

IMPLEMENTING MASS TRANSIT: A CASE STUDY OF THE CYRIDE SYSTEM IN
AMES, IOWA AND ITS IMPLICATIONS FOR MASS TRANSIT IN MANHATTAN,
KANSAS

by

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A REPORT

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Abstract

The purpose of this document is to use an existing transit system as the standard by which another community can model their own. It begins with the discussion of a brief history of mass transit in the United States—focusing on the detail that competing automobile manufacturers began the demise of transit ridership in this nation. As the 1950s came to a close, the nation's transit systems saw the peak of ridership. However, the post-war era brought about massive suburbanization and more automobiles per household. The American no longer needed to ride transit, except for those still living in the dense urban cores of cities like New York City.

The document moves into the discussion of the fundamentals of mass transit. It explains the importance of population base, ridership, and funding. Depending on the type of system, a minimum population base is recommended in order to support the proper system. Ridership is a key focus of transit, for without it, a community is just wasting resources. Finally, funding is very important. No transit system can support itself on fares alone and still remain a viable alternative to the automobile. Transit systems must procure funding from a variety of sources including all levels of government in order to obtain sufficient revenue to operate successfully.

The heart of the document focuses on the CyRide bus system in Ames, Iowa—serving the Ames community and Iowa State University since 1976. CyRide is a special system in that it serves a total population of only 54,000, but sees an annual ridership of 5 million. Their success is based on a longstanding relationship with the community complimented by staff that possess the passion to ensure the highest quality service day-in and day-out. This report discusses the fine details of how that system functions on all levels.

The document concludes with the discussion of Manhattan, Kansas—a city with approximately the same population as Ames, and is home to Kansas State University, which has approximately the same student enrollment as Iowa State. Manhattan currently does not have a transit system, but is seeking to implement one in the coming years. The overall intent of this report is to draw conclusions based on the performance of CyRide and provide recommendations to the City of Manhattan regarding the implementation and operation of a transit system.

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Dedication

To my father: this report signifies the culmination of my college career. The success of both would not have been possible without your continuing love, support and encouragement. Thank you.

CHAPTER 1 - Introduction

Background

As a city's population increases over time, a need for some kind of mass transit system arises. Not only does the sheer number of people using public infrastructure increase, but the physical size of the city increases as well. This means that new goods and services are now further away from certain centers of population mass. All citizens have a need to access these goods and services. What happens when citizens face certain obstacles that prevent them from being able to transport themselves to various nodes around the city? Whether it is the inability to afford a personal automobile, or even just the desire to budget less of one's personal finances to fluctuating gasoline prices, as the physical boundaries and the population base of a city expands, the need for alternative forms of transportation arises.

Given the situations formerly stated, what happens when a community does not have a mass transit service provided for the use of its citizens? It can be said that the citizenry are then forced to cope with the consequences of no alternative means of transportation. Such is the case in Manhattan, Kansas. Manhattan does not have any form of fixed-route mass transit service, although private sector service has recently made a presence. Implementing such a service is an integral step for the city to take as it faces its large anticipated growth over the next 20 years. By 2012, the Flint Hills Region is anticipating a direct growth of approximately 12,000 people due to military and employment growth. This will produce an indirect growth of 17,000 people coming to the region taking the form of military families and economic migration (EDAW et al, 2008). Therefore, new residents that choose to locate in other communities are still likely to travel to Manhattan in order to take advantage of certain economic amenities. It is also worth noting that this projection seems generous. Manhattan's projected annual growth rate from 2005-2010 is 1.03 percent, which is slightly above the estimated 2009 national growth rate of .977 percent (City of Manhattan, 2003; CIA, 2010).

It is estimated that the 2010 census will show that Manhattan will finally, and officially, crest the 50,000 population threshold. Becoming an entitlement city will only benefit the city in its pursuit to implementing mass transit. Not only is it a recommended base population to provide ample ridership, but holding the title provides certain benefits when it comes to funding the project. An entitlement city is guaranteed federal funding every year not to mention the

ability to apply for a subsidy for mass transit. Holding this title is tantamount to the success of a mass transit system for Manhattan. Having a funding base will only make attracting additional funds easier. An additional key to the success of the system is a partnership with Kansas State University as many of the routes, and even riders, will be centered in and around the university campus.

In order to get a bearing on how a transit system can work successfully for a city of Manhattan's size, this study will take a look at a single precedent—the CyRide system in Ames, Iowa. Ames has had a successful and award-winning bus service since the mid 1970s. Ames, as a city, has many similarities to Manhattan, Kansas. It has already crested the 50,000 population mark and they are both home to universities of similar size—Iowa State University having 26,000 students and Kansas State University having 23,000. A case study of Ames' bus system and how it services the city, university, and any commuter traffic will provide what is hoped to be a stellar example of how a small city can successfully operate a mass transit system.

Mass Transit

One solution to alternative forms of transportation within a city is mass transit. Mass transit “generally refers to scheduled intra-city service on a fixed route in shared vehicles” (Schrag, 2002). Mass transit can take many forms: commuter rail, subway, light rail, street/trolley cars, buses, and even taxi cabs. Each system requires a certain base population, but that is to be discussed further in this report. Most importantly, mass transit provides a necessary alternative to the automobile. The necessity of mass transit was most recently highlighted during the summer of 2008 when fuel prices soared to approximately 4 dollars per gallon. As the price of fuel began to rise, more drivers began taking advantage of mass transit systems in order to save money on gasoline (Krauss, 2008).

Brief History of Mass Transit in the United States

Taking a look at the history of mass transit in the United States will give a proper perspective as to how it has evolved into the present day systems and its relationship to the automobile. The earliest of transit systems originated on the East Coast—primarily New York City—where it began with horse-drawn street cars. As technology improved, these horse-drawn streetcars were eventually replaced by cable cars and finally electric streetcars. Additionally, wealthy commuters would take steam trains from the countryside into the city as a means to

commute to work. Eventually, the steam train was brought into the city, elevated above street grade, and began non-stop service within the city. The early 20th Century brought with it the invention of the internal combustion engine. Many transit operators began “motorizing” their services by switching from the fixed-route cable and electric street cars to motorized buses, which were less expensive to operate and were a more attractive solution in reaching suburban locations. As the century continued on, elevated trains switched from steam engines to the cleaner diesel engine, and many large cities dug networks of tunnels underground in order to accommodate modern subway systems (Schrag, 2002)

The internal combustion engine would prove to be the biggest competition to the nation’s mass transit systems. General Motors (GM) is specifically credited with “killing” rail mass transit in the United States by eliminating streetcars in an effort to increase auto sales. In the early 1920s, the streetcar networks in most major U.S. cities were so efficient that automobile makers, like GM, found that their auto-sales reached a plateau. In order to counteract this, GM took it upon themselves to do all they could in order to sell more cars. Through financial leverage and even bribery, GM effectively bought-out many of the large rail companies (including public operators) by threatening to take their freight business to a competitor, or they bribed public officials with a brand new Cadillac. The objective of this conspiracy was to convert electric streetcars to motorized buses, and it worked. Because buses were much less desirable to ride due to noise and exhaust fumes, the public responded in part by purchasing personal automobiles (Snell, 2001). Ever since then, this nation’s love affair with the automobile has increased and the use of mass transit has decreased.

Why Mass Transit

Reviewing the history of mass transit in the United States only reinforces the question, “Why mass transit?” Why should municipalities invest in mass transit systems? The American Public Transportation Association answers that question in the 2008 Public Transportation Fact Book (Neff, 2008) by saying that mass transit benefits everyone. It improves the quality of life in communities by providing an efficient and economical service that is both vital and necessary to the economy. One way it can improve the quality of life is by reducing traffic congestion. The Fact Book cites a study conducted by Texas Transportation Institute (TTI) which states that the use of mass transit saved travelers 541 million hours in travel time, and without mass transit, travel delays would see an increase of 13 percent. Therefore, the quality of life is increased due

to less hours spend on congested roadways and in traffic jams. An additional way it increases the quality of life is by creating more livable communities. The Fact Book states that mass transit “facilities and corridors are natural focal points for communities that serve to encourage economic and social activities that help create strong neighborhood centers that are economically stable, safe, and productive” (p. 11). When members of the community ride mass transit, they have the opportunity to interact with their neighbors more often, which brings the community closer together. Additionally, communities designed around mass transit facilities tend to be more walkable communities. This increases physical activity which is one component to leading healthier life-styles. Mass transit not only increases the quality of life for the residents in a community, but it is a vital and necessary component of the economy. Probably the most important example of mass transit aiding a healthy economy is the fact that it provides access to jobs. “More than half of the nation’s Fortune 500 companies, representing \$7 trillion in annual revenue, are headquartered in America’s transit-intensive metropolitan areas” (p. 10). Mass transit enhances worker reliability and reduces absenteeism. Additionally, communities with mass transit systems allow workers to access jobs over a larger area, effectively facilitating their inclusion into the work force. Another economic factor includes increasing the value of real estate for those residential and commercial properties that are served by mass transit. This stimulates economic development around mass transit stops and hubs, and it saves travelers money for which they can then spend on other goods and services (Neff, 2008). Overall, the existence of mass transit has proven benefits to both the individual and the community as a whole, and is therefore a vital component in the growth of any city.

Ridership

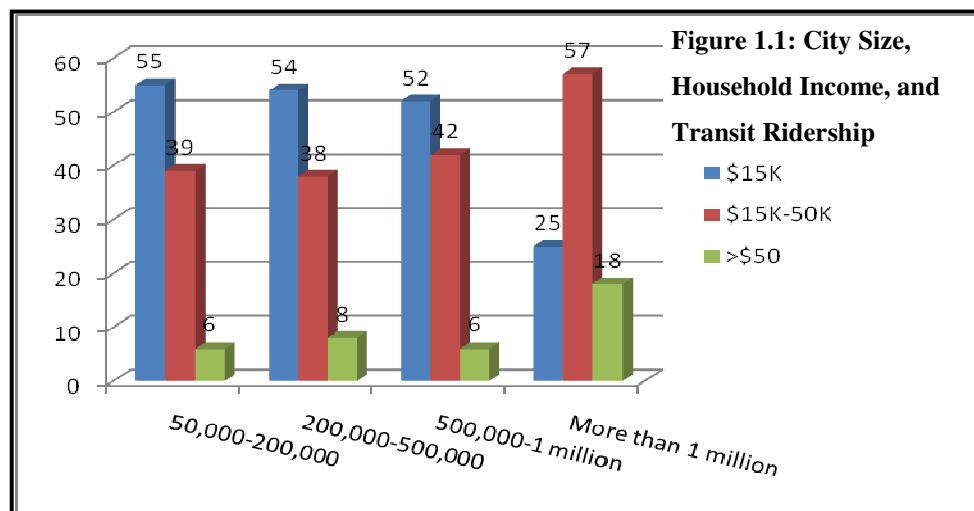
Ridership is the life-blood of all transit systems, for it not only dictates which type of system is appropriate to implement, but ridership also provides at least a portion of the total revenue needed to continue transit service. If no one were to ever utilize a transit system, it would not exist. At the national level, only about 5 percent of commuters use mass transit. In fact, the ridership in the year 2000 was only half that of 1950. The nation saw an

Table 1.1: Public Transit Ridership, 1950-2000

<i>Year</i>	<i>Total Ridership (in millions)</i>
1950	17,246
1960	9,395
1970	7,332
1980	8,500
1990	8,325
2000	8,752

Source: Neff, 2008

all-time low in the 1970, but ridership has been on a slow, but steady increase ever since (O'Sullivan, 2007). Table 1.1 documents this change in ridership over time. Beyond the year 2000, the increase in ridership has been even greater. From 2006-2008, transit ridership increased by 2.1 percent, and it is predicted to increase by 5 percent in the coming years. Much of this has to do with the aforementioned spike in gasoline prices during the summer of 2008. As noted by the president of the American Public Transportation Authority—William Millar—“In almost every transit system I talk to, we’re seeing very high rates of growth the last few months.” Although the summer of 2008 saw a dramatic jump in transit ridership, overall ridership numbers have increase steadily over the last few years (Krauss, 2008). In his book \$20 Per Gallon, Christopher Steiner (2009) gives specific examples proving how ridership increased due to gasoline prices topping \$4 per gallon. San Francisco’s Bay Area Rapid Transit (BART) system resorted to removing seats from the trains in order to make room for riders. A once neglected system now has standing room only because of higher gas prices. On the opposite side of the equation, the Mass Pike toll road in Massachusetts saw a drop in “millions in 2008” while their “T” subway system faced overcrowding as well (Steiner, 2009). This goes to prove that one of the major factors affecting transit ridership is income. As the price of gasoline increase, the cost of each trip taken in the automobile will increase to the point where more and more households cannot afford to spend as much on fuel. As Figure 1.1 illustrates, the majority of transit riders in most metropolitan areas are low-income commuters. The only exception is when the metropolitan area boasts a population of greater than 1 million. With populations over 1



Source: Neff, 2008

million, the moderate income category shows the highest number of riders. Speculation would say that as the price of gasoline continues to fluctuate and eventually steadily increase over the years, ridership across all income levels will increase.

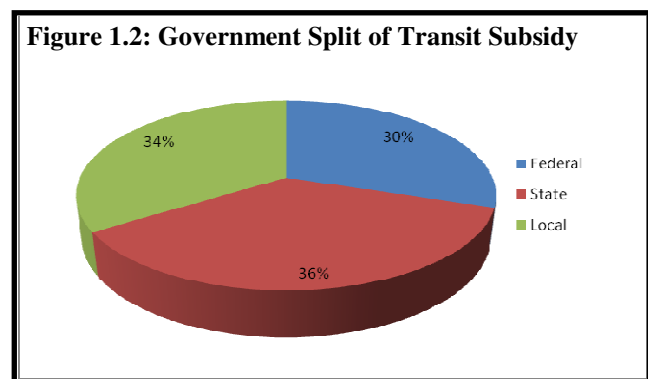
Funding

Out of all of the components that make up a successful transit system, funding is the foundation. Like ridership, without funding, the transit system would not exist. Most, if not all, transit systems in the nation are subsidized to some degree. This subsidy exists in order to keep the fares low and affordable to all riders. If fares alone were expected to cover the operating, maintenance, capital, and any other cost that the mass transit system may accrue, they would be very high and no one would be able to afford them. The subsidy also exists due to other factors that create a deficit. Such things include high transit worker wages, serving routes with low passenger density, and a decline in transit worker productivity (defined as transit rider per transit employee). The last factor is created by the fact that some transit worker labor union rules prohibit hiring part-time workers or split shifts. The transit agency has to hire enough workers to work the peak commuting hours; however, they are then required to pay the worker throughout the day even if they are idle. All such factors disallow the transit agency to be self-supporting (O'Sullivan, 2007).

Therefore, all levels of government provide financial assistance to cover this deficit. Overall, the federal government is responsible for 30 percent, the state government provides about 36 percent, and a local government makes up the final 34 percent (Figure 1.2)

(O'Sullivan, 2007). The aforementioned information is describing the situation for established metropolitan areas. How does it differ for a small city just entering the arena of mass transit? The Federal Transit Administration (FTA) offers several assistance programs for both non-urbanized

and urbanized transit systems. Non-Urbanized areas are defined as areas with populations below 50,000. Urbanized areas are defined as areas with populations greater than 50,000. Within the urbanized category, an additional demarcation differentiates between small urbanized areas and



Source: O'Sullivan, 2007

large urbanized areas. Small urbanized areas have populations ranging from 50,000 – 199,999. Large urbanized areas have populations greater than 200,000 (O'Sullivan, 2007). The following list of assistance programs is taken from the Ames Area Passenger Transportation Development Plan and will begin with federal assistance programs for both non-urbanized areas and urbanized areas. It also includes state funding programs and examples of local funding. A complete and detailed explanation of each program is included in Appendix A.

Federal Transit Assistance Programs

Metropolitan Transportation Planning Program (Section 5303)

Statewide Transportation Planning Program (Section 5304)

Urbanized Area Formula Program (Section 5307)

Capital Investment Program (Section 5309)

Special Needs Formula Program (Section 5310)

Non-urbanized Area Formula Program (Section 5311)

Rural Training Assistance Program (RTAP) (Section 5311(b)(3))

Intercity Bus Assistance Program (Section 5311(f))

Job Access/ Reverse Commute (JARC) Program (Section 5316)

New Freedom (NF) Program (Section 5317)

Over-the Road Bus Accessibility Program (Section 3038)

State Programs

State Transit Assistance (STA) Formula Program

STA Fellowship Program

STA Statewide Special Projects

STA Coordination Special Projects

Local Funding

Passenger Revenues

Contract Revenue

Local Taxes

Advertising Revenue.

City Size

City size plays a critical role in the implementation of a mass transit system. Although various population thresholds are not mandatory to attain before the implementation of a transit system, such thresholds bring with them a higher chance of success for the transit system.

Table 1.2: Mass Transit Modes/Ridership Base Populations

<i>Mass Transit Mode</i>	<i>Recommended Base Population</i>
Bus System	100K
Light Rail	200K- 300K
Commuter Rail/ Subway	500K
Combined Systems	500K - 2 million

Source: Levy, 2009

Therefore, each mode of transit has specific population thresholds based on whether or not the city has a great enough population in order to make the transit system cost effective. In the transit system hierarchy, as the next level is attained, the total cost of implementation increases.

Therefore, for every level, there is a greater population required in order to disperse the cost of implementation over a greater number of users (Levy, 2009). Table 1.2 compares the population thresholds for each mode of mass transit. The conventional bus system is recommended to have a population of at least 100,000. For light rail, the recommended population is between 200,000 and 300,000. Commuter rail systems and subways require a population of at least 500,000. If a city combines several modes of transit, a population base of 500,000 is recommended. However, there is an exception to the rule for each of these. The city can implement a certain transit system with a lower recommended base population if it believes it has nodes of critical mass that will provide ample sources of ridership. For example, a college town with a population of approximately 50,000 residents has been shown to support an efficient and effective bus system because it began serving the pockets of population consisting of students who need a means of transportation to the university campus. These pockets of population have a high enough critical mass in order to make the system cost effective. This specific bus system can be found in Ames, Iowa and will be discussed in greater detail later in the report.

Conclusion

The death of American streetcar can be seen as a tragedy, and although one can look back and wish it did not happen, the fact is that it did and nothing can be done to change it. U.S. cities' transit systems have evolved in relation to the gasoline and diesel engine, and they support

relatively efficient mass transit systems through interrelated networks of bus, light rail, commuter rail, and subways. The purpose of this report is not to debate the most efficient form of mass transit, or even discuss the ethics of the actions taken by GM. The purpose of this report is to look into how a growing city can implement its own mass transit system in order to serve its citizens given the available options that prove themselves in comparable locations. This report will look at the CyRide bus system of Ames, Iowa as it serves the city and Iowa State University in order to draw conclusions for which recommendations can be made to the City of Manhattan, Kansas.

CHAPTER 2 - City of Ames, Iowa State University, and CyRide

In order to get a bearing on how a small city can successfully run a mass transit system, this next section of the report will take an in-depth look at the CyRide bus system of Ames, Iowa and Iowa State University. It will first discuss the location and pertinent demographic information for both the city and the university. Following that, the Passenger Transportation Development Plan, administration, operations, maintenance, marketing, and sustainability efforts are discussed. The goal of this section is to determine the specifics of how the system operates and functions in order to then make general conclusions that can be passed along to another entity looking to model a similar system after CyRide. The information gathered to complete this section is a compilation of several literary sources, information straight from the professionals who work at CyRide, and personal experience of the system. The information gathered from the professions who work the system was gathered from an open ended interview that was held on January 5, 2010 at the CyRide administrative offices in Ames. An outline of the questions with their responses is provided in Appendix B. The participants in the interview are as follows:

Sheri Kyras, Transportation Director

Barb Neal, Operations Supervisor

Karen Jamison, Assistant Director of Operations

Tom Davenport, Transit Coordinator

Bob Bourne, Former Transit Director (1981-2006)

Location and Population

The City of Ames is located in Story County approximately 40 miles northwest of Des Moines, Iowa at the intersection of Interstate 35 and U.S. Highway 30 (Figure 2.1). The 2000 Census listed Ames as having a population of 50,731 (U.S. Census Bureau, 2000), which prompted the creation of the Ames Area Metropolitan Planning Organization (AAMPO).

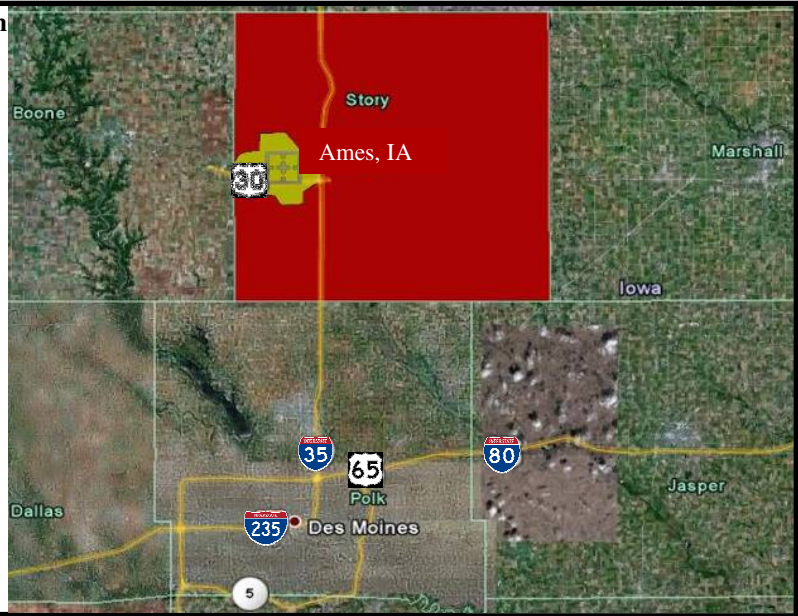
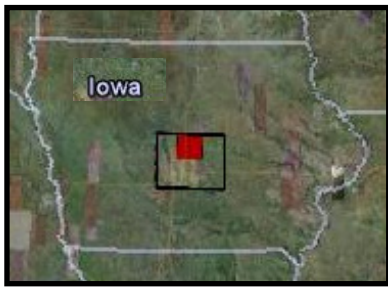
AAMPO is one of nine metropolitan planning areas within the State of Iowa. The City of Ames is also home to Iowa State University, which, until recent development in the last decade,



Source: City of Ames

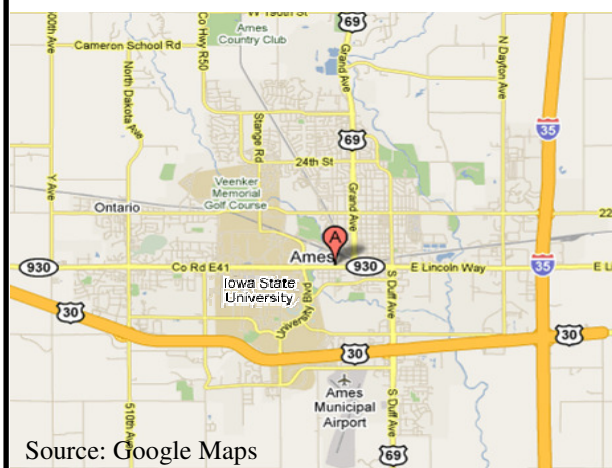
encompasses nearly all of the west side of the city. Current growth patterns, however, will eventually encapsulate the university (Figure 2.2). ISU typically enrolls approximately 25,000 students annually since 2001. However, in the fall of 2009, enrollment at ISU set a new record with 27,945 students (It's a Record Breaker, 2009). As with many college towns, the student population makes up a significant portion of the overall population. Ames is no exception. Students encompass approximately one-half of the population. Conversely, when school is not in session, the student population decreases to approximately 9,000—as is most noticeable in the summer. Therefore, for three months out of the year, 35 percent of the population leaves Ames—dramatically changing the character of the city. Such a change makes a specific impact on “the passenger transportation needs and level of service provided to the community” (Ames Area 2010 Passenger Transportation Development Plan, 2009 p. 7).

Figure 2.1: Regional Context and Location



Source: Google Earth

Figure 2.2: Location of Iowa State University



Source: Google Maps

Demographics

The following demographic information is taken from the Ames Area 2010 Passenger Transportation Development Plan (Fiscal Years 2010-2013) that was published in April of 2009. The information is ultimately reported from the U.S. Census Bureau’s 2000 website as it pertains to the City of Ames. Although most information is in reference to the 2000 Census, some information references the 2005-2007 Census estimates. Said information is marked as such. The demographic information is broken down into four key categories: elderly population, disabled population, poverty level, and ISU students. Where applicable, the population subset is looked at from both the city as a whole as well as just the university population. Iowa State University students are enumerated because the census data counts individuals based on where they live for the majority of the year (U.S. Census Bureau). The student population makes up approximately half of the city’s population. These demographic sections are being specifically highlighted because of they are closely tied to the subject of mass transit ridership. Persons with such demographic characteristics are more likely to ride mass transit (O’Sullivan, 2007).

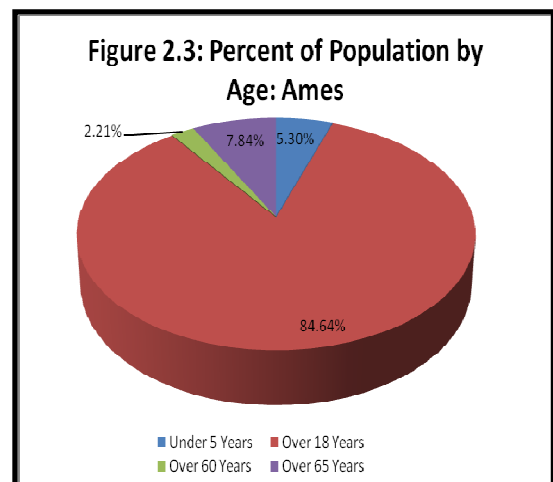
Elderly Population

The elderly population of the City of Ames is just over 10 percent (Table 2.1) (Ames Area 2010 PTDP). As shown in Table 2.2, ISU students do not contribute much at all to the elderly population of the city. Overall, the median age of the community—23.9—is relatively low compared to the national average—approximately 35. Ames also has the second lowest median age for the State of Iowa. Iowa City has the lowest at 25.40 (U.S. Census Bureau, 2000).

