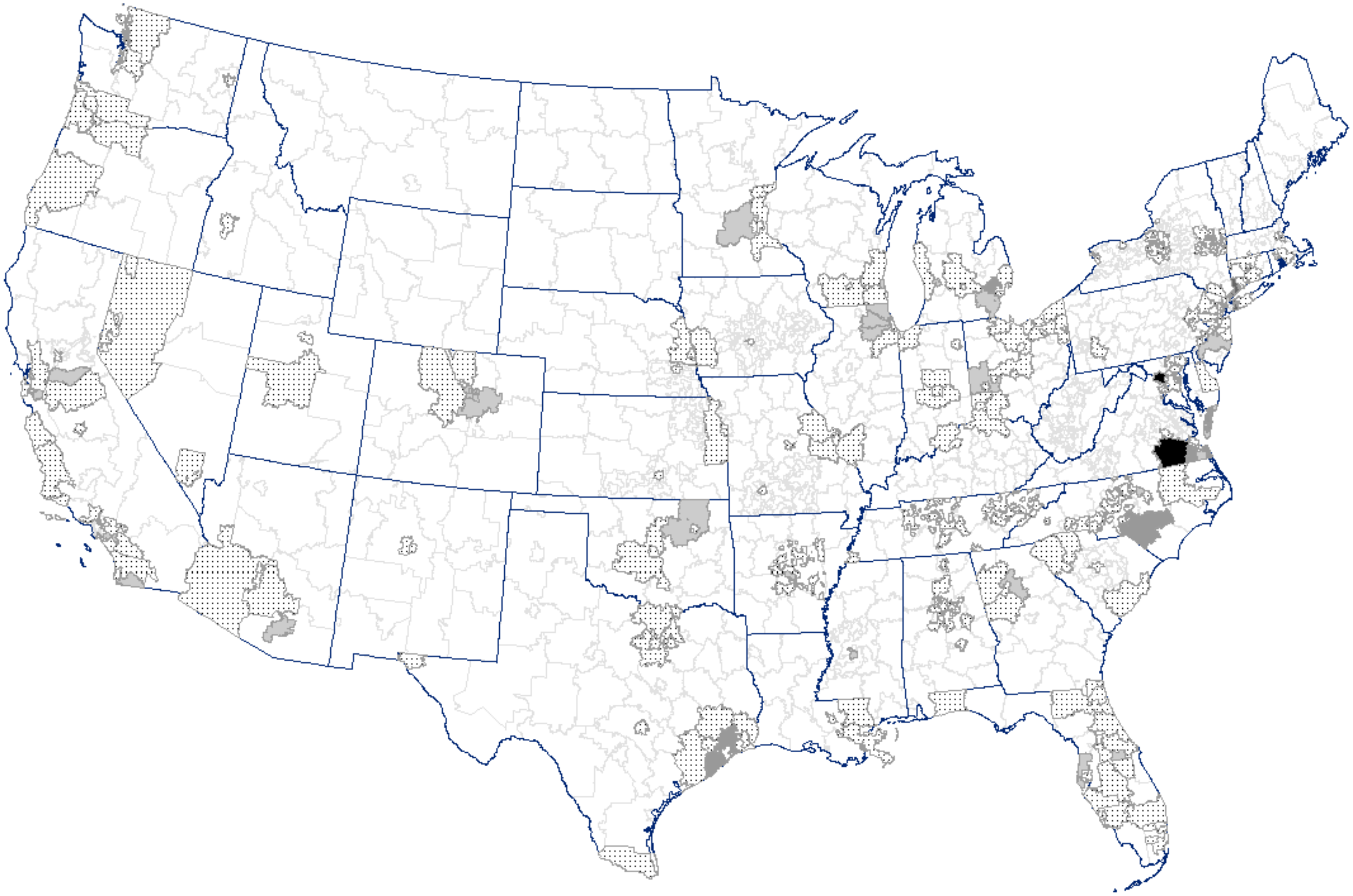
National Map – Adaptive TMS 2000



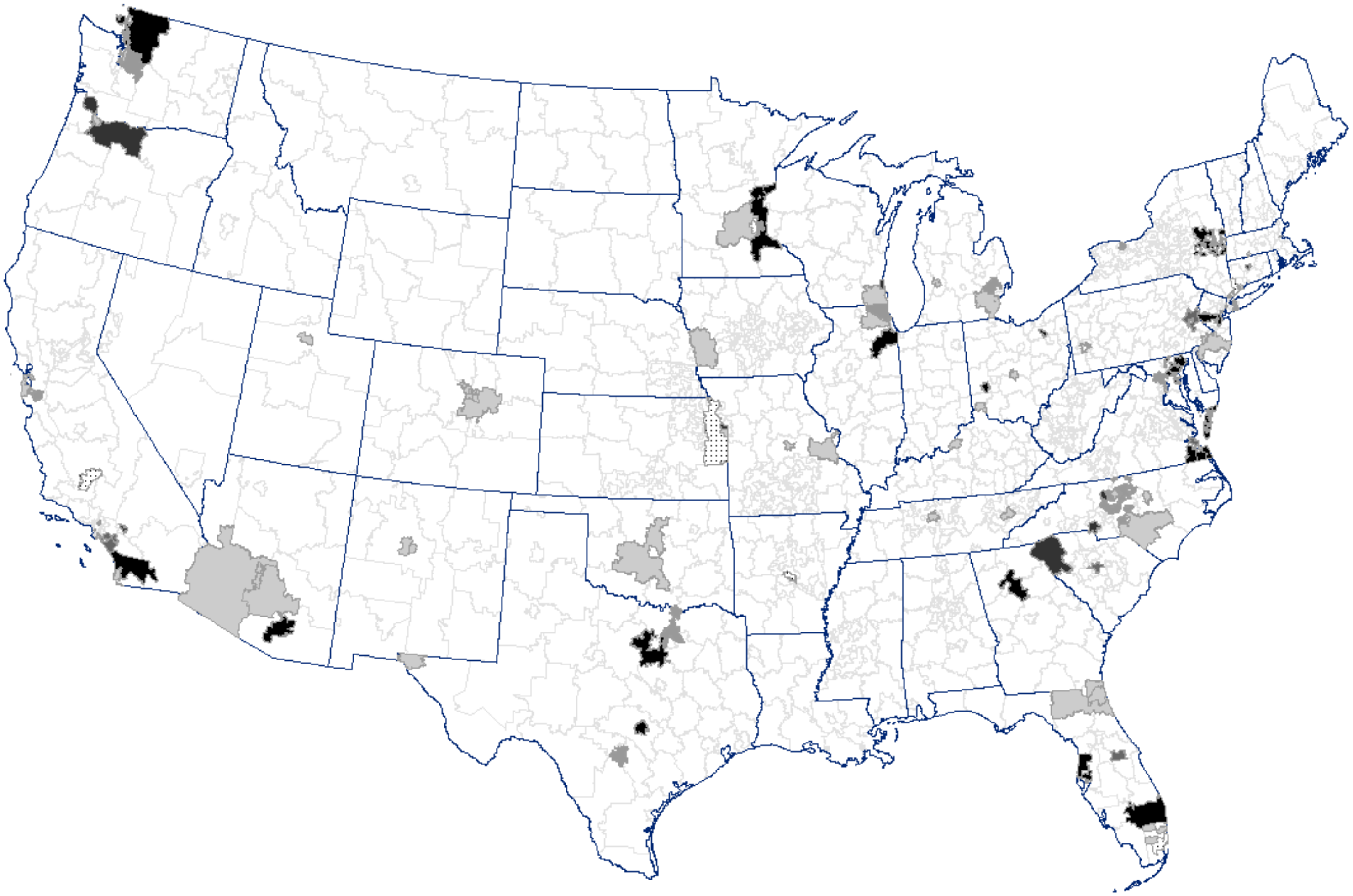
National Map – Adaptive TMS 2006



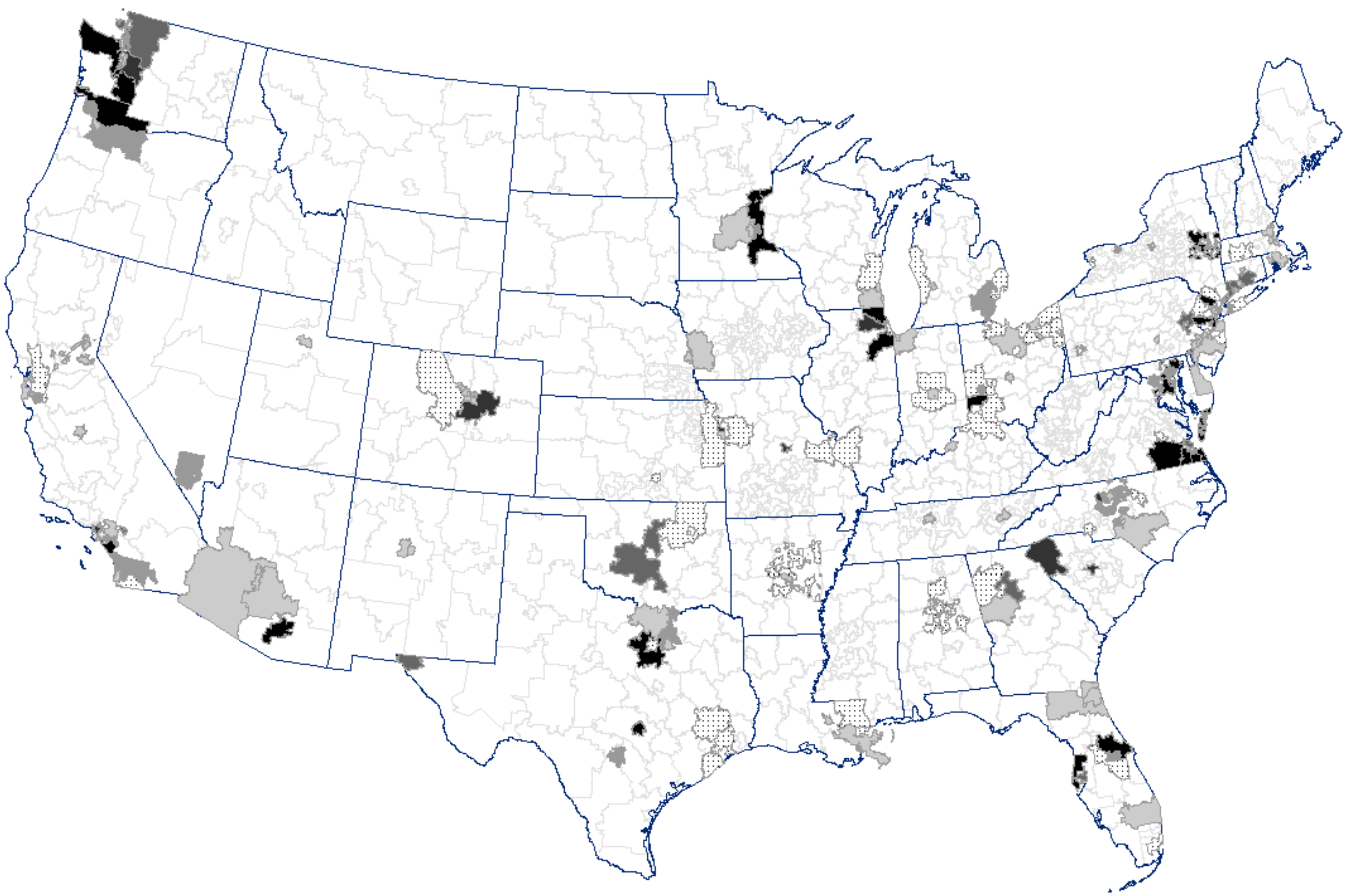
National Map – Adaptive TMS 2007



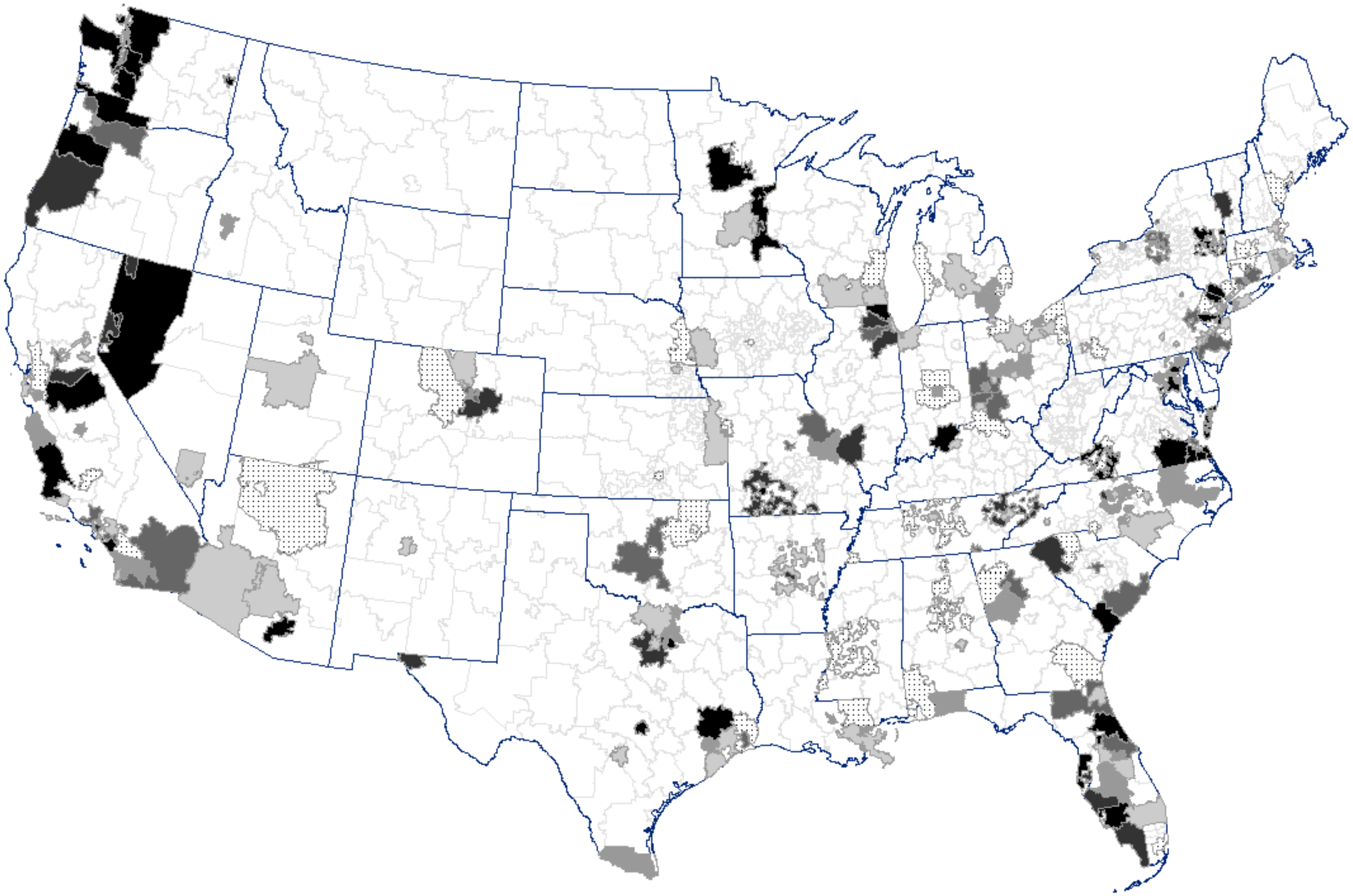
National Map – VDC 1999



National Map – VDC 2000



National Map – VDC 2002



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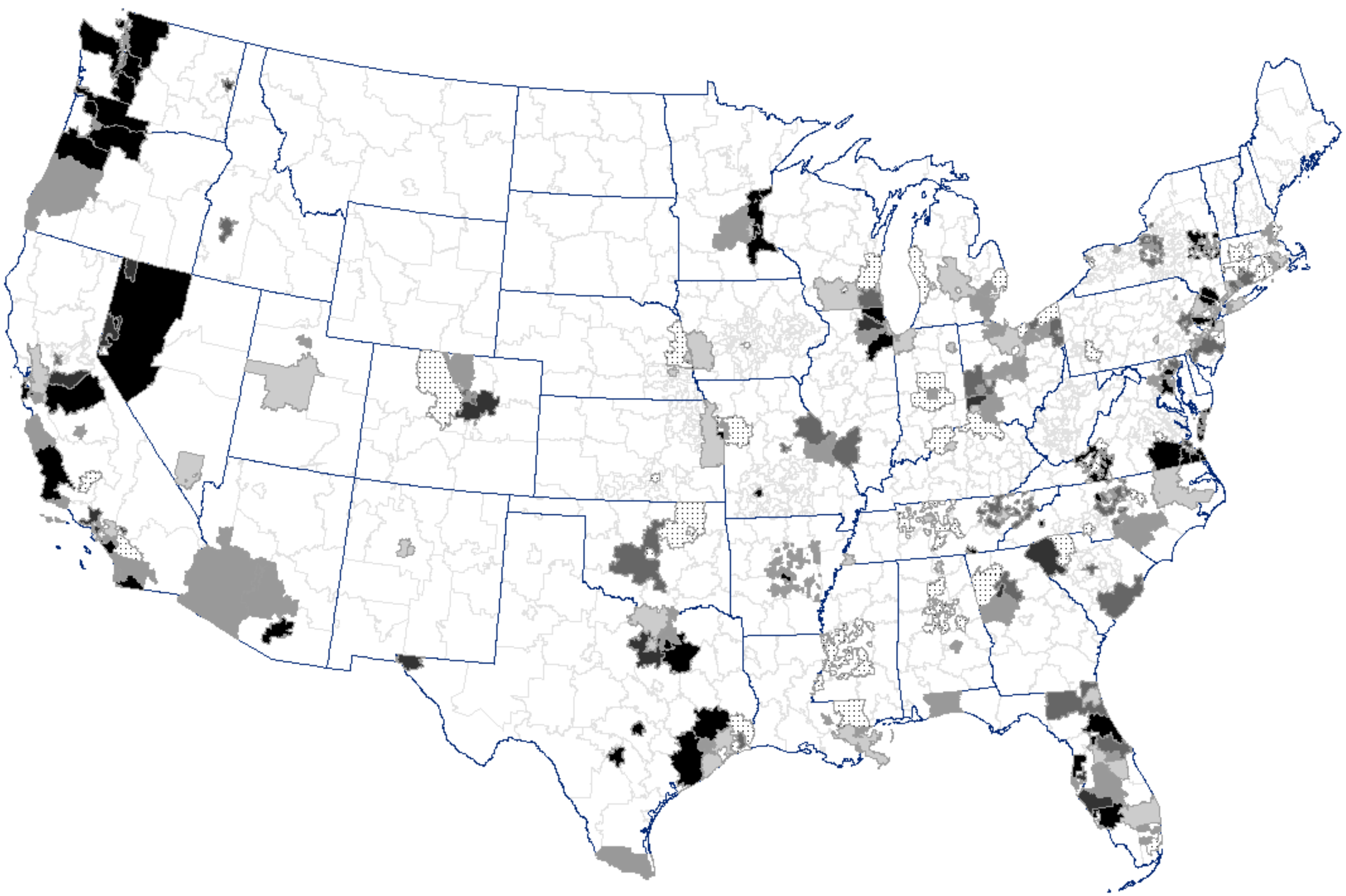

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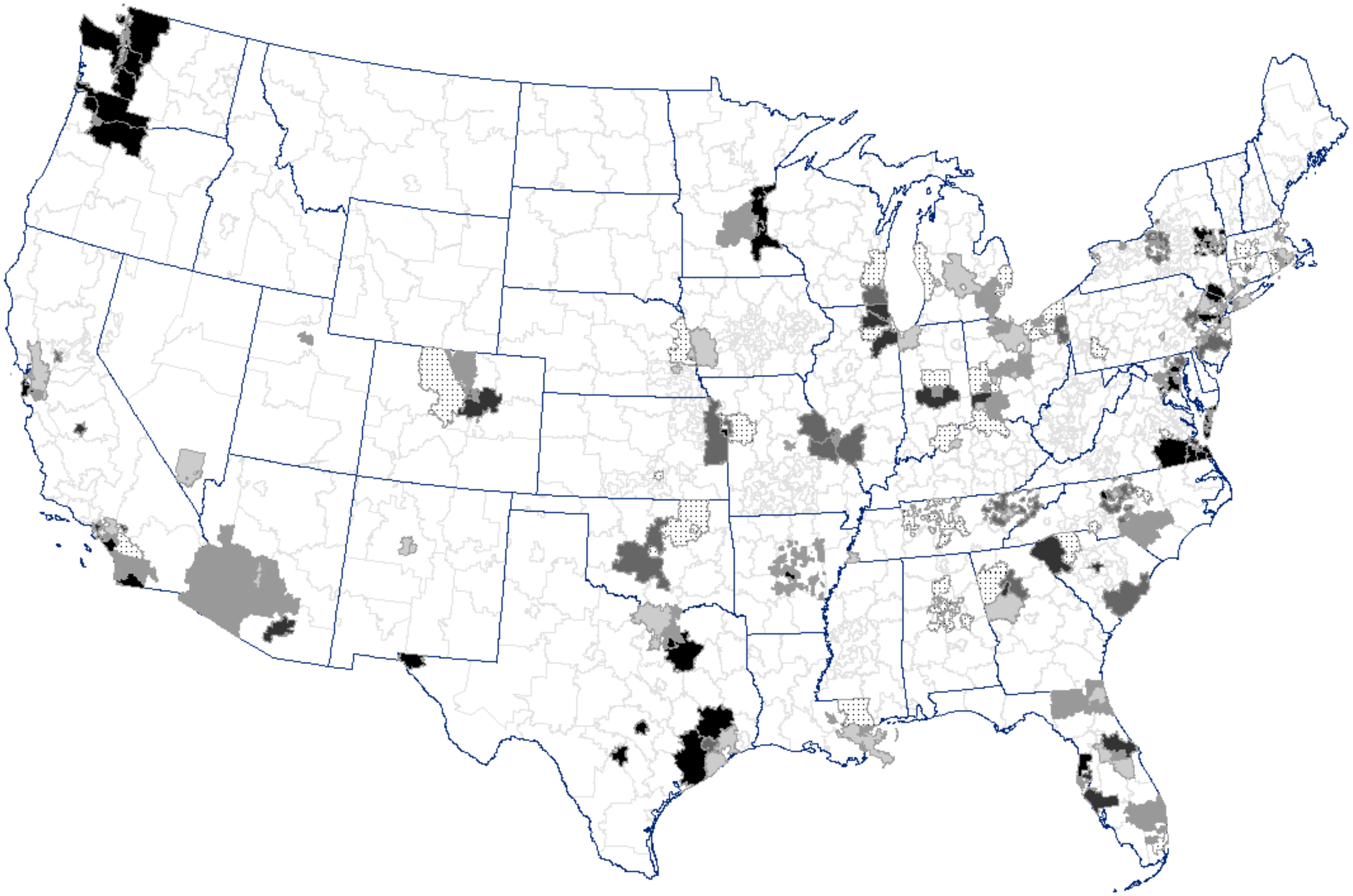
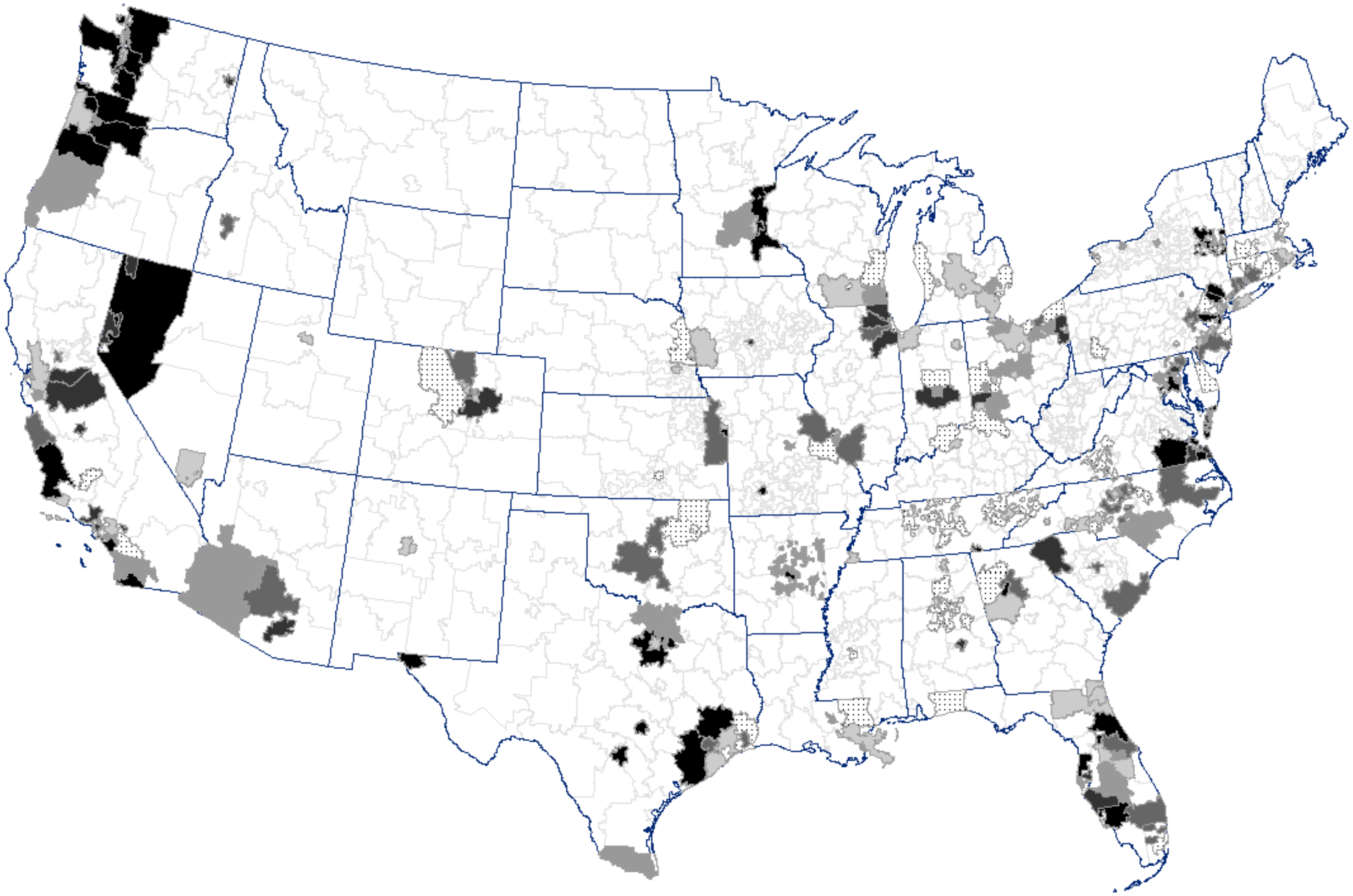
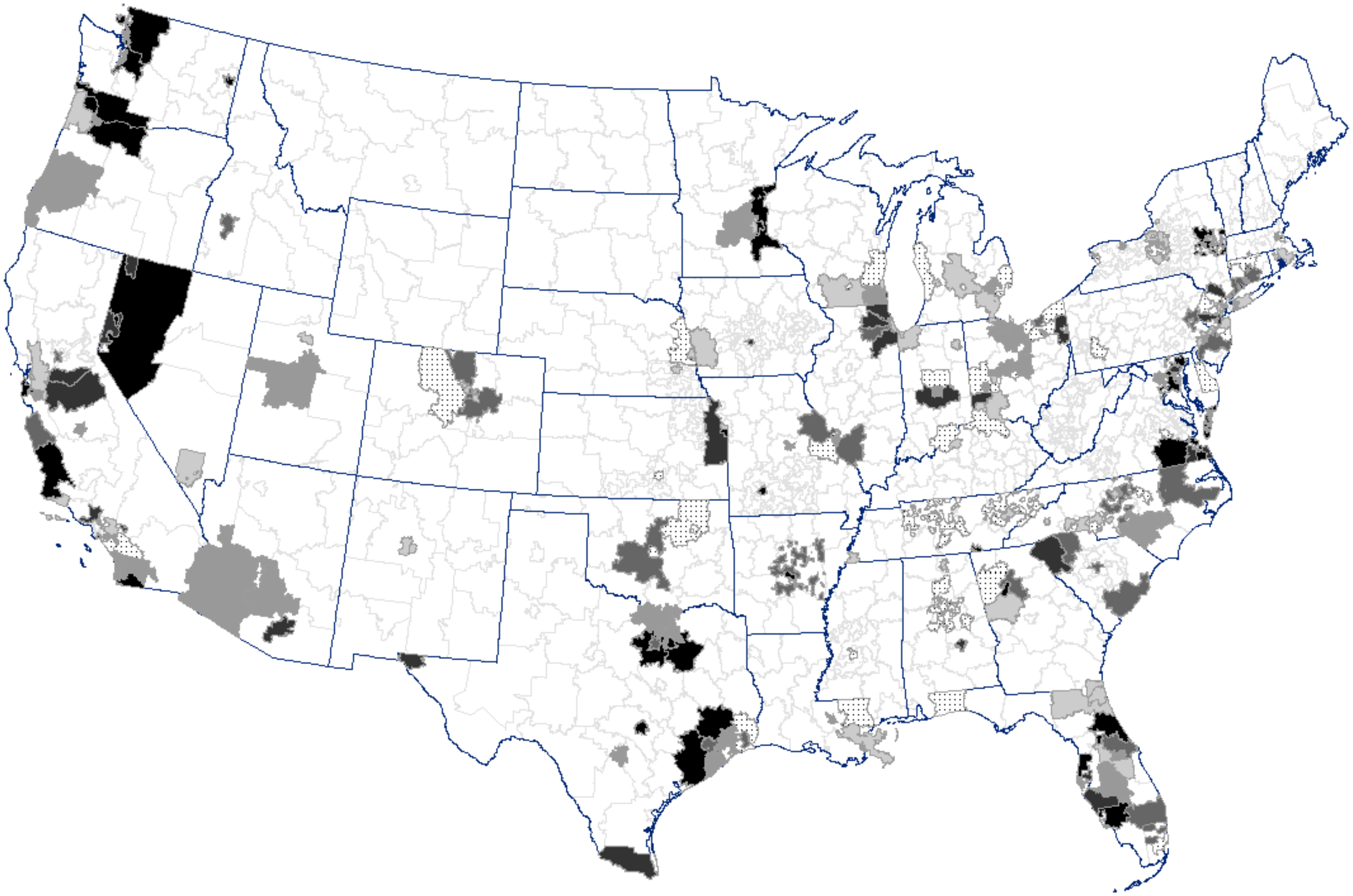


