INITIATIVE:
PERFORMANCE METRICS AND GUIDELINES

SUMMARY

Policy makers want to fund programs that work. Being able to measure and communicate the value achieved by investing in transit, therefore, is a critical part of securing funding. The Ohio Statewide Transit Needs Study, therefore, included both an evaluation of Ohio’s transit systems and considered how performance measurement strategies could help improve the quality of service and build support for strengthening the overall system.

Among the strongest challenges was the ability of the transit network to develop and sustain support from political leadership and also to translate existing support into reliable and secure funding. This challenge was balanced by other stakeholders’ – typically funders – desire to be assured that any future investments in transit service achieve real, measurable benefits.

The objective of the proposed performance measurement strategy is to help the State of Ohio:

- Demonstrate the value added to Ohio communities through transit services
- Understand and track system strengths and weaknesses
- Motivate and facilitate improved performance

PROPOSED PERFORMANCE MANAGEMENT SYSTEM

1. **Classify Services** – classify services not systems to create more equitable comparisons. In Ohio, seven classifications are recommended – four for fixed routes and three for demand response.

2. **Develop Measures** – use three standard transit industry measures to understand performance, plus a fourth for demand response services only. The measures use data already collected by transit agencies and reported to ODOT:
   - Passengers per hour
   - Cost per Hour
   - Cost per Passenger
   - Customer Satisfaction (Demand Response only)

3. **Set Benchmarks** – transit services need to be measured against something. Our recommendation is to develop two standards:
   - “Successful” standard for services performing at or better than the peer group average.
   - “Acceptable” standard for services performing within one standard deviation of the average

4. **Provide Assistance** - Agencies failing to meet the acceptable standard once may be asked to work with ODOT to address local challenges. Failing to meet the acceptable standard in two consecutive years could lead to a loss of state funding.

5. **Report Annually** – create summary tables and brief overview memo to report on results annually.
TRANSIT NEEDS AND PERFORMANCE MEASUREMENT

Overview

Policy makers want to fund programs that work. As a result, being able to measure and communicate the value achieved by investing in transit is a critical part of securing funding. The Ohio Statewide Transit Needs Study, therefore, included both an evaluation of Ohio’s transit systems and considered how performance measurement strategies could help improve the quality of service and build support for strengthening the overall system.

The Ohio Statewide Transit Needs Study issued two technical memorandums that summarize the results of a detailed and broad performance evaluation exercise – one for fixed route services and one for demand response services. Each memo was discussed with the Project Steering Committee and commented on by stakeholders; the memos are also available as separate documents. The evaluation results, combined with other analyses, became key building blocks and resources to understand transit needs. The goal of this summary memo is to recommend a broader performance management strategy that can be used by the State of Ohio as a tool to understand transit service levels, set goals for different service types, and as a method to communicate success and progress towards goals.

The technical memo is intended as a working paper and includes an overview of performance metrics in the transit industry, including the potential benefits achieved by measuring performance, as well as challenges associated with undertaking this type of effort. The memo also highlights national best practices and discusses potential applications of similar types of strategies in the State of Ohio.

Need in Ohio

Nearly all public transit agencies in the world require government assistance for service development and operations. As a result, being able to measure (and communicate) the value and benefits derived from this investment is essential to being able to attract and sustain funds and partnerships. The Ohio Statewide Transit Needs Study identified several challenges and concerns facing transit service development in Ohio. Among the strongest challenges was the ability of the transit network to develop and sustain support from political leadership and also to translate existing support into reliable and secure funding.

This challenge was balanced by other stakeholders’ – typically funders – desire to be assured that any future investments in transit service achieve real, measureable benefits. Surveys and interviews conducted as part of the Transit Needs Study also confirmed that while many people support transit and believe it is necessary, others were skeptical that it was widely used or produced real value for the money invested. Currently there is no avenue for transit agencies to consistently convey their performance to these stakeholders.

The objective of the proposed performance measurement strategy is to help the State of Ohio facilitate this discussion and create a strategy that helps achieve sustained political and financial support for transit service development in Ohio.

