

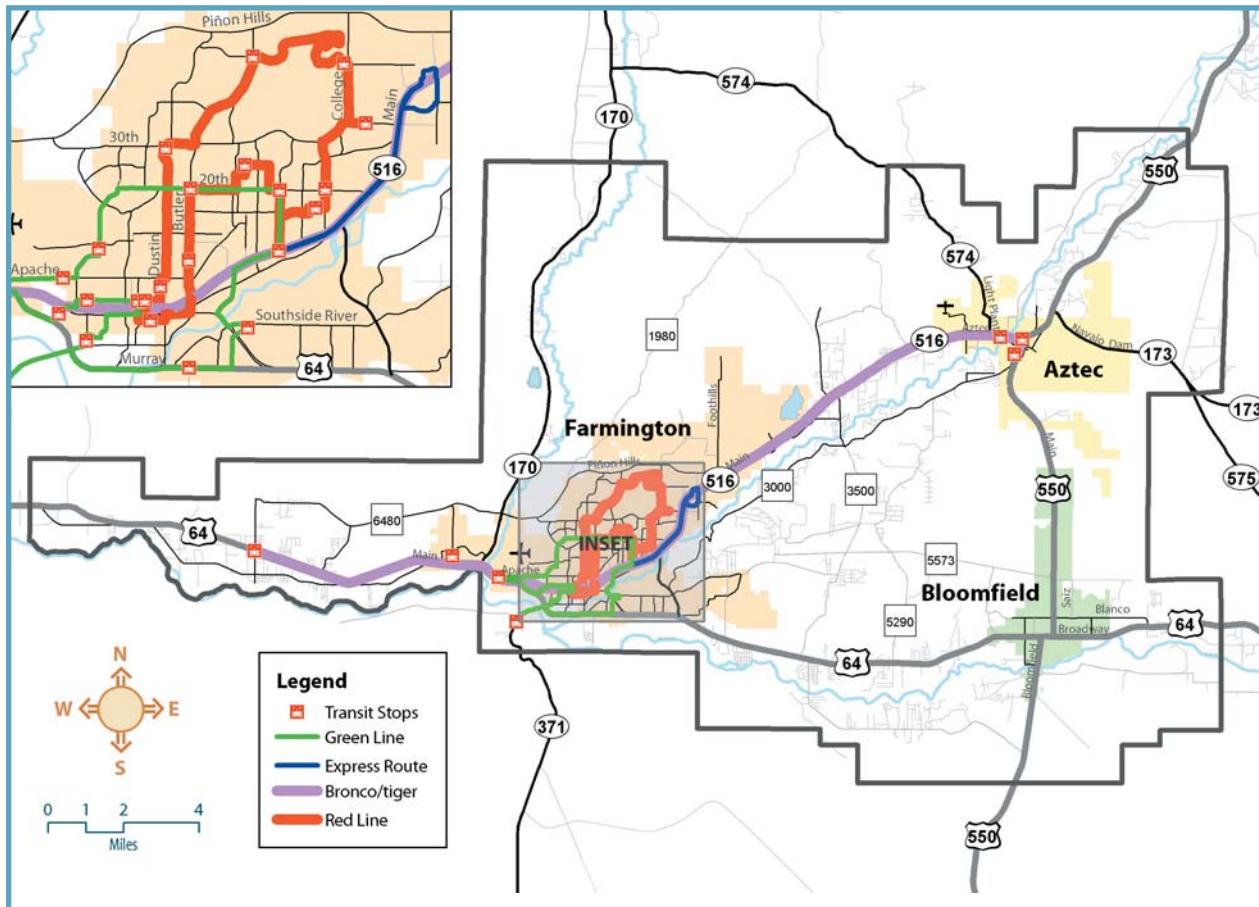
## TRANSIT PLAN

Transit service within the Farmington MPO area is currently provided by Red Apple Transit. This system includes a loop system and routes within the City of Farmington with limited service to Aztec and Kirtland. As growth in the area occurs, increased demand for transit will occur. Transit demand will also increase over the year 2030 planning horizon for the senior and youth population, who typically have a higher need for

transit. Transit will also be a factor in replacing auto trips along the primary arterial travel corridors. The current extent of Red Apple Transit's bus routes are shown in Figure 7.1.