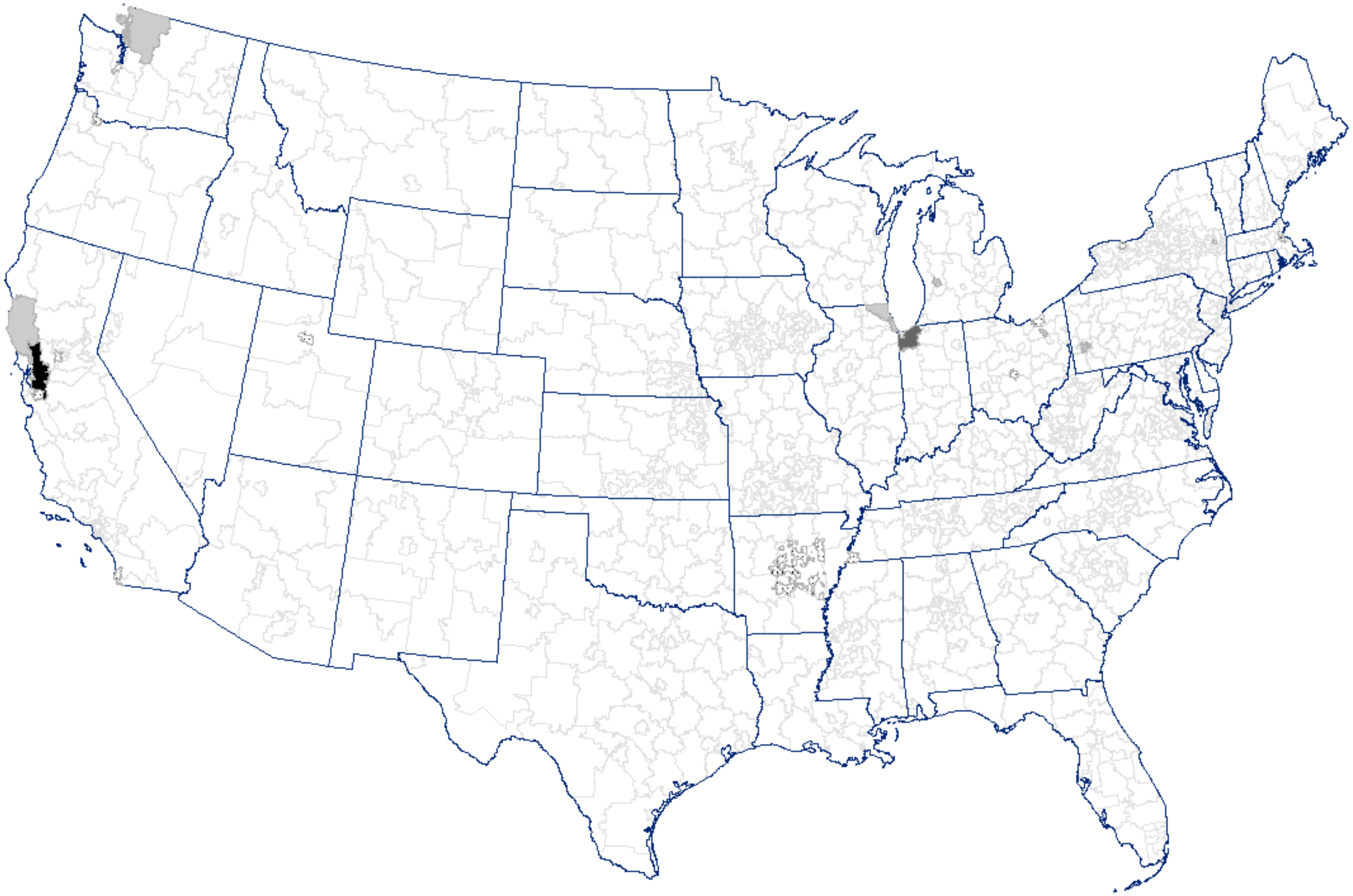
National Map – VDC 2006



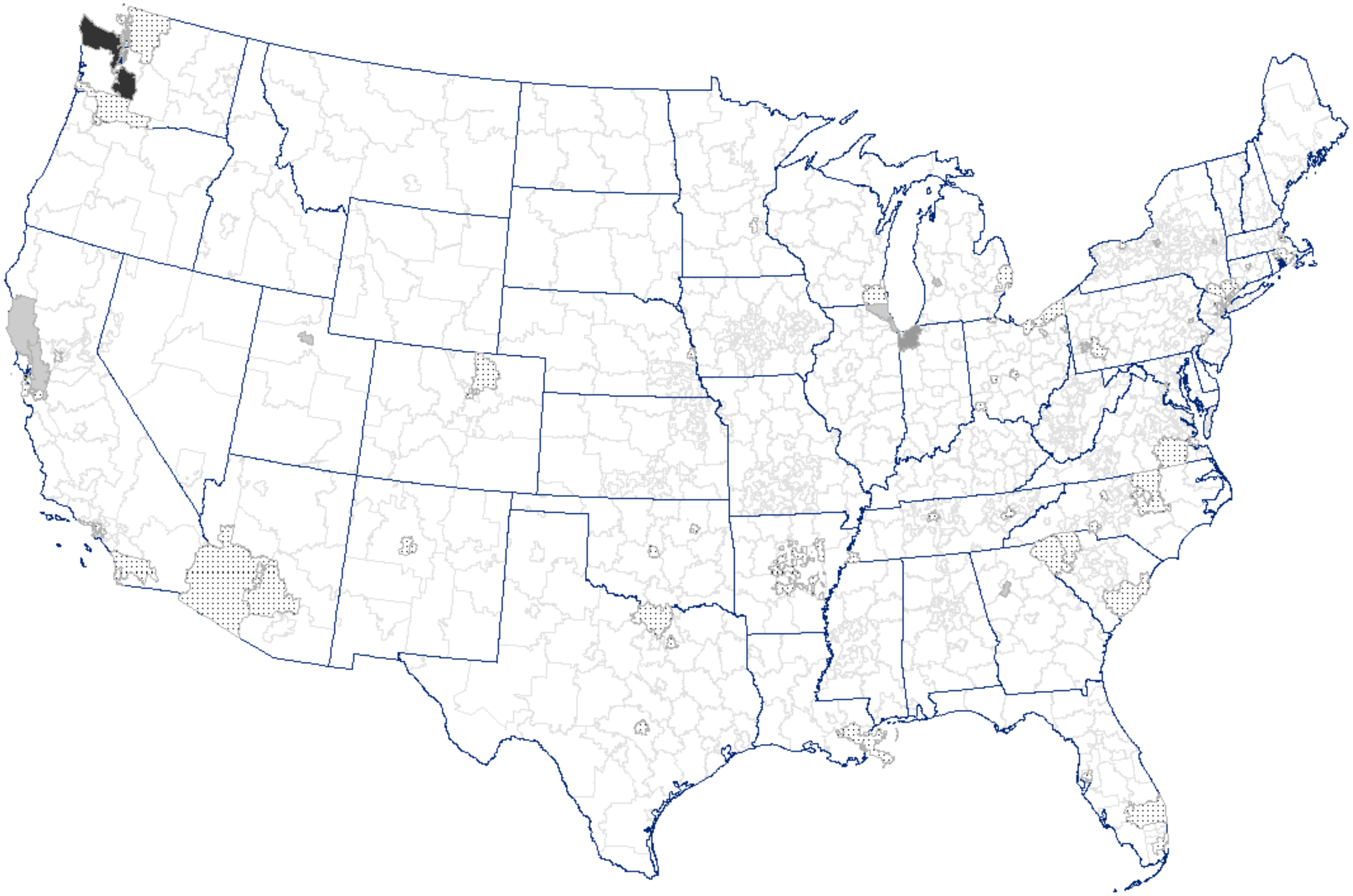
National Map – VDC 2007



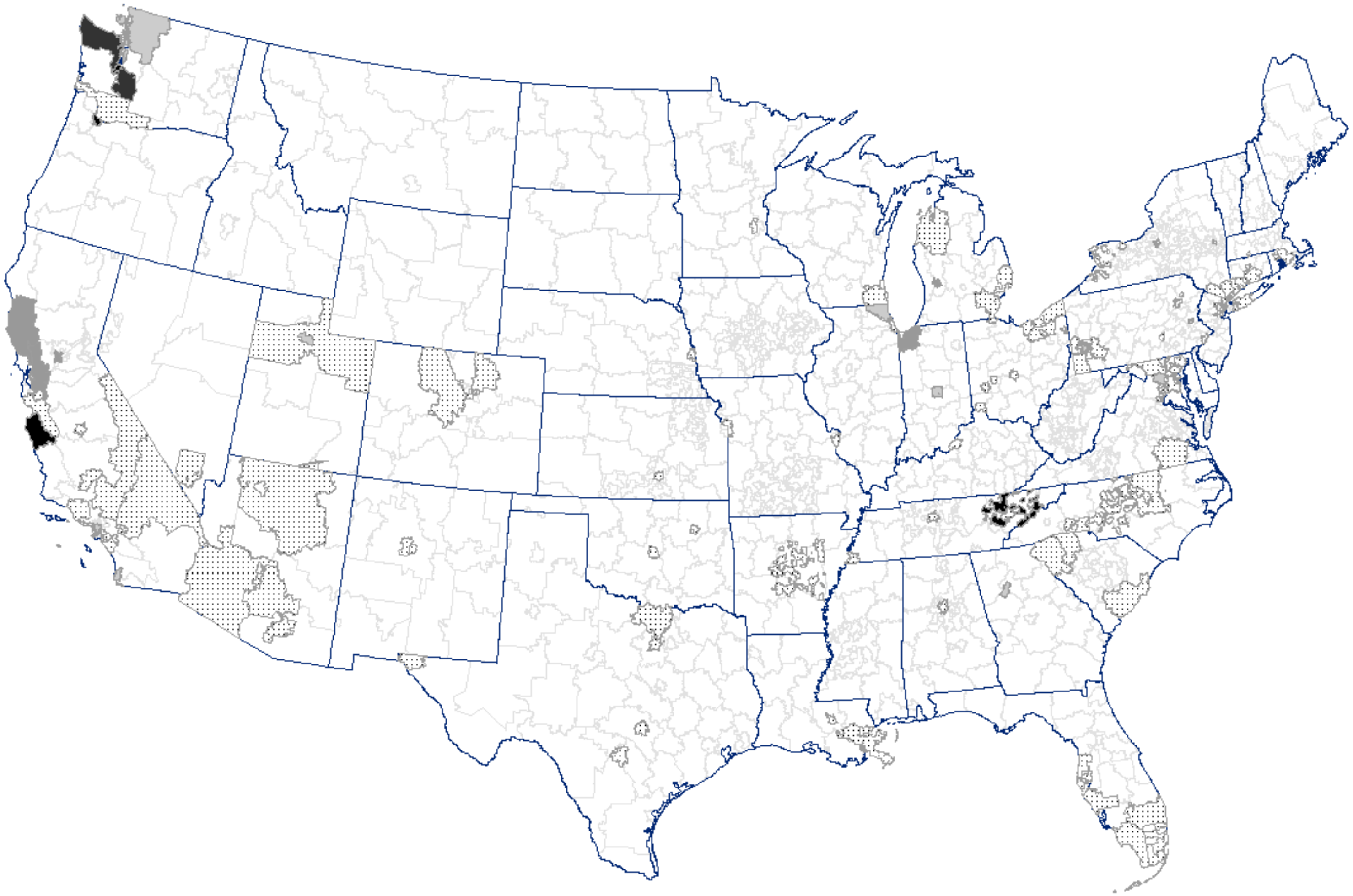
National Map – TSP 1999



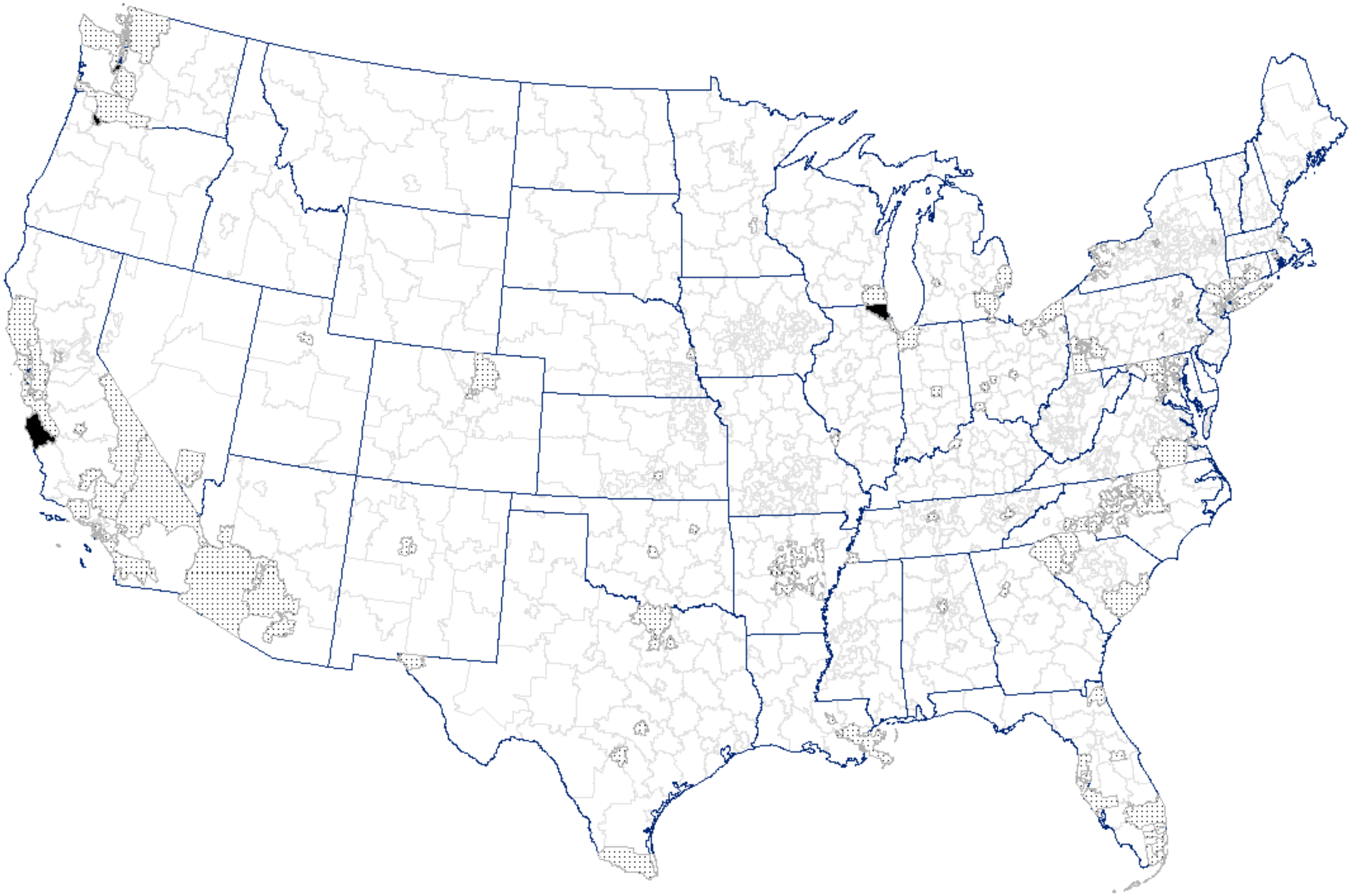
National Map – TSP 2000



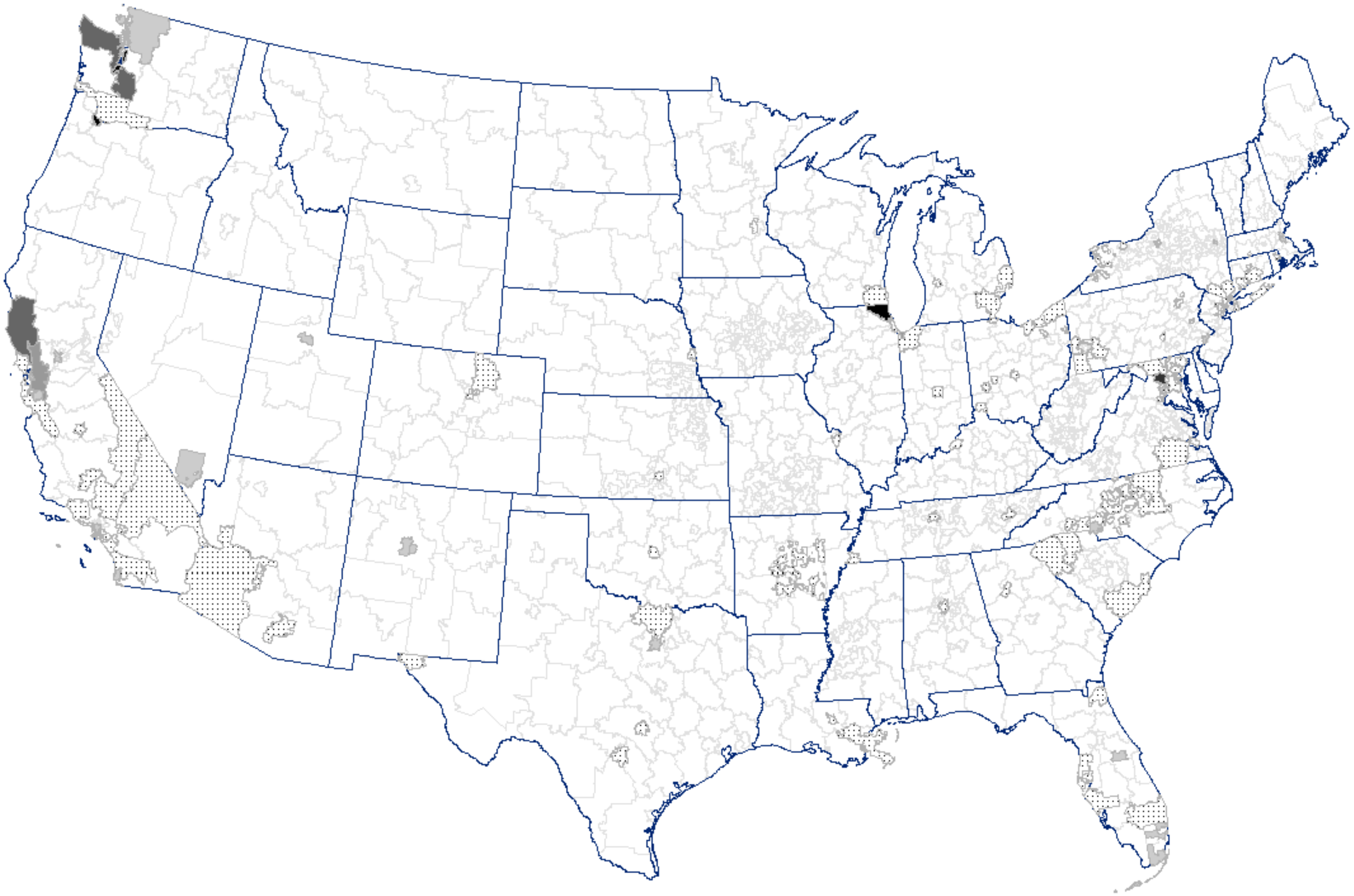
National Map – TSP 2002



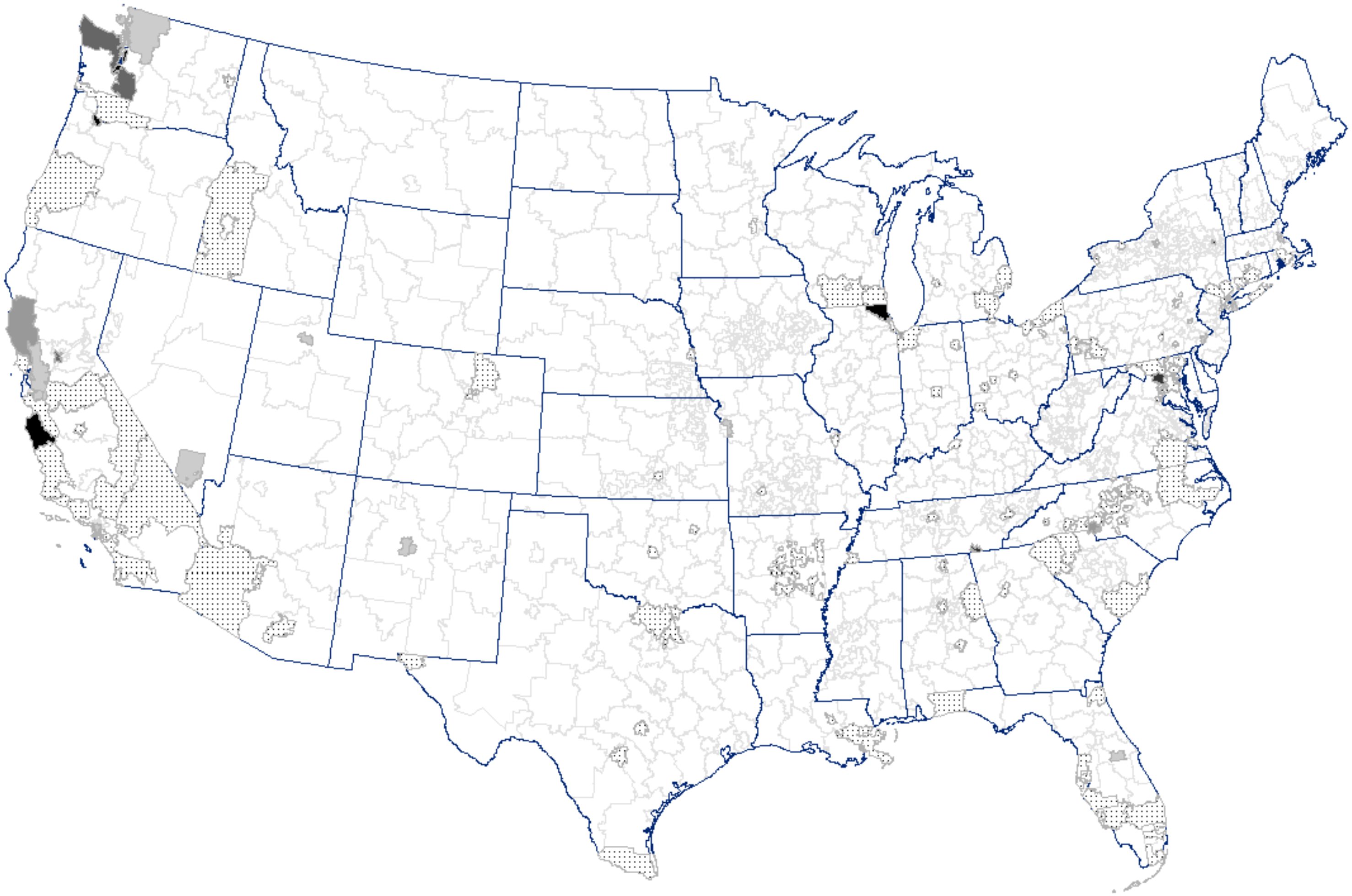
National Map – TSP 2004



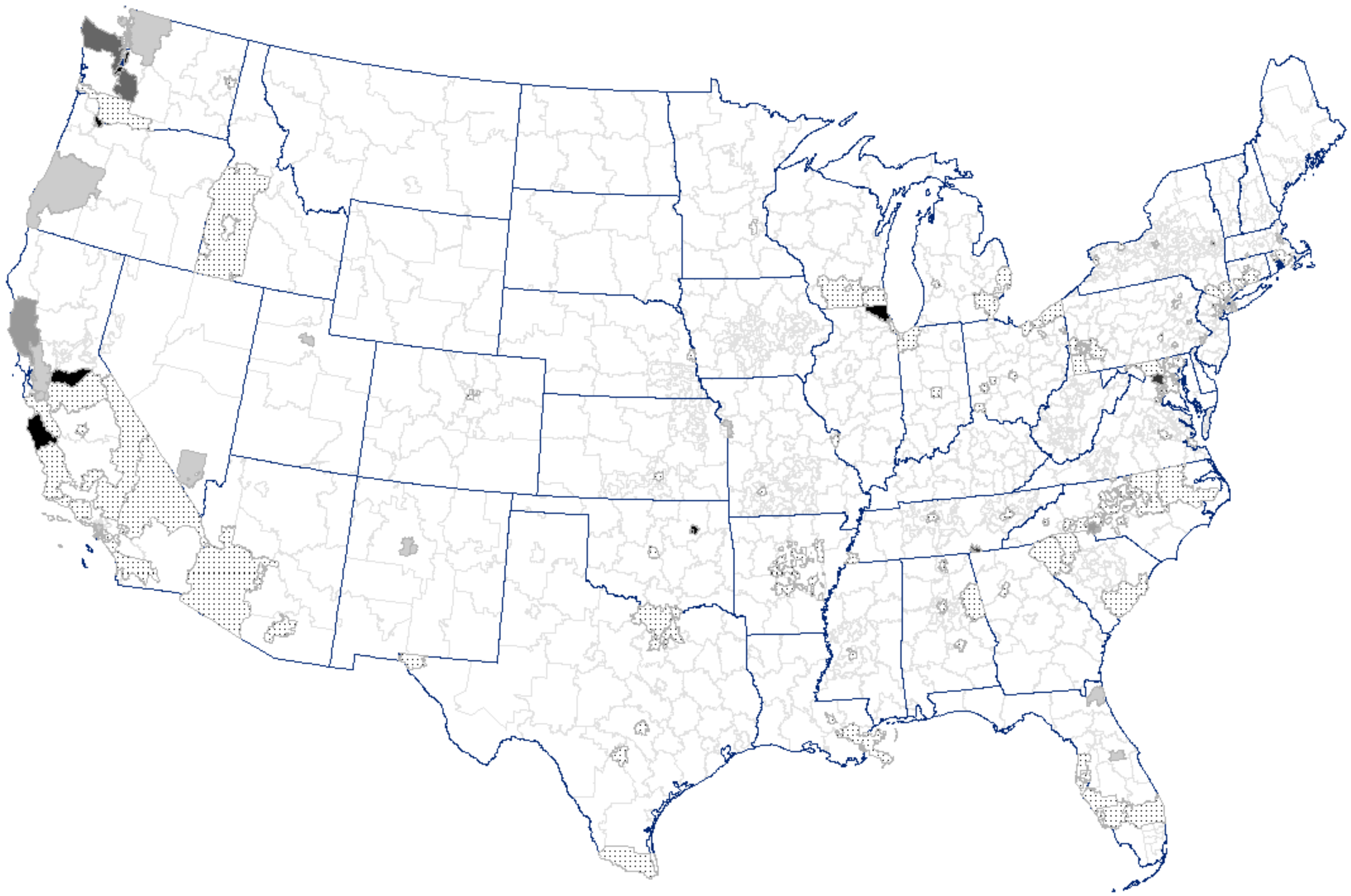
National Map – TSP 2005



National Map – TSP 2006



National Map – TSP 2007



Hawaii

EVP 1999

EVP 2000

EVP 2002

EVP 2004

EVP 2005

EVP 2006

EVP 2007

Hawaii

TMS 1999

TMS 2000

TMS 2002

TMS 2004

TMS 2005

TMS 2006

TMS 2007

Hawaii

Adaptive TMS 2000

Adaptive TMS 2006

Adaptive TMS 2007

Hawaii

VDC 1999

VDC 2000

VDC 2002

VDC 2004

VDC 2005

VDC 2006

VDC 2007

Hawaii

TSP 1999

TSP 2000

TSP 2002

TSP 2004

TSP 2005

TSP 2006

TSP 2007

Appendix D: ITS Deployment Tables

This appendix contains tables showing the extent of deployment of the studied ITS technologies within metro areas by year for each survey year from 1999 to 2007. The data is the same as that presented in Appendix C, but in tabular rather than graphic format. Within metro areas, the data is broken down more finely into the regions that share the same first three digits of a ZIP code (ZIP3). The use of ZIP3 provides clearer results in mapping and allows for observation of deployment variation within a metro area. A value of NA under "Percent Adoption" is a result of either missing values for the number of units of a system equipped with a particular technology (e.g. the number of signals with VDC capabilities) in the 3-digit ZIP code area, missing values for the total number of units (e.g. number of signals) in systems in the 3-digit ZIP code area or if there were 0 units of a system in the 3-digit ZIP code area.

EVP EM Data 1999

3 Digit Zip	Metro Area	Year	Percent Adoption
010	Springfield	1999	0.0%
017	Boston, Lawrence, Salem	1999	8.3%
018	Boston, Lawrence, Salem	1999	16.4%
019	Boston, Lawrence, Salem	1999	0.0%
021	Boston, Lawrence, Salem	1999	0.6%
024	Boston, Lawrence, Salem	1999	8.8%
027	Providence, Pawtucket, Fall River	1999	0.0%
028	Providence, Pawtucket, Fall River	1999	0.0%
029	Providence, Pawtucket, Fall River	1999	0.6%
060	Hartford, New Britain, Middletown	1999	16.7%
061	Hartford, New Britain, Middletown	1999	0.0%
064	New Haven, Meriden	1999	85.7%
065	New Haven, Meriden	1999	0.0%
066	New York, Northern New Jersey, Southwestern Connecticut	1999	3.5%
068	New York, Northern New Jersey, Southwestern Connecticut	1999	11.1%
070	New York, Northern New Jersey, Southwestern Connecticut	1999	0.0%
072	New York, Northern New Jersey, Southwestern Connecticut	1999	0.0%
077	New York, Northern New Jersey, Southwestern Connecticut	1999	0.0%
080	Philadelphia, Wilmington, Trenton	1999	0.0%
086	Philadelphia, Wilmington, Trenton	1999	0.0%
105	New York, Northern New Jersey, Southwestern Connecticut	1999	0.0%
106	New York, Northern New Jersey, Southwestern Connecticut	1999	0.0%

107	New York, Northern New Jersey, Southwestern Connecticut	1999	0.0%
108	New York, Northern New Jersey, Southwestern Connecticut	1999	0.0%
111	New York, Northern New Jersey, Southwestern Connecticut	1999	0.0%
117	New York, Northern New Jersey, Southwestern Connecticut	1999	38.3%
119	New York, Northern New Jersey, Southwestern Connecticut	1999	8.8%
121	Albany, Schenectady, Troy	1999	0.0%
122	Albany, Schenectady, Troy	1999	2.0%
123	Albany, Schenectady, Troy	1999	0.0%
130	Syracuse	1999	0.0%
132	Syracuse	1999	5.9%
140	Buffalo, Niagara Falls	1999	0.0%
141	Buffalo, Niagara Falls	1999	0.0%
142	Buffalo, Niagara Falls	1999	0.0%
143	Buffalo, Niagara Falls	1999	0.0%
146	Rochester	1999	0.0%
152	Pittsburgh, Beaver Valley	1999	14.8%
170	Harrisburg, Lebanon, Carlisle	1999	0.0%
171	Harrisburg, Lebanon, Carlisle	1999	0.0%
180	Allentown, Bethlehem, Easton	1999	0.0%
181	Allentown, Bethlehem, Easton	1999	0.0%
185	Scranton, Wilkes-Barre	1999	0.0%
187	Scranton, Wilkes-Barre	1999	0.0%
190	Philadelphia, Wilmington, Trenton	1999	5.8%
191	Philadelphia, Wilmington, Trenton	1999	0.2%
198	Philadelphia, Wilmington, Trenton	1999	0.0%
200	Washington	1999	0.7%
207	Washington	1999	0.0%
210	Baltimore	1999	0.0%
211	Baltimore	1999	0.0%
212	Baltimore	1999	0.0%
220	Washington	1999	14.6%
222	Washington	1999	0.0%
223	Washington	1999	0.0%
230	Richmond, Petersburg	1999	0.0%
232	Washington	1999	32.0%
233	Hampton Roads	1999	3.9%
234	Hampton Roads	1999	18.0%
235	Hampton Roads	1999	16.5%

236	Hampton Roads	1999	17.1%
237	Hampton Roads	1999	0.0%
238	Richmond, Petersburg	1999	10.4%
271	Greensboro, Winston-Salem, High Point	1999	0.0%
272	Greensboro, Winston-Salem, High Point	1999	0.0%
273	Raleigh-Durham	1999	0.0%
274	Greensboro, Winston-Salem, High Point	1999	9.3%
276	Raleigh-Durham	1999	0.4%
277	Raleigh-Durham	1999	0.0%
282	Charlotte, Gastonia, Rock Hill	1999	0.9%
293	Greenville, Spartanburg	1999	16.9%
294	Charleston	1999	0.0%
296	Greenville, Spartanburg	1999	0.0%
297	Charlotte, Gastonia, Rock Hill	1999	0.0%
300	Atlanta	1999	0.9%
301	Atlanta	1999	3.3%
302	Atlanta	1999	0.0%
303	Atlanta	1999	0.2%
320	Jacksonville	1999	0.0%
322	Jacksonville	1999	0.0%
327	Orlando	1999	0.0%
328	Orlando	1999	2.2%
330	Miami, Fort Lauderdale	1999	0.0%
331	Miami, Fort Lauderdale	1999	0.0%
333	Miami, Fort Lauderdale	1999	0.0%
334	West Palm Beach, Boca Raton, Delray	1999	0.0%
335	Tampa, St. Petersburg, Clearwater	1999	0.0%
336	Tampa, St. Petersburg, Clearwater	1999	0.6%
337	Tampa, St. Petersburg, Clearwater	1999	0.0%
342	Sarasota-Bradenton	1999	11.0%
346	Tampa, St. Petersburg, Clearwater	1999	0.0%
347	Orlando	1999	0.8%
352	Birmingham	1999	0.0%
355	Birmingham	1999	0.0%
372	Nashville	1999	0.0%
378	Knoxville	1999	0.0%
379	Knoxville	1999	0.0%
381	Memphis	1999	10.1%
400	Louisville	1999	58.7%
401	Louisville	1999	0.0%
402	Louisville	1999	0.0%

406	Louisville	1999	0.0%
410	Cincinnati, Hamilton	1999	0.0%
430	Columbus	1999	0.0%
431	Columbus	1999	0.0%
432	Columbus	1999	0.0%
434	Toledo	1999	0.0%
436	Toledo	1999	0.0%
440	Cleveland, Akron, Lorain	1999	1.9%
441	Cleveland, Akron, Lorain	1999	0.3%
443	Cleveland, Akron, Lorain	1999	0.0%
444	Youngstown, Warren	1999	4.3%
445	Youngstown, Warren	1999	0.0%
450	Cincinnati, Hamilton	1999	0.0%
451	Cincinnati, Hamilton	1999	3.1%
452	Cincinnati, Hamilton	1999	0.0%
453	Dayton, Springfield	1999	0.0%
454	Dayton, Springfield	1999	0.0%
455	Dayton, Springfield	1999	44.0%
460	Indianapolis	1999	0.0%
462	Indianapolis	1999	0.6%
463	Chicago, Gary, Lake County	1999	0.0%
466	Chicago, Gary, Lake County	1999	0.0%
471	Louisville	1999	0.0%
480	Detroit, Ann Arbor	1999	12.4%
481	Detroit, Ann Arbor	1999	2.8%
482	Detroit, Ann Arbor	1999	74.1%
483	Detroit, Ann Arbor	1999	0.0%
494	Grand Rapids	1999	0.0%
495	Grand Rapids	1999	22.8%
515	Omaha	1999	0.0%
530	Milwaukee, Racine	1999	0.0%
531	Milwaukee, Racine	1999	0.0%
532	Milwaukee, Racine	1999	61.1%
534	Milwaukee, Racine	1999	0.0%
547	Milwaukee, Racine	1999	0.0%
550	Minneapolis, St. Paul	1999	0.0%
551	Minneapolis, St. Paul	1999	79.8%
553	Minneapolis, St. Paul	1999	30.4%
554	Minneapolis, St. Paul	1999	20.6%
600	Chicago, Gary, Lake County	1999	2.9%
601	Chicago, Gary, Lake County	1999	5.2%

603	Chicago, Gary, Lake County	1999	0.0%
604	Chicago, Gary, Lake County	1999	4.2%
605	Chicago, Gary, Lake County	1999	8.5%
606	Chicago, Gary, Lake County	1999	0.3%
608	Chicago, Gary, Lake County	1999	31.3%
620	St. Louis	1999	0.0%
630	St. Louis	1999	0.0%
633	St. Louis	1999	0.0%
660	Kansas City	1999	33.6%
661	Kansas City	1999	0.0%
662	Kansas City	1999	120.0%
666	Kansas City	1999	0.0%
672	Wichita	1999	0.0%
680	Omaha	1999	0.0%
681	Omaha	1999	5.4%
700	New Orleans	1999	1.8%
704	New Orleans	1999	0.0%
707	Baton Rouge	1999	0.0%
708	Baton Rouge	1999	6.1%
720	Little Rock, North Little Rock	1999	0.0%
721	Little Rock, North Little Rock	1999	0.0%
722	Little Rock, North Little Rock	1999	1.2%
730	Oklahoma City	1999	5.7%
731	Oklahoma City	1999	4.5%
740	Tulsa	1999	78.4%
741	Tulsa	1999	4.5%
750	Dallas, Fort Worth	1999	11.5%
751	Dallas, Fort Worth	1999	0.0%
752	Dallas, Fort Worth	1999	0.0%
753	Dallas, Fort Worth	1999	0.0%
760	Dallas, Fort Worth	1999	33.1%
761	Dallas, Fort Worth	1999	0.0%
762	Dallas, Fort Worth	1999	0.0%
770	Houston, Galveston, Brazoria	1999	15.4%
773	Houston, Galveston, Brazoria	1999	0.0%
774	Houston, Galveston, Brazoria	1999	5.1%
775	Houston, Galveston, Brazoria	1999	1.5%
782	San Antonio	1999	0.0%
786	Austin	1999	0.0%
787	Austin	1999	1.5%
799	El Paso	1999	0.0%

800	Denver, Boulder	1999	85.2%
802	Denver, Boulder	1999	10.8%
803	Denver, Boulder	1999	65.0%
840	Salt Lake City, Ogden	1999	1.3%
841	Salt Lake City, Ogden	1999	1.1%
844	Salt Lake City, Ogden	1999	0.0%
850	Phoenix	1999	2.7%
852	Phoenix	1999	13.4%
853	Phoenix	1999	0.0%
857	Tucson	1999	9.1%
870	Albuquerque	1999	0.0%
871	Albuquerque	1999	3.1%
891	Las Vegas	1999	3.5%
900	Los Angeles, Anaheim, Riverside	1999	0.0%
903	Los Angeles, Anaheim, Riverside	1999	0.0%
912	Los Angeles, Anaheim, Riverside	1999	2.9%
917	Los Angeles, Anaheim, Riverside	1999	0.0%
919	San Diego	1999	13.5%
920	San Diego	1999	100.0%
921	San Diego	1999	0.0%
924	Los Angeles, Anaheim, Riverside	1999	0.0%
925	Los Angeles, Anaheim, Riverside	1999	0.0%
926	Los Angeles, Anaheim, Riverside	1999	0.0%
927	Los Angeles, Anaheim, Riverside	1999	0.0%
928	Los Angeles, Anaheim, Riverside	1999	0.0%
933	Bakersfield	1999	3.8%
937	Fresno	1999	2.9%
940	San Francisco, Oakland, San Jose	1999	24.5%
941	San Francisco, Oakland, San Jose	1999	0.0%
945	San Francisco, Oakland, San Jose	1999	4.4%
946	San Francisco, Oakland, San Jose	1999	0.0%
951	San Francisco, Oakland, San Jose	1999	1.5%
958	Sacramento	1999	4.3%
968	Honolulu	1999	1.3%
970	Portland, Vancouver	1999	65.3%
972	Portland, Vancouver	1999	12.0%
980	Seattle, Tacoma	1999	49.0%
981	Seattle, Tacoma	1999	23.0%
982	Seattle, Tacoma	1999	13.3%
984	Seattle, Tacoma	1999	10.9%
986	Portland, Vancouver	1999	7.1%

EVP EM 2000 Data

3 Digit Zip	Metro Area	Year	Percent Adoption
010	Springfield	2000	5.8%
017	Boston, Lawrence, Salem	2000	9.4%
018	Boston, Lawrence, Salem	2000	16.4%
019	Boston, Lawrence, Salem	2000	0.0%
021	Boston, Lawrence, Salem	2000	1.4%
024	Boston, Lawrence, Salem	2000	9.2%
027	Providence, Pawtucket, Fall River	2000	0.0%
028	Providence, Pawtucket, Fall River	2000	0.0%
029	Providence, Pawtucket, Fall River	2000	0.6%
060	Hartford, New Britain, Middletown	2000	20.7%
061	Hartford, New Britain, Middletown	2000	0.0%
064	New Haven, Meriden	2000	85.7%
065	New Haven, Meriden	2000	7.8%
066	New York, Northern New Jersey, Southwestern Connecticut	2000	15.2%
068	New York, Northern New Jersey, Southwestern Connecticut	2000	11.1%
070	New York, Northern New Jersey, Southwestern Connecticut	2000	0.0%
071	New York, Northern New Jersey, Southwestern Connecticut	2000	0.0%
072	New York, Northern New Jersey, Southwestern Connecticut	2000	0.0%
077	New York, Northern New Jersey, Southwestern Connecticut	2000	0.0%
080	Philadelphia, Wilmington, Trenton	2000	0.0%
086	Philadelphia, Wilmington, Trenton	2000	0.0%
105	New York, Northern New Jersey, Southwestern Connecticut	2000	0.0%
106	New York, Northern New Jersey, Southwestern Connecticut	2000	0.0%
107	New York, Northern New Jersey, Southwestern Connecticut	2000	0.0%
108	New York, Northern New Jersey, Southwestern Connecticut	2000	0.0%
111	New York, Northern New Jersey, Southwestern Connecticut	2000	0.0%
117	New York, Northern New Jersey, Southwestern Connecticut	2000	38.7%
119	New York, Northern New Jersey, Southwestern Connecticut	2000	38.0%
120	Albany, Schenectady, Troy	2000	0.0%
121	Albany, Schenectady, Troy	2000	0.0%

3 Digit Zip	Metro Area	Year	Percent Adoption
122	Albany, Schenectady, Troy	2000	2.2%
123	Albany, Schenectady, Troy	2000	0.0%
130	Syracuse	2000	0.0%
132	Syracuse	2000	12.6%
140	Buffalo, Niagara Falls	2000	0.0%
141	Buffalo, Niagara Falls	2000	0.0%
142	Buffalo, Niagara Falls	2000	1.1%
143	Buffalo, Niagara Falls	2000	0.0%
146	Rochester	2000	0.0%
152	Pittsburgh, Beaver Valley	2000	7.2%
170	Harrisburg, Lebanon, Carlisle	2000	0.0%
171	Harrisburg, Lebanon, Carlisle	2000	0.0%
180	Allentown, Bethlehem, Easton	2000	0.0%
181	Allentown, Bethlehem, Easton	2000	3.2%
185	Scranton, Wilkes-Barre	2000	0.0%
190	Philadelphia, Wilmington, Trenton	2000	4.5%
191	Philadelphia, Wilmington, Trenton	2000	0.2%
198	Philadelphia, Wilmington, Trenton	2000	0.0%
200	Washington	2000	3.4%
207	Washington	2000	0.0%
208	Washington	2000	0.0%
210	Baltimore	2000	0.0%
211	Baltimore	2000	0.0%
212	Baltimore	2000	0.0%
217	Washington	2000	0.0%
220	Washington	2000	14.6%
222	Washington	2000	0.0%
223	Washington	2000	0.0%
230	Richmond, Petersburg	2000	0.0%
232	Hampton Roads	2000	41.6%
233	Hampton Roads	2000	3.2%
234	Hampton Roads	2000	18.3%
235	Hampton Roads	2000	8.1%
236	Hampton Roads	2000	15.4%
237	Hampton Roads	2000	0.0%
238	Richmond, Petersburg	2000	12.3%
271	Greensboro, Winston-Salem, High Point	2000	1.1%
272	Greensboro, Winston-Salem, High Point	2000	0.0%
273	Raleigh-Durham	2000	0.0%

3 Digit Zip	Metro Area	Year	Percent Adoption
274	Greensboro, Winston-Salem, High Point	2000	5.3%
276	Raleigh-Durham	2000	0.2%
277	Raleigh-Durham	2000	6.5%
280	Harrisburg, Lebanon, Carlisle	2000	0.0%
282	Charlotte, Gastonia, Rock Hill	2000	3.6%
293	Greenville, Spartanburg	2000	17.1%
294	Charleston	2000	0.0%
296	Greenville, Spartanburg	2000	0.0%
297	Charlotte, Gastonia, Rock Hill	2000	0.0%
300	Atlanta	2000	1.8%
301	Atlanta	2000	3.3%
302	Atlanta	2000	0.0%
303	Atlanta	2000	0.4%
320	Jacksonville	2000	0.0%
322	Jacksonville	2000	0.0%
327	Orlando	2000	0.0%
328	Orlando	2000	2.3%
330	Miami, Fort Lauderdale	2000	0.0%
331	Miami, Fort Lauderdale	2000	1.4%
333	Miami, Fort Lauderdale	2000	0.4%
334	West Palm Beach, Boca Raton, Delray	2000	0.0%
335	Tampa, St. Petersburg, Clearwater	2000	0.0%
336	Tampa, St. Petersburg, Clearwater	2000	0.6%
337	Tampa, St. Petersburg, Clearwater	2000	1.4%
342	Sarasota-Bradenton	2000	10.4%
346	Tampa, St. Petersburg, Clearwater	2000	0.0%
347	Orlando	2000	0.5%
350	Birmingham	2000	0.0%
352	Birmingham	2000	0.0%
355	Birmingham	2000	0.0%
372	Nashville	2000	0.0%
378	Knoxville	2000	0.0%
379	Knoxville	2000	0.0%
381	Memphis	2000	0.1%
400	Louisville	2000	74.4%
401	Louisville	2000	0.0%
402	Louisville	2000	0.0%
406	Louisville	2000	0.0%
410	Cincinnati, Hamilton	2000	0.0%

3 Digit Zip	Metro Area	Year	Percent Adoption
430	Columbus	2000	0.0%
431	Columbus	2000	0.0%
432	Columbus	2000	1.2%
434	Toledo	2000	0.0%
436	Toledo	2000	0.0%
440	Cleveland, Akron, Lorain	2000	1.9%
441	Cleveland, Akron, Lorain	2000	0.0%
443	Cleveland, Akron, Lorain	2000	0.0%
444	Youngstown, Warren	2000	3.9%
445	Youngstown, Warren	2000	0.0%
450	Cincinnati, Hamilton	2000	0.0%
451	Cincinnati, Hamilton	2000	3.1%
452	Cincinnati, Hamilton	2000	0.0%
453	Dayton, Springfield	2000	0.0%
454	Dayton, Springfield	2000	0.0%
455	Dayton, Springfield	2000	20.0%
460	Indianapolis	2000	0.0%
462	Indianapolis	2000	0.7%
463	Chicago, Gary, Lake County	2000	0.0%
464	Chicago, Gary, Lake County	2000	0.0%
466	Chicago, Gary, Lake County	2000	0.0%
471	Louisville	2000	0.0%
480	Detroit, Ann Arbor	2000	13.4%
481	Detroit, Ann Arbor	2000	1.9%
482	Detroit, Ann Arbor	2000	11.4%
483	Detroit, Ann Arbor	2000	4.3%
488	Grand Rapids	2000	0.0%
494	Grand Rapids	2000	0.0%
495	Grand Rapids	2000	12.0%
515	Omaha	2000	0.0%
530	Milwaukee, Racine	2000	0.0%
531	Milwaukee, Racine	2000	18.4%
532	Milwaukee, Racine	2000	14.8%
534	Milwaukee, Racine	2000	0.0%
547	Milwaukee, Racine	2000	0.0%
551	Minneapolis, St. Paul	2000	75.1%
553	Minneapolis, St. Paul	2000	39.6%
554	Minneapolis, St. Paul	2000	13.8%
600	Chicago, Gary, Lake County	2000	4.2%

3 Digit Zip	Metro Area	Year	Percent Adoption
601	Chicago, Gary, Lake County	2000	16.0%
603	Chicago, Gary, Lake County	2000	0.0%
604	Chicago, Gary, Lake County	2000	4.3%
605	Chicago, Gary, Lake County	2000	11.2%
606	Chicago, Gary, Lake County	2000	0.3%
608	Chicago, Gary, Lake County	2000	31.3%
620	St. Louis	2000	0.0%
630	St. Louis	2000	0.0%
633	St. Louis	2000	0.0%
641	Kansas City	2000	0.4%
660	Kansas City	2000	34.5%
661	Kansas City	2000	0.0%
662	Kansas City	2000	133.3%
666	Kansas City	2000	0.0%
672	Wichita	2000	0.0%
680	Omaha	2000	0.0%
681	Omaha	2000	2.5%
700	New Orleans	2000	1.5%
701	New Orleans	2000	40.4%
704	New Orleans	2000	0.0%
707	Baton Rouge	2000	0.0%
708	Baton Rouge	2000	5.0%
720	Little Rock, North Little Rock	2000	0.0%
721	Little Rock, North Little Rock	2000	0.0%
722	Little Rock, North Little Rock	2000	1.2%
730	Oklahoma City	2000	12.0%
731	Oklahoma City	2000	3.7%
740	Tulsa	2000	92.9%
741	Tulsa	2000	1.0%
750	Dallas, Fort Worth	2000	18.2%
751	Dallas, Fort Worth	2000	0.0%
752	Dallas, Fort Worth	2000	0.0%
753	Dallas, Fort Worth	2000	0.0%
760	Dallas, Fort Worth	2000	33.8%
761	Dallas, Fort Worth	2000	0.0%
762	Dallas, Fort Worth	2000	0.0%
770	Houston, Galveston, Brazoria	2000	15.0%
773	Houston, Galveston, Brazoria	2000	0.0%
774	Houston, Galveston, Brazoria	2000	4.9%

3 Digit Zip	Metro Area	Year	Percent Adoption
775	Houston, Galveston, Brazoria	2000	3.3%
782	San Antonio	2000	0.0%
786	Austin	2000	2.9%
787	Austin	2000	3.7%
799	El Paso	2000	0.0%
800	Denver, Boulder	2000	81.3%
802	Denver, Boulder	2000	27.3%
803	Denver, Boulder	2000	65.0%
840	Salt Lake City, Ogden	2000	0.9%
841	Salt Lake City, Ogden	2000	1.3%
844	Salt Lake City, Ogden	2000	0.0%
850	Phoenix	2000	4.2%
852	Phoenix	2000	13.4%
853	Phoenix	2000	4.4%
857	Tucson	2000	9.0%
870	Albuquerque	2000	0.0%
871	Albuquerque	2000	3.7%
891	Las Vegas	2000	6.3%
900	Los Angeles, Anaheim, Riverside	2000	0.0%
903	Los Angeles, Anaheim, Riverside	2000	0.0%
912	Los Angeles, Anaheim, Riverside	2000	2.7%
917	Los Angeles, Anaheim, Riverside	2000	0.0%
920	San Diego	2000	25.7%
921	San Diego	2000	0.0%
924	Los Angeles, Anaheim, Riverside	2000	3.6%
925	Los Angeles, Anaheim, Riverside	2000	0.0%
926	Los Angeles, Anaheim, Riverside	2000	0.0%
927	Los Angeles, Anaheim, Riverside	2000	2.4%
928	Los Angeles, Anaheim, Riverside	2000	1.2%
933	Bakersfield	2000	8.4%
937	Fresno	2000	2.6%
940	San Francisco, Oakland, San Jose	2000	24.5%
941	San Francisco, Oakland, San Jose	2000	0.0%
945	San Francisco, Oakland, San Jose	2000	0.0%
946	San Francisco, Oakland, San Jose	2000	0.0%
951	San Francisco, Oakland, San Jose	2000	0.0%
958	Sacramento	2000	2.7%
968	Honolulu	2000	1.3%
970	Portland, Vancouver	2000	37.4%

3 Digit Zip	Metro Area	Year	Percent Adoption
972	Portland, Vancouver	2000	16.2%
980	Seattle, Tacoma	2000	45.1%
981	Seattle, Tacoma	2000	22.8%
982	Seattle, Tacoma	2000	10.5%
984	Seattle, Tacoma	2000	10.9%
986	Portland, Vancouver	2000	12.6%

EVP EM 2002 Data

3 Digit Zip	Metro Area	Year	Percent Adoption
010	Springfield	2002	5.8%
017	Boston, Lawrence, Salem	2002	6.3%
018	Boston, Lawrence, Salem	2002	50.0%
019	Boston, Lawrence, Salem	2002	11.8%
021	Boston, Lawrence, Salem	2002	2.6%
024	Boston, Lawrence, Salem	2002	18.9%
026	Hyannis	2002	5.9%
027	Providence, Pawtucket, Fall River	2002	0.0%
028	Providence, Pawtucket, Fall River	2002	0.0%
029	Providence, Pawtucket, Fall River	2002	0.5%
040	Old Orchard Beach	2002	0.0%
057	Rutland	2002	26.3%
060	Hartford, New Britain, Middletown	2002	47.3%
061	Hartford, New Britain, Middletown	2002	0.0%
063	New London	2002	39.5%
064	New Haven, Meriden	2002	12.8%
065	New Haven, Meriden	2002	13.1%
066	New York, Northern New Jersey, Southwestern Connecticut	2002	8.6%
068	New York, Northern New Jersey, Southwestern Connecticut	2002	1.8%
070	New York, Northern New Jersey, Southwestern Connecticut	2002	0.0%
071	New York, Northern New Jersey, Southwestern Connecticut	2002	0.0%
072	New York, Northern New Jersey, Southwestern Connecticut	2002	0.0%
077	New York, Northern New Jersey, Southwestern Connecticut	2002	0.0%
078	New York, Northern New Jersey, Southwestern Connecticut	2002	0.0%
079	New York, Northern New Jersey, Southwestern Connecticut	2002	0.0%
080	Philadelphia, Wilmington, Trenton	2002	0.0%
082	Ocean City (NJ)	2002	0.0%
086	Philadelphia, Wilmington, Trenton	2002	0.0%
105	New York, Northern New Jersey, Southwestern Connecticut	2002	0.0%
106	New York, Northern New Jersey, Southwestern Connecticut	2002	0.0%
107	New York, Northern New Jersey, Southwestern Connecticut	2002	0.0%

3 Digit Zip	Metro Area	Year	Percent Adoption
108	New York, Northern New Jersey, Southwestern Connecticut	2002	0.0%
110	Springfield	2002	0.0%
111	New York, Northern New Jersey, Southwestern Connecticut	2002	0.0%
117	New York, Northern New Jersey, Southwestern Connecticut	2002	45.6%
119	New York, Northern New Jersey, Southwestern Connecticut	2002	46.0%
120	Albany, Schenectady, Troy	2002	0.0%
121	Albany, Schenectady, Troy	2002	0.0%
122	Albany, Schenectady, Troy	2002	4.5%
123	Albany, Schenectady, Troy	2002	0.0%
130	Syracuse	2002	0.0%
132	Syracuse	2002	12.6%
140	Buffalo, Niagara Falls	2002	0.0%
141	Buffalo, Niagara Falls	2002	0.0%
142	Buffalo, Niagara Falls	2002	0.0%
143	Buffalo, Niagara Falls	2002	0.0%
146	Rochester	2002	0.0%
152	Pittsburgh, Beaver Valley	2002	1.2%
171	Harrisburg, Lebanon, Carlisle	2002	0.0%
176	Lancaster	2002	0.0%
180	Allentown, Bethlehem, Easton	2002	0.0%
181	Allentown, Bethlehem, Easton	2002	2.5%
185	Scranton, Wilkes-Barre	2002	0.0%
187	Scranton, Wilkes-Barre	2002	0.0%
190	Philadelphia, Wilmington, Trenton	2002	7.7%
191	Philadelphia, Wilmington, Trenton	2002	0.0%
198	Philadelphia, Wilmington, Trenton	2002	0.0%
207	Washington	2002	0.0%
208	Washington	2002	0.0%
210	Baltimore	2002	0.0%
211	Baltimore	2002	0.0%
212	Baltimore	2002	0.0%
217	Washington	2002	0.0%
218	Ocean City (MD)	2002	0.0%
220	Washington	2002	0.0%
222	Washington	2002	0.7%
223	Washington	2002	0.0%
230	Richmond, Petersburg	2002	0.0%

3 Digit Zip	Metro Area	Year	Percent Adoption
232	Washington	2002	7.5%
234	Hampton Roads	2002	22.7%
236	Hampton Roads	2002	15.8%
237	Hampton Roads	2002	0.0%
238	Richmond, Petersburg	2002	16.0%
240	Roanoke	2002	15.2%
271	Greensboro, Winston-Salem, High Point	2002	1.0%
272	Raleigh-Durham	2002	0.0%
273	Raleigh-Durham	2002	0.0%
274	Greensboro, Winston-Salem, High Point	2002	4.3%
276	Raleigh-Durham	2002	0.2%
277	Raleigh-Durham	2002	10.6%
278	Greenville	2002	5.2%
282	Charlotte, Gastonia, Rock Hill	2002	3.3%
288	Asheville	2002	0.0%
290	Columbia	2002	0.0%
292	Columbia	2002	4.8%
293	Greenville, Spartanburg	2002	13.2%
294	Charleston	2002	0.0%
296	Greenville, Spartanburg	2002	0.0%
297	Charlotte, Gastonia, Rock Hill	2002	0.0%
299	Hilton Head	2002	77.4%
300	Atlanta	2002	1.8%
301	Atlanta	2002	1.4%
302	Atlanta	2002	0.0%
303	Atlanta	2002	0.6%
313	Tybee Island	2002	0.0%
320	Jacksonville	2002	0.0%
321	Daytona Beach	2002	2.3%
322	Jacksonville	2002	0.0%
325	Pensacola	2002	0.0%
327	Daytona Beach	2002	0.0%
328	Orlando	2002	11.3%
330	Miami, Fort Lauderdale	2002	0.0%
331	Miami, Fort Lauderdale	2002	1.5%
333	Miami, Fort Lauderdale	2002	5.0%
334	West Palm Beach, Boca Raton, Delray	2002	0.0%
335	Tampa, St. Petersburg, Clearwater	2002	0.0%
336	Tampa, St. Petersburg, Clearwater	2002	0.6%

3 Digit Zip	Metro Area	Year	Percent Adoption
337	Tampa, St. Petersburg, Clearwater	2002	1.3%
339	Fort Myers	2002	0.0%
341	Naples	2002	0.0%
342	Sarasota-Bradenton	2002	10.5%
347	Orlando	2002	1.4%
350	Birmingham	2002	0.0%
352	Birmingham	2002	0.0%
355	Birmingham	2002	100.0%
358	Huntsville	2002	0.0%
360	Montgomery	2002	0.0%
361	Montgomery	2002	0.0%
365	Gulf Shores	2002	0.0%
372	Nashville	2002	0.0%
373	Chattanooga	2002	0.0%
374	Chattanooga	2002	1.0%
377	Gatlinburg	2002	0.0%
378	Knoxville	2002	0.0%
379	Knoxville	2002	0.0%
381	Memphis	2002	32.1%
392	Jackson	2002	5.8%
400	Louisville	2002	0.0%
401	Louisville	2002	0.0%
402	Louisville	2002	0.0%
406	Louisville	2002	0.0%
410	Cincinnati, Hamilton	2002	0.0%
430	Columbus	2002	0.0%
431	Columbus	2002	0.0%
432	Columbus	2002	1.2%
434	Toledo	2002	0.0%
436	Toledo	2002	0.0%
440	Cleveland, Akron, Lorain	2002	1.0%
441	Cleveland, Akron, Lorain	2002	1.7%
443	Cleveland, Akron, Lorain	2002	0.0%
444	Youngstown, Warren	2002	3.6%
445	Youngstown, Warren	2002	33.8%
448	Sandusky	2002	50.0%
450	Cincinnati, Hamilton	2002	0.0%
451	Cincinnati, Hamilton	2002	2.6%
452	Cincinnati, Hamilton	2002	0.0%

3 Digit Zip	Metro Area	Year	Percent Adoption
453	Dayton, Springfield	2002	0.0%
454	Dayton, Springfield	2002	0.0%
455	Dayton, Springfield	2002	19.1%
460	Indianapolis	2002	0.0%
462	Indianapolis	2002	5.1%
463	Chicago, Gary, Lake County	2002	0.0%
464	Chicago, Gary, Lake County	2002	0.0%
466	Chicago, Gary, Lake County	2002	0.0%
468	Fort Wayne	2002	0.0%
471	Louisville	2002	0.0%
480	Detroit, Ann Arbor	2002	12.3%
481	Detroit, Ann Arbor	2002	2.2%
482	Detroit, Ann Arbor	2002	0.0%
483	Detroit, Ann Arbor	2002	0.0%
488	Grand Rapids	2002	0.0%
494	Grand Rapids	2002	0.0%
495	Grand Rapids	2002	13.2%
496	Traverse City	2002	0.0%
503	Des Moines	2002	23.3%
515	Omaha	2002	0.0%
530	Milwaukee, Racine	2002	0.0%
531	Milwaukee, Racine	2002	11.2%
532	Milwaukee, Racine	2002	14.9%
534	Milwaukee, Racine	2002	0.0%
535	Janesville-Beloit	2002	0.0%
547	Milwaukee, Racine	2002	0.0%
550	Minneapolis, St. Paul	2002	48.5%
551	Minneapolis, St. Paul	2002	74.4%
553	Minneapolis, St. Paul	2002	54.9%
554	Minneapolis, St. Paul	2002	19.7%
564	Brainerd	2002	14.3%
597	Bozeman	2002	0.0%
600	Chicago, Gary, Lake County	2002	7.1%
601	Chicago, Gary, Lake County	2002	27.8%
603	Chicago, Gary, Lake County	2002	0.0%
604	Chicago, Gary, Lake County	2002	4.2%
605	Chicago, Gary, Lake County	2002	11.8%
606	Chicago, Gary, Lake County	2002	0.3%
608	Chicago, Gary, Lake County	2002	71.9%