Performance Measurement and Transit Industry

Performance measures are widely used in the transit industry, with most transit agencies reporting basic information about their service to the National Transit Database (NTD); reporting
data to the NTD is required for most transit agencies receiving federal transit funding. ODOT also collects and publishes service information in the Status of Transit (SOT) database, which is updated annually. In each case, the NTD and SOT databases include data points that are performance metrics, such as cost per mile, cost per passenger, farebox recovery ratio, etc. However, the information is published as straight-forward data points and not compared or contrasted with any standards or benchmarks and does not constitute a performance measurement system.

In general, the transit industry uses performance measures to:

1. Understand and track service and system strengths and weaknesses
2. Motivate and facilitate improved performance

At a local level, many Ohio transit agencies do work with their oversight boards or committees to develop their agency’s vision and articulate this vision through a series of goals. Local agencies also use performance measures to track progress towards stated goals. In many cases, goals are relatively straight-forward (i.e. increased ridership) and can be measured and used to track trends and progress; and compare against previous performance as well as against peer agencies. At the local level, this type of performance measurement system often works well. Local agencies understand their local environment well and can be sure that their goals and performance measures are appropriate and realistic; and if progress is stalled, they also have a good understanding of underlying challenges.

When applied to a statewide platform, however, performance measurement systems work differently. By definition, states measure and track a wide variety of systems and services, each of which exist in a wide range of operating environments and may be designed to respond to different local goals and needs. This makes it difficult to make comparisons that are considered equitable. State level performance measurement systems are also challenged by perceptions that performance measurement systems are punitive and in particular, could jeopardize access to funding. Despite these challenges many states around the country have performance measurement systems\(^1\) and successfully use to help guide and strengthen their statewide transit network (see best practice sidebars).

**TRANSIT PERFORMANCE MEASURES IN OHIO**

**Overview**

The Ohio State Department of Transportation (ODOT) published its most recent long range multimodal transportation plan, Access Ohio, in 2014. This plan clearly lays out six primary goals for Ohio’s transportation system:

1. Preservation – Promote cost-beneficial preservation of multimodal assets
2. Safety – Continue to improve transportation system safety
3. Mobility and Efficiency – Reduce congestion and increase reliability for personal and freight travel

4. Accessibility and Connectivity – Increase customer access to the state’s multimodal transportation system and improve linkages between modes

5. Stewardship – Advance triple bottom line - financial, environmental, and social objectives - for all investments

6. Economic Development – Develop and operate a state transportation system that supports a competitive and thriving economy

Access Ohio also identified critical success factors (CSFs) for each of these goals and adopted a framework for assessing, tracking and reporting ODOT’s progress towards achieving these goals (more information on Access Ohio, including the performance system is available on ODOT’s website). The Access Ohio performance framework is aimed at the system overall, and does not specify specific ways or measures to track investments in transit systems or the productivity of these individual systems. However, as part of developing performance measures for the transit system, these broader goals were used to establish the framework for a more local and mode specific system.

Transit Performance Measures

Currently urban and rural agencies report data to ODOT on an annual basis. Reporting for urban and rural agencies is done slightly differently but in both cases, the data contains similar information – the amount of service provided (miles driven, hours operated), the amount of service consumed (number of passenger boardings), and basic information about finances (operating and capital expenses, and revenue sources). This information is published annually in the SOT. However, as discussed, the data is published without any links to stated goals or benchmarks for expectations. ODOT did attempt a performance measurement system which was drafted internally at ODOT but never implemented.

A critical challenge facing Ohio is the diversity of transit systems around the state, each of which has unique agency missions, services, operating characteristics and access to funding. In total, Ohio has 612 transit agencies, many of which operate multiple service types, ranging from heavy rail to fixed route bus to countywide demand response.

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2 As of June 2014
In general, transit services are designed to meet certain objectives and work within the constraints of their individual operating environments. The most basic level of transportation service is provided for Ohioans eligible for federal and state sponsored programs and includes service to and from program sponsored activities, such as medical appointments. These services are available throughout the state. Transportation services available to the general public are not available statewide. Instead, local communities decide whether to operate services as well as the type and amount of service they feel is necessary.

Rural and small town communities typically offer dial-a-ride types of services; small towns and suburban communities may offer a combination of dial-a-ride and deviated fixed route services; and Ohio’s larger communities tend to offer fixed route services, including both bus and rail. In each case, the hours and days of operations, plus the frequency of service, determine if these services are sufficient to support trips to work, or are more oriented towards ensuring people who aren’t eligible for sponsored programs have access to basic amenities and services (see also the market analysis published under a separate cover).