Table 2.1: Ames, Iowa: Elderly Population

2005-2007 Population Estimates	Number
Total Population	54,181
Under 5 Years of Age	2,874
Over 18 Years of Age	45,859
Over 60 Years of Age	1,199
Over 65 Years of Age	4,249
Median Age	23.9

Source: Ames Area 2010 PTDP, 2009

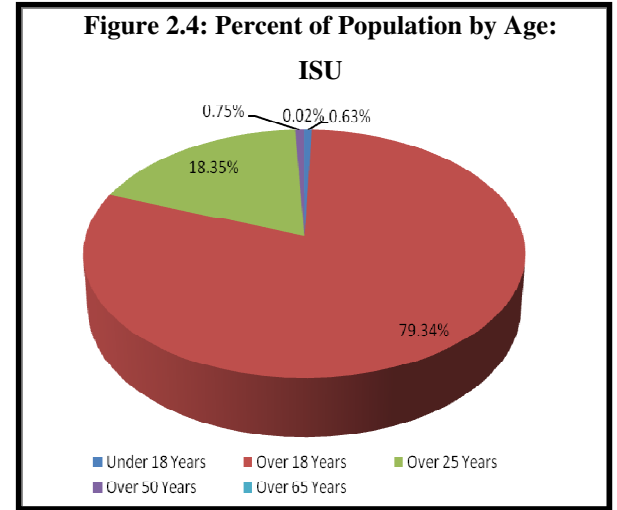


Source: Ames Area 2010 PTDP, 2009

Table 2.2: ISU Students: Elderly

2008 Population	Number
Total Population	26,160
Under 18 Years of Age	164
Over 18 Years of Age	20,756
Over 25 Years of Age	4,801
Over 50 Years of Age	196
Over 65 Years of Age	8

Source: Ames Area 2010 PTDP, 2009



Source: Ames Area 2010 PTDP, 2009

Disabled Population

The 2000 Census indicates that Ames has 4,001 disabled residents, which comprises 8.3 percent of the total population. Of the 4,001 disabled residents, 611 are enrolled at Iowa State University. Table 2.3 contains this information and further categorizes the disabled population by age cohort and type of disability (Ames Area 2010 PTDP).

Table 2.3: Ames, Iowa Disabled Population	Number	Years				Percent
		5-15	16-20	21-64	65+	
Total Population	50,731					
Population over 5 Year of Age	48,494					
Disability Status (over 5 Years of Age)	4,001					8.3%
One Type of Disability	2,418	216	357	1,243	602	5.0%
Sensory Disability		13	61	232	159	
Physical Disability		10	31	206	349	
Mental Disability		193	165	229	40	
Self-Care Disability		0	0	22	9	
Go-Outside Home Disability		0	17	56	45	
Employment Disability		0	83	498	0	
Two Types of Disability +	1,583	0	167	880	536	3.3%
Includes Self-Care Disability		0	34	193	154	
Does Not Include Self Care Disability		0	133	687	382	

Source: Ames Area 2010 PTDP, 2009

Poverty Status

The next demographic section to be highlighted is those living below the poverty line. Table 2.4 outlines this data using information gathered from the 2000 Census. The City of Ames had 8,507 individuals below the poverty level when the last census was taken. It is also important to note that approximately 4,122 Iowa State University students receive federal, state and low-income programs for their tuition reimbursement. Additionally, approximately 80 percent of students will receive some degree of financial aid every school year, however, these students are not considered below the poverty line (Ames Area 2010 PTDP).

Table 2.4: Ames Iowa: Poverty Status in 1999 of Individuals	All Income Levels	Below Poverty Level	Percent Below Poverty Level
All Individuals for whom Poverty Status is Determined	41,776	8,507	20.4%
Unrelated Individuals for whom Poverty Status is Determined	16,260	6,652	40.9%

Source: Ames Area 2010 PTDP, 2009

Students

As stated before, students encompass nearly half of the total population of the City of Ames. In 2008, Iowa State University documented that 26,160 students enrolled for the school year. The population estimates for the same year for the city were 54,181. This means that 48 percent of the total population is made up of college students. Table 2.5 documents this ratio.

Table 2.5: Student Population Ratio	City of Ames	Iowa State Univ.	Student Pop. Ratio
Numbers	54,181	26,160	48%

Source: Ames Area 2010 PTDP, 2009

Special populations are the backbone for any transit system. Creating a system that provides ample service for these population helps to ensure the success of the system. This means that the system must be reliable and safe in its service to frequently visited destinations within the community such as job centers and retail areas. The next portion of this report will begin the in-depth study of the bus service that the City of Ames provides known as CyRide.

CyRide

The name “CyRide” is a play-on-words incorporating the university’s mascot—the Cyclones— and the idea of ridership as if to say it is the official “ride” of the Cyclones. The name makes complete sense when considering the fact that the inception of the system, in the mid-1970s, was a decision made by the university, completely independent of the city. In order to accomplish the goal of reducing the number of cars on campus and promoting a more pedestrian campus, it had to provide the students with an alternative means of transportation in and around the university (Iowa State University Parking Division, 2006). In the interview, it was stated that the “first endeavors to reduce the number of cars on campus was to restrict access to various campus streets”, however this proved to be unsuccessful (CyRide, 2010). Knowing that parking was extremely limited and overrun, the university began incrementally raising rates of on-campus parking lots, while allowing students to park at the Iowa State Center (ISC) for free. Eventually, the university passed a regulation that prohibited any student living in the City of Ames to receive a campus parking permit. This would practically force all such students to park at the ISC and take a shuttle to campus. Simultaneously, in September of 1976, CyRide became a department of the city, but that was after the university had been operating several routes on its own. The first city-wide route began operating in September of 1979. Over the years, CyRide has expanded service to meet the ever growing demands of the community and the university alike (CyRide History, 2006). A detailed timeline annotating the history of the system can be found in Appendix B. This section of the report will outline the Passenger Transportation Development Plan; the various departments within CyRide such as administrative, operations, maintenance, and marking; and will conclude with a discussion regarding the sustainability efforts of the system.

Passenger Transportation Development Plan

CyRide is in charge of creating and retooling the Passenger Transportation Development Plan (PTDP). The PTDP is a planning document that is required by Congress through the Safe, Accountable, Flexible, Efficient, Transportation Equity Act: A Legacy of Users (SAFETEA-LU). This act is responsible for reauthorizing funds for transportation service providers. The mandate is handed down from Congress to the state level. In reaction, the Iowa Department of Transportation (IDOT) requires a PTDP to be developed by the states metropolitan planning

organizations (MPOs). Therefore, the Ames Area Metropolitan Planning Organization (AAMPO) is responsible for keeping their PTDP document up to date. The most recent document encompasses the 2010-2013 fiscal years (Ames Area 2010 Passenger Transportation Development Plan, 2009). Overall, the PTDP sets forth approved recommendations for the AAMPO to consider as it looks to improve overall transportation service throughout the transit planning area. These recommendations are put together from a variety of participants within Story County, and are supposed to reflect the needs of all constituents involved. More specifically “[t]he PTDP plan’s elements consists of inventorying the available transportation services, identifying transportation needs of Ames’ residents, evaluating current services gaps, and exploring options to better meet the needs of Ames residents” (Ames Area 2010 PTDP, 2009 p. 3). It is a four-year plan that is modified annually whose primary focus is how to better meet the needs of those individuals who are elderly, disabled, or fall below the poverty line. Overall, the document works to better the coordination between service provides in order to deliver the most efficient service to the entire community by not duplicating services, which only wastes precious fiscal resources (Ames Area 2010 PTDP, 2009). The complete document is available on CyRide’s Planning Documents, Studies, and Civil Rights Policies webpage at http://www.cyride.com/planning_policies/planning.html. This section of the report will briefly discuss the most recent Ames Area PTDP. The most attention will be given to the most likely candidate for future service that was found when the gap analysis was conducted.

General Information

The document provides general background information regarding the location of the City of Ames as well as pertinent demographic information. The next section in the document is an inventory of the existing transportation providers. It includes airports, taxi services, charter services, intercity bus, ridesharing, school transportation, and public transit providers. It then gives the details of the fixed-route service offered by CyRide, which will be discussed in detail later in this report. With these details, various maps are provided illustrating these fixed routes. As the inventory of transportation continues, human service/private transportation providers, human service agency transportation, and coordination efforts are discussed. The latter documents the relationship between Cyride, the city, the university, Central Iowa Transit, and Heartland Senior Services. Following the discussion of the relationship between CyRide and other partners, the PTDP discusses the future transportation needs of the community. This

section is by far the most important of the entire document. The CyRide staff conducted a gap analysis to determine where service is currently lacking. The gap analysis will be discussed in greater detail further in the report. Along with the gap analysis, other needs were discussed as they pertained to various departments. These needs will be addressed within the specified subheading within this report. In general, the transportation needs section outlines the current administrative needs, needs related to operations, maintenance needs, and education/marketing. The document covers additional needs regarding services that partner with CyRide such as Heartland Senior Services, CIT, and various human service agencies (Ames Area 2010 PTDP, 2009)

The fifth section in the report takes the transportation needs one step further by providing possible strategies as solutions to the needs presented. Alongside the discussion of the needs, the pertinent strategies will be discussed in the specified sections within this report. The sixth section of the document address the financial resources available to fund the various costs associated with operating a transportation system. These resources are discussed in greater detail under the “Funding” subheading. In general, this section discusses the funding sources CyRide takes advantage of in order to maintain the proper level of service to the community. Following the discussion of financial resources, the PTDP offers a detailed table of projects that were unanimously recommended to be incorporated into the 2010 PTDP. This table outlines the projected provider, a description of the project, the type of project (examples include “operations, capital, or planning”), the estimated cost, the proposed funding source (including a proposed dollar amount), and finally a priority ranking. The table is viewable in Appendix B. To conclude the document, the PTDP offers a reflection regarding improvements that it is hoping to address in 2010. The bottom line of this conclusion is that CyRide intends to gather more information about other human service providers in the area in order to increase coordination between the various providers in an effort in increase the efficiency of the network as a whole (Ames Area 2010 PTDP, 2009).

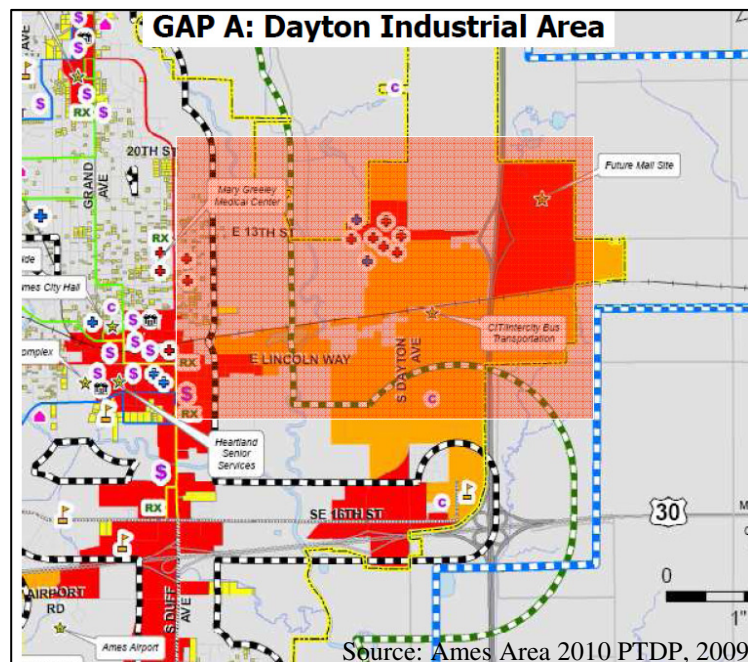
Gap Analysis

The section within the PTDP that is discussed in greatest detail is the section that discusses transportation needs. CyRide receives public comment throughout the year via telephone and email. They take public comment very seriously and use it to help direct where future service should be implemented. The section regarding transportation needs is the main

point of the PTDP, for it outlines the new services that CyRide is considering in the next four years. To professionally address areas where services seem to be lacking, the CyRide staff combined public comment with land-use and demographic data in order to study where community members need to travel throughout the city. The study analyzed the location of commercial and industrial areas as well as residential rental units. Rental units communicate where higher density occurs in the city as well as where transit dependent residents most likely reside. Other special populations were identified such as low-income neighborhoods, students, elderly residences, assisted living facilities, and hospitals. Special destination status was also given to the university campus as it is not defined as commercial, industrial, or high density residential. The data retrieved regarding the population was combined with the existing transit service routes/bus stops and a base map was plotted in order for initial analysis to be conducted. The next step in the analysis process is to determine the pedestrian access to transit from the demarked areas. To determine this, both a quarter-mile and half-mile buffer was created around each bus stop. A quarter-mile is identified as the typical distance a person is willing to walk. A distance of one-half mile was also determined as an acceptable distance in which people will be willing to travel on foot to a destination. This analysis resulted in finding seven gaps in transit service. A gap is defined as either when targeted populations live outside the half-mile buffer from a transit stop or when a destination that should have transit service is outside the half-mile buffer (Ames Area 2010 PTDP, 2009). This next section will cover the gap that will most likely receive service extended to it.

The area known as the Dayton Industrial Area is located in the northeast quadrant of the city and is situated adjacent to Interstate 35 and 13th Street, as illustrated

Figure 2.5: Gap Analysis Results



in Figure 2.5. Also known as East Ames, “[t]his area serves as a major commercial/industrial zone of the city with businesses such as 3M, Mainstream Living, Mary Greeley Diagnosis, Wylie Eye Care Center, and Sauer-Danfoss ... a new proposed mall area... [as well as] several clinics” (Ames Area 2010 PTDP, 2009 p. 39). However, the interviewees commented that “due to the downturn of the economy, the proposed mall site on the east side of the interstate has been significantly delayed” (CyRide, 2010). Regardless, this area has been a priority in the PTDP process for several years. This is primarily due to the presence of the medical services that are provided. The majority of this area falls significantly outside the half-mile buffer in the gap analysis. This means that residents seeking the medical assistance offered in this area would have to walk a significant distance from the nearest bus stop in order to take advantage of the services provided in this area. For many residents in the community that are transit dependent, this is a huge obstacle as they are elderly or may have a disability which may restrict their ability to travel such a distance on foot. In the interview however, the staff indicated that they “expect service to this area will begin in July 2010 as long as CyRide can locate funding to match the monies awarded to them by a grant” (CyRide, 2010). Providing service to this area will help increase access to this area for those residents in the community who do not own a vehicle, but still require the services provided in East Ames. The downside to extending service to East Ames, however, is that certain funding ratios may have to be adjusted due to the added service. If the ratios change significantly enough, CyRide could end up losing some funding. The interviewees stated that it is hard to know what will happen so there is really no way to predict if their changed ratios will cause a drop in funding. Overall, they are not letting the concern of losing some funds deter them from providing needed service to East Ames (CyRide, 2010).

Administration

The CyRide facility is located on the Iowa State University campus and houses all of the Administrative, Operations, and Maintenance offices. According to those interviewed, CyRide became a department of the city in 1976, and remained such until 1981 when it became an agency (CyRide, 2010). An agency still works alongside the city and is still subject to the authority of the city. However, an agency does possess more self-governing authority than a department would. Specifically, the relationship between CyRide and the City of Ames is defined as a 28E Agreement, which is basically just an “intergovernmental agreement that

created CyRide as an agency” (CyRide, 2010). In regards to the relationship between the two entities, CyRide has a board that approves decisions made by the agency. Once approval from the board is received, it is then passed over to the city for approval by the Ames City Council. It was mentioned that “very rarely, if ever, does a decision not get approved by the city if it has already been approved by CyRide because the board is made up of constituents of all three local funding partners: Iowa State University, Government of the Student Body, and the City of Ames” (CyRide, 2010). Since the city has representation in the original decision-making process, if it reaches approval in the first state, it is obviously in line with the goals and intentions of the city.

In the interview, an instance was cited when the city made a decision concerning CyRide without consulting the board previously. In the summer of 2009, the City of Ames wanted to do a demonstration period to test what would happen if CyRide was fare-free city wide. The Ames City Council voted that the bus system would be fare-free from May 15 through August 15 without consulting the CyRide board. The only reason that this worked is because the city decided early on that it would be the sole financier of this demonstration period, therefore it did not need the approval of the other two entities because it was not asking them for financial support. The interviewees said that the city did keep CyRide abreast of the situation by communicating pertinent details when they were made available (CyRide, 2010). In no way did this damage the relationship between CyRide and the city. It was said that having an agreement which brings all three entities together to make decisions is the most efficient way of doing things, however—as proven by aforementioned example—it can make the decision making process a little cumbersome. In the interview, Sheri Kyras stated, “The lines can get a bit fuzzy especially when the City Council approves something the CyRide Board’s approval first. It’s legal, just annoying” (CyRide, 2010).

Funding

In regards to funding, CyRide receives federal, state, and local funding. Funding from all three levels covers the administrative, capital, operational, and maintenance costs of the entire system. Although the amount of funding varies from year to year and certain projects are put on hold due to lack of funding, CyRide has been able to continue operating its system as efficiently and consistently as possible (Ames Area 2010 PTDP, 2009). This section will look at the federal, state, local sources of funding CyRide takes advantage of on a yearly basis.

Federal

On the federal level, CyRide has received funding even prior to Ames being named an entitlement city in 2000. Prior to the year 2000, CyRide was the recipient of Section 5311 funds for Rural and Small Urban Areas. The interviewees stated that under the Section 5311 formula, CyRide received approximately \$800,000 disbursed annually by the Governor of the State of Iowa. Once Ames crossed the threshold of 50,000 in the year 2000, CyRide then qualified for Section 5307 funds for Large Urban Cities. Under the Section 5307 formula, CyRide’s Federal funding was nearly cut in half to approximately \$450,000 (CyRide, 2010). Where CyRide lacks funding from the Section 5307 formula, they make up for it by using funds from the Small Transit Intensive Cities (STIC) formula (Ames Area 2010 PTDP, 2009). These funds are available of small cities that do not fit the normal of typical small city transit operations. Typically, transit systems in small cities have relatively low ridership—mostly based on residents who need transportation assistance such as the elderly, disabled, or low-income residents. However, some small cities have special populations that create a much higher demand for transit and create large ridership numbers (Federal Transit Authority STIC, 2009). Ames, Iowa is one of these small cities. With a relatively significant student population—comprising nearly half the total population—CyRide experiences high ridership on the majority of its bus routes. Because of these characteristics, CyRide is eligible to quality for funds under the STIC formula. As stated in the interview, “under the STIC formula a small urban area can receive additional funding for each of the six criteria it meets. For every criterion met, CyRide receives approximately \$120,000” (CyRide, 2010). The criteria and CyRide’s calculations in relation to the national average are as follows in Table 2.6:

Table 2.6: STIC Ratios	FY08 National Average	CyRide FFY08
Passenger Miles/ Revenue Miles	5.58	5.62
Passenger Miles/ Revue Hours	100.24	60.51
Revenue Miles/ Capita	11.28	20.54
Revenue Hours/ Capita	0.75	1.91
Passenger Miles/ Capita	78.35	115.44
Passengers/ Capita	13.97	79.85

Source: Davenport, 2009

The interviewees stated that “as of 2008, CyRide qualified for approximately \$600,000 based on the 5 criteria it met” (CyRide, 2010). The only criterion for which it does not receive funding (nor does the administrative staff believe it ever will) is the second one: passenger miles/ revenue hours. The reason why it is unlikely for CyRide to ever meet the second criterion is because the system operates in a small city. The passenger miles/revenue hours will perpetually be less than that of a transit system in a large city. Although CyRide met five of the six criteria for the fiscal year of 2008, which provides revenue for the 2009 fiscal year, they are not confident in holding onto the first criterion. The 2009 data has yet to be made available by the FTA, but the national average for passenger miles/ revenue miles is expected to increase to approximately 6.4, and CyRide does not expect their ratio to increase as significantly to retain that criterion. However, when it comes to the other 4 criteria, CyRide remains confident in their ability to maintain significantly higher ratios—making STIC funds a reliable source of annual revenue (CyRide, 2010).

In addition to FTA assistance programs, there are also flexible funds made available to transit systems by the Federal Government. The first of which is a state program funded by the Federal Highway Administration (FHWA). The Iowa Clean Air Attainment Program (ICAAP) allocates funds that can be used by highway, transit, or bicycle/pedestrian uses. This program is specifically set up for areas that do not have any air quality violations under the Clean Air Act. Areas within states that violate the air quality standards of the Clean Air Act receive monies from the Congestion Mitigation/Air Quality (CMAQ) program. Since there are no areas in the State of Iowa that violate such standards, it receives a minimum allocation of CMAQ funds that can be used state-wide. These funds must be applied for, and awarded on the basis of the project’s anticipated air quality or congestion relief benefits. In October 2008, CyRide received \$50,800 in ICAAP funds and is using it towards marketing efforts for their Public Education program. It also received \$915,200 in ICAAP funds in October 2009 which were used to purchase two out of the twelve buses it will be converting to hybrid vehicles (Ames Area 2010 PTDP, 2009). The additional buses were purchased through stimulus money, which is discussed later in the report.

The other program of flexible federal funds is the Surface Transportation Program (STP). STP funds are again awarded to the states by the FHWA based on various factors such as vehicle miles of travel, highway lane miles, and the number and size of bridges. The funds can be used

for roadway, transit capital projects, pedestrian/bicycle projects, or intermodal planning projects. Usually, transit systems secure these funds from their local MPO or regional planning affiliations (RPA). This is the case when applied to CyRide. It has not received any direct STP funds, but since it is an agency of the City of Ames, it receives STP funds indirectly. These funds have paid for 40 percent of the Ames Transit Feasibility Study—total cost equally \$100,000—and 25 percent of the CyRide Facilities Master Plan Update—total cost equally \$40,000 (Ames Area 2010 PTDP, 2009).

The final source of federal funding made available in the last year was the stimulus package under the American Recovery and Reinvestment Act (ARRA). The ARRA was signed by President Barack Obama on February 17, 2009. According the FTA website, ARRA includes appropriations and tax law changes totaling approximately \$787 billion to support government wide efforts to stimulate the economy. Goals of the statute include the preservation or creation of jobs and the promotion of an economic recovery, as well as the investment in transportation, environmental protection and other infrastructure providing long-term economic benefits” (Federal Transit Authority ARRA, 2009). According to the interview, “CyRide was awarded a portion of these funds in 2009 equally \$4.3 million” (CyRide, 2010). These funds were used to purchase seven diesel buses. These funds, in conjunction with a grant from Transit Investments for Greenhouse Gas and Energy Reduction (TIGGER)—totally \$1.6 million-- allowed CyRide to convert the newly purchased seven diesel buses along with five other diesel buses into hybrid vehicles. The federal funding paid for the conversion of ten out of the twelve vehicles. If it were not the federal funding made available by the stimulus package, CyRide would not have been able to add hybrid vehicles to their fleet. This is because they were previously denied money from the state, which will be discussed further in the report. Additional funding—totaling \$640,000—from the ARRA allowed CyRide to rehabilitate the cracked walls/ceiling/floor of the steam cleaning area of their facility (CyRide, 2010).

State

In addition to federal funding, CyRide also receives annual funding from various state sources as well. However, out of the three major funding sources, the share received from the state is the least. CyRide takes full advantage of the funds that are available through the State Transit Assistance (STA) programs. On average, CyRide receives \$470,000 each year from this program to help support its operations. Additional state revenue comes from the STA fellowship

program, which is designed to assist with the training costs of transit systems. CyRides utilizes approximately \$15,000 of this program for administrative, maintenance, and operational staff. The funding goes towards attending Federal (FTA) and state (IDOT) transit seminars, conferences, trainings, and educational site-visits to other university transit communities (Ames Area 2010 PTDP, 2009).

In 2006, the Iowa Legislature passed the Public Transit Infrastructure Grants program “to fund some of the vertical infrastructure needs of Iowa’s transit systems” (Ames Area 2010 PTDP, 2009 p.71). These funds may be used for construction, reconstruction, or remodeling; however, each project must include a vertical component to qualify. This means that projects must deal with structures involving transit-related uses as opposed to widening roads to accommodate buses (for example). Funding for projects, in combination with any federal funding, cannot exceed 80 percent of the overall cost, nor can a single system receive 40 percent of the total funding available in a given year. In 2007, CyRide received \$880,000 to aid in the construction of the administrative wing on their facility. CyRide also requested funding in 2008 as well as for 2010 (Ames Area 2010 PTDP, 2009).

