I. EXECUTIVE SUMMARY

States and localities throughout the United States are pursuing the development of high speed, passenger rail systems. Such major improvements in the transportation infrastructure promise to better link Ohio communities with the world, ameliorate automobile congestion and pollution, stimulate economic development, and improve the quality of life. However, because of the substantial investment required for high speed rail, a careful, robust analysis of the economic impacts is imperative to ensure that decisions are made to maximize potential net benefits and serve the public interest.

Gem Public Sector Services (GEM) was retained by the Ohio Rail Development Commission (ORDC) to evaluate the economic benefits of high-speed rail on Ohio's state and local economies. The Ohio Hub is an intercity passenger rail system designed to serve all of the major cities in Ohio and link them with the Midwest Regional Rail System with trains capable of reaching 110 mph. The Midwest Regional Rail System will provide interstate travel throughout the great lakes states and the Midwest region of the United States.

The objectives of this study are twofold:

1) Evaluate the methodologies and conclusions used by the transportation consulting firm, Transportation Economics and Management Systems, Inc., or TEMS, to explore and quantify the economic impacts of the Ohio Hub, and

2) Use alternative methodologies to evaluate the economic development potential and impacts of the Ohio Hub and provide supplemental information and analysis to either support or refute the conclusions provided by TEMS.

The following report is divided into five major sections that relate to the economic impacts of Ohio Hub and our evaluation of the TEMS analysis. The following sections summarize the main observations and conclusions of the GEM Public Services report.

A. Evaluation of TEMS Methodologies

Transportation Economics and Management Systems (TEMS) conducted a preliminary analysis of the feasibility of high speed, passenger rail in Ohio. Gem Public Sector Services reviewed key aspects of the TEMS methodologies used to estimate the potential economic feasibility and impact of constructing and operating a high-speed passenger rail system in Ohio. Our review served three main purposes:

1. Provide a bird's eye review of the TEMS methodology;

2. Develop an understanding of economic benefits projected by TEMS and, when appropriate, use them as inputs into the GEM impact analysis; and

3. Build a foundation for a study that will use alternative approaches to estimating potential rail impacts and complement the TEMS analysis.

Previous work by TEMS was reviewed by Gem Public Sector Services based upon an understanding that their initial studies were intended to be at the feasibility level of accuracy. This report assumes that readers will have a basic understanding of the Ohio Hub High Speed Rail planning process.

The review of the TEMS analysis led to seven observations and conclusions by the Gem Public Sector Services research team:

1. *TEMS employed a reasonable, appropriate and professionally acceptable discount rate for evaluating long-term benefits and costs of the Ohio HUB project.* TEMS employed a large-scale model to estimate the benefit-cost and the operating cost ratios for the Ohio Hub. The benefit-cost ratio of 1.24 suggests that the project is economically justifiable in the sense that it creates total economic benefits in excess of costs. The real discount rate used in the benefit-cost calculations of 3.9% is acceptable for evaluating long-term projects.

2. *The TEMS ridership projections are reasonable and based upon generally acceptable forecasting methods and principles*. The estimated economic benefits used in the benefit-cost calculations are based upon underlying ridership projections provided by the TEMS model. TEMS used a modified gravity model to project ridership. TEMS projections increase directly with population and regional per capita income and decrease with travel costs. Other factors such as quality of service, interconnectivity with the Midwest Regional Rail System (MWRRS), and a bus feeder system at major stations are also important factors in the ridership projections.

3. *The Ohio HUB system is projected to cover its own expenses and return an operating profit to the investor if built and implemented as planned*. TEMS estimate of the operating cost ratio likewise depends upon ridership estimates since ridership drives expected operating revenue and costs. Operating costs are based upon engineering estimates for operating a high speed rail system. The positive operating ratio of 1.23 in 2015 and 1.39 in 2025 suggest that, once built and fully operational, the Ohio HUB will generate revenue in excess of operating costs. This suggests the potential for a sustainable long-term business model for the ownership and operation of the Ohio HUB.