3 Digit Zip	Metro Area	Year	Percent Adoption
620	St. Louis	2002	0.0%
630	St. Louis	2002	0.0%
633	St. Louis	2002	0.0%
641	Kansas City	2002	0.2%
656	Branson	2002	10.8%
658	Springfield(MO)	2002	0.0%
660	Kansas City	2002	37.6%
661	Kansas City	2002	0.0%
662	Kansas City	2002	100.0%
666	Kansas City	2002	0.0%
672	Wichita	2002	0.4%
680	Omaha	2002	0.0%
681	Omaha	2002	6.1%
700	New Orleans	2002	1.8%
701	New Orleans	2002	29.8%
707	Baton Rouge	2002	0.0%
708	Baton Rouge	2002	5.2%
720	Little Rock, North Little Rock	2002	0.0%
721	Little Rock, North Little Rock	2002	1.2%
722	Little Rock, North Little Rock	2002	1.4%
730	Oklahoma City	2002	12.2%
731	Oklahoma City	2002	3.4%
740	Tulsa	2002	57.8%
741	Tulsa	2002	6.2%
750	Dallas, Fort Worth	2002	24.1%
751	Dallas, Fort Worth	2002	5.5%
752	Dallas, Fort Worth	2002	0.0%
753	Dallas, Fort Worth	2002	0.0%
760	Dallas, Fort Worth	2002	34.4%
761	Dallas, Fort Worth	2002	0.5%
762	Dallas, Fort Worth	2002	0.0%
770	Houston, Galveston, Brazoria	2002	0.0%
773	Houston, Galveston, Brazoria	2002	0.0%
774	Houston, Galveston, Brazoria	2002	0.0%
775	Houston, Galveston, Brazoria	2002	1.5%
776	Beaumont-Port Arthur	2002	26.5%
777	Beaumont-Port Arthur	2002	14.5%
782	San Antonio	2002	6.8%
785	McAllen	2002	2.9%

3 Digit Zip	Metro Area	Year	Percent Adoption
786	Austin	2002	0.0%
787	Austin	2002	4.1%
799	El Paso	2002	0.0%
800	Denver, Boulder	2002	78.4%
802	Denver, Boulder	2002	7.6%
803	Denver, Boulder	2002	100.0%
804	Breckenridge	2002	30.0%
837	Boise City	2002	16.2%
840	Salt Lake City, Ogden	2002	2.7%
841	Salt Lake City, Ogden	2002	1.4%
844	Salt Lake City, Ogden	2002	0.0%
846	Provo - Orem	2002	7.2%
850	Phoenix	2002	0.0%
852	Phoenix	2002	11.4%
853	Phoenix	2002	2.6%
857	Tucson	2002	10.5%
860	Flagstaff	2002	0.0%
870	Albuquerque	2002	0.0%
871	Albuquerque	2002	3.9%
873	Boise City	2002	100.0%
891	Las Vegas	2002	5.5%
894	Reno	2002	20.0%
895	Reno	2002	11.7%
900	Los Angeles, Anaheim, Riverside	2002	0.0%
903	Los Angeles, Anaheim, Riverside	2002	0.0%
912	Los Angeles, Anaheim, Riverside	2002	5.0%
917	Los Angeles, Anaheim, Riverside	2002	0.0%
919	San Diego	2002	31.0%
920	San Diego	2002	28.6%
921	San Diego	2002	0.0%
922	Palm Springs	2002	12.9%
924	Los Angeles, Anaheim, Riverside	2002	5.3%
925	Los Angeles, Anaheim, Riverside	2002	0.0%
926	Los Angeles, Anaheim, Riverside	2002	0.0%
927	Los Angeles, Anaheim, Riverside	2002	10.0%
928	Los Angeles, Anaheim, Riverside	2002	1.5%
931	Santa Barbara	2002	2.1%
933	Bakersfield	2002	5.2%
934	San Luis Obispo	2002	3.1%

3 Digit Zip	Metro Area	Year	Percent Adoption
937	Fresno	2002	2.6%
939	Salinas	2002	0.0%
940	San Francisco, Oakland, San Jose	2002	0.0%
941	San Francisco, Oakland, San Jose	2002	0.0%
945	San Francisco, Oakland, San Jose	2002	0.0%
946	San Francisco, Oakland, San Jose	2002	0.0%
951	San Francisco, Oakland, San Jose	2002	1.5%
952	Stockton	2002	9.4%
953	Modesto	2002	47.0%
958	Sacramento	2002	6.0%
968	Honolulu	2002	3.6%
970	Portland, Vancouver	2002	39.5%
972	Portland, Vancouver	2002	15.9%
974	Eugene	2002	16.4%
980	Seattle, Tacoma	2002	66.4%
981	Seattle, Tacoma	2002	1.4%
982	Seattle, Tacoma	2002	48.4%
984	Seattle, Tacoma	2002	10.9%
986	Portland, Vancouver	2002	25.4%
992	Spokane	2002	9.8%

EVP EM 2004 Data

3 Digit Zip	Metro Area	Year	Percent Adoption
010	Springfield	2004	17.9%
017	Boston, Lawrence, Salem	2004	6.3%
018	Boston, Lawrence, Salem	2004	12.4%
019	Boston, Lawrence, Salem	2004	6.7%
021	Boston, Lawrence, Salem	2004	2.8%
024	Boston, Lawrence, Salem	2004	18.5%
027	Providence, Pawtucket, Fall River	2004	0.0%
028	Providence, Pawtucket, Fall River	2004	0.0%
029	Providence, Pawtucket, Fall River	2004	0.0%
060	Hartford, New Britain, Middletown	2004	36.5%
061	Hartford, New Britain, Middletown	2004	0.0%
063	New London	2004	27.3%
064	New Haven, Meriden	2004	10.5%
065	New Haven, Meriden	2004	7.0%
066	New York, Northern New Jersey, Southwestern Connecticut	2004	8.6%
068	New York, Northern New Jersey, Southwestern Connecticut	2004	8.2%
070	New York, Northern New Jersey, Southwestern Connecticut	2004	0.0%
071	New York, Northern New Jersey, Southwestern Connecticut	2004	0.0%
072	New York, Northern New Jersey, Southwestern Connecticut	2004	0.0%
077	New York, Northern New Jersey, Southwestern Connecticut	2004	0.0%
078	New York, Northern New Jersey, Southwestern Connecticut	2004	0.0%
080	Philadelphia, Wilmington, Trenton	2004	0.0%
086	Philadelphia, Wilmington, Trenton	2004	0.0%
105	New York, Northern New Jersey, Southwestern Connecticut	2004	0.0%
106	New York, Northern New Jersey, Southwestern Connecticut	2004	0.0%
107	New York, Northern New Jersey, Southwestern Connecticut	2004	0.0%
108	New York, Northern New Jersey, Southwestern Connecticut	2004	0.0%
110	Springfield	2004	0.0%
111	New York, Northern New Jersey, Southwestern Connecticut	2004	0.0%
117	New York, Northern New Jersey, Southwestern Connecticut	2004	46.7%
120	Albany, Schenectady, Troy	2004	0.0%

3 Digit Zip	Metro Area	Year	Percent Adoption
121	Albany, Schenectady, Troy	2004	0.0%
122	Albany, Schenectady, Troy	2004	1.0%
123	Albany, Schenectady, Troy	2004	0.0%
130	Syracuse	2004	0.0%
132	Syracuse	2004	19.0%
140	Buffalo, Niagara Falls	2004	0.0%
141	Buffalo, Niagara Falls	2004	0.0%
142	Buffalo, Niagara Falls	2004	0.0%
143	Buffalo, Niagara Falls	2004	0.0%
146	Rochester	2004	6.6%
152	Pittsburgh, Beaver Valley	2004	0.0%
170	Harrisburg, Lebanon, Carlisle	2004	NA
171	Harrisburg, Lebanon, Carlisle	2004	0.0%
176	Lancaster	2004	0.0%
180	Allentown, Bethlehem, Easton	2004	0.0%
181	Allentown, Bethlehem, Easton	2004	2.2%
185	Scranton, Wilkes-Barre	2004	0.0%
190	Philadelphia, Wilmington, Trenton	2004	18.2%
191	Philadelphia, Wilmington, Trenton	2004	0.0%
198	Philadelphia, Wilmington, Trenton	2004	0.0%
200	Washington	2004	0.0%
208	Washington	2004	0.0%
210	Baltimore	2004	0.0%
211	Baltimore	2004	0.0%
212	Baltimore	2004	0.0%
217	Washington	2004	0.0%
222	Washington	2004	0.0%
223	Washington	2004	0.0%
230	Richmond, Petersburg	2004	0.0%
232	Hampton Roads	2004	4.7%
234	Hampton Roads	2004	24.9%
235	Hampton Roads	2004	46.2%
236	Hampton Roads	2004	17.9%
237	Hampton Roads	2004	0.0%
238	Richmond, Petersburg	2004	0.0%
240	Roanoke	2004	14.2%
271	Greensboro, Winston-Salem, High Point	2004	0.0%
272	Greensboro, Winston-Salem, High Point	2004	0.0%
273	Raleigh-Durham	2004	0.0%

3 Digit Zip	Metro Area	Year	Percent Adoption
274	Greensboro, Winston-Salem, High Point	2004	3.9%
276	Raleigh-Durham	2004	0.1%
277	Raleigh-Durham	2004	5.5%
278	Greenville	2004	5.5%
282	Charlotte, Gastonia, Rock Hill	2004	8.2%
288	Asheville	2004	0.0%
290	Columbia	2004	0.0%
292	Columbia	2004	2.7%
293	Greenville, Spartanburg	2004	6.5%
294	Charleston	2004	0.0%
296	Greenville, Spartanburg	2004	0.0%
297	Charlotte, Gastonia, Rock Hill	2004	0.0%
300	Atlanta	2004	2.2%
301	Atlanta	2004	0.0%
302	Atlanta	2004	0.0%
303	Atlanta	2004	0.0%
320	Jacksonville	2004	0.0%
321	Daytona Beach	2004	1.2%
322	Jacksonville	2004	0.0%
325	Pensacola	2004	0.0%
327	Daytona Beach	2004	0.0%
328	Orlando	2004	4.5%
330	Miami, Fort Lauderdale	2004	1.9%
331	Miami, Fort Lauderdale	2004	2.2%
333	Miami, Fort Lauderdale	2004	3.6%
334	West Palm Beach, Boca Raton, Delray	2004	1.4%
335	Tampa, St. Petersburg, Clearwater	2004	0.0%
336	Tampa, St. Petersburg, Clearwater	2004	0.5%
337	Tampa, St. Petersburg, Clearwater	2004	3.1%
339	Fort Myers	2004	0.0%
342	Sarasota-Bradenton	2004	7.9%
346	Tampa, St. Petersburg, Clearwater	2004	6.7%
347	Orlando	2004	0.0%
350	Birmingham	2004	0.0%
352	Birmingham	2004	0.3%
358	Huntsville	2004	0.0%
360	Montgomery	2004	0.0%
361	Montgomery	2004	0.0%
372	Nashville	2004	0.0%

3 Digit Zip	Metro Area	Year	Percent Adoption
374	Chattanooga	2004	0.6%
378	Knoxville	2004	0.0%
379	Knoxville	2004	0.0%
381	Memphis	2004	6.3%
392	Jackson	2004	6.4%
401	Louisville	2004	0.0%
402	Louisville	2004	0.0%
406	Louisville	2004	0.0%
410	Cincinnati, Hamilton	2004	0.0%
430	Columbus	2004	0.0%
431	Columbus	2004	0.0%
432	Columbus	2004	1.1%
434	Toledo	2004	0.0%
436	Toledo	2004	0.0%
440	Cleveland, Akron, Lorain	2004	1.0%
441	Cleveland, Akron, Lorain	2004	0.9%
443	Cleveland, Akron, Lorain	2004	0.0%
444	Youngstown, Warren	2004	3.6%
445	Youngstown, Warren	2004	33.8%
450	Cincinnati, Hamilton	2004	0.0%
451	Cincinnati, Hamilton	2004	2.6%
452	Cincinnati, Hamilton	2004	0.0%
453	Dayton, Springfield	2004	8.8%
454	Dayton, Springfield	2004	0.0%
455	Dayton, Springfield	2004	23.6%
460	Indianapolis	2004	0.0%
462	Indianapolis	2004	1.1%
463	Chicago, Gary, Lake County	2004	0.0%
464	Chicago, Gary, Lake County	2004	0.5%
466	Chicago, Gary, Lake County	2004	0.0%
468	Fort Wayne	2004	0.0%
471	Louisville	2004	0.0%
480	Detroit, Ann Arbor	2004	13.2%
481	Detroit, Ann Arbor	2004	2.3%
482	Detroit, Ann Arbor	2004	0.0%
483	Detroit, Ann Arbor	2004	0.0%
488	Grand Rapids	2004	0.0%
494	Grand Rapids	2004	0.0%
495	Grand Rapids	2004	12.3%

3 Digit Zip	Metro Area	Year	Percent Adoption
503	Des Moines	2004	25.5%
515	Omaha	2004	0.0%
530	Milwaukee, Racine	2004	0.0%
531	Milwaukee, Racine	2004	22.6%
532	Milwaukee, Racine	2004	13.9%
534	Milwaukee, Racine	2004	0.0%
535	Janesville-Beloit	2004	0.0%
547	Milwaukee, Racine	2004	0.0%
550	Minneapolis, St. Paul	2004	81.3%
551	Minneapolis, St. Paul	2004	81.5%
553	Minneapolis, St. Paul	2004	54.5%
554	Minneapolis, St. Paul	2004	23.4%
600	Chicago, Gary, Lake County	2004	12.2%
601	Chicago, Gary, Lake County	2004	27.1%
603	Chicago, Gary, Lake County	2004	17.3%
604	Chicago, Gary, Lake County	2004	10.7%
605	Chicago, Gary, Lake County	2004	32.1%
606	Chicago, Gary, Lake County	2004	0.0%
608	Chicago, Gary, Lake County	2004	75.0%
620	St. Louis	2004	0.0%
630	St. Louis	2004	0.0%
633	St. Louis	2004	0.0%
641	Kansas City	2004	0.3%
658	Springfield(MO)	2004	0.0%
660	Kansas City	2004	51.7%
661	Kansas City	2004	0.0%
662	Kansas City	2004	100.0%
666	Kansas City	2004	0.0%
672	Wichita	2004	0.2%
680	Omaha	2004	0.0%
681	Omaha	2004	6.1%
700	New Orleans	2004	1.9%
701	New Orleans	2004	44.3%
704	New Orleans	2004	0.0%
707	Baton Rouge	2004	0.0%
708	Baton Rouge	2004	6.6%
720	Little Rock, North Little Rock	2004	0.0%
721	Little Rock, North Little Rock	2004	1.1%
722	Little Rock, North Little Rock	2004	1.3%

3 Digit Zip	Metro Area	Year	Percent Adoption
730	Oklahoma City	2004	19.9%
731	Oklahoma City	2004	5.6%
740	Tulsa	2004	53.1%
741	Tulsa	2004	5.2%
750	Dallas, Fort Worth	2004	24.8%
751	Dallas, Fort Worth	2004	12.1%
752	Dallas, Fort Worth	2004	0.0%
753	Dallas, Fort Worth	2004	0.0%
760	Dallas, Fort Worth	2004	44.7%
761	Dallas, Fort Worth	2004	0.0%
762	Dallas, Fort Worth	2004	0.0%
770	Houston, Galveston, Brazoria	2004	10.1%
774	Houston, Galveston, Brazoria	2004	13.2%
775	Houston, Galveston, Brazoria	2004	4.4%
776	Beaumont-Port Arthur	2004	0.0%
777	Beaumont-Port Arthur	2004	11.5%
782	San Antonio	2004	6.8%
785	McAllen	2004	2.9%
786	Austin	2004	0.0%
787	Austin	2004	4.2%
799	El Paso	2004	1.6%
800	Denver, Boulder	2004	72.0%
802	Denver, Boulder	2004	10.1%
803	Denver, Boulder	2004	100.0%
837	Boise City	2004	44.6%
840	Salt Lake City, Ogden	2004	3.9%
841	Salt Lake City, Ogden	2004	2.6%
844	Salt Lake City, Ogden	2004	0.0%
846	Provo - Orem	2004	9.3%
850	Phoenix	2004	8.5%
852	Phoenix	2004	13.4%
853	Phoenix	2004	4.5%
857	Tucson	2004	10.0%
870	Albuquerque	2004	0.0%
871	Albuquerque	2004	4.8%
873	Boise City	2004	100.0%
891	Las Vegas	2004	6.8%
894	Reno	2004	29.0%
895	Reno	2004	9.6%

3 Digit Zip	Metro Area	Year	Percent Adoption
903	Los Angeles, Anaheim, Riverside	2004	0.0%
912	Los Angeles, Anaheim, Riverside	2004	3.6%
917	Los Angeles, Anaheim, Riverside	2004	0.0%
919	San Diego	2004	93.3%
920	San Diego	2004	25.3%
921	San Diego	2004	0.1%
925	Los Angeles, Anaheim, Riverside	2004	0.0%
926	Los Angeles, Anaheim, Riverside	2004	0.0%
927	Los Angeles, Anaheim, Riverside	2004	10.1%
928	Los Angeles, Anaheim, Riverside	2004	6.3%
931	Santa Barbara	2004	15.9%
933	Bakersfield	2004	5.5%
934	San Luis Obispo	2004	4.1%
937	Fresno	2004	6.3%
939	Salinas	2004	0.0%
940	San Francisco, Oakland, San Jose	2004	0.0%
941	San Francisco, Oakland, San Jose	2004	0.0%
945	San Francisco, Oakland, San Jose	2004	14.9%
946	San Francisco, Oakland, San Jose	2004	0.0%
951	San Francisco, Oakland, San Jose	2004	7.1%
952	Stockton	2004	10.0%
953	Modesto	2004	52.6%
958	Sacramento	2004	9.6%
968	Honolulu	2004	3.5%
970	Portland, Vancouver	2004	62.7%
972	Portland, Vancouver	2004	16.7%
974	Eugene	2004	15.8%
980	Seattle, Tacoma	2004	69.8%
981	Seattle, Tacoma	2004	18.9%
982	Bellingham	2004	49.1%
984	Seattle, Tacoma	2004	16.4%
986	Portland, Vancouver	2004	19.4%
992	Spokane	2004	13.3%

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3 Digit Zip	Metro Area	Year	Percent Adoption
010	Springfield	2005	27.8%
017	Boston, Lawrence, Salem	2005	12.5%
018	Boston, Lawrence, Salem	2005	11.8%
019	Boston, Lawrence, Salem	2005	10.0%
021	Boston, Lawrence, Salem	2005	2.8%
024	Boston, Lawrence, Salem	2005	18.6%
027	Providence, Pawtucket, Fall River	2005	0.0%
028	Providence, Pawtucket, Fall River	2005	0.0%
029	Providence, Pawtucket, Fall River	2005	0.0%
060	Hartford, New Britain, Middletown	2005	42.7%
061	Hartford, New Britain, Middletown	2005	0.0%
064	New Haven, Meriden	2005	10.5%
065	New Haven, Meriden	2005	15.7%
068	New York, Northern New Jersey, Southwestern Connecticut	2005	12.5%
070	New York, Northern New Jersey, Southwestern Connecticut	2005	0.0%
071	New York, Northern New Jersey, Southwestern Connecticut	2005	0.0%
072	New York, Northern New Jersey, Southwestern Connecticut	2005	0.0%
077	New York, Northern New Jersey, Southwestern Connecticut	2005	0.0%
078	New York, Northern New Jersey, Southwestern Connecticut	2005	0.0%
080	Philadelphia, Wilmington, Trenton	2005	0.0%
086	Philadelphia, Wilmington, Trenton	2005	0.0%
106	New York, Northern New Jersey, Southwestern Connecticut	2005	0.0%
107	New York, Northern New Jersey, Southwestern Connecticut	2005	0.0%
108	New York, Northern New Jersey, Southwestern Connecticut	2005	0.0%
110	Springfield	2005	0.0%
111	New York, Northern New Jersey, Southwestern Connecticut	2005	0.0%
117	New York, Northern New Jersey, Southwestern Connecticut	2005	57.3%
120	Albany, Schenectady, Troy	2005	0.0%
121	Albany, Schenectady, Troy	2005	0.0%
122	Albany, Schenectady, Troy	2005	2.0%
123	Albany, Schenectady, Troy	2005	0.0%

3 Digit Zip	Metro Area	Year	Percent Adoption
130	Syracuse	2005	0.0%
132	Syracuse	2005	19.0%
140	Buffalo, Niagara Falls	2005	0.0%
141	Buffalo, Niagara Falls	2005	0.0%
142	Buffalo, Niagara Falls	2005	0.0%
143	Buffalo, Niagara Falls	2005	0.0%
146	Rochester	2005	9.5%
152	Pittsburgh, Beaver Valley	2005	0.0%
171	Harrisburg, Lebanon, Carlisle	2005	0.0%
180	Allentown, Bethlehem, Easton	2005	0.0%
181	Allentown, Bethlehem, Easton	2005	5.9%
185	Scranton, Wilkes-Barre	2005	0.0%
187	Scranton, Wilkes-Barre	2005	0.0%
190	Philadelphia, Wilmington, Trenton	2005	29.5%
191	Philadelphia, Wilmington, Trenton	2005	0.1%
198	Philadelphia, Wilmington, Trenton	2005	0.0%
208	Washington	2005	0.0%
210	Baltimore	2005	0.0%
211	Baltimore	2005	0.0%
212	Baltimore	2005	0.0%
217	Washington	2005	0.0%
220	Washington	2005	0.0%
222	Washington	2005	0.0%
223	Washington	2005	0.0%
230	Richmond, Petersburg	2005	0.0%
232	Washington	2005	3.2%
234	Hampton Roads	2005	25.4%
235	Hampton Roads	2005	46.2%
236	Hampton Roads	2005	16.5%
237	Hampton Roads	2005	0.0%
238	Richmond, Petersburg	2005	0.2%
271	Greensboro, Winston-Salem, High Point	2005	0.0%
272	Raleigh-Durham	2005	0.0%
273	Raleigh-Durham	2005	0.0%
274	Greensboro, Winston-Salem, High Point	2005	7.6%
276	Raleigh-Durham	2005	0.0%
277	Raleigh-Durham	2005	5.6%
282	Charlotte, Gastonia, Rock Hill	2005	7.6%
293	Greenville, Spartanburg	2005	6.4%

3 Digit Zip	Metro Area	Year	Percent Adoption
294	Charleston	2005	0.2%
296	Greenville, Spartanburg	2005	0.0%
297	Charlotte, Gastonia, Rock Hill	2005	0.0%
300	Atlanta	2005	2.1%
301	Atlanta	2005	0.0%
302	Atlanta	2005	0.0%
303	Atlanta	2005	0.0%
320	Jacksonville	2005	0.0%
322	Jacksonville	2005	0.0%
328	Orlando	2005	12.3%
330	Miami, Fort Lauderdale	2005	2.9%
331	Miami, Fort Lauderdale	2005	0.0%
333	Miami, Fort Lauderdale	2005	3.2%
334	West Palm Beach, Boca Raton, Delray	2005	1.2%
335	Tampa, St. Petersburg, Clearwater	2005	0.0%
336	Tampa, St. Petersburg, Clearwater	2005	0.5%
337	Tampa, St. Petersburg, Clearwater	2005	3.3%
342	Sarasota-Bradenton	2005	7.7%
346	Tampa, St. Petersburg, Clearwater	2005	9.4%
347	Orlando	2005	0.0%
350	Birmingham	2005	0.0%
352	Birmingham	2005	0.0%
372	Nashville	2005	0.0%
378	Knoxville	2005	0.0%
379	Knoxville	2005	0.0%
381	Memphis	2005	6.5%
401	Louisville	2005	0.0%
402	Louisville	2005	0.0%
406	Louisville	2005	0.0%
410	Cincinnati, Hamilton	2005	0.0%
430	Columbus	2005	0.0%
431	Columbus	2005	0.0%
432	Columbus	2005	1.0%
434	Toledo	2005	0.0%
436	Toledo	2005	0.0%
440	Cleveland, Akron, Lorain	2005	0.9%
441	Cleveland, Akron, Lorain	2005	0.9%
443	Cleveland, Akron, Lorain	2005	0.0%
444	Youngstown, Warren	2005	5.2%

3 Digit Zip	Metro Area	Year	Percent Adoption
445	Youngstown, Warren	2005	33.8%
450	Cincinnati, Hamilton	2005	0.3%
451	Cincinnati, Hamilton	2005	2.6%
452	Cincinnati, Hamilton	2005	0.0%
453	Dayton, Springfield	2005	8.8%
454	Dayton, Springfield	2005	0.0%
455	Dayton, Springfield	2005	23.6%
462	Indianapolis	2005	1.2%
463	Chicago, Gary, Lake County	2005	0.0%
464	Chicago, Gary, Lake County	2005	0.5%
466	Chicago, Gary, Lake County	2005	0.0%
471	Louisville	2005	0.0%
480	Detroit, Ann Arbor	2005	14.3%
481	Detroit, Ann Arbor	2005	2.2%
482	Detroit, Ann Arbor	2005	0.0%
483	Detroit, Ann Arbor	2005	0.0%
488	Grand Rapids	2005	0.0%
494	Grand Rapids	2005	0.0%
495	Grand Rapids	2005	13.0%
515	Omaha	2005	0.0%
530	Milwaukee, Racine	2005	0.0%
531	Milwaukee, Racine	2005	23.1%
532	Milwaukee, Racine	2005	11.8%
534	Milwaukee, Racine	2005	0.0%
547	Milwaukee, Racine	2005	0.0%
550	Minneapolis, St. Paul	2005	76.5%
551	Minneapolis, St. Paul	2005	94.6%
553	Minneapolis, St. Paul	2005	56.3%
554	Minneapolis, St. Paul	2005	23.5%
600	Chicago, Gary, Lake County	2005	17.5%
601	Chicago, Gary, Lake County	2005	26.7%
603	Chicago, Gary, Lake County	2005	16.5%
604	Chicago, Gary, Lake County	2005	10.4%
605	Chicago, Gary, Lake County	2005	40.5%
606	Chicago, Gary, Lake County	2005	0.0%
608	Chicago, Gary, Lake County	2005	75.0%
620	St. Louis	2005	0.0%
622	St. Louis	2005	0.0%
630	St. Louis	2005	0.0%

3 Digit Zip	Metro Area	Year	Percent Adoption
633	St. Louis	2005	0.0%
641	Kansas City	2005	0.3%
660	Kansas City	2005	23.0%
661	Kansas City	2005	0.0%
662	Kansas City	2005	100.0%
666	Kansas City	2005	0.0%
672	Wichita	2005	0.2%
680	Omaha	2005	0.0%
681	Omaha	2005	6.1%
700	New Orleans	2005	3.2%
701	New Orleans	2005	44.3%
704	New Orleans	2005	0.0%
707	Baton Rouge	2005	0.0%
708	Baton Rouge	2005	11.6%
720	Little Rock, North Little Rock	2005	0.0%
721	Little Rock, North Little Rock	2005	1.1%
722	Little Rock, North Little Rock	2005	1.3%
730	Oklahoma City	2005	19.9%
731	Oklahoma City	2005	5.7%
740	Tulsa	2005	27.1%
741	Tulsa	2005	5.2%
750	Dallas, Fort Worth	2005	26.9%
751	Dallas, Fort Worth	2005	11.9%
752	Dallas, Fort Worth	2005	0.0%
753	Dallas, Fort Worth	2005	0.0%
760	Dallas, Fort Worth	2005	44.7%
761	Dallas, Fort Worth	2005	0.0%
762	Dallas, Fort Worth	2005	0.0%
770	Houston, Galveston, Brazoria	2005	10.1%
773	Houston, Galveston, Brazoria	2005	0.0%
774	Houston, Galveston, Brazoria	2005	13.0%
775	Houston, Galveston, Brazoria	2005	9.3%
782	San Antonio	2005	6.7%
786	Austin	2005	0.0%
787	Austin	2005	4.3%
799	El Paso	2005	1.6%
800	Denver, Boulder	2005	68.9%
802	Denver, Boulder	2005	8.7%
803	Denver, Boulder	2005	100.0%

3 Digit Zip	Metro Area	Year	Percent Adoption
840	Salt Lake City, Ogden	2005	1.4%
841	Salt Lake City, Ogden	2005	14.7%
844	Salt Lake City, Ogden	2005	0.0%
850	Phoenix	2005	10.2%
852	Phoenix	2005	10.4%
853	Phoenix	2005	4.2%
857	Tucson	2005	10.2%
870	Albuquerque	2005	100.0%
871	Albuquerque	2005	4.8%
891	Las Vegas	2005	5.8%
903	Los Angeles, Anaheim, Riverside	2005	0.0%
912	Los Angeles, Anaheim, Riverside	2005	3.4%
917	Los Angeles, Anaheim, Riverside	2005	0.0%
919	San Diego	2005	28.0%
920	San Diego	2005	20.2%
921	San Diego	2005	0.5%
925	Los Angeles, Anaheim, Riverside	2005	0.0%
926	Los Angeles, Anaheim, Riverside	2005	0.0%
927	Los Angeles, Anaheim, Riverside	2005	10.0%
928	Los Angeles, Anaheim, Riverside	2005	6.3%
933	Bakersfield	2005	5.3%
937	Fresno	2005	10.1%
940	San Francisco, Oakland, San Jose	2005	0.0%
941	San Francisco, Oakland, San Jose	2005	0.0%
945	San Francisco, Oakland, San Jose	2005	0.0%
946	San Francisco, Oakland, San Jose	2005	0.0%
958	Sacramento	2005	10.1%
968	Honolulu	2005	3.6%
970	Portland, Vancouver	2005	72.9%
972	Portland, Vancouver	2005	16.2%
980	Seattle, Tacoma	2005	96.3%
981	Seattle, Tacoma	2005	18.9%
982	Seattle, Tacoma	2005	19.7%
984	Seattle, Tacoma	2005	16.4%
986	Portland, Vancouver	2005	25.2%

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3 Digit Zip	Metro Area	Year	Percent Adoption
010	Springfield	2006	10.5%
011	Springfield	2006	0.0%
017	Boston, Lawrence, Salem	2006	12.5%
018	Boston, Lawrence, Salem	2006	11.7%
019	Boston, Lawrence, Salem	2006	100.0%
021	Boston, Lawrence, Salem	2006	8.4%
024	Boston, Lawrence, Salem	2006	18.6%
027	Providence, Pawtucket, Fall River	2006	0.0%
029	Providence, Pawtucket, Fall River	2006	0.0%
060	Hartford, New Britain, Middletown	2006	44.4%
061	Hartford, New Britain, Middletown	2006	2.4%
063	New London	2006	32.4%
064	New Haven, Meriden	2006	9.7%
065	New Haven, Meriden	2006	9.3%
068	New York, Northern New Jersey, Southwestern Connecticut	2006	13.8%
070	New York, Northern New Jersey, Southwestern Connecticut	2006	0.0%
071	New York, Northern New Jersey, Southwestern Connecticut	2006	0.0%
072	New York, Northern New Jersey, Southwestern Connecticut	2006	0.0%
077	New York, Northern New Jersey, Southwestern Connecticut	2006	0.0%
078	New York, Northern New Jersey, Southwestern Connecticut	2006	0.0%
080	Philadelphia, Wilmington, Trenton	2006	0.0%
086	Philadelphia, Wilmington, Trenton	2006	0.0%
105	New York, Northern New Jersey, Southwestern Connecticut	2006	0.0%
106	New York, Northern New Jersey, Southwestern Connecticut	2006	0.0%
107	New York, Northern New Jersey, Southwestern Connecticut	2006	0.0%
110	Springfield	2006	0.0%
111	New York, Northern New Jersey, Southwestern Connecticut	2006	0.0%
117	New York, Northern New Jersey, Southwestern Connecticut	2006	57.0%
120	Albany, Schenectady, Troy	2006	0.0%
121	Albany, Schenectady, Troy	2006	0.0%
122	Albany, Schenectady, Troy	2006	2.2%

123	Albany, Schenectady, Troy	2006	0.0%
130	Syracuse	2006	0.0%
132	Syracuse	2006	19.0%
141	Buffalo, Niagara Falls	2006	0.0%
142	Buffalo, Niagara Falls	2006	0.0%
143	Buffalo, Niagara Falls	2006	0.0%
146	Rochester	2006	8.4%
152	Pittsburgh, Beaver Valley	2006	0.0%
171	Harrisburg, Lebanon, Carlisle	2006	26.1%
176	Lancaster	2006	0.0%
180	Allentown, Bethlehem, Easton	2006	0.0%
181	Allentown, Bethlehem, Easton	2006	0.0%
185	Scranton, Wilkes-Barre	2006	4.3%
187	Scranton, Wilkes-Barre	2006	0.0%
190	Philadelphia, Wilmington, Trenton	2006	44.3%
191	Philadelphia, Wilmington, Trenton	2006	1.0%
198	Philadelphia, Wilmington, Trenton	2006	0.0%
200	Washington	2006	0.0%
208	Washington	2006	0.0%
210	Baltimore	2006	0.0%
211	Baltimore	2006	0.0%
212	Baltimore	2006	0.0%
217	Washington	2006	0.0%
222	Washington	2006	0.0%
223	Washington	2006	0.0%
230	Richmond, Petersburg	2006	0.0%
232	Richmond, Petersburg	2006	0.3%
234	Hampton Roads	2006	38.4%
235	Hampton Roads	2006	50.0%
236	Hampton Roads	2006	7.0%
237	Hampton Roads	2006	0.0%
238	Richmond, Petersburg	2006	0.5%
240	Roanoke	2006	23.8%
271	Greensboro, Winston-Salem, High Point	2006	0.0%
272	Greensboro, Winston-Salem, High Point	2006	0.0%
273	Raleigh-Durham	2006	0.0%
274	Greensboro, Winston-Salem, High Point	2006	3.6%
276	Raleigh-Durham	2006	0.0%
277	Raleigh-Durham	2006	0.0%
278	Greenville	2006	8.9%
282	Charlotte, Gastonia, Rock Hill	2006	7.8%

288	Asheville	2006	0.0%
290	Columbia	2006	0.0%
292	Columbia	2006	21.1%
293	Greenville, Spartanburg	2006	8.1%
294	Charleston	2006	0.0%
296	Greenville, Spartanburg	2006	0.0%
297	Charlotte, Gastonia, Rock Hill	2006	0.0%
300	Atlanta	2006	2.4%
301	Atlanta	2006	0.0%
302	Atlanta	2006	0.0%
303	Atlanta	2006	0.0%
320	Jacksonville	2006	0.0%
321	Daytona Beach	2006	1.1%
322	Jacksonville	2006	0.0%
325	Pensacola	2006	0.0%
327	Daytona Beach	2006	0.0%
328	Orlando	2006	12.5%
330	Miami, Fort Lauderdale	2006	2.3%
331	Miami, Fort Lauderdale	2006	0.0%
333	Miami, Fort Lauderdale	2006	3.7%
334	West Palm Beach, Boca Raton, Delray	2006	1.1%
335	Tampa, St. Petersburg, Clearwater	2006	0.0%
336	Tampa, St. Petersburg, Clearwater	2006	0.1%
337	Tampa, St. Petersburg, Clearwater	2006	4.1%
339	Fort Myers	2006	0.0%
342	Sarasota-Bradenton	2006	8.5%
346	Tampa, St. Petersburg, Clearwater	2006	14.3%
347	Orlando	2006	0.0%
350	Birmingham	2006	0.0%
352	Birmingham	2006	0.0%
358	Huntsville	2006	0.0%
361	Montgomery	2006	0.0%
372	Nashville	2006	0.0%
374	Chattanooga	2006	5.3%
378	Knoxville	2006	0.0%
379	Knoxville	2006	0.0%
381	Memphis	2006	0.0%
392	Jackson	2006	100.0%
402	Louisville	2006	0.0%
410	Cincinnati, Hamilton	2006	0.0%
430	Columbus	2006	0.0%

431	Columbus	2006	0.0%
432	Columbus	2006	1.0%
434	Toledo	2006	0.0%
436	Toledo	2006	0.0%
440	Cleveland, Akron, Lorain	2006	1.0%
441	Cleveland, Akron, Lorain	2006	1.1%
443	Cleveland, Akron, Lorain	2006	0.0%
444	Youngstown, Warren	2006	9.4%
445	Youngstown, Warren	2006	33.8%
450	Cincinnati, Hamilton	2006	0.6%
451	Cincinnati, Hamilton	2006	2.6%
452	Cincinnati, Hamilton	2006	0.0%
453	Dayton, Springfield	2006	9.5%
454	Dayton, Springfield	2006	0.0%
455	Dayton, Springfield	2006	23.6%
462	Indianapolis	2006	0.0%
463	Chicago, Gary, Lake County	2006	9.9%
464	Chicago, Gary, Lake County	2006	0.0%
466	Chicago, Gary, Lake County	2006	0.0%
468	Fort Wayne	2006	0.0%
471	Louisville	2006	0.0%
480	Detroit, Ann Arbor	2006	10.6%
481	Detroit, Ann Arbor	2006	2.4%
482	Detroit, Ann Arbor	2006	0.0%
483	Detroit, Ann Arbor	2006	0.0%
488	Grand Rapids	2006	0.0%
494	Grand Rapids	2006	0.0%
495	Grand Rapids	2006	16.7%
503	Des Moines	2006	25.1%
515	Omaha	2006	0.0%
530	Milwaukee, Racine	2006	0.0%
531	Milwaukee, Racine	2006	17.9%
532	Milwaukee, Racine	2006	11.9%
534	Milwaukee, Racine	2006	0.0%
535	Janesville-Beloit	2006	17.4%
547	Milwaukee, Racine	2006	0.0%
550	Minneapolis, St. Paul	2006	76.5%
551	Minneapolis, St. Paul	2006	93.5%
553	Minneapolis, St. Paul	2006	66.2%
554	Minneapolis, St. Paul	2006	22.8%
600	Chicago, Gary, Lake County	2006	61.0%

601	Chicago, Gary, Lake County	2006	33.9%
603	Chicago, Gary, Lake County	2006	15.5%
604	Chicago, Gary, Lake County	2006	26.6%
605	Chicago, Gary, Lake County	2006	46.7%
606	Chicago, Gary, Lake County	2006	0.0%
608	Chicago, Gary, Lake County	2006	75.0%
620	St. Louis	2006	0.0%
622	St. Louis	2006	0.0%
630	St. Louis	2006	0.0%
633	St. Louis	2006	0.0%
641	Kansas City	2006	0.3%
658	Springfield(MO)	2006	0.0%
660	Kansas City	2006	26.1%
661	Kansas City	2006	0.0%
662	Kansas City	2006	100.0%
672	Wichita	2006	0.0%
680	Omaha	2006	0.0%
681	Omaha	2006	9.8%
700	New Orleans	2006	2.6%
701	New Orleans	2006	37.0%
704	New Orleans	2006	0.0%
707	Baton Rouge	2006	0.0%
708	Baton Rouge	2006	3.3%
720	Little Rock, North Little Rock	2006	0.0%
721	Little Rock, North Little Rock	2006	0.0%
722	Little Rock, North Little Rock	2006	1.3%
730	Oklahoma City	2006	20.0%
731	Oklahoma City	2006	5.5%
740	Tulsa	2006	28.0%
741	Tulsa	2006	5.2%
750	Dallas, Fort Worth	2006	23.1%
751	Dallas, Fort Worth	2006	11.9%
752	Dallas, Fort Worth	2006	0.0%
753	Dallas, Fort Worth	2006	0.0%
760	Dallas, Fort Worth	2006	24.6%
761	Dallas, Fort Worth	2006	0.0%
762	Dallas, Fort Worth	2006	0.0%
770	Houston, Galveston, Brazoria	2006	9.8%
773	Houston, Galveston, Brazoria	2006	0.0%
774	Houston, Galveston, Brazoria	2006	11.7%
775	Houston, Galveston, Brazoria	2006	1.9%

776	Beaumont-Port Arthur	2006	0.0%
777	Beaumont-Port Arthur	2006	9.2%
782	San Antonio	2006	7.4%
785	McAllen	2006	0.0%
786	Austin	2006	0.0%
787	Austin	2006	2.0%
799	El Paso	2006	2.5%
800	Denver, Boulder	2006	70.2%
802	Denver, Boulder	2006	8.2%
803	Denver, Boulder	2006	100.0%
837	Boise City	2006	44.2%
840	Provo - Orem	2006	4.0%
841	Salt Lake City, Ogden	2006	6.1%
844	Salt Lake City, Ogden	2006	0.0%
846	Provo - Orem	2006	9.6%
850	Phoenix	2006	10.8%
852	Phoenix	2006	11.7%
853	Phoenix	2006	4.5%
857	Tucson	2006	10.5%
870	Albuquerque	2006	100.0%
871	Albuquerque	2006	5.1%
873	Boise City	2006	100.0%
891	Las Vegas	2006	0.0%
894	Reno	2006	31.7%
895	Reno	2006	0.0%
903	Los Angeles, Anaheim, Riverside	2006	0.0%
912	Los Angeles, Anaheim, Riverside	2006	0.0%
917	Los Angeles, Anaheim, Riverside	2006	0.0%
919	San Diego	2006	25.0%
920	San Diego	2006	22.5%
921	San Diego	2006	0.5%
925	Los Angeles, Anaheim, Riverside	2006	0.0%
926	Los Angeles, Anaheim, Riverside	2006	0.0%
927	Los Angeles, Anaheim, Riverside	2006	13.5%
928	Los Angeles, Anaheim, Riverside	2006	6.3%
931	Santa Barbara	2006	14.7%
933	Bakersfield	2006	14.3%
934	Santa Barbara	2006	17.6%
937	Fresno	2006	6.6%
939	Salinas	2006	6.3%
940	San Francisco, Oakland, San Jose	2006	0.0%

941	San Francisco, Oakland, San Jose	2006	0.0%
945	San Francisco, Oakland, San Jose	2006	14.9%
946	San Francisco, Oakland, San Jose	2006	0.0%
951	San Francisco, Oakland, San Jose	2006	40.6%
952	Stockton	2006	26.2%
953	Modesto	2006	45.0%
958	Sacramento	2006	9.9%
968	Honolulu	2006	5.3%
970	Portland, Vancouver	2006	65.6%
972	Portland, Vancouver	2006	16.0%
974	Eugene	2006	15.9%
980	Seattle, Tacoma	2006	95.0%
981	Seattle, Tacoma	2006	19.3%
982	Bellingham	2006	50.5%
984	Seattle, Tacoma	2006	15.8%
986	Portland, Vancouver	2006	100.0%
992	Spokane	2006	24.1%

EVP EM 2007 Data

3 Digit Zip	Metro Area	Year	Percent Adoption
010	Springfield	2007	10.5%
011	Springfield	2007	0.0%
017	Boston, Lawrence, Salem	2007	10.3%
018	Boston, Lawrence, Salem	2007	0.0%
021	Boston, Lawrence, Salem	2007	19.5%
024	Boston, Lawrence, Salem	2007	18.6%
027	Providence, Pawtucket, Fall River	2007	0.0%
029	Providence, Pawtucket, Fall River	2007	0.0%
060	Hartford, New Britain, Middletown	2007	79.0%
061	Hartford, New Britain, Middletown	2007	2.4%
063	New London	2007	34.2%
064	New Haven, Meriden	2007	9.7%
065	New Haven, Meriden	2007	23.3%
066	New York, Northern New Jersey, Southwestern Connecticut	2007	13.9%
068	New York, Northern New Jersey, Southwestern Connecticut	2007	100.0%
070	New York, Northern New Jersey, Southwestern Connecticut	2007	0.0%
071	New York, Northern New Jersey, Southwestern Connecticut	2007	0.0%
072	New York, Northern New Jersey, Southwestern Connecticut	2007	0.0%
077	New York, Northern New Jersey, Southwestern Connecticut	2007	0.0%
078	New York, Northern New Jersey, Southwestern Connecticut	2007	0.0%
080	Philadelphia, Wilmington, Trenton	2007	0.0%
086	Philadelphia, Wilmington, Trenton	2007	0.0%
105	New York, Northern New Jersey, Southwestern Connecticut	2007	0.0%
106	New York, Northern New Jersey, Southwestern Connecticut	2007	0.0%
110	Springfield	2007	0.0%
111	New York, Northern New Jersey, Southwestern Connecticut	2007	0.0%
117	New York, Northern New Jersey, Southwestern Connecticut	2007	31.9%
120	Albany, Schenectady, Troy	2007	0.0%
121	Albany, Schenectady, Troy	2007	0.0%
122	Albany, Schenectady, Troy	2007	3.1%
123	Albany, Schenectady, Troy	2007	0.0%

3 Digit Zip	Metro Area	Year	Percent Adoption
130	Syracuse	2007	0.0%
132	Syracuse	2007	20.4%
140	Buffalo, Niagara Falls	2007	0.0%
141	Buffalo, Niagara Falls	2007	0.0%
142	Buffalo, Niagara Falls	2007	0.0%
143	Buffalo, Niagara Falls	2007	0.0%
146	Rochester	2007	8.3%
152	Pittsburgh, Beaver Valley	2007	0.0%
171	Harrisburg, Lebanon, Carlisle	2007	0.0%
176	Lancaster	2007	0.0%
180	Allentown, Bethlehem, Easton	2007	0.0%
181	Allentown, Bethlehem, Easton	2007	0.0%
185	Scranton, Wilkes-Barre	2007	5.4%
190	Philadelphia, Wilmington, Trenton	2007	39.8%
191	Philadelphia, Wilmington, Trenton	2007	1.3%
198	Philadelphia, Wilmington, Trenton	2007	0.0%
200	Washington	2007	0.0%
210	Baltimore	2007	0.0%
211	Baltimore	2007	0.0%
212	Baltimore	2007	0.0%
217	Washington	2007	0.0%
222	Washington	2007	0.0%
230	Richmond, Petersburg	2007	0.0%
232	Roanoke	2007	0.4%
234	Hampton Roads	2007	59.0%
235	Hampton Roads	2007	50.0%
236	Hampton Roads	2007	18.5%
237	Hampton Roads	2007	0.0%
238	Richmond, Petersburg	2007	0.4%
240	Roanoke	2007	27.0%
271	Greensboro, Winston-Salem, High Point	2007	0.0%
272	Greensboro, Winston-Salem, High Point	2007	0.0%
273	Raleigh-Durham	2007	0.0%
274	Greensboro, Winston-Salem, High Point	2007	0.0%
276	Raleigh-Durham	2007	0.0%
277	Raleigh-Durham	2007	6.7%
278	Greenville	2007	4.3%
282	Charlotte, Gastonia, Rock Hill	2007	7.0%
288	Asheville	2007	0.0%