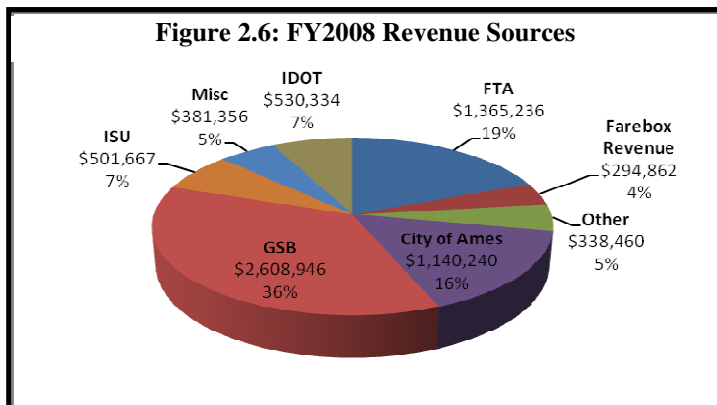
Additional funds available from the State of Iowa include the Capital Match Revolving Loan Fund (AMOCO Loan) and the Iowa Power Fund. The AMOCO Loan was made available in the 1980s by the Iowa Legislature. The funds were made available through Iowa’s share of the Federal Government’s settlement over the American Oil Company (AMOCO) for their overcharging of petroleum. The funds are available to all transit systems and are designed to expedite the implementation of transit capital projects—therefore seeking to promote the energy conservation inherent in riding transit. The program provides no-interest loans that must be matched at 50 percent by local funds. Additionally, the recipient must report the projects energy savings annually until the loan is repaid. Currently, CyRide has no outstanding loan with this program. The Iowa Power Fund was jointly created when the Iowa State Legislature created the Office of Energy Independence (OEI) in 2007 to “accelerate Iowa’s leadership in energy for the 21st Century” (Ames Area 2010 PTDP, 2009 p. 71). The intent of these funds is to aid the five transit systems in Iowa implement hybrid buses into their fleet, which already uses bio-diesel. In 2008, CyRide applied for a grant from the OEI to aid in financing a city-wide fare-free system. However, the funds were denied because the OEI feels that offering fare-free does not encourage mode change. This was completely contrary to the findings that CyRide presented. They estimate

that a fare-free system would increase ridership by 1 million riders each year. As stated before, CyRide was eventually able to fund the conversion of 12 diesel buses through stimulus money made available by the ARRA (Ames Area 2010 PTDP, 2009).

Local

On the local level CyRide receives funding from all the typical ways of generating revenue for a transit system. These include passenger revenue, contract revenue, advertising revenue, and local taxes. In addition to those sources, CyRide also receives revenue from Iowa State University student fees. Overall, the three main contributors of local funding are the City of Ames, Iowa State University, and the Government of the Student Body (GSB). According to the interviewees, “as the cost of operation increases, the three entities, although the three entities contribute unequal percentages, all try to increase their funding by the same percent” (CyRide, 2010). However, this can be complex especially when dealing with an entity of the state. The university is not always able to increase its funding when the GSB or the city wants to, due to state budget cuts. There is no written agreement that all entities have to increase the percentage of their funding, but each wants to try out of courtesy. It was also stated in the interview that “it is much easier for CyRide to budget if it knows that each entity is increasing their share by 5 percent in the next year” (CyRide, 2010). It is inefficient to budget towards the entity that pays the least. For an additional example of a system that uses a three entity board, one can research Chapel Hill, North Carolina—home to the University of North Carolina Chapel Hill. For an example of a system that does not, the example of Iowa City, Iowa—home to the University of Iowa—was given.

In summation, CyRide takes advantage of most of the funding sources available through federal, state, and local sources. Figure 2.6 illustrates the percent break down of revenue sources



Source: Ames Area 2010 PTDP, 2009

for the 2008 fiscal year. Money generated by the GSB through mandatory student fees proves to be the largest share of overall funding at 36 percent. The next largest share of funding comes from the various sources made available through the

FTA. These sources combined provide 19 percent of CyRide's annual revenue. The third largest source of revenue comes from the City of Ames, whose share is 16 percent. The main proponent of this source is local property taxes. Finally, revenue generated through fares, ISU, IDOT, miscellaneous funds, and other sources fill in the remaining 29 percent (Ames Area 2010 PTDP, 2009).

Administrative Needs

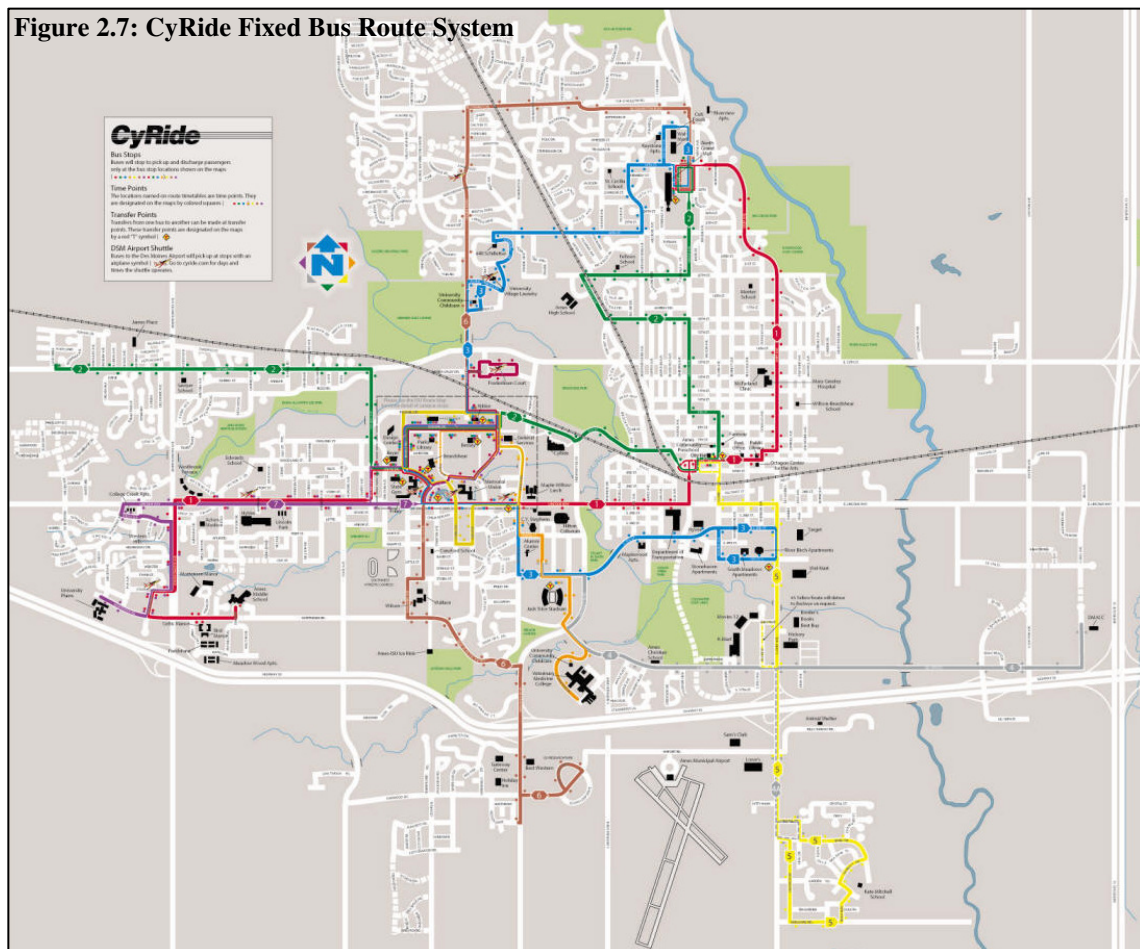
In general, the on-going administrative need is the continual pursuit and securing of financial resources. Each new fiscal year brings about new funding challenges that must be met. It is up to the administration to find sources to meet these needs. In relation to finding financial resources to support the system, the administrative offices have pinpointed the need to make the system more affordable for the community as a whole. A wide array of strategies of how to meet this need have been discussed. These strategies include city-wide fare free system, a continuation of the Transportation Assistance bus pass/gas vouchers, as well as "identifying opportunities for human service organizations to share vehicles and/or drivers" (Ames Area PTDP 2010, 2009 p. 59). An additional administrative need addressed by the PTDP is the need to increase communication and coordination between CyRide and other service providers within the community. This will create a more efficient public transportation network serving the Ames community. One main strategy to increase communication and coordination between service providers is the implementation of a common database for all organizations in order to avoid duplication of service. This not only increases communication between the organizations, but reducing duplicate services allows each organization to save money each year (Ames Area 2010 PTDP, 2009).

Operations

The office of operations heads up the physical implementation of the bus system. The operations staff manages the shifts of the bus drivers, oversees the bus schedules, and ensures proper and efficient service throughout the day. This next section in the report will discuss the various bus routes CyRide operates daily, dial-a-ride services, ways in which the operations are supervised daily, and the operational need as addressed in the PTDP.

Bus Routes

CyRide typically operates 11 fixed bus routes during the week, 6 fixed routes on Saturdays, and 5 fixed routes on Sundays. Changes in the number of routes as well as service frequency generally coincide with university holidays and breaks, and nationally observed holidays. Overall, in 2008, the fixed-route system carried 4,741,054 passengers. Ridership numbers by month and route can be found in Appendix B. CyRide uses a system of colors and numbers to identify which buses are serving which routes. For example a #1 Red bus provides services from the mall in the northeast corner of the city all the way to Ames Middle School in the southwest corner of the city. Riders are able to identify the correct bus via the LED information signs installed above the front windshield of each vehicle. These signs cycle through the identification number/color and the final destination of the route it is running. The following information contains a brief discussion of each route. Figure 2.7 is to be referred to for the discussion of each route. Information concerning each route was taken from CyRide's 2009/2010 Route Timetables and Map webpage.



Source: CyRide 2009/2010 Route Timetables and Map

#1 Red

The Red route is the longest route and begins in the northeast corner of the city at the North Grand Mall. It travels through the heart of the city to the southwest corner of the city where it terminates at the Ames Middle School. Apart from North Grand Mall, ISU campus, and Ames Middle School, major stops along this route include Mary Greeley Hospital, City Hall, and Downtown. The Red route has the second largest ridership in the community. In 2008 it carried 1,118,547 riders—a 16.4 percent increase from the previous year (Davenport, 2009). Passengers riding the Red route will only have to wait approximately 20 minutes between buses (known as the headway time), and are able to transfer to all other routes except the Gray.

#2 Green

The Green route provides service starting in the northeast corner at the North Grand Mall. It follows a different path than the Red route south, serving a residential area and downtown. This route provides service to the university campus before it travels to the far west edge of the city. The end of this route serves a primarily single-family residential area. Additional major stops along the Green route include Ames High School, City Hall, and Downtown. Passengers riding the Green route have a headway time of approximately 30 minutes, and are able to transfer to all other routes except the Gray.

#3 Blue

The Blue route begins at the North Grand Mall and travels west before it travels south towards the university campus, and completes its horseshoe route by arriving at a node of several apartment complexes. Other important stops along this route include a university housing complex, ISU campus, and Jack Trice stadium. Passengers riding the Blue route have a headway time of approximately 20 minutes, and can transfer to all other CyRide routes.

#4 Gray/ #4AGray

The Gray route, with the #4A subset, provides service from the Iowa State Center (ISC) to the Des Moines Area Community College (DMACC) east of town. The #4A subset travels south on Duff Avenue and terminates at a small commercial center that serves the single-family residential community surrounding it. From there, riders have the ability to transfer to the Yellow route. Other major stops along this route include Jack Trice Stadium, and the Veterinary College.

Passengers riding the Gray route have a hour headway, and can transfer to the Yellow, Blue, and Orange routes.

#5 Yellow

The Yellow route is one of the shortest routes serving the community apart from the campus circulator routes. It begins service at City Hall and travels south to a single-family community near the Ames Municipal Airport. However, this route does provide service to the university campus during the 8:00am to 9:00am hour block during weekdays. Riders must first take the route to City Hall, and from there it continues on to the campus. It then returns to City Hall and continues with its normal service. This route has a 30 minute headway time, provides transfers to the Gray, Blue, Red, and Green routes as well as transfers to the university circulator routes during its single trip to campus in the morning.

#6 Brown

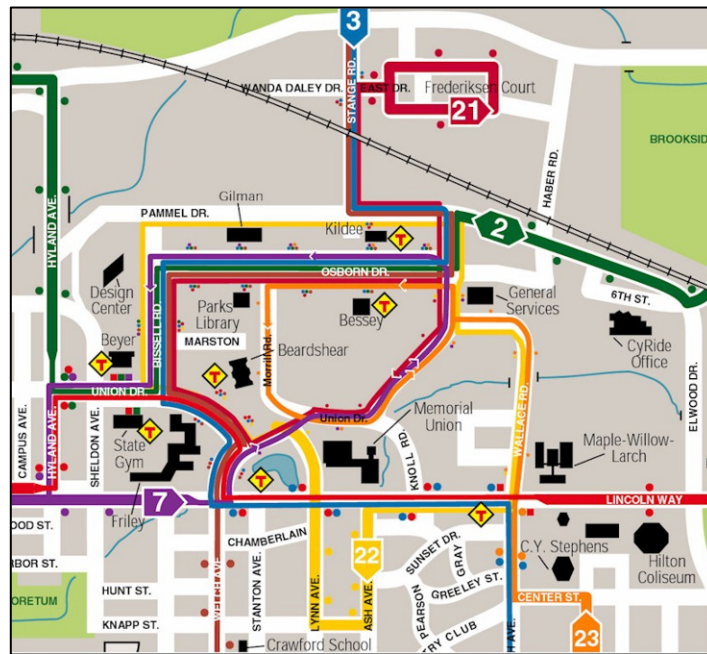
Along with the Red, Blue, and Green routes, the Brown route begins service at the North Grand Mall. It travels from the mall, through the ISU campus, and terminates on the south edge of the city at the ISU research park. The Brown route provides important service to two of the major university dormitories—The Towers—as they are a considerable distance from the university. This route has a 30 minute headway time, and provides transfers to all other routes except the Gray.

#7 Purple

The Purple route begins in the southwest corner of the city at the Sterling University Plains apartment complex. It then follows the same path as the Red route as it heads north and east towards the university campus. It circulates once around the campus before heading in the other direction. The major purpose of this route is to provide service from certain residential areas to the university campus as well as the commercial areas in between. The headway time for this route is approximately 40 minutes, and riders can access transfers to all other routes except the Gray.

The following routes are the campus circulator routes. These routes travel primarily in one direction. The reader should refer to Figure 2.8 for illustration of these routes.

Figure 2.8: CyRide Campus Circulator Routes



Source: CyRide 2009/2010 Route Timetables and Map

#21 Cardinal

The Cardinal route's primary purpose is to serve those students living in the Frederiksen Court university housing complex and bring them to campus. While traveling through campus, the route offers service between major buildings in the center of campus. The headway time of this route is only about 10 minutes, which provides riders ample service, as well as offering transfers to all other routes except the Gray.

#22 Gold

The Gold route runs primarily on the perimeter of the ISU campus. A priority of the Gold route is to serve a cluster of fraternity and sorority houses located south of campus on Ash and Lynn Avenues. The headway time for this route is approximately 20 minutes, and the route provides access to transfer points for all other routes except the Gray.

#23 Orange

The Orange route is the most heavily traveled route of the entire CyRide system, but only on schools days. This route serves the athletic parking lots at the ISC and brings riders to campus. Since parking in these lots is free, students and other visitors to campus use these lots as the main park-and-ride. The route serves opposite the Cardinal route for a portion of campus, but

then is the primary route through the very center of the campus. During the morning rush period, CyRide provides 4-5 buses (which may include a CIT bus if needed) in order to meet the morning demand. Each bus is usually filled to capacity with 70-90 riders. Total ridership of the Orange route for 2008 was 1,448,043 (Davenport, 2009). The Orange route has a headway time of approximately 2 minutes until 12:00pm, 5 minutes until 5:00pm, and 10 minutes after 5:00pm. According to the interview, when school is in session, the Orange route is the 3rd largest route in the State of Iowa when looking at the number of riders. The success of this route is due primarily to the fact that ISU does not grant campus parking permits to students living in the city limits of Ames. By providing free parking at the ISC, those students without parking permits are able drive to campus and access the heart of campus via transit. This route also provides access to all other routes except the Gray.

Mobile Dispatcher

In order help keep the system running as efficiently as possible, CyRide provides a service known as the mobile dispatcher. The mobile dispatcher is a position filled by an operations staff member. This person either remains parked somewhere in the community, or drives in relation to the routes until services are needed. In the interview, it was stated that this service runs every day from approximately 7:15am until 6:00pm. The purpose of this service is summed up in 5 words: transfers, misroutes, overloads, breakdowns, and late buses (CyRide, 2010). If a bus is so late to a transfer point to where the transfer bus must continue on route in order to remain on-time, the mobile dispatcher will meet the late bus at the transfer point, pick up the passengers that missed the transfer, and take them to their specific bus stops—or to a stop where they can re-board the bus they missed. The same is true if a bus were to go off-route, known as a misroute. When a misroute occurs, the most common error is when a route is on a main road, detours onto residential roads and then continues on the same main road. Often, some beginner bus drivers new to the route may forget to turn off the main road and just continue on to the next bus stop. When this happens, certain bus stops were missed. The bus driver notifies the mobile dispatcher of the misroute, stays idle at the current bus stop in order to not be ahead of schedule, the mobile dispatcher then picks up the passengers at the missed bus stops, and brings them to the idle bus for them to re-board. This situation most notably happens on the Green route (CyRide, 2010). Occasionally, as a bus is serving its route, it may reach full capacity, and therefore not have enough room to carry all the passengers who wish to take that bus. In this

case, the mobile dispatcher is notified, and depending on the size of the overload, either a new bus is sent out to pick up the excess passenger if the number of extra passengers would exceed the capacity of the mobile dispatcher's mini bus, or the mobile dispatcher will pick up the extra passengers and run that particular route until those passengers have reached their transfer or destination. Additionally, if a bus were to break down, the mobile dispatcher is notified. As with the previous situation, the mobile dispatcher will pick up the stranded passengers and run the route until a new bus is dispatched to take over, or a new bus will have to be dispatched to the location of the break down in order to carry the higher capacity load. In that latter case, the mobile dispatcher may assist those passengers who need to catch a bus transfer. Finally, if a bus is running more than 3 minutes late on its route, the mobile dispatcher is notified. The bus is then instructed to skip certain stops so that it can regain an on-time status, and the mobile dispatcher will then serve those routes that bus skips (CyRide, 2010).

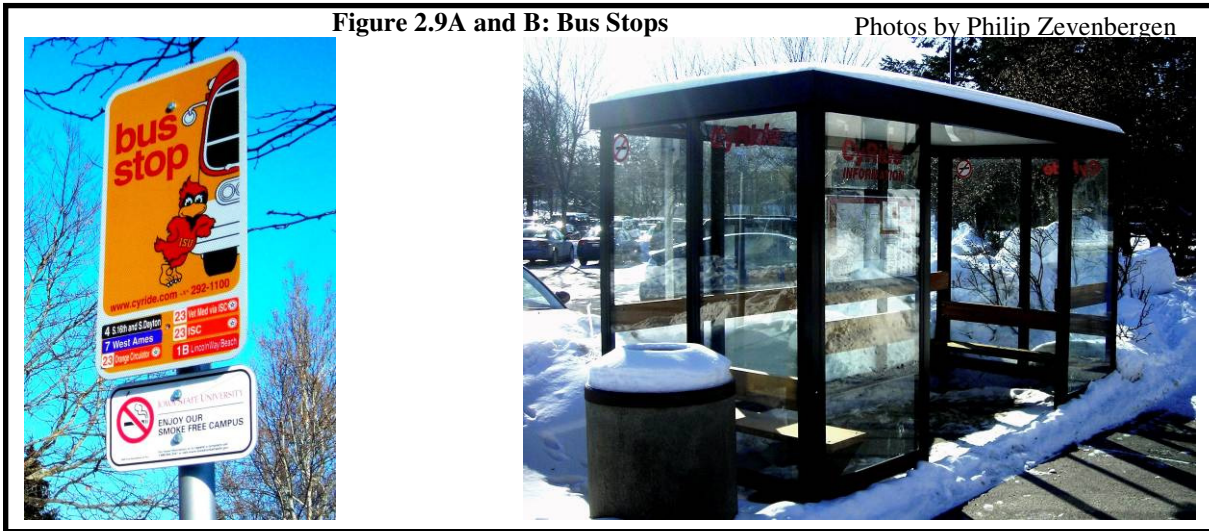
The interviewees stated that “when no such situations are requiring the mobile dispatcher's attention, the mobile dispatcher may do one of the following activities: park the minibus in a central location and take the time to work on paper work for the office of operations, drive around and check the status of the routes, park within viewing distance of a route and conduct time-trials on the buses in order to gather data on the consistency of the system” (CyRide, 2010). Overall the purpose of the mobile dispatcher is rooted in customer service. CyRide is committed to providing the best service possible for the community, and the mobile dispatcher plays an integral role.

Bus Stops and Transfers

The majority of the bus stops throughout the community are typically demarked with a sign post as illustrated in Figure 2.9A. These signs designate where the bus comes to a stop and where passengers may board. Each sign also lists all possible bus routes that stop at that location. However, other locations have an actual enclosed glass shelter as can be seen in Figure 2.9B. These shelters are lit during non-daylight hours to enhance safety. They also provide bus transfer information as well as a city-wide transit map illustrating the complete fixed-route system.

Figure 2.9A and B: Bus Stops

Photos by Philip Zevenbergen



Dial-A-Ride

CyRide provides a Dial-A-Ride service to the community of Ames. According to CyRide’s website, the Dial-A-Ride is a door to door service that runs during the normal operating hours of the fixed route system. Riders call ahead to the CyRide operations office to request service. Within three-quarters of a mile from a fixed route, students ride for free as they have paid for this service through student fees. Disabled residents ride at the discounted fare of \$2 per trip, and for the general public, fares are \$18 per trip. For service east of Skunk River, students and disabled residents pay a \$5 fare per trip and the general public’s fare stays constant at \$18 per trip (CyRide Dial-A-Ride, 2006).

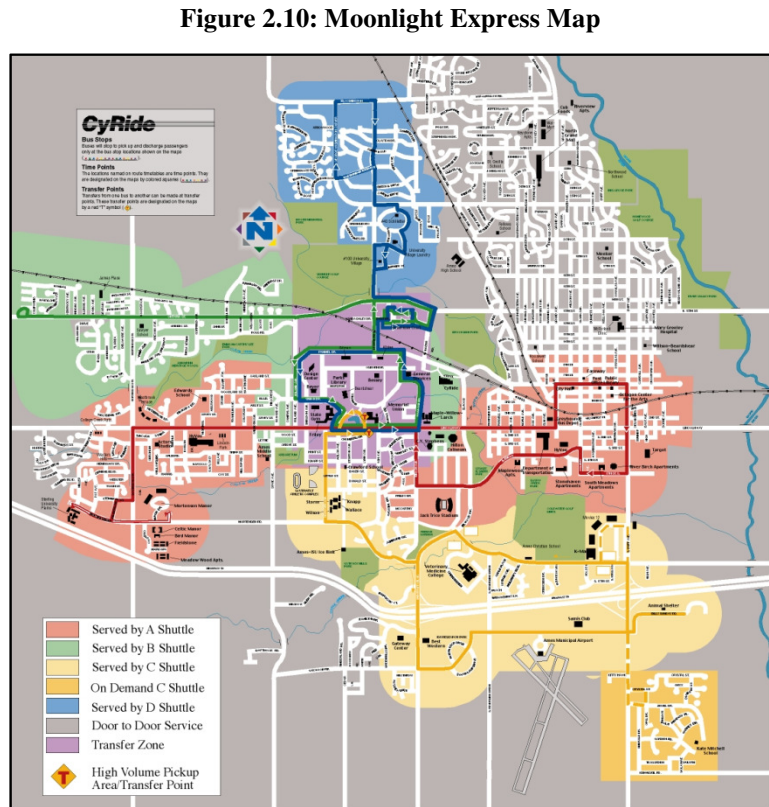
Moonlight Express

As stated on the CyRide website, “Moonlight Express offers a free, safe ride when regular fixed route service ends on Friday and Saturday nights from 10:30 pm to 3:00 am (telephones shut off at 2:30 am) when ISU is in session.” These shuttles serve campustown—a commercial district just south of campus—downtown, West Ames, and Southeast Ames. It also offers door-to-door buses that operate in the areas of the city not covered by the shuttle route. Over the years, the service of the Moonlight Express has been carefully crafted to operate only when it proves to be beneficial. With this in mind, it does not run on various weekends throughout the year due to low ridership, nor does it run the entire summer. Such weekends are generally follow major national holidays and those adjacent to university breaks. They include:

- Weekend following Thanksgiving

- Weekends following finals week in December through the end of the month
- Weekends preceding the first week of classes in January
- Weekends on either side of spring break in March
- Weekend following Easter
- Weekend following finals week in May

Figure 2.10 illustrates which areas of the community are served by which moonlight express shuttle.



Source: (CyRide Moonlight Express, 2006)

The A Shuttle is a fixed route service that runs on a fixed time

table and does not need any previous arrangements made with the CyRide dispatcher. However, service provided by the other shuttles must be arranged prior to services. Those needing assistance must call ahead to the dispatcher and arrange for when and where they are to be picked-up and where they are to be dropped off. This is to avoid unnecessary expenditures (CyRide Moonlight Express, 2006). Due to the nature of its service, the Moonlight Express has gained an unfortunate nickname of the “drunk bus” by the locals. The interviewees stated that “in spite of this, CyRide continues to recognize the importance of this service and continues to offer a safe and reliable alternative to drunk driving to the community” (CyRide, 2010).

Operational Needs

The first need that must be addressed is increasing the size of the fleet. This is need was created not just due to increased community demand, but also from the desire of the operations office wanting additional spare vehicles. CyRide’s currently has 60 buses available for use. Their weekday pull out is 51 vehicles leaving 9 vehicles as spare. Therefore, their spare ratio is 18 percent. However, out of the 9 spare vehicles, only 5 of them are heavy duty buses. 4

out of the 9 are light duty buses that cannot fill-in for normal weekday fixed-route service due to their lack of capacity. The FTA allows systems that operate over 50 vehicles to have a maximum spare ratio of 20 percent (Ames Area 2010 PTDP, 2009). The interviewees stated that it is their desire to reach the maximum limit. Having additional spare vehicles will allow some more breathing room, so to speak, for vehicle maintenance.

