
The Development Impacts of Highway Interchanges in Major Urban Areas: Case Study Findings

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The outcomes of a new highway interchange in a major urban area is difficult to predict, but some lessons can be learned by identifying the project situation and comparing it with historical experiences elsewhere. This document describes several case studies -- four areas outside Pennsylvania, and three within the Philadelphia region.

Each of these major highway interchanges had varying impacts on their surrounding communities. Some were clearly essential in turning around distressed areas and encouraging economic growth. Others did little to stimulate growth and revive a struggling economy, and some had a mix of significant positive and negative impacts.

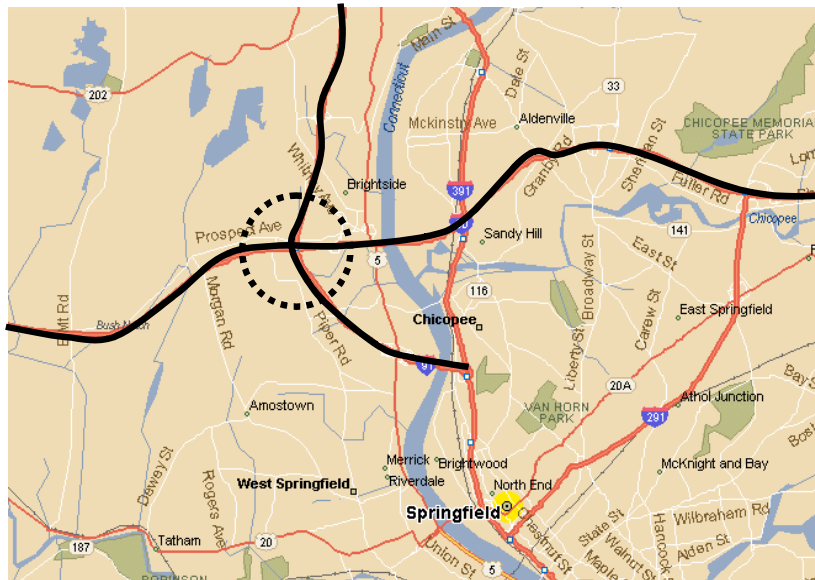
No two situations are ever identical. There are, however, important lessons to be learned from the experiences of communities elsewhere with major highway infrastructure projects. In general, the following was found:

- Interchanges between two highways most notably have an effect on an area's access to nearby business and commercial markets. Likewise, the area around a new interchange is more readily accessible from other regional markets. Improved accessibility can generate development pressures; natural and other land use limitations, as well as zoning regulations, can channel where and if such development occurs.
- The effects of an interchange on an industrial area can vary. Such areas often remain industrialized, as in parts of Houston, and opportunities for warehousing and distribution can be increased. In cases where there is a strong demand for space in nearby communities, such as in the case of Plymouth Meeting, old industrial sites are often re-developed for commercial and office use.
- Areas that are distressed will not necessarily experience an economic upswing as a result of an interchange. Some interchanges give developers a reason to build heavily in the area. Others have no effect on economic growth in struggling areas.
- The design of an interchange itself can have important implications for development potential in its vicinity. Sites adjacent to an interchange may suffer from aesthetic harm caused by a particularly large or poorly located interchange.

None of these examples is an exact replica of the situation in the project area. Some, however, share important characteristics with the current project, while others differ from it in equally important ways. For instance, the case of Conshohocken was selected in part because of the existence of an Enterprise Zone – a business incentive also in place in Lower Bucks. The experience in Houston, by contrast, demonstrates the implications for development in the absence of zoning regulations. The accounts that follow offer insight into several possible outcomes of the proposed interchange between I-95 and the Turnpike.

National Case Studies

Interchange between Interstate 91 and the Massachusetts Turnpike (Interstate 90) – Springfield, Massachusetts

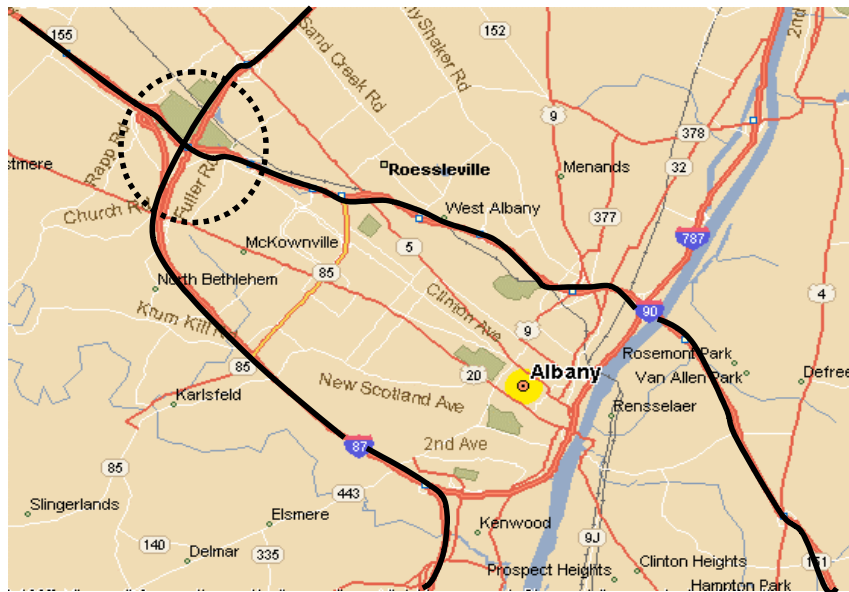


The connection between the Massachusetts Turnpike (east-west route) and I-91 (north-south route) is located in West Springfield, MA, near the Holyoke border. The Turnpike was built in the late 1950s-early 1960s. Interstate 91 was built in the late 1960s. There is actually no direct interchange between the Turnpike and I-91. Rather, the Turnpike exit puts the traveler onto a limited access connector road that goes for approximately one-half mile between the Turnpike and I-91. Prior to the construction of I-91, Route 5 (Riverdale Road) was the major north-south road in this area. Riverdale Road remains an active commercial road, and is easily accessed directly from the I-91, Exit 14 interchange.