Each of these defining characteristics, including the service type, amount of service provided, the operating environment, the resources available in the community, and the community’s attitudes toward transit influences the performance of that service. The majority – but not all - of these characteristics are outside of the transit manager’s control. Consequently, developing a system that can compare and contrast system performance must reflect different categories of agencies and services.

Another challenge facing state-level performance measurement systems is identifying appropriate measures to use. The primary audience for the tool is ODOT planning staff, ODOT leadership, the Ohio Legislature, and citizens. As a result, systems need be simple, easy to understand and easy to replicate. The performance metrics also need to reflect goals and the aspects of service that the audience cares about. In the transit industry, these measures tend to be:

- **Service effectiveness**, or the ratio of consumption to outputs, i.e. passengers per revenue hour, or farebox recovery ratio
- **Cost efficiency**, or the relative cost of providing service (i.e. cost per hour of service)
- **Cost effectiveness**, or the ratio of service inputs to service outputs, such as cost per passenger.
- **Customer satisfaction** or the portion of the rider satisfied with the service received. This metric is proposed for demand response services only.

While all transit agencies are concerned with customer satisfaction, demand response services are more likely oriented around the achievement of social goals and generally structure their services around providing transportation services to disadvantaged populations. This may be at cross purposes to achieving more cost effective and efficient service operations, and an increase in service may result in a decrease in a transit system’s overall service efficiency or effectiveness. Some states include customer satisfaction as a performance measure to reflect the fact that transit service, especially demand response services, are nearly always balancing the need to serve a disadvantage population with a desire to be efficient and effective.
Best Practice: State of Vermont

Vermont is a small state, in terms of both geography and population; it is also largely rural. Despite these characteristics, the State of Vermont has 11 transit agencies and invests some $7.2 million in state resources towards public transportation services.

Approach to Transit Performance Measurement:
- Classifies transit services by route and by route type, rather than by agencies.
- Assigns one key performance measure for each service type (i.e. riders per hour or cost per passenger).
- Sets two benchmarks, “Successful” and “Acceptable”. The successful standard is the peer group average. The acceptable standard half (or twice) the average.
- The Vermont Agency of Transportation summarizes performance annually and reports to the state legislature.
- New services have two years to achieve an acceptable standard.
- The first year a route does not achieve an acceptable standards, VTrans provide technical assistance to help improve the route’s productivity.
- If a route does not achieve an acceptable standard for two consecutive years, it may lose its state funding.

Best Practice: State of North Carolina

North Carolina has 100 counties and roughly 75 transit systems. Although the State’s investment in public transportation has changed recently, the State of North Carolina has traditionally provided significant resources to public transit operators through its State Maintenance Assistance Program (SMAP), which provides up to 20% of a transit agency’s operating deficit (i.e. operating costs less fares) and up to 10% of a transit agency’s capital program.

For urban operators, distribution of SMAP funds is not based on a performance measurement program, but instead uses performance measures to determine and allocate funding. Instead, SMAP funds are distributed to urban systems based on a formula that includes performance as part of the criteria:

- 30% based on number of revenue hours, modified based on the average number of passenger trips per revenue hour. If the agency is above the state average, then they get more money. If they are less than the state average, then they get less.
- 30% based on the number of passenger trips, modified by the average cost per passenger trip. If the agency is above the state average, then they get more money. If they are less than the state average, then they get less.
- 30% based on a system’s share of total local revenue, including both farebox and local contributions.
- 10% equal distribution of the available resources.
PROPOSED PERFORMANCE MEASUREMENT SYSTEM

The Transit Needs Study has broadly interpreted the goals of the performance measurement system as:

- Demonstrating the value added to Ohio communities through transit services
- Understanding and tracking system strengths and weaknesses
- Motivating and facilitating improved performance

With these goals in mind, the study team developed a performance measurement system (see graphic). The performance measurement system will give both individual transit agencies and ODOT a tool to define the return on investment of transit service. Our proposal is also designed to easily communicate improvement from year to year and through that process, identify areas where underperformance needs attention. The process will also provide assurance that public resources are being used efficiently and effectively. A sample of how the performance analysis could be presented is included as Appendix A.