3 Digit Zip	Metro Area	Year	Percent Adoption
290	Columbia	2007	0.0%
292	Columbia	2007	2.6%
293	Greenville, Spartanburg	2007	8.0%
294	Charleston	2007	0.0%
296	Greenville, Spartanburg	2007	0.0%
297	Charlotte, Gastonia, Rock Hill	2007	0.0%
300	Atlanta	2007	2.4%
301	Atlanta	2007	0.0%
302	Atlanta	2007	0.0%
303	Atlanta	2007	0.1%
320	Jacksonville	2007	0.0%
321	Daytona Beach	2007	1.0%
322	Jacksonville	2007	0.0%
325	Pensacola	2007	0.0%
328	Orlando	2007	12.6%
330	Miami, Fort Lauderdale	2007	2.7%
331	Miami, Fort Lauderdale	2007	2.3%
333	Miami, Fort Lauderdale	2007	5.8%
334	West Palm Beach, Boca Raton, Delray	2007	1.4%
335	Tampa, St. Petersburg, Clearwater	2007	0.0%
336	Tampa, St. Petersburg, Clearwater	2007	0.8%
337	Tampa, St. Petersburg, Clearwater	2007	2.8%
339	Fort Myers	2007	0.0%
342	Sarasota-Bradenton	2007	23.0%
346	Tampa, St. Petersburg, Clearwater	2007	11.8%
347	Orlando	2007	0.0%
350	Birmingham	2007	0.0%
352	Birmingham	2007	0.0%
358	Huntsville	2007	0.0%
361	Montgomery	2007	0.0%
372	Nashville	2007	0.0%
373	Chattanooga	2007	0.0%
374	Chattanooga	2007	3.2%
378	Knoxville	2007	0.0%
379	Knoxville	2007	0.0%
381	Memphis	2007	0.0%
392	Jackson	2007	0.0%
401	Louisville	2007	0.0%
402	Louisville	2007	0.0%

3 Digit Zip	Metro Area	Year	Percent Adoption
410	Cincinnati, Hamilton	2007	0.0%
430	Columbus	2007	0.0%
431	Columbus	2007	0.0%
432	Columbus	2007	1.0%
434	Toledo	2007	0.0%
436	Toledo	2007	0.0%
440	Cleveland, Akron, Lorain	2007	0.6%
441	Cleveland, Akron, Lorain	2007	3.5%
443	Cleveland, Akron, Lorain	2007	54.5%
444	Youngstown, Warren	2007	6.1%
445	Youngstown, Warren	2007	36.1%
450	Cincinnati, Hamilton	2007	0.0%
451	Cincinnati, Hamilton	2007	2.6%
452	Cincinnati, Hamilton	2007	0.0%
453	Dayton, Springfield	2007	9.1%
454	Dayton, Springfield	2007	0.0%
455	Dayton, Springfield	2007	24.4%
462	Indianapolis	2007	0.0%
463	Chicago, Gary, Lake County	2007	0.0%
464	Chicago, Gary, Lake County	2007	0.0%
468	Fort Wayne	2007	0.0%
471	Louisville	2007	0.0%
480	Detroit, Ann Arbor	2007	14.0%
481	Detroit, Ann Arbor	2007	5.1%
482	Detroit, Ann Arbor	2007	0.0%
483	Detroit, Ann Arbor	2007	0.0%
488	Grand Rapids	2007	0.0%
494	Grand Rapids	2007	0.0%
495	Grand Rapids	2007	27.9%
503	Des Moines	2007	25.4%
515	Omaha	2007	23.9%
530	Milwaukee, Racine	2007	0.0%
531	Milwaukee, Racine	2007	17.8%
532	Milwaukee, Racine	2007	11.6%
534	Milwaukee, Racine	2007	0.0%
535	Janesville-Beloit	2007	12.8%
547	Milwaukee, Racine	2007	0.0%
550	Minneapolis, St. Paul	2007	79.5%
551	Minneapolis, St. Paul	2007	92.5%

3 Digit Zip	Metro Area	Year	Percent Adoption
553	Minneapolis, St. Paul	2007	69.5%
554	Minneapolis, St. Paul	2007	26.2%
600	Chicago, Gary, Lake County	2007	32.6%
601	Chicago, Gary, Lake County	2007	36.8%
603	Chicago, Gary, Lake County	2007	15.8%
604	Chicago, Gary, Lake County	2007	14.6%
605	Chicago, Gary, Lake County	2007	51.4%
606	Chicago, Gary, Lake County	2007	0.3%
608	Chicago, Gary, Lake County	2007	58.7%
620	St. Louis	2007	0.0%
630	St. Louis	2007	0.0%
633	St. Louis	2007	0.0%
641	Kansas City	2007	0.3%
658	Springfield(MO)	2007	0.0%
660	Kansas City	2007	44.7%
661	Kansas City	2007	0.0%
662	Kansas City	2007	100.0%
666	Kansas City	2007	0.0%
672	Wichita	2007	0.0%
680	Omaha	2007	0.0%
681	Omaha	2007	9.8%
700	New Orleans	2007	2.4%
701	New Orleans	2007	13.0%
707	Baton Rouge	2007	0.6%
708	Baton Rouge	2007	3.3%
720	Little Rock, North Little Rock	2007	0.0%
721	Little Rock, North Little Rock	2007	0.0%
722	Little Rock, North Little Rock	2007	3.6%
730	Oklahoma City	2007	17.3%
731	Oklahoma City	2007	5.8%
740	Tulsa	2007	30.0%
741	Tulsa	2007	91.2%
750	Dallas, Fort Worth	2007	26.2%
751	Dallas, Fort Worth	2007	0.0%
752	Dallas, Fort Worth	2007	0.0%
753	Dallas, Fort Worth	2007	0.0%
760	Dallas, Fort Worth	2007	27.9%
761	Dallas, Fort Worth	2007	0.0%
762	Dallas, Fort Worth	2007	0.0%

3 Digit Zip	Metro Area	Year	Percent Adoption
770	Houston, Galveston, Brazoria	2007	9.8%
773	Houston, Galveston, Brazoria	2007	0.0%
774	Houston, Galveston, Brazoria	2007	11.8%
775	Houston, Galveston, Brazoria	2007	2.2%
776	Beaumont-Port Arthur	2007	0.0%
777	Beaumont-Port Arthur	2007	0.0%
782	San Antonio	2007	7.4%
785	McAllen	2007	1.9%
786	Austin	2007	0.0%
787	Austin	2007	2.2%
799	El Paso	2007	2.2%
800	Denver, Boulder	2007	70.2%
802	Denver, Boulder	2007	8.2%
803	Denver, Boulder	2007	100.0%
837	Boise City	2007	43.3%
840	Salt Lake City, Ogden	2007	15.2%
841	Salt Lake City, Ogden	2007	4.3%
844	Salt Lake City, Ogden	2007	0.0%
846	Provo - Orem	2007	15.4%
852	Phoenix	2007	11.7%
853	Phoenix	2007	1.8%
857	Tucson	2007	43.3%
870	Albuquerque	2007	100.0%
871	Albuquerque	2007	4.9%
891	Las Vegas	2007	0.0%
894	Reno	2007	30.9%
895	Reno	2007	0.0%
917	Los Angeles, Anaheim, Riverside	2007	0.0%
919	San Diego	2007	93.3%
920	San Diego	2007	18.8%
921	San Diego	2007	0.5%
925	Los Angeles, Anaheim, Riverside	2007	0.0%
927	Los Angeles, Anaheim, Riverside	2007	15.0%
928	Los Angeles, Anaheim, Riverside	2007	5.9%
931	Santa Barbara	2007	15.1%
933	Bakersfield	2007	4.1%
934	San Luis Obispo	2007	4.3%
937	Fresno	2007	6.9%
939	Salinas	2007	9.2%

3 Digit Zip	Metro Area	Year	Percent Adoption
940	San Francisco, Oakland, San Jose	2007	0.0%
941	San Francisco, Oakland, San Jose	2007	0.0%
945	San Francisco, Oakland, San Jose	2007	14.9%
946	San Francisco, Oakland, San Jose	2007	0.0%
951	San Francisco, Oakland, San Jose	2007	44.1%
952	Stockton	2007	27.1%
953	Modesto	2007	49.8%
958	Sacramento	2007	9.7%
968	Honolulu	2007	5.3%
970	Portland, Vancouver	2007	63.5%
972	Portland, Vancouver	2007	15.7%
974	Eugene	2007	8.0%
980	Seattle, Tacoma	2007	95.0%
981	Seattle, Tacoma	2007	17.7%
982	Bellingham	2007	76.4%
984	Seattle, Tacoma	2007	100.0%
986	Portland, Vancouver	2007	100.0%
992	Spokane	2007	14.8%

TMS 1999 Data

3 Digit Zip	Metro Area	year	Percent Adoption
010	Springfield	1999	0.0%
011	Springfield	1999	26.3%
019	Boston, Lawrence, Salem	1999	46.2%
021	Boston, Lawrence, Salem	1999	10.1%
022	Boston, Lawrence, Salem	1999	67.8%
024	Boston, Lawrence, Salem	1999	3.8%
027	Providence, Pawtucket, Fall River	1999	0.0%
028	Providence, Pawtucket, Fall River	1999	20.0%
029	Providence, Pawtucket, Fall River	1999	0.0%
061	Hartford, New Britain, Middletown	1999	93.0%
064	New York, Northern New Jersey, Southwestern Connecticut	1999	31.2%
065	New Haven, Meriden	1999	53.8%
066	New York, Northern New Jersey, Southwestern Connecticut	1999	14.2%
068	New York, Northern New Jersey, Southwestern Connecticut	1999	80.8%
069	New York, Northern New Jersey, Southwestern Connecticut	1999	66.7%
070	New York, Northern New Jersey, Southwestern Connecticut	1999	9.5%
071	New York, Northern New Jersey, Southwestern Connecticut	1999	27.0%
072	New York, Northern New Jersey, Southwestern Connecticut	1999	0.0%
073	New York, Northern New Jersey, Southwestern Connecticut	1999	100.0%
074	New York, Northern New Jersey, Southwestern Connecticut	1999	100.0%
076	New York, Northern New Jersey, Southwestern Connecticut	1999	7.1%
078	New York, Northern New Jersey, Southwestern Connecticut	1999	0.0%
080	Philadelphia, Wilmington, Trenton	1999	3.9%
086	Philadelphia, Wilmington, Trenton	1999	9.1%
087	New York, Northern New Jersey, Southwestern Connecticut	1999	1.3%
088	New York, Northern New Jersey, Southwestern Connecticut	1999	2.0%
100	New York, Northern New Jersey, Southwestern Connecticut	1999	55.6%
105	New York, Northern New Jersey, Southwestern Connecticut	1999	0.0%
106	New York, Northern New Jersey, Southwestern Connecticut	1999	20.8%

3 Digit Zip	Metro Area	year	Percent Adoption
108	New York, Northern New Jersey, Southwestern Connecticut	1999	NA
109	New York, Northern New Jersey, Southwestern Connecticut	1999	100.0%
111	New York, Northern New Jersey, Southwestern Connecticut	1999	51.5%
115	New York, Northern New Jersey, Southwestern Connecticut	1999	43.6%
117	New York, Northern New Jersey, Southwestern Connecticut	1999	10.9%
120	Albany, Schenectady, Troy	1999	69.2%
122	Albany, Schenectady, Troy	1999	7.8%
123	Albany, Schenectady, Troy	1999	20.6%
132	Syracuse	1999	41.4%
142	Buffalo, Niagara Falls	1999	9.6%
143	Buffalo, Niagara Falls	1999	81.8%
146	Rochester	1999	65.4%
152	Pittsburgh, Beaver Valley	1999	19.9%
156	Pittsburgh, Beaver Valley	1999	100.0%
171	Harrisburg, Lebanon, Carlisle	1999	61.9%
180	Allentown, Bethlehem, Easton	1999	52.5%
181	Allentown, Bethlehem, Easton	1999	0.0%
190	Philadelphia, Wilmington, Trenton	1999	8.2%
191	Philadelphia, Wilmington, Trenton	1999	13.8%
198	Philadelphia, Wilmington, Trenton	1999	0.0%
199	Philadelphia, Wilmington, Trenton	1999	14.7%
207	Washington	1999	89.2%
208	Washington	1999	100.0%
210	Baltimore	1999	49.3%
212	Baltimore	1999	33.1%
214	Baltimore	1999	68.7%
222	Washington	1999	100.0%
223	Washington	1999	70.8%
232	Richmond, Petersburg	1999	0.0%
233	Hampton Roads	1999	100.0%
234	Hampton Roads	1999	77.9%
235	Hampton Roads	1999	77.3%
236	Hampton Roads	1999	63.5%
237	Hampton Roads	1999	47.0%
238	Richmond, Petersburg	1999	41.6%
271	Greensboro, Winston-Salem, High Point	1999	93.1%

3 Digit Zip	Metro Area	year	Percent Adoption
274	Greensboro, Winston-Salem, High Point	1999	56.9%
277	Raleigh-Durham	1999	0.0%
282	Charlotte, Gastonia, Rock Hill	1999	63.1%
283	Greensboro, Winston-Salem, High Point	1999	10.2%
292	Charlotte, Gastonia, Rock Hill	1999	23.2%
293	Greenville, Spartanburg	1999	64.2%
296	Greenville, Spartanburg	1999	68.6%
300	Atlanta	1999	51.5%
301	Atlanta	1999	100.0%
302	Atlanta	1999	51.7%
303	Atlanta	1999	56.4%
320	Jacksonville	1999	49.0%
322	Jacksonville	1999	24.8%
328	Orlando	1999	87.9%
331	Miami, Fort Lauderdale	1999	82.7%
333	Miami, Fort Lauderdale	1999	76.0%
334	West Palm Beach, Boca Raton, Delray	1999	51.0%
336	Tampa, St. Petersburg, Clearwater	1999	85.3%
337	Tampa, St. Petersburg, Clearwater	1999	49.0%
342	Sarasota-Bradenton	1999	70.7%
346	Tampa, St. Petersburg, Clearwater	1999	44.2%
352	Birmingham	1999	66.0%
371	Nashville	1999	NA
372	Nashville	1999	64.6%
379	Knoxville	1999	29.9%
381	Memphis	1999	8.8%
402	Louisville	1999	90.4%
410	Cincinnati, Hamilton	1999	62.9%
430	Columbus	1999	21.2%
432	Columbus	1999	61.5%
434	Toledo	1999	12.5%
436	Toledo	1999	100.0%
440	Cleveland, Akron, Lorain	1999	4.1%
441	Cleveland, Akron, Lorain	1999	33.3%
443	Cleveland, Akron, Lorain	1999	34.6%
445	Youngstown, Warren	1999	80.0%
448	Cleveland, Akron, Lorain	1999	0.0%
450	Cincinnati, Hamilton	1999	92.4%
451	Cincinnati, Hamilton	1999	0.0%

3 Digit Zip	Metro Area	year	Percent Adoption
452	Cincinnati, Hamilton	1999	22.3%
453	Dayton, Springfield	1999	44.4%
454	Dayton, Springfield	1999	66.7%
455	Dayton, Springfield	1999	9.6%
460	Indianapolis	1999	100.0%
461	Indianapolis	1999	25.0%
462	Indianapolis	1999	70.0%
463	Chicago, Gary, Lake County	1999	92.9%
464	Chicago, Gary, Lake County	1999	2.9%
471	Louisville	1999	0.0%
480	Detroit, Ann Arbor	1999	0.4%
481	Detroit, Ann Arbor	1999	26.6%
482	Detroit, Ann Arbor	1999	0.0%
483	Detroit, Ann Arbor	1999	33.3%
488	Detroit, Ann Arbor	1999	53.3%
494	Grand Rapids	1999	0.0%
495	Grand Rapids	1999	0.0%
515	Omaha	1999	68.0%
530	Milwaukee, Racine	1999	100.0%
531	Milwaukee, Racine	1999	18.4%
532	Milwaukee, Racine	1999	7.1%
534	Milwaukee, Racine	1999	71.8%
550	Minneapolis, St. Paul	1999	0.0%
551	Minneapolis, St. Paul	1999	75.1%
553	Minneapolis, St. Paul	1999	62.4%
554	Minneapolis, St. Paul	1999	92.9%
600	Chicago, Gary, Lake County	1999	49.7%
601	Chicago, Gary, Lake County	1999	53.8%
602	Chicago, Gary, Lake County	1999	0.0%
603	Chicago, Gary, Lake County	1999	33.3%
604	Chicago, Gary, Lake County	1999	63.8%
606	Chicago, Gary, Lake County	1999	9.2%
622	St. Louis	1999	69.6%
630	St. Louis	1999	24.7%
633	St. Louis	1999	0.0%
640	Kansas City	1999	7.0%
641	Kansas City	1999	22.1%
651	Kansas City	1999	25.3%
660	Kansas City	1999	39.8%

3 Digit Zip	Metro Area	year	Percent Adoption
661	Kansas City	1999	52.4%
662	Kansas City	1999	70.0%
672	Wichita	1999	79.5%
680	Omaha	1999	100.0%
681	Omaha	1999	96.6%
700	New Orleans	1999	3.5%
701	New Orleans	1999	20.6%
704	New Orleans	1999	0.0%
708	Baton Rouge	1999	11.1%
721	Little Rock, North Little Rock	1999	74.6%
722	Little Rock, North Little Rock	1999	71.6%
730	Oklahoma City	1999	39.9%
740	Tulsa	1999	0.0%
741	Tulsa	1999	23.2%
750	Dallas, Fort Worth	1999	50.3%
752	Dallas, Fort Worth	1999	84.7%
760	Dallas, Fort Worth	1999	69.4%
761	Dallas, Fort Worth	1999	35.6%
762	Dallas, Fort Worth	1999	47.0%
770	Houston, Galveston, Brazoria	1999	8.1%
772	Houston, Galveston, Brazoria	1999	51.1%
773	Houston, Galveston, Brazoria	1999	0.0%
774	Houston, Galveston, Brazoria	1999	NA
775	Houston, Galveston, Brazoria	1999	51.6%
782	San Antonio	1999	0.0%
787	Austin	1999	59.6%
799	El Paso	1999	27.2%
800	Denver, Boulder	1999	68.9%
801	Denver, Boulder	1999	30.5%
802	Denver, Boulder	1999	27.6%
803	Denver, Boulder	1999	82.4%
804	Denver, Boulder	1999	83.1%
841	Salt Lake City, Ogden	1999	19.4%
850	Phoenix	1999	17.2%
852	Phoenix	1999	91.9%
853	Phoenix	1999	22.8%
857	Tucson	1999	100.0%
871	Albuquerque	1999	100.0%
900	Los Angeles, Anaheim, Riverside	1999	57.0%

3 Digit Zip	Metro Area	year	Percent Adoption
903	Los Angeles, Anaheim, Riverside	1999	76.4%
908	Los Angeles, Anaheim, Riverside	1999	74.3%
911	Los Angeles, Anaheim, Riverside	1999	100.0%
912	Los Angeles, Anaheim, Riverside	1999	84.4%
917	Los Angeles, Anaheim, Riverside	1999	43.2%
919	San Diego	1999	100.0%
920	San Diego	1999	39.1%
921	San Diego	1999	49.5%
924	Los Angeles, Anaheim, Riverside	1999	44.3%
925	Los Angeles, Anaheim, Riverside	1999	30.0%
926	Los Angeles, Anaheim, Riverside	1999	91.5%
927	Los Angeles, Anaheim, Riverside	1999	100.0%
928	Los Angeles, Anaheim, Riverside	1999	95.2%
933	Bakersfield	1999	0.0%
937	Bakersfield	1999	27.3%
940	San Francisco, Oakland, San Jose	1999	100.0%
941	San Francisco, Oakland, San Jose	1999	91.4%
945	San Francisco, Oakland, San Jose	1999	100.0%
946	San Francisco, Oakland, San Jose	1999	0.0%
951	San Francisco, Oakland, San Jose	1999	75.4%
957	Sacramento	1999	39.6%
958	Sacramento	1999	43.9%
968	Honolulu	1999	40.0%
970	Portland, Vancouver	1999	8.1%
972	Portland, Vancouver	1999	46.2%
980	Seattle, Tacoma	1999	60.5%
981	Seattle, Tacoma	1999	50.5%
982	Seattle, Tacoma	1999	74.0%
983	Seattle, Tacoma	1999	100.0%
984	Seattle, Tacoma	1999	31.3%
986	Portland, Vancouver	1999	58.2%

TMS 2000 Data

3 Digit Zip	Metro Area	Year	Percent Adoption
010	Springfield	2000	0.0%
011	Springfield	2000	27.1%
018	Boston, Lawrence, Salem	2000	0.0%
021	Boston, Lawrence, Salem	2000	10.2%
022	Boston, Lawrence, Salem	2000	67.8%
024	Boston, Lawrence, Salem	2000	13.8%
027	Providence, Pawtucket, Fall River	2000	0.0%
029	Providence, Pawtucket, Fall River	2000	14.1%
061	New York, Northern New Jersey, Southwestern Connecticut	2000	54.4%
064	New Haven, Meriden	2000	30.8%
065	New Haven, Meriden	2000	61.7%
066	New York, Northern New Jersey, Southwestern Connecticut	2000	14.2%
068	New York, Northern New Jersey, Southwestern Connecticut	2000	89.4%
069	New York, Northern New Jersey, Southwestern Connecticut	2000	76.9%
070	New York, Northern New Jersey, Southwestern Connecticut	2000	16.2%
071	New York, Northern New Jersey, Southwestern Connecticut	2000	30.4%
072	New York, Northern New Jersey, Southwestern Connecticut	2000	0.0%
073	New York, Northern New Jersey, Southwestern Connecticut	2000	100.0%
074	New York, Northern New Jersey, Southwestern Connecticut	2000	100.0%
077	New York, Northern New Jersey, Southwestern Connecticut	2000	7.1%
078	New York, Northern New Jersey, Southwestern Connecticut	2000	0.0%
080	Philadelphia, Wilmington, Trenton	2000	5.3%
086	Philadelphia, Wilmington, Trenton	2000	0.0%
087	New York, Northern New Jersey, Southwestern Connecticut	2000	9.4%
088	New York, Northern New Jersey, Southwestern Connecticut	2000	2.0%
089	New York, Northern New Jersey, Southwestern Connecticut	2000	0.0%
100	New York, Northern New Jersey, Southwestern Connecticut	2000	55.5%
106	New York, Northern New Jersey, Southwestern Connecticut	2000	20.8%
107	New York, Northern New Jersey, Southwestern Connecticut	2000	0.0%

3 Digit Zip	Metro Area	Year	Percent Adoption
109	New York, Northern New Jersey, Southwestern Connecticut	2000	100.0%
111	New York, Northern New Jersey, Southwestern Connecticut	2000	68.9%
115	New York, Northern New Jersey, Southwestern Connecticut	2000	43.6%
117	New York, Northern New Jersey, Southwestern Connecticut	2000	10.8%
120	Albany, Schenectady, Troy	2000	71.4%
122	New York, Northern New Jersey, Southwestern Connecticut	2000	8.3%
123	Albany, Schenectady, Troy	2000	21.3%
132	Syracuse	2000	41.4%
142	Buffalo, Niagara Falls	2000	42.6%
143	Buffalo, Niagara Falls	2000	81.8%
146	Rochester	2000	65.4%
152	Pittsburgh, Beaver Valley	2000	19.9%
156	Pittsburgh, Beaver Valley	2000	100.0%
171	Harrisburg, Lebanon, Carlisle	2000	61.2%
180	Allentown, Bethlehem, Easton	2000	51.0%
181	Allentown, Bethlehem, Easton	2000	0.0%
190	Philadelphia, Wilmington, Trenton	2000	17.8%
191	Philadelphia, Wilmington, Trenton	2000	13.8%
198	Philadelphia, Wilmington, Trenton	2000	0.0%
199	Philadelphia, Wilmington, Trenton	2000	23.6%
200	Washington	2000	100.0%
207	Washington	2000	88.3%
208	Washington	2000	100.0%
210	Baltimore	2000	49.3%
212	Baltimore	2000	64.7%
214	Baltimore	2000	65.9%
220	Washington	2000	100.0%
222	Washington	2000	100.0%
223	Washington	2000	70.8%
232	Richmond, Petersburg	2000	0.0%
233	Hampton Roads	2000	100.0%
234	Hampton Roads	2000	77.1%
235	Hampton Roads	2000	66.0%
236	Hampton Roads	2000	64.7%
237	Hampton Roads	2000	47.0%
238	Richmond, Petersburg	2000	55.7%

3 Digit Zip	Metro Area	Year	Percent Adoption
271	Greensboro, Winston-Salem, High Point	2000	92.8%
272	Greensboro, Winston-Salem, High Point	2000	54.9%
274	Raleigh-Durham	2000	50.8%
276	Raleigh-Durham	2000	75.3%
277	Raleigh-Durham	2000	0.0%
282	Charlotte, Gastonia, Rock Hill	2000	76.0%
283	Greensboro, Winston-Salem, High Point	2000	11.7%
292	Charlotte, Gastonia, Rock Hill	2000	24.3%
293	Greenville, Spartanburg	2000	62.4%
296	Greenville, Spartanburg	2000	68.6%
300	Atlanta	2000	51.3%
301	Atlanta	2000	100.0%
302	Atlanta	2000	67.5%
303	Atlanta	2000	44.1%
320	Jacksonville	2000	51.6%
322	Jacksonville	2000	24.8%
327	Orlando	2000	75.0%
328	Orlando	2000	69.8%
331	Miami, Fort Lauderdale	2000	80.6%
333	Miami, Fort Lauderdale	2000	76.0%
334	West Palm Beach, Boca Raton, Delray	2000	64.3%
336	Tampa, St. Petersburg, Clearwater	2000	85.3%
337	Tampa, St. Petersburg, Clearwater	2000	49.4%
342	Sarasota-Bradenton	2000	65.4%
346	Tampa, St. Petersburg, Clearwater	2000	50.0%
347	Orlando	2000	1.5%
350	Birmingham	2000	0.0%
352	Birmingham	2000	51.9%
371	Nashville	2000	NA
372	Nashville	2000	64.0%
379	Knoxville	2000	44.4%
381	Memphis	2000	10.0%
402	Louisville	2000	90.4%
410	Cincinnati, Hamilton	2000	62.9%
430	Columbus	2000	21.2%
432	Columbus	2000	63.9%
434	Toledo	2000	8.6%
436	Toledo	2000	73.1%
440	Cleveland, Akron, Lorain	2000	1.3%

3 Digit Zip	Metro Area	Year	Percent Adoption
441	Cleveland, Akron, Lorain	2000	19.4%
442	Cleveland, Akron, Lorain	2000	0.0%
443	Cleveland, Akron, Lorain	2000	34.2%
444	Youngstown, Warren	2000	21.4%
445	Youngstown, Warren	2000	0.0%
448	Cleveland, Akron, Lorain	2000	1.0%
450	Cincinnati, Hamilton	2000	81.6%
451	Cincinnati, Hamilton	2000	29.4%
452	Cincinnati, Hamilton	2000	7.1%
453	Dayton, Springfield	2000	44.4%
454	Dayton, Springfield	2000	81.0%
455	Dayton, Springfield	2000	16.9%
460	Indianapolis	2000	100.0%
461	Indianapolis	2000	25.0%
462	Indianapolis	2000	62.5%
463	Chicago, Gary, Lake County	2000	92.6%
464	Chicago, Gary, Lake County	2000	4.4%
480	Detroit, Ann Arbor	2000	3.0%
481	Detroit, Ann Arbor	2000	24.8%
482	Detroit, Ann Arbor	2000	0.0%
483	Detroit, Ann Arbor	2000	33.5%
488	Detroit, Ann Arbor	2000	53.3%
494	Grand Rapids	2000	0.0%
495	Grand Rapids	2000	12.2%
515	Omaha	2000	71.2%
530	Milwaukee, Racine	2000	100.0%
531	Milwaukee, Racine	2000	15.4%
532	Milwaukee, Racine	2000	8.2%
534	Milwaukee, Racine	2000	71.8%
550	Minneapolis, St. Paul	2000	0.0%
551	Minneapolis, St. Paul	2000	74.8%
553	Minneapolis, St. Paul	2000	52.5%
554	Minneapolis, St. Paul	2000	81.7%
600	Chicago, Gary, Lake County	2000	51.1%
601	Chicago, Gary, Lake County	2000	57.1%
602	Chicago, Gary, Lake County	2000	0.0%
603	Chicago, Gary, Lake County	2000	28.6%
604	Chicago, Gary, Lake County	2000	62.7%
606	Chicago, Gary, Lake County	2000	9.2%

3 Digit Zip	Metro Area	Year	Percent Adoption
622	St. Louis	2000	68.6%
630	St. Louis	2000	0.0%
633	St. Louis	2000	0.0%
640	Kansas City	2000	7.0%
641	Kansas City	2000	22.1%
651	Kansas City	2000	47.7%
660	Kansas City	2000	39.8%
661	Kansas City	2000	52.4%
662	Kansas City	2000	54.5%
672	Wichita	2000	73.0%
681	Omaha	2000	74.3%
700	New Orleans	2000	7.9%
701	New Orleans	2000	28.8%
704	New Orleans	2000	58.3%
708	Baton Rouge	2000	11.1%
721	Little Rock, North Little Rock	2000	88.1%
722	Little Rock, North Little Rock	2000	74.6%
730	Oklahoma City	2000	42.7%
740	Tulsa	2000	0.0%
741	Tulsa	2000	23.0%
750	Dallas, Fort Worth	2000	60.8%
752	Dallas, Fort Worth	2000	88.6%
753	Dallas, Fort Worth	2000	44.4%
760	Dallas, Fort Worth	2000	67.4%
761	Dallas, Fort Worth	2000	5.0%
762	Dallas, Fort Worth	2000	46.2%
772	Houston, Galveston, Brazoria	2000	44.7%
773	Houston, Galveston, Brazoria	2000	0.0%
774	Houston, Galveston, Brazoria	2000	0.0%
775	Houston, Galveston, Brazoria	2000	12.0%
782	San Antonio	2000	0.0%
787	Austin	2000	58.7%
799	El Paso	2000	37.4%
800	Denver, Boulder	2000	57.5%
801	Denver, Boulder	2000	26.7%
802	Denver, Boulder	2000	27.5%
803	Denver, Boulder	2000	83.0%
804	Denver, Boulder	2000	10.1%
841	Salt Lake City, Ogden	2000	22.3%

3 Digit Zip	Metro Area	Year	Percent Adoption
850	Phoenix	2000	18.9%
852	Phoenix	2000	99.0%
853	Phoenix	2000	53.9%
857	Tucson	2000	87.9%
871	Albuquerque	2000	79.1%
891	Las Vegas	2000	97.5%
900	Los Angeles, Anaheim, Riverside	2000	65.3%
908	Los Angeles, Anaheim, Riverside	2000	56.2%
911	Los Angeles, Anaheim, Riverside	2000	100.0%
912	Los Angeles, Anaheim, Riverside	2000	84.4%
917	Los Angeles, Anaheim, Riverside	2000	94.9%
919	San Diego	2000	100.0%
920	San Diego	2000	36.9%
921	San Diego	2000	50.1%
924	Los Angeles, Anaheim, Riverside	2000	49.1%
926	Los Angeles, Anaheim, Riverside	2000	90.3%
927	Los Angeles, Anaheim, Riverside	2000	100.0%
928	Los Angeles, Anaheim, Riverside	2000	95.8%
937	Bakersfield	2000	27.3%
940	San Francisco, Oakland, San Jose	2000	100.0%
941	San Francisco, Oakland, San Jose	2000	0.0%
945	San Francisco, Oakland, San Jose	2000	97.1%
946	San Francisco, Oakland, San Jose	2000	0.0%
951	San Francisco, Oakland, San Jose	2000	76.1%
957	Sacramento	2000	17.9%
958	Sacramento	2000	51.4%
968	Honolulu	2000	40.0%
970	Portland, Vancouver	2000	24.9%
972	Portland, Vancouver	2000	47.2%
980	Seattle, Tacoma	2000	55.0%
982	Seattle, Tacoma	2000	72.4%
983	Seattle, Tacoma	2000	100.0%
984	Seattle, Tacoma	2000	58.8%
986	Portland, Vancouver	2000	70.0%

TMS 2002 Data

3 Digit Zip	Metro Area	Year	Percent Adoption
010	Springfield	2002	0.0%
011	Springfield	2002	20.6%
018	Boston, Lawrence, Salem	2002	0.0%
019	Boston, Lawrence, Salem	2002	0.0%
021	Boston, Lawrence, Salem	2002	17.1%
022	Boston, Lawrence, Salem	2002	67.6%
024	Boston, Lawrence, Salem	2002	19.2%
027	Providence, Pawtucket, Fall River	2002	0.0%
028	Providence, Pawtucket, Fall River	2002	26.4%
029	Providence, Pawtucket, Fall River	2002	21.2%
040	Old Orchard Beach	2002	100.0%
057	Rutland	2002	72.0%
060	Hartford, New Britain, Middletown	2002	0.0%
061	New York, Northern New Jersey, Southwestern Connecticut	2002	49.9%
064	New York, Northern New Jersey, Southwestern Connecticut	2002	30.8%
065	New Haven, Meriden	2002	63.5%
066	New York, Northern New Jersey, Southwestern Connecticut	2002	19.1%
068	New York, Northern New Jersey, Southwestern Connecticut	2002	100.0%
069	New York, Northern New Jersey, Southwestern Connecticut	2002	96.3%
070	New York, Northern New Jersey, Southwestern Connecticut	2002	14.6%
071	New York, Northern New Jersey, Southwestern Connecticut	2002	27.1%
072	New York, Northern New Jersey, Southwestern Connecticut	2002	0.0%
073	New York, Northern New Jersey, Southwestern Connecticut	2002	100.0%
074	New York, Northern New Jersey, Southwestern Connecticut	2002	100.0%
075	New York, Northern New Jersey, Southwestern Connecticut	2002	91.4%
076	New York, Northern New Jersey, Southwestern Connecticut	2002	2.7%
077	New York, Northern New Jersey, Southwestern Connecticut	2002	6.8%
078	New York, Northern New Jersey, Southwestern Connecticut	2002	0.0%
080	Philadelphia, Wilmington, Trenton	2002	9.6%
086	Philadelphia, Wilmington, Trenton	2002	2.3%

3 Digit Zip	Metro Area	Year	Percent Adoption
087	New York, Northern New Jersey, Southwestern Connecticut	2002	9.3%
088	New York, Northern New Jersey, Southwestern Connecticut	2002	0.0%
089	New York, Northern New Jersey, Southwestern Connecticut	2002	0.0%
105	New York, Northern New Jersey, Southwestern Connecticut	2002	0.0%
106	New York, Northern New Jersey, Southwestern Connecticut	2002	20.8%
107	New York, Northern New Jersey, Southwestern Connecticut	2002	5.5%
108	New York, Northern New Jersey, Southwestern Connecticut	2002	10.9%
109	New York, Northern New Jersey, Southwestern Connecticut	2002	0.0%
111	New York, Northern New Jersey, Southwestern Connecticut	2002	53.1%
115	New York, Northern New Jersey, Southwestern Connecticut	2002	46.9%
117	New York, Northern New Jersey, Southwestern Connecticut	2002	13.5%
120	Albany, Schenectady, Troy	2002	84.6%
122	Syracuse	2002	15.6%
123	Albany, Schenectady, Troy	2002	21.3%
130	Syracuse	2002	0.0%
132	Syracuse	2002	41.4%
142	Buffalo, Niagara Falls	2002	25.9%
143	Buffalo, Niagara Falls	2002	88.2%
146	Rochester	2002	63.1%
150	Pittsburgh, Beaver Valley	2002	NA
152	Pittsburgh, Beaver Valley	2002	19.7%
156	Pittsburgh, Beaver Valley	2002	100.0%
171	Harrisburg, Lebanon, Carlisle	2002	61.2%
176	Lancaster	2002	97.2%
180	Allentown, Bethlehem, Easton	2002	51.0%
181	Allentown, Bethlehem, Easton	2002	0.0%
185	Scranton, Wilkes-Barre	2002	17.6%
190	Philadelphia, Wilmington, Trenton	2002	10.2%
191	Philadelphia, Wilmington, Trenton	2002	13.8%
198	Philadelphia, Wilmington, Trenton	2002	2.3%
200	Washington	2002	100.0%
207	Washington	2002	91.2%
208	Washington	2002	100.0%

3 Digit Zip	Metro Area	Year	Percent Adoption
210	Baltimore	2002	48.9%
212	Baltimore	2002	31.7%
214	Baltimore	2002	63.2%
220	Washington	2002	100.0%
222	Washington	2002	100.0%
223	Washington	2002	70.2%
232	Richmond, Petersburg	2002	0.0%
233	Hampton Roads	2002	100.0%
234	Hampton Roads	2002	84.8%
235	Hampton Roads	2002	74.2%
236	Hampton Roads	2002	65.3%
237	Hampton Roads	2002	50.8%
238	Richmond, Petersburg	2002	70.3%
240	Roanoke	2002	31.9%
241	Roanoke	2002	20.5%
271	Greensboro, Winston-Salem, High Point	2002	91.0%
272	Greensboro, Winston-Salem, High Point	2002	100.0%
274	Greensboro, Winston-Salem, High Point	2002	51.2%
276	Raleigh-Durham	2002	40.0%
277	Raleigh-Durham	2002	0.0%
278	Greenville	2002	35.4%
282	Charlotte, Gastonia, Rock Hill	2002	89.4%
283	Greensboro, Winston-Salem, High Point	2002	11.7%
288	Asheville	2002	6.7%
292	Charleston	2002	40.2%
293	Greenville, Spartanburg	2002	61.8%
294	Charleston	2002	84.0%
296	Greenville, Spartanburg	2002	63.8%
299	Hilton Head	2002	100.0%
300	Atlanta	2002	42.7%
301	Atlanta	2002	100.0%
302	Atlanta	2002	63.7%
303	Atlanta	2002	33.4%
315	Tybee Island	2002	0.0%
320	Jacksonville	2002	52.7%
321	Daytona Beach	2002	96.1%
322	Jacksonville	2002	41.6%
325	Pensacola	2002	65.9%
327	Orlando	2002	50.8%

3 Digit Zip	Metro Area	Year	Percent Adoption
328	Orlando	2002	66.1%
331	Miami, Fort Lauderdale	2002	79.4%
334	West Palm Beach, Boca Raton, Delray	2002	61.8%
336	Tampa, St. Petersburg, Clearwater	2002	86.1%
337	Tampa, St. Petersburg, Clearwater	2002	86.9%
338	Fort Myers	2002	55.6%
339	Fort Myers	2002	60.0%
341	Naples	2002	65.3%
342	Sarasota-Bradenton	2002	70.2%
346	Tampa, St. Petersburg, Clearwater	2002	70.1%
347	Orlando	2002	5.3%
350	Birmingham	2002	0.0%
352	Birmingham	2002	51.9%
358	Huntsville	2002	10.4%
361	Montgomery	2002	26.8%
365	Gulf Shores	2002	0.0%
371	Nashville	2002	0.0%
372	Nashville	2002	64.3%
374	Chattanooga	2002	35.6%
377	Knoxville	2002	16.7%
379	Knoxville	2002	47.5%
381	Memphis	2002	20.9%
391	Jackson	2002	50.0%
392	Jackson	2002	41.3%
402	Louisville	2002	84.4%
410	Cincinnati, Hamilton	2002	62.9%
430	Columbus	2002	45.0%
432	Columbus	2002	70.9%
434	Toledo	2002	19.2%
436	Toledo	2002	71.0%
440	Cleveland, Akron, Lorain	2002	1.4%
441	Cleveland, Akron, Lorain	2002	37.8%
442	Cleveland, Akron, Lorain	2002	0.0%
443	Cleveland, Akron, Lorain	2002	35.0%
444	Youngstown, Warren	2002	21.4%
445	Youngstown, Warren	2002	12.7%
448	Sandusky	2002	4.1%
450	Cincinnati, Hamilton	2002	64.5%
451	Cincinnati, Hamilton	2002	43.5%

3 Digit Zip	Metro Area	Year	Percent Adoption
452	Cincinnati, Hamilton	2002	9.9%
453	Dayton, Springfield	2002	10.9%
454	Dayton, Springfield	2002	78.8%
455	Dayton, Springfield	2002	30.0%
460	Indianapolis	2002	100.0%
461	Indianapolis	2002	50.0%
462	Fort Wayne	2002	54.4%
463	Chicago, Gary, Lake County	2002	93.3%
464	Chicago, Gary, Lake County	2002	0.0%
471	Louisville	2002	0.0%
480	Detroit, Ann Arbor	2002	8.9%
481	Detroit, Ann Arbor	2002	23.4%
482	Detroit, Ann Arbor	2002	0.3%
483	Detroit, Ann Arbor	2002	35.4%
488	Detroit, Ann Arbor	2002	0.0%
494	Grand Rapids	2002	0.0%
495	Grand Rapids	2002	12.0%
503	Des Moines	2002	100.0%
515	Omaha	2002	73.4%
530	Milwaukee, Racine	2002	100.0%
531	Milwaukee, Racine	2002	22.2%
532	Milwaukee, Racine	2002	9.4%
534	Milwaukee, Racine	2002	71.8%
535	Janesville-Beloit	2002	21.0%
537	Janesville-Beloit	2002	0.0%
550	Minneapolis, St. Paul	2002	0.0%
551	Minneapolis, St. Paul	2002	74.7%
553	Minneapolis, St. Paul	2002	54.4%
554	Minneapolis, St. Paul	2002	89.0%
564	Brainerd	2002	0.0%
600	Chicago, Gary, Lake County	2002	52.1%
601	Chicago, Gary, Lake County	2002	60.3%
602	Chicago, Gary, Lake County	2002	0.0%
603	Chicago, Gary, Lake County	2002	77.8%
604	Chicago, Gary, Lake County	2002	60.3%
605	Chicago, Gary, Lake County	2002	48.6%
606	Chicago, Gary, Lake County	2002	15.3%
622	St. Louis	2002	61.2%
630	St. Louis	2002	37.2%

3 Digit Zip	Metro Area	Year	Percent Adoption
631	St. Louis	2002	24.8%
633	St. Louis	2002	0.0%
641	Kansas City	2002	21.6%
651	Kansas City	2002	42.2%
656	Branson	2002	0.0%
658	Springfield(MO)	2002	66.9%
660	Kansas City	2002	35.9%
661	Kansas City	2002	56.6%
662	Kansas City	2002	64.1%
672	Wichita	2002	63.4%
680	Omaha	2002	0.0%
681	Omaha	2002	74.9%
685	Omaha	2002	81.3%
700	New Orleans	2002	7.5%
701	New Orleans	2002	36.3%
704	Baton Rouge	2002	0.0%
708	Baton Rouge	2002	11.6%
721	Little Rock, North Little Rock	2002	78.8%
722	Little Rock, North Little Rock	2002	79.4%
730	Oklahoma City	2002	39.2%
731	Oklahoma City	2002	46.4%
740	Tulsa	2002	0.0%
741	Tulsa	2002	22.9%
750	Dallas, Fort Worth	2002	65.5%
752	Dallas, Fort Worth	2002	98.4%
753	Dallas, Fort Worth	2002	66.7%
760	Dallas, Fort Worth	2002	48.3%
761	Dallas, Fort Worth	2002	35.3%
762	Dallas, Fort Worth	2002	62.5%
770	Houston, Galveston, Brazoria	2002	5.6%
773	Houston, Galveston, Brazoria	2002	48.6%
774	Houston, Galveston, Brazoria	2002	NA
775	Houston, Galveston, Brazoria	2002	10.7%
776	Beaumont-Port Arthur	2002	0.0%
777	Beaumont-Port Arthur	2002	22.0%
782	San Antonio	2002	72.0%
785	McAllen	2002	24.5%
787	Austin	2002	56.0%
799	El Paso	2002	51.4%

3 Digit Zip	Metro Area	Year	Percent Adoption
800	Denver, Boulder	2002	71.9%
801	Denver, Boulder	2002	41.1%
802	Denver, Boulder	2002	35.3%
803	Denver, Boulder	2002	79.7%
804	Denver, Boulder	2002	10.1%
805	Denver, Boulder	2002	97.0%
837	Boise City	2002	76.9%
841	Salt Lake City, Ogden	2002	80.2%
844	Salt Lake City, Ogden	2002	NA
846	Provo - Orem	2002	92.5%
850	Tucson	2002	27.0%
852	Phoenix	2002	99.1%
853	Phoenix	2002	42.6%
857	Tucson	2002	100.0%
860	Flagstaff	2002	0.0%
871	Albuquerque	2002	76.4%
891	Las Vegas	2002	93.6%
894	Reno	2002	93.5%
895	Reno	2002	79.5%
900	Los Angeles, Anaheim, Riverside	2002	66.3%
903	Los Angeles, Anaheim, Riverside	2002	79.1%
908	Los Angeles, Anaheim, Riverside	2002	60.4%
911	Los Angeles, Anaheim, Riverside	2002	100.0%
912	Los Angeles, Anaheim, Riverside	2002	83.6%
913	Santa Barbara	2002	23.8%
917	Los Angeles, Anaheim, Riverside	2002	53.1%
919	San Diego	2002	98.1%
920	San Diego	2002	55.2%
921	San Diego	2002	56.8%
922	Palm Springs	2002	49.3%
924	Los Angeles, Anaheim, Riverside	2002	60.1%
925	Los Angeles, Anaheim, Riverside	2002	34.4%
926	Los Angeles, Anaheim, Riverside	2002	87.0%
927	Los Angeles, Anaheim, Riverside	2002	100.0%
928	Los Angeles, Anaheim, Riverside	2002	90.6%
931	Santa Barbara	2002	51.4%
933	Bakersfield	2002	42.3%
934	San Luis Obispo	2002	43.6%
937	Fresno	2002	74.5%