4. *The TEMS calculations and ridership projections are reasonable, and indicate that the Ohio HUB will cover its operating costs.* Our analysis concurs with this assessment of the critical importance of a joint public-private partnership. Private capital markets are unlikely to finance large, long term projects such as the Ohio HUB if revenues are based solely on fares. Fares, as the TEMS analysis finds, will cover operating costs, not full costs (initial capital investment plus operations). Our analysis agrees with TEMS that Federal and state subsidies of capital construction costs are justified based on the benefit cost analysis. Public subsidies at the initial stages will be necessary to stimulate the development of high-speed rail services in Ohio as well as in other states. Moreover, because of the size of public support given highway transportation compared to passenger rail, imbalances in public funding of highway vs. rail transportation, and because of the necessity of and benefits from interstate connectivity implied in a national high speed rail program, the majority of the capital subsidy ought to come from the Federal government.

5. *A successful high speed passenger rail network is conditional upon several critical factors.* First, to be economically successful as a joint public-private partnership, the Ohio HUB must be constructed and managed to provide high quality, high-speed rail service. The trains must have sufficient speed, capacity and reliability to be competitive with the automobile for intercity trips in Ohio. Second, the system must provide attractive car facilities and comfort for passengers and the trains must operate on time. Finally, to achieve predicted levels of ridership, the Ohio HUB must be integrated into the larger Midwest and national high speed rail systems. A regional bus feeder system to draw potential riders from a larger area within regional markets is also an important factor built into projected ridership and the benefit-cost and operating ratios. The TEMS methodology estimates that interconnectivity and a bus feeder system jointly add about 35 percent to projected ridership. Timely construction and ramp-up will also be important to success.

6. *The construction and operation of the Ohio HUB has the potential to generate localized economic impacts along the four corridors and at the 18 stations in Ohio.* The TEMS proprietary economic rent model, RENTS, provides a reasonable and professionally sound method for estimating the localized aggregate economic impacts along the corridors and at the stations; however, the methodology is not sufficient to estimate the full induced investment and economic development effects that could occur. The RENTS model is based upon the general principle that economic rents fall with distance to main access points, such as train station. Aggregate rents will depend upon traffic flows at the stations and upon additional community or regional investments in retail, commercial and residential properties at or near the train stations. The key point that we stress in our analysis of RENTS is the importance of community response to new economic opportunities as high speed rail service comes to the local regions. RENTS provides an estimate of some theoretical investment and economic development opportunities but dialogue with the local communities will be necessary to uncover the likely economic development impacts and localized economic benefits of the Ohio HUB. RENTS is a projection tool that alone cannot capture the full range of potential localized economic impacts of the Ohio HUB.

7. *With Federal sharing of capital construction costs, the Ohio HUB is an economically feasible project for Ohio and its future.* This is the bottom line conclusion of the TEMS report on the Ohio HUB and one in which GEM concurs.

B. Input/Output Summary and Implications

Gem Public Sector Services conducted an independent assessment of the potential economic benefits (impacts) of the proposed Ohio Hub using a more traditional "input-output" (I/O) approach. I/O analysis uses industry-level economic "multipliers" calculated by the U.S. Department of Commerce to estimate the economic impacts of project spending on employment, income, and consumer expenditures. The multipliers represent the fact that new dollars being spent on the project will continue to circulate within the Ohio economy after their initial injection into the state's internal circular expenditure/income flow. The analysis of the short-term impacts focused upon the construction impacts as well as the on-going Operations and Maintenance (O&M) expenditures associated with operating the high speed passenger rail service.

Gem Public Sector Services' findings suggest that the economic benefits may be significant and will serve as an aggregate demand stimulate to counties and cities along the Ohio Hub as will as many of Ohio's industries. Opportunities at the community level also exist for transit oriented development but the benefits of these long-term investments are not addressed in this report.

System Construction Impacts

Ohio will receive approximately $2.38 billion in direct construction expenditure benefits over the planned 8-year construction cycle of the Ohio Hub project. The total economic impact to Ohio will be approximately $6 billion. These expenditure benefits will be felt in all of Ohio's major cities, including Cleveland, Columbus, Cincinnati, Toledo, Dayton, Middletown, Springfield, Youngstown, Akron and Mansfield, as well as in rural counties and communities across Ohio. Virtually all of Ohio's major industries will be directly affected but the construction, manufacturing, retail and distribution sectors will experience the largest output gains.