Classify Services

Classifying transit services rather than transit agencies helps account for differences between service types and creates a more equitable comparison. As discussed, not all services are designed to operate with the same efficiency and effectiveness. For example, fixed route services in urban areas may be more expensive to operate in terms of cost per hour (as compared with rural demand response services) because of higher wages, larger vehicles (more fuel), and higher overhead/administrative costs associated with large agencies. But these systems may be more efficient with the resources spend, i.e. they carry more riders for the same hour of service. With this perspective in mind, transit services – not agencies – were classified into groups (with performance measures developed for each group or type of services):

- Large Fixed Route services
- Medium Fixed Route services
- Small Fixed Route services
- Deviated Fixed Route services
- Demand Response services operated

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3 Classifications are based on agency size as defined by operating budget, ridership and annual service hours.
together with fixed route services
- Countywide Demand Response services (stand alone)
- City oriented demand response systems (stand alone)

The recommended classification for each of Ohio’s transit services is shown in Appendix A. The table lists transit agencies alphabetically together with the service classification.

Develop Measures

The study team recommends three performance measures that are used for each of the seven service classifications:

- Service effectiveness – passengers per hour
- Cost efficiency – cost per hour
- Cost effectiveness – cost per passenger
- Customer satisfaction – portion of riders with high levels of satisfaction

Customer Satisfaction Survey for Stand Alone Demand Response

Some of the advantages of the performance measurement system described above are that the measures and benchmarks are objective, simple to calculate, and easy to interpret. However, some transit services perform well – by design - in ways that are not highlighted by this quantitative approach. In particular, stand alone demand response services offer the only public transportation within some counties. The goal of providing a mobility option, or serving older adults or people with disabilities, may mean that some systems balance goals of being efficiency and effectiveness with other objectives of customer satisfaction.

Given this perspective, we also recommend that stand alone demand response systems also include a customer satisfaction measure as part of the performance measurement system. For these agencies, our recommendation is to conduct an annual customer satisfaction survey and use these results to communicate value. The recommendation of a customer satisfaction survey, however, does come with some caveats. Transit industry experience with customer satisfaction surveys, especially in rural areas where services are limited, tend to show very high levels of satisfaction. High rates tend to reflect the value that individual place on having a service option, rather than satisfaction with a service. The rider survey conducted as part of this study, for example, showed very high value for most aspects of the available transit service, even in cases where riders also said it was very difficult to get where they wanted to go. Interpreting the results, therefore, should consider change over time and note any areas where marks are low.

Set Performance Benchmarks

Another challenge facing the performance analysis is setting performance benchmarks or standards to compare and contrast individual transit services. As discussed, each transit service operates in a unique operating environment that presents its own opportunities and challenges.
The primary strategy to addressing this issue involved creating classifications. Setting performance benchmarks follow a similar approach.

Within each service classification and for each performance measure the study team identified two benchmarks 1) a successful performance standard; and 2) an acceptable performance standard. The successful performance measure is set as the average for the service classification group. In the case of service effectiveness, which is measured in passengers per hour, a successful level of performance for a service is at or above the average of its service classification group. An acceptable performance, on the other hand, is defined as one standard deviation below the average (half of the average). For cost efficiency and cost effectiveness (cost per hour and cost per passenger) successful performance is at or below the average and acceptable performance is at or below one standard deviation above the average (twice the average) within each service classification. A complete performance measurement report of transit services in Ohio using these classifications, measures, and benchmarks can be found in Appendix A.

Implementation

As discussed, the purpose of the proposed performance measurement system is to:

- Demonstrate value added to Ohio communities through transit services
- Understand and track system strengths and weaknesses
- Motivate and facilitate improved performance

The performance measurement system is designed to achieve these goals through a straightforward reporting template that can be easily generated and distributed to stakeholders, including ODOT leadership and the Ohio State Legislature. The report should give them an overview of the system overall as well as relative performance information on individual services and transit agencies. Experience in other states suggests that the performance measurement system will educate stakeholders about what the critical statistics on the statewide transit systems and increasingly, the stakeholders will become accustomed to seeing these reports.

