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# JUNCTION CITY/GRANDVIEW PLAZA FIXED ROUTE FEASIBILITY STUDY



## EXECUTIVE SUMMARY

Submitted to

Flint Hills Area Transportation Agency

by

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### EXECUTIVE SUMMARY

#### INTRODUCTION

The following study examines the feasibility of fixed route transit service in Junction City and Grandview Plaza, Kansas. The combined communities consist of approximately 25,000 people and are situated in Geary County, the north central area of Kansas. The town is unique in its proximity to Fort Riley, an active duty military base, Interstate 70 and Kansas State University in nearby Manhattan, Kansas. The study area consisted of approximately 14 square miles, including the city limits for Junction City and Grandview Plaza, as well as the connecting intercity transit service which links Junction City to Manhattan.

Flint Hills Area Transportation Agency (ATA) has been operating the existing demand-response transit service in Junction City and Grandview Plaza for the last four years. The ridership of this system has steadily increased over those four years. The vision for ATA services is to provide the tri-county region with a unified and seamless system that enables people to move easily across the region.

This report is in response to the interest in providing fixed route transit services and complementary paratransit services and provide technical assistance to Flint hills Area Transportation Agency. The feasibility study will cover demographic analyses, particularly surrounding transit dependent populations in Junction City to better determine existing use and predict future use. This report will also detail a transit needs analysis, community and employer input, a preliminary route design, and a financial analysis using peer systems.

#### APPROACH TO THE STUDY

The study began with an analysis of demographics in Junction City and Grandview Plaza using data from the U.S. Census Bureau and ArcMap™, a component of Esri's ArcGIS suite of geospatial processing software, to produce maps and overlays of the different demographics within city limits. This was later used in the creation of route designs, which continued the use of ArcMap™ to create routes that would be within walkable distances for the majority of the population. The routes were then given timetables that were tested in person via automobile.

The two surveys conducted, for employers and the community, used a web based survey generator called SurveyMonkey™ which allowed the survey to be distributed online via email and social media outlets and ads. Additionally, printed copies of the survey were used to collect responses, as well as phone based surveys. SurveyMonkey™ also aided in the analysis of the data collected. An advisory committee was also

formed of a range of community stakeholders and met at the onset of the study to lend direction and guidance to the study.

The next step in the study was to forecast fixed route transit demand, using a tool from the Transit Cooperative Research Program that was released in *Report 161*. (Vanasse Hangen Brustlin, Inc., 2013) This tool uses primary data from the US Census Bureau, as well as data from comparably-sized, peer systems from the Rural National Transportation Database to produce equations that project the amount of ridership and other service measures a given system will see in the future.

Once demand was quantified, a series of iterations of route design were tested to meet desired parameters of maximizing population within a quarter mile buffer (on each side of the route), serving most desired origins and destinations as identified by a community and employer survey as well as utilizing a plot of existing demand response service in Junction City and Grandview Plaza, and meeting industry-standard route design standards as explained in Chapter 6.

Finally, financial estimates were created using the City-Wide route and University Crossing in Manhattan, Kansas as the most accurate comparison within regional data for complementary paratransit and fixed-route services. The number of peak hours, off-peak headway hours, number of annual weekdays, weekend hours, weekend days and weekend headways hours were used to create formulas which produced the final estimates.

## FINDINGS

The demographic analysis of Junction City and Grandview Plaza identified that, while the cities on average have a lower population density than would normally support transit, there are specific neighborhoods within the cities that have densities well above what would be needed to create a feasible, well-utilized transit system. This was further overlaid with identified transit dependent populations, such as those without access to a private vehicle, those with members in the household over the age of 65, and people with disabilities to create a distinct visual of where transit would be most effective.

In addition to transit demand modeling, American Community Survey data were collected and analyzed, finding that 79 percent of workers currently commute to work in a single occupancy vehicle, with 12 percent carpooling. This analysis of employee commute patterns was used to create an illustration of general direction and density of travel, which helped to define key corridors of travel. The demand estimate was then produced in part, on these travel behaviors. Another method of employer inclusion in the study was the use of a survey that collected responses from 34 employers which represented approximately 3,400 employees (approximately 26 percent of the total workforce). From this survey, shift times were identified generally as the standard 8 a.m. to 5 p.m. shift, with larger variations in second, and third shifts. Also, some existing transit usage of employees was indicated, with the 47 percent of employers who responded saying that they have employees that use transit, primarily ATA demand response (86 percent). 66 percent of employers also responded that not having access to a reliable vehicle is a reason for employee tardiness or absenteeism. Similarly, employers responded that an increase in transit coverage (83 percent) and more frequent service (75 percent) would increase the number of employees that would use transit. Overall, 64 percent of employers believe that if given the opportunity, employees would be interested in using fixed-route services.

Online and printed surveys of the community also were conducted, with a total of 261 responses. 83 percent of respondents indicated that it was likely, or very likely, that they would use fixed-route services; 61 percent of those who did not anticipate using the services nonetheless supported the development of services. Seniors in particular supported the development of fixed-route services (91 percent) as did families who have a member stationed at Fort Riley (93 percent). This survey also provided information on preferred timeframes, important locations for bus stops, and an average amount respondents would be willing to pay.

Based on the information gathered, a forecast for transit demand was created which defined transit needs based on peer systems in Kansas. The peer systems used for this analysis were from Reno County, Finney County and the City of Salina. The peer system service analysis examined the fixed route demand, small city fixed-route demand and demand response demand. This analysis projected annual average demand for transit trips to be approximately 15,000 demand response trips, with fixed-route demand estimated at 76,000 rides. These data provided the basis for formulating potential routes, timetables and financial estimates to meet this demand. From this alternatives for service times and costs were produced. After further direction from the advisory committee, the fifth alternative was created and has all three routes operating a total of 13 hours per weekday, with no initial service on the weekend. This alternative allows for weekend service to be included incrementally at a later date, and includes an additional five days of full weekday service for special promotional fare free days. The estimated yearly cost for Alternative 5 is \$403,302 and demonstrates the greatest cost savings of all the alternatives produced.

The cost estimates to provide a three-route fixed-route service with complementary paratransit service is estimated to range from approximately \$403,302 to \$479,000 per year based on hourly variations.

## NEXT STEPS

This report serves as a feasibility study, which should be followed with a more detailed operations plan. The operational planning should include a detailed plan of routes and specific designation of bus stops. Retiming the routes based on the designation of actual bus stops along the route, as the bus stops suggested here in the feasibility report are conceptual. This should also include developing a plan for bus stop signs and benches at specific stops, and a vehicle maintenance plan. In conjunction with the operational plan, an ADA plan will be developed to support the complementary paratransit service, modeled after Flint Hills ATA existing ADA plan (see Appendix 1). Finally, a marketing plan will provide the design for route maps and rider guides, and a media campaign for new service implemented prior to the start of services.

## CONCLUSION

Based on the findings of this study, fixed-route service is recommended for key areas of Junction City and Grandview Plaza. By centering the system on transit dependent demographics, nodes of activity and corridors that already receive high traffic, a fixed route system is feasible for Junction City/Grandview Plaza. Additionally, by integrating it into the larger fabric of the tri-county regional transit system, access and connectivity would greatly increase across the region.

FIGURE 50 PREFERRED ROUTE ALTERNATIVES