3 Digit Zip	Metro Area	Year	Percent Adoption
939	Salinas	2002	31.5%
940	San Francisco, Oakland, San Jose	2002	51.7%
941	San Francisco, Oakland, San Jose	2002	0.0%
945	San Francisco, Oakland, San Jose	2002	93.8%
946	San Francisco, Oakland, San Jose	2002	0.6%
951	San Francisco, Oakland, San Jose	2002	76.0%
952	Stockton	2002	59.0%
953	Modesto	2002	82.1%
957	Sacramento	2002	18.9%
958	Sacramento	2002	67.1%
968	Honolulu	2002	40.9%
970	Portland, Vancouver	2002	29.5%
972	Portland, Vancouver	2002	50.0%
973	Eugene	2002	0.0%
974	Eugene	2002	59.8%
980	Seattle, Tacoma	2002	74.7%
981	Seattle, Tacoma	2002	56.0%
982	Seattle, Tacoma	2002	66.1%
983	Seattle, Tacoma	2002	96.6%
984	Seattle, Tacoma	2002	63.7%
986	Portland, Vancouver	2002	68.1%
992	Spokane	2002	0.0%

TMS 2004 Data

3 Digit Zip	Metro Area	Year	Percent Adoption
010	Springfield	2004	0.0%
011	Springfield	2004	25.6%
018	Boston, Lawrence, Salem	2004	9.4%
019	Boston, Lawrence, Salem	2004	0.0%
021	Boston, Lawrence, Salem	2004	12.1%
022	Boston, Lawrence, Salem	2004	68.0%
024	Boston, Lawrence, Salem	2004	28.3%
027	Providence, Pawtucket, Fall River	2004	0.0%
028	Providence, Pawtucket, Fall River	2004	29.3%
029	Providence, Pawtucket, Fall River	2004	21.5%
060	Hartford, New Britain, Middletown	2004	0.0%
061	Hartford, New Britain, Middletown	2004	50.2%
063	New London	2004	0.0%
064	New Haven, Meriden	2004	32.0%
065	New Haven, Meriden	2004	62.5%
066	New York, Northern New Jersey, Southwestern Connecticut	2004	41.3%
068	New York, Northern New Jersey, Southwestern Connecticut	2004	81.0%
069	New York, Northern New Jersey, Southwestern Connecticut	2004	90.2%
070	New York, Northern New Jersey, Southwestern Connecticut	2004	19.1%
071	New York, Northern New Jersey, Southwestern Connecticut	2004	25.4%
072	New York, Northern New Jersey, Southwestern Connecticut	2004	0.0%
073	New York, Northern New Jersey, Southwestern Connecticut	2004	100.0%
074	New York, Northern New Jersey, Southwestern Connecticut	2004	100.0%
075	New York, Northern New Jersey, Southwestern Connecticut	2004	91.4%
076	New York, Northern New Jersey, Southwestern Connecticut	2004	2.7%
077	New York, Northern New Jersey, Southwestern Connecticut	2004	6.4%
078	New York, Northern New Jersey, Southwestern Connecticut	2004	0.0%
080	Philadelphia, Wilmington, Trenton	2004	15.3%
081	Philadelphia, Wilmington, Trenton	2004	0.0%
086	Philadelphia, Wilmington, Trenton	2004	1.0%
087	New York, Northern New Jersey, Southwestern Connecticut	2004	12.5%

3 Digit Zip	Metro Area	Year	Percent Adoption
088	New York, Northern New Jersey, Southwestern Connecticut	2004	12.9%
089	New York, Northern New Jersey, Southwestern Connecticut	2004	0.0%
106	New York, Northern New Jersey, Southwestern Connecticut	2004	50.0%
108	New York, Northern New Jersey, Southwestern Connecticut	2004	10.7%
109	New York, Northern New Jersey, Southwestern Connecticut	2004	0.0%
111	New York, Northern New Jersey, Southwestern Connecticut	2004	55.0%
115	New York, Northern New Jersey, Southwestern Connecticut	2004	46.9%
117	New York, Northern New Jersey, Southwestern Connecticut	2004	18.4%
120	Albany, Schenectady, Troy	2004	84.6%
122	New York, Northern New Jersey, Southwestern Connecticut	2004	17.7%
123	Albany, Schenectady, Troy	2004	21.3%
130	Syracuse	2004	0.0%
132	Syracuse	2004	38.4%
142	Buffalo, Niagara Falls	2004	22.1%
143	Buffalo, Niagara Falls	2004	90.9%
146	Rochester	2004	68.3%
150	Pittsburgh, Beaver Valley	2004	NA
156	Pittsburgh, Beaver Valley	2004	100.0%
171	Harrisburg, Lebanon, Carlisle	2004	68.8%
180	Allentown, Bethlehem, Easton	2004	50.9%
181	Allentown, Bethlehem, Easton	2004	0.0%
185	Scranton, Wilkes-Barre	2004	17.6%
190	Philadelphia, Wilmington, Trenton	2004	19.0%
191	Philadelphia, Wilmington, Trenton	2004	29.6%
198	Philadelphia, Wilmington, Trenton	2004	2.2%
200	Washington	2004	100.0%
207	Washington	2004	96.8%
208	Washington	2004	100.0%
210	Baltimore	2004	51.5%
212	Baltimore	2004	31.3%
214	Baltimore	2004	64.9%
222	Washington	2004	100.0%
232	Richmond, Petersburg	2004	0.0%
233	Hampton Roads	2004	100.0%

3 Digit Zip	Metro Area	Year	Percent Adoption
234	Hampton Roads	2004	46.8%
235	Hampton Roads	2004	72.2%
236	Hampton Roads	2004	87.0%
237	Hampton Roads	2004	55.6%
238	Richmond, Petersburg	2004	70.3%
240	Roanoke	2004	29.7%
241	Roanoke	2004	20.0%
271	Greensboro, Winston-Salem, High Point	2004	90.5%
272	Greensboro, Winston-Salem, High Point	2004	98.9%
274	Raleigh-Durham	2004	56.4%
276	Raleigh-Durham	2004	75.3%
277	Raleigh-Durham	2004	0.0%
278	Greenville	2004	60.0%
282	Charlotte, Gastonia, Rock Hill	2004	88.5%
283	Greensboro, Winston-Salem, High Point	2004	25.0%
288	Asheville	2004	7.1%
292	Charleston	2004	44.5%
293	Greenville, Spartanburg	2004	60.7%
294	Charleston	2004	80.3%
296	Greenville, Spartanburg	2004	75.0%
300	Atlanta	2004	65.9%
301	Atlanta	2004	100.0%
302	Atlanta	2004	0.0%
303	Atlanta	2004	32.7%
320	Jacksonville	2004	59.5%
321	Daytona Beach	2004	96.1%
322	Jacksonville	2004	50.9%
325	Pensacola	2004	64.4%
327	Orlando	2004	56.8%
328	Orlando	2004	65.6%
331	Miami, Fort Lauderdale	2004	77.9%
333	Miami, Fort Lauderdale	2004	73.0%
334	West Palm Beach, Boca Raton, Delray	2004	59.1%
336	Tampa, St. Petersburg, Clearwater	2004	85.7%
337	Tampa, St. Petersburg, Clearwater	2004	87.1%
338	Fort Myers	2004	55.6%
339	Fort Myers	2004	62.9%
342	Sarasota-Bradenton	2004	66.7%
346	Tampa, St. Petersburg, Clearwater	2004	69.8%

3 Digit Zip	Metro Area	Year	Percent Adoption
347	Orlando	2004	22.6%
350	Birmingham	2004	0.0%
352	Birmingham	2004	66.0%
358	Huntsville	2004	100.0%
361	Montgomery	2004	21.6%
371	Nashville	2004	0.0%
372	Nashville	2004	62.9%
374	Chattanooga	2004	43.3%
377	Knoxville	2004	0.0%
379	Knoxville	2004	57.9%
381	Memphis	2004	20.6%
391	Jackson	2004	50.0%
392	Jackson	2004	48.9%
402	Louisville	2004	84.8%
410	Cincinnati, Hamilton	2004	60.0%
430	Columbus	2004	53.0%
432	Columbus	2004	72.1%
434	Toledo	2004	31.8%
436	Toledo	2004	70.5%
440	Cleveland, Akron, Lorain	2004	0.4%
441	Cleveland, Akron, Lorain	2004	48.6%
442	Cleveland, Akron, Lorain	2004	0.0%
443	Cleveland, Akron, Lorain	2004	38.3%
444	Youngstown, Warren	2004	53.9%
445	Youngstown, Warren	2004	0.0%
448	Cleveland, Akron, Lorain	2004	2.5%
450	Cincinnati, Hamilton	2004	61.7%
451	Cincinnati, Hamilton	2004	33.3%
452	Cincinnati, Hamilton	2004	30.4%
453	Dayton, Springfield	2004	41.1%
454	Dayton, Springfield	2004	75.6%
455	Dayton, Springfield	2004	35.3%
460	Indianapolis	2004	100.0%
461	Indianapolis	2004	57.1%
462	Fort Wayne	2004	58.3%
463	Chicago, Gary, Lake County	2004	93.3%
464	Chicago, Gary, Lake County	2004	0.0%
468	Fort Wayne	2004	65.8%
471	Louisville	2004	0.0%

3 Digit Zip	Metro Area	Year	Percent Adoption
480	Detroit, Ann Arbor	2004	8.6%
481	Detroit, Ann Arbor	2004	26.4%
482	Detroit, Ann Arbor	2004	3.1%
483	Detroit, Ann Arbor	2004	37.3%
488	Detroit, Ann Arbor	2004	0.0%
494	Grand Rapids	2004	0.0%
495	Grand Rapids	2004	14.6%
503	Des Moines	2004	100.0%
515	Omaha	2004	47.6%
530	Milwaukee, Racine	2004	100.0%
531	Milwaukee, Racine	2004	22.2%
532	Milwaukee, Racine	2004	10.2%
534	Milwaukee, Racine	2004	70.0%
535	Janesville-Beloit	2004	34.1%
537	Janesville-Beloit	2004	0.0%
550	Minneapolis, St. Paul	2004	0.0%
551	Minneapolis, St. Paul	2004	73.4%
553	Minneapolis, St. Paul	2004	53.8%
554	Minneapolis, St. Paul	2004	90.9%
600	Chicago, Gary, Lake County	2004	61.7%
601	Chicago, Gary, Lake County	2004	59.2%
602	Chicago, Gary, Lake County	2004	0.0%
603	Chicago, Gary, Lake County	2004	83.1%
604	Chicago, Gary, Lake County	2004	61.0%
605	Chicago, Gary, Lake County	2004	39.6%
606	Chicago, Gary, Lake County	2004	15.9%
622	St. Louis	2004	60.8%
630	St. Louis	2004	45.6%
631	St. Louis	2004	28.6%
633	St. Louis	2004	8.5%
640	Kansas City	2004	0.0%
641	Kansas City	2004	28.8%
651	Kansas City	2004	46.9%
658	Springfield(MO)	2004	76.8%
660	Kansas City	2004	40.9%
661	Kansas City	2004	31.0%
662	Kansas City	2004	63.9%
672	Wichita	2004	61.8%
680	Omaha	2004	0.0%

3 Digit Zip	Metro Area	Year	Percent Adoption
681	Omaha	2004	84.7%
685	Omaha	2004	81.3%
700	New Orleans	2004	12.4%
701	New Orleans	2004	36.7%
704	New Orleans	2004	0.0%
708	Baton Rouge	2004	14.1%
721	Little Rock, North Little Rock	2004	79.7%
722	Little Rock, North Little Rock	2004	92.2%
730	Oklahoma City	2004	58.0%
731	Oklahoma City	2004	47.2%
740	Tulsa	2004	0.0%
741	Tulsa	2004	21.7%
750	Dallas, Fort Worth	2004	78.2%
751	Dallas, Fort Worth	2004	10.6%
752	Dallas, Fort Worth	2004	100.0%
753	Dallas, Fort Worth	2004	85.7%
760	Dallas, Fort Worth	2004	46.7%
761	Dallas, Fort Worth	2004	37.6%
762	Dallas, Fort Worth	2004	28.7%
770	Houston, Galveston, Brazoria	2004	13.8%
772	Houston, Galveston, Brazoria	2004	54.1%
773	Houston, Galveston, Brazoria	2004	47.9%
774	Houston, Galveston, Brazoria	2004	100.0%
775	Houston, Galveston, Brazoria	2004	10.6%
776	Beaumont-Port Arthur	2004	0.0%
777	Beaumont-Port Arthur	2004	21.4%
782	San Antonio	2004	71.4%
785	McAllen	2004	28.9%
787	Austin	2004	63.7%
799	El Paso	2004	69.7%
800	Denver, Boulder	2004	73.3%
801	Denver, Boulder	2004	48.1%
802	Denver, Boulder	2004	41.2%
803	Denver, Boulder	2004	79.5%
804	Denver, Boulder	2004	14.9%
805	Denver, Boulder	2004	100.0%
837	Boise City	2004	71.2%
841	Salt Lake City, Ogden	2004	61.9%
844	Salt Lake City, Ogden	2004	NA

3 Digit Zip	Metro Area	Year	Percent Adoption
846	Provo - Orem	2004	94.1%
850	Phoenix	2004	47.1%
852	Phoenix	2004	98.4%
853	Phoenix	2004	7.3%
857	Tucson	2004	96.0%
871	Albuquerque	2004	76.3%
891	Las Vegas	2004	96.8%
894	Reno	2004	93.5%
895	Reno	2004	77.8%
900	Los Angeles, Anaheim, Riverside	2004	71.0%
903	Los Angeles, Anaheim, Riverside	2004	79.3%
908	Los Angeles, Anaheim, Riverside	2004	62.6%
911	Los Angeles, Anaheim, Riverside	2004	100.0%
912	Los Angeles, Anaheim, Riverside	2004	78.9%
913	Santa Barbara	2004	100.0%
917	Los Angeles, Anaheim, Riverside	2004	51.5%
918	Los Angeles, Anaheim, Riverside	2004	0.0%
919	San Diego	2004	92.6%
920	San Diego	2004	62.4%
921	San Diego	2004	59.2%
924	Los Angeles, Anaheim, Riverside	2004	53.8%
925	Los Angeles, Anaheim, Riverside	2004	34.4%
926	Los Angeles, Anaheim, Riverside	2004	87.8%
927	Los Angeles, Anaheim, Riverside	2004	100.0%
928	Los Angeles, Anaheim, Riverside	2004	39.0%
931	Santa Barbara	2004	48.8%
933	Bakersfield	2004	44.8%
934	San Luis Obispo	2004	46.6%
937	Fresno	2004	10.4%
939	Salinas	2004	30.7%
940	San Francisco, Oakland, San Jose	2004	73.7%
941	San Francisco, Oakland, San Jose	2004	0.0%
945	San Francisco, Oakland, San Jose	2004	85.2%
946	San Francisco, Oakland, San Jose	2004	0.6%
951	San Francisco, Oakland, San Jose	2004	79.6%
952	Stockton	2004	56.3%
953	Modesto	2004	82.5%
958	Sacramento	2004	67.1%
968	Honolulu	2004	46.1%

3 Digit Zip	Metro Area	Year	Percent Adoption
970	Portland, Vancouver	2004	48.1%
972	Portland, Vancouver	2004	56.5%
973	Eugene	2004	0.0%
974	Eugene	2004	61.4%
980	Seattle, Tacoma	2004	82.9%
981	Seattle, Tacoma	2004	58.4%
982	Seattle, Tacoma	2004	54.8%
983	Seattle, Tacoma	2004	65.6%
984	Seattle, Tacoma	2004	69.8%
986	Portland, Vancouver	2004	82.9%
992	Spokane	2004	70.3%

TMS 2005 Data

3 Digit Zip	Metro Area	Year	Percent Adoption
010	Springfield	2005	0.0%
011	Springfield	2005	25.4%
019	Boston, Lawrence, Salem	2005	0.0%
021	Boston, Lawrence, Salem	2005	12.1%
022	Boston, Lawrence, Salem	2005	68.6%
024	Boston, Lawrence, Salem	2005	28.0%
027	Providence, Pawtucket, Fall River	2005	0.0%
028	Providence, Pawtucket, Fall River	2005	34.7%
029	Providence, Pawtucket, Fall River	2005	27.7%
060	Hartford, New Britain, Middletown	2005	0.0%
061	Hartford, New Britain, Middletown	2005	49.9%
065	New Haven, Meriden	2005	63.8%
066	New York, Northern New Jersey, Southwestern Connecticut	2005	47.0%
068	New York, Northern New Jersey, Southwestern Connecticut	2005	73.8%
069	New York, Northern New Jersey, Southwestern Connecticut	2005	90.2%
070	New York, Northern New Jersey, Southwestern Connecticut	2005	19.9%
071	New York, Northern New Jersey, Southwestern Connecticut	2005	0.0%
072	New York, Northern New Jersey, Southwestern Connecticut	2005	0.0%
073	New York, Northern New Jersey, Southwestern Connecticut	2005	100.0%
074	New York, Northern New Jersey, Southwestern Connecticut	2005	100.0%
075	New York, Northern New Jersey, Southwestern Connecticut	2005	91.4%
076	New York, Northern New Jersey, Southwestern Connecticut	2005	3.7%
077	New York, Northern New Jersey, Southwestern Connecticut	2005	2.9%
078	New York, Northern New Jersey, Southwestern Connecticut	2005	0.0%
080	Philadelphia, Wilmington, Trenton	2005	15.5%
081	Philadelphia, Wilmington, Trenton	2005	0.0%
086	Philadelphia, Wilmington, Trenton	2005	0.0%
087	New York, Northern New Jersey, Southwestern Connecticut	2005	12.1%
088	New York, Northern New Jersey, Southwestern Connecticut	2005	12.5%
089	New York, Northern New Jersey, Southwestern Connecticut	2005	0.0%

3 Digit Zip	Metro Area	Year	Percent Adoption
106	New York, Northern New Jersey, Southwestern Connecticut	2005	59.7%
108	New York, Northern New Jersey, Southwestern Connecticut	2005	10.6%
109	New York, Northern New Jersey, Southwestern Connecticut	2005	0.0%
111	New York, Northern New Jersey, Southwestern Connecticut	2005	53.8%
115	New York, Northern New Jersey, Southwestern Connecticut	2005	46.3%
117	New York, Northern New Jersey, Southwestern Connecticut	2005	7.3%
120	Albany, Schenectady, Troy	2005	84.6%
122	Albany, Schenectady, Troy	2005	11.8%
123	Albany, Schenectady, Troy	2005	51.6%
130	Syracuse	2005	13.3%
132	Syracuse	2005	38.4%
142	Buffalo, Niagara Falls	2005	26.8%
143	Buffalo, Niagara Falls	2005	90.9%
146	Rochester	2005	71.9%
150	Pittsburgh, Beaver Valley	2005	NA
156	Pittsburgh, Beaver Valley	2005	100.0%
171	Harrisburg, Lebanon, Carlisle	2005	68.8%
180	Allentown, Bethlehem, Easton	2005	50.0%
181	Allentown, Bethlehem, Easton	2005	0.0%
185	Scranton, Wilkes-Barre	2005	17.6%
190	Philadelphia, Wilmington, Trenton	2005	21.2%
191	Philadelphia, Wilmington, Trenton	2005	31.5%
198	Philadelphia, Wilmington, Trenton	2005	2.2%
200	Washington	2005	100.0%
207	Washington	2005	98.7%
208	Washington	2005	100.0%
210	Baltimore	2005	51.2%
212	Baltimore	2005	30.8%
214	Baltimore	2005	63.5%
220	Washington	2005	100.0%
222	Washington	2005	100.0%
232	Richmond, Petersburg	2005	0.0%
233	Hampton Roads	2005	100.0%
234	Hampton Roads	2005	97.3%
235	Hampton Roads	2005	70.0%
236	Hampton Roads	2005	97.9%

3 Digit Zip	Metro Area	Year	Percent Adoption
237	Hampton Roads	2005	58.1%
238	Richmond, Petersburg	2005	78.3%
271	Greensboro, Winston-Salem, High Point	2005	90.5%
272	Greensboro, Winston-Salem, High Point	2005	100.0%
274	Greensboro, Winston-Salem, High Point	2005	55.1%
276	Raleigh-Durham	2005	75.3%
277	Raleigh-Durham	2005	0.0%
282	Charlotte, Gastonia, Rock Hill	2005	88.5%
283	Greensboro, Winston-Salem, High Point	2005	23.7%
292	Greenville, Spartanburg	2005	28.5%
293	Greenville, Spartanburg	2005	59.6%
294	Charleston	2005	94.3%
296	Greenville, Spartanburg	2005	75.0%
300	Atlanta	2005	68.0%
301	Atlanta	2005	0.0%
302	Atlanta	2005	0.0%
303	Atlanta	2005	6.6%
320	Jacksonville	2005	63.6%
322	Jacksonville	2005	51.3%
327	Orlando	2005	79.8%
328	Orlando	2005	80.4%
331	Miami, Fort Lauderdale	2005	77.9%
333	Miami, Fort Lauderdale	2005	72.9%
334	West Palm Beach, Boca Raton, Delray	2005	55.2%
336	Tampa, St. Petersburg, Clearwater	2005	84.2%
337	Tampa, St. Petersburg, Clearwater	2005	87.2%
342	Sarasota-Bradenton	2005	59.9%
346	Tampa, St. Petersburg, Clearwater	2005	66.3%
347	Orlando	2005	21.7%
350	Birmingham	2005	0.0%
352	Birmingham	2005	51.7%
371	Nashville	2005	0.0%
372	Nashville	2005	62.5%
377	Knoxville	2005	0.0%
379	Knoxville	2005	57.5%
381	Memphis	2005	20.5%
402	Louisville	2005	84.8%
410	Cincinnati, Hamilton	2005	61.0%
430	Columbus	2005	53.0%

3 Digit Zip	Metro Area	Year	Percent Adoption
432	Columbus	2005	72.0%
434	Toledo	2005	44.3%
436	Toledo	2005	70.5%
440	Cleveland, Akron, Lorain	2005	0.4%
441	Cleveland, Akron, Lorain	2005	34.9%
442	Cleveland, Akron, Lorain	2005	0.0%
443	Cleveland, Akron, Lorain	2005	36.1%
444	Youngstown, Warren	2005	53.9%
445	Youngstown, Warren	2005	0.0%
448	Cleveland, Akron, Lorain	2005	16.1%
450	Cincinnati, Hamilton	2005	66.8%
451	Cincinnati, Hamilton	2005	25.0%
452	Cincinnati, Hamilton	2005	35.8%
453	Dayton, Springfield	2005	32.0%
454	Dayton, Springfield	2005	87.0%
455	Dayton, Springfield	2005	41.4%
460	Indianapolis	2005	100.0%
461	Indianapolis	2005	62.5%
462	Indianapolis	2005	66.0%
463	Chicago, Gary, Lake County	2005	82.9%
464	Chicago, Gary, Lake County	2005	0.0%
471	Louisville	2005	0.0%
480	Detroit, Ann Arbor	2005	31.5%
481	Detroit, Ann Arbor	2005	24.2%
482	Detroit, Ann Arbor	2005	5.5%
483	Detroit, Ann Arbor	2005	38.6%
488	Detroit, Ann Arbor	2005	0.0%
494	Grand Rapids	2005	0.0%
495	Grand Rapids	2005	14.6%
515	Omaha	2005	47.6%
530	Milwaukee, Racine	2005	100.0%
531	Milwaukee, Racine	2005	25.2%
532	Milwaukee, Racine	2005	10.2%
534	Milwaukee, Racine	2005	70.0%
550	Minneapolis, St. Paul	2005	0.0%
551	Minneapolis, St. Paul	2005	89.3%
553	Minneapolis, St. Paul	2005	53.7%
554	Minneapolis, St. Paul	2005	92.1%
600	Chicago, Gary, Lake County	2005	56.7%

3 Digit Zip	Metro Area	Year	Percent Adoption
601	Chicago, Gary, Lake County	2005	59.7%
602	Chicago, Gary, Lake County	2005	0.0%
603	Chicago, Gary, Lake County	2005	69.9%
604	Chicago, Gary, Lake County	2005	64.0%
605	Chicago, Gary, Lake County	2005	2.3%
606	Chicago, Gary, Lake County	2005	45.2%
622	St. Louis	2005	64.1%
630	St. Louis	2005	51.2%
631	St. Louis	2005	42.9%
633	St. Louis	2005	10.4%
640	Kansas City	2005	0.0%
641	Kansas City	2005	30.4%
651	Kansas City	2005	45.2%
660	Kansas City	2005	44.6%
661	Kansas City	2005	29.6%
662	Kansas City	2005	64.2%
672	Wichita	2005	60.9%
680	Omaha	2005	0.0%
681	Omaha	2005	84.3%
685	Omaha	2005	81.3%
700	New Orleans	2005	11.9%
701	New Orleans	2005	36.7%
704	New Orleans	2005	0.0%
708	Baton Rouge	2005	32.0%
721	Little Rock, North Little Rock	2005	83.8%
722	Little Rock, North Little Rock	2005	98.6%
730	Oklahoma City	2005	66.1%
731	Oklahoma City	2005	48.1%
740	Tulsa	2005	0.0%
741	Tulsa	2005	22.6%
750	Dallas, Fort Worth	2005	78.1%
751	Dallas, Fort Worth	2005	10.3%
752	Dallas, Fort Worth	2005	100.0%
753	Dallas, Fort Worth	2005	93.6%
761	Dallas, Fort Worth	2005	36.5%
762	Dallas, Fort Worth	2005	28.7%
770	Houston, Galveston, Brazoria	2005	4.9%
772	Houston, Galveston, Brazoria	2005	54.2%
773	Houston, Galveston, Brazoria	2005	52.7%

3 Digit Zip	Metro Area	Year	Percent Adoption
774	Houston, Galveston, Brazoria	2005	100.0%
775	Houston, Galveston, Brazoria	2005	17.0%
782	San Antonio	2005	70.2%
787	Austin	2005	66.7%
799	El Paso	2005	86.6%
800	Denver, Boulder	2005	62.4%
801	Denver, Boulder	2005	49.1%
802	Denver, Boulder	2005	44.1%
803	Denver, Boulder	2005	87.3%
804	Denver, Boulder	2005	14.1%
805	Denver, Boulder	2005	100.0%
841	Salt Lake City, Ogden	2005	68.9%
844	Salt Lake City, Ogden	2005	NA
850	Tucson	2005	54.2%
852	Phoenix	2005	97.8%
853	Phoenix	2005	10.0%
857	Tucson	2005	94.9%
871	Albuquerque	2005	74.8%
891	Las Vegas	2005	93.9%
900	Los Angeles, Anaheim, Riverside	2005	72.0%
903	Los Angeles, Anaheim, Riverside	2005	79.6%
908	Los Angeles, Anaheim, Riverside	2005	72.4%
911	Los Angeles, Anaheim, Riverside	2005	100.0%
912	Los Angeles, Anaheim, Riverside	2005	79.0%
917	Los Angeles, Anaheim, Riverside	2005	51.5%
918	Los Angeles, Anaheim, Riverside	2005	0.0%
919	San Diego	2005	94.5%
920	San Diego	2005	60.8%
921	San Diego	2005	64.0%
924	Los Angeles, Anaheim, Riverside	2005	51.0%
925	Los Angeles, Anaheim, Riverside	2005	39.4%
926	Los Angeles, Anaheim, Riverside	2005	87.8%
927	Los Angeles, Anaheim, Riverside	2005	100.0%
928	Los Angeles, Anaheim, Riverside	2005	41.9%
937	Bakersfield	2005	29.4%
940	San Francisco, Oakland, San Jose	2005	74.1%
941	San Francisco, Oakland, San Jose	2005	0.0%
945	San Francisco, Oakland, San Jose	2005	85.0%
946	San Francisco, Oakland, San Jose	2005	1.6%

3 Digit Zip	Metro Area	Year	Percent Adoption
951	San Francisco, Oakland, San Jose	2005	72.1%
958	Sacramento	2005	65.9%
968	Honolulu	2005	45.9%
970	Portland, Vancouver	2005	49.6%
972	Portland, Vancouver	2005	55.9%
980	Seattle, Tacoma	2005	83.4%
981	Seattle, Tacoma	2005	61.5%
982	Seattle, Tacoma	2005	41.6%
983	Seattle, Tacoma	2005	62.9%
984	Seattle, Tacoma	2005	67.6%
986	Portland, Vancouver	2005	75.6%

TMS 2006 Data

3 Digit Zip	Metro Area	Year	Percent Adoption
010	Springfield	2006	0.0%
017	Boston, Lawrence, Salem	2006	0.0%
019	Boston, Lawrence, Salem	2006	0.0%
021	Boston, Lawrence, Salem	2006	14.2%
022	Boston, Lawrence, Salem	2006	67.7%
024	Boston, Lawrence, Salem	2006	20.7%
027	Providence, Pawtucket, Fall River	2006	0.0%
028	Providence, Pawtucket, Fall River	2006	35.3%
029	Providence, Pawtucket, Fall River	2006	25.2%
060	Hartford, New Britain, Middletown	2006	0.0%
061	New Haven, Meriden	2006	50.1%
063	New London	2006	0.0%
064	New Haven, Meriden	2006	32.0%
065	New Haven, Meriden	2006	63.8%
066	New York, Northern New Jersey, Southwestern Connecticut	2006	65.4%
068	New York, Northern New Jersey, Southwestern Connecticut	2006	80.1%
069	New York, Northern New Jersey, Southwestern Connecticut	2006	90.2%
070	New York, Northern New Jersey, Southwestern Connecticut	2006	17.4%
071	New York, Northern New Jersey, Southwestern Connecticut	2006	0.0%
072	New York, Northern New Jersey, Southwestern Connecticut	2006	0.0%
073	New York, Northern New Jersey, Southwestern Connecticut	2006	100.0%
074	New York, Northern New Jersey, Southwestern Connecticut	2006	100.0%
075	New York, Northern New Jersey, Southwestern Connecticut	2006	91.4%
076	New York, Northern New Jersey, Southwestern Connecticut	2006	3.9%
078	New York, Northern New Jersey, Southwestern Connecticut	2006	0.0%
080	Philadelphia, Wilmington, Trenton	2006	25.6%
081	Philadelphia, Wilmington, Trenton	2006	0.0%
086	Philadelphia, Wilmington, Trenton	2006	0.0%
087	New York, Northern New Jersey, Southwestern Connecticut	2006	12.0%
088	New York, Northern New Jersey, Southwestern Connecticut	2006	12.5%

3 Digit Zip	Metro Area	Year	Percent Adoption
089	New York, Northern New Jersey, Southwestern Connecticut	2006	0.0%
105	New York, Northern New Jersey, Southwestern Connecticut	2006	NA
106	New York, Northern New Jersey, Southwestern Connecticut	2006	68.3%
108	New York, Northern New Jersey, Southwestern Connecticut	2006	10.6%
109	New York, Northern New Jersey, Southwestern Connecticut	2006	0.0%
111	New York, Northern New Jersey, Southwestern Connecticut	2006	53.4%
115	New York, Northern New Jersey, Southwestern Connecticut	2006	46.0%
117	New York, Northern New Jersey, Southwestern Connecticut	2006	8.5%
120	Albany, Schenectady, Troy	2006	84.6%
122	Albany, Schenectady, Troy	2006	11.8%
132	Syracuse	2006	38.4%
142	Buffalo, Niagara Falls	2006	23.8%
143	Buffalo, Niagara Falls	2006	90.9%
146	Rochester	2006	71.8%
150	Pittsburgh, Beaver Valley	2006	NA
156	Pittsburgh, Beaver Valley	2006	100.0%
176	Lancaster	2006	77.5%
180	Allentown, Bethlehem, Easton	2006	53.6%
181	Allentown, Bethlehem, Easton	2006	0.0%
185	Scranton, Wilkes-Barre	2006	17.6%
190	Philadelphia, Wilmington, Trenton	2006	24.1%
191	Philadelphia, Wilmington, Trenton	2006	35.6%
198	Philadelphia, Wilmington, Trenton	2006	2.2%
199	Philadelphia, Wilmington, Trenton	2006	0.0%
200	Washington	2006	100.0%
207	Washington	2006	98.8%
208	Washington	2006	100.0%
210	Baltimore	2006	51.2%
212	Baltimore	2006	63.2%
214	Baltimore	2006	62.2%
220	Washington	2006	100.0%
222	Washington	2006	100.0%
232	Richmond, Petersburg	2006	0.0%
233	Hampton Roads	2006	100.0%
234	Hampton Roads	2006	89.1%

3 Digit Zip	Metro Area	Year	Percent Adoption
235	Hampton Roads	2006	79.9%
236	Hampton Roads	2006	97.7%
237	Hampton Roads	2006	59.0%
238	Richmond, Petersburg	2006	73.7%
240	Roanoke	2006	29.7%
272	Greensboro, Winston-Salem, High Point	2006	100.0%
274	Greensboro, Winston-Salem, High Point	2006	55.2%
276	Raleigh-Durham	2006	76.8%
277	Raleigh-Durham	2006	0.0%
278	Greenville	2006	61.1%
280	Charlotte, Gastonia, Rock Hill	2006	92.6%
282	Charlotte, Gastonia, Rock Hill	2006	88.5%
283	Greensboro, Winston-Salem, High Point	2006	23.7%
288	Asheville	2006	18.0%
292	Charleston	2006	30.3%
294	Charleston	2006	94.9%
296	Greenville, Spartanburg	2006	75.2%
300	Atlanta	2006	68.7%
301	Atlanta	2006	0.0%
302	Atlanta	2006	18.7%
303	Atlanta	2006	40.9%
320	Jacksonville	2006	70.9%
321	Daytona Beach	2006	96.1%
322	Jacksonville	2006	50.7%
325	Pensacola	2006	50.5%
327	Daytona Beach	2006	59.3%
328	Orlando	2006	78.9%
331	Miami, Fort Lauderdale	2006	76.9%
333	Miami, Fort Lauderdale	2006	72.9%
334	West Palm Beach, Boca Raton, Delray	2006	100.0%
336	Tampa, St. Petersburg, Clearwater	2006	84.2%
337	Tampa, St. Petersburg, Clearwater	2006	87.3%
338	Fort Myers	2006	59.2%
339	Fort Myers	2006	62.9%
342	Sarasota-Bradenton	2006	62.1%
346	Tampa, St. Petersburg, Clearwater	2006	79.2%
347	Orlando	2006	25.5%
350	Birmingham	2006	0.0%
352	Birmingham	2006	51.4%

3 Digit Zip	Metro Area	Year	Percent Adoption
358	Huntsville	2006	13.8%
361	Montgomery	2006	22.0%
371	Nashville	2006	0.0%
372	Nashville	2006	66.8%
374	Chattanooga	2006	46.7%
377	Knoxville	2006	0.0%
379	Knoxville	2006	56.7%
381	Memphis	2006	20.5%
392	Jackson	2006	48.9%
402	Louisville	2006	84.7%
410	Cincinnati, Hamilton	2006	58.8%
430	Columbus	2006	53.0%
432	Columbus	2006	49.2%
434	Toledo	2006	45.9%
436	Toledo	2006	71.8%
440	Cleveland, Akron, Lorain	2006	0.4%
441	Cleveland, Akron, Lorain	2006	49.1%
442	Cleveland, Akron, Lorain	2006	55.6%
443	Cleveland, Akron, Lorain	2006	40.5%
444	Youngstown, Warren	2006	90.2%
445	Youngstown, Warren	2006	0.0%
448	Cleveland, Akron, Lorain	2006	19.0%
450	Cincinnati, Hamilton	2006	66.5%
451	Cincinnati, Hamilton	2006	21.4%
452	Cincinnati, Hamilton	2006	12.3%
453	Dayton, Springfield	2006	26.7%
454	Dayton, Springfield	2006	86.5%
455	Dayton, Springfield	2006	35.1%
460	Indianapolis	2006	100.0%
461	Indianapolis	2006	62.5%
462	Indianapolis	2006	58.9%
463	Chicago, Gary, Lake County	2006	82.4%
464	Chicago, Gary, Lake County	2006	3.4%
468	Fort Wayne	2006	65.7%
471	Louisville	2006	0.0%
480	Detroit, Ann Arbor	2006	33.1%
481	Detroit, Ann Arbor	2006	24.3%
482	Detroit, Ann Arbor	2006	6.4%
483	Detroit, Ann Arbor	2006	38.2%

3 Digit Zip	Metro Area	Year	Percent Adoption
488	Detroit, Ann Arbor	2006	0.0%
494	Grand Rapids	2006	0.0%
495	Grand Rapids	2006	25.9%
503	Des Moines	2006	81.8%
515	Omaha	2006	47.6%
530	Milwaukee, Racine	2006	100.0%
531	Milwaukee, Racine	2006	32.1%
532	Milwaukee, Racine	2006	6.7%
534	Milwaukee, Racine	2006	66.3%
535	Janesville-Beloit	2006	25.0%
537	Janesville-Beloit	2006	0.0%
550	Minneapolis, St. Paul	2006	53.4%
551	Minneapolis, St. Paul	2006	72.9%
553	Minneapolis, St. Paul	2006	54.1%
554	Minneapolis, St. Paul	2006	92.0%
600	Chicago, Gary, Lake County	2006	54.8%
601	Chicago, Gary, Lake County	2006	66.7%
603	Chicago, Gary, Lake County	2006	64.1%
604	Chicago, Gary, Lake County	2006	65.2%
605	Chicago, Gary, Lake County	2006	52.3%
606	Chicago, Gary, Lake County	2006	45.2%
622	St. Louis	2006	65.0%
630	St. Louis	2006	58.3%
631	St. Louis	2006	53.6%
633	St. Louis	2006	10.4%
651	St. Louis	2006	49.9%
658	Springfield(MO)	2006	96.4%
660	Kansas City	2006	56.6%
661	Kansas City	2006	33.0%
662	Kansas City	2006	64.6%
672	Wichita	2006	0.0%
680	Omaha	2006	0.0%
681	Omaha	2006	84.7%
685	Omaha	2006	81.3%
700	New Orleans	2006	17.3%
704	New Orleans	2006	0.0%
708	Baton Rouge	2006	31.5%
721	Little Rock, North Little Rock	2006	84.2%
722	Little Rock, North Little Rock	2006	98.7%

3 Digit Zip	Metro Area	Year	Percent Adoption
730	Oklahoma City	2006	65.0%
731	Oklahoma City	2006	47.7%
740	Tulsa	2006	0.0%
741	Tulsa	2006	25.8%
750	Dallas, Fort Worth	2006	75.7%
752	Dallas, Fort Worth	2006	100.0%
753	Dallas, Fort Worth	2006	73.8%
760	Dallas, Fort Worth	2006	64.5%
761	Dallas, Fort Worth	2006	35.7%
762	Dallas, Fort Worth	2006	32.4%
770	Houston, Galveston, Brazoria	2006	4.8%
772	Houston, Galveston, Brazoria	2006	54.3%
773	Houston, Galveston, Brazoria	2006	93.1%
774	Houston, Galveston, Brazoria	2006	100.0%
775	Houston, Galveston, Brazoria	2006	23.6%
776	Beaumont-Port Arthur	2006	0.0%
777	Beaumont-Port Arthur	2006	21.4%
782	San Antonio	2006	67.6%
785	McAllen	2006	25.9%
787	Austin	2006	74.9%
799	El Paso	2006	82.4%
800	Denver, Boulder	2006	63.6%
801	Denver, Boulder	2006	50.0%
802	Denver, Boulder	2006	53.7%
803	Denver, Boulder	2006	87.0%
804	Denver, Boulder	2006	15.3%
805	Denver, Boulder	2006	100.0%
837	Boise City	2006	73.0%
840	Provo - Orem	2006	80.3%
841	Salt Lake City, Ogden	2006	67.8%
850	Tucson	2006	24.0%
852	Phoenix	2006	94.7%
853	Phoenix	2006	13.4%
857	Tucson	2006	100.0%
871	Albuquerque	2006	75.5%
891	Las Vegas	2006	82.0%
894	Reno	2006	89.3%
895	Reno	2006	72.9%
900	Los Angeles, Anaheim, Riverside	2006	74.6%

3 Digit Zip	Metro Area	Year	Percent Adoption
903	Los Angeles, Anaheim, Riverside	2006	85.7%
908	Los Angeles, Anaheim, Riverside	2006	72.1%
911	Los Angeles, Anaheim, Riverside	2006	100.0%
912	Los Angeles, Anaheim, Riverside	2006	80.6%
913	Santa Barbara	2006	100.0%
917	Los Angeles, Anaheim, Riverside	2006	51.5%
918	Los Angeles, Anaheim, Riverside	2006	0.1%
919	San Diego	2006	95.3%
920	San Diego	2006	59.0%
921	San Diego	2006	63.6%
924	Los Angeles, Anaheim, Riverside	2006	50.3%
925	Los Angeles, Anaheim, Riverside	2006	50.0%
926	Los Angeles, Anaheim, Riverside	2006	100.0%
927	Los Angeles, Anaheim, Riverside	2006	100.0%
928	Los Angeles, Anaheim, Riverside	2006	25.1%
931	Santa Barbara	2006	18.6%
933	Bakersfield	2006	46.9%
934	San Luis Obispo	2006	66.7%
937	Fresno	2006	12.0%
939	Salinas	2006	14.7%
941	San Francisco, Oakland, San Jose	2006	12.1%
945	San Francisco, Oakland, San Jose	2006	94.4%
946	San Francisco, Oakland, San Jose	2006	7.8%
951	San Francisco, Oakland, San Jose	2006	72.4%
952	Stockton	2006	49.6%
953	Modesto	2006	70.5%
958	Sacramento	2006	62.7%
968	Honolulu	2006	45.0%
970	Portland, Vancouver	2006	32.4%
972	Portland, Vancouver	2006	54.4%
973	Eugene	2006	0.0%
974	Eugene	2006	78.4%
980	Seattle, Tacoma	2006	83.7%
981	Seattle, Tacoma	2006	74.7%
982	Seattle, Tacoma	2006	41.1%
983	Seattle, Tacoma	2006	61.5%
984	Seattle, Tacoma	2006	64.5%
986	Portland, Vancouver	2006	75.0%
992	Spokane	2006	74.4%

TMS 2007 Data

3 Digit Zip	Metro Area	Year	Percent Adoption
011	Springfield	2007	13.3%
021	Boston, Lawrence, Salem	2007	23.3%
022	Boston, Lawrence, Salem	2007	68.8%
024	Boston, Lawrence, Salem	2007	20.7%
027	Providence, Pawtucket, Fall River	2007	0.0%
029	Providence, Pawtucket, Fall River	2007	1.8%
060	Hartford, New Britain, Middletown	2007	0.0%
061	New York, Northern New Jersey, Southwestern Connecticut	2007	44.3%
064	New Haven, Meriden	2007	32.0%
065	New Haven, Meriden	2007	63.8%
066	New York, Northern New Jersey, Southwestern Connecticut	2007	65.4%
068	New York, Northern New Jersey, Southwestern Connecticut	2007	80.1%
069	New York, Northern New Jersey, Southwestern Connecticut	2007	90.2%
070	New York, Northern New Jersey, Southwestern Connecticut	2007	17.1%
072	New York, Northern New Jersey, Southwestern Connecticut	2007	0.0%
075	New York, Northern New Jersey, Southwestern Connecticut	2007	91.4%
076	New York, Northern New Jersey, Southwestern Connecticut	2007	3.8%
077	New York, Northern New Jersey, Southwestern Connecticut	2007	6.8%
078	New York, Northern New Jersey, Southwestern Connecticut	2007	0.0%
080	Philadelphia, Wilmington, Trenton	2007	27.0%
086	Philadelphia, Wilmington, Trenton	2007	0.0%
087	New York, Northern New Jersey, Southwestern Connecticut	2007	10.9%
088	New York, Northern New Jersey, Southwestern Connecticut	2007	0.0%
089	New York, Northern New Jersey, Southwestern Connecticut	2007	0.0%
105	New York, Northern New Jersey, Southwestern Connecticut	2007	NA
106	New York, Northern New Jersey, Southwestern Connecticut	2007	88.7%
108	New York, Northern New Jersey, Southwestern Connecticut	2007	10.6%
109	New York, Northern New Jersey, Southwestern	2007	0.0%

3 Digit Zip	Metro Area	Year	Percent Adoption
	Connecticut		
111	New York, Northern New Jersey, Southwestern Connecticut	2007	52.9%
115	New York, Northern New Jersey, Southwestern Connecticut	2007	45.9%
117	New York, Northern New Jersey, Southwestern Connecticut	2007	8.3%
120	Albany, Schenectady, Troy	2007	84.6%
122	Albany, Schenectady, Troy	2007	11.8%
123	Albany, Schenectady, Troy	2007	55.6%
130	Syracuse	2007	12.9%
132	Syracuse	2007	38.4%
142	Buffalo, Niagara Falls	2007	23.8%
143	Buffalo, Niagara Falls	2007	90.9%
146	Rochester	2007	72.3%
150	Pittsburgh, Beaver Valley	2007	NA
156	Pittsburgh, Beaver Valley	2007	100.0%
180	Allentown, Bethlehem, Easton	2007	57.7%
190	Philadelphia, Wilmington, Trenton	2007	21.3%
191	Philadelphia, Wilmington, Trenton	2007	34.9%
199	Philadelphia, Wilmington, Trenton	2007	0.0%
207	Washington	2007	97.1%
208	Washington	2007	100.0%
210	Baltimore	2007	60.9%
212	Baltimore	2007	63.2%
214	Baltimore	2007	62.0%
220	Washington	2007	100.0%
222	Washington	2007	100.0%
232	Richmond, Petersburg	2007	0.0%
233	Hampton Roads	2007	100.0%
234	Hampton Roads	2007	90.0%
235	Hampton Roads	2007	81.8%
236	Hampton Roads	2007	97.9%
237	Hampton Roads	2007	59.3%
238	Richmond, Petersburg	2007	75.3%
272	Greensboro, Winston-Salem, High Point	2007	100.0%
274	Greensboro, Winston-Salem, High Point	2007	68.0%
276	Raleigh-Durham	2007	76.8%
277	Raleigh-Durham	2007	95.7%
278	Greenville	2007	61.4%