Transit service, whether fixed-route or demand-responsive, is intricately linked to many other governmental and planning actions. Providing fixed-route transit service relies upon direct pedestrian connections between bus stops and origins and destinations. Transit

**RED APPLE TRANSIT (fig. 7.1)**



service reacts to the density of development within the city, locations of transportation corridors and activity centers, and the design of developments along the corridors and centers it serves. Travel corridors and activity centers with a mix of uses and a large number of travelers provide the demand that can effectively support higher levels of transit service.

A balanced, multi-modal transportation system sometimes requires shifts in public investment given the historical emphasis on roadways and automobiles. To facilitate a higher level of transit service in the region, new developments and land use patterns should be planned in such a way as to support the non-automobile modes. In turn, the design of the City's infrastructure and roadway system must consider all transportation modes, including transit.

## Methodology

Two future year (2030) transit alternatives were developed for the Farmington Metropolitan Planning Organization's (MPO) Metropolitan Transportation Plan. In order to assess whether future year service levels were reasonable, an estimate was made of the current system's annual revenue bus hours and annual revenue bus miles since these data were not available. This baseline served as the basis for evaluating future increases in transit service levels.

In developing the 2030 alternatives, forecasts of households and employment were reviewed graphically using geographic information systems (GIS). Typically, transit routes function best in areas with higher population and employment densities. While the 2030 forecasts of households suggest the MPO area will grow by 47 percent over current conditions, this growth is likely to occur in a dispersed manner. In developing the routes for 2030, particular attention was paid to areas with the highest population and employment

densities. These areas were identified as locations with the most transit ridership potential



### Factors Affecting Transit Mobility

Two of the primary factors affecting ridership on transit systems are density and service characteristics. Higher population and employment densities within walking distance to the transit system can support higher-type transit services. Service characteristics are also an important consideration for Red Apple Transit. However, more service will require additional investment. Furthermore, issues such as providing "coverage" versus "productivity" route strategies has a significant impact on ridership and how the system is perceived by the public.

The concept for the two future transit alternatives was to replace the inefficient one-way loop operation of the Red and Green Lines with two-way service on all routes. The Red and Green Lines were maintained, with enhancements in the future. Boarding and alighting data were reviewed to determine the most productive segments. It was also important to retain transit service to important attractions such as the San Juan Medical Center, major employment centers, multi-family housing, retail, and other social services. Based on this methodology, two transit service options were developed and evaluated.

### Service Option 1

Service Option 1 reflects a 33 percent increase in revenue service miles over the current system. This increase in service levels seemed reasonable after reviewing the 2030 forecast for households. While the forecasts suggest that total households will increase by 47 percent in the Farmington MPO area, an increase

of this magnitude was thought to be unusually large. A closer look confirmed that this number was being skewed by the larger percentage increases in households outside of the City of Farmington. This area is marked by dispersed development patterns making this population harder to serve by transit. Hence, this option's 33 percent increase is considered a conservative alternative that attempts to match transit service with household growth within the City of Farmington's boundaries

The routes have been restructured in Option 1 to serve the existing transfer center at Orchard Plaza located at Main Street and Farmington Avenue. All routes will start and end at this transit center, thereby allowing transit riders the opportunity to transfer to other routes in the system. Other transfer locations will be available at the intersection of any two routes. Red Apple Transit currently has a fleet of two cutaway buses and six vans that serve existing service. Option 1 would require three new vehicles to operate the expanded service. This estimate does not include spare vehicles which should represent twenty percent of the total fleet. Including the spares, a total of five vehicles would be needed for this option. This assumes a base fleet of five vehicles that are used to operate the existing system. A route map for Transit Service Option 1 can be seen in Figure 7.2. Below is a brief description of the proposed route and service frequencies:

**Maroon Route** - Local service at a 45 minute frequency from the Animas Valley Mall to Orchard Plaza via Main Street. This route serves the retail businesses along Main Street.