Along with increasing the size of the fleet, the operations office needs to replace several of its aging vehicles. The average age of the fleet is 16 years, whereas the average age of the national fleet is 7 years. CyRide currently operates 13 vehicles that are 22 years. There is currently no federal funding available for bus replacement. Additionally, under the state's competitive program, the CyRide staff estimates that these buses would have to reach 40 years old before they would qualify for replacement. Therefore, they are currently looking at other systems that are willing to sell their vehicles so that CyRide will have "newer" older buses—effectively reducing the time vehicles sit idle while having to be maintained or repaired (Ames Area 2010 PTDP, 2009).

The biggest need for the office of operations is a larger facility to store and maintain buses. This need does not only affect operations, but maintenance. Although the facility offers ample space for staff and their offices, CyRide has outgrown the facility when it comes to bus storage. Their garage is at capacity with storing 70 buses. After taking a tour of the facility, this lack of space is only made more evident as it is very hard to navigate around the buses that are parked extremely close, not only to each other end to end, but also to all four walls of the building. To add to this need, CyRide is expecting to expand their fleet to 95 buses, and therefore will need additional space to accommodate this growth (Ames Area 2010 PTDP, 2009). In the interview, it was said that "this need will have to be met by the construction of an additional bus storage/maintenance facility at a different location" (CyRide, 2010). CyRide's current location on the university campus has no room for expansion. Even though CyRide understands the necessity of constructing an additional facility at a new location, they face this need with regret. Having two facilities brings with it additional costs to staff and maintain the building in addition to additional utility costs that could have been avoided if they had the space to expand on their current location. Operationally, having an additional storage location will increase the complexity of scheduling bus pull-outs every morning as the dispatcher will have to then coordinate with the new location as to which bus drivers have which bus and what route they

will be serving. Despite this inevitable increase in system complexity, CyRide is committed to providing quality service to the community, even if it means having to managing a more complex system of operations.

A final need is for additional operational staff. It was said in the interview that although the current staff is adequate to meet the current needs of the system, when an unexpected situation arises—such as a bus driver not arriving on-time for the morning pull-out—the office staff must sacrifice some of their normal duties in the office in order to accommodate the present need—such as driving that bus route until the scheduled driver arrives to replace them. This places an unnecessary strain on those working in the office, for now they must take on those additional duties until the system equilibrium is established again. In the interview, it was opined that it would be nice to have a couple extra staff to spread the duties out a little more so when unexpected circumstances do arise, the staff will not have to be as stretched in their duties (CyRide, 2010).

Maintenance

Maintenance of the vehicles is a must in order for transit system to be successful. CyRide follows a rigorous maintenance routine in order to insure that all of their vehicles are performing at their best, which in-turn translates to fulfilling their commitment to proving quality, reliable service to the community of Ames. This section briefly explains the various maintenance duties CyRide performs on their vehicles as well as the future needs in the maintenance department.

Vehicle Maintenance

As stated in the interview, “the Federal Government mandates that preventative maintenance must continue on each vehicle in order to receive their financial assistance” (CyRide, 2010). CyRide fulfills this mandate by maintaining each vehicle according the age of the vehicle as well as how the manufacturer recommends. Therefore, CyRide has specific preventative maintenance checklists for each style of vehicle in its fleet—which includes minivans, mini-buses, Gillig, Orion, older Orions, and GM. An example of one of the checklists is provided in Appendix B. Minivans are inspected every 3,000 miles. This includes oil and filter change, interior inspection, and an exterior inspection. Mini-buses are inspected every 6,000, 12,000, 24,000 miles and every 12,000 miles after that. Minibuses have an interior, exterior, under chassis, and engine compartment inspection. This includes the wheelchair lift and

passenger riding area. Gillig and Orion buses are inspected every 5,000, 10,000, 20,000, 40,000 miles and every 20,000 miles after that. As with the minibuses, they receive an inspection of the interior, exterior, under chassis, and engine compartment. Again, this includes the wheelchair lift and passenger riding area. Older Orion buses are inspected every 2,500, 5,000, 10,000, 20,000, 40,000 miles and every 20,000 miles after that. All aforementioned inspections hold true for these buses as well. Finally, GM buses are inspected every 2,500, 5,000, 10,000, 20,000 miles, and every 10,000 miles after that. Again, all aforementioned maintenance inspections are performed on these vehicles as well.

The interviewees stated that an additional maintenance procedure conducted is routine cleaning of each vehicle. During the non-winter months, each vehicle is steam-cleaned as needed. In the winter months when the roads become slow packed or slushy, the vehicles are cleaned nightly in order to wash-off any salt solution residue that would lead to corrosion. CyRide understands that the image of their system is one the biggest selling points to potential riders. Having clean vehicles allows the system as a whole to retain a sharp appearance (both inside and out) that is attractive to the community. Additionally, having clean vehicles on the inside communicates that CyRide cares about their riders and in turn, the riders are encouraged to help maintain the cleanliness of the vehicles. The interviewees said that they really never have a problem with anyone leaving trash in their vehicles. The care they communicate to the public is reciprocated (CyRide, 2010).

In regards to general maintenance, CyRide must maintain its curbside bus stops as well. In the winter months, the staff keeps the pad free of snow so that riders exiting the bus do not have to step into snow. Other bus stop maintenance includes ensuring that the light fixtures in those stops that are lit at night are routinely replaced. Sign post bus stops must remain visible and are replaced as needed.

Maintenance Needs

The major need regarding the maintenance office is the additional bus-storage and maintenance space as previously discussed in the “Operational Needs” section of this report. Again, with the anticipated growth from 70 to 95 vehicles, additional space is needed in order to properly store and maintain the vehicles (Ames Area 2010 PTDP, 2009). In the interview, it was stated that “with the current facility at capacity, any new vehicles purchased will have to be stored outside the facility, which will only increase the cost of maintaining those vehicles,

especially in the cold winter months” (CyRide, 2010). Apart from additional storage space, additional space is needed in order to maintain the buses more efficiently. An expanded work area which encompasses extra bays is needed to provide exterior circulation—allowing maintenance staff the ability to work after 5:30pm once the buses are parked. Additionally, purchasing new buses with new emissions requirements will also require CyRide to raise the height of garage doors as well as internal components in the facility so that buses have to the ability to navigate safely inside the facility (Ames Area 2010 PTDP, 2009). The interviewees stated that much of this can be solved with the construction of an additional facility. It could be built to the new standards, thereby removing the need for a renovation of the current facility. All new buses with new emission requirements would then be stored and maintained at the new facility (CyRide, 2010).

Marketing

Marketing is essential to operating a successful transit system. When asked how they market CyRide, the interviewees’ first response was “We don’t have to” (CyRide, 2010). It is a rather unusual response considering the success of the system. Some would think that CyRide spends a considerable amount of money to advertise their service to their community. However, the interviewees stated that CyRide has no real marketing budget. No exact figure was given, but

Figure 2.11: Bus Image



it can be assumed that it is almost non-existent. As it was further discussed, it was revealed that because CyRide has been fortunate enough to be successful for so many years that the system markets itself. They said that the key to having a system market itself is image. The staff ensures that the buses stay clean and dent-free as a way to communicate to their community that the system cares about them and wants

them to have a clean and attractive system to ride. From personal experience, seeing a shiny white bus with cardinal and gold stripes drive up is refreshing after having to wait on the side of

the road that is covered in dirty ice and grime that is consequence of road clearance in the winter months. Figure 2.11 is an image taken of a clean CyRide bus providing service on the university campus. A clean and attractive image encourages members of the community to ride the bus. It was said in the interview that “a clean image also helps break down the negative stigma that is often associated with riding the bus” (CyRide, 2010). An additional way that CyRide attempts to bridge the gap of the negative social stigma of riding the bus is by advertising a “fun factor.” On the same sign that displays the identification of the bus and route, the staff also occasionally display a fun message that relates mostly to their student riders such as “Call your mom,” or “Go to class,” and when their state rival—the Iowa Hawkeyes—is in town for athletic events, the sign may display “Beat Iowa.” The interviewees said that they have received a lot of positive feedback from the community when it comes to the image of the system as well as the community enjoying the fun messages that are displayed on the buses (CyRide, 2010).

It was later discussed in the interview that CyRide does market the system in more intentional ways. Although it does not advertise directly to the community, it does advertise directly to incoming freshmen college students at their freshmen orientation. According the Bob Bourne, this is essential to ensuring the continued success of the system. The system revolves mainly around the student population, and therefore if the benefit of riding the bus can be effectively communicated to incoming students each fall, the system’s success has a greater chance of remaining successful. CyRide also places an advertisement in the Iowa State University *Daily* newspaper at the beginning of each school year (CyRide, 2010).

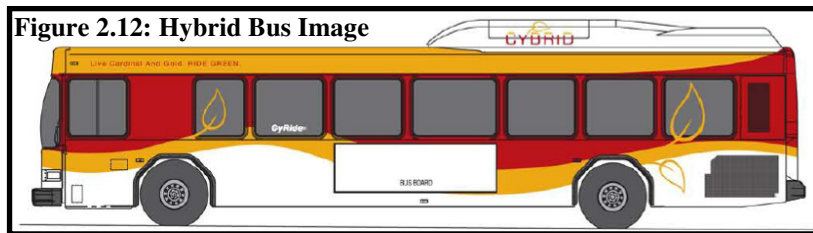
CyRide is proactive in marketing when inclement weather is in the forecast. The interviewees said that they “encourage the community to stay out of their cars and ride the bus when the city roads are hazardous” (CyRide, 2010). This eliminates the amount of cars on the road, and coupled with the good safety record of the bus, the riders are ensured safe transportation throughout the community. It was said that this advertising is done with flyers inside the buses. The system relies upon the word-of-mouth advertising of its riders to spread the message. However, due to their presence in the community since the mid 1970s, the system does not need to do much advertising to encourage riding the bus when the weather in poor. The interviewees said that the community practically does it automatically (CyRide, 2010).

The newest form or marketing is via online social networking websites such as Facebook and Twitter. Although these websites are somewhat used to advertise their service, CyRide

mainly uses to them to communicate any urgent information to its riders. They communicate significant route delays, route cancellations, new services, and anything they feel is pertinent for their riders to know. Riders are able to “become a fan” of the CyRide Facebook page, and those riders who have an active Twitter account must “follow” CyRide in order to receive the updates on their mobile devices. An example of a Facebook update states, “*CyRide is operating on our regular weekday schedule despite ISU cancelling all classes after 6pm. Be aware that our buses maybe running behind given the adverse weather conditions. Check back for updates*” (CyRide Fan Page, 2010). Their Facebook page also provides the community the ability to comment on the services they are receiving.

Sustainability Efforts

CyRide is committed to pursuing ways in which it can be more sustainable not only to set an example for the university and the community, but also because they are committed to



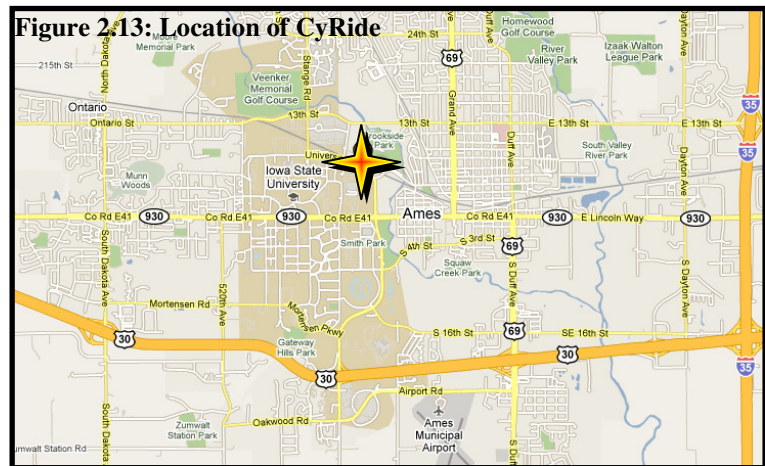
Source: CyRide website homepage

reducing their carbon footprint. They have taken the time to address sustainability efforts not only in regards to their fleet, but also with their facility as well. First of all,

their fleet of buses run on a mixture of diesel fuel that contains anywhere from 2-10 percent biodiesel in the summer and 2 percent biodiesel in the winter. Biodiesel burns cleaner than conventional diesel because it does not contain sulfur or aromatics, as well as reducing the emissions of hydrocarbons, carbon monoxide, and particulate matter (CyRide Sustainability, 2006). In the interview, it was made said that other efforts to make their bus fleet most environmentally friendly came about in 2009 with receiving money from the American Recovery and Reinvestment Act that is going towards converting 12 diesel buses into hybrids (CyRide, 2010). They recently revealed design of the buses is illustrated in Figure 2.12. Additionally, CyRide is systematically replacing its fleet of supervisory vehicles with vehicles that are either hybrids or use ethanol (E85) for fuel in an effort to help reduce auto emissions contributing to air pollution (CyRide Sustainability, 2006).

In addition to combating air pollution, CyRide has been taking strides to reduce the carbon footprint of their facility. First of all, throughout the City of Ames, CyRide has a few bus stop shelters that are operated by solar power. This means that there is no cost to operate these shelters when they are lighted at night for passenger safety. CyRide is committed to

incorporating more solar shelters throughout the community as it expands service as well as replacing outdated shelters. Finally, the most prominent effort in sustainability is the main CyRide facility. CyRide’s current location is on the Iowa State University campus at 1700 University Boulevard (illustrated by Figure 2.13). Their facility houses



Source: Google Maps

all components of the system: administrative offices, operations, maintenance, and bus storage. The most important aspect about the CyRide facility is that it is the first office-type building in the State of Iowa to receive a Gold certification from Leadership in Energy and Environmental Design (LEED). The construction of the new building was completed in May 2008. The following list—as taken from the CyRide website—documents the features of the new building that made it eligible for the certification (CyRide Sustainability, 2006).

- Heating the building with the water from ISU’s cooling towers
- Collecting and storing rainwater to irrigate the landscaping in front of the building
- Orienting the building windows to take advantage of natural light
- Using renewable and regionally available materials on the interior of the building
- Using healthier interior finishes like low-emitting paints and carpet adhesives
- Using efficient appliances and sensor controlled lighting to reduce energy consumption
- Installing an energy saving, reflective white roof which reduces urban heating
- Starting a recycling program and using “green” cleaning and paper products
- Using landscaping materials that support and attract wildlife

Although there is no current report on the energy savings this facility has produced, the facility is anticipated to reduce CyRide annual utility costs. Even if the building were to not reduce these costs, the reduced impact on the environment is worth the cost of updating the facility by making it more environmentally friendly. As stated before, CyRide is proud to set an example for not only the City of Ames, but also the State of Iowa, and even the nation. It is helping pave the way for more public facilities to be more “green” not only in word, but in deed.

Conclusion

In its 34 years in existence, Cyride has created a successful and award-winning transit system founded on—and committed to—customer service. (A complete list of awards is detailed in Appendix B) An important question to ask regarding their success is “How?” Upon visiting Ames, discussing and learning the CyRide system with the staff, and personally experiencing the system—several conclusions were discovered. The biggest key to the success of the system is rooted in the passion and dedication each member of the CyRide staff embodies. As stated several times in this report, the staff is committed to providing the best possible service to their community. This passion is very noticeable while talking with various staff members. Each one shares the same excitement and deep-rooted desire to see CyRide continue to succeed. It is not only those who work in the offices that have this passion. It was observed in all facets of the system—from the mechanics to the bus drivers, to the dispatchers. This inward passion then translates to how they act in the work place and how they handle cumbersome situations and change. The public they serve cannot help but notice it as well. As an outsider looking in, it was present from the very beginning.

A second conclusion that is evident is that CyRide cares about the good of the rider, not the good of the system. Although CyRide has had to strategically find ways to save money, they do it in such a way as to minimize the effect on the service they provide to the community. Rather than reacting to the overwhelmingly old age of the fleet by cutting the number of buses that run—therefore making their riders wait longer for service—CyRide takes the initiative to maintain their buses as proactively as possible and communicates to their community when an unfortunate lack of service must happen. An additional example of their care for the riders is made evident in the sacrifices the staff makes in order to ensure the same quality service day-in and day-out. As previously discussed, if a bus driver is late to work, one of the operations staff

members (all of which have their commercial drivers license) immediately takes the correct bus out and serves that route until a replacement bus driver is found. To reiterate, it would be much more convenient for the operations staff to forego that morning service because their duties in the office are many and important as well. This would strand an untold number of citizens, and speculation would say that these stranded riders would lose trust in the system they depend on. The trust of their community is one of CyRide's highest priorities.

An additional comment on the success of CyRide has to do with whom they serve. The system began serving the students. The students enumerate a large number of their riders. It can be said that if a system wants to be successful, it should ensure consistent and reliable service to its largest constituent of riders. CyRide accomplishes this. In serving their community, CyRide not only attempts to anticipate the future needs of the community, but it listens. Members of the community have ample alternative means of communicating to CyRide their comments, concerns, and suggestions of how the system can be improved. CyRide does its best to listen and respond in whatever way they can. Sometimes this takes the form of encouraging the public to remain patient in the times when service cannot be improved for reasons such as a lack of funding. Every system will have its fair-share of "growing pains," so to speak, and CyRide combats these situations by implementing new services incrementally.

The final key to the success of the system was stated in the interview with the staff. They opined that the system would be completely different and probably not as successful if CyRide did not have its own board populated by members of the three local funding entities: the City of Ames, Iowa State University, and Government of the Student Body. These entities represent almost the entire population base, and therefore are able to bring the pressing needs of each individual sub-community to the table. In regards to the student representatives, it is important to note that they have actual voting power and are not just an advisory committee. This ensures that the largest constituent of riders have the ability to be active in the decision making process. Bill Bourne opined that giving the student representatives voting power is tantamount (CyRide, 2010).

In summation, CyRide is passionate about the service they provide. They continually look for ways in which to provide a higher level of service to their community. Their success is rooted not only in their passion for customer service, but also in the trust their community has in the system. The staff understands that compromises and sacrifices must be made in order to

maintain a successful business as well as quality service. They are willing and able to make these compromises and sacrifices, keeping customer service at the heart of each decision. The students play a key role in the success of the system as they were the original target population for the service. Finally, having representatives of each constituent served in the community, which coincide with funding sources, and giving them all equal voting power ensures that the most pressing needs of each are met.

Conclusions at a Glance

- CyRide is a successful and award-winning transit service because it is built on the passion and dedication of the staff
- CyRide molds the system around the good of the rider—making necessary sacrifices to ensure reliable service/trust of the community
- CyRide reliably serves the largest demographic subset of the population—college students
- CyRide listens to and communicates with the community in order to effectively make changes to improve service
- The success of the system is ultimately rooted in the three-entity transit board made up of the City of Ames, Government of the Student Body, and Iowa State University.

CHAPTER 3 - City of Manhattan and Kansas State University

To take an in-depth look at a particular transit system and conclude why that system is successful is a logical study. However, leaving a document at that point may be seen as a little short sighted, or unfinished. It is much more beneficial to take those conclusions and apply them to a community seeking similar success with their own transit system. To reiterate, the purpose of this report is to draw conclusions regarding the success of the CyRide bus system in Ames, Iowa, and then translate those conclusions into meaningful recommendations for Manhattan, Kansas—a community without a means of mass transit, seeking to implement a similar system. This section of the report will briefly profile the City of Manhattan’s location and population, review a portion of their transportation plan, compare what Manhattan is considering to CyRide, and finally give an update as to where the city is in regards to implementation.

Location and Population

The City of Manhattan is located in Riley County approximately 60 miles west of Topeka, Kansas. As Figure 3.1 illustrates, Manhattan is 9 miles north of the Interstate 70 corridor at the intersection of U.S. Highway 24, Kansas Highway



177, and Kansas Highway 18. The city was settled at the confluence of the Kansas and Big Blue rivers. The 2000 Census listed Manhattan having a population of 44,831 (U.S. Census Bureau, 2000). However, Manhattan is a very rapidly growing community and based off of trends a projections, the 2010 population is estimated at 51,466 (City of Manhattan, 2003). The City of Manhattan is home to Kansas State University, which is located in the center of the city (Figure 3.2). Development has completely encapsulated the university with the exception of the north side of campus where the university agricultural lands are located. KSU is not just an integral part of the community with its location but demographically as well. In the spring of 2010, KSU enrolled 21,570 (KSU Registrar's Office, 2010). Additionally, the Manhattan community is also located adjacent to Fort Riley (Figure 3.2), and therefore is greatly influenced by the ebb and flow of soldier deployments and relocations. Although Manhattan does not receive all of the new

populations associated with a military base, a study by the base shows that the Manhattan-Ogden region is likely to receive 39 percent of the new soldiers plus families who relocate to the region (Fort Riley, 2010). In recent years, Manhattan and Kansas State University won the bid for the location of a new National Bio-Ag Defense Facility (NBAF). When the population of the expansion of Fort Riley and the new population associated with NBAF, the population growth of Manhattan is expected to accelerate rapidly (EDAW et al, 2008).

Figure 3.1: Regional Context and Location

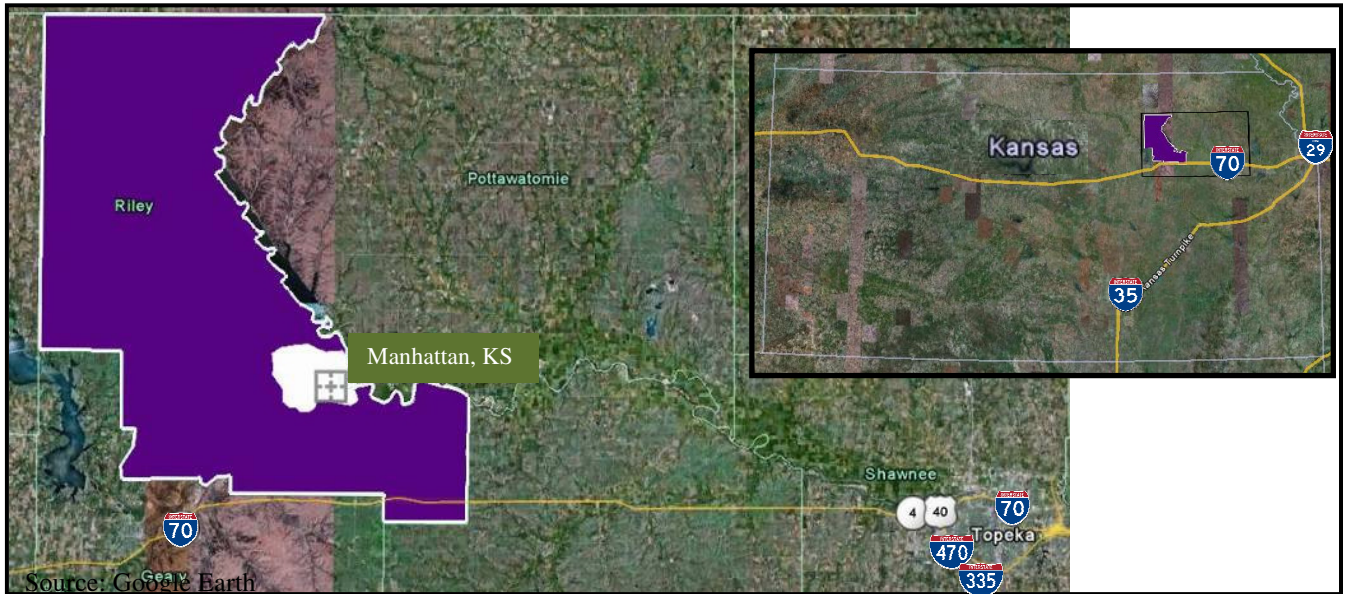
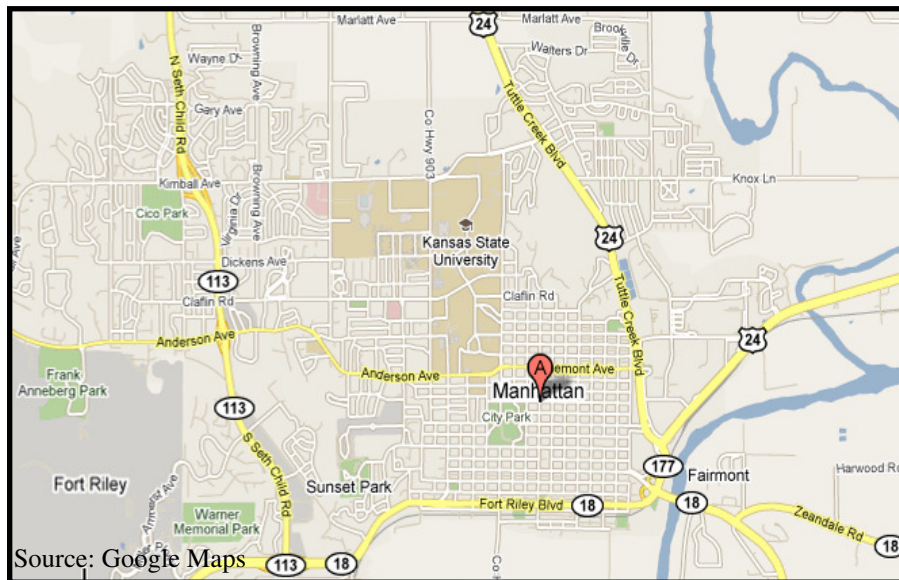


Figure 3.2: Location of Kansas State University and Fort Riley



Demographics

The following section contains the demographic information regarding the elderly disabled, those under the poverty line, KSU student populations, and a fifth special population will be added due to Manhattan’s relatively significant military population. In order to make a true comparison, the information regarding each special population will be taken from the same source as was analyzed for the City of Ames. As a reminder, this will included census data from either 2000 or the 2005-2007 estimates, and the sources will be properly demarked. Any deviation from this has the proper notation as well.