Because of the limited access nature of the connector road, there is no major development directly along it. The mega-regional Holyoke Mall is located at Exit 15 off I-91, which is the first exit north of the Turnpike connector (Exit 14). The mall was built in the late 1970s, has expanded once, and has plans for a second expansion. It was clearly located at its current site because of direct freeway access to the area. The mall can now be accessed from I-90 via I-91 at its own exit (I-91, Exit 15) or from Riverdale Road (via I-91, Exit 14).

Overall, it appears that freeway access and market growth has driven development in this area. The local interchange with I-91 is the major source of access to the mall. While the Turnpike connector road was not the key motivation for the mall location, and there is no sign about the mall on the Turnpike, there is no doubt that this connection expands access to these and other businesses along the north-south I-91 corridor from points east and west. Planners also consider this connection to be important for future planned office / industrial development. In addition, the connection is undoubtedly important to continued commercial development along Riverdale Road south of I-90, which has direct access from I-90 at the interchange with I-91, and also has access from I-91 south of the Turnpike.

Interchange between New York State Thruway and Interstate 87 (The Northway) – Albany, New York



This interchange and associated access ramps are located within the City of Albany, NY, northwest of the central business district. The New York State Thruway was constructed as a toll facility prior to the establishment of the toll-free Interstate system. The original uptown interchange (Exit 24), which opened in the mid-1950s, connected to the Washington Avenue, a major commercial thoroughfare. When the first section of the Adirondack Northway (I-87) opened in 1960, a new interchange was constructed at this location to connect the Thruway with the Northway. The interchange was reconfigured in the mid-1980s.

The Thruway / I-87 interchange was constructed in an area then characterized by mixed uses. There are several conservation lands and parks near the interchange (north and west). A large municipal golf course (now the site of the State University campus) was located directly east of the interchange. Washington Street and Fuller Road housed a mix of commercial uses. Several large vacant, developable parcels were located to the south, west and east. The Albany County Airport, located several miles north of the interchange, was accessible from the site.

The interchange has influenced some of the land uses within several miles of its location. Most notably, Crossgates Mall is located directly southwest of the interchange. This super-regional shopping center opened circa 1980. The mall was named “Crossgates” because it is located at the Crossgates of the city – the interchange between I-87 and the Thruway. It is unlikely that the mall would have located at this site without the access provided by the interchange (as well as the availability of a large, undeveloped parcel of land). The mall advertises that one can come from Buffalo, Montreal, New York City, and Boston without hitting a traffic light until arriving at the mall. This mall has expanded since it was first constructed.

Colonie Center shopping mall is located one exit north on I-87, and is also accessible from the Thruway / I-87 interchange via local roads. This is another regional shopping center (although it has been superseded in importance by Crossgates). This mall also developed because of its proximity to the interstate. There is substantial commercial development along the local roads between the malls, including retail and office uses. Much of this development has occurred during the past forty years, since construction of the interchange and Interstate system.

One of the access roads leading to the interchange is characterized by warehousing facilities. Planners surmise that these businesses chose this spot because of proximity to the interchange and the highway network. Several hotels are located along Washington Avenue, which runs parallel to the Thruway in this area. The hotel owners have pressured the city to allow large signs (not in keeping with the zoning code) that could be read from the

Thruway. This interest in large signs visible from the highway suggests that these hotels believe that visibility from the Thruway and proximity to the interchange is a location advantage that will help them market their facilities. To date, the city has not allowed these signs.

The interchange is located in close proximity to the State University campus and a complex of state office buildings, and the Albany County Airport is located about five to ten miles from the interchange. These trip generators, as well as the commercial development and malls, all benefit from proximity to the interstate system and the major interchanges that serve them. However, the presence of the interchange was not considered instrumental in the decision of where to site the university, state office park, or airport.

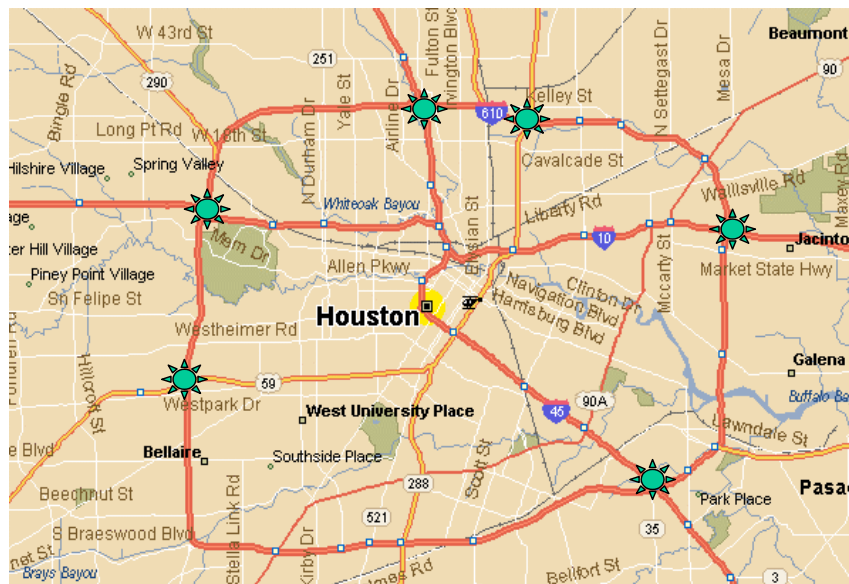
The extent of the land use impacts of this interchange has been tempered by several factors. First, there are several areas of sensitive environmental lands in close proximity to the interchange. Cook Park (city-owned) and Rensselaer Lake are located directly northwest of the interchange. The Pine Bush Preserve, a state natural area, occupies several hundred acres north and west of the site. These areas are all conservation lands that cannot be developed. Moreover, the City landfill is located just northwest of the interchange, and represents another large parcel of undevelopable land.

The City of Albany has not marketed this area aggressively. No changes have been made to land use policies in an effort to encourage development in close proximity to this interchange. Redevelopment efforts in the City are focused on the downtown area.

Conclusions from Springfield and Albany Case Studies

- Without an effective marketing campaign, an interchange is not enough to spur development.
- Major facilities, such as airports, government facilities, or recreation areas can limit the development opportunities that might otherwise be spurred by a new interchange.
- Adjacent access roads can become prime business locations, trading on proximity to the new interchange or connected highways.