3 Digit Zip	Metro Area	Year	Percent Adoption
280	Charlotte, Gastonia, Rock Hill	2007	92.6%
282	Charlotte, Gastonia, Rock Hill	2007	88.9%
283	Greensboro, Winston-Salem, High Point	2007	23.5%
288	Asheville	2007	16.2%
292	Charleston	2007	22.4%
293	Greenville, Spartanburg	2007	53.1%
294	Charleston	2007	94.9%
296	Greenville, Spartanburg	2007	75.2%
300	Atlanta	2007	66.9%
301	Atlanta	2007	0.0%
302	Atlanta	2007	66.4%
303	Atlanta	2007	35.7%
320	Jacksonville	2007	19.9%
321	Daytona Beach	2007	96.8%
322	Jacksonville	2007	55.9%
325	Pensacola	2007	50.0%
327	Orlando	2007	59.3%
328	Orlando	2007	81.2%
331	Miami, Fort Lauderdale	2007	81.2%
333	Miami, Fort Lauderdale	2007	78.2%
334	West Palm Beach, Boca Raton, Delray	2007	100.0%
336	Tampa, St. Petersburg, Clearwater	2007	83.1%
337	Tampa, St. Petersburg, Clearwater	2007	87.3%
338	Fort Myers	2007	59.2%
339	Fort Myers	2007	82.5%
342	Sarasota-Bradenton	2007	62.1%
346	Tampa, St. Petersburg, Clearwater	2007	79.8%
347	Orlando	2007	24.4%
350	Birmingham	2007	0.0%
352	Birmingham	2007	66.0%
358	Huntsville	2007	13.6%
361	Montgomery	2007	22.0%
371	Nashville	2007	0.0%
372	Nashville	2007	66.8%
374	Chattanooga	2007	51.6%
377	Knoxville	2007	0.0%
379	Knoxville	2007	57.3%
381	Memphis	2007	20.3%
392	Jackson	2007	48.9%

3 Digit Zip	Metro Area	Year	Percent Adoption
402	Louisville	2007	84.7%
410	Cincinnati, Hamilton	2007	58.6%
430	Columbus	2007	53.0%
432	Columbus	2007	52.4%
434	Toledo	2007	45.9%
436	Toledo	2007	77.4%
440	Cleveland, Akron, Lorain	2007	0.9%
441	Cleveland, Akron, Lorain	2007	48.4%
442	Cleveland, Akron, Lorain	2007	100.0%
443	Youngstown, Warren	2007	43.9%
444	Youngstown, Warren	2007	90.2%
445	Youngstown, Warren	2007	0.0%
448	Cleveland, Akron, Lorain	2007	23.2%
450	Cincinnati, Hamilton	2007	64.4%
451	Cincinnati, Hamilton	2007	17.6%
452	Cincinnati, Hamilton	2007	12.3%
453	Dayton, Springfield	2007	26.7%
454	Dayton, Springfield	2007	86.4%
455	Dayton, Springfield	2007	35.1%
460	Indianapolis	2007	100.0%
461	Indianapolis	2007	66.7%
462	Fort Wayne	2007	59.6%
463	Chicago, Gary, Lake County	2007	82.4%
464	Chicago, Gary, Lake County	2007	3.9%
468	Fort Wayne	2007	65.6%
471	Louisville	2007	0.0%
480	Detroit, Ann Arbor	2007	44.7%
481	Detroit, Ann Arbor	2007	54.1%
482	Detroit, Ann Arbor	2007	7.2%
483	Detroit, Ann Arbor	2007	38.3%
488	Detroit, Ann Arbor	2007	0.0%
494	Grand Rapids	2007	0.0%
495	Grand Rapids	2007	30.0%
503	Des Moines	2007	81.8%
515	Omaha	2007	46.7%
530	Milwaukee, Racine	2007	100.0%
531	Milwaukee, Racine	2007	31.6%
532	Milwaukee, Racine	2007	6.7%
534	Milwaukee, Racine	2007	66.3%

3 Digit Zip	Metro Area	Year	Percent Adoption
535	Janesville-Beloit	2007	22.0%
537	Janesville-Beloit	2007	0.0%
550	Minneapolis, St. Paul	2007	55.0%
551	Minneapolis, St. Paul	2007	71.7%
553	Minneapolis, St. Paul	2007	55.2%
554	Minneapolis, St. Paul	2007	94.3%
600	Chicago, Gary, Lake County	2007	55.1%
601	Chicago, Gary, Lake County	2007	68.6%
602	Chicago, Gary, Lake County	2007	21.2%
603	Chicago, Gary, Lake County	2007	65.0%
604	Chicago, Gary, Lake County	2007	77.7%
605	Chicago, Gary, Lake County	2007	53.0%
606	Chicago, Gary, Lake County	2007	19.9%
622	St. Louis	2007	65.0%
630	St. Louis	2007	0.0%
631	St. Louis	2007	53.6%
633	St. Louis	2007	17.3%
651	Springfield(MO)	2007	49.9%
658	Springfield(MO)	2007	95.8%
660	Kansas City	2007	76.9%
661	Kansas City	2007	36.9%
662	Kansas City	2007	64.1%
672	Wichita	2007	0.0%
680	Omaha	2007	0.0%
681	Omaha	2007	85.1%
685	Omaha	2007	81.3%
700	New Orleans	2007	20.0%
704	Baton Rouge	2007	0.0%
708	Baton Rouge	2007	35.5%
721	Little Rock, North Little Rock	2007	84.4%
722	Little Rock, North Little Rock	2007	98.7%
730	Oklahoma City	2007	63.8%
731	Oklahoma City	2007	46.6%
740	Tulsa	2007	0.0%
741	Tulsa	2007	100.0%
750	Dallas, Fort Worth	2007	78.0%
751	Dallas, Fort Worth	2007	14.9%
752	Dallas, Fort Worth	2007	100.0%
753	Dallas, Fort Worth	2007	89.1%

3 Digit Zip	Metro Area	Year	Percent Adoption
760	Dallas, Fort Worth	2007	70.1%
761	Dallas, Fort Worth	2007	41.6%
762	Dallas, Fort Worth	2007	32.4%
770	Houston, Galveston, Brazoria	2007	4.8%
772	Houston, Galveston, Brazoria	2007	52.5%
773	Houston, Galveston, Brazoria	2007	100.0%
774	Houston, Galveston, Brazoria	2007	100.0%
775	Houston, Galveston, Brazoria	2007	29.3%
776	Beaumont-Port Arthur	2007	0.0%
777	Beaumont-Port Arthur	2007	21.8%
782	San Antonio	2007	0.0%
785	McAllen	2007	51.0%
787	Austin	2007	79.0%
799	El Paso	2007	80.8%
800	Denver, Boulder	2007	62.9%
801	Denver, Boulder	2007	83.3%
802	Denver, Boulder	2007	59.4%
803	Denver, Boulder	2007	87.1%
804	Denver, Boulder	2007	15.3%
805	Denver, Boulder	2007	100.0%
837	Boise City	2007	74.4%
841	Salt Lake City, Ogden	2007	67.7%
844	Salt Lake City, Ogden	2007	NA
846	Provo - Orem	2007	100.0%
852	Phoenix	2007	90.7%
853	Phoenix	2007	24.8%
857	Tucson	2007	100.0%
871	Albuquerque	2007	75.5%
891	Las Vegas	2007	93.3%
894	Reno	2007	89.3%
895	Reno	2007	71.4%
908	Los Angeles, Anaheim, Riverside	2007	73.9%
911	Los Angeles, Anaheim, Riverside	2007	100.0%
912	Los Angeles, Anaheim, Riverside	2007	80.0%
913	Santa Barbara	2007	100.0%
917	Los Angeles, Anaheim, Riverside	2007	51.5%
918	Los Angeles, Anaheim, Riverside	2007	6.2%
919	San Diego	2007	94.4%
920	San Diego	2007	58.1%

3 Digit Zip	Metro Area	Year	Percent Adoption
921	San Diego	2007	63.4%
924	Los Angeles, Anaheim, Riverside	2007	49.7%
925	Los Angeles, Anaheim, Riverside	2007	50.0%
926	Los Angeles, Anaheim, Riverside	2007	99.2%
927	Los Angeles, Anaheim, Riverside	2007	100.0%
928	Los Angeles, Anaheim, Riverside	2007	37.6%
931	Santa Barbara	2007	18.5%
934	San Luis Obispo	2007	21.1%
937	Fresno	2007	6.9%
939	Salinas	2007	14.3%
940	San Francisco, Oakland, San Jose	2007	74.1%
945	San Francisco, Oakland, San Jose	2007	94.4%
946	San Francisco, Oakland, San Jose	2007	4.3%
951	San Francisco, Oakland, San Jose	2007	72.6%
952	Modesto	2007	44.8%
953	Modesto	2007	70.5%
958	Sacramento	2007	55.0%
968	Honolulu	2007	45.0%
970	Portland, Vancouver	2007	18.6%
971	Portland, Vancouver	2007	0.0%
972	Portland, Vancouver	2007	53.1%
974	Eugene	2007	78.2%
980	Seattle, Tacoma	2007	84.5%
981	Seattle, Tacoma	2007	58.1%
982	Seattle, Tacoma	2007	47.6%
984	Seattle, Tacoma	2007	59.8%
986	Portland, Vancouver	2007	74.5%
992	Spokane	2007	76.3%

TSP 1999 Data

3 Digit Zip	Metro Area	Year	Percent Adoption
021	Boston, Lawrence, Salem	1999	0.0%
122	Albany, Schenectady, Troy	1999	0.0%
146	Rochester	1999	0.0%
152	Pittsburgh, Beaver Valley	1999	3.0%
381	Memphis	1999	0.0%
432	Columbus	1999	0.0%
441	Cleveland, Akron, Lorain	1999	0.0%
443	Cleveland, Akron, Lorain	1999	10.1%
463	Chicago, Gary, Lake County	1999	41.7%
495	Grand Rapids	1999	18.2%
600	Chicago, Gary, Lake County	1999	5.6%
606	Chicago, Gary, Lake County	1999	0.3%
721	Little Rock, North Little Rock	1999	0.0%
841	Salt Lake City, Ogden	1999	0.0%
921	San Diego	1999	0.0%
945	San Francisco, Oakland, San Jose	1999	100.0%
951	San Francisco, Oakland, San Jose	1999	0.0%
954	San Francisco, Oakland, San Jose	1999	11.5%
958	Sacramento	1999	0.0%
972	Portland, Vancouver	1999	0.0%
982	Seattle, Tacoma	1999	9.3%
984	Seattle, Tacoma	1999	0.0%

TSP 2000 Data

3 Digit Zip	Metro Area	Year	Percent Adoption
009	San Juan	2000	0.0%
021	Boston, Lawrence, Salem	2000	0.0%
027	Providence, Pawtucket, Fall River	2000	0.0%
029	Providence, Pawtucket, Fall River	2000	0.0%
061	New York, Northern New Jersey, Southwestern Connecticut	2000	0.0%
068	New York, Northern New Jersey, Southwestern Connecticut	2000	0.0%
070	New York, Northern New Jersey, Southwestern Connecticut	2000	0.0%
076	New York, Northern New Jersey, Southwestern Connecticut	2000	0.0%
100	New York, Northern New Jersey, Southwestern Connecticut	2000	0.0%
104	New York, Northern New Jersey, Southwestern Connecticut	2000	0.0%
105	New York, Northern New Jersey, Southwestern Connecticut	2000	0.0%
107	New York, Northern New Jersey, Southwestern Connecticut	2000	0.0%
109	New York, Northern New Jersey, Southwestern Connecticut	2000	0.0%
122	Albany, Schenectady, Troy	2000	0.0%
132	Syracuse	2000	0.0%
146	Rochester	2000	0.0%
152	Pittsburgh, Beaver Valley	2000	3.0%
156	Pittsburgh, Beaver Valley	2000	0.0%
181	Allentown, Bethlehem, Easton	2000	0.0%
191	Philadelphia, Wilmington, Trenton	2000	0.0%
200	Washington	2000	0.0%
236	Hampton Roads	2000	0.0%
238	Richmond, Petersburg	2000	0.0%
271	Greensboro, Winston-Salem, High Point	2000	0.0%
275	Raleigh-Durham	2000	0.0%
277	Raleigh-Durham	2000	0.0%
282	Charlotte, Gastonia, Rock Hill	2000	0.0%
293	Greenville, Spartanburg	2000	0.0%
294	Charleston	2000	0.0%
296	Greenville, Spartanburg	2000	0.0%
303	Atlanta	2000	3.3%
331	Miami, Fort Lauderdale	2000	0.0%
334	West Palm Beach, Boca Raton, Delray	2000	0.0%

3 Digit Zip	Metro Area	Year	Percent Adoption
336	Tampa, St. Petersburg, Clearwater	2000	0.0%
372	Nashville	2000	0.0%
379	Knoxville	2000	0.0%
381	Memphis	2000	0.0%
432	Columbus	2000	0.0%
436	Toledo	2000	0.0%
440	Cleveland, Akron, Lorain	2000	0.0%
441	Cleveland, Akron, Lorain	2000	0.0%
443	Cleveland, Akron, Lorain	2000	0.0%
445	Youngstown, Warren	2000	0.0%
452	Cincinnati, Hamilton	2000	0.0%
455	Dayton, Springfield	2000	0.0%
463	Chicago, Gary, Lake County	2000	29.4%
480	Detroit, Ann Arbor	2000	0.0%
495	Grand Rapids	2000	14.8%
531	Milwaukee, Racine	2000	0.0%
532	Milwaukee, Racine	2000	0.0%
554	Minneapolis, St. Paul	2000	0.0%
600	Chicago, Gary, Lake County	2000	5.5%
606	Chicago, Gary, Lake County	2000	2.1%
681	Omaha	2000	0.0%
700	New Orleans	2000	0.0%
721	Little Rock, North Little Rock	2000	0.0%
731	Oklahoma City	2000	0.0%
741	Tulsa	2000	0.0%
752	Dallas, Fort Worth	2000	0.0%
762	Dallas, Fort Worth	2000	0.0%
772	Houston, Galveston, Brazoria	2000	0.0%
787	Austin	2000	0.0%
802	Denver, Boulder	2000	0.0%
806	Denver, Boulder	2000	0.0%
841	Salt Lake City, Ogden	2000	1.9%
850	Phoenix	2000	0.0%
852	Phoenix	2000	0.0%
853	Phoenix	2000	0.0%
871	Albuquerque	2000	0.0%
900	Los Angeles, Anaheim, Riverside	2000	0.0%
902	Los Angeles, Anaheim, Riverside	2000	0.0%
904	Los Angeles, Anaheim, Riverside	2000	0.0%

3 Digit Zip	Metro Area	Year	Percent Adoption
906	Los Angeles, Anaheim, Riverside	2000	0.0%
920	San Diego	2000	0.0%
921	San Diego	2000	0.0%
940	San Francisco, Oakland, San Jose	2000	0.0%
941	San Francisco, Oakland, San Jose	2000	114.3%
945	San Francisco, Oakland, San Jose	2000	6.7%
951	San Francisco, Oakland, San Jose	2000	0.0%
954	San Francisco, Oakland, San Jose	2000	11.1%
958	Sacramento	2000	0.0%
972	Portland, Vancouver	2000	0.0%
981	Seattle, Tacoma	2000	20.9%
982	Seattle, Tacoma	2000	0.0%
983	Seattle, Tacoma	2000	66.3%
984	Seattle, Tacoma	2000	0.0%
986	Portland, Vancouver	2000	0.0%

TSP 2002 Data

3 Digit Zip	Metro Area	Year	Percent Adoption
011	Springfield	2002	0.0%
027	Providence, Pawtucket, Fall River	2002	0.0%
029	Providence, Pawtucket, Fall River	2002	0.0%
061	New York, Northern New Jersey, Southwestern Connecticut	2002	0.0%
064	Hartford, New Britain, Middletown	2002	0.0%
065	New Haven, Meriden	2002	0.0%
068	New York, Northern New Jersey, Southwestern Connecticut	2002	0.0%
070	New York, Northern New Jersey, Southwestern Connecticut	2002	0.0%
071	New York, Northern New Jersey, Southwestern Connecticut	2002	0.0%
073	New York, Northern New Jersey, Southwestern Connecticut	2002	0.0%
076	New York, Northern New Jersey, Southwestern Connecticut	2002	0.0%
100	New York, Northern New Jersey, Southwestern Connecticut	2002	0.0%
105	New York, Northern New Jersey, Southwestern Connecticut	2002	0.0%
107	New York, Northern New Jersey, Southwestern Connecticut	2002	0.0%
109	New York, Northern New Jersey, Southwestern Connecticut	2002	0.0%
115	New York, Northern New Jersey, Southwestern Connecticut	2002	0.0%
117	New York, Northern New Jersey, Southwestern Connecticut	2002	0.0%
122	Albany, Schenectady, Troy	2002	0.0%
132	Syracuse	2002	0.0%
141	Buffalo, Niagara Falls	2002	0.0%
142	Buffalo, Niagara Falls	2002	0.0%
146	Rochester	2002	0.0%
150	Pittsburgh, Beaver Valley	2002	0.0%
152	Pittsburgh, Beaver Valley	2002	2.7%
153	Pittsburgh, Beaver Valley	2002	0.0%
156	Pittsburgh, Beaver Valley	2002	0.0%
171	Harrisburg, Lebanon, Carlisle	2002	0.0%
181	Allentown, Bethlehem, Easton	2002	0.0%
185	Scranton, Wilkes-Barre	2002	0.0%
187	Scranton, Wilkes-Barre	2002	0.0%
191	Philadelphia, Wilmington, Trenton	2002	0.0%

3 Digit Zip	Metro Area	Year	Percent Adoption
200	Washington	2002	0.0%
207	Baltimore	2002	0.0%
208	Washington	2002	2.5%
210	Baltimore	2002	0.0%
212	Baltimore	2002	0.0%
217	Washington	2002	0.0%
220	Washington	2002	0.0%
221	Washington	2002	0.0%
238	Richmond, Petersburg	2002	0.0%
271	Greensboro, Winston-Salem, High Point	2002	0.0%
272	Greensboro, Winston-Salem, High Point	2002	0.0%
274	Greensboro, Winston-Salem, High Point	2002	0.0%
275	Raleigh-Durham	2002	0.0%
276	Raleigh-Durham	2002	0.0%
277	Raleigh-Durham	2002	0.0%
280	Charlotte, Gastonia, Rock Hill	2002	0.0%
293	Greenville, Spartanburg	2002	0.0%
294	Charleston	2002	0.0%
296	Greenville, Spartanburg	2002	0.0%
303	Atlanta	2002	3.3%
330	Miami, Fort Lauderdale	2002	0.0%
331	Miami, Fort Lauderdale	2002	0.0%
334	West Palm Beach, Boca Raton, Delray	2002	0.0%
336	Tampa, St. Petersburg, Clearwater	2002	0.0%
337	Tampa, St. Petersburg, Clearwater	2002	0.0%
341	Naples	2002	0.0%
342	Sarasota-Bradenton	2002	0.0%
346	Tampa, St. Petersburg, Clearwater	2002	0.0%
352	Birmingham	2002	0.0%
372	Nashville	2002	0.0%
377	Gatlinburg	2002	100.0%
379	Knoxville	2002	0.0%
381	Memphis	2002	0.0%
402	Louisville	2002	0.0%
432	Columbus	2002	0.0%
436	Toledo	2002	0.0%
440	Cleveland, Akron, Lorain	2002	0.0%
441	Cleveland, Akron, Lorain	2002	0.0%
442	Cleveland, Akron, Lorain	2002	0.0%

3 Digit Zip	Metro Area	Year	Percent Adoption
443	Cleveland, Akron, Lorain	2002	0.0%
445	Youngstown, Warren	2002	0.0%
452	Cincinnati, Hamilton	2002	0.0%
454	Dayton, Springfield	2002	0.0%
455	Dayton, Springfield	2002	0.0%
462	Indianapolis	2002	3.4%
463	Chicago, Gary, Lake County	2002	27.8%
464	Chicago, Gary, Lake County	2002	0.0%
480	Detroit, Ann Arbor	2002	0.0%
481	Detroit, Ann Arbor	2002	0.0%
495	Grand Rapids	2002	26.9%
496	Traverse City	2002	0.0%
531	Milwaukee, Racine	2002	0.0%
532	Milwaukee, Racine	2002	0.0%
534	Milwaukee, Racine	2002	0.0%
554	Minneapolis, St. Paul	2002	0.0%
600	Chicago, Gary, Lake County	2002	5.5%
606	Chicago, Gary, Lake County	2002	0.0%
631	St. Louis	2002	0.0%
641	Kansas City	2002	0.0%
672	Wichita	2002	0.0%
681	Omaha	2002	0.0%
700	New Orleans	2002	0.0%
701	New Orleans	2002	0.0%
708	Baton Rouge	2002	0.0%
721	Little Rock, North Little Rock	2002	0.0%
731	Oklahoma City	2002	0.0%
741	Tulsa	2002	0.0%
761	Dallas, Fort Worth	2002	0.0%
762	Dallas, Fort Worth	2002	0.0%
772	Houston, Galveston, Brazoria	2002	0.0%
782	San Antonio	2002	0.0%
787	Austin	2002	0.0%
799	El Paso	2002	0.0%
802	Denver, Boulder	2002	0.0%
804	Breckenridge	2002	0.0%
806	Denver, Boulder	2002	0.0%
840	Park City	2002	0.0%
841	Salt Lake City, Ogden	2002	3.9%

3 Digit Zip	Metro Area	Year	Percent Adoption
850	Phoenix	2002	0.0%
852	Phoenix	2002	0.0%
853	Phoenix	2002	0.0%
857	Tucson	2002	0.0%
860	Flagstaff	2002	0.0%
871	Albuquerque	2002	0.0%
891	Las Vegas	2002	0.0%
900	Los Angeles, Anaheim, Riverside	2002	4.5%
902	Los Angeles, Anaheim, Riverside	2002	0.0%
904	Los Angeles, Anaheim, Riverside	2002	0.0%
905	Los Angeles, Anaheim, Riverside	2002	0.0%
906	Los Angeles, Anaheim, Riverside	2002	0.0%
921	San Diego	2002	0.2%
923	Los Angeles, Anaheim, Riverside	2002	0.0%
926	Los Angeles, Anaheim, Riverside	2002	0.0%
928	Los Angeles, Anaheim, Riverside	2002	0.0%
930	Los Angeles, Anaheim, Riverside	2002	0.0%
933	Bakersfield	2002	0.0%
935	Los Angeles, Anaheim, Riverside	2002	0.0%
937	Fresno	2002	0.0%
939	Salinas	2002	100.0%
945	San Francisco, Oakland, San Jose	2002	31.4%
946	San Francisco, Oakland, San Jose	2002	0.3%
950	San Francisco, Oakland, San Jose	2002	0.0%
951	San Francisco, Oakland, San Jose	2002	0.0%
954	San Francisco, Oakland, San Jose	2002	36.1%
958	Sacramento	2002	34.9%
968	Honolulu	2002	0.0%
972	Portland, Vancouver	2002	100.0%
981	Seattle, Tacoma	2002	18.3%
982	Seattle, Tacoma	2002	13.2%
983	Seattle, Tacoma	2002	61.2%
984	Seattle, Tacoma	2002	100.0%
986	Portland, Vancouver	2002	0.0%

TSP 2004 Data

3 Digit Zip	Metro Area	Year	Percent Adoption
009	San Juan	2004	0.0%
011	Springfield	2004	0.0%
021	Boston, Lawrence, Salem	2004	0.0%
029	Providence, Pawtucket, Fall River	2004	0.0%
061	New York, Northern New Jersey, Southwestern Connecticut	2004	0.0%
064	Hartford, New Britain, Middletown	2004	0.0%
065	New Haven, Meriden	2004	0.0%
068	New York, Northern New Jersey, Southwestern Connecticut	2004	0.0%
070	New York, Northern New Jersey, Southwestern Connecticut	2004	0.0%
071	New York, Northern New Jersey, Southwestern Connecticut	2004	0.0%
076	New York, Northern New Jersey, Southwestern Connecticut	2004	0.0%
100	New York, Northern New Jersey, Southwestern Connecticut	2004	0.0%
105	New York, Northern New Jersey, Southwestern Connecticut	2004	0.0%
107	New York, Northern New Jersey, Southwestern Connecticut	2004	0.0%
109	New York, Northern New Jersey, Southwestern Connecticut	2004	0.0%
115	New York, Northern New Jersey, Southwestern Connecticut	2004	0.0%
117	New York, Northern New Jersey, Southwestern Connecticut	2004	0.0%
119	New York, Northern New Jersey, Southwestern Connecticut	2004	0.0%
122	Albany, Schenectady, Troy	2004	0.0%
132	Syracuse	2004	0.0%
141	Buffalo, Niagara Falls	2004	0.0%
142	Buffalo, Niagara Falls	2004	0.0%
146	Rochester	2004	0.0%
150	Pittsburgh, Beaver Valley	2004	0.0%
152	Pittsburgh, Beaver Valley	2004	0.0%
153	Pittsburgh, Beaver Valley	2004	0.0%
156	Pittsburgh, Beaver Valley	2004	0.0%
171	Harrisburg, Lebanon, Carlisle	2004	0.0%
181	Allentown, Bethlehem, Easton	2004	0.0%
185	Scranton, Wilkes-Barre	2004	0.0%
187	Scranton, Wilkes-Barre	2004	0.0%

3 Digit Zip	Metro Area	Year	Percent Adoption
191	Philadelphia, Wilmington, Trenton	2004	0.0%
200	Washington	2004	0.0%
207	Baltimore	2004	0.0%
208	Washington	2004	2.3%
210	Baltimore	2004	0.0%
212	Baltimore	2004	0.0%
217	Washington	2004	0.0%
220	Washington	2004	11.8%
221	Washington	2004	0.0%
236	Hampton Roads	2004	0.0%
238	Richmond, Petersburg	2004	0.0%
271	Greensboro, Winston-Salem, High Point	2004	0.0%
272	Greensboro, Winston-Salem, High Point	2004	0.0%
274	Greensboro, Winston-Salem, High Point	2004	0.0%
275	Raleigh-Durham	2004	0.0%
276	Raleigh-Durham	2004	0.0%
277	Raleigh-Durham	2004	0.0%
280	Charlotte, Gastonia, Rock Hill	2004	0.0%
282	Charlotte, Gastonia, Rock Hill	2004	17.0%
293	Greenville, Spartanburg	2004	0.0%
294	Charleston	2004	0.0%
296	Greenville, Spartanburg	2004	0.0%
303	Atlanta	2004	0.0%
322	Jacksonville	2004	0.0%
328	Orlando	2004	0.0%
330	Miami, Fort Lauderdale	2004	0.0%
331	Miami, Fort Lauderdale	2004	0.0%
334	West Palm Beach, Boca Raton, Delray	2004	0.0%
336	Tampa, St. Petersburg, Clearwater	2004	0.0%
337	Tampa, St. Petersburg, Clearwater	2004	0.0%
342	Sarasota-Bradenton	2004	0.0%
346	Tampa, St. Petersburg, Clearwater	2004	0.0%
352	Birmingham	2004	0.0%
372	Nashville	2004	0.0%
379	Knoxville	2004	0.0%
381	Memphis	2004	0.0%
402	Louisville	2004	0.0%
432	Columbus	2004	0.0%
436	Toledo	2004	0.0%

3 Digit Zip	Metro Area	Year	Percent Adoption
440	Cleveland, Akron, Lorain	2004	0.0%
441	Cleveland, Akron, Lorain	2004	0.0%
443	Cleveland, Akron, Lorain	2004	0.0%
445	Youngstown, Warren	2004	0.0%
452	Cincinnati, Hamilton	2004	0.0%
454	Dayton, Springfield	2004	0.0%
455	Dayton, Springfield	2004	0.0%
462	Indianapolis	2004	0.0%
463	Chicago, Gary, Lake County	2004	0.0%
464	Chicago, Gary, Lake County	2004	14.8%
480	Detroit, Ann Arbor	2004	0.0%
481	Detroit, Ann Arbor	2004	0.0%
495	Grand Rapids	2004	30.1%
531	Milwaukee, Racine	2004	0.0%
534	Milwaukee, Racine	2004	0.0%
554	Minneapolis, St. Paul	2004	0.0%
600	Chicago, Gary, Lake County	2004	100.0%
606	Chicago, Gary, Lake County	2004	0.0%
631	St. Louis	2004	0.0%
672	Wichita	2004	0.0%
681	Omaha	2004	0.0%
700	New Orleans	2004	0.0%
708	Baton Rouge	2004	0.0%
721	Little Rock, North Little Rock	2004	0.0%
731	Oklahoma City	2004	0.0%
741	Tulsa	2004	0.0%
752	Dallas, Fort Worth	2004	0.0%
761	Dallas, Fort Worth	2004	0.0%
762	Dallas, Fort Worth	2004	0.0%
772	Houston, Galveston, Brazoria	2004	0.0%
782	San Antonio	2004	0.0%
785	McAllen	2004	0.0%
787	Austin	2004	0.0%
799	El Paso	2004	0.0%
802	Denver, Boulder	2004	0.0%
806	Denver, Boulder	2004	0.0%
841	Salt Lake City, Ogden	2004	4.1%
850	Phoenix	2004	0.0%
852	Phoenix	2004	0.0%

3 Digit Zip	Metro Area	Year	Percent Adoption
853	Phoenix	2004	0.0%
857	Tucson	2004	0.0%
871	Albuquerque	2004	0.0%
891	Las Vegas	2004	3.2%
900	Los Angeles, Anaheim, Riverside	2004	3.8%
902	Los Angeles, Anaheim, Riverside	2004	0.0%
904	Los Angeles, Anaheim, Riverside	2004	0.0%
905	Los Angeles, Anaheim, Riverside	2004	0.0%
906	Los Angeles, Anaheim, Riverside	2004	0.0%
908	Los Angeles, Anaheim, Riverside	2004	0.0%
920	San Diego	2004	0.0%
923	Los Angeles, Anaheim, Riverside	2004	0.0%
926	Los Angeles, Anaheim, Riverside	2004	0.0%
928	Los Angeles, Anaheim, Riverside	2004	0.0%
930	Los Angeles, Anaheim, Riverside	2004	0.0%
933	Bakersfield	2004	0.0%
935	Los Angeles, Anaheim, Riverside	2004	0.0%
937	Fresno	2004	0.0%
939	Salinas	2004	100.0%
940	San Francisco, Oakland, San Jose	2004	0.0%
941	San Francisco, Oakland, San Jose	2004	25.7%
945	San Francisco, Oakland, San Jose	2004	13.4%
946	San Francisco, Oakland, San Jose	2004	3.0%
949	San Francisco, Oakland, San Jose	2004	0.0%
950	San Francisco, Oakland, San Jose	2004	0.0%
951	San Francisco, Oakland, San Jose	2004	8.1%
954	San Francisco, Oakland, San Jose	2004	40.8%
958	Sacramento	2004	32.0%
968	Honolulu	2004	0.0%
972	Portland, Vancouver	2004	100.0%
981	Seattle, Tacoma	2004	86.7%
982	Seattle, Tacoma	2004	8.1%
983	Seattle, Tacoma	2004	53.8%
984	Seattle, Tacoma	2004	100.0%
986	Portland, Vancouver	2004	0.0%

TSP 2005 Data

3 Digit Zip	Metro Area	Year	Percent Adoption
011	Springfield	2005	0.0%
021	Boston, Lawrence, Salem	2005	1.7%
029	Providence, Pawtucket, Fall River	2005	0.0%
061	Hartford, New Britain, Middletown	2005	0.0%
064	Hartford, New Britain, Middletown	2005	0.0%
065	New Haven, Meriden	2005	0.0%
070	New York, Northern New Jersey, Southwestern Connecticut	2005	0.0%
071	New York, Northern New Jersey, Southwestern Connecticut	2005	0.0%
076	New York, Northern New Jersey, Southwestern Connecticut	2005	0.0%
100	New York, Northern New Jersey, Southwestern Connecticut	2005	0.0%
105	New York, Northern New Jersey, Southwestern Connecticut	2005	0.0%
109	New York, Northern New Jersey, Southwestern Connecticut	2005	0.0%
115	New York, Northern New Jersey, Southwestern Connecticut	2005	0.0%
119	New York, Northern New Jersey, Southwestern Connecticut	2005	0.0%
122	Albany, Schenectady, Troy	2005	5.1%
132	Syracuse	2005	0.0%
141	Buffalo, Niagara Falls	2005	0.0%
142	Buffalo, Niagara Falls	2005	0.0%
146	Rochester	2005	0.0%
150	Pittsburgh, Beaver Valley	2005	0.0%
153	Pittsburgh, Beaver Valley	2005	0.0%
156	Pittsburgh, Beaver Valley	2005	0.0%
171	Harrisburg, Lebanon, Carlisle	2005	0.0%
181	Allentown, Bethlehem, Easton	2005	0.0%
185	Scranton, Wilkes-Barre	2005	0.0%
187	Scranton, Wilkes-Barre	2005	0.0%
191	Philadelphia, Wilmington, Trenton	2005	3.0%
200	Washington	2005	0.0%
207	Baltimore	2005	0.0%
208	Washington	2005	67.8%
210	Baltimore	2005	0.0%
212	Baltimore	2005	0.0%
217	Washington	2005	0.0%

3 Digit Zip	Metro Area	Year	Percent Adoption
220	Washington	2005	11.8%
221	Washington	2005	0.0%
236	Hampton Roads	2005	0.0%
238	Richmond, Petersburg	2005	0.0%
271	Greensboro, Winston-Salem, High Point	2005	0.0%
272	Greensboro, Winston-Salem, High Point	2005	0.0%
274	Greensboro, Winston-Salem, High Point	2005	0.0%
275	Raleigh-Durham	2005	0.0%
276	Raleigh-Durham	2005	0.0%
277	Raleigh-Durham	2005	0.0%
280	Charlotte, Gastonia, Rock Hill	2005	0.0%
282	Charlotte, Gastonia, Rock Hill	2005	18.1%
293	Greenville, Spartanburg	2005	0.0%
294	Charleston	2005	0.0%
296	Greenville, Spartanburg	2005	0.0%
303	Atlanta	2005	0.0%
322	Jacksonville	2005	0.0%
328	Orlando	2005	0.4%
330	Miami, Fort Lauderdale	2005	0.4%
334	West Palm Beach, Boca Raton, Delray	2005	0.0%
336	Tampa, St. Petersburg, Clearwater	2005	0.0%
337	Tampa, St. Petersburg, Clearwater	2005	0.0%
342	Sarasota-Bradenton	2005	0.0%
346	Tampa, St. Petersburg, Clearwater	2005	0.0%
352	Birmingham	2005	0.0%
372	Nashville	2005	0.0%
379	Knoxville	2005	0.0%
381	Memphis	2005	0.0%
402	Louisville	2005	0.0%
432	Columbus	2005	0.0%
436	Toledo	2005	0.0%
440	Cleveland, Akron, Lorain	2005	0.0%
441	Cleveland, Akron, Lorain	2005	0.0%
443	Cleveland, Akron, Lorain	2005	0.0%
445	Youngstown, Warren	2005	0.0%
452	Cincinnati, Hamilton	2005	0.0%
454	Dayton, Springfield	2005	0.0%
455	Dayton, Springfield	2005	0.0%
462	Indianapolis	2005	0.0%

3 Digit Zip	Metro Area	Year	Percent Adoption
463	Chicago, Gary, Lake County	2005	0.0%
464	Chicago, Gary, Lake County	2005	23.5%
480	Detroit, Ann Arbor	2005	0.0%
481	Detroit, Ann Arbor	2005	0.0%
495	Grand Rapids	2005	0.0%
531	Milwaukee, Racine	2005	0.0%
534	Milwaukee, Racine	2005	0.0%
554	Minneapolis, St. Paul	2005	0.0%
600	Chicago, Gary, Lake County	2005	93.8%
606	Chicago, Gary, Lake County	2005	0.0%
631	St. Louis	2005	0.0%
672	Wichita	2005	0.0%
681	Omaha	2005	0.0%
700	New Orleans	2005	0.0%
708	Baton Rouge	2005	0.0%
721	Little Rock, North Little Rock	2005	0.0%
731	Oklahoma City	2005	0.0%
761	Dallas, Fort Worth	2005	3.8%
762	Dallas, Fort Worth	2005	0.0%
772	Houston, Galveston, Brazoria	2005	68.8%
782	San Antonio	2005	0.0%
787	Austin	2005	0.0%
799	El Paso	2005	0.0%
802	Denver, Boulder	2005	0.0%
806	Denver, Boulder	2005	0.0%
841	Salt Lake City, Ogden	2005	4.1%
850	Phoenix	2005	0.0%
853	Phoenix	2005	0.0%
857	Tucson	2005	0.0%
871	Albuquerque	2005	7.9%
891	Las Vegas	2005	3.2%
900	Los Angeles, Anaheim, Riverside	2005	13.1%
902	Los Angeles, Anaheim, Riverside	2005	0.0%
904	Los Angeles, Anaheim, Riverside	2005	0.0%
905	Los Angeles, Anaheim, Riverside	2005	0.0%
906	Los Angeles, Anaheim, Riverside	2005	0.0%
908	Los Angeles, Anaheim, Riverside	2005	0.0%
920	San Diego	2005	0.0%
921	San Diego	2005	1.2%

3 Digit Zip	Metro Area	Year	Percent Adoption
923	Los Angeles, Anaheim, Riverside	2005	0.0%
926	Los Angeles, Anaheim, Riverside	2005	0.0%
928	Los Angeles, Anaheim, Riverside	2005	0.0%
930	Los Angeles, Anaheim, Riverside	2005	0.0%
933	Bakersfield	2005	0.0%
935	Los Angeles, Anaheim, Riverside	2005	0.0%
937	Fresno	2005	0.0%
940	San Francisco, Oakland, San Jose	2005	0.0%
945	San Francisco, Oakland, San Jose	2005	20.3%
946	San Francisco, Oakland, San Jose	2005	3.3%
949	San Francisco, Oakland, San Jose	2005	0.0%
950	San Francisco, Oakland, San Jose	2005	0.0%
951	San Francisco, Oakland, San Jose	2005	8.1%
954	San Francisco, Oakland, San Jose	2005	40.8%
958	Sacramento	2005	5.8%
968	Honolulu	2005	0.0%
972	Portland, Vancouver	2005	100.0%
981	Seattle, Tacoma	2005	100.0%
982	Seattle, Tacoma	2005	9.0%
983	Seattle, Tacoma	2005	48.1%
984	Seattle, Tacoma	2005	100.0%
986	Portland, Vancouver	2005	0.0%

TSP 2006 Data

3 Digit Zip	Metro Area	Year	Percent Adoption
011	Springfield	2006	3.3%
021	Boston, Lawrence, Salem	2006	1.7%
027	Providence, Pawtucket, Fall River	2006	0.0%
061	New York, Northern New Jersey, Southwestern Connecticut	2006	0.0%
064	Hartford, New Britain, Middletown	2006	0.0%
065	New Haven, Meriden	2006	0.0%
071	New York, Northern New Jersey, Southwestern Connecticut	2006	0.0%
076	New York, Northern New Jersey, Southwestern Connecticut	2006	0.0%
100	New York, Northern New Jersey, Southwestern Connecticut	2006	0.0%
105	New York, Northern New Jersey, Southwestern Connecticut	2006	0.0%
109	New York, Northern New Jersey, Southwestern Connecticut	2006	0.0%
113	New York, Northern New Jersey, Southwestern Connecticut	2006	0.0%
115	New York, Northern New Jersey, Southwestern Connecticut	2006	1.5%
119	New York, Northern New Jersey, Southwestern Connecticut	2006	0.0%
122	Albany, Schenectady, Troy	2006	100.0%
132	Syracuse	2006	0.0%
142	Buffalo, Niagara Falls	2006	0.0%
146	Rochester	2006	0.0%
150	Pittsburgh, Beaver Valley	2006	0.0%
156	Pittsburgh, Beaver Valley	2006	0.0%
171	Harrisburg, Lebanon, Carlisle	2006	0.0%
176	Lancaster	2006	0.0%
181	Allentown, Bethlehem, Easton	2006	0.0%
185	Scranton, Wilkes-Barre	2006	0.0%
187	Scranton, Wilkes-Barre	2006	0.0%
191	Philadelphia, Wilmington, Trenton	2006	2.9%
200	Washington	2006	1.5%
207	Baltimore	2006	0.0%
208	Washington	2006	67.8%
210	Baltimore	2006	0.0%
212	Baltimore	2006	0.0%
217	Washington	2006	0.0%
220	Washington	2006	11.8%

3 Digit Zip	Metro Area	Year	Percent Adoption
221	Washington	2006	0.0%
232	Richmond, Petersburg	2006	0.0%
236	Hampton Roads	2006	0.0%
238	Richmond, Petersburg	2006	0.0%
271	Greensboro, Winston-Salem, High Point	2006	0.0%
272	Greensboro, Winston-Salem, High Point	2006	0.0%
274	Greensboro, Winston-Salem, High Point	2006	0.0%
276	Raleigh-Durham	2006	0.0%
277	Raleigh-Durham	2006	0.0%
278	Greenville	2006	0.0%
280	Charlotte, Gastonia, Rock Hill	2006	0.0%
282	Charlotte, Gastonia, Rock Hill	2006	39.9%
288	Asheville	2006	0.0%
293	Greenville, Spartanburg	2006	0.0%
294	Charleston	2006	0.0%
296	Greenville, Spartanburg	2006	0.0%
303	Atlanta	2006	0.0%
322	Jacksonville	2006	0.0%
325	Pensacola	2006	0.0%
328	Orlando	2006	4.2%
330	Miami, Fort Lauderdale	2006	0.0%
334	West Palm Beach, Boca Raton, Delray	2006	0.0%
336	Tampa, St. Petersburg, Clearwater	2006	0.0%
337	Tampa, St. Petersburg, Clearwater	2006	0.0%
339	Fort Myers	2006	0.0%
342	Sarasota-Bradenton	2006	0.0%
346	Tampa, St. Petersburg, Clearwater	2006	0.0%
352	Birmingham	2006	0.0%
358	Huntsville	2006	0.0%
361	Montgomery	2006	0.0%
362	Montgomery	2006	0.0%
372	Nashville	2006	0.0%
374	Chattanooga	2006	72.7%
379	Knoxville	2006	0.0%
381	Memphis	2006	0.0%
402	Louisville	2006	0.0%
432	Columbus	2006	0.0%
436	Toledo	2006	0.0%
440	Cleveland, Akron, Lorain	2006	0.0%

3 Digit Zip	Metro Area	Year	Percent Adoption
441	Cleveland, Akron, Lorain	2006	0.0%
443	Cleveland, Akron, Lorain	2006	0.0%
445	Youngstown, Warren	2006	0.0%
452	Cincinnati, Hamilton	2006	0.0%
454	Dayton, Springfield	2006	0.0%
455	Dayton, Springfield	2006	0.0%
462	Indianapolis	2006	0.0%
463	Chicago, Gary, Lake County	2006	0.0%
464	Chicago, Gary, Lake County	2006	22.2%
468	Fort Wayne	2006	0.0%
480	Detroit, Ann Arbor	2006	0.0%
481	Detroit, Ann Arbor	2006	0.0%
495	Grand Rapids	2006	0.0%
531	Milwaukee, Racine	2006	0.0%
534	Milwaukee, Racine	2006	0.0%
535	Janesville-Beloit	2006	0.0%
554	Minneapolis, St. Paul	2006	0.0%
600	Chicago, Gary, Lake County	2006	93.8%
606	Chicago, Gary, Lake County	2006	0.0%
631	St. Louis	2006	0.0%
641	Kansas City	2006	5.6%
658	Springfield(MO)	2006	0.0%
672	Wichita	2006	0.0%
681	Omaha	2006	0.0%
700	New Orleans	2006	0.0%
701	New Orleans	2006	0.0%
708	Baton Rouge	2006	0.0%
721	Little Rock, North Little Rock	2006	0.0%
731	Oklahoma City	2006	0.0%
741	Tulsa	2006	0.0%
750	Dallas, Fort Worth	2006	0.0%
762	Dallas, Fort Worth	2006	0.0%
782	San Antonio	2006	0.0%
785	McAllen	2006	0.0%
787	Austin	2006	0.0%
799	El Paso	2006	0.0%
802	Denver, Boulder	2006	0.0%
806	Denver, Boulder	2006	0.0%
836	Boise City	2006	0.0%

3 Digit Zip	Metro Area	Year	Percent Adoption
841	Salt Lake City, Ogden	2006	3.8%
850	Phoenix	2006	0.0%
853	Phoenix	2006	0.0%
857	Tucson	2006	0.0%
871	Albuquerque	2006	8.1%
891	Las Vegas	2006	3.2%
900	Los Angeles, Anaheim, Riverside	2006	9.9%
902	Los Angeles, Anaheim, Riverside	2006	0.0%
905	Los Angeles, Anaheim, Riverside	2006	0.0%
906	Los Angeles, Anaheim, Riverside	2006	0.0%
908	Los Angeles, Anaheim, Riverside	2006	0.0%
920	San Diego	2006	0.0%
921	San Diego	2006	0.0%
923	Los Angeles, Anaheim, Riverside	2006	0.0%
926	Los Angeles, Anaheim, Riverside	2006	0.0%
928	Los Angeles, Anaheim, Riverside	2006	0.0%
930	Los Angeles, Anaheim, Riverside	2006	0.0%
931	Santa Barbara	2006	0.0%
934	San Luis Obispo	2006	0.0%
935	Los Angeles, Anaheim, Riverside	2006	0.0%
937	Fresno	2006	0.0%
939	Salinas	2006	100.0%
945	San Francisco, Oakland, San Jose	2006	2.3%
946	San Francisco, Oakland, San Jose	2006	6.3%
949	San Francisco, Oakland, San Jose	2006	0.0%
950	San Francisco, Oakland, San Jose	2006	0.0%
951	San Francisco, Oakland, San Jose	2006	8.1%
953	Modesto	2006	0.0%
954	San Francisco, Oakland, San Jose	2006	36.7%
958	Sacramento	2006	42.5%
968	Honolulu	2006	0.0%
972	Portland, Vancouver	2006	100.0%
974	Eugene	2006	0.0%
981	Seattle, Tacoma	2006	100.0%
982	Bellingham	2006	8.1%
983	Seattle, Tacoma	2006	48.5%
984	Seattle, Tacoma	2006	100.0%
986	Portland, Vancouver	2006	0.0%
992	Spokane	2006	0.0%