Gem Public Sector Services estimates that about 7,120 jobs will be added annually to Ohio's economy during the construction phase of the project and aggregate household earnings will rise by about $1.84 billion. The job and income gains will be felt mainly in the urban counties along the Ohio Hub but rural counties traversed by the Ohio Hub system and non-Ohio Hub counties will experience gains as well.

Continuing Operations Impacts

The Operations and Maintenance expenditures needed to provide the level and consistency of high speed passenger rail service in Ohio, consistent with TEMS projections, will likewise generate impacts on Ohio's economy. The O&M expenditures at the 2025 level projected by TEMS, if maintained in real terms, over a 40 year period will add additional industrial output, household income and employment to Ohio's economy. Unlike infrastructure expenditures, which will largely expire after the construction cycle ends, O&M expenditures will continue as long as the Ohio Hub remains operational. The GEM research team estimates that the annual gain in industry output will be approximately $290 million. Total household income will rise by about $74 million annually and about 1,761 new jobs will be created to support the direct and indirect demand associated with operating and maintaining the Ohio Hub system.

Regional Impacts

As a terminal point on the 3-C corridor, the Cleveland metropolitan area can expect to see increases in economic output by about $1.5 billion, household earnings by $414.5 million, and employment by 11,210. Columbus and Cincinnati would also experience significant increases in regional economic output. Output in Columbus is likely increase by $800 million as almost 7,000 jobs are added to the regional economy. Similarly Cincinnati can expect nearly 5,000 jobs to be created from the Ohio Hub as regional output increases by $550 million. Dayton, Toledo, Youngstown and Akron will each see economic output increase by hundreds of millions of dollars and thousands of jobs added to their regional economies. Overall, the four rail corridors are expected to boost metropolitan economic output by $4 billion and 33,288 jobs.

Industry Impacts

Some industries would benefit more than others during the 8 year construction phase. Ohio's construction industry would reap $2.4 in economic output, or about 40% of the total output generated by the project. The state's manufacturing industry would also capture about 17% of the total output worth about $1 billion to that industry. Similarly, about 21,953 jobs would be created in the construction industry (44% of the total jobs generated) while Ohio's manufacturing industry could expect to see employment increase by about 5,000 jobs (10% of the total).

The finding that the economic benefits are substantial does not in and of itself justify the nearly $3.5 billion investment that will be necessary to build the Ohio Hub infrastructure. Our I/O study identifies the benefits but does not represent a complete benefit-cost analysis. A complete economic analysis would compare the expected rate of return on the Ohio Hub project, as reflected in the size of the benefit/cost ratio, with rates of return on alternative uses of the $3.5 billion, of which there are many. Nevertheless, the GEM study suggests that the Ohio Hub has significant potential to benefit Ohio's citizens and help alter the long-term growth of the economy.

This is particularly true to the extent that the initial capital construction costs are financed by Federal programs or by other outside sources of investment capital and is fully integrated into the Midwest Rail Regional Rail System. Our analysis complements the analysis conducted by TEMS, Inc., which reported a benefit/cost ratio of 1.24.

C. Long-term Employment, Income and Real Estate Development Impacts

In order to more fully evaluate the economic benefits of the Ohio Hub, Gem Public Sector Services used the localized impacts estimated by TEMS to analyze the potential long-term impacts on the local real estate and employment markets in four communities: Columbus (High Street and Nationwide Blvd.), Cincinnati (Union Station), Toledo (the current Amtrak station) and Middletown (Charles St. and Central Ave.). GEM examined demographic and employment data within a quarter mile and one-half mile of the proposed station stops in each of these cities, and then projected economic impacts based on estimates provided by TEMS. Importantly, all of the projections are based on the underlying assumption that the market will accept and embrace high-speed, intercity rail service as a more efficient means of transportation than any of the variety of existing means of travel.