The performance measurement system is also designed to help ODOT track agency performance as well as encourage agencies to review and evaluate services to ensure their current operating structure is appropriate and effective. At the time this technical memo was prepared (Summer 2014), there is not direct correlation between state funding and the results of this analysis. However, the study team suggests that ODOT implement guidelines to clarify consequences for transit services that repeatedly fail to meet the acceptable standards for performance. These guidelines may include:

- Transit services that fail to meet the acceptable standards, for any of the performance metrics, in a single year will be contacted by ODOT to discuss challenges facing the service in question. The purpose of these conversations will be to develop a strategy to improve the service.
- Transit agencies that fail to meet the acceptable standards, for any of the performance metrics, in two consecutive years will meet with ODOT staff to discuss the existing service. Depending on the local circumstances, state funding used to support the transit service may be withdrawn.
- Exceptions to these guidelines may be allowed for new services, or other extenuating circumstances.
# Appendix A  Ohio Transit Agencies by Category

<table>
<thead>
<tr>
<th>Agencies</th>
<th>Fixed Route Category</th>
<th>Demand Response Category</th>
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<tbody>
<tr>
<td>Akron (METRO Regional Transit Authority)</td>
<td>Large Fixed Route</td>
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Appendix B  2012 Transit Performance Review (EXAMPLE)

Overview
There are 61 transit agencies operating in the State of Ohio and combined, these communities –
together with assistance from the federal government and the State of Ohio - invest nearly $900
million annually in their local communities. The transit systems carry over 115 million
riders annually and provide over 6.6 million hours of service.

This report contains the 2012 performance review for all of Ohio’s all fixed route and demand response
services in Ohio. The intent of this analysis is to demonstrate the value added to Ohio communities
through transit services, ensure policy makers can understand and track system strengths and
weaknesses, and monitor and facilitate improved performance.

The performance measurement system acknowledges differences among the 61 agencies by classifying
transit services into seven groups, but uses the same three performance measures: service effectiveness
(passengers per hour); cost efficiency (cost per hour); and cost effectiveness (cost per hour).

How to Read the Charts
The results of the performance evaluation are tallied in 21 charts shown below. This represents the
seven types of services and the three performance measures. Data on customer satisfaction is
not available at this time, but may be added in subsequent years.

The charts are organized by service type, with large fixed route services presented first, followed
by the medium, small and deviated fixed route services. Demand response services are presented
second in the order of demand response services operating with fixed route, followed by stand
alone county wide systems and stand alone city oriented systems.

Looking at the charts, agencies with a green bar in the orange part of the graph indicate the
agency is within the “successful range”; if the green bar is in the grey range, the agency is within
the “acceptable” range. Agencies with the green bar in the white part of the graph are not meeting
the established performance standards.

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4 Funding sources include federal grants (roughly 26%), state contributions (2%) and local revenues (72%).
Summary of Performance Measures

Most of Ohio’s transit agencies meet the standard for acceptable performance for each category; with a smaller portion of agencies achieve the successful standard. The number of systems not meeting the standards is summarized in the following section by service type:

Large Fixed Route Services
- Large fixed route systems carry an average of 27 passengers per hour—system wide.
- On average, large fixed route transit agencies spend about $4.50 per passenger carried, not including fares collected.
- One system (Akron) carries fewer passengers per hour than the acceptable level and has a cost per passenger above the acceptable level.

Medium Fixed Route Services
- Medium fixed route systems carry an average of 17 passengers per hour.
- The average cost per passenger for the medium fixed route services is about $5.40.
- Two medium fixed route services (Laketran and Toledo) – by a very small margin - carry slightly fewer passengers per hour than the acceptable level.
- One service (Laketran) has both cost per hour and cost per passenger above the acceptable level.

Small Fixed Route Services
- Small fixed route systems carry an average of nine passengers per hour.
- The average cost per passenger for the small fixed route services is about $10.80. Half of the small fixed route services have costs considerably lower than the average.
- Three small fixed route services (Lawrence, Washington and Delaware counties) carry fewer passengers per hour than the acceptable level.
- Two systems services (Clermont and Lawrence counties) have a cost per hour above the acceptable level.
- One service (Lawrence County) has a cost per passenger above the acceptable level.