Interchanges with the Sam Houston Toll Road – Houston, Texas



The Sam Houston Toll Road (SHTR) is a limited-access toll facility that forms a ring road around the City of Houston. It intersects with I-10 on both the east and west sides of the city, I-45 on both the north and south sides

of the city, and US 59 on both the north and south sides of the city. All of the interchanges with these interstates and the toll road have been built since 1986.

Houston is a city of approximately 1.7 million people that encompasses 539.9 square miles. Much of its growth has occurred in the past twenty-five years, and it is characterized by a pattern of low-density sprawl. Houston does not have zoning; therefore, it is difficult for the city to direct growth through land use regulations.

Interstate 10 / SHTR – Interchange at East Side of the City

Interstate 10 intersects with the SHTR on both the east and west sides of the City of Houston. Prior to construction of the interchange on the city's east side, the location of the interchange was an area characterized by warehousing and industrial land uses.

The area in the vicinity of the I-10 / SHTR interchange on the east side of the city has not experienced notable new development since construction of the interchange. The area continues to be characterized by warehousing and industrial land uses, which likely utilize the interchange. The city and economic development associations have not focused any efforts on development of this area.

Interstate 10 / SHTR – Interchange at West Side of the City

Prior to construction of the interchange on the city's west side, the location of the interchange was characterized as a commercial area. Several strip malls, car dealerships, and office buildings were located immediately adjacent to the site where the interchange was subsequently built. This type of mixed commercial, auto-oriented land use is typical of the land uses on the west side of the city. Development is not dense, and development parcels were available within a several mile radius of the interchange, and accessible from the interchange via local and arterial roads.

The interchange between I-10 and the SHTR on the west side of the city was completed in 1986. Land uses around the interchange, which is located 10 miles from the central business district, remain primarily commercial. Frontage roads serve all the land around the interchange. The commercial area located in the southeast quadrant of the interchange, which includes retail shops, a theater, and other commercial uses, has grown substantially since construction of the interchange, and is thriving. The Katy Mills mall (a major regional mall) opened on October 28, 1999, about three miles from the interchange. The city believes the proximity of the interchange contributed to the site location for this mall.

In contrast to the positive impacts on commercial land uses described for the above-mentioned sites, a small commercial strip mall located in the southwest quadrant of the interchange closed soon after the interchange was constructed. City planners think that the multi-story concrete interchange created an uninviting environment for this strip mall, located immediately adjacent to, and in the shadow of, the interchange.

Interstate 45 / SHTR – North Side of the City

Interstate 45 intersects with the SHTR on both the north and south sides of the City of Houston. The interchange on the north side of the city is located within several miles of the Houston airport. Prior to construction of the interchange, land uses in that area were characterized by auto-oriented commercial uses, including strip malls, car dealerships, and low density office.

The interchange between I-45 and the SHTR on the north side of Houston is surrounded by commercial uses similar to those found near I-10 west. A strip mall, several car dealerships, and several offices are also located in close proximity to the interchange, and these uses are thriving. One of the car dealerships was located in the area prior to construction of the interchange, while another has opened since the interchange was built. The city credits the success of these commercial uses to improvements to the major thoroughfares serving these uses.

One small shopping mall experienced substantial decline after the interchange opened, and, despite efforts by a local business association to foster business growth there and elsewhere in North Houston, it remains only one-third occupied. The interchanges and connecting bridges overshadow this mall.

Interstate 45 / SHTR – South Side of the City

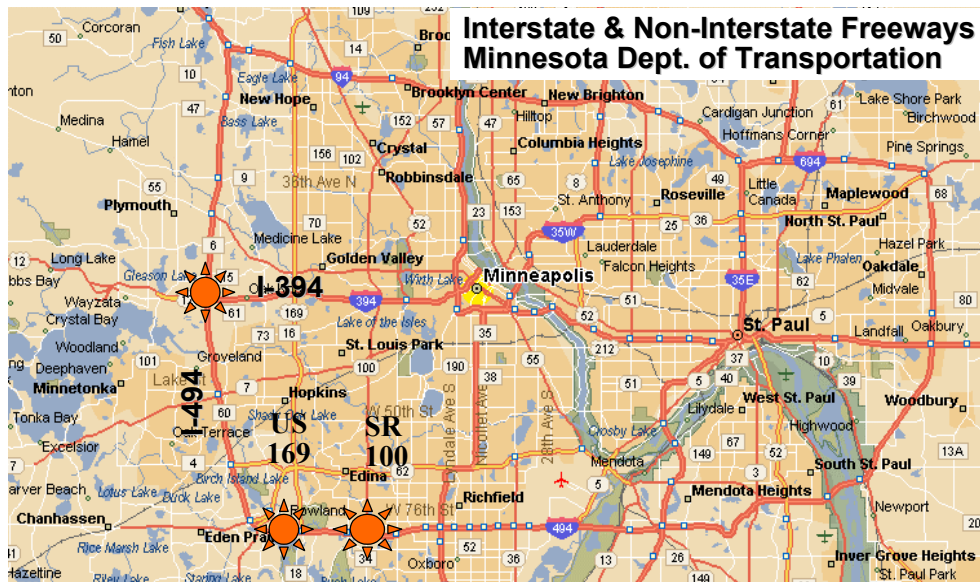
Prior to construction of the interchange on the city's south side, the area in the vicinity of the interchange between I-45 and the SHTR south of the city was characterized by limited commercial development.

On the south side of Houston, the I-45 / SHTR interchange is located in a warehousing area. Several office buildings in the vicinity of the interchange have been converted to warehouse facilities within the last decade. There has not been significant change in land uses since the interchange was constructed in 1996.

Conclusions from Houston Examples

- Planners in Houston do not believe the interchanges and access ramps have had significant impacts on land uses, but instead believe the interchanges and ramps support the continuation and growth of established commercial development patterns.
- The interchanges do appear to have influenced the siting of at least one major regional mall. There is some feeling that some retail uses directly adjacent to the interchange may suffer because the interchanges are large, unattractive structures that creates shadows and a generally unpleasant environment.
- Because there is no zoning, the city has no ability to impact development patterns.
- Houston Metro has located park and ride lots at each of these interchanges, but these do not seem to impact surrounding land uses.