**Yellow Route** - Local service at a 60 minute frequency from north of San Juan College to Orchard Plaza via College Boulevard, 30th Street, Hutton Avenue, 20th Street, and Farmington Avenue. The Yellow Route serves the San Juan College, San Juan College Career Center,

San Juan Apartments, Conquistador Apartments, and Orchard Plaza.

**Orange Route** - Local service at a 60 minute frequency from the junction of Apache Street/W. Main Street to Orchard Plaza via Apache Street, Municipal Drive, 20th Street, and Farmington Avenue. This serves the Northgate Apartments, City Hall, and the retail businesses along 20th Street.

**Fuschia Route** - Local service at a 60 minute frequency from Piñon Hills/Butler Avenue to Orchard Plaza via Dustin Avenue, 30th Street, Butler Avenue, Apache Street, Orchard Avenue, Broadway Street, San Juan Boulevard, and Main Street. This route provides service to Village Apartments, Mesa Shopping Center, Senior Center, Civic Center, State Office Buildings, and Orchard Plaza.

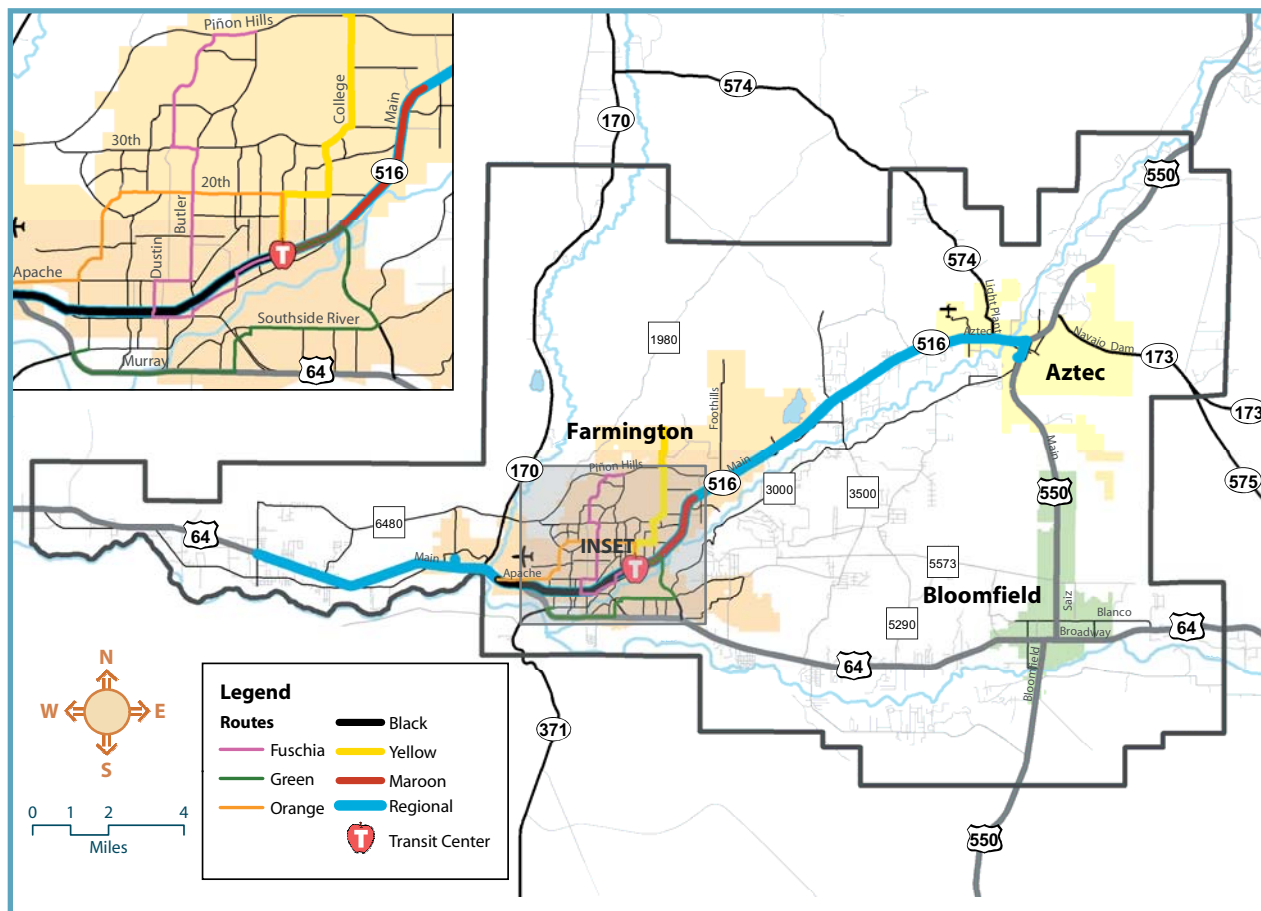
**Black Route** - Local service at a 60 minute frequency from W. Main Street/Apache Street to Orchard Plaza via W. Main Street. This route is the western counterpart to the Maroon Route. It provides service to Northgate Apartments and businesses along W. Main Street.