Deviated Fixed Route Services
- Deviated fixed route services also carry an average of nine passengers per hour.
- The average cost per passenger for the small fixed route services is about $10.60. Half of the deviated fixed route services have costs considerably lower than the average.
- One deviated fixed route service (Greene County) has a cost per passengers above than the acceptable level. Please note that operating cost data was not available by mode for Greene County. The number presented in the charts is based on the total operating cost and total passengers, including demand response service. This number would likely be different if deviated fixed route only data were used.
Demand Response Services that Operate as part of Fixed Route Systems

- Demand response services that operate as part of fixed route systems carry an average of 2.7 passengers per hour.
- The average cost per passenger for these services is roughly $27.60.
- Three demand response services (Chillicothe, Loraine and Lima/Allen) operate with fixed route have a cost per hour above the acceptable level.
- Two services (Loraine and Lawrence County) have a cost per passenger above the acceptable level.

Countywide Demand Response Services

- Demand response services that operate independently and serve an entire county carry an average of 2.3 passengers per hour.
- The average cost per passenger for these services is roughly $42.00.
- Four countywide (stand alone) demand response services carry fewer passengers per hour than the acceptable level (Logan, Perry, Trumbull and Harrison). Of these three are just barely below the acceptable level.
- Six services have a cost per hour above the acceptable level (Geauga, Trumbull, Sandusky, Shelby, Scioto and Ottawa).
- Three services have a cost per passengers above the acceptable level (Trumbull, Sandusky and Logan).

City Oriented Demand Response Services

- Demand response services that operate independently and are oriented around a small urban area carry an average of 4.5 passengers per hour.
- The average cost per passenger for these services is roughly 12.60.
- One city oriented demand response service (Ashland) carries fewer passengers per hour than the acceptable level and has a cost per passengers above the acceptable level.
- Another city oriented demand response service (Bowling Green) has a cost per hour that is above the acceptable level.
Large Fixed Route Services

Figure 1 Large Fixed Route Service Effectiveness (Passengers per Hour)

<table>
<thead>
<tr>
<th>City</th>
<th>Passengers per Vehicle Hour</th>
<th>Successful</th>
<th>Acceptable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cleveland</td>
<td>34.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dayton</td>
<td>25.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cincinnati</td>
<td>24.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Columbus</td>
<td>23.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Akron</td>
<td>18.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 2 Large Fixed Route Cost Efficiency (Cost per Hour)

<table>
<thead>
<tr>
<th>City</th>
<th>Operating Cost per Vehicle Hour</th>
<th>Successful</th>
<th>Acceptable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Columbus</td>
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<td></td>
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</tr>
<tr>
<td>Cincinnati</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Dayton</td>
<td>$128</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cleveland</td>
<td>$135</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Akron</td>
<td>$135</td>
<td></td>
<td></td>
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</tbody>
</table>
Figure 3 Large Fixed Route Cost Effectiveness (Cost per Passenger)

<table>
<thead>
<tr>
<th>City</th>
<th>Operating Cost per Passenger</th>
<th>Successful</th>
<th>Acceptable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cleveland</td>
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<td></td>
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<tr>
<td>Columbus</td>
<td>$4.61</td>
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<tr>
<td>Cincinnati</td>
<td>$4.71</td>
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<tr>
<td>Dayton</td>
<td>$5.10</td>
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</tr>
<tr>
<td>Akron</td>
<td>$7.47</td>
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<td></td>
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</tbody>
</table>

$5.91

Figure 4 Medium Fixed Route Service Effectiveness (Passengers per Hour)

<table>
<thead>
<tr>
<th>Service Area</th>
<th>Passengers per Vehicle Hour</th>
<th>Successful</th>
<th>Acceptable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Portage Co.</td>
<td>22.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Western Reserve</td>
<td>21.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stark Co.</td>
<td>18.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Laketrans</td>
<td>12.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Toledo</td>
<td>11.9</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

17.4

Medium Fixed Route Services
Figure 5  Medium Fixed Route Cost Efficiency (Cost per Hour)

- Operating Cost per Vehicle Hour: $61, $71, $84, $91, $115
- Successful: $84
- Acceptable: $105

Stark Co. | Portage Co. | Toledo | Western Reserve | Laketrans

Figure 6  Medium Fixed Route Cost Effectiveness (Cost per Passenger)

- Operating Cost per Passenger: $3.11, $3.33, $4.18, $7.03, $9.51
- Successful: $8.20
- Acceptable: $5.43