Interchanges with Interstate 494 – Bloomington, Minnesota



The City of Bloomington, MN is located eight miles south of downtown Minneapolis. The city has a population of 86,000, while the population of the metropolitan area is 2.7 million. Bloomington is a community of above-average income levels.

I-494 goes around the south and west of Minneapolis, and together with I-694 forms part of a ring road around the Twin Cities. I-494 was built in the 1960s. At the time of its construction, interchanges were built with both State Route 100 and US 169, which are the two case study sites. The interchange with US 169 is currently undergoing reconstruction. Major improvements are also planned for the SR 100 interchange, including the addition of a lane on SR 100 and construction of a new bridge over I-494. New interchanges were also built in

1991 at the intersections of I-494 with State Trunk Highway 77 and 24th Avenue. Those interchanges were built specifically to serve the Mall of America.

I-494 / US 169 Interchange

The area in the vicinity of the I-494 / US 169 interchange was developed prior to construction of the interchange. Land uses are somewhat constrained by natural features – there are several lakes within a short distance of the interchange. A large golf course has been in the northeast quadrant of the interchange for many decades. Training fields and offices of the Minnesota Vikings football organization occupy the northwest quadrant. (Its training facilities, playing fields, and headquarters predate the interchange as they have been located here since the team came to Minneapolis.) In the southwest quadrant, older single family homes oriented toward Anderson Lake also predate the construction of the interchange. An elderly housing campus (including townhouses, assisted living units and nursing home facilities) is located in the southeast quadrant, and has been there for several decades. Single family housing dominates the land uses within one to two miles south of the interchange. There also are several hundred acres of parkland south of I-494 in the vicinity of this interchange.

The US 169 interchange was built when Interstate 494 was constructed. No notable change in mix of land uses has occurred since its construction, although some are anticipated. The interchange currently is being reconstructed and upgraded to better accommodate traffic on I-494 and the six-lane SR 169. The golf course and Vikings training facilities are both large, stable land uses that significantly limit new development opportunities north of the interchange.

Lakes and parkland to the south limit land use options south of the interchange. The elderly housing campus in the southeast quadrant has expanded in recent years. The degree to which its expansion is due to the interchange is unclear, although access to the site from throughout the metropolitan area is important to residents of the facility and their families, so in that sense it was a positive factor for the expansion decision.

The interchange (especially with the new design to accommodate more traffic) has had an impact on the single-family residential neighborhood in the southwest quadrant. The city does not believe this area is a good location for residential uses, and many of the residents of the neighborhood have expressed concern about the negative impacts of the interchange on their community. A private sector developer is interested in redeveloping this area as an office park. The developer believes the combination of the location near the interchange and on the lake is ideal for an office park. The city agrees that office would be a better use for this site, but is not taking steps to redevelop the area. The city plans to let the residents take the lead on any redevelopment initiative, but has expressed a willingness to help land owners who would be displaced by such a redevelopment. The city does not expect this land use change to occur for at least ten years, due to the sensitivity involved with relocating residential uses.

I-494 / SR 100 Interchange

The area between the SR 100 interchange and the France Avenue interchange to the east was historically a commercial / industrial corridor. All of the land in the corridor was developed for office or manufacturing uses prior to construction of the SR 100 interchange. Single family residential neighborhoods have characterized the area south of the interchange for decades. There are several parks and playgrounds south of I-494 in this area.

The area in close proximity to this interchange and adjacent to the interstate to the east was historically, and remains, predominantly commercial. As a result of planning and zoning policies, retail and service land uses are located immediately adjacent to the interchange (including auto dealerships, hotels, and restaurants), while office uses predominate between the SR 100 interchange and the France Avenue interchange to the east. (These policies have not changed as a result of the interchange. The only modifications that have been made to zoning have been to allow planned unit commercial development to provide some flexibility with density and site coverage.)

While the existing land uses mirror the land uses that were in this corridor when the interchange was built in the early 1960s, the area has undergone substantial redevelopment. The Bloomington city planner stated that there has been substantial developer interest in this area, and that a combination of strong market forces and the interchange are driving redevelopment in this area. (There are no vacant lots in this corridor – all new development is a result of redevelopment.) The city is not promoting the area, but is working with the development community on redevelopment efforts. Two new office buildings are under construction, and the city is working with a developer interested in constructing a third office park. Near France Avenue, a 300,000 square foot industrial building was demolished and replaced with three new office buildings in recent years. Assessed valuation and property tax revenues have accordingly increased.

I-494 / Trunk Highway 77 Interchange

This interchange is located adjacent to the Minneapolis international airport (to the northwest). Older single family homes are located to the northwest of the interchange. Commercial and industrial uses are immediately adjacent to I-494 to the southwest, with older single family residential land uses further southwest. The southeast quadrant included a mix of uses prior to construction of the interchange. A large eighty-acre site one block from the interchange housed the sports arena where the Vikings and Twins played formerly. There is a small residential neighborhood south of this site. Lake Hennepin and Lake Dakota are located to the southeast.