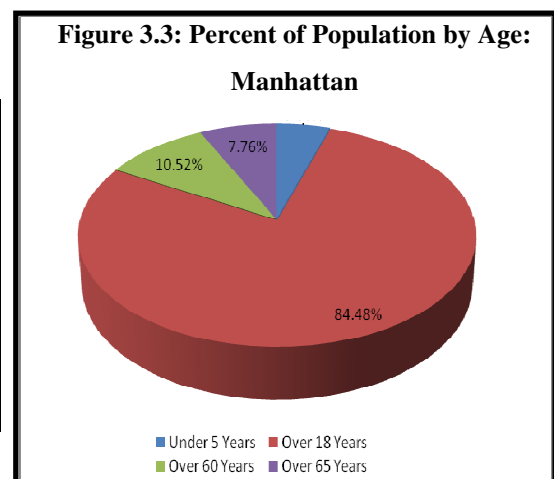
Elderly Population

The demographic breakdown of Manhattan is very similar to Ames. As Table 3.1 and Figure 3.3 illustrate, three out of the four categories differ only by a fraction of a percent. For example, Manhattan’s population over the age of 18 makes up 84.48 percent and Ames’ same population cohort is slightly larger at 84.64 percent. The biggest difference lies in the 60-64 years of age cohort. In Manhattan, this cohort makes up 10.52 percent of the population whereas in Ames it only makes up 2.21 percent. This could mean that Manhattan is more of a retirement destination than Ames. Overall, the demographic breakdowns are almost identical, even down to the median age. Because there is a higher percentage of the population over the age of 60 in Manhattan, the median age is slightly higher than Ames. Manhattan’s median age is 24.1 and Ames’ is 23.9. Both cities boast a much lower median age than the national average—approximately 35—due to their high student populations as illustrated in the large over 18 years of age cohort (U.S. Census Bureau, 2005-2007).

Table 3.1: Manhattan, Kansas: Elderly Population

2005-2007 Population Estimates	Number
Total Population	51,497
Under 5 Years of Age	2,772
Over 18 Years of Age	43,504
Over 60 Years of Age	5,417
Over 65 Years of Age	3,995
Median Age	24.1

Source: U.S. Census Bureau, 2005-2007 Estimates



Source: U.S. Census Bureau, 2005-2007 Estimates

Disabled Population

The 2000 Census data indicates that Manhattan has 4,159 disabled residents which comprise 10 percent of the population. As of 2009 KSU has 500 students registered as having a disability (Loftus, 2009). Table 3.2 illustrates the number of individuals with disabilities by various age cohorts. Overall, Manhattan’s disabled population encompasses a slightly greater percent of the total population than Ames.

Table 3.2: Manhattan, KS Disabled Population		
	Number	Percent
Total Population	44, 831	
Population over 5 Year of Age	41,459	
Disability Status (over 5 Years of Age)		
	4,159	10%
Disability Status (5-20 Years of Age)	720	1.7%
Disability Status (21-64 Years of Age)	2,205	5.3%
Disability Status (Over 65 years of Age)	1,234	3.0%

Source: U.S Census Bureau, 2000

Poverty Status

The next demographic section to be highlighted is those living below the poverty line. Table 3.3 outlines this data using information gathered from the 2000 Census. The number of individuals that fall below the poverty status is 21 percent of the total population. However, combining all three categories outline, the total amount of the population only rises to approximately 23 percent. For Ames, the number of individuals who were determined to be living under the poverty line is only 20.4 percent. Once again, the characteristics of both cities are very similar in this category.

Table 3.3: Manhattan, Kansas: Poverty Status in 1999				
	Total Population	Families	Families w/ Female Householder	Individuals
Population	44,831	729	292	9,475
Percent	100%	1.6%	.06%	21%

Source: U.S. Census Bureau, 2000

Students

The student population in Manhattan encompasses a significant portion of the total population of the city. The spring of 2010 recorded 21,570 students enrolled at Kansas State University (KSU Registrars Office, 2010). The population projections for 2010 indicate a total population of approximately 51,466 (City of Manhattan, 2003). Therefore, the student population of KSU makes up approximately 42 percent of the overall population of the city. Table 3.4 documents this ratio. The City of Ames’ student population comprises more of the overall population at 48 percent than that of Manhattan. This could be the result of Manhattan having a more diversified population due to a higher retirement community as well as military population.

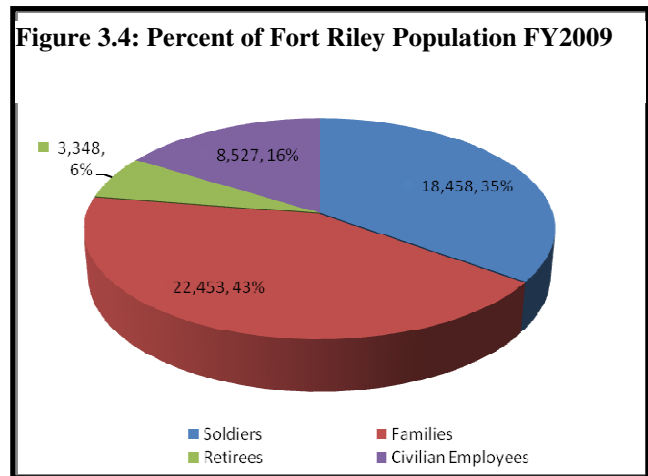
Table 3.4: Student Population Ratio	City of Manhattan	Kansas State Univ.	Student Pop. Ratio
Numbers	51,466	21,570	42%

Sources: KSU Registrars Office, 2010; City of Manhattan, 2003

Military Population

Due to the close proximity of Fort Riley, and the fact that Manhattan is the largest community surrounding the fort, the city is one of the primary locations for soldiers and their families to settle.

According to the Community Partnership Conference, held on February 25, 2010, Fort Riley boasts a total population of 52,786, which encompasses soldiers, families, retirees, and civilian employees. As Figure



Source: Fort Riley, 2010

3.4 illustrates, there are 18,458 soldiers and 22,453 individuals making up the soldiers’ families. Therefore, for every one soldier, there is at least one person associated with that soldier needing a place to live. Of those families, 12,907 do not live

Table 3.5: Soldiers per City	
City	Number of Soldiers
Junction City	2,416
Manhattan	1,693
Ogden	273
Abilene	129

Source: Fort Riley, 2010

on Fort Riley. This means that they choose to live in a community near the fort. The conference proceedings provided information as to where these soldiers and their families choose to locate. Table 3.5 documents the top four locations around Fort Riley and the number of soldiers who live in there. As

shown in Table 3.5, the Manhattan-Ogden area is home to 1,966 soldiers (39 percent). This number is likely to grow as the fort continues to increase in size (Fort Riley, 2010).

It is vital for Manhattan to pay significant attention to these special populations as it looks to implement a bus system. It has been proven that residents living in the community having these demographic characteristics are more likely to take advantage of a transit service (O'Sullivan, 2007).

Manhattan Area Transportation Strategy/Implementation

Using the Manhattan Area Transportation Strategy: Connecting to 2020 (MATS) as a platform, the City of Manhattan hired TranSystems Corporation to prepare the Transit Implementation Plan (April, 2001). The purpose of this plan was to assess the feasibility of a citywide transit system for the City of Manhattan with specific service for Kansas State University. The university was included due to an apparent parking deficiency documented by studies the university conducted. The system would therefore be a partnership between the city and the university, much like the CyRide system in Ames, Iowa (TranSystems Corporation, 2001).

Due to the comprehensive nature of the documents, it is beyond the scope of this report to discuss the entirety in detail. Therefore, for the purposes of this report, only the sections pertinent to public transportation and financial capacity will be discussed. The goal of this section is to assess the current transit situation in Manhattan in order to effectively match the recommendations and conclusions that will be drawn from the CyRide system.

Public Transportation

Overall, the Transit Implementation Plan verified the key factors documented in the MATS which outline how the city can provide sufficient service to key populations and destinations throughout the city. These factors include:

- The residential location of potential riders of the system
- Key destinations for potential riders including employment, education, commercial, and social services.
- Traditional and innovative service concepts that:
 - Minimize travel time and the need to transfer among services
 - Minimize operating costs by creating services with highest ridership productivity.

From these factors, a series of maps were produced to identify the location of potential riders and key destinations. Potential riders include eligible taxi coupon users, Area Transportation Agency (ATA) clients, Flint Hills Breadbasket clientele, and KSU students and faculty. As previously stated, key destinations include employment centers, educational facilities, commercial areas, and social services (including medical) (City of Manhattan, 2000). All maps generated by the summit are available in Appendix C. In addition to verifying these key factors, TranSystems detailed a step-by-step planning process for implementation. These steps include:

1. Determine the market for transit.
2. Review preliminary service concepts including fixed-route, demand response, and deviated fixed route services.
3. Determine the size and shape of transit.
4. Develop a “street-ready” plan.

The first step identifies those individuals who are most likely to use transit, their place of residence, and the destinations they are most likely to travel to. Information for this step is previously discussed. The second step outlines various transit possibilities and is discussed in detail in the following paragraphs. The third step’s purpose is to define what the service will look like and how much service should be provided. Finally, the fourth step takes the general idea of what the city would like to see, and creates the specifics of the system such as schedules, routes, vehicles and costs (TranSystems Corporation, 2001).

The aforementioned second step outlines three different types of service. Two out of the three options are flexible service concepts and the final option is a fixed route system. The two flexible service concepts include demand response service (DRS) and deviated fixed route service (DFR). DRS provides “services that operate on flexible routes and schedules [that]...are dictated by the demand of the patrons” (City of Manhattan, 2000, p. 6-6). This service differs from taxis in that DRS passengers share rides even when travel destinations are unrelated. DRS service works well with low population densities and is optimal in rural areas. It works well for riders with physical and mobility limitations as it is a “curb to curb” service. However, it has low productivity, cannot handle large volumes of riders, has a relatively high cost per passenger, and requires advanced request by the riders (City of Manhattan, 2000).

The other flexible service concept is the DFR. As with the DRS, the schedules and routes are flexible. “The chief difference is that DFR...operates[s] to one or more major destinations arriving and departing from those destinations at specific times (City of Manhattan, 2000, p. 6-6). The route between the destinations may vary depending on the demand of the rider; however, the area of deviation does not depart from a defined geographic region. Like the DRS, this service works well with low population densities, limited travel destinations, it complies with ADA requirements, and can have higher productivity than DRS but lower than a fixed route system. It has a relatively high cost per passenger and requires an extensive marking scheme providing information to the public (City of Manhattan, 2000).

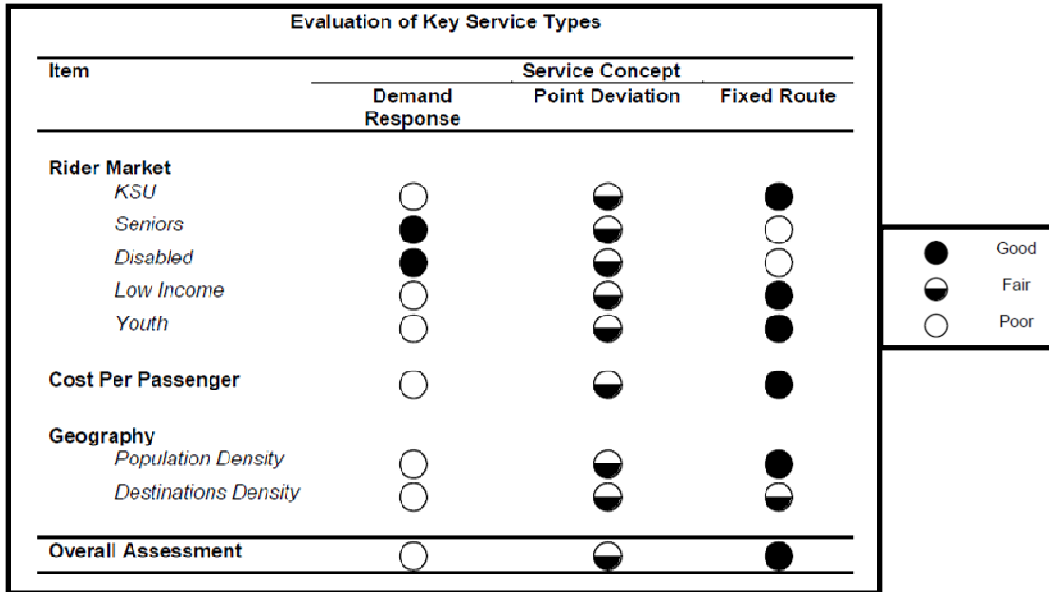
Finally, a fixed route service is detailed. This type of a system operates on specific routes and on a specific schedule. Its optimum operating environment is in compact or relatively densely populated areas. It also requires relatively large movements of people that produces sufficient demand. When providing service to at least 15-20 riders per hour, a fixed route service has a relatively low cost per passenger and a high productivity. The biggest benefit to a fixed route system is that it allows riders to make spontaneous trips. However, it has a limited geographic area of coverage and requires paratransit services to comply with ADA requirements (City of Manhattan, 2000).

Evaluation of Transit Service Concepts

To aid in deciding which transit service is best for the Manhattan community, the MATS evaluated the probable riders, the key destinations, as well as other observations regarding development characteristics of the community in order to determine which of the three options

would best suit the transit needs of the community. Figure 3.5 is taken directly from their report and documents the findings. As clearly illustrated, a fixed-route system is determined to be the best fit for the Manhattan community with the DFR showing fair potential.

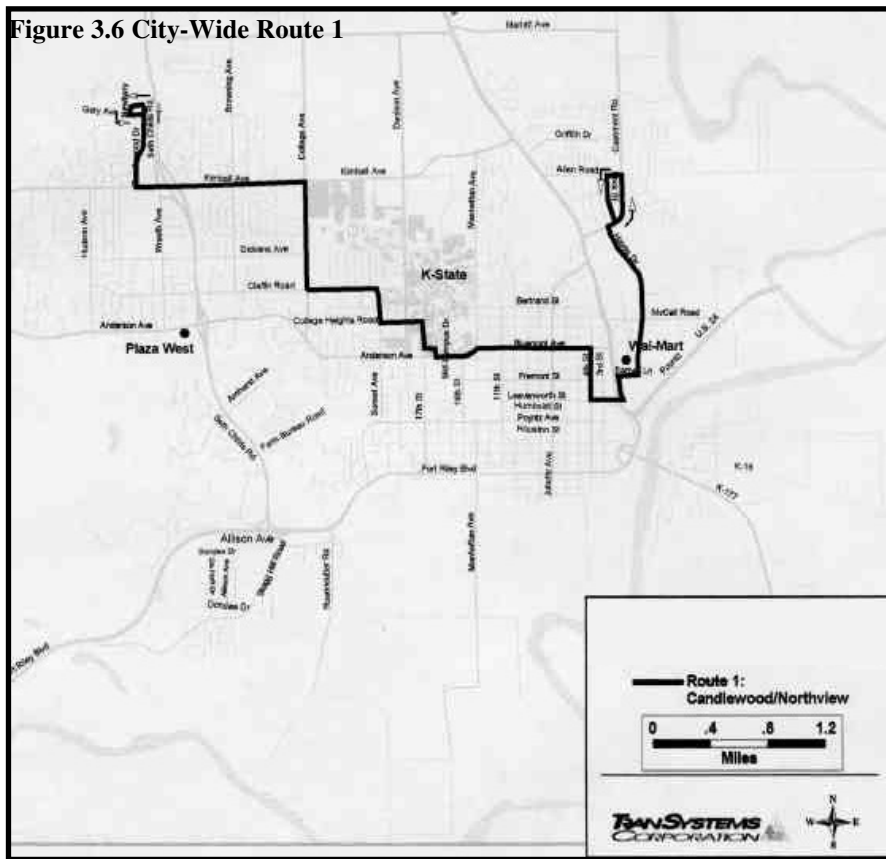
Figure 3.5: Service Types



Source: City of Manhattan, 2000

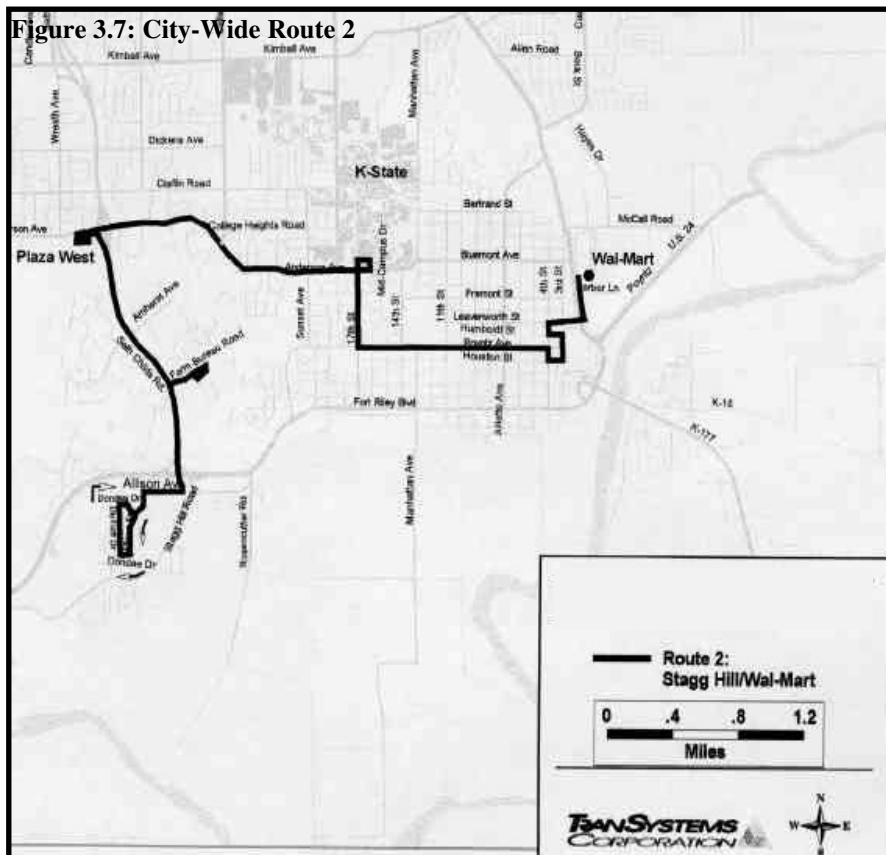
TranSystems took the above information and created a three route system for the City of Manhattan with an additional special service that would operate Friday and Saturday nights. The first two routes, illustrated by Figures 3.6 and 3.7 respectively, detail the two city-wide routes. Figure 3.8 illustrates a park-and-ride service that would operate from the Bramlage Coliseum athletic parking lots and provide service to the main campus. Figure 3.9 illustrates the Friday and Saturday night service entitled the Aggieville Special, which would only operate from 10:00pm to 2:00am on those respective nights. The nature of the Aggieville Special is to provide students and other members of the community, who have been drinking, safe transportation from the Aggieville commercial district to their residence (TranSystems Corporation, 2001). Undoubtedly, this service was modeled after CyRide’s Moonlight Express service.

Figure 3.6 City-Wide Route 1



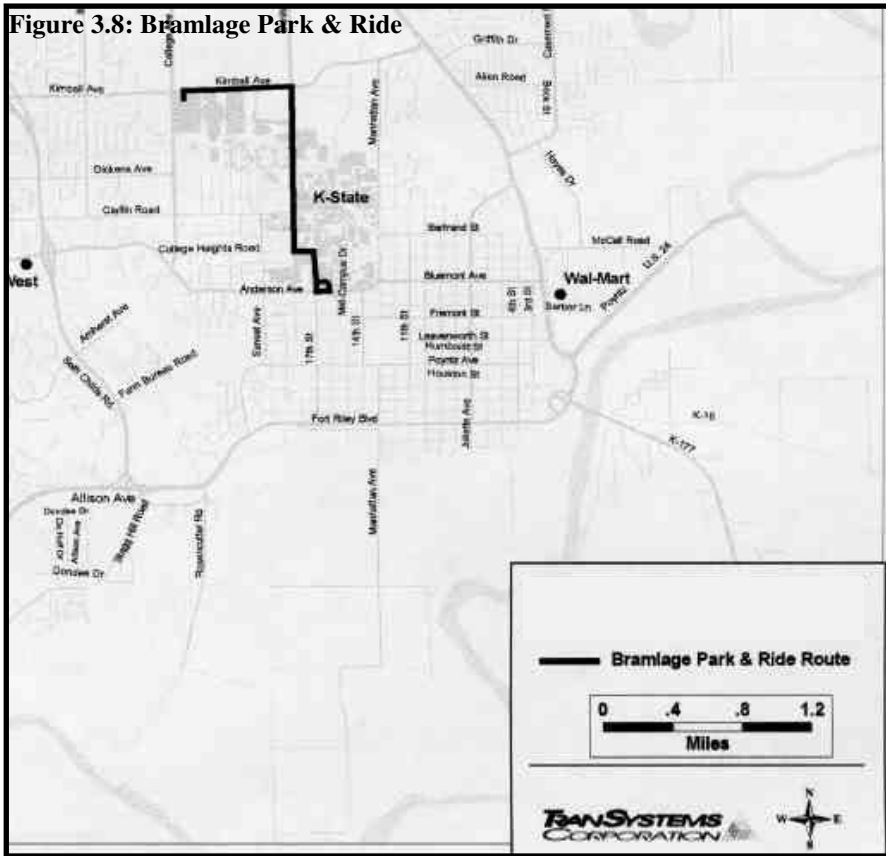
Source: TranSystems Corporation, 2001

Figure 3.7: City-Wide Route 2



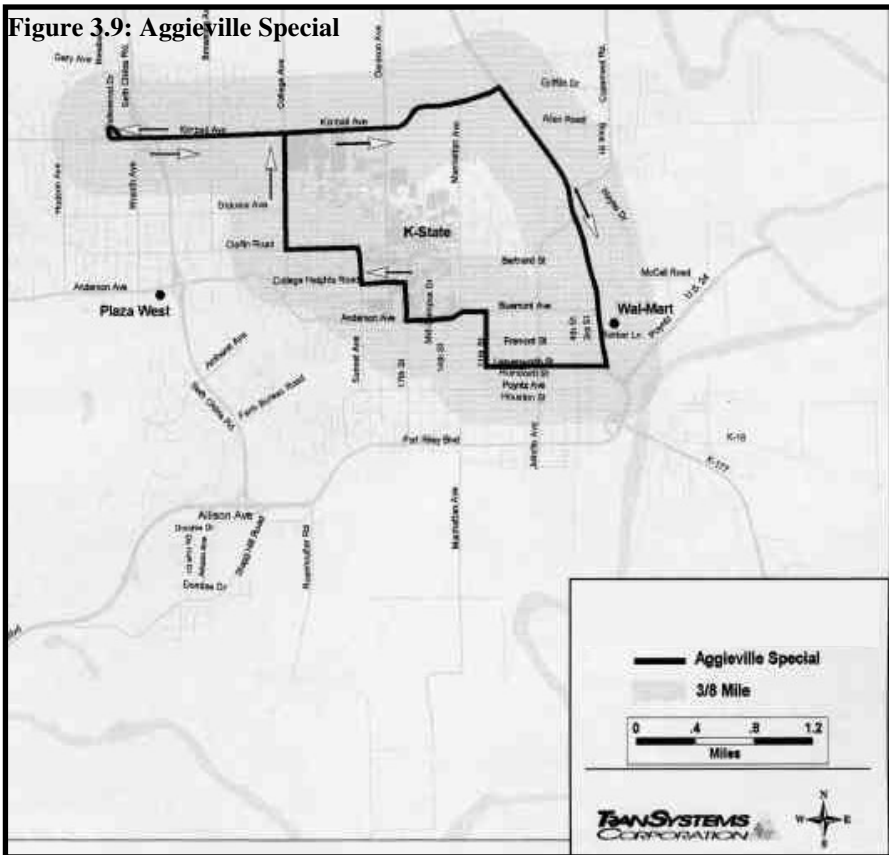
Source: TranSystems Corporation, 2001

Figure 3.8: Bramlage Park & Ride



Source: TranSystems Corporation, 2001

Figure 3.9: Aggieville Special



Source: TranSystems Corporation, 2001

Table 3.6 provides operational statistics for this proposed system.

Table 3.6: Summary of Operational Statistics

Days of Operation	Approximate Hours of Service	Service Frequency
<u>All Year</u>		
Two Route System	6:00 AM to 6:00 PM	30 minutes
Monday through Friday	6:00 PM to 10:00 PM	60 minutes
Saturday	6:00 AM to 10:00 PM	60 minutes
Sunday	10:00 AM to 7:00 PM	60 minutes
<u>Academic Year (August to May)</u>		
Aggieville Special		
Fridays and Saturdays	10:00 PM to 2:00 AM	60 minutes
Bramlage Park and Ride Shuttle		
Monday through Friday	6:00 AM to 6:00 PM	10 minutes (7AM to 10AM and 2PM to 5PM) 20 minutes (other times)

Source: TranSystems Corporation, 2001

It was concluded that the two-route system with a park-and-ride option would be a good “starter” system for the city (City of Manhattan, 2000). A “starter” system would be beneficial in many ways. It would give the community time to adjust to the idea of a transit system and not overwhelm them with the complexity of more routes. Furthermore, it would allow the city a greater period of time to locate sufficient funding sources. When implementing the two-route system first, the city would have to locate less funding, which for a community new to funding a transit system, it would be a good beginning step. As the city becomes more funding savvy—finding additional resources—the funds will become available to expand the system. In any given system it will take time to build ridership, and as it was learned from the CyRide system, the best way to implement changes or new things is to do it incrementally. Therefore, the City of Manhattan should consider an incremental implementation approach.