None of the long-term economic development benefits analyzed above have taken into account the jobs to be created by the Ohio Hub, itself. Local employment projections have either looked at the local markets in the context of total employment, or disaggregated into broad categories of “retail employment” and “office-based employment”. In addition, neither TEMS nor GEM has assumed that the Ohio Hub will be introduced in an economic development vacuum. To the contrary, it is assumed that the local economic development benefits will result from an association with the Ohio Hub, but not be a result of the Ohio Hub alone. In essence, the Ohio Hub will be one potential catalyst for local development in the context of greater local efforts to stimulate growth in conjunction with rail based transportation.

Local outcomes in any community to be a station stop on the Ohio hub will be directly related to the local emphasis placed on development of the station stop and the surrounding areas. This observation speaks to an area of future emphasis for the Ohio Rail Development Commission in conjunction with the local communities that are projected to have station stops along the Ohio Hub route. First, high-speed, passenger rail service can only make one or two stops in any given community before it loses its travel time advantage over other forms of transportation. As a result, the local communities must be able to deliver equally efficient means of making connections to the most likely destinations of passengers disembarking from the trains in their respective communities. Second, consistency of the level of local services among station stops will be important for travelers to select high-speed rail over other forms of transportation. Passengers must be reasonably sure that they can access local conveniences at each station stop and that there are reliable means to get to their local destinations quickly and conveniently after leaving the train.

Third, it is unlikely that the various local communities will be able to independently plan for the consistently high level of customer service that should be expected at each station stop without some unified guidance by the ORDC. Nor is it likely that the local connectivity, that will ultimately determine the overall efficiency of high-speed rail service as an alternative transportation mode, will be developed consistently by each individual community without the input, and possibly oversight, of the ORDC.

1. Employment Growth

Employment growth in the local markets where station stops will be located may be a function of rail transportation but new development will not exclusively be driven by the new rail investment. The largest impact on local employment growth will be in the immediate area surrounding the rail stations.

For example, TEMS estimates that the Ohio Hub's impact on the local employment market in Cincinnati will increase employment by between 1,010 and 1,390 jobs. This would have the effect of more than doubling employment within a quarter mile of the station stop, and increasing employment by between 36% and 50% within a half mile of the station stop. Thus, local impacts could be substantial even though the impact citywide would be relatively small, adding less than 1% to the employment base of the city and county.

Columbus is expected to have a station stop of similar magnitude and impact as Cincinnati, generating (by TEMS estimates) between 1,400 and 1,925 new jobs. This would have the effect of increase employment between 12% and 16% within a quarter mile of the station and 4% and 5.5% within a half mile. The relatively smaller impacts are due to an already substantial employment base in the immediate neighborhood of the planned station stop.

The employment increases projected by TEMS were also compared to current citywide and local employment in the "retail" and "office-based" segments of the local marketplaces. These segments of the labor market are most likely to experience growth directly from the Ohio Hub since retail services depend on "foot traffic" and office workers will benefit from the lower overall transportation costs resulting from access to the high-speed rail network. Of course, some employment will also result from the rail system itself, particularly in larger stations with significant ridership volumes.

The real estate value increase projected in the local communities will most likely come from a single mixed-use project. This is the case for transportation oriented development. Without such a development, local employment could still result from the operation of the Ohio Hub, but it would be much more difficult to prove a direct link between the employment increases and the Ohio Hub.

2. Household Income

Like the employment impacts, projected household income will change very little citywide although impacts around the immediate station can be significant. Even these statistics are reduced to reasonable ranges when the potential household increases that are projected to result from new development are superimposed over the current status of the areas under review. In essence, the household income increases projected by TEMS appear to be small relative to the size of the overall economies of the cities and regions, but reasonable within the context of the assumptions implied in their analysis.

The Ohio Hub investment has the potential to increase household incomes within a quarter mile of the station by between $160,000 and $221,000 in Cincinnati, $2.9 million and $3.9 million in Columbus, $16,000 and $23,000 in Middletown, and $148,000 and $236,000 in Toledo.