Portage Co. | Stark Co. | Western Reserve | Toledo | Laketrans
Small Fixed Route Services

Figure 7 Small Fixed Route Service Effectiveness (Passengers per Hour)

Figure 8 Small Fixed Route Cost Efficiency (Cost per Hour)
Deviated Fixed Route Services

Figure 9 Small Fixed Route Cost Effectiveness (Cost per Passenger)

- Operating Cost per Passenger
- Successful
- Acceptable

Figure 10 Deviated Fixed Route Service Effectiveness (Passengers per Hour)

- Passengers per Vehicle Hour
- Successful
- Acceptable

* Data for deviated fixed route passengers and hours only was not available for Greene County. This number reflects total passengers and total hours, including demand response services.
Figure 11  Deviated Fixed Route Cost Efficiency (Cost per Hour)

Data for deviated fixed route operating cost only was not available for Ashtabula County, Greene County, Sandusky, or Knox County. This number reflects total operating cost and total hours, including demand response services.

Figure 12  Deviated Fixed Route Cost Effectiveness (Cost per Passenger)

Data for deviated fixed route operating cost only was not available for Ashtabula County, Greene County, Sandusky, or Knox County. This number reflects total operating cost and total passengers, including demand response services.
Demand Response Services Operating with Fixed Route Service

Figure 13: Demand Response Operating w/ Fixed Route Service Effectiveness (Passengers per Hour)

*Data for demand response passengers and hours only was not available for Greene County. This number reflects total passengers and total hours, including deviated fixed route services.*
Figure 14  Demand Response Operating w/ Fixed Route Cost Efficiency (Cost per Hour)

*Data for demand response operating cost only was not available for Ashtabula County, Greene County, Sandusky, or Knox County. This number reflects total operating cost and total hours, including deviated fixed route services.
Figure 15: Demand Response Operating w/ Fixed Route Cost Effectiveness (Cost per Passenger)

*Data for demand response operating cost only was not available for Ashtabula County, Greene County, Sandusky, or Knox County. This number reflects total operating cost and total passengers, including deviated fixed route services.
Stand Alone Countywide Demand Response Services

Figure 16 Stand Alone Countywide Demand Response Service Effectiveness (Passengers per Hour)
Figure 17  Stand Alone Countywide Demand Response Cost Efficiency (Cost per Hour)
Figure 18  Stand Alone Countywide Demand Response Cost Effectiveness (Cost per Passenger)

- Operating Cost per Passenger
- Successful
- Acceptable

Cost per Passenger:
- Monroe Co.: $7.32
- Seneca Co.: $10.30
- Pickaway Co.: $12.16
- Carroll Co.: $12.32
- Champaign Co.: $12.32
- Crawford Co.: $14.69
- Pike Co.: $15.00
- Morgan Co.: $15.11
- Shelby Co.: $15.99
- Fayette Co.: $7.39
- Huron Co.: $7.77
- Fairfield Co.: $13.02
- Sandusky Co.: $15.56
- Warren Co.: $19.56
- Hancock Co.: $20.32
- Perry Co.: $20.98
- Licking Co.: $20.71
- Geauga Co.: $21.48
- Miami Co.: $21.67
- Columbiana Co.: $23.63
- Harrison Co.: $24.87
- Logan Co.: $26.02
- Trumbull Co.: $57.22

Average Cost per Passenger:
- $25.32
- $19.00
Stand Alone City Oriented Demand Response Services

Figure 19  City Oriented Demand Response Service Effectiveness (Passengers per Hour)

Figure 20  City Oriented Demand Response Cost Efficiency (Cost per Hour)
Figure 21  City Oriented Demand Response Cost Effectiveness (Cost per Passenger)

<table>
<thead>
<tr>
<th>City</th>
<th>Operating Cost per Passenger</th>
<th>Successful</th>
<th>Acceptable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marion</td>
<td>$4.02</td>
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</tr>
<tr>
<td>Wilmington</td>
<td>$8.49</td>
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</tr>
<tr>
<td>Greenville</td>
<td>$9.03</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Logan</td>
<td>$15.30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bowling Green</td>
<td>$17.56</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ashland</td>
<td>$20.99</td>
<td></td>
<td></td>
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</tbody>
</table>

The chart shows the cost per passenger for different cities, indicating the cost effectiveness of demand response services.