Funding

In order to keep fares reasonable and unobtrusive to potential riders, all transit systems rely on some form of subsidy. As Manhattan looks into implementing a bus system, it will have to locate funding on the federal, state, and local levels.

Federal

All previously discussed federal funding sources (see Appendix A) are available for the City of Manhattan. In review, the major funding sources are Sections 5303, 5304, 5307, 5311. Sections 5304 and 5311 are programs designed to allocate funds for non-urbanized areas, and Sections 5303 and 5307 are programs designed to allocate funds for urbanized areas. Depending on whether or not Manhattan crosses the 50,000 population mark as of the 2010 Census will determine which programs they will need to seek as funding sources. However, considering current population estimates, it appears that Manhattan will cross that threshold and officially become an urbanized area (City of Manhattan, 2000).

State

State funding sources differ from CyRide because Ames and Manhattan are located in different states. Each state legislature creates programs that allocate different amounts of funding to transit systems. A major milestone was achieved in the State of Kansas in 1999 when the Comprehensive Transportation Act was passed. This Act increased funding for public transportation from \$1 million to \$6 million annually. One-third of those funds are made available for rural areas and cities fewer than 50,000 (City of Manhattan, 2000). Possible state funding sources include the following, and a detailed explanation of each can be found in Appendix C. Such funding sources can be used to make the necessary road improvements needed to implement a transit system as well as fund the system (City of Manhattan, 2000).

- System Enhancement
- KLINK Geometric
- KLINK 1R
- Economic Development
- Special City/County Highway Fund
- City Connecting Link.

Local

Local funding sources are generally the same for most locations, especially when comparing two cities that are home to major universities. As with the CyRide system, Manhattan is considering funding sources such as the City of Manhattan/Riley County, KSU student fees/parking fees, Kansas State University, and City/University Project Funds. Funds from the city and county would be levied through increases in property taxes, sales taxes, or even implementing a special tax to the purpose of generating revenue for the transit system. Although this path is fairly inevitable, it is recommended that any proposed increases in taxes are reasonable in order to gain the approval of the voting public. This means that all local funding cannot reasonably be accomplished through taxes. It is to the city’s benefit that they have a long-standing, working relationship with the university (City of Manhattan, 2000). Having the cooperation of the university and the student body is vital to the success of the system as the students are projected to be a large potential ridership population. Manhattan’s transportation strategy discusses drawing funds from a general operating program through the university rather than exacting fees from the students and faculty. As shown by the success of CyRide, it is recommended to pursue exacting those fees, for it then sets the transit system up to run fare-free to those who pay the

fee. Overall, it appears that the City of Manhattan is in the process of forming a solid foundation of funding sources in order to implement a successful system. Table 3.7 documents the estimated annual costs of operating the system, and the potential funding for the services.

Table 3.7: Estimated Annual Costs and Funding for Services

Item	Citywide	Bramlage	Total
Costs			
Annual Operating Costs	\$988,602	\$195,862	\$1,184,464
Annualized Capital Costs	181,240	53,665	234,905
Total Annualized Costs	\$1,169,842	\$249,526	\$1,419,369
Funding			
Passenger Fares	\$ 61,000	\$ -	\$ 61,000
KSU Student Fees	\$ 350,000	-	350,000
KSU Parking Division		249,526	249,526
Federal Transit Administration	425,000	-	425,000
State of Kansas	150,000	-	150,000
City of Manhattan	260,000	-	260,000
Total Funding	\$1,246,000	\$ 249,526	\$ 1,495,526
Surplus (Deficit)			
% of Costs	\$76,158 6.5%	\$0 0.0%	\$76,157 5.4%

Source: TranSystems Corporation, 2001

Management

When it comes time to implement the system, the question of system management arises. There are three general options when it comes to management possibilities: direct city management and operation, contracted management but with city personnel and assets, and turnkey contracted operation. The advantage of the city directly managing and operating the system is that there will be no misunderstanding between transit operation and city expectations. Additionally, improvements to the system will be more directly attainable when the city deems it necessary. However, the disadvantage is that the city would then have to hire expert personnel to manage and operate the system which could lead to increasing the overall cost of implementation and service. Additionally, transit employees tend to be unionized which could increase the complexity of managing labor contracts (City of Manhattan, 2000).

The second option is to manage the system via contract. The city would hire a management firm, but the city would not hire the personnel. However, the city would purchase and provide the equipment. The advantage is that a management firm has greater access to experienced management personnel who would be too expensive for the city to employ. However, hiring a firm to manage the system can come at a higher cost than hiring a single manager. An additional disadvantage is the potential lack of relating to the driving personnel and potential union standards (City of Manhattan, 2000).

The final option is a turnkey management and operation. This involves the city hiring an outside firm to manage and operate the entire system with little city involvement. The city would acquire the firm competitively in order to ensure least cost, high accountability, and attention to service quality. Contracting service out may allow the city to bypass certain federal labor protection regulations, which will lower overall labor costs. However, in giving almost full control of the system to an outside partner, the city may find it difficult to oversee the service, and it could lead to the city being “held hostage” (City of Manhattan, 2000).

The conclusion from the Transit Implementation Plan is that the city should pursue contracted operations where the city would purchase the equipment and lease it to the managing firm. This will allow the city to take advantage of obtaining personnel with a higher degree of expertise as well as giving the city room to back out of the agreement if the system fails to meet community expectation. The idea behind the city purchasing the equipment is so that if the city were to eventually take over management, it would be able to do so rather seamlessly having

already obtained the equipment. Additionally, it is recommended that the city create a Transit Advisory Committee where stakeholders and non-stakeholders are represented alike (TranSystems Corporation, 2001). When taken in reference to the administration of CyRide, this committee should consist of the city, the university, and the student body—allowing all three to have equal voting power. If the city does pursue contract management, the contracting firm should hold a seat on the committee as well.

Current Events

In an effort to provide the most current information in this document, the following section will outline the current actions the City of Manhattan is undertaking in regards to implementing transit. To gain this information, an open-ended interview process took place at Manhattan City Hall on March 5, 2010 with the city’s Director of Community Development, Karen Davis. The following is a discussion of that interview. An outline of the questions and responses is provided in Appendix C.

In lieu of the outdated nature of some of the information within the Transportation Implementation Plan produced by the TranSystems Corporation in 2001, the city decided to renew their contract with TranSystem and charge them with the task of updating the plan. Another factor which encouraged an update is the 2010 decennial census. In the interview, it was communicated that “Manhattan is anticipating the census to confirm a population greater than 50,000—allowing for the creation of an metropolitan planning organization” (Manhattan, 2010). Manhattan had hoped that the 2000 Census would record a sufficient population in order to create an MPO, but the Census showed that the population did not grow as anticipated. Because of this, the federal funding sources the city was relying upon to implement the Transportation Implementation Plan did not materialize. Therefore, the City of Manhattan was unable to implement a transit system at that time. However, the city is optimistic with the 2010 Census because the current population estimates boast a population of approximately 51,000 (Manhattan, 2010).

In the interview it was stated that in order to facilitate the updating processes, the city created a Steering Committee made up of representatives from the following sectors in the community:

- Chamber of Commerce

- Riley County
- Manhattan City Commission
- KSU Faculty Senate
- KSU Student Governing Association
- KSU Parking Services
- Ft. Riley
- KDOT
- ATA

The committee meets once a month to hear from TranSystems and to provide feedback to the consulting firm as the updating process continues. The updated plan is scheduled to be published by April 2010 (Manhattan, 2010).

In the interview, the purpose of the updated plan was also discussed. Since 2001, the city has grown in several ways. The new plan will include an updated report of the social service agencies providing transportation services to the community. One in particular that Karen Davis highlighted is Area Transportation Agency (ATA) bus operating in Riley County. It was noted in the interview that “ATA has increased service in the area in order to meet a growing demand. It has also branched out to serve the student population by providing service to selected apartment complexes housing a high percentage of college students” (Manhattan, 2010). According to the *Kansas State Collegian*, ATA service in the Manhattan area has increased by 65 percent in the last year (Davis, 2009). It was mentioned that the city is open to some type of coordination with ATA as a means to incrementally provide transit service city-wide. This follows the new outlook for the updated plan. The city is considering a “building blocks approach” to implementing transit (Manhattan, 2010). By that, Karen Davis meant that they may have to start small, but they want to provide the highest quality service they can for the funding that is available.

Other updates to the plan include revisiting and restating the growing need for transit in Manhattan due in part to the ever growing population and the lack of current service. It was stated in the interview that in order to accomplish this update, “the City of Manhattan received and 85 percent (15 percent match) funding package from the Kansas Department of Transportation. KDOT sees this project as one of high importance for the region and therefore has been very supportive in order to facilitate its success” (Manhattan, 2010).

Karen Davis stated that “if the process continues forward without major setbacks, Manhattan could see transit in some capacity by 2011” (Manhattan, 2010). She did note that if the 2010 Census indicates that Manhattan indeed crossed the 50,000 population threshold, the city will pursue the establishment of an MPO. However, federal funding for the MPO will not be available until perhaps 2012-2013. This is why the plan for implementing transit in Manhattan will probably be incremental process. As new funding sources are made available, additional transit needs will be met along the way. One of the largest obstacles the city faces is the topic of exacting money from the public in order to pay a portion of the system. In the interview, it was said that the community may see this is wasting resources for a system that will not instantly be comprehensive. She hopes the public understands that it will take time to provide sufficient service on the city-wide (Manhattan, 2010).

Recommendations

The following matrix (Table 3.8) is a side-by-side comparison of the CyRide system in Ames and the potential system in Manhattan. It outlines what is currently in place with CyRide and what is proposed for Manhattan. The purpose is to use CyRide as a standard for success and to assess Manhattan’s possible success in implementing its own system. Recommendations are italicized.

Table 3.8: Comparison Matrix

Item	Ames	Manhattan
Total Population (2007 est.)	54,101	51,497
Student Population (2009-2010)	27,945 (Fall 2009)	21,570 (Spring 2010)
Administration	CyRide	CAT (City Area Transit)<i>proposed</i>
Management Type	Agency	Contracted
Transit Board Members	City, University, GSB	<i>Follow similar format</i>
Funding Sources	Federal, State, Local	Federal, State, Local
Operations		
Number of Routes	11	3
Number of Vehicles	60 (18% spare ratio)	<i>Obtain sufficient number including proper spare ratio</i>
ADA Accessible	All routes + Paratransit	<i>Follow similar format</i>
Weekend Night Service	Moonlight Express	Aggieville Special

Fares		
City	\$.50 - \$1.00	\$0.50 - \$1.00
Student	Fare Free (student fee paid)	Fare Free (student fee paid)
Facility	At capacity, will need an additional facility	<i>Obtain sufficient land to construct facility with room to expand</i>
Maintenance		
Preventative Maintenance	Conducted according to manufacturer recommendations	<i>Follow similar format</i>
Cleaning	As necessary, more frequent in winter months	<i>Follow similar format</i>
Marketing		
Website	CyRide.com—separate from city	<i>Follow similar format</i>
Social Networking	Facebook fan page; Twitter	<i>Suggested</i>
Community Publicity	Fairly non-existent	<i>Promote heavily</i>
University Publicity	Freshmen orientation	<i>Follow similar format</i>
Sustainability		
	-LEED Gold Certified Facility -12 Hybrid buses -Supervisory vehicles replacement with FlexFuel or Hybrids -Biodiesel bus fuel mixture	<i>Consider making key system elements sustainable: fuel choice, facility standards</i>

Recommendations at a Glance

Administration:

- Secure viable funding sources from all levels of government
- Consider a “fare-free” system for university students paid for by semester student fees
- Resident fares should be reasonable and affordable
- Pursue contract management in the short-run
- Create a three-entity transit board consisting of the City of Manhattan, Student Governing Association, and Kansas State University

Operations/Maintenance

- Pursue implementing a fixed-route system
- Location and construction of facility should have growth/expansion in mind

- Obtain a sufficient number of vehicles to ensure a proper spare ratio of at least 18 percent
- All vehicles should be ADA accessible

Marketing

- Advertise heavily within the community to secure maximum ridership
- Advertise heavily to university students to secure maximum ridership
- Create a user friendly website with a map, timetables, and route planner to ensure ease of transit usage by residents and visitors alike
- Upon implementation, consider using social networking websites to aid in communicating pertinent information to the riders

Sustainability

- Consider making key elements—such as fuel choice/hybrid—sustainable.

Conclusions

When using one system as the basis for launching another, it is pertinent to consider whether or not that second system will operate and serve in the same capacity as the original. In this case, the question of whether or not Manhattan's proposed system, when implemented, will serve its community to the same degree that the CyRide system serves Ames and Iowa State University. When seeing the previous side-by-side comparison, it appears that Manhattan will not be providing sufficient service considering the size and characteristics of the community. CyRide is operating a system of 11 routes in order to meet the needs of a population of 54,000, and even still has conducted studies which made the system aware of gaps in service—areas in which more service is required. When using that as a basis, Manhattan's three-route system to serve a population of 51,000 makes it appear that the community will be severely underserved. However, it is worth remembering that CyRide has been in operation since 1976. In its infancy, CyRide did not have 11 routes. In fact, it took CyRide until 1981 to implement its fourth and fifth routes (CyRide History, 2006). One could argue that from 1976-1981 the population of Ames was much smaller, and that would be correct. The point to consider is not the degree to which the amount of routes matches up with the population, but the fact that CyRide started small and incrementally implemented additional routes as called for by public demand and available funding. In light of that, Manhattan is starting out exactly how CyRide did, and overtime should increase their service capacity as funding becomes available in order to meet the

demand. If Manhattan were to try and implement a system the size of CyRide, their inexperience in running such a system could prove to be disastrous. It is better for the City of Manhattan to begin small and grow in experience as the system grows in order to do this right the first time—providing consistent and reliable transit service to their community. The predicament that Manhattan faces is that they could potentially turn-off their community if it is underserved. There is no quantitative way to calculate this. In order to combat this precarious situation, Manhattan must be committed to communicating with the public during this process. Public feedback is essential and the city must effectively address the citizens' concerns and back-up their proposals with the correct, meaningful action.

A final question that must be asked is if the City of Manhattan is committed as much as CyRide. It is observed that Manhattan appears to be. In talking with the Director of Community Development and reading through the various plans and strategies, Manhattan appears to have the desire to implement a system that will be the basis for continued growth and success. It was communicated in the interview that if the resources (funding, human resources, and public support) are not available to do it right the first time, the City of Manhattan would rather not do it at all. Manhattan's true commitment to serving their community through a safe and reliable mass transit service will be tested by time. At the heart of it lies the passion of those involved in making this system a reality. If those individuals involved in the creation and implementation of this system instill within in them the same passion and drive exhibited by the staff at CyRide, then it can be concluded that their commitment is genuine and lasting.

Conclusions at a Glance

Service Capacity and Commitment:

- Manhattan's system appears to under-serve the community compared to Ames' system serving a community of similar size
- However, CyRide was successful due to incremental growth
- Manhattan should pursue incremental growth to ensure proper service—gaining community trust
- This requires constant communication with the community
- Manhattan is striving to “get it right the first time”
- Time will ultimately be the judge of their commitment level to a successful system

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Appendix A - Chapter 1

Federal, State, and Local Funding Programs

The following information is reprinted in total from the Ames Area 2010 Passenger Transportation Development Plan (2009, pp 63-73). Some information has been omitted due to its specific application to the CyRide system.

Federal Transit Assistance Programs

Metropolitan Planning Program (Section 5303) - This is a FTA program to support planning activities in metropolitan areas on an 80% federal, 20% non-federal basis. By law, the state is the direct recipient of the funding. In Iowa, these funds are administered by the Iowa DOT's Office of Systems Planning and are distributed to each of the state's Metropolitan Planning Organizations (MPOs). Annual allocations of 5303 funds are based on a formula that distributes 1/3 of the funds based on the 1990 urban area population, 1/3 based on the 2000 urban area population and the last 1/3 is equally distributed. The 5303 funds are administered jointly with Metropolitan Planning "PL" funds available through the Federal Highway Administration as part of a Consolidated Planning Grant. The 5303 and PL funds can support any MPO costs related to intermodal transportation planning activities for the urbanized area.

Statewide Planning Program (Section 5304) - These funds are intended to support transit planning in addition to what is conducted by the individual MPOs. By law, the state is the direct recipient of the funding. Iowa uses these funds, along with 5311 funds set aside specifically for planning, to support a system of Regional Planning Affiliations (RPAs). The RPAs are responsible for local intermodal transportation planning in areas of the state not included in a Metropolitan Planning Organization. Iowa DOT's Office of Systems Planning serves as the direct recipient of these funds. The combined 5304 and 5311 planning funds are allocated among the state's 18 RPAs based on half of the funds being evenly distributed among the RPAs, 25% distributed on the basis of population and 25% on the basis of the number of counties within the region.

Urbanized Area Formula Program (Section 5307) - This is a federal program for support of urban transit systems serving communities with more than 50,000 population. In all urbanized areas, 5307 funds can be used for capital improvements, including preventive maintenance activities, or planning activities on an 80% federal, 20% non-federal basis. Purchase and installation of special equipment or features required by the Americans with Disabilities Act or the Clean Air Act Amendments, and certain bicycle accommodation projects are eligible for 90% federal assistance. FTA has allowed revenue vehicles with required ADA and clean air equipment to be purchased at a blended participation rate of 83% federal, 17% non-federal. Transit systems may use up to 10 percent of their total 5307 funds to pay for ADA paratransit costs on an 80% federal, 20% non-federal basis. Each area over 200,000 population receives its own 5307 allocation directly from FTA. The allocations are based partially on population and population density, and partially on performance factors, including passenger miles of service provided. Each state receives a single allocation of 5307 funds for use in the smaller urbanized areas (with population from 50,000 to 200,000). This 'Governor's Apportionment' includes a base allocation calculated strictly on population and population density of the state's communities in that size range, plus a "growing states" allocation, based on projected population growth. There is also now a "small transit intensive cities" tier that provides additional funding if any of the small urbanized areas in the state exceed the average performance of the larger communities across the nation on one or more of six specified performance measures. The state is responsible for deciding how 5307 Governor's Apportionment funds are distributed.

Capital Investment Program (Section 5309) – This is a federal program for support of transit capital needs that exceed what can be funded under the federal formula programs. All public transit systems are eligible for these funds. Public agencies may receive these funds directly. Private non-profit transit agencies may not apply directly, but can be part of a statewide application. This federal program provides discretionary funding of transit capital improvements on an 80% federal, 20% non-federal matching basis (83% federal, 17% nonfederal for vehicles equipped to meet ADA and Clean Air standards). In most recent years, all 5309 funding has been earmarked by Congress through the authorization or appropriation processes.

Special Needs Program (Section 5310) – This is a federal program for support of transit services serving elderly and disabled persons. These funds are allocated to Iowa on the basis of the number of persons who are elderly or have disabilities within the state compared to other states. By law, the state is the direct recipient of the funding. Public agencies responsible for coordinating human service transportation are eligible, as are private not-for-profit agencies. Because Iowa requires the designated public transit systems to coordinate all publicly-funded passenger transportation services, Iowa distributes these funds to the public transit agencies. The funds may be used for the cost of contracted operations, equipment and passenger or vehicle shelters on an 80% federal, and 20% non-federal basis. Purchase of vehicles equipped for access by persons with disabilities can

Non-urbanized Area Formula Program (Section 5311) – This federal program supports transit activities in rural areas and communities with less than 50,000 population. These funds are allocated to Iowa based on the number of persons living outside urbanized areas compared to other states. By law, the state is the direct recipient of the funding. Iowa DOT serves as the direct recipient of the funds, through both the Office of Public Transit (OPT) and the Office of Systems Planning. The OPT administers the bulk of the 5311 funding that is provided to small urban and regional transit systems, as well as the 15% of the annual apportionment, that in conformance with federal law, is utilized to support intercity bus services. The Office of Systems Planning administers that portion of the 5311 funds that are combined with the 5304 funding to support rural transit and intermodal planning activities.

The formula apportionment funds received by each system must be used to support services open to the public. This would include eligible transit capital or operating expenses as defined by the federal government. The decision of how the formula funds are programmed is a part of the local transportation planning and programming process conducted through the regional planning affiliation. OPT provides a projection of the formula funding that will be available to each system for the coming state fiscal year in early December, in order to facilitate integration of the 5311 programming process with the annual preparation of the Passenger Transportation Development Plan (PTDP) and the regional Transportation Improvement Program (TIP).

The OPT decides which agencies will receive 5310 funds versus 5311 funds, based on how the transit systems will use the monies. At present, most transit systems choose to use their formula funds for support of transit service costs. The 5310 funds are targeted to systems that purchase services from sub-providers, and 5311 funds are targeted first to systems that provide their services directly. To the extent that any system proposes to use its 5310/5311 allocation for purchase of rolling stock to operate within an urbanized area, 5310 funds will be used (and the project will be included in that urbanized area's Transportation Improvement Program (TIP).) If facility improvements are programmed with the formula funds, 5311 funding will be used.

Rural Transit Assistance Program (Section 5311(b)(3) - RTAP) – This federal program provides a source of funding to assist in the design and implementation of training and technical assistance programs and other support services tailored to meet the specific needs of transit operators in non-urbanized areas (less than 50,000 in population). By law, the state is the direct recipient of the funding. In Iowa, the DOT's OPT serves as the recipient of these funds.

Section 5311(f) Intercity Bus Assistance Program - A minimum of 15 percent of each year's non-urbanized formula funds allocated to Iowa under the 5311 program is required to be set aside to support intercity bus transportation. Iowa's Intercity Bus Assistance Program is intended to support intercity bus service in rural and small urban areas. Private-for-profit companies, private non-profit corporations, or public entities may apply for this funding. Eligible bus service must make convenient connections to the existing national intercity bus network. Connections to Amtrak or passenger air service terminals are desirable. Service strictly for commuter purposes is not eligible. Projects may include operating assistance, capital assistance, planning, or administrative costs such as marketing and insurance. The Intercity Bus Assistance Program is included as a statewide total in the Statewide

Transportation Improvement Program (STIP). Annual intercity bus assistance applications must be received by OPT by the first business day of October for projects to begin in January. Project selections are finalized by December.

Section 5316 Job Access and Reverse Commute Program (JARC) – This is a federal program established to provide transportation services to access employment opportunities and support services (such as training and child care) for welfare recipients and low-income individuals. Services designed for these purposes may be used by the general public for any trip purpose. Each urbanized area over 200,000 population receives a separate annual apportionment of funding, and each state receives both an apportionment for use in urbanized areas under 200,000 population and a second apportionment for use in non-urbanized areas. The federal apportionments are based on census data concerning the number of low income individuals in each area, but the law requires that a competitive project selection process must be administered for each of these apportionment areas. All projects must derive from the area’s Passenger Transportation Development Plan (PTDP), developed through collaboration of public transit and human service interests. Required match (50% of net cost for operating projects and 80% for capital [83% for ADA vehicles]) can come from any non-DOT federal funds, as well as from state or local government or from private sources. The OPT accepts applications for JARC projects under the small urbanized areas apportionment or the non-urbanized areas apportionment as part of its Consolidated Transit Funding Application due the first business day of May each year. If any funding remains un-obligated after those applications are processed, a second round of applications may be solicited.

New Freedom Program (Section 5317) – This is a federal program established under SAFETEA-LU to support new services or accommodations for persons with disabilities that go beyond the minimums established by the rules implementing the Americans with Disabilities Act. “New” is defined as projects that were not implemented or programmed prior to the signing of SAFETEA-LU (August 10, 2005). As with the JARC program, each urbanized area over 200,000 population receives a separate annual apportionment of funding, and each state receives both an apportionment for use in urbanized areas under 200,000 population and a second apportionment for use in non-urbanized areas. The federal apportionments are based on census data concerning the number of persons with disabilities in each area, but the law requires that a competitive project selection process must be administered for each of these apportionments. All projects must derive from the area’s Passenger Transportation Development Plan (PTDP), developed through collaboration of public transit and human service interests. Required match (50% of net cost for operating projects and 80% for capital [83% for ADA vehicles]) can come from any non-DOT federal funds, as well as from state or local government or from private sources. The Office of Public Transit (OPT) accepts applications for New Freedom projects under the small urbanized areas apportionment or the non-urbanized areas apportionment as part of its Consolidated Transit Funding Application due the first business day of May each year. Under this program, the DOT gives estimated amounts available called “marks” to each large urban transit system in the UZA’s under 200,000 in population. If not all the systems apply for this funding, then the funding is available to those that do apply is higher if the DOT deems the project acceptable. This process is similar for regional systems under 50,000 in population. If any funding remains un-obligated after those applications are processed, a second round of applications may be solicited.

Over-the-Road Bus Accessibility Program (OTRB) – Grants are provided directly from FTA to operators of over-the-road buses to help finance incremental capital and training costs to implement the final accessibility rule under the Americans with Disabilities Act (ADA). Providers of intercity fixed-route service, commuter service, and charter and tour service may apply directly to FTA for annual grants. FTA announces its solicitation for applications each year through a notice in the Federal Register.

State Programs

State Transit Assistance (STA) – All public transit systems are eligible for funding under the STA program, which began in 1976. Since 1984, STA funding has been derived from a dedicated portion (currently 1/20th) of the first four cents of the state “use tax” imposed on the sale of motor vehicles and accessory equipment. STA funds are provided to support public transit services and may be used for either operating or capital projects.