3. Real Estate Value Increases

Real estate value increases in the local markets have been interpreted to mean new commercial and residential real estate development. In the analysis outlined above, only the values of new improvements were taken into consideration. The value of land underlying any new development is likely to increase as a function of the project constructed on the land, but this potential outcome has been ignored in the projecting the possible magnitude of development in each of the four cities selected as examples.

While the potential projects are significant in scale in each of the communities, they would not be unprecedented for the local markets, nor would they contribute an inordinate amount of new square footage compared to the inventory of commercial properties currently on the landscape in any of the cities reviewed.

TEMS projections for real estate value increases suggest that between 572,333 square feet and 787,667 square feet of retail space could be built in Cincinnati. The potential impact could generate demand for 794,333 to 1 million square feet of retail space in Columbus, between 60,000 and 85,000 square feet in Middletown and between 255,000 and 351,000 square feet in Toledo. By comparison, the Toledo retail market had an inventory of 18,251,547 square feet of retail space in major projects surveyed by CB Richard Ellis/Reichle Klein at year-end 2006. The potential new retail development indicated for Toledo would expand the current inventory between 3% and 4% if the commercial focus of development were centered exclusively on new retail space. This is a static comparison, when a potential development timeframe of as much as thirty years is introduced the growth percentages in the inventory are almost indistinguishable.

Similar examples are drawn from the office markets in Cincinnati and Columbus. The current inventory of office properties, in large-scale buildings, in Cincinnati, comprised approximately 30,537,000 square feet as of the end of 2006, as surveyed by Colliers International. Thus, the potential development outcome amounts to an addition of 1% to 2% if all of this potential were to result from one project.

In Columbus, the current market inventory of major office buildings comprises approximately 23,584,603 square feet as surveyed by Colliers International at the end of 2006. If TEMS real estate value increases for Columbus are translated into office development, the resulting project would increase the Columbus office inventory between 2% and 3%, respectively, based on the current market inventory.

Multiple development formats were tested against TEMS projections with a range of outcomes. Three alternative development scenarios ranging from "mid to high-rise" development with structured parking" to a low density format using "low-rise construction with surface parking". These illustrations point out that the approaches taken to leverage economic development will be different in every community. In the larger cities, available land and the current built environment may dictate a high-rise development strategy with accompanying, structured parking. In the smaller cities served by the Ohio Hub, the development plan may consist of a low-rise format with surface parking. In essence, one plan does not fit all communities. The purpose of showing the alternatives is to understand the possible varieties of real estate outcomes in each city along the Ohio Hub route.

An example of the context for new real estate development in close proximity to an Ohio Hub station stop is shown below for Cincinnati. The proposed station stop that appears to be the preferred location is at Union Terminal. Yet, development is highly constrained West of the existing station because the magnitude of the rail network west of Union Terminal appears to represent an insurmountable barrier. The scarcity of land for redevelopment will likely direct development into a mid-rise or a high-rise project with accompanying parking garages to support the development rather than a low-rise project with substantial surface parking.

Residential development is a component of new development in all of the cities cited as examples in this report. The placement of this component of new construction is also likely present some challenges in every market as well. Development constraints are likely in every station stop location. These constraints will have to be addressed by each of the communities involved. Ultimately, the potential development outcomes will be the duty of the local communities to oversee.

D. The Compiled Results of Four Community Meetings Regarding the Ohio Hub

Four focus groups consisting of transportation planners, business leaders, elected officials, and local economic development officials were conducted in four regions—Cincinnati, Columbus, Middletown, and Toledo. The purpose of these meetings was to determine the sense of community leaders regarding potential demand, likely economic growth outcomes, and the nature of transportation oriented development.

While there were similarities among the viewpoints of representatives in the four cities in which meetings were held, there are also important differences. The collective perceptions from the local communities should assist ORDC as it moves the plan forward toward construction and operation. The compiled results of questionnaires completed by attendees at all of the local meetings are included in Appendix 4.E. for reference.

1. Findings Regarding Passenger Service

The great majority of participants in the focus groups in all four cities were supportive of high speed passenger rail. They identified a wide variety of local travel needs and destinations, consistent with local demand. The focus group opinions were qualitative, however and should not be directly compared to the TEMS ridership forecasts. Overall, local opinions tended to support the estimates. Many respondents were particularly oriented towards the use of rail as a commuter service, suggesting that inter-city rail should be coordinated with other modes of commuter transportation.