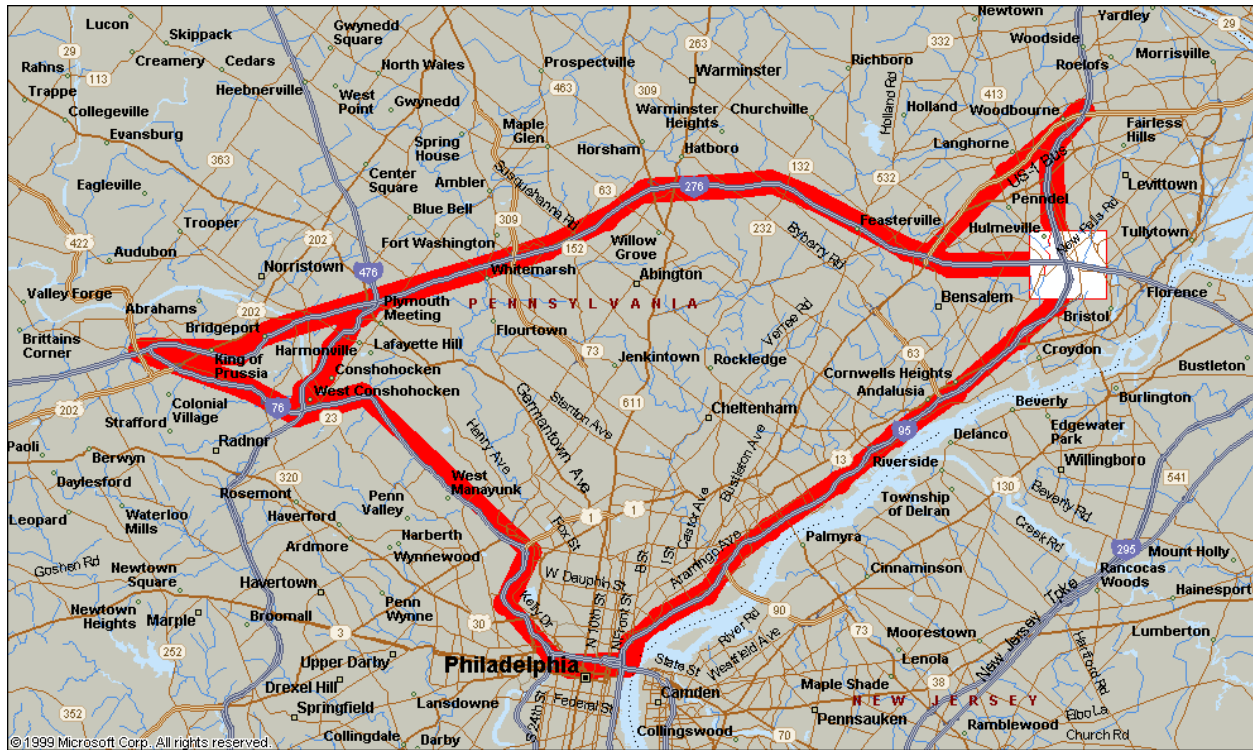
Until 1991, no interchange existed between I-494 and Trunk Highway 77. In the past, the City of Bloomington had approached the state about providing an interchange, but the state claimed that traffic levels did not justify the expenditure. In the late 1980s, a retail developer approached the city about using the old stadium site for a major super-regional shopping center – the Mall of America. The plans called for 4.2 million square feet of retail, hotel and entertainment uses. The city was interested, but the developer would not proceed with his development plans without an interchange between I-494 and Trunk Highway 77. An agreement for construction of an interchange was reached between the state, the city and the developer. The city floated municipal bonds worth \$80 million to finance the interchange, as well as other infrastructure investments. The state agreed to repay the city \$5 million per year for 10 years, for a total of \$50 million. The developer paid nothing, and refused to break ground on the mall until the infrastructure was in place. The interchange was finished in 1991, and the mall in 1992. The mall has been an international success, and the city and state have more than recouped their investments in the form of real estate and sales taxes, and spin-off impacts. A second phase of development at the mall is planned, which will add an additional 3 million square feet of office, retail, hotel and entertainment uses at the site.

Both the airport and natural features limit additional development in the vicinity of this interchange. The safety zone for the new north-south runway at the airport limits what can be built south of the airport. Large lakes limit development to the southeast.

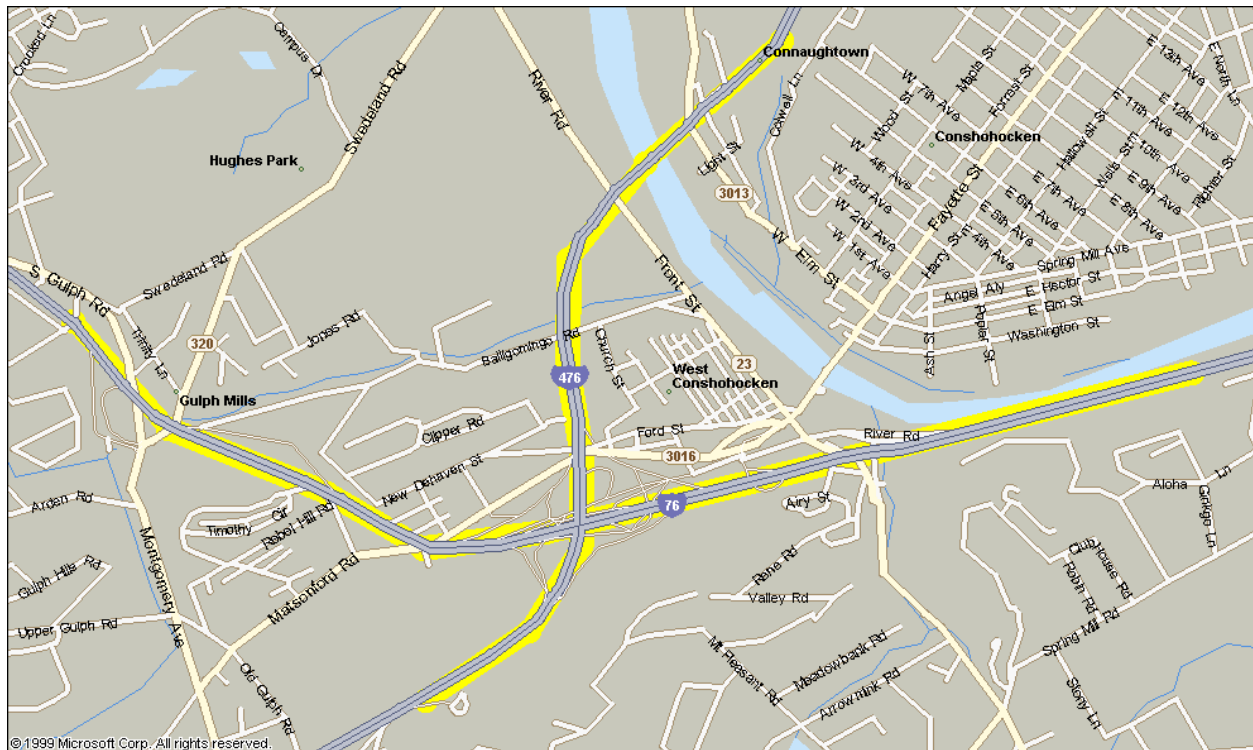
Conclusions from the Minneapolis Examples

- Numerous factors influence the land use impacts of interchanges. Areas characterized by large, stable uses will be less likely to experience land use impacts than areas with substantial parcels of undeveloped land, or land available for redevelopment. Topographic and environmental characteristics of the surrounding area also can limit development potential.
- Market forces will drive development – without market demand and competitive sites, land use impacts will be limited, while a strong market combined with the improved access provided by an interchange can result in substantial development opportunities.
- Finally, public policies ranging from zoning to infrastructure investment can influence how an interchange will impact land uses.