STA Formula Program - The majority of the state transit assistance funds received in a fiscal year are distributed to individual transit systems on the basis of a formula using performance statistics from the most recent available year. Each month, the dollars received in the fund during the prior month are allocated to the transit agencies. These

funds can be used by the public transit system for operating, capital or planning expenses related to the provision of open-to-the-public passenger transportation. The STA formula funds are first split between urban and regional systems on the basis of total revenue miles of service provided by each group. The funds are then split among individual systems in each category, 50 percent on the basis of locally determined income (LDI), 25 percent on the basis of rides per dollar of expense, and 25 percent on the basis of revenue miles per dollar of expenditure. OPT calculates LDI by subtracting FTA and STA formula funds from the system's operating expenses.

STA Statewide Special Projects - Each year up to \$300,000 of the total STA funds are set aside to fund “special projects.” These can include grants to individual systems to support transit services which are developed in conjunction with human service agencies, or statewide projects to improve public transit in Iowa through such means as technical training for transit system or planning agency personnel, statewide marketing campaigns, etc.

The **Coordination Special Projects** are considered an “immediate opportunity” program by the state DOT, meaning that these funds can be applied for at any time of the year as an opportunity arises, provided that funding is still available. Projects are intended to assist with start-up of new services that have been identified as needs by health, employment or human service agencies participating in the Passenger Transportation Development Planning process. Most projects are small in scope and typically will fall within the \$5,000- \$25,000 range. Projects shall be for no more than one year, but a second year of funding can be applied for separately. Priority is given to projects which include a contribution from human service agencies as well.

Local Funding

The bulk of transit funding in Iowa comes from local sources, especially on the operating side. How systems generate their local financial support varies, but some of the more common sources are as follows:

Passenger Revenues – Fees paid by the passengers is one of the most common sources of local support. This can include monies collected on-board the transit vehicle (usually called “farebox receipts”), as well as prepaid fares from sale of passes or tickets, or fares billed to the passenger after the fact. FTA requires that all passenger revenues be subtracted from the total cost of operating transit service to identify a net operating cost, before eligibility for federal financial support of operations can be calculated.

Contract Revenue – Human service agencies, local communities, as well as private businesses are often willing to pay a part or all of the cost for certain types of rides provided as part of the open to the public transit operation. Such subsidies are classified as contract revenues and can count toward the required local match on federal projects.

Local Taxes

Municipal Transit Levy – Iowa law authorizes municipalities to levy up to 95 cents per \$1,000 assessed valuation to support the cost of a public transit system. Most of Iowa’s larger communities levy for support of their urban transit systems. A number of smaller communities use this authority to generate funding used to support services contracted from their designated regional transit system. CyRide has its own transit levy for the community of which Ames is approximately 17% of its revenue stream. For Ames, this levy is approximately 62 cents per \$1,000 assessed valuation.

Regional Transit Levy – In 2005, the Iowa legislature authorized Iowa’s two largest counties to form special taxing districts, under the control of the county, for support of area-wide public transit services. Once formed, adjacent counties can become part of the district, or municipalities in non-participating adjacent counties can join. The district can levy up to the 95 cents per \$1,000 assessed valuation; but, unlike the provisions in the municipal levy, the regional transit districts can set differing levy rates across their territory. As of July 2007, only Polk County has chosen to form a district, and has, so far, limited its geographic coverage to just their county. Nearly all municipalities within the county have opted to participate.

General Fund Levy – The cost of supporting transit services is an eligible use of general fund revenues for all Iowa governments and is the primary source of funding to support transit for counties who don’t have the option of a transit levy, as well as for cities which chose not to use the transit levy.

Trust and Agency Levy – The Trust and Agency Levy can be used by cities and counties to support employee benefit plans. As such, it can be used to help support the cost of a city operated transit system.

Other Local

Advertising Revenues – Sale of on-board advertising or advertising space in brochures, etc., can provide some additional revenues to the transit program.

Appendix B - Chapter 2

CyRide Interview

The following information is an outline of the questions and responses of the interview with the staff at CyRide.

1. Which Routes are most popular—i.e. where do you have to supply 4-5 buses to accommodate riders? Times of day?
 - a. #23 Orange—mostly commuter students and residents halls—circular routes. 3rd largest (# of riders) in the state of Iowa. Runs every 2 minutes until approx noon. 5 minutes until 5pm, and 10 minutes after 5pm.
 - b. Red—in town riders
2. Out of all of the new options to expand service (gap analysis) which one is the most likely and why?
 - a. E. 13th and Dayton (East Ames) because of grant for buses—which will show up in July. When it comes to funding it usually involves “match dollars”. East Ames is the most likely it will serve medical services and a potential mall (may be build east of I-35).
3. What is a 28E Agreement specifically? How does it work? Does the city have veto power?
 - a. Inter government agreement. It just lays out the details of the relationship. There is a Department. CyRide is now an agency with the city (28E agreement created the agency)—not an authority (which means that it is a standalone governing body that can make decisions on its own).
 - b. CyRide has a Board to approve decisions then it goes to the City Council—which if the Board approves it, the City Council almost always approves it. Board is made up of 3 constituents – City of Ames, GSB, Iowa State University.
 - c. Sheri Kyras—opinion: 3 entities is a more efficient way to do it but it is more cumbersome for the staff to deal with CyRide and the City. The lines can get a bit fuzzy where sometimes the City Council does something without CyRide Board approval first. It’s legal, just annoying. Example, City Council approved a fare-free demonstration period where board did not, but City was going to foot the bill anyway so that is why the Council went ahead with approval.
 - d. All 3 entities try to increase contributions all at the same percent increment—doesn’t always happen. Example: University could lag behind due to state budget cuts.
 - e. Budgeting towards the entity that pays the least is inefficient.

- f. The group that worked to bring the 3 entities together was the Legal Womens Voter group.
 - g. Additional example of 3 entity system is Chapel Hill, NC.
 - h. Example of separate entities is Iowa City.
4. CyRide wants to be fare-free city wide. How would that work?
 - a. City would have to find a funding source: could be an increase in property taxes.
 - b. Last May 15- Aug 15 the City had a demonstration period for city wide fare-free. City paid for it from the Hotel/Motel Local Options Sales Tax. They saw an increase of 27% in ridership. The City Council will discuss and vote the end of January to make fare-free permanent.
 5. Did CyRide receive any stimulus money in 2009? If yes, what was it used for?
 - a. 4.3 million
 - b. Used to buy 7 diesel buses
 - c. Applied for TIGGER—got 1.6 million to take those 7 buses plus 3 more and make them hybrids. 2 more are being supplied so there will be a total of 12 buses—federal funding paid for 10.
 - d. Steam Cleaning Area rehabilitation was paid for by \$640,000 of stimulus.
 6. In regards to maintenance, what preventative/reactive measures are taken in order to ensure vehicle longevity? How do you deal with corrosion from salt in the winter months?
 - a. All buses are steam cleaned every night when the roads are slushy to wash salt off. In non-winter months (or when weather is clear in the winter) buses are cleaned as needed.
 - b. Preventative maintenance is a go-ahead—and is mandatory when receiving federal funding. See PM worksheets. Each buses is maintained according to its age and how the manufacturer recommends.
 7. What type of “growing pains” did/does the system experience?
 - a. It was suggested to implement things incrementally—they sited how they implemented fare-free to students. It was done over a 2 year period.
 - b. Driver retention. People want to work full time, but part time is more efficient. “Best way for a University/City system due to ridership swings.”
 - c. Getting “new” used buses.
 - d. Growth problem:
 - i. not enough room to park all of the buses in the garage/facility. Current site should only be holding 25 and they are parking 70. This next year will be the first year they will have to park buses outside. It is suggested to plan ahead and expect to expand. Make sure you have plenty of room to expand.

- ii. 1 million new riders in the last year—they are behind the eight ball in providing service for them. The federal dollars (congress earmarks) just don't go far enough
 - e. After fare-free to students, many drivers had to work overtime. The increase service demand increased. CyRide couldn't hire and train fast enough. Sometimes, people in the office actually go out and drive if there is a need. (use and manage staff to fill gaps)
- 8. How do you advertise services?
 - a. Student orientation
 - b. No real marketing budget, but there is not real need for it due to success
 - c. Word of mouth
 - d. Weather sponsorship – in bad weather, they advertise to ride the bus vs. driving their car.
 - e. ISU Daily (newspaper) at the beginning of each year
 - f. Fun Factor on the front route signs (Call Mom, Go to class, beat Iowa)
 - g. IMAGE! Keep a good image. Clean, neatly painted buses. Buses are painted every 3-6 years. Fix dents
 - h. Early on, there was a negative stigma with riding the bus, but over the years, due to good image, it does not exist.
 - i. City of Ames does a resident survey (including some students) and Cyride gets 93% satisfaction rating.
- 9. How did it work prior to 1976? What factors caused the University/City to pursue transit
 - a. Was a city taxi—couldn't keep up. Mini bus service started
 - b. Wayne Moore—former VP of ISU Office of Business and Finance
 - i. Wanted to find a way to get cars off campus. Parking was insufficient. Students should be able to get to class without driving. Looked at Northern Illinois Univ. because they had a fare-free service for students and residents. They implemented the first system in Ames as fare free for students and the community—paid by taxes and student fees. There was a student committee that represented the students. The first manager didn't do so well, but the second generation of management—still in power today—is what made the system successful. The system got rid of fare-free—residents and students paid a fare upon boarding. Mid 90's brought fare free back to students.
- 10. How did funding work prior to 2000 (when Ames became entitlement city)?
 - a. 5311 = federal funding under the rural systems (?). They received approximately 800K annually
 - b. 5307 = federal funding under urban category (?). Funding then dropped to only 450K annually.
 - c. STIC (small transit intensive cities) brings funding back to about 800K

- i. 6 criteria—for each one attained, you about approx 120K. They have 4, soon to get 5. Will never get the 6th one—Passenger Mile to Revenue Hour(?) FTA site.
 - ii. may lose money by expanding toe East Ames—changes ratios.
- 11. If you could do it over—start from scratch what would you do better? Advice for Manhattan:
 - a. Have enough land area for a facility
 - b. Separation between office and maintenance buildings
 - c. Thing big and outside of the box
 - i. Example: city and university saying they are not expecting to grow, but they have seen growth in ridership meaning CyRide was unprepared and having to be reactive.
 - d. Have enough staff to support growth. Some say “lean” is good, but it isn’t always the best. Right now they don’t have a good ratio in operations
 - e. Training is essential. They have an outstanding safety program. Weather training!

CyRide History

The follow is an annotated timeline of the history of CyRide. The information is located on the History webpage on the CyRide website at <http://www.cyride.com/about/history.html>.

Table B.1: Annotated Timeline/CyRide History

Date	Route	Day	Change
Sep-76	CyRide		CyRide started as a city department.
Sep-79	Blue	WkDy	Blue route started.
Sep-79	Green	WkDy	Green route expanded to run all day.
Sep-79	Red	WkDy	Red route expanded to run all day.
Sep-80	CyRide		Ames Transit Agency established. Office on Sumner.
Aug-81	Orange	WkDy	Orange route started.
Aug-81	RGB	Sun	Sunday service started.
Aug-81	RGB	WkDy	Evening service started.
Aug-81	Yellow	WkDy	Yellow route started.
Oct-81	Yellow	Sat	Saturday Yellow started.
Aug-83	Brown	WkDy	Brown route started (rush hours only).
Aug-83	PLS	WkDy	Parking Lot shuttle started.
Nov-83	RGB	WkDy	Headways reduced to 20 minutes.
Aug-85	DAR		DAR fares increased to \$1.50
Aug-85	Fares		Full Fares increased to 60 cents.
Aug-85	RGB	Sun	Sunday morning service started.
Aug-88	Brown	WkDy	Night service started.
Aug-88	DAR	WkDy	Evening DAR service started.
Jan-89	Purple	Wkdy	Purple route starts (rush hour only).
Aug-91	Purple	WkDy	Two midday trips added.
Jan-92	DAR	WkEd	DAR weekend service expanded to comply with ADA.
Aug-92	Yellow	WkDy	Night service provided by Orange route (60 minutes)
Aug-92	Purple	WkDy	Purple expanded to all day service (40 - 60 minute headways).
May-93	Fares		Fares increased to \$0.40/student and \$0.90/full fare.
Aug-93	MLX		Moonlight Express started in place of Night Ride.
May-94	Fares		Fares decreased to \$0.35/student and \$0.75/full fare.
May-94	Brown	WkDy	Midday added to operate same all year.
May-94	Orange	Sat	Saturday Orange to set schedule to Vet Med (3 trips/day).
May-94	Blue	Sat	Summer Blue Saturday night service started.
Aug-94	Brown	WkDy	Midday Brown times expanded.
Aug-94	Orange	WkDy	Orange Route expanded to 7-8 minute rush/midday, 15 late AM, 10 minute PM.
Aug-94	Fares		ISU begins to subsidize Staff/Faculty passes

Aug-94	Fares		ISU students can charge semester passes to their UBill
Sep-94	Orange	WkDy	Bus added to morning rush hour for 4-6 minute interval.
May-95	Blue	Sun	Summer Blue Sunday night service started.
May-95	Red	Sun	Summer Red Sunday night service started.
Jul-95	RGB	Wkdy	2 of 4 sequences wheelchair accessible. All night buses accessible
Jul-95	RGB	WkEd	All weekend routes wheelchair accessible.
Aug-95	Brown	WkDy	Towers purchases passes for all residents for Brown Route.
Aug-95	Orange		Orange timetable separated from other timetables.
Aug-95	Orange	WkDy	Orange Route expanded to 5 minute rush/midday, 10 minute rest.
Aug-95	Yellow	WkDy	Midday trips reduced to 1 per hour.
Aug-95	Pass		Full Fare semester pass established.
Aug-95	Pass		Student and Full Fare Winter passes established.
Jan-96	MLX		MLX service area reduced.
May-96	RGB	WkDy	6:50am & 7:10am trips combined to a 7:00am trip.
Aug-96	Brown	WkDy	Midday Brown extra bus started by Towers (10:40am to 1:00pm)
Sep-96	Orange	WkDy	7:15am trip added from ISC.
Nov-96	DAR		\$3.00 fare for service >3/4 mile from a fixed route initiated.
Nov-96	DAR		\$3.00 fare for elderly started.
Nov-96	DAR		\$5.00 fee for "No Shows" initiated.
May-97	Green	WkEd	Added Green night service on Saturday and Sunday. (Summer)
May-97	RGB	WkDy	Third daytime sequence made wheelchair accessible
May-97	RGB	WkDy	Changed night running time to 90 minute round trip.
Aug-97	Fares		School Year Pass started for Students and Full Fare
Aug-97	Fares		Winter pass extended to November.
Aug-97	Red	All	West endpoint moved to Mortensen/Pinon.
Nov-97	Airport		Airport shuttle to DSM started (Fare \$10 students, \$15 non-students)
Jan-98	MLX		MLX service area increased to entire city
May-98	DAR		Elderly reduced fare eliminated
Aug-98	MLX		MLX funded by all three funding bodies
Jan-99	MLX		Second shuttle bus added (campustown to downtown)
May-99	Gray	WkDy	Second Gray Route bus added in rush hours
May-99	Gray	WkDy	Gray Route expanded to operate all day
Aug-99	Airport		Airport shuttle fares changed to \$12 for everyone, \$12 if frequent rider
Aug-01	Brown	WkDy	Brown route fare free Wilson Hall to Wilson Hall
Aug-01	Orange	All	Orange route fare free Vet Med to Vet Med
Oct-01	Gold	WkDy	Gold route started (fare free)
Aug-02	CyRide	All	Entire system free to ISU students with ID card
Aug-02	CyRide	WkDy	Campus Circulator routes started (21 Cardinal, 22 Gold, 23 Orange, 24 Silver)
Aug-02	CyRide	All	ISU campus stops free for all passengers on all routes
Aug-02	Orange	WkDy	Orange route to 7 minute headway all day

Oct-02	Red	WkDy	Red route to 10 minute headway all day between ISU and Mortensen
Jan-03	Blue	WkDy	Blue route express routes started between S. 5th & ISU during rush hours
Aug-03	Airport		Fares to \$10 for all passengers (including ISU students)
Aug-03	Orange	WkDy	Orange route to 5 minute headway all day
Aug-03	Orange	Sat	Saturday Orange ended
Aug-03		All	All trips except Orange shuttles and some Cardinal trips wheelchair accessible
Dec-03	Airport		Airport shuttle ended 12/23 to 1/7 due to low ridership
Mar-04	Fares		Fares increased (\$1.00 Regular, \$0.50 Reduced)
May-04	Yellow	Wd,Sat	Most midday trips cut
Aug-04	Silver	Sun	Silver route ended on Friday/Saturday nights. Silver runs Sunday evening from stadium lots to residence associations
Aug-04	Cardinal		Cardinal runs between Frederiksen Ct. and campus only
May-05	Purple		Purple route cut back to rush hours only
May-05	Gold	WkDy	Evening Gold route service ends
May-06	Red		Red route moved off of Lincoln Swing to Lincoln Way
Aug-06	All		Electronic destination signs put in service. All routes called by number/color: #1 Red, #2 Green, #3 Blue, #4 Gray, #5 Yellow, #6 Brown, #7 Purple, #21 Cardinal, #22 Gold, #23 Orange
Nov-06	#6A		#6A Towers/Campus shuttle started to operate between the Towers and ISU weekday afternoons and evenings, and assorted times on Saturdays and Sundays
May-07	#6 Brown	WkDy	#6 Brown Extra summer trips added in the morning and afternoon rush hours to create 20 minute headway.
May-09	All		All fixed routes and Dial A Ride Fare Free for everyone from May 15 to August 15. Ridership increased 27% over 2008.
FY2009	All		All time record ridership of 5,002,146 from 7/1/08 to 6/30/09

Recommended Projects: 2010-2013

Table B.2: Recommended Projects: 2010-2013

Provider	Project Description	Type	Estimated Cost	Proposed Funding (List all anticipated sources)		Priority	
				Potential Source	Amount (\$)		
Projects recommended as candidates for FTA or STA funding:							
1	CyRide	General Operations	O	\$ 7,280,545	5307	\$ 1,500,000	H
1	CyRide	General Operations	O	(see above)	STA - F	\$ 523,616	H
2	CyRide	Subcontracted ADA Dial-A-Ride Service	O	\$ 171,141	5310	\$ 131,019	H
3	CyRide	Brown Route Frequency/Hours Expansion	O	\$ 62,617	5316	\$ 31,309	H
4	CyRide	Yellow Route Mid-day Expansion	O	\$ 15,256	5316	\$ 7,628	H
5	CyRide	E. 13th/Dayton Service	O	\$ 329,700	5316, 5317	\$ 164,850	H
5	CyRide	E. 13th/Dayton Service	O	\$ 329,700	ICAAP	\$ 263,760	H
6	HIRTA	Ames to Iowa City Service	O	\$ 38,272	5317, STA - S	\$ 30,618	H
7	CyRide	Alternative Analysis Study - Orange Rt.	P	\$ 200,000	5339	\$ 160,000	M
8	CyRide	I35 Ames-Des Moines Corridor Planning	P	\$ 100,000	STA - S	\$ 80,000	M
9	AAMPO	Planning	P	\$ 35,000	5303	\$ 28,000	H
10	CyRide	One LD low-floor bus (Aquatic Center)	C	\$ 119,000	5317	\$ 98,770	H
11	CyRide	One 40' HD bus (cameras)	C	\$ 384,000	5317	\$ 100,000	H
12	CyRide	Transit Amenities	C	\$ 50,000	5310	\$ 40,000	M
13	CyRide	Replace 13 - 40' HD Buses (cameras)	C	\$ 4,992,000	5309	\$ 4,143,360	H
14	CyRide	Replace 5 - 159" LD Low-floor Buses	C	\$ 575,000	5309	\$ 460,000	H
15	CyRide	Facility Cameras/Proximity Card Access	C	\$ 56,660	5309	\$ 45,328	M
16	CyRide	West Wall EIFS Exterior Replacement	C	\$ 200,000	PTIG	\$ 160,000	H
17	CyRide	Shutoffs for fuel/oil/hydraulic lines	C	\$ 36,000	5309	\$ 28,800	H
18	CyRide	Electric Distribution Rehabilitation	C	\$ 30,000	5309	\$ 24,000	L
19	CyRide	Vehicle Security System Cameras Rep.	C	\$ 218,000	5309	\$ 172,800	H
20	CyRide	Fire Sprinkler System Upgrade	C	\$ 250,000	5309	\$ 200,000	L
21	CyRide	Storage area air handling replacment	C	\$ 250,000	5309	\$ 200,000	L
22	CyRide	Satellite Maintenance Facility & Expansion Hybrid Buses	C	\$ 20,500,000	5309	\$ 16,400,000	M
23	CyRide	Garage Expansion Phase III	C	\$ 1,168,400	5309	\$ 934,720	M
24	CyRide	AVL technology, web planner, passenger co	C	\$ 1,632,540	5309	\$ 1,306,032	L
25	CyRide	Resurface ISC Commuter parking	C	\$ 1,000,000	5309	\$ 800,000	L
26	CyRide	ISU Intermodal Facility	C	\$ 15,000,000	5309	\$ 12,000,000	L
27	CyRide	Ames Fare Free	O	\$ 5,010,955	?	\$ 4,008,764	M
28	CyRide	Vanpool Program	C, O	\$ 430,000	ICAAP, 5309	\$ 344,000	M
Projects recommended as candidates for human services or other funding:							
6	HIRTA	Ames to Iowa City Service	O	\$ 38,272	SC, SCCF, UWSC, ASSET	7,654.40	H
Note: for FTA/STA projects, projects for sub-providers to designated public transit systems must be grouped by designated transit system(s)							
Project Type Codes: O - Operations, C - Capital, P - Planning							
Funding Source Codes: FTA Programs: 5307 - Urbanized Formula, 5309 - Capital Investment Grants, 5310 - Special Needs, 5311 - Non-Urbanized Formula, 5316 - Job Access/Reverse Commute, 5317 - New Freedom, 5339 - Alternative Analysis Funding, ICAAP - Iowa's Clean Air Attainment Program STA Programs: STA - F - State Transit Formula, STA - S - State Transit Special Projects, PTIG - Public Transit Infrastructure Grant HHS Programs: HS - Head Start, OAA - Older Americans Act, etc., WTF - Welfare to Work IADHS Programs:							
Priority Code: H (High), M (Medium), or L (Low)							

Source: Ames Area 2010 Passenger Transportation Development Plan, 2009, p. 82

CyRide Passengers per Year by Route

Table B.3: Passengers Per Year By Route

		RED	GREEN	BLUE	ORANGE	YELLOW	BROWN	PURPLE	CARD	GOLD	SILVER	CIT	DAR	MLX	DSM	Fixed	Shuttles	TOTAL
Jul	2007	35,090	20,348	31,898	14,763	2,010	11,267	1,101					910		117,387	0	117,387	
Aug	2007	85,370	29,864	71,391	91,180	2,509	27,085	2,023	21,122	3,185		402	955	3,793	338,879	58,646	397,525	
Sep	2007	115,598	36,420	81,694	161,371	2,084	35,054	2,649	38,006	5,718		849	927	9,339	489,709	8,289	497,998	
Oct	2007	126,946	41,877	88,065	201,495	2,046	41,084	3,046	46,045	7,039		841	913	8,484	567,881	6,667	574,548	
Nov	2007	94,688	33,571	69,477	150,112	1,877	32,180	2,485	34,820	5,849		583	801	4,602	431,226	5,934	437,160	
Dec	2007	61,677	25,118	48,686	73,712	1,670	21,219	1,372	18,875	2,888		215	761	1,885	258,254	385	258,639	
Jan	2008	92,834	35,990	70,927	138,127	1,818	34,360	2,515	36,678	6,794		481	925	3,492	425,062	0	425,062	
Feb	2008	122,505	43,920	92,270	207,299	1,950	47,831	3,300	58,744	11,664		1,039	944	7,896	599,362	1,542	600,904	
Mar	2008	92,811	36,289	73,218	147,761	2,022	34,679	2,451	39,910	7,675		0	919	4,275	442,121	138	442,259	
Apr	2008	111,277	41,074	83,421	190,925	2,134	40,151	3,035	49,439	9,210		0	1,007	10,222	541,895	890	542,785	
May	2008	54,945	25,751	42,952	47,660	1,899	17,867	1,077	9,259	1,359			972	1,235	204,976	0	204,976	
June	2008	43,710	23,933	37,287	23,636	1,928	15,885	963					886	0	148,228	0	148,228	
Jul	2008	42,721	23,863	38,112	18,597	1,963	16,227	746					891		143,120	0	143,120	
Aug	2008	74,421	27,281	64,296	48,551	2,365	23,100	1,484	10,471	1,327	67		894	3,030	257,287	156	257,443	
Sep	2008	143,135	40,836	98,256	169,418	2,280	41,574	3,319	41,584	5,638	227		874	6,611	553,752	2,187	555,939	
Oct	2008	148,367	41,016	101,026	198,043	2,143	43,393	3,505	45,850	7,314	181		902	10,543	602,283	1,575	603,858	
Nov	2008	98,971	30,615	75,389	136,048	1,743	30,797	2,362	32,414	5,442	135		731	4,318	419,166	828	419,994	
Dec	2008	92,850	32,488	73,867	121,978	1,863	32,647	2,301	36,643	5,859	68		727	2,296	403,802	294	404,096	
	2004	728,572	435,876	805,986	1,574,647	18,960	270,726	91,794	408,625	75,275	2,071	0	11,542	47,388	536	4,471,998	66,493	4,538,491
	2005	787,371	419,746	719,690	1,379,017	20,865	271,800	53,365	321,468	71,516	1,258	8,287	10,518	51,810	615	4,117,326	69,457	4,186,783
	2006	851,899	399,096	700,580	1,322,586	19,917	271,581	28,791	319,286	58,351	0	17,148	10,881	51,354	569	4,052,039	203,270	4,255,309
	2007	961,007	385,488	737,924	1,405,710	23,617	320,579	25,001	338,821	58,812	0	12,057	11,178	51,949	571	4,332,714	84,620	4,417,334
	2008	1,118,547	403,056	851,021	1,448,043	24,108	378,511	27,058	360,992	62,282	678	1,520	10,672	53,918	648	4,741,054	7,610	4,748,664
Incr. Prev Yr.		16.4%	4.6%	15.3%	3.0%	2.1%	18.1%	8.2%	6.5%	5.9%	#DIV/0!	-87.4%	-4.5%	3.8%	13.5%	9.4%	-91.0%	7.5%
Avg. Incr.		97,494	(8,205)	11,259	(31,651)	1,287	26,946	(16,184)	(11,908)	(3,248)	(348)	380	(218)	1,633	28	67,264	(14,721)	52,543

Source: Davenport, 2009

Example Maintenance Checklist

The following document is an example of a maintenance checklist for the GM vehicles operated by CyRide. A hardcopy of the checklist was provided courtesy of the CyRide Operations Office.