TSP 2007 Data

3 Digit Zip	Metro Area	Year	Percent Adoption
011	Springfield	2007	3.3%
021	Boston, Lawrence, Salem	2007	1.7%
027	Providence, Pawtucket, Fall River	2007	0.0%
029	Providence, Pawtucket, Fall River	2007	0.0%
061	New York, Northern New Jersey, Southwestern Connecticut	2007	0.0%
064	Hartford, New Britain, Middletown	2007	0.0%
065	New Haven, Meriden	2007	0.0%
070	New York, Northern New Jersey, Southwestern Connecticut	2007	0.0%
076	New York, Northern New Jersey, Southwestern Connecticut	2007	0.0%
100	New York, Northern New Jersey, Southwestern Connecticut	2007	0.0%
105	New York, Northern New Jersey, Southwestern Connecticut	2007	0.0%
109	New York, Northern New Jersey, Southwestern Connecticut	2007	0.0%
113	New York, Northern New Jersey, Southwestern Connecticut	2007	0.0%
115	New York, Northern New Jersey, Southwestern Connecticut	2007	1.5%
122	Albany, Schenectady, Troy	2007	100.0%
132	Syracuse	2007	0.0%
142	Buffalo, Niagara Falls	2007	0.0%
146	Rochester	2007	0.0%
150	Pittsburgh, Beaver Valley	2007	0.0%
152	Pittsburgh, Beaver Valley	2007	0.0%
153	Pittsburgh, Beaver Valley	2007	0.0%
156	Pittsburgh, Beaver Valley	2007	0.0%
171	Harrisburg, Lebanon, Carlisle	2007	0.0%
176	Lancaster	2007	0.0%
181	Allentown, Bethlehem, Easton	2007	0.0%
185	Scranton, Wilkes-Barre	2007	0.0%
187	Scranton, Wilkes-Barre	2007	0.0%
191	Philadelphia, Wilmington, Trenton	2007	2.9%
200	Washington	2007	1.5%
207	Baltimore	2007	0.0%
208	Washington	2007	67.8%
210	Baltimore	2007	0.0%
217	Washington	2007	0.0%

3 Digit Zip	Metro Area	Year	Percent Adoption
220	Washington	2007	8.9%
221	Washington	2007	0.0%
232	Richmond, Petersburg	2007	0.0%
236	Hampton Roads	2007	0.0%
271	Greensboro, Winston-Salem, High Point	2007	0.0%
272	Greensboro, Winston-Salem, High Point	2007	0.0%
274	Greensboro, Winston-Salem, High Point	2007	0.0%
275	Raleigh-Durham	2007	0.0%
276	Raleigh-Durham	2007	0.0%
277	Raleigh-Durham	2007	0.0%
278	Greenville	2007	0.0%
280	Charlotte, Gastonia, Rock Hill	2007	0.0%
282	Charlotte, Gastonia, Rock Hill	2007	27.2%
288	Asheville	2007	0.0%
293	Greenville, Spartanburg	2007	0.0%
294	Charleston	2007	0.0%
296	Greenville, Spartanburg	2007	0.0%
303	Atlanta	2007	0.0%
322	Jacksonville	2007	7.7%
328	Orlando	2007	4.0%
334	West Palm Beach, Boca Raton, Delray	2007	0.0%
336	Tampa, St. Petersburg, Clearwater	2007	0.0%
337	Tampa, St. Petersburg, Clearwater	2007	0.0%
339	Fort Myers	2007	0.0%
342	Sarasota-Bradenton	2007	0.0%
346	Tampa, St. Petersburg, Clearwater	2007	0.0%
352	Birmingham	2007	0.0%
358	Huntsville	2007	0.0%
361	Montgomery	2007	0.0%
362	Montgomery	2007	0.0%
372	Nashville	2007	0.0%
374	Chattanooga	2007	70.6%
379	Knoxville	2007	0.0%
381	Memphis	2007	0.0%
392	Jackson	2007	0.0%
432	Columbus	2007	0.0%
440	Cleveland, Akron, Lorain	2007	0.0%
441	Cleveland, Akron, Lorain	2007	0.0%
443	Cleveland, Akron, Lorain	2007	0.0%

3 Digit Zip	Metro Area	Year	Percent Adoption
445	Youngstown, Warren	2007	0.0%
452	Cincinnati, Hamilton	2007	0.0%
454	Dayton, Springfield	2007	0.0%
455	Dayton, Springfield	2007	0.0%
462	Indianapolis	2007	0.0%
463	Chicago, Gary, Lake County	2007	0.0%
464	Chicago, Gary, Lake County	2007	0.0%
480	Detroit, Ann Arbor	2007	0.0%
481	Detroit, Ann Arbor	2007	0.0%
495	Grand Rapids	2007	0.0%
531	Milwaukee, Racine	2007	0.0%
534	Milwaukee, Racine	2007	0.0%
535	Janesville-Beloit	2007	0.0%
554	Minneapolis, St. Paul	2007	0.0%
600	Chicago, Gary, Lake County	2007	93.8%
606	Chicago, Gary, Lake County	2007	0.0%
631	St. Louis	2007	0.0%
641	Kansas City	2007	4.5%
658	Springfield(MO)	2007	0.0%
672	Wichita	2007	0.0%
681	Omaha	2007	0.0%
700	New Orleans	2007	0.0%
708	Baton Rouge	2007	0.0%
721	Little Rock, North Little Rock	2007	0.0%
731	Oklahoma City	2007	0.0%
741	Tulsa	2007	100.0%
750	Dallas, Fort Worth	2007	0.0%
761	Dallas, Fort Worth	2007	0.0%
762	Dallas, Fort Worth	2007	0.0%
782	San Antonio	2007	0.0%
785	McAllen	2007	0.0%
787	Austin	2007	0.0%
799	El Paso	2007	0.0%
802	Denver, Boulder	2007	0.0%
836	Boise City	2007	0.0%
841	Salt Lake City, Ogden	2007	1.9%
850	Phoenix	2007	0.0%
853	Phoenix	2007	0.0%
857	Tucson	2007	0.0%

3 Digit Zip	Metro Area	Year	Percent Adoption
871	Albuquerque	2007	12.0%
891	Las Vegas	2007	2.9%
900	Los Angeles, Anaheim, Riverside	2007	17.0%
902	Los Angeles, Anaheim, Riverside	2007	0.0%
904	Los Angeles, Anaheim, Riverside	2007	5.8%
905	Los Angeles, Anaheim, Riverside	2007	0.0%
906	Los Angeles, Anaheim, Riverside	2007	0.0%
908	Los Angeles, Anaheim, Riverside	2007	0.0%
920	San Diego	2007	0.0%
923	Los Angeles, Anaheim, Riverside	2007	0.0%
926	Los Angeles, Anaheim, Riverside	2007	0.0%
928	Los Angeles, Anaheim, Riverside	2007	0.0%
930	Los Angeles, Anaheim, Riverside	2007	0.0%
931	Santa Barbara	2007	0.0%
933	Bakersfield	2007	0.0%
934	San Luis Obispo	2007	0.0%
935	Los Angeles, Anaheim, Riverside	2007	0.0%
937	Fresno	2007	0.0%
939	Salinas	2007	100.0%
945	San Francisco, Oakland, San Jose	2007	1.9%
946	San Francisco, Oakland, San Jose	2007	6.3%
950	San Francisco, Oakland, San Jose	2007	0.0%
951	San Francisco, Oakland, San Jose	2007	7.5%
952	Stockton	2007	95.6%
953	Modesto	2007	0.0%
954	San Francisco, Oakland, San Jose	2007	36.3%
968	Honolulu	2007	0.0%
972	Portland, Vancouver	2007	100.0%
974	Eugene	2007	5.4%
981	Seattle, Tacoma	2007	95.3%
982	Bellingham	2007	17.9%
983	Seattle, Tacoma	2007	48.5%
984	Seattle, Tacoma	2007	100.0%
986	Portland, Vancouver	2007	0.0%
992	Spokane	2007	0.0%

VDC 1999 Data

3 Digit Zip	Metro Area	Year	Percent Adoption
011	Springfield	1999	13.2%
022	Boston, Lawrence, Salem	1999	49.3%
061	Hartford, New Britain, Middletown	1999	72.4%
066	New York, Northern New Jersey, Southwestern Connecticut	1999	14.2%
068	New York, Northern New Jersey, Southwestern Connecticut	1999	0.0%
072	New York, Northern New Jersey, Southwestern Connecticut	1999	8.1%
080	Philadelphia, Wilmington, Trenton	1999	3.9%
088	New York, Northern New Jersey, Southwestern Connecticut	1999	100.0%
100	New York, Northern New Jersey, Southwestern Connecticut	1999	0.9%
106	New York, Northern New Jersey, Southwestern Connecticut	1999	25.0%
115	New York, Northern New Jersey, Southwestern Connecticut	1999	24.1%
120	Albany, Schenectady, Troy	1999	100.0%
122	New York, Northern New Jersey, Southwestern Connecticut	1999	20.8%
146	Rochester	1999	33.9%
152	Pittsburgh, Beaver Valley	1999	0.0%
180	Allentown, Bethlehem, Easton	1999	45.5%
191	Philadelphia, Wilmington, Trenton	1999	13.8%
208	Washington	1999	27.4%
210	Baltimore	1999	97.3%
212	Baltimore	1999	100.0%
222	Washington	1999	0.4%
223	Washington	1999	1.4%
233	Hampton Roads	1999	100.0%
234	Hampton Roads	1999	100.0%
235	Hampton Roads	1999	18.7%
236	Hampton Roads	1999	47.9%
271	Greensboro, Winston-Salem, High Point	1999	69.8%
272	Greensboro, Winston-Salem, High Point	1999	33.3%
274	Greensboro, Winston-Salem, High Point	1999	15.7%
276	Raleigh-Durham	1999	3.7%
282	Charlotte, Gastonia, Rock Hill	1999	71.4%
283	Greensboro, Winston-Salem, High Point	1999	10.2%
292	Greenville, Spartanburg	1999	51.6%

3 Digit Zip	Metro Area	Year	Percent Adoption
296	Greenville, Spartanburg	1999	72.6%
300	Atlanta	1999	100.0%
320	Jacksonville	1999	14.4%
322	Jacksonville	1999	11.9%
328	Orlando	1999	54.2%
331	Miami, Fort Lauderdale	1999	0.0%
333	Miami, Fort Lauderdale	1999	0.1%
334	West Palm Beach, Boca Raton, Delray	1999	97.8%
336	Tampa, St. Petersburg, Clearwater	1999	100.0%
346	Tampa, St. Petersburg, Clearwater	1999	100.0%
372	Nashville	1999	4.8%
379	Knoxville	1999	3.3%
402	Louisville	1999	4.8%
432	Columbus	1999	10.4%
443	Cleveland, Akron, Lorain	1999	100.0%
452	Cincinnati, Hamilton	1999	2.9%
454	Dayton, Springfield	1999	100.0%
481	Detroit, Ann Arbor	1999	17.0%
483	Detroit, Ann Arbor	1999	33.3%
495	Grand Rapids	1999	16.0%
515	Omaha	1999	5.0%
531	Milwaukee, Racine	1999	19.8%
532	Milwaukee, Racine	1999	70.4%
550	Minneapolis, St. Paul	1999	100.0%
551	Minneapolis, St. Paul	1999	22.5%
553	Minneapolis, St. Paul	1999	1.9%
600	Chicago, Gary, Lake County	1999	30.0%
601	Chicago, Gary, Lake County	1999	10.7%
603	Chicago, Gary, Lake County	1999	60.6%
604	Chicago, Gary, Lake County	1999	98.1%
630	St. Louis	1999	0.2%
651	St. Louis	1999	3.9%
660	Kansas City	1999	0.0%
661	Kansas City	1999	77.5%
662	Kansas City	1999	15.5%
722	Little Rock, North Little Rock	1999	0.0%
730	Oklahoma City	1999	15.9%
750	Dallas, Fort Worth	1999	31.4%
760	Dallas, Fort Worth	1999	100.0%

3 Digit Zip	Metro Area	Year	Percent Adoption
782	San Antonio	1999	40.0%
787	Austin	1999	100.0%
799	El Paso	1999	9.7%
800	Denver, Boulder	1999	15.6%
801	Denver, Boulder	1999	18.5%
802	Denver, Boulder	1999	1.7%
803	Denver, Boulder	1999	10.8%
841	Salt Lake City, Ogden	1999	2.6%
850	Phoenix	1999	17.2%
852	Phoenix	1999	11.7%
853	Phoenix	1999	4.1%
857	Tucson	1999	82.7%
871	Albuquerque	1999	10.5%
903	Los Angeles, Anaheim, Riverside	1999	0.0%
908	Los Angeles, Anaheim, Riverside	1999	1.4%
912	Los Angeles, Anaheim, Riverside	1999	84.9%
920	San Diego	1999	100.0%
921	San Diego	1999	0.9%
924	Los Angeles, Anaheim, Riverside	1999	69.5%
926	Los Angeles, Anaheim, Riverside	1999	53.1%
928	Los Angeles, Anaheim, Riverside	1999	46.6%
933	Bakersfield	1999	0.0%
940	San Francisco, Oakland, San Jose	1999	1.7%
941	San Francisco, Oakland, San Jose	1999	0.1%
946	San Francisco, Oakland, San Jose	1999	0.6%
951	San Francisco, Oakland, San Jose	1999	23.2%
968	Honolulu	1999	11.0%
970	Portland, Vancouver	1999	67.2%
972	Portland, Vancouver	1999	3.7%
980	Seattle, Tacoma	1999	27.7%
981	Seattle, Tacoma	1999	3.6%
982	Seattle, Tacoma	1999	85.0%

VDC 2000 Data

3 Digit Zip	Metro Area	Year	Percent Adoption
010	Springfield	2000	0.0%
011	Springfield	2000	13.0%
018	Boston, Lawrence, Salem	2000	19.3%
021	Boston, Lawrence, Salem	2000	14.0%
022	Boston, Lawrence, Salem	2000	49.3%
024	Boston, Lawrence, Salem	2000	9.4%
027	Providence, Pawtucket, Fall River	2000	8.6%
029	Providence, Pawtucket, Fall River	2000	14.1%
061	Hartford, New Britain, Middletown	2000	13.5%
064	New Haven, Meriden	2000	44.6%
065	New Haven, Meriden	2000	3.2%
066	New York, Northern New Jersey, Southwestern Connecticut	2000	14.2%
068	New York, Northern New Jersey, Southwestern Connecticut	2000	42.3%
069	New York, Northern New Jersey, Southwestern Connecticut	2000	56.4%
070	New York, Northern New Jersey, Southwestern Connecticut	2000	1.3%
071	New York, Northern New Jersey, Southwestern Connecticut	2000	0.0%
072	New York, Northern New Jersey, Southwestern Connecticut	2000	11.4%
073	New York, Northern New Jersey, Southwestern Connecticut	2000	0.0%
074	New York, Northern New Jersey, Southwestern Connecticut	2000	100.0%
077	New York, Northern New Jersey, Southwestern Connecticut	2000	2.4%
078	New York, Northern New Jersey, Southwestern Connecticut	2000	0.0%
080	Philadelphia, Wilmington, Trenton	2000	5.3%
086	Philadelphia, Wilmington, Trenton	2000	0.0%
087	New York, Northern New Jersey, Southwestern Connecticut	2000	0.0%
088	New York, Northern New Jersey, Southwestern Connecticut	2000	100.0%
089	New York, Northern New Jersey, Southwestern Connecticut	2000	0.0%
100	New York, Northern New Jersey, Southwestern Connecticut	2000	0.9%
106	New York, Northern New Jersey, Southwestern Connecticut	2000	25.0%
107	New York, Northern New Jersey, Southwestern Connecticut	2000	0.0%

3 Digit Zip	Metro Area	Year	Percent Adoption
109	New York, Northern New Jersey, Southwestern Connecticut	2000	0.0%
111	New York, Northern New Jersey, Southwestern Connecticut	2000	0.0%
115	New York, Northern New Jersey, Southwestern Connecticut	2000	24.1%
117	New York, Northern New Jersey, Southwestern Connecticut	2000	0.0%
120	Albany, Schenectady, Troy	2000	100.0%
122	New York, Northern New Jersey, Southwestern Connecticut	2000	8.6%
132	Syracuse	2000	0.0%
142	Buffalo, Niagara Falls	2000	0.0%
146	Rochester	2000	33.9%
152	Pittsburgh, Beaver Valley	2000	0.0%
171	Harrisburg, Lebanon, Carlisle	2000	8.2%
180	Allentown, Bethlehem, Easton	2000	44.2%
181	Allentown, Bethlehem, Easton	2000	0.0%
190	Philadelphia, Wilmington, Trenton	2000	13.0%
191	Philadelphia, Wilmington, Trenton	2000	13.8%
198	Philadelphia, Wilmington, Trenton	2000	66.8%
199	Philadelphia, Wilmington, Trenton	2000	3.5%
200	Washington	2000	33.3%
207	Washington	2000	100.0%
208	Washington	2000	30.9%
210	Baltimore	2000	97.3%
212	Baltimore	2000	21.3%
214	Baltimore	2000	0.0%
220	Washington	2000	100.0%
222	Washington	2000	0.4%
223	Washington	2000	1.4%
232	Richmond, Petersburg	2000	0.0%
233	Hampton Roads	2000	100.0%
234	Hampton Roads	2000	99.2%
235	Hampton Roads	2000	20.8%
236	Hampton Roads	2000	47.9%
237	Hampton Roads	2000	35.7%
238	Richmond, Petersburg	2000	100.0%
271	Greensboro, Winston-Salem, High Point	2000	69.7%
272	Greensboro, Winston-Salem, High Point	2000	33.0%
274	Greensboro, Winston-Salem, High Point	2000	12.8%

3 Digit Zip	Metro Area	Year	Percent Adoption
276	Raleigh-Durham	2000	0.0%
277	Raleigh-Durham	2000	0.0%
282	Charlotte, Gastonia, Rock Hill	2000	0.0%
283	Greensboro, Winston-Salem, High Point	2000	11.7%
292	Charleston	2000	63.5%
296	Greenville, Spartanburg	2000	72.6%
300	Atlanta	2000	45.8%
301	Atlanta	2000	0.0%
302	Atlanta	2000	17.2%
303	Atlanta	2000	0.0%
320	Jacksonville	2000	8.2%
322	Jacksonville	2000	11.9%
327	Orlando	2000	100.0%
328	Orlando	2000	28.8%
331	Miami, Fort Lauderdale	2000	0.0%
334	West Palm Beach, Boca Raton, Delray	2000	9.2%
336	Tampa, St. Petersburg, Clearwater	2000	46.4%
337	Tampa, St. Petersburg, Clearwater	2000	82.8%
346	Tampa, St. Petersburg, Clearwater	2000	94.2%
347	Orlando	2000	0.0%
350	Birmingham	2000	0.0%
352	Birmingham	2000	0.0%
372	Nashville	2000	5.6%
379	Knoxville	2000	3.5%
402	Louisville	2000	4.6%
410	Cincinnati, Hamilton	2000	0.0%
432	Columbus	2000	10.0%
434	Toledo	2000	0.0%
436	Toledo	2000	0.0%
440	Cleveland, Akron, Lorain	2000	0.0%
441	Cleveland, Akron, Lorain	2000	1.3%
442	Cleveland, Akron, Lorain	2000	0.0%
443	Youngstown, Warren	2000	6.3%
444	Youngstown, Warren	2000	0.0%
445	Youngstown, Warren	2000	0.0%
448	Cleveland, Akron, Lorain	2000	1.0%
450	Cincinnati, Hamilton	2000	81.6%
451	Cincinnati, Hamilton	2000	0.0%
453	Dayton, Springfield	2000	0.0%

3 Digit Zip	Metro Area	Year	Percent Adoption
454	Dayton, Springfield	2000	25.9%
455	Dayton, Springfield	2000	0.0%
460	Indianapolis	2000	0.0%
461	Indianapolis	2000	0.0%
462	Indianapolis	2000	1.1%
463	Chicago, Gary, Lake County	2000	4.7%
464	Chicago, Gary, Lake County	2000	8.0%
480	Detroit, Ann Arbor	2000	0.0%
481	Detroit, Ann Arbor	2000	29.2%
482	Detroit, Ann Arbor	2000	0.0%
483	Detroit, Ann Arbor	2000	33.5%
494	Grand Rapids	2000	0.0%
495	Grand Rapids	2000	14.3%
515	Omaha	2000	4.8%
530	Milwaukee, Racine	2000	0.0%
531	Milwaukee, Racine	2000	15.4%
532	Milwaukee, Racine	2000	8.5%
534	Milwaukee, Racine	2000	5.1%
550	Minneapolis, St. Paul	2000	96.7%
551	Minneapolis, St. Paul	2000	32.9%
553	Minneapolis, St. Paul	2000	4.7%
554	Minneapolis, St. Paul	2000	16.5%
600	Chicago, Gary, Lake County	2000	84.8%
601	Chicago, Gary, Lake County	2000	74.0%
602	Chicago, Gary, Lake County	2000	0.0%
603	Chicago, Gary, Lake County	2000	74.3%
604	Chicago, Gary, Lake County	2000	82.5%
606	Chicago, Gary, Lake County	2000	0.0%
622	St. Louis	2000	0.0%
630	St. Louis	2000	0.0%
640	Kansas City	2000	0.0%
651	Kansas City	2000	70.3%
660	Kansas City	2000	0.0%
661	Kansas City	2000	77.5%
662	Kansas City	2000	14.5%
672	Wichita	2000	0.0%
681	Omaha	2000	1.5%
700	New Orleans	2000	7.9%
701	New Orleans	2000	0.0%

3 Digit Zip	Metro Area	Year	Percent Adoption
704	New Orleans	2000	0.0%
708	Baton Rouge	2000	2.8%
721	Little Rock, North Little Rock	2000	0.0%
722	Little Rock, North Little Rock	2000	3.6%
730	Oklahoma City	2000	43.9%
740	Tulsa	2000	0.0%
750	Dallas, Fort Worth	2000	22.1%
752	Dallas, Fort Worth	2000	9.1%
753	Dallas, Fort Worth	2000	4.7%
760	Dallas, Fort Worth	2000	100.0%
761	Dallas, Fort Worth	2000	0.0%
762	Dallas, Fort Worth	2000	7.7%
772	Houston, Galveston, Brazoria	2000	44.7%
773	Houston, Galveston, Brazoria	2000	0.0%
775	Houston, Galveston, Brazoria	2000	0.0%
782	San Antonio	2000	40.0%
787	Austin	2000	100.0%
799	El Paso	2000	57.0%
800	Denver, Boulder	2000	16.7%
801	Denver, Boulder	2000	60.7%
802	Denver, Boulder	2000	2.2%
803	Denver, Boulder	2000	9.5%
804	Denver, Boulder	2000	0.0%
841	Salt Lake City, Ogden	2000	2.5%
850	Phoenix	2000	16.1%
852	Phoenix	2000	12.3%
853	Phoenix	2000	3.9%
857	Tucson	2000	82.7%
871	Albuquerque	2000	5.5%
891	Las Vegas	2000	33.3%
900	Los Angeles, Anaheim, Riverside	2000	65.3%
908	Los Angeles, Anaheim, Riverside	2000	1.2%
911	Los Angeles, Anaheim, Riverside	2000	2.9%
912	Los Angeles, Anaheim, Riverside	2000	84.9%
917	Los Angeles, Anaheim, Riverside	2000	3.8%
919	San Diego	2000	0.0%
920	San Diego	2000	30.6%
921	San Diego	2000	0.7%
924	Los Angeles, Anaheim, Riverside	2000	49.8%

3 Digit Zip	Metro Area	Year	Percent Adoption
926	Los Angeles, Anaheim, Riverside	2000	100.0%
927	Los Angeles, Anaheim, Riverside	2000	0.0%
928	Los Angeles, Anaheim, Riverside	2000	22.0%
937	Fresno	2000	10.3%
940	San Francisco, Oakland, San Jose	2000	1.7%
941	San Francisco, Oakland, San Jose	2000	0.1%
945	San Francisco, Oakland, San Jose	2000	0.0%
946	San Francisco, Oakland, San Jose	2000	0.6%
951	San Francisco, Oakland, San Jose	2000	23.3%
957	Sacramento	2000	1.7%
968	Honolulu	2000	11.0%
970	Portland, Vancouver	2000	36.8%
972	Portland, Vancouver	2000	6.3%
980	Seattle, Tacoma	2000	75.4%
981	Seattle, Tacoma	2000	3.6%
982	Seattle, Tacoma	2000	57.5%
983	Seattle, Tacoma	2000	100.0%
984	Seattle, Tacoma	2000	100.0%
986	Portland, Vancouver	2000	98.3%

VDC 2002 Data

3 Digit Zip	Metro Area	Year	Percent Adoption
010	Springfield	2002	0.0%
011	Springfield	2002	15.5%
018	Boston, Lawrence, Salem	2002	18.9%
019	Boston, Lawrence, Salem	2002	0.0%
021	Boston, Lawrence, Salem	2002	7.9%
022	Boston, Lawrence, Salem	2002	48.5%
024	Boston, Lawrence, Salem	2002	17.7%
027	Providence, Pawtucket, Fall River	2002	1.5%
028	Providence, Pawtucket, Fall River	2002	7.5%
029	Providence, Pawtucket, Fall River	2002	19.4%
040	Old Orchard Beach	2002	0.0%
057	Rutland	2002	72.0%
060	Hartford, New Britain, Middletown	2002	0.0%
061	Hartford, New Britain, Middletown	2002	47.5%
064	New Haven, Meriden	2002	42.3%
065	New Haven, Meriden	2002	23.2%
066	New York, Northern New Jersey, Southwestern Connecticut	2002	19.1%
068	New York, Northern New Jersey, Southwestern Connecticut	2002	0.0%
069	New York, Northern New Jersey, Southwestern Connecticut	2002	58.8%
070	New York, Northern New Jersey, Southwestern Connecticut	2002	6.1%
071	New York, Northern New Jersey, Southwestern Connecticut	2002	4.5%
072	New York, Northern New Jersey, Southwestern Connecticut	2002	11.4%
073	New York, Northern New Jersey, Southwestern Connecticut	2002	0.0%
074	New York, Northern New Jersey, Southwestern Connecticut	2002	100.0%
075	New York, Northern New Jersey, Southwestern Connecticut	2002	91.4%
076	New York, Northern New Jersey, Southwestern Connecticut	2002	0.0%
077	New York, Northern New Jersey, Southwestern Connecticut	2002	2.3%
078	New York, Northern New Jersey, Southwestern Connecticut	2002	0.0%
080	Philadelphia, Wilmington, Trenton	2002	44.3%
086	Philadelphia, Wilmington, Trenton	2002	0.0%
087	New York, Northern New Jersey, Southwestern Connecticut	2002	0.0%

3 Digit Zip	Metro Area	Year	Percent Adoption
088	New York, Northern New Jersey, Southwestern Connecticut	2002	100.0%
089	New York, Northern New Jersey, Southwestern Connecticut	2002	0.0%
105	New York, Northern New Jersey, Southwestern Connecticut	2002	0.0%
106	New York, Northern New Jersey, Southwestern Connecticut	2002	20.8%
107	New York, Northern New Jersey, Southwestern Connecticut	2002	0.0%
108	New York, Northern New Jersey, Southwestern Connecticut	2002	10.9%
109	New York, Northern New Jersey, Southwestern Connecticut	2002	96.7%
111	New York, Northern New Jersey, Southwestern Connecticut	2002	35.4%
115	New York, Northern New Jersey, Southwestern Connecticut	2002	23.7%
117	New York, Northern New Jersey, Southwestern Connecticut	2002	0.3%
120	Albany, Schenectady, Troy	2002	100.0%
122	New York, Northern New Jersey, Southwestern Connecticut	2002	5.9%
123	Albany, Schenectady, Troy	2002	0.0%
130	Syracuse	2002	40.2%
132	Syracuse	2002	41.4%
142	Buffalo, Niagara Falls	2002	0.0%
143	Buffalo, Niagara Falls	2002	0.0%
146	Rochester	2002	32.6%
152	Pittsburgh, Beaver Valley	2002	0.0%
156	Pittsburgh, Beaver Valley	2002	0.0%
171	Harrisburg, Lebanon, Carlisle	2002	8.2%
176	Lancaster	2002	10.4%
180	Allentown, Bethlehem, Easton	2002	51.0%
181	Allentown, Bethlehem, Easton	2002	0.0%
185	Scranton, Wilkes-Barre	2002	29.4%
190	Philadelphia, Wilmington, Trenton	2002	3.2%
191	Philadelphia, Wilmington, Trenton	2002	13.8%
198	Philadelphia, Wilmington, Trenton	2002	66.8%
200	Washington	2002	33.3%
207	Washington	2002	100.0%
208	Washington	2002	30.7%
210	Baltimore	2002	38.7%
212	Baltimore	2002	100.0%

3 Digit Zip	Metro Area	Year	Percent Adoption
214	Baltimore	2002	0.0%
220	Washington	2002	100.0%
223	Washington	2002	1.3%
232	Richmond, Petersburg	2002	0.0%
233	Hampton Roads	2002	100.0%
234	Hampton Roads	2002	100.0%
235	Hampton Roads	2002	17.7%
236	Hampton Roads	2002	50.3%
237	Hampton Roads	2002	50.8%
238	Richmond, Petersburg	2002	100.0%
240	Roanoke	2002	0.0%
241	Roanoke	2002	99.3%
271	Greensboro, Winston-Salem, High Point	2002	72.3%
272	Greensboro, Winston-Salem, High Point	2002	36.8%
274	Greensboro, Winston-Salem, High Point	2002	8.5%
276	Raleigh-Durham	2002	3.3%
277	Raleigh-Durham	2002	0.0%
278	Greenville	2002	24.4%
282	Charlotte, Gastonia, Rock Hill	2002	0.0%
283	Greensboro, Winston-Salem, High Point	2002	11.7%
288	Asheville	2002	17.3%
292	Charleston	2002	59.5%
293	Greenville, Spartanburg	2002	0.0%
294	Charleston	2002	47.4%
296	Greenville, Spartanburg	2002	67.6%
299	Hilton Head	2002	100.0%
300	Atlanta	2002	40.8%
301	Atlanta	2002	0.0%
302	Atlanta	2002	22.3%
303	Atlanta	2002	26.3%
315	Tybee Island	2002	0.0%
320	Jacksonville	2002	46.0%
321	Daytona Beach	2002	100.0%
322	Jacksonville	2002	17.4%
325	Pensacola	2002	30.0%
327	Daytona Beach	2002	53.5%
328	Orlando	2002	26.8%
331	Miami, Fort Lauderdale	2002	0.0%
334	West Palm Beach, Boca Raton, Delray	2002	18.6%

3 Digit Zip	Metro Area	Year	Percent Adoption
336	Tampa, St. Petersburg, Clearwater	2002	73.8%
337	Tampa, St. Petersburg, Clearwater	2002	82.9%
338	Fort Myers	2002	35.8%
339	Fort Myers	2002	100.0%
341	Naples	2002	65.3%
342	Sarasota-Bradenton	2002	71.9%
346	Tampa, St. Petersburg, Clearwater	2002	94.5%
347	Orlando	2002	7.9%
350	Birmingham	2002	0.0%
352	Birmingham	2002	0.0%
358	Huntsville	2002	0.0%
361	Montgomery	2002	8.0%
365	Gulf Shores	2002	0.0%
371	Nashville	2002	0.0%
372	Nashville	2002	5.4%
374	Chattanooga	2002	57.2%
377	Gatlinburg	2002	66.7%
379	Knoxville	2002	5.8%
381	Memphis	2002	0.0%
391	Jackson	2002	0.0%
392	Jackson	2002	0.0%
402	Louisville	2002	4.5%
410	Cincinnati, Hamilton	2002	0.0%
430	Columbus	2002	40.0%
432	Columbus	2002	11.3%
434	Toledo	2002	0.0%
436	Toledo	2002	0.4%
440	Cleveland, Akron, Lorain	2002	0.0%
441	Cleveland, Akron, Lorain	2002	24.7%
442	Cleveland, Akron, Lorain	2002	20.0%
443	Cleveland, Akron, Lorain	2002	12.3%
444	Youngstown, Warren	2002	0.0%
445	Youngstown, Warren	2002	0.0%
448	Cleveland, Akron, Lorain	2002	4.1%
450	Cincinnati, Hamilton	2002	52.7%
451	Cincinnati, Hamilton	2002	43.5%
452	Cincinnati, Hamilton	2002	2.8%
453	Dayton, Springfield	2002	58.8%
454	Dayton, Springfield	2002	25.8%

3 Digit Zip	Metro Area	Year	Percent Adoption
455	Dayton, Springfield	2002	4.6%
460	Indianapolis	2002	0.0%
461	Indianapolis	2002	0.0%
462	Fort Wayne	2002	22.6%
463	Chicago, Gary, Lake County	2002	4.7%
464	Chicago, Gary, Lake County	2002	39.4%
471	Louisville	2002	100.0%
480	Detroit, Ann Arbor	2002	0.0%
481	Detroit, Ann Arbor	2002	30.2%
482	Detroit, Ann Arbor	2002	0.0%
483	Detroit, Ann Arbor	2002	35.4%
488	Detroit, Ann Arbor	2002	10.5%
494	Grand Rapids	2002	0.0%
495	Grand Rapids	2002	14.0%
503	Des Moines	2002	0.0%
515	Omaha	2002	13.8%
530	Milwaukee, Racine	2002	0.0%
531	Milwaukee, Racine	2002	20.0%
532	Milwaukee, Racine	2002	10.9%
534	Milwaukee, Racine	2002	15.4%
535	Janesville-Beloit	2002	1.7%
537	Janesville-Beloit	2002	0.0%
550	Minneapolis, St. Paul	2002	97.4%
551	Minneapolis, St. Paul	2002	77.2%
553	Minneapolis, St. Paul	2002	4.7%
554	Minneapolis, St. Paul	2002	18.6%
564	Brainerd	2002	100.0%
600	Chicago, Gary, Lake County	2002	82.1%
601	Chicago, Gary, Lake County	2002	74.1%
602	Chicago, Gary, Lake County	2002	0.0%
603	Chicago, Gary, Lake County	2002	1.1%
604	Chicago, Gary, Lake County	2002	79.4%
605	Chicago, Gary, Lake County	2002	41.5%
606	Chicago, Gary, Lake County	2002	1.6%
622	St. Louis	2002	61.2%
630	St. Louis	2002	37.2%
631	St. Louis	2002	24.8%
633	St. Louis	2002	51.3%
641	Kansas City	2002	0.0%

3 Digit Zip	Metro Area	Year	Percent Adoption
651	Kansas City	2002	41.2%
656	Branson	2002	66.7%
658	Springfield(MO)	2002	100.0%
660	Kansas City	2002	10.9%
661	Kansas City	2002	0.0%
662	Kansas City	2002	25.0%
672	Wichita	2002	0.0%
680	Omaha	2002	0.0%
681	Omaha	2002	1.8%
685	Omaha	2002	1.9%
700	New Orleans	2002	7.5%
701	New Orleans	2002	23.2%
704	New Orleans	2002	0.0%
708	Baton Rouge	2002	33.5%
721	Little Rock, North Little Rock	2002	12.1%
722	Little Rock, North Little Rock	2002	79.4%
730	Oklahoma City	2002	40.3%
731	Oklahoma City	2002	0.0%
740	Tulsa	2002	0.0%
741	Tulsa	2002	0.0%
750	Dallas, Fort Worth	2002	22.9%
752	Dallas, Fort Worth	2002	100.0%
753	Dallas, Fort Worth	2002	66.7%
760	Dallas, Fort Worth	2002	69.0%
761	Dallas, Fort Worth	2002	1.0%
762	Dallas, Fort Worth	2002	10.4%
770	Houston, Galveston, Brazoria	2002	28.1%
773	Houston, Galveston, Brazoria	2002	89.2%
775	Houston, Galveston, Brazoria	2002	5.8%
776	Beaumont-Port Arthur	2002	0.0%
777	Beaumont-Port Arthur	2002	52.1%
782	San Antonio	2002	0.5%
785	McAllen	2002	32.5%
787	Austin	2002	86.7%
799	El Paso	2002	66.3%
800	Denver, Boulder	2002	52.6%
801	Denver, Boulder	2002	63.3%
802	Denver, Boulder	2002	29.6%
803	Denver, Boulder	2002	9.2%

3 Digit Zip	Metro Area	Year	Percent Adoption
804	Denver, Boulder	2002	0.0%
805	Denver, Boulder	2002	18.2%
837	Boise City	2002	38.5%
841	Park City	2002	9.4%
846	Provo - Orem	2002	12.5%
850	Phoenix	2002	19.4%
852	Phoenix	2002	13.3%
853	Phoenix	2002	13.2%
857	Tucson	2002	81.2%
860	Flagstaff	2002	0.0%
871	Albuquerque	2002	7.2%
891	Las Vegas	2002	7.2%
894	Reno	2002	93.5%
895	Reno	2002	79.5%
900	Los Angeles, Anaheim, Riverside	2002	66.3%
903	Los Angeles, Anaheim, Riverside	2002	13.7%
908	Los Angeles, Anaheim, Riverside	2002	1.2%
911	Los Angeles, Anaheim, Riverside	2002	8.7%
912	Los Angeles, Anaheim, Riverside	2002	84.1%
913	Santa Barbara	2002	47.6%
917	Los Angeles, Anaheim, Riverside	2002	7.5%
919	San Diego	2002	50.0%
920	San Diego	2002	29.9%
921	San Diego	2002	1.1%
922	Palm Springs	2002	49.3%
924	Los Angeles, Anaheim, Riverside	2002	46.1%
925	Los Angeles, Anaheim, Riverside	2002	0.0%
926	Los Angeles, Anaheim, Riverside	2002	97.5%
927	Los Angeles, Anaheim, Riverside	2002	0.0%
928	Los Angeles, Anaheim, Riverside	2002	47.3%
931	Santa Barbara	2002	8.6%
933	Bakersfield	2002	0.0%
934	Santa Barbara	2002	81.2%
937	Fresno	2002	25.8%
939	Salinas	2002	31.5%
940	San Francisco, Oakland, San Jose	2002	13.8%
941	San Francisco, Oakland, San Jose	2002	0.1%
945	San Francisco, Oakland, San Jose	2002	0.0%
946	San Francisco, Oakland, San Jose	2002	2.6%

3 Digit Zip	Metro Area	Year	Percent Adoption
951	San Francisco, Oakland, San Jose	2002	24.0%
952	Stockton	2002	74.3%
953	Stockton	2002	85.7%
957	Sacramento	2002	1.6%
958	Sacramento	2002	49.2%
968	Honolulu	2002	10.9%
970	Portland, Vancouver	2002	40.2%
972	Portland, Vancouver	2002	29.7%
973	Eugene	2002	100.0%
974	Eugene	2002	73.2%
980	Seattle, Tacoma	2002	85.8%
981	Seattle, Tacoma	2002	42.9%
982	Bellingham	2002	83.2%
983	Seattle, Tacoma	2002	100.0%
984	Seattle, Tacoma	2002	71.4%
986	Portland, Vancouver	2002	98.6%
992	Spokane	2002	100.0%

VDC 2004 Data

3 Digit Zip	Metro Area	Year	Percent Adoption
010	Springfield	2004	0.0%
011	Springfield	2004	15.8%
018	Boston, Lawrence, Salem	2004	20.8%
019	Boston, Lawrence, Salem	2004	0.0%
021	Boston, Lawrence, Salem	2004	7.8%
022	Boston, Lawrence, Salem	2004	50.1%
024	Boston, Lawrence, Salem	2004	28.3%
027	Providence, Pawtucket, Fall River	2004	5.9%
028	Providence, Pawtucket, Fall River	2004	0.0%
029	Providence, Pawtucket, Fall River	2004	37.5%
060	Hartford, New Britain, Middletown	2004	0.0%
061	Hartford, New Britain, Middletown	2004	49.5%
063	New London	2004	0.0%
064	New Haven, Meriden	2004	45.3%
065	New Haven, Meriden	2004	22.0%
066	New York, Northern New Jersey, Southwestern Connecticut	2004	41.3%
068	New York, Northern New Jersey, Southwestern Connecticut	2004	10.9%
069	New York, Northern New Jersey, Southwestern Connecticut	2004	53.7%
070	New York, Northern New Jersey, Southwestern Connecticut	2004	6.2%
071	New York, Northern New Jersey, Southwestern Connecticut	2004	4.3%
072	New York, Northern New Jersey, Southwestern Connecticut	2004	11.4%
073	New York, Northern New Jersey, Southwestern Connecticut	2004	0.0%
074	New York, Northern New Jersey, Southwestern Connecticut	2004	100.0%
075	New York, Northern New Jersey, Southwestern Connecticut	2004	91.4%
076	New York, Northern New Jersey, Southwestern Connecticut	2004	0.0%
077	New York, Northern New Jersey, Southwestern Connecticut	2004	5.9%
078	New York, Northern New Jersey, Southwestern Connecticut	2004	17.6%
080	Philadelphia, Wilmington, Trenton	2004	46.4%
081	Philadelphia, Wilmington, Trenton	2004	0.0%
086	Philadelphia, Wilmington, Trenton	2004	0.0%
087	New York, Northern New Jersey, Southwestern Connecticut	2004	0.0%

3 Digit Zip	Metro Area	Year	Percent Adoption
088	New York, Northern New Jersey, Southwestern Connecticut	2004	89.4%
089	New York, Northern New Jersey, Southwestern Connecticut	2004	0.0%
106	New York, Northern New Jersey, Southwestern Connecticut	2004	50.0%
108	New York, Northern New Jersey, Southwestern Connecticut	2004	10.7%
109	New York, Northern New Jersey, Southwestern Connecticut	2004	96.7%
111	New York, Northern New Jersey, Southwestern Connecticut	2004	34.4%
115	New York, Northern New Jersey, Southwestern Connecticut	2004	23.7%
117	New York, Northern New Jersey, Southwestern Connecticut	2004	0.3%
120	Albany, Schenectady, Troy	2004	100.0%
122	New York, Northern New Jersey, Southwestern Connecticut	2004	14.0%
123	Albany, Schenectady, Troy	2004	0.0%
130	Syracuse	2004	51.1%
132	Syracuse	2004	38.1%
142	Buffalo, Niagara Falls	2004	0.0%
143	Buffalo, Niagara Falls	2004	0.0%
146	Rochester	2004	38.4%
156	Pittsburgh, Beaver Valley	2004	0.0%
171	Harrisburg, Lebanon, Carlisle	2004	9.7%
180	Allentown, Bethlehem, Easton	2004	50.0%
181	Allentown, Bethlehem, Easton	2004	0.0%
185	Scranton, Wilkes-Barre	2004	29.4%
190	Philadelphia, Wilmington, Trenton	2004	11.5%
191	Philadelphia, Wilmington, Trenton	2004	29.6%
198	Philadelphia, Wilmington, Trenton	2004	90.7%
200	Washington	2004	32.7%
207	Washington	2004	100.0%
208	Washington	2004	28.8%
210	Baltimore	2004	52.4%
212	Baltimore	2004	100.0%
214	Baltimore	2004	0.0%
222	Washington	2004	24.4%
232	Richmond, Petersburg	2004	0.0%
233	Hampton Roads	2004	100.0%
234	Hampton Roads	2004	100.0%

3 Digit Zip	Metro Area	Year	Percent Adoption
235	Hampton Roads	2004	17.6%
236	Hampton Roads	2004	71.9%
237	Hampton Roads	2004	55.6%
238	Richmond, Petersburg	2004	100.0%
240	Roanoke	2004	0.0%
241	Roanoke	2004	100.0%
271	Greensboro, Winston-Salem, High Point	2004	90.5%
272	Greensboro, Winston-Salem, High Point	2004	54.1%
274	Greensboro, Winston-Salem, High Point	2004	9.0%
276	Raleigh-Durham	2004	0.0%
277	Raleigh-Durham	2004	0.0%
278	Greenville	2004	12.5%
282	Charlotte, Gastonia, Rock Hill	2004	0.0%
283	Greensboro, Winston-Salem, High Point	2004	25.0%
288	Asheville	2004	100.0%
292	Columbia	2004	48.1%
293	Greenville, Spartanburg	2004	0.0%
294	Charleston	2004	46.7%
296	Greenville, Spartanburg	2004	75.0%
300	Atlanta	2004	44.7%
301	Atlanta	2004	0.0%
302	Atlanta	2004	21.3%
303	Atlanta	2004	70.0%
320	Jacksonville	2004	42.9%
321	Daytona Beach	2004	100.0%
322	Jacksonville	2004	17.0%
325	Pensacola	2004	28.5%
327	Daytona Beach	2004	49.7%
328	Orlando	2004	25.9%
331	Miami, Fort Lauderdale	2004	0.0%
333	Miami, Fort Lauderdale	2004	22.2%
334	West Palm Beach, Boca Raton, Delray	2004	11.8%
336	Tampa, St. Petersburg, Clearwater	2004	73.3%
337	Tampa, St. Petersburg, Clearwater	2004	38.3%
338	Fort Myers	2004	35.8%
339	Fort Myers	2004	95.0%
342	Sarasota-Bradenton	2004	68.2%
346	Tampa, St. Petersburg, Clearwater	2004	98.9%
347	Orlando	2004	10.4%

3 Digit Zip	Metro Area	Year	Percent Adoption
350	Birmingham	2004	0.0%
352	Birmingham	2004	0.0%
358	Huntsville	2004	6.7%
361	Montgomery	2004	24.1%
371	Nashville	2004	0.0%
372	Nashville	2004	2.1%
374	Chattanooga	2004	80.1%
377	Knoxville	2004	60.0%
379	Knoxville	2004	8.9%
381	Memphis	2004	2.2%
391	Jackson	2004	0.0%
392	Jackson	2004	0.0%
402	Louisville	2004	4.5%
410	Cincinnati, Hamilton	2004	0.0%
430	Columbus	2004	40.0%
432	Columbus	2004	15.1%
434	Toledo	2004	28.2%
436	Toledo	2004	9.1%
440	Cleveland, Akron, Lorain	2004	0.0%
441	Cleveland, Akron, Lorain	2004	46.8%
442	Cleveland, Akron, Lorain	2004	33.3%
443	Cleveland, Akron, Lorain	2004	14.2%
444	Youngstown, Warren	2004	46.1%
445	Youngstown, Warren	2004	0.0%
448	Cleveland, Akron, Lorain	2004	3.4%
450	Cincinnati, Hamilton	2004	63.3%
451	Cincinnati, Hamilton	2004	33.3%
452	Cincinnati, Hamilton	2004	3.4%
453	Dayton, Springfield	2004	53.0%
454	Dayton, Springfield	2004	27.6%
455	Dayton, Springfield	2004	7.3%
460	Indianapolis	2004	0.0%
461	Indianapolis	2004	0.0%
462	Fort Wayne	2004	27.9%
463	Chicago, Gary, Lake County	2004	4.7%
464	Chicago, Gary, Lake County	2004	39.4%
468	Fort Wayne	2004	10.0%
471	Louisville	2004	0.0%
480	Detroit, Ann Arbor	2004	0.0%