Greater Philadelphia Regional Case Studies



Interchange between Interstate 476 (The Blue Route) and Interstate 76 (The Schuylkill Expressway) – Conshohocken, Pennsylvania



In the mid-1960s, the Montgomery County Planning Commission warned that Conshohocken's commercial and industrial bases were failing, and that the borough would need to undergo considerable redevelopment to sustain its economy. As Conshohocken suffered from a decline in jobs and an aging population, Council officials sought to revitalize the area.

Redevelopment projects were proposed almost immediately. One project – a mix of retail, office, hotel, and residential space – did not receive funding from the Department of Housing and Urban Development until eight years after the borough applied for it. By that point, in 1974, the redevelopment plan was outdated and the King of Prussia and Plymouth Meeting malls had already been constructed.

Nevertheless, the borough cleared land for the designated redevelopment area, displacing many households and businesses. Another plan for development proposed a shopping center on the vacant parcel, but the project could not be realized because of inflation and high interest rates. Twenty-four acres of space remained undeveloped for several years.

Both Conshohocken and West Conshohocken Boroughs were by the early 1980s considered to be in a state of hopeless decay. Their economies had long relied on heavy industry located along the Schuylkill River, and the gradual closing of their once-thriving steel and tire plants came at the expense of more than 4,000 local jobs. The prospect of an interchange between the Schuylkill Expressway and the Blue Route was therefore generally embraced as a crucial element to the survival of Conshohocken. The Expressway already existed as an east-west route through West Conshohocken Borough and ran south of Conshohocken Borough. The Blue Route, however, was a proposed major north-south highway that would connect to the east-west Pennsylvania Turnpike and its Northeast Extension at the northern end, and to Interstate 95 at the southern end.

Impacts of the Interchange on Land Use

Upon completion of the Blue Route, a development boom was already well under way in Conshohocken. The area's first major office park, the Pleasant Valley Business Center, had been constructed by Meehan-Weinmann in 1983 and was almost fully occupied by 1987. In 1987, Acorn Development began construction on the Four Falls Corporate Center, and Oliver Tyrone Pulver began its enormous, ten-year Tower Bridge project. The construction cost for each of these projects was about \$70 million, \$60 million, and \$300 million, respectively.

This construction boom was spurred by the expected completion of the Blue Route. While most people involved in real estate could not envision the Conshohocken area as much more than dying industrial boroughs, these three developers invested heavily in the designated redevelopment area, insisting that the opening of the Blue Route would result in a transformation of the town. The president of Meehan-Weinmann said: "Six years ago, a real estate friend of mine came to Conshohocken and he laughed at us.... What we saw was a town that was ideally situated between Philadelphia and King of Prussia, and we saw that with the possibility of the Blue Route being finished, we'd be in the heart of a major interchange." Indeed, his firm began construction two years before a federal court ensured once and for all that the highway would be completed. The principal of Pulver, referring to that court decision, said: "The week it happened, we started to acquire property.... It will succeed because the location is so incredibly great." Both Pulver and Acorn characterized their redevelopment projects as the first steps toward creating a "city in the suburbs."

Development around the interchange has taken place primarily on old steel plant sites and brownfields. While West Conshohocken Borough has enjoyed most of the redevelopment boom, development is beginning to stretch eastward along the river, into Conshohocken Borough.

It is generally agreed that construction of the Blue Route was the main reason for Conshohocken's economic turnaround. However, growth was accelerated in part because of the area's proximity to the booming real estate markets of King of Prussia and Radnor. Business growth, moreover, was strongly encouraged with the establishment of an Enterprise Zone.