GM INSPECTION

2,500 5,000 10,000 20,000

Bus No. _____ Odometer Miles: _____ Date _____

Previous Miles: _____ Symbol / O.K.

Actual Miles: _____ X

Last Oil Change: _____ ADJUSTED

Miles on this Oil Sample: _____ O REPAIR

_____ **PICK UP ALL MAINTENANCE CARDS & TEST DRIVE**

_____ **UPDATE COMPUTER AND DBS**

INTERIOR INSPECTION

--	--	--	--	--

DRIVERS' AREA

___ FREE PLAY IN STEERING WHEEL

___ HORN OPERATION

___ DRIVERS' SEAT & SEAT BELT OPERATION

___ SERVICE BRAKE & ACCELERATOR PEDAL OPERATION

___ SPRING BRAKE OPERATION - CHECK CONTROL KNOB CONDITION & FOR EXCESSIVE AIR LEAKAGE

___ HAND BRAKE OPERATION & ADJUSTMENT

___ DOOR MASTER CONTROL & INTERLOCK OPERATION

___ REAR DOOR OVERRIDE SWITCH OPERATION

___ REARVIEW MIRRORS & CHECK FOR MIRROR TOOLS

___ ALL INSTRUMENT PANEL GAUGES - OPERATION & DIMMING

___ ILLUMINATOR LAMPS - OPERATION & DIMMING

___ AIR COMPRESSOR OPERATION : CUT-IN & CUT-OUT PRESSURES

___ INSTRUMENT PANEL INDICATOR & WARNING LAMP OPERATION

___ TRANS GEAR SELECTOR SWITCH OPERATION - WHEN APPLICABLE

___ TRANS GEAR SHIFT LEVER - WHEN APPLICABLE

___ MASTER SWITCH OPERATION

___ EMERGENCY ENGINE SHUTDOWN - WHEN APPLICABLE

___ HEADLIGHT & DIMMER SWITCH OPERATION - CHECK HEADLIGHT AIM

___ WINDSHIELD WIPER/WASHER OPERATION

___ FOOT MOUNTED TURN SIGNAL SWITCH OPERATION

___ HAZARD/4-WAY SWITCH OPERATION

___ RADIO OPERATION & MTG

___ PA SYSTEM OPERATION & MTG

___ DRIVERS' SIDE WINDOW OPERATION

___ FRONT DESTINATION SIGN & LIGHT OPERATION

___ DRIVERS' HEATER CONTROLS & FAN OPERATION

___ DRIVERS' BOOSTER FAN OPERATION - WHEN APPLICABLE

___ PASSENGER HEATER CONTROLS & FAN OPERATION

___ FAREBOX MTG OPERATION & LAMP

___ DRIVERS' LAMP OPERATION

PASSENGER AREA

___ SEAT FRAMES & COVERINGS FOR DEFECTS

___ GENERAL INTERIOR CONDITION - PAINT, PANELS, TRIM, ETC.

___ ENTRANCE & EXIT DOOR OPERATION

___ DOOR AIR MOTORS FOR LEAKS, ETC.

___ LIMIT SWITCHES MOUNTING & OPERATION

___ EXIT DOOR STEP TREADLES & SENSITIVE EDGES

___ ENTRANCE / EXIT STEP WELLS FOR LOOSE COVERINGS & DEFECTS

___ STEP WELL LAMP OPERATION

___ "GREEN" LAMP OPERATION W/EXIT DOORS AUTHORIZED

___ STANCHION & GRAB RAILS FOR DEFECTS

___ FLOOR COVERING FOR LOOSENESS & DEFECTS

___ PASSENGER CHIME & PULL CORDS

___ SIDE DESTINATION SIGN & LAMP OPERATION

___ WINDOWS, LATCHES & OPERATION

___ EMERGENCY EXIT OPERATION

___ INSPECT SEATS FOR CLEANLINESS - CLEAN IF NECESSARY

___ INSPECT INTERIOR FOR CLEANLINESS - CLEAN IF NECESSARY

___ CHECK CIRC PUMP OPERATION

___ CHECK & SHAKE FIRE EXTINGUISHER (10,000)

___ CHECK 1ST AID KIT & ACCIDENT PKT & RESTOCK DRIVER'S CABINET

___ INSPECT DRIVERS' FOOT BOX - CLEAN IF NECESSARY

___ MOP BUS (Winter Months)

___ PASSENGER DOME LAMP OPERATION

- GENERAL BODY & PAINT CONDITION
- EXTERIOR LIGHTS - CLEARANCE, SIDE, MARKER, STOP, ETC.
- BACK-UP ALARM OPERATION
- WHEEL & AXLE FLANGE NUTS
- TORQUE ALL LUG NUTS (450 FT LBS - 500 FT LBS.)
- WASH RADIATOR, A/C CONDENSER, BATTERY BOX, ENGINE COMPARTMENT
- WIPER ARMS & BLADES, ETC.
- DOOR & FENDER RUBBERS
- CHECK & SERVICE BATTERIES

UNDER CHASSIS INSPECTION

- VISUALLY INSPECT ALL UNDER CHASSIS COMPONENTS
- CHECK FOR LEAKS - AIR, COOLANT, OIL, FUEL, ETC.
- DRAGLINK & TIE RODS
- KING PINS FOR LOOSENESS
- SHOCK ABSORBERS - FRONT & REAR
- RADIUS RODS & BUSHINGS - FRONT & REAR
- STEERING SHAFT & U-JOINTS IF APPLICABLE
- STEERING GEAR & LUBRICATE
- CHECK & ADJ BRAKES - RECORD APPROX . BRAKE LINING THICKNESS
- BRAKE HOSES
- WHEEL SEALS FOR LEAKAGE
- WHEEL BEARING ADJUSTMENT
- VISUALLY CK. TIRES FOR WEAR & TREAD DEPTH - RECORD DEPTH
- CHECK TIRE PRESSURE & ADJUST TO TIRE MFG. SPEC
- COMPLETE CHASSIS LUBRICATION
- INSPECT HEATER FILTER -CHANGE AS NEEDED
- CHECK HEATER CORES FOR LEAKAGE & MTG
- MOTOR MOUNTS - FRONT & REAR
- EXHAUST SYSTEM - MUFFLER, EXHAUST PIPING & MTG
- CHECK MUD FLAP MTG & CONDITION
- FUEL TANK MTG, DAMAGE & FOR LEAKAGE
- TRANS OUTPUT SHAFT SEAL FOR LEAKAGE
- DRIVE SHAFT & U-JOINTS FOR LOOSENESS
- DIFFERENTIAL LUBE LEVEL
- DIFFERENTIAL/PINION SEAL & HOUSING FOR LEAKS
- AIR COMPRESSOR INLET PIPING
- DRAIN & INSPECT AIR TANK
- DRAIN BLOWER BOX CATCH TANK & INSPECT VENT TUBE
- 10,000 Inspection**
- CHANGE ENGINE OIL & FILTER- 40W OIL
- REPLACE COOLANT FILTER - WHEN APPLICABLE
- SERVICE AIR CLEANER
- REPLACE FUEL FILTER(S)
- 20,000 Inspection**
- SERVICE TRANSMISSION -DRAIN & REFILL
- SERVICE POWER STEERING SYSTEM - DRAIN & REFILL
- REPLACE SUCTION FILTERS
- STEAM CLEAN ENGINE/TRANS
- SERVICE DIFFERENTIAL - DRAIN & REFILL
- HYDROMETER TEST BATTERIES

ENGINE COMPARTMENT INSPECTION

- REAR RUN SWITCHES, GAUGES & COMPARTMENT LAMP OPERATION
- VISUALLY INSPECT FOR LEAKS - WATER, OIL, FUEL & AIR LINES
- CHECK FLUID LEVELS
- ENGINE OIL
- TRANSMISSION FLUID
- COOLANT
- HYDRAULIC FLUID
- AIR COMPRESSOR INLET & DISCHARGE LINES
- STARTER OPERATION & MTG
- ALCOHOL EVAPORATOR BOTTLE & PLUMBING - FILL
- ALTERNATOR OPERATION & MTG
- ENGINE GOVERNOR COVER LINKAGES
- THROTTLE CYLINDER OPERATION WHEN APPLICABLE
- RADIATOR COOLING FAN, HUB, MOTOR & OPERATION
- RADIATOR & SURGE TANK MTG & FOR LEAKAGE
- RADIATOR FILL CAP & GASKET OPERATION & FOR LEAKAGE
- COOLANT HOSE CONDITION & CLAMP TIGHTNESS
- SHUTTER OPERATION
- HYDRAULIC FLUID PUMP FOR LEAKAGE

CyRide Awards

The following is a list of the awards the CyRide system has won since its inception in 1976.

- 1983: All American Cy Award
- 1989: UMTA Outstanding Public Service Award
- 1991: APTA Neil E. Goldschmidt Silver Safety Award Finalist
- 1992: Public Risk Management Administration Achievement Award
- 1993: APTA Neil E. Goldschmidt Silver Safety Award Finalist
- 1995: APTA Neil E. Goldschmidt Silver Safety Award Winner
- 1996: APTA AdWheels Award Winner
- 1997: APTA Neil E. Goldschmidt Silver Safety Award Winner
- 1999: APTA Neil E. Goldschmidt Silver Safety Award Finalist
- 2002 APTA Gold Safety Award Finalist
- 17 State Bus Rodeo Winners (as of June 2009)
- 2nd place in the 35' bus division at the 2004 APTA International Bus Rodeo
- 5th place in the 35' bus division at the 2007 APTA International Bus Rodeo
- 2009 APTA Bus Safety Award—Certificate of Merit

Appendix C - Chapter 3

Transit Summit Maps

The following maps were taken from the Manhattan Area Transit Strategy: Connecting 2020 (2000, pp. 98-102).

Figure C.1: Eligible Taxi Coupon Users

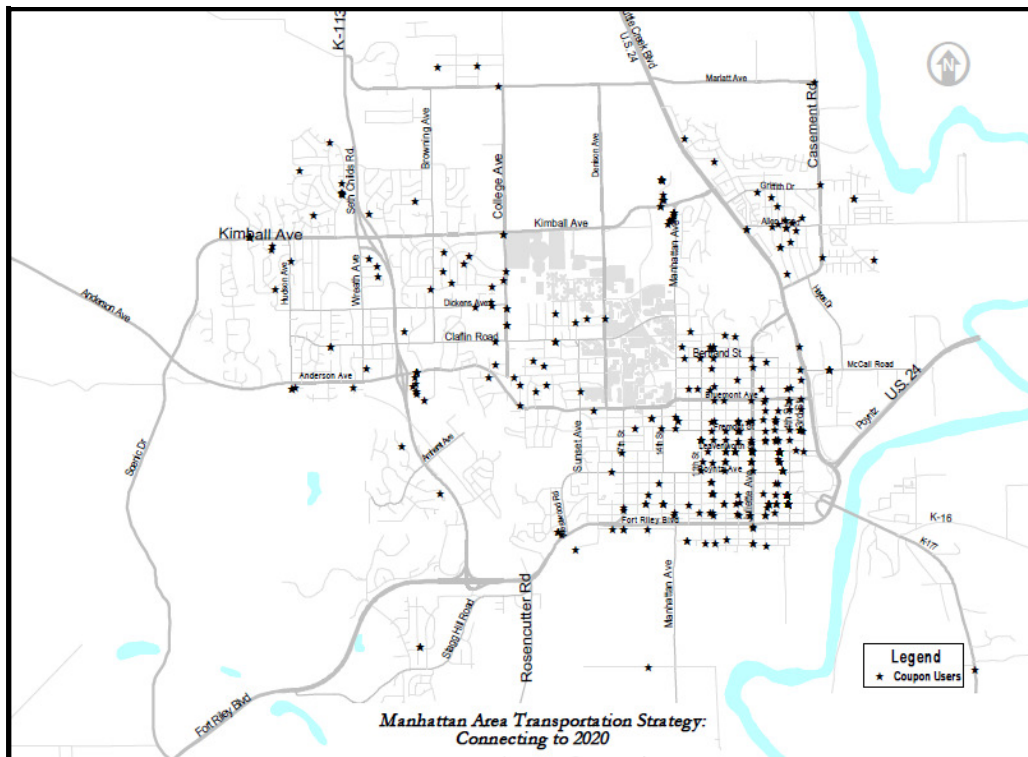


Figure C.2: ATA Clients

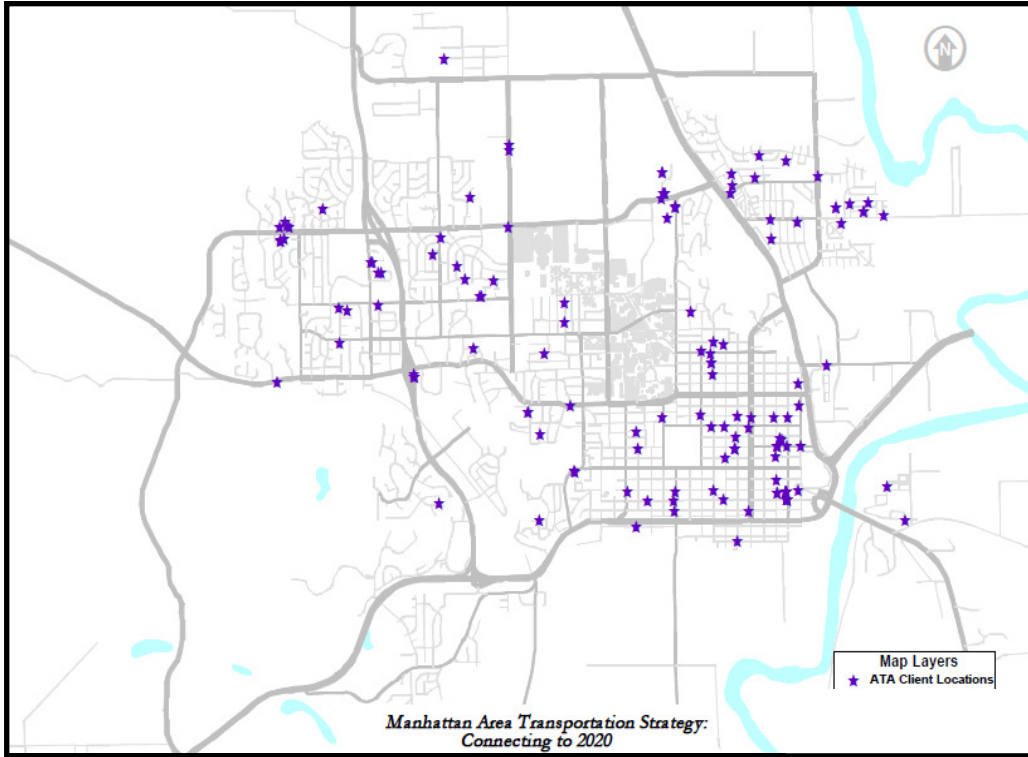


Figure C.3: KSU Permits

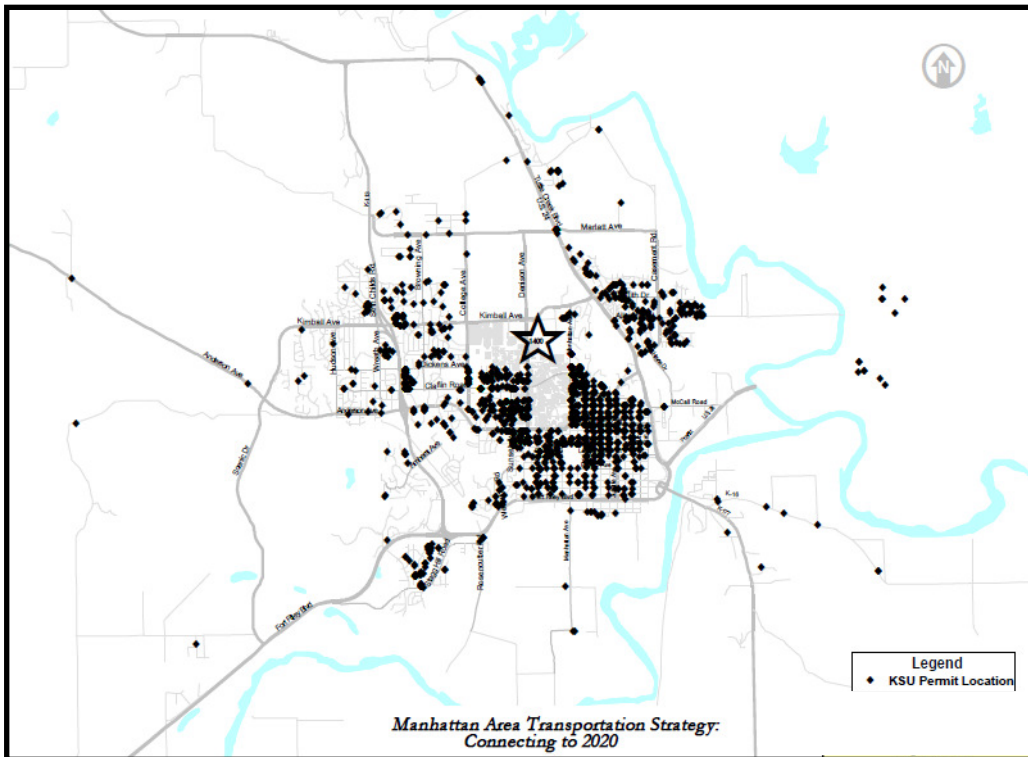


Figure C.4: Key Destinations

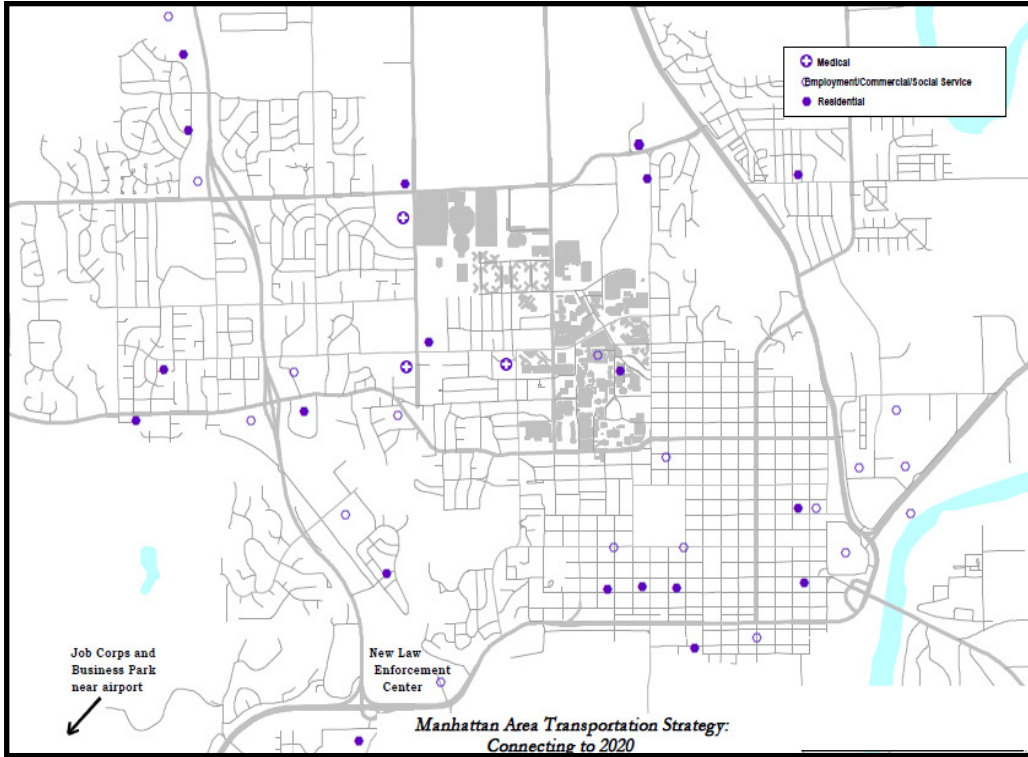
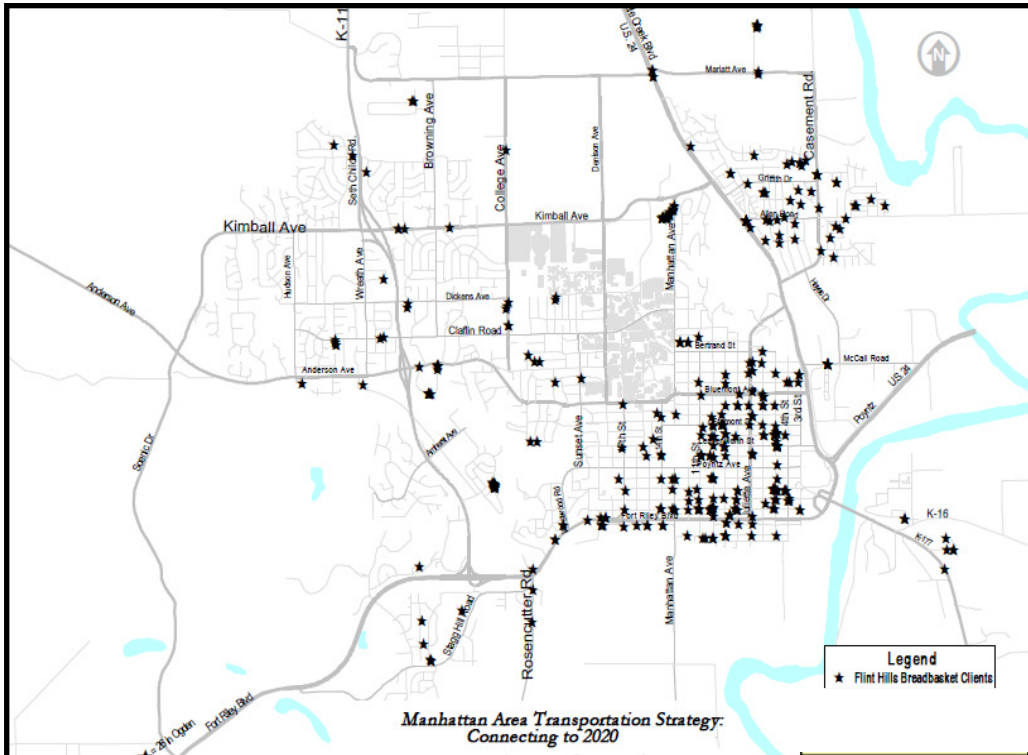


Figure C.5: Breadbasket Clientele



State Funding in Kansas

The following information is reprinted in total from the Manhattan Area Transportation Strategy: Connecting 2020 (2000 pp. 139-140).

System Enhancement statewide discretionary funding made available to all local governments on a one-time basis. Projects must be on or eligible to be added to the State Highway System. Categories are: interchanges/separations, bypasses, and corridors.

KLINK Geometric program is for geometric improvements to city streets that carry state highway designations (City Connecting Links). This is a statewide annual discretionary program available to all jurisdictions.

KLINK 1R program is for roadway surfacing on connecting links. It is available to all jurisdictions.

Economic Development is a statewide annual discretionary program for projects that will provide or enhance economic development for communities. It is available to all jurisdictions.

The Comprehensive Transportation Program, enacted in 1999, also increased funding to the **Special City/County Highway Fund**, which is distributed to all cities and counties in the state.

City Connecting Link payments were increased from \$2000 to \$3000 per lane mile.

Finally, an additional benefit available to KDOT is the use of toll credits for project financing. Federal law states basically that if a state has interstate highways that were constructed and are maintained without the use of federal funds, i.e. the Kansas Turnpike, the state can receive credit for this spending. Almost all federal transportation programs have matching requirements ranging from 10 to 50 percent. Toll credits can be used in lieu of local or state matching funds, allowing 100 percent federal funding. KDOT has shared toll credits with local governments on occasion.

City of Manhattan Interview

The following information is an outline of the question and responses of the interview with the City of Manhattan.

1. Why did the first Transit Implementation Plan fail to be implemented?
 - a. Census numbers did not match up to expectations—did not breach 50,000
 - b. No MPO created, therefore some federal funding fell through
2. Do you foresee any major deviation from the original plan, such as additional routes?
 - a. This plan is taking a building blocks approach.
 - b. City may have to start small, but will do what they can with what funding is available.
 - c. Looking at taking an incremental approach to implementation
3. What is the purpose of the new plan?
 - a. Update existing numbers, transportation providers, reinforce the need, find out what's available for funding, etc.
4. What is the timetable for this plan? When is it going to be published?
 - a. Meetings with the Steering Committee once a month to present new ideas
 - b. Presentation to entities like the City Council, and SGA
 - c. Should be published by the end of April 2010
5. If all goes well, when do you think Manhattan will have transit
 - a. In some capacity by 2011
6. Any negotiations/talking with ATA? What is the relationship between ATA and the city?
 - a. ATA receives most of its funding from the State of Kansas
 - b. ATA will receive 47,000 from the city's Social Service Advisory Board
 - c. Considering some type of partnership for transit