3 Digit Zip	Metro Area	Year	Percent Adoption
481	Detroit, Ann Arbor	2004	32.0%
482	Detroit, Ann Arbor	2004	0.1%
483	Detroit, Ann Arbor	2004	37.3%
488	Detroit, Ann Arbor	2004	8.7%
494	Grand Rapids	2004	0.0%
495	Grand Rapids	2004	14.3%
503	Des Moines	2004	0.0%
515	Omaha	2004	16.2%
530	Milwaukee, Racine	2004	0.0%
531	Milwaukee, Racine	2004	55.6%
532	Milwaukee, Racine	2004	11.4%
534	Milwaukee, Racine	2004	17.5%
535	Janesville-Beloit	2004	12.2%
537	Janesville-Beloit	2004	0.0%
550	Minneapolis, St. Paul	2004	100.0%
551	Minneapolis, St. Paul	2004	80.6%
553	Minneapolis, St. Paul	2004	29.1%
554	Minneapolis, St. Paul	2004	18.7%
600	Chicago, Gary, Lake County	2004	81.1%
601	Chicago, Gary, Lake County	2004	73.2%
602	Chicago, Gary, Lake County	2004	0.0%
603	Chicago, Gary, Lake County	2004	83.1%
604	Chicago, Gary, Lake County	2004	80.1%
605	Chicago, Gary, Lake County	2004	39.2%
606	Chicago, Gary, Lake County	2004	1.6%
622	St. Louis	2004	59.5%
630	St. Louis	2004	37.1%
631	St. Louis	2004	35.7%
633	St. Louis	2004	51.1%
640	Kansas City	2004	0.0%
641	Kansas City	2004	38.1%
651	Springfield(MO)	2004	41.2%
658	Springfield(MO)	2004	100.0%
660	Kansas City	2004	9.1%
661	Kansas City	2004	0.0%
662	Kansas City	2004	100.0%
672	Wichita	2004	0.0%
680	Omaha	2004	0.0%
681	Omaha	2004	2.7%

3 Digit Zip	Metro Area	Year	Percent Adoption
685	Omaha	2004	1.9%
700	New Orleans	2004	12.4%
701	New Orleans	2004	25.4%
704	Baton Rouge	2004	0.0%
708	Baton Rouge	2004	37.6%
721	Little Rock, North Little Rock	2004	25.7%
722	Little Rock, North Little Rock	2004	100.0%
730	Oklahoma City	2004	43.1%
731	Oklahoma City	2004	0.0%
740	Tulsa	2004	0.0%
741	Tulsa	2004	0.0%
750	Dallas, Fort Worth	2004	27.9%
751	Dallas, Fort Worth	2004	100.0%
752	Dallas, Fort Worth	2004	100.0%
753	Dallas, Fort Worth	2004	85.7%
760	Dallas, Fort Worth	2004	76.7%
761	Dallas, Fort Worth	2004	15.1%
762	Dallas, Fort Worth	2004	15.8%
770	Houston, Galveston, Brazoria	2004	31.6%
772	Houston, Galveston, Brazoria	2004	54.0%
773	Houston, Galveston, Brazoria	2004	100.0%
774	Houston, Galveston, Brazoria	2004	100.0%
775	Houston, Galveston, Brazoria	2004	5.7%
776	Beaumont-Port Arthur	2004	0.0%
777	Beaumont-Port Arthur	2004	51.0%
782	San Antonio	2004	99.2%
785	McAllen	2004	30.2%
787	Austin	2004	100.0%
799	El Paso	2004	75.8%
800	Denver, Boulder	2004	57.6%
801	Denver, Boulder	2004	66.8%
802	Denver, Boulder	2004	38.3%
803	Denver, Boulder	2004	12.2%
804	Denver, Boulder	2004	0.0%
805	Denver, Boulder	2004	33.8%
837	Boise City	2004	50.7%
841	Salt Lake City, Ogden	2004	29.5%
846	Provo - Orem	2004	17.6%
850	Phoenix	2004	20.4%

3 Digit Zip	Metro Area	Year	Percent Adoption
852	Phoenix	2004	23.0%
853	Phoenix	2004	37.1%
857	Tucson	2004	81.4%
871	Albuquerque	2004	8.4%
891	Las Vegas	2004	5.8%
894	Reno	2004	93.5%
895	Reno	2004	77.8%
900	Los Angeles, Anaheim, Riverside	2004	71.0%
903	Los Angeles, Anaheim, Riverside	2004	22.9%
908	Los Angeles, Anaheim, Riverside	2004	2.9%
911	Los Angeles, Anaheim, Riverside	2004	9.4%
912	Los Angeles, Anaheim, Riverside	2004	100.0%
913	Santa Barbara	2004	78.4%
917	Los Angeles, Anaheim, Riverside	2004	7.3%
918	Los Angeles, Anaheim, Riverside	2004	0.0%
919	San Diego	2004	97.4%
920	San Diego	2004	28.7%
921	San Diego	2004	29.5%
924	Los Angeles, Anaheim, Riverside	2004	61.7%
925	Los Angeles, Anaheim, Riverside	2004	0.0%
926	Los Angeles, Anaheim, Riverside	2004	97.6%
927	Los Angeles, Anaheim, Riverside	2004	0.4%
928	Los Angeles, Anaheim, Riverside	2004	21.7%
931	Santa Barbara	2004	20.7%
933	Bakersfield	2004	0.0%
934	Santa Barbara	2004	82.5%
937	Fresno	2004	22.6%
939	Salinas	2004	28.3%
940	San Francisco, Oakland, San Jose	2004	91.2%
941	San Francisco, Oakland, San Jose	2004	0.1%
945	San Francisco, Oakland, San Jose	2004	0.7%
946	San Francisco, Oakland, San Jose	2004	8.3%
951	San Francisco, Oakland, San Jose	2004	25.6%
952	Stockton	2004	71.7%
953	Modesto	2004	85.2%
958	Sacramento	2004	49.5%
968	Honolulu	2004	15.8%
970	Portland, Vancouver	2004	84.4%
972	Portland, Vancouver	2004	29.6%

3 Digit Zip	Metro Area	Year	Percent Adoption
973	Eugene	2004	100.0%
974	Eugene	2004	22.1%
980	Seattle, Tacoma	2004	92.8%
981	Seattle, Tacoma	2004	41.0%
982	Seattle, Tacoma	2004	86.8%
983	Seattle, Tacoma	2004	100.0%
984	Seattle, Tacoma	2004	74.7%
986	Portland, Vancouver	2004	98.8%
992	Spokane	2004	78.8%

VDC 2005 Data

3 Digit Zip	Metro Area	Year	Percent Adoption
010	Springfield	2005	0.0%
011	Springfield	2005	19.5%
019	Boston, Lawrence, Salem	2005	0.0%
021	Boston, Lawrence, Salem	2005	7.8%
022	Boston, Lawrence, Salem	2005	50.1%
024	Boston, Lawrence, Salem	2005	28.0%
027	Providence, Pawtucket, Fall River	2005	9.4%
028	Providence, Pawtucket, Fall River	2005	0.0%
029	Providence, Pawtucket, Fall River	2005	45.6%
060	Hartford, New Britain, Middletown	2005	0.0%
061	Hartford, New Britain, Middletown	2005	47.9%
065	New Haven, Meriden	2005	23.3%
066	New York, Northern New Jersey, Southwestern Connecticut	2005	47.0%
068	New York, Northern New Jersey, Southwestern Connecticut	2005	10.0%
069	New York, Northern New Jersey, Southwestern Connecticut	2005	53.7%
070	New York, Northern New Jersey, Southwestern Connecticut	2005	6.2%
071	New York, Northern New Jersey, Southwestern Connecticut	2005	0.0%
072	New York, Northern New Jersey, Southwestern Connecticut	2005	11.4%
073	New York, Northern New Jersey, Southwestern Connecticut	2005	0.0%
074	New York, Northern New Jersey, Southwestern Connecticut	2005	100.0%
075	New York, Northern New Jersey, Southwestern Connecticut	2005	91.4%
076	New York, Northern New Jersey, Southwestern Connecticut	2005	0.0%
077	New York, Northern New Jersey, Southwestern Connecticut	2005	9.0%
078	New York, Northern New Jersey, Southwestern Connecticut	2005	16.7%
080	Philadelphia, Wilmington, Trenton	2005	46.8%
081	Philadelphia, Wilmington, Trenton	2005	5.0%
086	Philadelphia, Wilmington, Trenton	2005	0.0%
087	New York, Northern New Jersey, Southwestern Connecticut	2005	0.0%
088	New York, Northern New Jersey, Southwestern Connecticut	2005	89.8%
089	New York, Northern New Jersey, Southwestern Connecticut	2005	0.0%

3 Digit Zip	Metro Area	Year	Percent Adoption
106	New York, Northern New Jersey, Southwestern Connecticut	2005	59.7%
108	New York, Northern New Jersey, Southwestern Connecticut	2005	10.6%
109	New York, Northern New Jersey, Southwestern Connecticut	2005	96.8%
111	New York, Northern New Jersey, Southwestern Connecticut	2005	35.3%
115	New York, Northern New Jersey, Southwestern Connecticut	2005	23.3%
117	New York, Northern New Jersey, Southwestern Connecticut	2005	0.3%
120	Albany, Schenectady, Troy	2005	100.0%
122	Albany, Schenectady, Troy	2005	11.8%
123	Albany, Schenectady, Troy	2005	10.2%
130	Syracuse	2005	52.2%
132	Syracuse	2005	38.1%
142	Buffalo, Niagara Falls	2005	0.0%
143	Buffalo, Niagara Falls	2005	0.0%
146	Rochester	2005	37.7%
156	Pittsburgh, Beaver Valley	2005	0.0%
171	Harrisburg, Lebanon, Carlisle	2005	9.7%
180	Allentown, Bethlehem, Easton	2005	49.1%
181	Allentown, Bethlehem, Easton	2005	0.0%
185	Scranton, Wilkes-Barre	2005	29.4%
190	Philadelphia, Wilmington, Trenton	2005	13.4%
191	Philadelphia, Wilmington, Trenton	2005	31.5%
198	Philadelphia, Wilmington, Trenton	2005	90.8%
200	Washington	2005	32.6%
207	Washington	2005	100.0%
208	Washington	2005	31.3%
210	Washington	2005	51.7%
212	Baltimore	2005	100.0%
214	Baltimore	2005	0.0%
220	Washington	2005	100.0%
222	Washington	2005	24.1%
232	Richmond, Petersburg	2005	0.0%
233	Hampton Roads	2005	100.0%
234	Hampton Roads	2005	100.0%
235	Hampton Roads	2005	70.0%
236	Hampton Roads	2005	71.4%
237	Hampton Roads	2005	58.1%

3 Digit Zip	Metro Area	Year	Percent Adoption
238	Richmond, Petersburg	2005	100.0%
271	Greensboro, Winston-Salem, High Point	2005	90.5%
272	Greensboro, Winston-Salem, High Point	2005	52.1%
274	Greensboro, Winston-Salem, High Point	2005	8.7%
276	Raleigh-Durham	2005	0.0%
277	Raleigh-Durham	2005	0.0%
282	Charlotte, Gastonia, Rock Hill	2005	0.0%
283	Greensboro, Winston-Salem, High Point	2005	23.7%
292	Charleston	2005	67.7%
293	Greenville, Spartanburg	2005	0.0%
294	Charleston	2005	44.8%
296	Greenville, Spartanburg	2005	75.0%
300	Atlanta	2005	45.5%
301	Atlanta	2005	0.0%
302	Atlanta	2005	18.1%
303	Atlanta	2005	62.8%
320	Jacksonville	2005	32.4%
322	Jacksonville	2005	17.7%
327	Orlando	2005	79.8%
328	Orlando	2005	25.4%
331	Miami, Fort Lauderdale	2005	0.0%
333	Miami, Fort Lauderdale	2005	24.0%
334	West Palm Beach, Boca Raton, Delray	2005	29.6%
336	Tampa, St. Petersburg, Clearwater	2005	71.4%
337	Tampa, St. Petersburg, Clearwater	2005	39.4%
342	Sarasota-Bradenton	2005	61.3%
346	Tampa, St. Petersburg, Clearwater	2005	95.5%
347	Orlando	2005	12.5%
350	Birmingham	2005	0.0%
352	Birmingham	2005	0.0%
371	Nashville	2005	0.0%
372	Nashville	2005	0.0%
377	Knoxville	2005	60.0%
379	Knoxville	2005	8.8%
381	Memphis	2005	2.3%
402	Louisville	2005	4.5%
410	Cincinnati, Hamilton	2005	0.0%
430	Columbus	2005	40.0%
432	Columbus	2005	15.6%

3 Digit Zip	Metro Area	Year	Percent Adoption
434	Toledo	2005	27.3%
436	Toledo	2005	13.4%
440	Cleveland, Akron, Lorain	2005	0.0%
441	Cleveland, Akron, Lorain	2005	27.4%
442	Cleveland, Akron, Lorain	2005	0.0%
443	Cleveland, Akron, Lorain	2005	12.7%
444	Youngstown, Warren	2005	46.1%
445	Youngstown, Warren	2005	0.0%
448	Cleveland, Akron, Lorain	2005	16.1%
450	Cincinnati, Hamilton	2005	65.2%
451	Cincinnati, Hamilton	2005	25.0%
452	Cincinnati, Hamilton	2005	3.4%
453	Dayton, Springfield	2005	0.0%
454	Dayton, Springfield	2005	28.2%
455	Dayton, Springfield	2005	13.8%
460	Indianapolis	2005	0.0%
461	Indianapolis	2005	62.5%
462	Indianapolis	2005	23.7%
463	Chicago, Gary, Lake County	2005	5.4%
464	Chicago, Gary, Lake County	2005	0.0%
471	Louisville	2005	0.0%
480	Detroit, Ann Arbor	2005	0.0%
481	Detroit, Ann Arbor	2005	27.9%
482	Detroit, Ann Arbor	2005	0.0%
483	Detroit, Ann Arbor	2005	38.6%
488	Detroit, Ann Arbor	2005	17.4%
494	Grand Rapids	2005	0.0%
495	Grand Rapids	2005	14.2%
515	Omaha	2005	16.2%
530	Milwaukee, Racine	2005	0.0%
531	Milwaukee, Racine	2005	57.9%
532	Milwaukee, Racine	2005	11.9%
534	Milwaukee, Racine	2005	60.0%
550	Minneapolis, St. Paul	2005	100.0%
551	Minneapolis, St. Paul	2005	90.9%
553	Minneapolis, St. Paul	2005	29.9%
554	Minneapolis, St. Paul	2005	18.8%
600	Chicago, Gary, Lake County	2005	71.0%
601	Chicago, Gary, Lake County	2005	73.0%

3 Digit Zip	Metro Area	Year	Percent Adoption
602	Chicago, Gary, Lake County	2005	0.0%
603	Chicago, Gary, Lake County	2005	69.9%
604	Chicago, Gary, Lake County	2005	76.7%
605	Chicago, Gary, Lake County	2005	0.0%
606	Chicago, Gary, Lake County	2005	0.0%
622	St. Louis	2005	56.4%
630	St. Louis	2005	40.6%
631	St. Louis	2005	35.7%
633	St. Louis	2005	50.0%
640	Kansas City	2005	0.0%
641	Kansas City	2005	51.2%
651	St. Louis	2005	30.7%
660	Kansas City	2005	44.6%
661	Kansas City	2005	0.0%
662	Kansas City	2005	99.6%
672	Wichita	2005	0.0%
680	Omaha	2005	0.0%
681	Omaha	2005	2.7%
685	Omaha	2005	1.9%
700	New Orleans	2005	11.9%
701	New Orleans	2005	25.4%
704	Baton Rouge	2005	0.0%
708	Baton Rouge	2005	32.0%
721	Little Rock, North Little Rock	2005	37.8%
722	Little Rock, North Little Rock	2005	96.4%
730	Oklahoma City	2005	42.2%
731	Oklahoma City	2005	0.0%
740	Tulsa	2005	0.0%
741	Tulsa	2005	0.0%
750	Dallas, Fort Worth	2005	22.2%
751	Dallas, Fort Worth	2005	100.0%
752	Dallas, Fort Worth	2005	100.0%
753	Dallas, Fort Worth	2005	93.6%
761	Dallas, Fort Worth	2005	12.9%
762	Dallas, Fort Worth	2005	19.8%
770	Houston, Galveston, Brazoria	2005	53.0%
772	Houston, Galveston, Brazoria	2005	54.2%
773	Houston, Galveston, Brazoria	2005	100.0%
774	Houston, Galveston, Brazoria	2005	100.0%

3 Digit Zip	Metro Area	Year	Percent Adoption
775	Houston, Galveston, Brazoria	2005	5.7%
782	San Antonio	2005	99.2%
787	Austin	2005	97.0%
799	El Paso	2005	92.0%
800	Denver, Boulder	2005	24.9%
801	Denver, Boulder	2005	64.2%
802	Denver, Boulder	2005	42.5%
803	Denver, Boulder	2005	12.0%
804	Denver, Boulder	2005	0.0%
805	Denver, Boulder	2005	33.8%
841	Salt Lake City, Ogden	2005	27.0%
850	Phoenix	2005	18.4%
852	Phoenix	2005	22.9%
853	Phoenix	2005	37.5%
857	Tucson	2005	79.8%
871	Albuquerque	2005	8.9%
891	Las Vegas	2005	6.1%
900	Los Angeles, Anaheim, Riverside	2005	72.0%
903	Los Angeles, Anaheim, Riverside	2005	25.4%
908	Los Angeles, Anaheim, Riverside	2005	95.6%
911	Los Angeles, Anaheim, Riverside	2005	9.0%
912	Los Angeles, Anaheim, Riverside	2005	100.0%
917	Los Angeles, Anaheim, Riverside	2005	15.2%
918	Los Angeles, Anaheim, Riverside	2005	0.0%
919	San Diego	2005	100.0%
920	San Diego	2005	28.0%
921	San Diego	2005	29.5%
924	Los Angeles, Anaheim, Riverside	2005	64.8%
925	Los Angeles, Anaheim, Riverside	2005	0.0%
926	Los Angeles, Anaheim, Riverside	2005	97.6%
927	Los Angeles, Anaheim, Riverside	2005	0.4%
928	Los Angeles, Anaheim, Riverside	2005	23.9%
937	Bakersfield	2005	60.2%
940	San Francisco, Oakland, San Jose	2005	91.4%
941	San Francisco, Oakland, San Jose	2005	5.7%
945	San Francisco, Oakland, San Jose	2005	3.1%
946	San Francisco, Oakland, San Jose	2005	8.2%
951	San Francisco, Oakland, San Jose	2005	25.3%
958	Sacramento	2005	47.6%

3 Digit Zip	Metro Area	Year	Percent Adoption
968	Honolulu	2005	15.7%
970	Portland, Vancouver	2005	85.0%
972	Portland, Vancouver	2005	29.2%
980	Seattle, Tacoma	2005	93.4%
981	Seattle, Tacoma	2005	41.0%
982	Seattle, Tacoma	2005	83.2%
983	Seattle, Tacoma	2005	100.0%
984	Seattle, Tacoma	2005	74.1%
986	Portland, Vancouver	2005	98.9%

VDC 2006 Data

3 Digit Zip	Metro Area	Year	Percent Adoption
010	Springfield	2006	0.0%
019	Boston, Lawrence, Salem	2006	0.0%
021	Boston, Lawrence, Salem	2006	10.6%
022	Boston, Lawrence, Salem	2006	49.2%
024	Boston, Lawrence, Salem	2006	20.7%
027	Providence, Pawtucket, Fall River	2006	10.8%
028	Providence, Pawtucket, Fall River	2006	0.0%
029	Providence, Pawtucket, Fall River	2006	28.9%
060	Hartford, New Britain, Middletown	2006	0.0%
061	New York, Northern New Jersey, Southwestern Connecticut	2006	48.3%
063	New London	2006	0.0%
064	New Haven, Meriden	2006	45.3%
065	New Haven, Meriden	2006	23.3%
066	New York, Northern New Jersey, Southwestern Connecticut	2006	65.4%
068	New York, Northern New Jersey, Southwestern Connecticut	2006	51.8%
069	New York, Northern New Jersey, Southwestern Connecticut	2006	53.7%
070	New York, Northern New Jersey, Southwestern Connecticut	2006	6.0%
071	New York, Northern New Jersey, Southwestern Connecticut	2006	0.0%
073	New York, Northern New Jersey, Southwestern Connecticut	2006	0.0%
074	New York, Northern New Jersey, Southwestern Connecticut	2006	100.0%
075	New York, Northern New Jersey, Southwestern Connecticut	2006	91.4%
076	New York, Northern New Jersey, Southwestern Connecticut	2006	0.0%
078	New York, Northern New Jersey, Southwestern Connecticut	2006	0.0%
080	Philadelphia, Wilmington, Trenton	2006	47.2%
081	Philadelphia, Wilmington, Trenton	2006	10.2%
086	Philadelphia, Wilmington, Trenton	2006	3.7%
087	New York, Northern New Jersey, Southwestern Connecticut	2006	0.0%
088	New York, Northern New Jersey, Southwestern Connecticut	2006	89.8%
089	New York, Northern New Jersey, Southwestern Connecticut	2006	0.0%
106	New York, Northern New Jersey, Southwestern Connecticut	2006	68.3%

3 Digit Zip	Metro Area	Year	Percent Adoption
108	New York, Northern New Jersey, Southwestern Connecticut	2006	10.6%
109	New York, Northern New Jersey, Southwestern Connecticut	2006	95.6%
111	New York, Northern New Jersey, Southwestern Connecticut	2006	35.0%
115	New York, Northern New Jersey, Southwestern Connecticut	2006	23.2%
117	New York, Northern New Jersey, Southwestern Connecticut	2006	0.4%
120	Albany, Schenectady, Troy	2006	100.0%
122	Albany, Schenectady, Troy	2006	11.8%
132	Syracuse	2006	38.1%
142	Buffalo, Niagara Falls	2006	0.0%
143	Buffalo, Niagara Falls	2006	0.0%
146	Rochester	2006	37.9%
156	Pittsburgh, Beaver Valley	2006	0.0%
176	Lancaster	2006	0.0%
180	Allentown, Bethlehem, Easton	2006	52.7%
181	Allentown, Bethlehem, Easton	2006	0.0%
185	Scranton, Wilkes-Barre	2006	29.4%
190	Philadelphia, Wilmington, Trenton	2006	12.0%
191	Philadelphia, Wilmington, Trenton	2006	35.6%
198	Philadelphia, Wilmington, Trenton	2006	90.8%
199	Philadelphia, Wilmington, Trenton	2006	0.0%
200	Washington	2006	32.5%
207	Washington	2006	100.0%
208	Washington	2006	31.3%
210	Baltimore	2006	51.6%
212	Baltimore	2006	79.0%
214	Baltimore	2006	0.0%
220	Washington	2006	100.0%
222	Washington	2006	23.4%
232	Richmond, Petersburg	2006	0.0%
233	Hampton Roads	2006	100.0%
234	Hampton Roads	2006	78.4%
235	Hampton Roads	2006	79.9%
236	Hampton Roads	2006	93.0%
237	Hampton Roads	2006	59.0%
238	Richmond, Petersburg	2006	100.0%
240	Roanoke	2006	0.0%

3 Digit Zip	Metro Area	Year	Percent Adoption
272	Greensboro, Winston-Salem, High Point	2006	50.8%
274	Raleigh-Durham	2006	8.6%
276	Raleigh-Durham	2006	0.0%
277	Raleigh-Durham	2006	0.0%
278	Greenville	2006	42.0%
280	Charlotte, Gastonia, Rock Hill	2006	14.8%
282	Charlotte, Gastonia, Rock Hill	2006	0.0%
283	Greensboro, Winston-Salem, High Point	2006	23.7%
288	Asheville	2006	18.0%
292	Columbia	2006	43.2%
294	Charleston	2006	43.8%
296	Greenville, Spartanburg	2006	74.3%
300	Atlanta	2006	45.2%
301	Atlanta	2006	0.0%
302	Atlanta	2006	17.6%
303	Atlanta	2006	93.8%
320	Jacksonville	2006	13.8%
321	Daytona Beach	2006	100.0%
322	Jacksonville	2006	17.3%
325	Pensacola	2006	0.0%
327	Orlando	2006	51.7%
328	Orlando	2006	27.4%
331	Miami, Fort Lauderdale	2006	0.0%
333	Miami, Fort Lauderdale	2006	51.8%
334	West Palm Beach, Boca Raton, Delray	2006	54.1%
336	Tampa, St. Petersburg, Clearwater	2006	71.5%
337	Tampa, St. Petersburg, Clearwater	2006	39.1%
338	Fort Myers	2006	38.2%
339	Fort Myers	2006	94.4%
342	Sarasota-Bradenton	2006	61.9%
346	Tampa, St. Petersburg, Clearwater	2006	94.7%
347	Orlando	2006	12.4%
350	Birmingham	2006	0.0%
352	Birmingham	2006	0.0%
358	Huntsville	2006	5.1%
361	Montgomery	2006	79.1%
371	Nashville	2006	0.0%
372	Nashville	2006	0.0%
374	Chattanooga	2006	100.0%

3 Digit Zip	Metro Area	Year	Percent Adoption
377	Knoxville	2006	0.0%
379	Knoxville	2006	7.5%
381	Memphis	2006	2.3%
392	Jackson	2006	0.0%
402	Louisville	2006	4.5%
410	Cincinnati, Hamilton	2006	0.0%
430	Columbus	2006	40.0%
432	Columbus	2006	11.5%
434	Toledo	2006	28.2%
436	Toledo	2006	14.0%
440	Cleveland, Akron, Lorain	2006	0.0%
441	Cleveland, Akron, Lorain	2006	45.2%
442	Cleveland, Akron, Lorain	2006	22.2%
443	Cleveland, Akron, Lorain	2006	17.2%
444	Youngstown, Warren	2006	77.0%
445	Youngstown, Warren	2006	0.0%
448	Cleveland, Akron, Lorain	2006	19.0%
450	Cincinnati, Hamilton	2006	64.9%
451	Cincinnati, Hamilton	2006	21.4%
452	Cincinnati, Hamilton	2006	4.5%
453	Dayton, Springfield	2006	0.0%
454	Dayton, Springfield	2006	28.9%
455	Dayton, Springfield	2006	19.5%
460	Indianapolis	2006	0.0%
461	Indianapolis	2006	62.5%
462	Fort Wayne	2006	28.7%
463	Chicago, Gary, Lake County	2006	6.1%
464	Chicago, Gary, Lake County	2006	0.0%
468	Fort Wayne	2006	10.0%
471	Louisville	2006	0.0%
480	Detroit, Ann Arbor	2006	0.0%
481	Detroit, Ann Arbor	2006	12.6%
482	Detroit, Ann Arbor	2006	0.0%
483	Detroit, Ann Arbor	2006	38.2%
488	Detroit, Ann Arbor	2006	18.2%
494	Grand Rapids	2006	0.0%
495	Grand Rapids	2006	13.2%
503	Des Moines	2006	78.1%
515	Omaha	2006	16.2%

3 Digit Zip	Metro Area	Year	Percent Adoption
530	Milwaukee, Racine	2006	0.0%
531	Milwaukee, Racine	2006	32.1%
532	Milwaukee, Racine	2006	1.2%
534	Milwaukee, Racine	2006	67.5%
535	Janesville-Beloit	2006	12.5%
537	Janesville-Beloit	2006	0.0%
550	Minneapolis, St. Paul	2006	100.0%
551	Minneapolis, St. Paul	2006	80.3%
553	Minneapolis, St. Paul	2006	30.1%
554	Minneapolis, St. Paul	2006	18.7%
600	Chicago, Gary, Lake County	2006	69.0%
601	Chicago, Gary, Lake County	2006	75.9%
603	Chicago, Gary, Lake County	2006	64.4%
604	Chicago, Gary, Lake County	2006	74.2%
605	Chicago, Gary, Lake County	2006	44.6%
606	Chicago, Gary, Lake County	2006	0.0%
622	St. Louis	2006	56.3%
630	St. Louis	2006	0.0%
631	St. Louis	2006	39.3%
633	St. Louis	2006	50.0%
651	Kansas City	2006	33.0%
658	Springfield(MO)	2006	100.0%
660	Kansas City	2006	56.6%
661	Kansas City	2006	2.9%
662	Kansas City	2006	99.6%
672	Wichita	2006	0.0%
680	Omaha	2006	0.0%
681	Omaha	2006	3.5%
685	Omaha	2006	1.9%
700	New Orleans	2006	17.3%
704	Baton Rouge	2006	0.0%
708	Baton Rouge	2006	31.5%
721	Little Rock, North Little Rock	2006	39.5%
722	Little Rock, North Little Rock	2006	96.6%
730	Oklahoma City	2006	43.8%
731	Oklahoma City	2006	0.0%
740	Tulsa	2006	0.0%
741	Tulsa	2006	0.0%
750	Dallas, Fort Worth	2006	24.6%

3 Digit Zip	Metro Area	Year	Percent Adoption
752	Dallas, Fort Worth	2006	100.0%
753	Dallas, Fort Worth	2006	73.8%
760	Dallas, Fort Worth	2006	90.3%
761	Dallas, Fort Worth	2006	12.4%
762	Dallas, Fort Worth	2006	22.9%
770	Houston, Galveston, Brazoria	2006	52.5%
772	Houston, Galveston, Brazoria	2006	54.3%
773	Houston, Galveston, Brazoria	2006	100.0%
774	Houston, Galveston, Brazoria	2006	100.0%
775	Houston, Galveston, Brazoria	2006	17.7%
776	Beaumont-Port Arthur	2006	0.0%
777	Beaumont-Port Arthur	2006	51.0%
782	San Antonio	2006	99.2%
785	McAllen	2006	27.1%
787	Austin	2006	100.0%
799	El Paso	2006	87.7%
800	Denver, Boulder	2006	10.4%
801	Denver, Boulder	2006	63.0%
802	Denver, Boulder	2006	52.4%
803	Denver, Boulder	2006	13.0%
804	Denver, Boulder	2006	0.0%
805	Denver, Boulder	2006	43.2%
837	Boise City	2006	54.1%
841	Provo - Orem	2006	19.8%
850	Phoenix	2006	20.5%
852	Phoenix	2006	50.7%
853	Phoenix	2006	37.5%
857	Tucson	2006	78.9%
871	Albuquerque	2006	15.1%
891	Las Vegas	2006	6.1%
894	Reno	2006	89.3%
895	Reno	2006	72.9%
900	Los Angeles, Anaheim, Riverside	2006	74.6%
903	Los Angeles, Anaheim, Riverside	2006	25.7%
908	Los Angeles, Anaheim, Riverside	2006	94.2%
911	Los Angeles, Anaheim, Riverside	2006	14.5%
912	Los Angeles, Anaheim, Riverside	2006	100.0%
913	Santa Barbara	2006	78.4%
917	Los Angeles, Anaheim, Riverside	2006	15.2%

3 Digit Zip	Metro Area	Year	Percent Adoption
918	Los Angeles, Anaheim, Riverside	2006	0.0%
919	San Diego	2006	100.0%
920	San Diego	2006	26.1%
921	San Diego	2006	29.5%
924	Los Angeles, Anaheim, Riverside	2006	67.0%
925	Los Angeles, Anaheim, Riverside	2006	0.0%
926	Los Angeles, Anaheim, Riverside	2006	98.3%
927	Los Angeles, Anaheim, Riverside	2006	0.0%
928	Los Angeles, Anaheim, Riverside	2006	23.7%
931	Santa Barbara	2006	18.6%
933	Bakersfield	2006	0.0%
934	Santa Barbara	2006	93.5%
937	Fresno	2006	60.2%
939	Salinas	2006	55.9%
941	San Francisco, Oakland, San Jose	2006	21.7%
945	San Francisco, Oakland, San Jose	2006	5.0%
946	San Francisco, Oakland, San Jose	2006	7.8%
951	San Francisco, Oakland, San Jose	2006	23.4%
952	Modesto	2006	73.6%
953	Modesto	2006	77.5%
958	Sacramento	2006	46.0%
968	Honolulu	2006	15.3%
970	Portland, Vancouver	2006	83.8%
971	Portland, Vancouver	2006	12.4%
972	Portland, Vancouver	2006	35.3%
973	Eugene	2006	100.0%
974	Eugene	2006	21.9%
980	Seattle, Tacoma	2006	93.0%
981	Seattle, Tacoma	2006	17.4%
982	Seattle, Tacoma	2006	88.5%
983	Seattle, Tacoma	2006	97.4%
984	Seattle, Tacoma	2006	73.6%
986	Portland, Vancouver	2006	99.0%
992	Spokane	2006	78.8%

VDC 2007 Data

3 Digit Zip	Metro Area	Year	Percent Adoption
011	Springfield	2007	25.4%
021	Boston, Lawrence, Salem	2007	0.0%
022	Boston, Lawrence, Salem	2007	49.1%
024	Boston, Lawrence, Salem	2007	20.7%
027	Providence, Pawtucket, Fall River	2007	10.8%
029	Providence, Pawtucket, Fall River	2007	16.2%
060	Hartford, New Britain, Middletown	2007	0.0%
061	New York, Northern New Jersey, Southwestern Connecticut	2007	42.5%
064	New Haven, Meriden	2007	45.3%
065	New Haven, Meriden	2007	23.3%
066	New York, Northern New Jersey, Southwestern Connecticut	2007	65.4%
068	New York, Northern New Jersey, Southwestern Connecticut	2007	53.9%
069	New York, Northern New Jersey, Southwestern Connecticut	2007	54.1%
070	New York, Northern New Jersey, Southwestern Connecticut	2007	6.0%
072	New York, Northern New Jersey, Southwestern Connecticut	2007	0.0%
075	New York, Northern New Jersey, Southwestern Connecticut	2007	91.4%
076	New York, Northern New Jersey, Southwestern Connecticut	2007	0.0%
077	New York, Northern New Jersey, Southwestern Connecticut	2007	15.9%
078	New York, Northern New Jersey, Southwestern Connecticut	2007	0.0%
080	Philadelphia, Wilmington, Trenton	2007	45.1%
086	Philadelphia, Wilmington, Trenton	2007	7.1%
087	New York, Northern New Jersey, Southwestern Connecticut	2007	0.0%
088	New York, Northern New Jersey, Southwestern Connecticut	2007	71.9%
089	New York, Northern New Jersey, Southwestern Connecticut	2007	0.0%
106	New York, Northern New Jersey, Southwestern Connecticut	2007	88.7%
108	New York, Northern New Jersey, Southwestern Connecticut	2007	10.6%
109	New York, Northern New Jersey, Southwestern Connecticut	2007	69.4%
111	New York, Northern New Jersey, Southwestern Connecticut	2007	11.6%

3 Digit Zip	Metro Area	Year	Percent Adoption
115	New York, Northern New Jersey, Southwestern Connecticut	2007	23.1%
117	New York, Northern New Jersey, Southwestern Connecticut	2007	0.4%
120	Albany, Schenectady, Troy	2007	100.0%
122	Albany, Schenectady, Troy	2007	11.8%
123	Albany, Schenectady, Troy	2007	7.9%
130	Syracuse	2007	12.9%
132	Syracuse	2007	38.1%
142	Buffalo, Niagara Falls	2007	0.0%
143	Buffalo, Niagara Falls	2007	0.0%
146	Rochester	2007	37.8%
156	Pittsburgh, Beaver Valley	2007	0.0%
180	Allentown, Bethlehem, Easton	2007	57.7%
190	Philadelphia, Wilmington, Trenton	2007	3.1%
191	Philadelphia, Wilmington, Trenton	2007	33.5%
199	Philadelphia, Wilmington, Trenton	2007	0.0%
207	Washington	2007	100.0%
208	Washington	2007	29.4%
210	Baltimore	2007	88.0%
212	Baltimore	2007	79.0%
214	Baltimore	2007	0.0%
220	Washington	2007	100.0%
222	Washington	2007	23.0%
232	Richmond, Petersburg	2007	0.0%
233	Hampton Roads	2007	100.0%
234	Hampton Roads	2007	76.6%
235	Hampton Roads	2007	81.8%
236	Hampton Roads	2007	93.0%
237	Hampton Roads	2007	59.3%
238	Richmond, Petersburg	2007	100.0%
272	Greensboro, Winston-Salem, High Point	2007	49.3%
274	Greensboro, Winston-Salem, High Point	2007	9.1%
276	Raleigh-Durham	2007	0.0%
277	Raleigh-Durham	2007	0.0%
278	Greenville	2007	41.3%
280	Charlotte, Gastonia, Rock Hill	2007	14.8%
282	Charlotte, Gastonia, Rock Hill	2007	0.0%
283	Greensboro, Winston-Salem, High Point	2007	23.5%
288	Asheville	2007	19.0%

3 Digit Zip	Metro Area	Year	Percent Adoption
292	Charleston	2007	58.9%
293	Greenville, Spartanburg	2007	50.8%
294	Charleston	2007	43.8%
296	Greenville, Spartanburg	2007	74.3%
300	Atlanta	2007	43.9%
301	Atlanta	2007	0.0%
302	Atlanta	2007	13.7%
303	Atlanta	2007	98.9%
320	Jacksonville	2007	12.5%
321	Daytona Beach	2007	100.0%
322	Jacksonville	2007	17.1%
325	Pensacola	2007	0.0%
327	Orlando	2007	51.0%
328	Orlando	2007	27.1%
331	Miami, Fort Lauderdale	2007	0.0%
333	Miami, Fort Lauderdale	2007	48.8%
334	West Palm Beach, Boca Raton, Delray	2007	58.6%
336	Tampa, St. Petersburg, Clearwater	2007	70.0%
337	Tampa, St. Petersburg, Clearwater	2007	38.9%
338	Fort Myers	2007	38.2%
339	Fort Myers	2007	100.0%
342	Sarasota-Bradenton	2007	61.9%
346	Tampa, St. Petersburg, Clearwater	2007	94.8%
347	Orlando	2007	11.0%
350	Birmingham	2007	0.0%
352	Birmingham	2007	0.0%
358	Huntsville	2007	5.4%
361	Montgomery	2007	79.1%
371	Nashville	2007	0.0%
372	Nashville	2007	0.0%
374	Chattanooga	2007	98.1%
377	Knoxville	2007	0.0%
379	Knoxville	2007	7.5%
381	Memphis	2007	2.4%
392	Jackson	2007	0.0%
402	Louisville	2007	4.5%
410	Cincinnati, Hamilton	2007	0.0%
430	Columbus	2007	40.0%
432	Columbus	2007	0.0%

3 Digit Zip	Metro Area	Year	Percent Adoption
434	Toledo	2007	28.2%
436	Toledo	2007	13.5%
440	Cleveland, Akron, Lorain	2007	0.0%
441	Cleveland, Akron, Lorain	2007	42.4%
442	Cleveland, Akron, Lorain	2007	0.0%
443	Cleveland, Akron, Lorain	2007	20.1%
444	Youngstown, Warren	2007	77.0%
445	Youngstown, Warren	2007	0.0%
448	Cleveland, Akron, Lorain	2007	23.2%
450	Cincinnati, Hamilton	2007	62.8%
451	Cincinnati, Hamilton	2007	17.6%
452	Cincinnati, Hamilton	2007	4.5%
453	Dayton, Springfield	2007	0.0%
454	Dayton, Springfield	2007	29.2%
455	Dayton, Springfield	2007	19.5%
460	Indianapolis	2007	0.0%
461	Indianapolis	2007	66.7%
462	Fort Wayne	2007	20.2%
463	Chicago, Gary, Lake County	2007	6.1%
464	Chicago, Gary, Lake County	2007	1.6%
468	Fort Wayne	2007	11.5%
471	Louisville	2007	0.0%
480	Detroit, Ann Arbor	2007	0.0%
481	Detroit, Ann Arbor	2007	17.8%
482	Detroit, Ann Arbor	2007	0.0%
483	Detroit, Ann Arbor	2007	38.3%
488	Detroit, Ann Arbor	2007	17.4%
494	Grand Rapids	2007	0.0%
495	Grand Rapids	2007	12.1%
503	Des Moines	2007	78.1%
515	Omaha	2007	19.6%
530	Milwaukee, Racine	2007	0.0%
531	Milwaukee, Racine	2007	31.6%
532	Milwaukee, Racine	2007	1.6%
534	Milwaukee, Racine	2007	72.3%
535	Janesville-Beloit	2007	12.2%
537	Janesville-Beloit	2007	0.0%
550	Minneapolis, St. Paul	2007	100.0%
551	Minneapolis, St. Paul	2007	80.6%

3 Digit Zip	Metro Area	Year	Percent Adoption
553	Minneapolis, St. Paul	2007	32.9%
554	Minneapolis, St. Paul	2007	16.3%
600	Chicago, Gary, Lake County	2007	70.0%
601	Chicago, Gary, Lake County	2007	77.2%
602	Chicago, Gary, Lake County	2007	0.0%
603	Chicago, Gary, Lake County	2007	65.0%
604	Chicago, Gary, Lake County	2007	75.2%
605	Chicago, Gary, Lake County	2007	45.5%
606	Chicago, Gary, Lake County	2007	7.0%
622	St. Louis	2007	56.3%
630	St. Louis	2007	0.0%
631	St. Louis	2007	39.3%
633	St. Louis	2007	46.2%
651	St. Louis	2007	33.0%
658	Springfield(MO)	2007	100.0%
660	Kansas City	2007	76.9%
661	Kansas City	2007	6.0%
662	Kansas City	2007	99.6%
672	Wichita	2007	0.0%
680	Omaha	2007	0.0%
681	Omaha	2007	4.2%
685	Omaha	2007	1.9%
700	New Orleans	2007	20.0%
704	Baton Rouge	2007	0.0%
708	Baton Rouge	2007	35.5%
721	Little Rock, North Little Rock	2007	40.3%
722	Little Rock, North Little Rock	2007	96.7%
730	Oklahoma City	2007	43.0%
731	Oklahoma City	2007	0.0%
740	Tulsa	2007	0.0%
741	Tulsa	2007	0.0%
750	Dallas, Fort Worth	2007	21.7%
751	Dallas, Fort Worth	2007	100.0%
752	Dallas, Fort Worth	2007	100.0%
753	Dallas, Fort Worth	2007	89.1%
760	Dallas, Fort Worth	2007	92.4%
761	Dallas, Fort Worth	2007	55.5%
762	Dallas, Fort Worth	2007	22.9%
770	Houston, Galveston, Brazoria	2007	52.3%

3 Digit Zip	Metro Area	Year	Percent Adoption
772	Houston, Galveston, Brazoria	2007	52.5%
773	Houston, Galveston, Brazoria	2007	100.0%
774	Houston, Galveston, Brazoria	2007	100.0%
775	Houston, Galveston, Brazoria	2007	29.3%
776	Beaumont-Port Arthur	2007	0.0%
777	Beaumont-Port Arthur	2007	49.0%
782	San Antonio	2007	40.0%
785	McAllen	2007	76.5%
787	Austin	2007	100.0%
799	El Paso	2007	79.9%
800	Denver, Boulder	2007	11.0%
801	Denver, Boulder	2007	53.6%
802	Denver, Boulder	2007	57.8%
803	Denver, Boulder	2007	12.9%
804	Denver, Boulder	2007	0.0%
805	Denver, Boulder	2007	43.9%
837	Boise City	2007	55.1%
841	Salt Lake City, Ogden	2007	19.7%
846	Provo - Orem	2007	28.1%
852	Phoenix	2007	37.0%
853	Phoenix	2007	39.6%
857	Tucson	2007	78.9%
871	Albuquerque	2007	15.2%
891	Las Vegas	2007	5.8%
894	Reno	2007	89.3%
895	Reno	2007	71.4%
908	Los Angeles, Anaheim, Riverside	2007	93.8%
911	Los Angeles, Anaheim, Riverside	2007	14.5%
912	Los Angeles, Anaheim, Riverside	2007	100.0%
913	Santa Barbara	2007	78.4%
917	Los Angeles, Anaheim, Riverside	2007	15.2%
918	Los Angeles, Anaheim, Riverside	2007	0.0%
919	San Diego	2007	100.0%
920	San Diego	2007	25.2%
921	San Diego	2007	30.1%
924	Los Angeles, Anaheim, Riverside	2007	67.3%
925	Los Angeles, Anaheim, Riverside	2007	0.0%
926	Los Angeles, Anaheim, Riverside	2007	0.0%
927	Los Angeles, Anaheim, Riverside	2007	0.0%

3 Digit Zip	Metro Area	Year	Percent Adoption
928	Los Angeles, Anaheim, Riverside	2007	24.4%
931	Santa Barbara	2007	18.5%
934	Santa Barbara	2007	96.3%
937	Fresno	2007	34.0%
939	Salinas	2007	57.1%
940	San Francisco, Oakland, San Jose	2007	91.4%
945	San Francisco, Oakland, San Jose	2007	7.5%
946	San Francisco, Oakland, San Jose	2007	10.9%
951	San Francisco, Oakland, San Jose	2007	23.2%
952	Stockton	2007	76.4%
953	Stockton	2007	77.5%
958	Sacramento	2007	45.6%
968	Honolulu	2007	15.2%
970	Portland, Vancouver	2007	84.1%
971	Portland, Vancouver	2007	15.4%
972	Portland, Vancouver	2007	30.4%
974	Eugene	2007	22.1%
980	Seattle, Tacoma	2007	93.5%
981	Seattle, Tacoma	2007	34.4%
982	Seattle, Tacoma	2007	88.7%
984	Seattle, Tacoma	2007	75.4%
986	Portland, Vancouver	2007	99.0%
992	Spokane	2007	80.3%