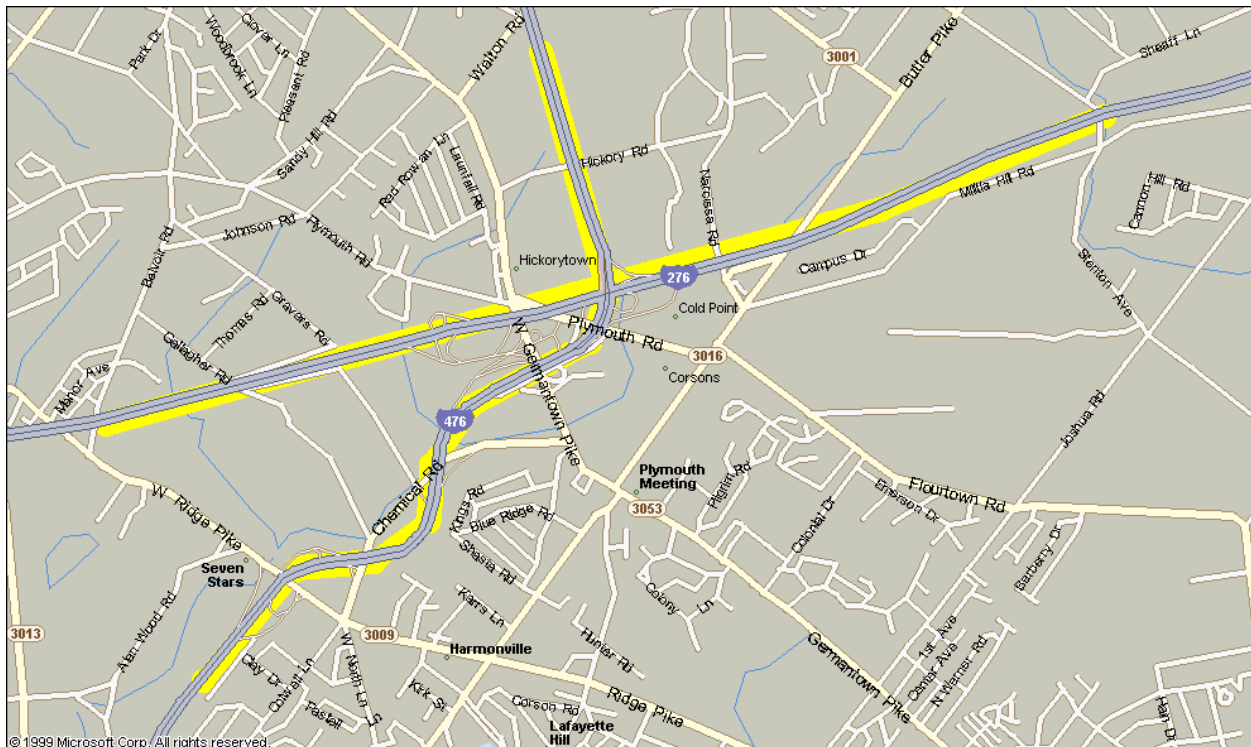
Financial Statistics

Although assessment figures do not typically undergo rapid change over time within a jurisdiction, real estate in West Conshohocken experienced unusually explosive growth in assessed valuation between 1987 and 1997. Its increase of 131.8% in that borough far outpaced assessment growth in the other municipalities included in these local case studies. This remarkable rate of growth is primarily attributable to almost constant construction on projects such as Tower Bridge, and therefore the steady addition to the borough of new property to be assessed. By contrast, real estate in Conshohocken Borough, which had not yet experienced the same level of construction, did not increase greatly in assessed value over that ten-year time period.

Market value of real estate in West Conshohocken also increased rapidly, at a rate of over 500%. Market value per capita, furthermore, increased at a greater rate in the borough than in any of the other local case study jurisdictions.¹ Conshohocken Borough also experienced significant growth in these statistics, but at a much slower pace. As mentioned, development has only recently begun to spread across its border from West Conshohocken.

Revenues collected by both boroughs, particularly West Conshohocken, increased significantly between 1987 and 1997. By far, the most notable increase in Conshohocken's revenues was in the amount collected from its business privilege tax. For West Conshohocken, the greatest increase was in its earned income tax; however, it experienced considerable increases in almost all of its other tax revenues as well, except for its real property transfer tax.

Interchange between Interstate 476 (The Blue Route / Northeast Extension) and Interstate 276 (The Pennsylvania Turnpike) – Plymouth Meeting, Pennsylvania



¹ Source: PA Department of Community and Economic Development (formerly Department of Community Affairs), Local Government Financial Statistics, 1987, 1997

The area around the interchange between the Pennsylvania Turnpike, the Blue Route, and the Turnpike's Northeast Extension (now re-designated as I-476, along with the Blue Route) is located within Plymouth Township and adjacent to the border of Whitemarsh Township. It was once characterized by commercial use north of the Turnpike and by industrial and intended residential use south of the Turnpike. In the northwest quadrant of the interchange was the Plymouth Meeting Mall, which is still in existence. Some vacant parcels south of the Turnpike, though zoned for residential use, remained undeveloped. On the other side of Plymouth Road was the George Washington Inn. Chemical Road was a heavy industrial district, long in decline and formerly occupied by the Kaiser Aluminum Company and Victory Metals plants.

Impacts of the Interchange on Land Use

Before completion of the Blue Route, the Turnpike and its Northeast Extension already converged in Plymouth Meeting. The lack of access to and from the south, however, was a deterrent to growth until there was a sense that the Blue Route project would indeed be completed. As Plymouth Township's old industrial base declined, developers in the 1980s began to purchase land for re-use as retail, office, and hotel space, hoping that the area would eventually become a "mini-King of Prussia." An Ikea furniture store opened in 1985, presumably anticipating the Blue Route's completion. Plymouth has since made many changes to zoning patterns within the township in order to accommodate the demand for commercial property.

The most ambitious and anticipated project in this area to date is the Metroplex at Plymouth Meeting, an enormous complex at Chemical and Gallagher Roads featuring big box retail and hotel and office space. The project was delayed for years by zoning problems, and further delayed because of the need for an environmental cleanup, but it is currently under construction.

Elsewhere in the vicinity of the interchange, vacant residential parcels north of Plymouth Road have been re-zoned for mixed uses. South of Plymouth Road, the former George Washington Inn has been replaced by office space. The site of the former Victory Metals plant has also been re-zoned, with office space under construction. A Wal-Mart and Sam's Club have been proposed at the intersection of Butler Pike and Plymouth Road. That area, originally zoned for residential use, has been re-zoned to accommodate retail and office space.

Since the opening of the Blue Route, the Plymouth Meeting Mall, once financially distressed, has undergone considerable renovation and revived itself. A large movie theater opened there recently, and Ikea continues to thrive. As one major developer remarked, "Plymouth Meeting looks like King of Prussia twenty-five years ago."

Although the completion of the Blue Route was a major reason for the current development boom in Plymouth Meeting, other factors contributed to the area's growth as well. For instance, one reason for its appeal to developers was its proximity to the mostly-built-up King of Prussia. Excess demand for real estate in King of Prussia has forced developers to look for the "next best" area, and they have begun to focus much of their attention on places such as Devon and Plymouth Meeting. Moreover, the general trend toward sprawl in the Philadelphia region has attracted jobs and residents to the suburbs, and the booming economy of the last several years has resulted in explosive growth.