**Green Route** - Local service at a 60 minute frequency from the San Juan Medical Center to Orchard Plaza via Old Bloomfield Highway, Carlton Avenue, Bloomfield Highway, Southside Road, Browning Parkway, and Main Street. This route provides service to the San Juan Medical Center, Mesa Village Apartments, and Orchard Plaza.

**Tiger Route**- Limited service (3 trips per day) from Aztec to Orchard Plaza via State Highway 516.

**Bronco Route**- Limited service (3 trips per day) from Kirtland to Orchard Plaza via Highway 64 and W. Main Street.

TRANSIT SERVICE OPTION 1 (fig.7.2)



**Service Option 2**

Service Option 2 reflects a 47 percent increase in service miles over the current system. The higher level of service is consistent with the expected growth in households for the entire Farmington MPO area. The most notable difference between Option 2 and Option 1 is the shifting of the transit center westward to roughly Butler Avenue and Main Street (Butler Transfer).

The purpose of this shift was to bring the transit center closer to the traditional “downtown” of Farmington along Main Street. This location also moves the transit center into an area with greater population and employment densities. In addition, the transit hub would be closer to the City’s various social services.

Most of the local routes in Option 2 also have more frequent service frequencies. While much of the service

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in Option 1 is hourly, most of the service in Option 2 will operate with 45 minute headways throughout the day. In addition to the Tiger and Bronco routes, a new Bloomfield Limited will provide service from the City of Bloomfield to Farmington. This option would require at least four new vehicles over the existing number to operate. If spare vehicles are desired, six new vehicles would be required for this option. The route system is shown in Figure 7.3 and described below:

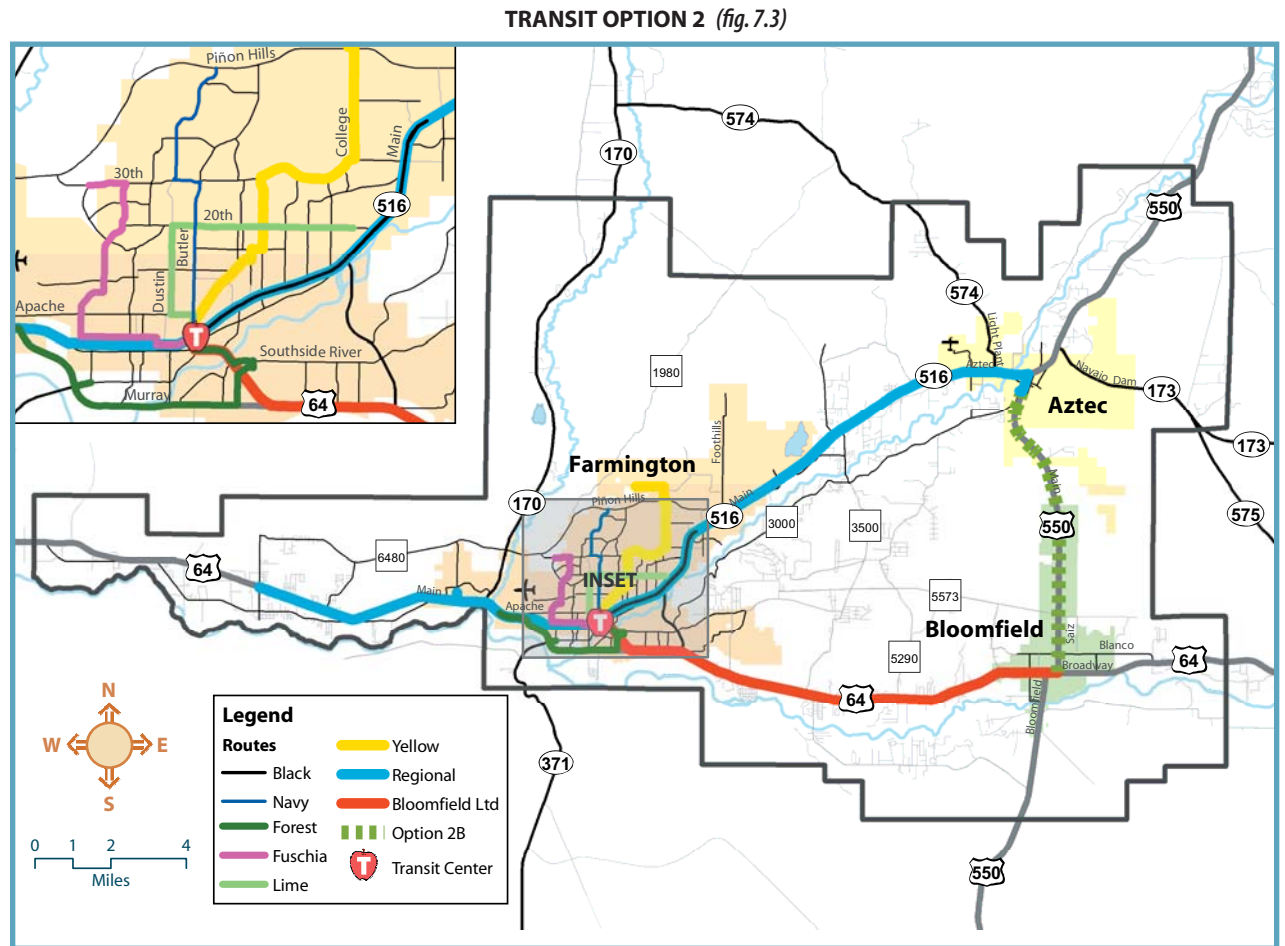
**Black Route** - Local service at a 45 minute frequency from the Animas Valley Mall to the Butler Transfer. This route provides service to all the retail businesses along Main Street.

**Yellow Route** - Local service at a 60 minute frequency from Lions Trail to the Butler Transfer via College Boulevard, 30th Street, Sullivan Avenue, Vine Avenue, and Butler Avenue. It provides service to the San Juan College, San Juan College Career Center, residential neighborhoods, and the Butler Transfer.

**Lime Route** - Local service at a 45 minute frequency from the 20th Street/Clayton Drive to the Butler Transfer via 20th Street, Dustin Avenue, Apache Street, and Butler Street. This provides service to 20th Street retail businesses and Butler Transfer.

**Navy Route** - Local service at a 45 minute frequency from Piñon Hills Boulevard/Dustin Avenue to the Butler Transfer via Dustin Avenue, 30th Street, and Butler Avenue. This route provides service to Village Apartments, residential neighborhoods, Mesa Shopping Center and the Butler Transfer.

**Fuschia Route** - Local service at a 45 minute frequency from Glade Drive/30th Street to the Butler Transfer via 30th Street, Municipal Drive, Arrington Street, Main Street, and Butler Street. It provides service to City Hall,



Retail, Civic Center, and the Butler Transfer Center.