2. Findings Regarding Regional Economic Development

If the rail system is to do more than relocate activity from one part of an area to another, the rail system must contribute to overall growth. In general, the combined results from all of the groups indicate a positive impression regarding the potential of the Ohio Hub to leverage economic development in the various communities. All respondents indicated that high-speed rail would generate economic development opportunities in their communities. Ninety percent of respondents ranked the likely impacts of high-speed rail on their communities as “somewhat positive” to “very positive”.

Columbus and Toledo representatives saw improved connectivity as direct contributions to economic development, giving there communities a comparative advantage in specific types of activities. Columbus representatives felt inter-city rail would enhance their quality of life and hence improve the quality of the labor market. Toledo representatives felt their “back office” development path would be improved. Office development was also important in Cincinnati. In Middletown, improved commuting was a factor.

Among segments of the economy that would be the most likely to benefit from high-speed rail, office-based growth was cited most frequently by approximately 85% of respondents. Retail and residential growth were also cited, in declining order of frequency. The numbers of respondents indicating either retail or residential growth were substantially fewer than those indicating office growth.

Seventy-five percent of respondents felt that near-by businesses would benefit from a local station stop.

3. Findings Regarding Site Development

Conditions around the station stops varied among the communities. Cincinnati and Columbus have densely developed locations whereas Middletown and Toledo have less nearby development.

Because of the density of Columbus and Cincinnati station stops, the economic impacts of high speed rail is likely to be somewhat diffuse (less steep rent tents).

Toledo has the potential for new development immediately next to the station stop and is an ideal site for a planned unit development.

Office and retail growth were both cited as commercial land uses having development or redevelopment potential as a result of the Ohio Hub in most cities. Additionally, residential uses were cited as having development potential as a function of high-speed rail.

Support for nearby businesses was frequently mentioned by group meeting attendees, providing some idea of the proximity that development could have in relationship to the local station stops.

E. Urban Development and Land Use Impacts Near High-Volume Amtrak Stations in Maine, Pennsylvania, and Wisconsin

Gem Public Sector Services evaluated economic development impacts around high volume inter-city passenger rails stations in other parts of the nation as a way of "benchmarking" the potential for station area development in Ohio. The research team identified three successful, high volume corridors in Pennsylvania, Maine, and Wisconsin to identify impacts on land development resulting from proximity to this transportation service.

While these corridors were not serviced by high-speed passenger rail service, the station ridership volumes paralleled the potential volumes projected for stations along the Ohio Hub under the high speed scenario recommended by TEMS. Information on population, household size, housing units, vacancy rates, household income, consumer spending, and property valuations were examined within a quarter-mile and half-mile of the rail station to determine whether proximity to a intercity passenger rail stations seemed to have a significant impact on growth and revitalization around these stations.

The analysis focused on the highest volume Amtrak stations along the following corridors:

- The Keystone Corridor linking Philadelphia to Harrisburg via Lancaster;
- The Downester linking downtown Portland, Maine to Boston
- The Hiawatha Line linking downtown Milwaukee to downtown Chicago.

These corridors and Amtrak stations were identified because they were primarily intercity rail passenger terminals or hubs, had operated long enough for local real estate markets to adjust to increased passenger ridership along these lines, ranked among the top performers in the Amtrak system, and had ridership levels comparable to those projected for the Ohio Hub.

After analyzing demographic, housing, and real estate trends within ¼-of a mile of the train stations, we concluded:

- *The impacts of proximity to intercity passenger rail service on residential development were modest.* Some stations experienced substantial increases in population and housing while others experienced declines or stagnant markets.