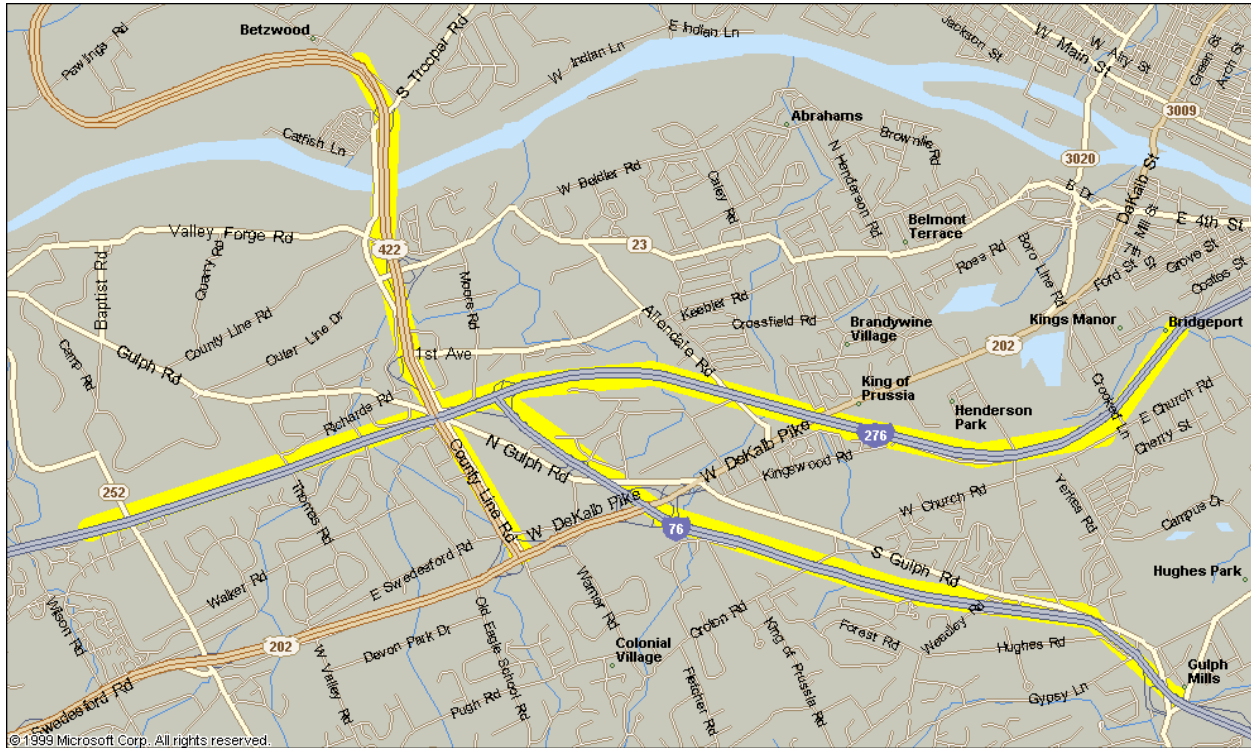
Financial Statistics

The area known as Plymouth Meeting comprises parts of two townships, Plymouth and Whitemarsh. These two jurisdictions displayed very similar rates of growth in assessed and market valuation of real estate between 1987 and 1997. However, Metroplex and the long list of other development projects underway in the interchange area will all be located entirely within the limits of Plymouth Township. This large-scale construction, only recently begun, will add considerably and rapidly to the assessed value of real estate in the township.

Between 1987 and 1997, Plymouth began to collect an earned income tax, raising its revenues significantly. Whitemarsh did not levy such a tax, thereby lagging behind Plymouth in growth of revenue collection. The slight decline in Plymouth of real estate taxes is associated with a decrease in the property tax rate, from 32.5 to

30 mills. Conversely, real estate taxes collected in Whitmarsh rose by almost 60%, with a concurrent increase in millage from 26.44 to 36.²

Interchange between Interstate 76 (The Schuylkill Expressway) and I-276 (The Pennsylvania Turnpike) – King of Prussia, Pennsylvania



The Pennsylvania Turnpike and Schuylkill Expressway are old highways, having run through the Philadelphia region for four decades. The interchange between these highways – as well as Routes 202 and 422, two other major thoroughfares – is located in King of Prussia, part of Upper Merion Township. Several hundred acres of farmland once occupied the current interchange area.

Impacts of the Interchange on Land Use

The confluence of these highways is now a major regional hub characterized by explosive commercial growth. Development around the interchange has taken place over several decades, since the highways involved have existed for a long period of time.

The arrival of superhighways and major roads in the area led to a steady transformation of King of Prussia from farmland into the “edge city” it has become. Located in Upper Merion Township, a jurisdiction that has not traditionally opposed or planned for growth, King of Prussia has developed a dense concentration of retail space, hotels, and office parks, most notably the Court and the Plaza which constitute the mall. Like Conshohocken and Plymouth Meeting, but to a greater extent, its growth has been accompanied by heavy traffic congestion. As early as 1983, residents had begun lobbying against further development. A *Philadelphia Inquirer* article from that year wrote:

² PA Department of Community and Economic Development (formerly Department of Community Affairs), *Local Government Financial Statistics*, 1987, 1997

As crowded as it is, as huge as its mega malls are, as choked as its roads have become, the current zoning laws in Upper Merion Township would permit nearly twice the existing retail and commercial business and almost three times the existing office and industrial space.

Throughout the 1980s and through the boom of the 1990s, however, development persisted, particularly at the mall.

King of Prussia has long been well-situated for growth. Having been located at an established interchange of major roads for many years, its growth has been sustained by its accessibility to other important business markets, such as Plymouth Meeting, Radnor, and Philadelphia.

Financial Statistics

Because King of Prussia has been located at a major interchange for many years, growth in the area has been spread out over a long period of time. Upper Merion Township is the sole municipality to encompass the interchange area. The table includes statistics for the years 1977 and 1997, to reflect the protracted nature of growth in the area relative to Conshohocken and Plymouth Meeting, whose interchanges are considerably newer.

However, despite the long-term existence of the King of Prussia highway interchange, the area has continued to demonstrate rapid growth. Over this latest twenty-year period, market value of real estate in Upper Merion rose significantly (591.6%). Total assessed value did not grow at a particularly high rate, but its absolute increase of over \$50 million is nevertheless significant. Both total assessed and market value of real estate in the township are much greater in absolute terms than in any of the other local case study jurisdictions, because development there has taken place over many decades.

Revenues, too, have grown steadily in Upper Merion over the years, particularly from the business privilege tax. Indeed, all tax revenues increased greatly between 1977 and 1997. The township did not collect an earned income tax, but it raised its property tax rate from 11 to 31.5 mills.³

Conclusions from Greater Philadelphia Case Studies

- The combination of Enterprise Zone incentives and a new interchange can significantly alter the economic trajectory of a declining community, as is the case in Conshohocken and West Conshohocken.
- Markets linked by a network of high-speed interstates and connections, as in this area, will fuel development and growth in each other. The success of one market can lead to increased activity in adjacent markets, including infill and redevelopment of older properties.
- An over-taxed local road network, putting increased pressure on the interstates and major highways, can limit growth potential.
- The growth of the Philadelphia economy is in the suburbs, and new developments in a suburban location can attract high-quality tenants willing to pay more for an office in a premiere location.

³ Source: PA Department of Community and Economic Development (formerly Department of Community Affairs), *Local Government Financial Statistics, 1977, 1997*