**Forest Route** - Local service at a 60 minute frequency from W. Main Street/Apache Street to the Butler Transfer via W. Main Street, Murray Drive, Carlton Avenue, Bloomfield Highway, Broadway Street, and Butler Avenue. This route provides service to Northgate Apartments, American Plaza, San Juan Medical Center, Mesa Village Apartments, and the Butler Transfer Center.

**Tiger Route** - Limited service (3 trips per day) from Aztec to Butler Transfer via State Highway 516.

**Bronco Route** - Limited service (3 trips per day) from Kirtland to Butler Transfer via Highway 64 and W. Main Street.

**RIDERSHIP FORECAST SUMMARY (Fig. 7.4)**

Ridership	Existing - 2004	Option 1 - 2030	Option 2 - 2030	Option 2B - 2030
Annual Ridership	42,756	61,512	79,376	80,911
Average Weekday Ridership	139	200	259	264
Increase Over Existing	—	43.9%	85.6%	89.2%

**Bloomfield Ltd** - Limited service (3 trips per day) from Bloomfield to Butler Transfer via Highway 64.

### Option 2B

Service Option 2B is very similar to Option 2. Option 2B includes the same recommendations as Option 2, including the relocation of the transit center from Orchard Place to Butler Transfer, and adds limited service several times per day between Aztec and Bloomfield. Option 2B would result in a 60% increase in service miles over the current system. This option would require one additional vehicle over Option 2B, or from five to seven vehicles more than the existing service, depending on the desire for spares.

## Alternatives Analysis

Red Apple Transit carried 42,756 passengers on their fixed routes in 2004. This annual figure equates to about 139 passengers during an average weekday. Future year transit ridership was estimated based on revenue hours of service, households within a half mile of the route, and employees within a half mile of the route

For 2030, this ridership model was applied to the Option 1 and Option 2 alternatives. Using this method, system-wide ridership was forecast to be approximately 200 riders during an average weekday for Option 1 and 259 riders for Option 2. When these forecasts are annualized, Option 1 would carry 61,512 passengers

while Option 2 would carry 79,376 passengers. The forecasts for Option 1 and Option 2 would represent increases of 43.9 percent and 85.6 percent, respectively. Option 2B is estimated to add only five riders per day to Option 2, or 80,911 riders per year. Figure 7.4 provides a summary of the ridership projections for the fixed route services.

The routes in all of the options eliminate the one-way loop operation of the Green and Red Lines. While a one-way loop may be useful for certain applications, routes on infrequent headways and long routes require some passengers to have long wait times as well as travel out of direction. The proposed routes for both alternatives are relatively direct and operate in two directions. One positive characteristic of the current system that has been retained for both future alternatives is the central hub or transfer station. In Option 1, Orchard Plaza, located approximately at Farmington Avenue and Main Street, remains the main transfer center. In Options 2 and 2B, the location has been shifted westward to approximately Butler

Avenue and Main Street. Depending on the availability of land, the location of the transfer center can be moved. As mentioned earlier, the idea of shifting the transfer center closer to the traditional Farmington downtown is to provide people a more pedestrian-friendly environment to access transit either by walking or riding their bicycles.

Red Apple Transit currently provides about 186,600 revenue bus miles annually. Both alternatives would represent increases in transit service over the base network. Option 1 would increase bus miles by 33 percent to 247,800. Option 2 would represent an 11 percent increase in service over Option 1 with 275,300 bus miles and Option 2B would increase revenue miles to 298,800. Not surprisingly, Options 2 and 2B are forecast to carry more riders than Option 1, with Option 2B having the highest ridership by a small margin. Higher ridership does not always suggest a superior alternative; however, an equally important issue is the cost of providing a certain level of service. Hence, the forecasted ridership was examined in light of the potential costs associated with providing the proposed service levels. Applying the current operating cost per mile of \$2.04\* to the annual revenue miles, the annual cost for providing Option 1 service in 2004 dollars would be \$505,512, Option 2 would cost \$561,612, and Option 2B would cost \$599,352. Taking the annual cost and dividing by