- *Proximity to an intercity passenger rail station had little direct impact on projected household spending or increases in property values based on projected property tax revenue increases.*

- *Stations in existing built up urban neighborhoods, most notably Harrisburg and Lancaster, appeared to have stronger and more robust housing markets and residential trends.*

- *Stations with the highest ridership tended to be terminal stations (e.g., Milwaukee, Portland, Harrisburg). These stations also tended to be located in industrial and commercial districts facilitating their use as intermodal hubs but limiting the ability for access to rail service to stimulate land development.*

- *No evidence suggested that the existence of the rail station significantly impacted overall development trends, suggesting investments in intercity passenger rail stations would support, rather than drive, existing real estate markets.*

In sum, intercity passenger rail stations may have modest impacts on land development in the immediate vicinity and neighborhood, but they have not yet become drivers of local or regional development. Investments in intercity passenger rail are unlikely to have significant short or intermediate term impacts in the immediate vicinity of the station stop independently of other revitalization and investment efforts. Maximizing the potential for development around rail stations requires ensuring other supporting policies are in place, including zoning and planning policies that support higher density and mixed use development and convenience access by automobiles, pedestrians, and other transit services.

Maximizing the long-term impacts of these investments will required considering the local economic context and investment climate since regional development patterns are determined by larger, regional factors that are likely overwhelm the impact of a transit station. The economic success of stations will likely be determined on a case-by-case basis.

Thus, any economic development that is likely to occur will be part of a comprehensive, broad-based approach to redevelopment. The station investments and passenger traffic can provide a supporting role, but they are unlikely to be a driving force behind new development or neighborhood revitalization.
These conclusions could change, however, if ridership increases significantly. Based on the experiences around the station stops in this study, ridership would likely have to increase by several orders of magnitude to have significant, independent impacts on economic development in the immediate neighborhood.

F. Summary and Recommendations

Gem Public Sector Services concludes that construction of high speed passenger rail is economically feasible and justifiable assuming an 80% federal construction match. By feasible, we believe the economic benefits justify the investment the project will not be a burden on the State bi-annual budget. This conclusion is consistent with the analysis of TEMS. Accordingly, Gem Public Sector Services recommends that ORDC move forward to the next stage of determining the feasibility of implementing this project.

More specifically, we recommend the state of Ohio and ORDC:

1. ***Seek funding for a complete Environmental Impact Statement (EIS).*** While seeking funds for the EIS, ORDC should continue building a state-wide political support and public appreciation of the potential benefits because changes will inevitably occur. The more the stakeholders know about the projects the easier it will be to explain the changes and the more expeditious the adjustments will be.

2. ***Develop and implement an integrated design, construction, and implementation plan***. This plan should provide a framework for guiding state government efforts to build, operate, and maintain the Ohio Hub. The plan should also recognize intergovernmental issues in implementation, identify key obstacles to implementing the system, and recommend policy reforms that will facilitate the implementation of the Ohio Hub once funding and final approval is secured. The plan should be used as a policy framework for identifying needed rights of way, identifying land for acquisition, phasing specific projects, and developing an overall timetable with benchmarks to facilitate construction and intergovernmental cooperation and coordination.

3. ***Involve local communities in planning and implementation efforts as soon as possible to maximize the potential economic development benefits***. The Ohio Department of Transportation, ORDC, and the Ohio Department of Development should consider establishing technical assistance programs for local communities that have been selected for a rail station as well as communities that will likely be impacted significantly by the new service. The state can take a leading role in facilitating the integration of local transit agencies plans and programs into the Ohio Hub to maximize its impact on the economy and improving mobility.

4 ***More fully integrate airport connections into the Ohio HUB system.*** One of the first efforts should be to determine how the rail system will be connected to local airports.

5. ***Investigate the potential benefits or costs to Ohio's rail freight operators and users***. We recommend direct discussions with users rather than assuming carriers speak for their costumers. Many long term benefits of the system will come from more efficient shipment of fright, yet ways to take advantages of these potential benefits have not been examined sufficiently. In this regard, consideration should be given to same day delivery of high valued fright, as has been suggested with same day mail.

6. ***Prepare a construction and start-up business plan for the Ohio HUB system.*** The business plan should determine a construction timetable and milestones for each corridor and intercity rail segment, consider revenue streams and pricing strategies, determine scheduling and routing priorities, provide a pro forma income and expenditure statement and other financial reports, and prepare a marketing and roll out strategy for the Ohio HUB.