**COMPARISON OF TRANSIT OPTIONS (Fig. 7.5)**

Fixed Route Summary	Existing	Option 1 - 2030	Option 2 - 2030	Option 2B - 2030
Annual Revenue Miles	186,600	247,800	275,300	298,800
Annual Cost (@\$2.04 per mile*)	\$379,440	\$505,512	\$561,612	\$599,352
Operating Cost per Rider	\$8.87	\$8.22	\$7.08	\$7.41

\*This figure was provided by Red Apple Transit for 2004

the annual riders that are forecasted for each alternative, Option 2 has the lowest operating cost per rider at \$7.08. Figure 7.5 below has a summary of the comparison.

### Recommended Plan

The Recommended Transit Plan provides a long-term vision on how public transportation in the MPO area can be enhanced and expanded to serve residents in the outlying areas. Balancing overall ridership and operating expenses, it is recommended that Option 2 be adopted. This option provides for a 29% increase in daily ridership over Option 1, while increasing total operating costs over Option 1 by only 11%. Overall, the operating cost per rider of Option 2 is almost 15% less than Option 1. Option 2B was not deemed a viable alternative due to the very modest increase in ridership and greatly increased operating costs.

### Implementation

There is a trade-off relationship in the transit system between the number of routes, the frequency of service, and the extent of service hours. As an example, if resources are expended on increasing the frequency of service or extending the service hours, less productive service routes might need to be eliminated and those resources reallocated to the higher-frequency and extended service-hour routes. Similarly, if additional routes are added, frequency of service and/or service hours for existing routes might need to be cut.

As development occurs and the MPO grows service to intensified existing development areas and newly developed areas, the trade-offs between number of routes, frequency of service, and service hours should be examined. To the extent possible, frequency of service should be increased on the higher-density transit route corridors to capture trips that might have tradition-

ally used automobiles. As new development occurs, extended or new services should be considered when densities warrant.

Because Option 2 provides superior service and reduced costs per rider than Option 1, the implementation strategy is based on trying to move toward the Option 2 transit network. The most important priorities would involve:

- Relocating the transit center westward to the vicinity of Butler Avenue and Main Street and
- Restructuring the two current fixed route one-directional loops to several fixed routes operating bi-directionally.

As a starting point, 60 minute headways can be set for all of the fixed routes. Over time, as ridership builds and more funding becomes available, headways can be shortened to 45 minutes for routes with the highest productivity. Once these core fixed route services are established, the Bloomfield Limited should be considered.

To ensure that the multi-modal needs of the community are met, a number of broad policies and actions are needed. These actions and policies build on the successes and opportunities of the existing system and are described below.

#### TRANSIT ACTION 1: ONGOING MONITORING OF TRANSIT PERFORMANCE AND SERVICE

Monitor and modify transit service in response to future growth, changes in development patterns, and users' needs.

#### TRANSIT ACTION 2: RELOCATE RED APPLE'S REGIONAL TRANSIT HUB

Examine the possibility of relocating Red Apple's regional transit hub to a location within proximity of Farmington's urban core.

#### TRANSIT ACTION 3: DEVELOP PEDESTRIAN STANDARDS TO PROMOTE PRODUCTIVE TRANSIT SERVICE

Develop pedestrian access standards that provide direct and continuous access to transit stops and safe street crossings.

#### TRANSIT ACTION 4: ROADWAY DESIGN STANDARDS

Develop transit-friendly roadway improvement standards that accommodate and promote far side intersection bus turnouts, efficient transit operations, and rider safety and comfort. Require transit-friendly roadway design in construction of new roadways and reconstruction of existing roadways.

#### TRANSIT ACTION 5: DEVELOP A LONG-TERM TRANSIT FUNDING STRATEGY

Establish a long-term funding commitment for the expansion of Red Apple Transit to implement the proposed Transit Vision Plan.

