# POLICY TOPIC PAPER 5.0: FIXED TRANSIT

## BACKGROUND

Fixed transit includes public transportation services that run along an established route in accordance with a preset schedule. This generally includes trains, subways, and buses that function on an established and generally unchanging schedule or timetable. Fixed transit routes typically consist of express fixed routes, such as commuter lines with fewer stops, or as feeder or circulator routes, which transport passengers from a neighborhood or employment area to stops along a connecting bus or rail line.

### Factors Influencing Fixed Transit

A number of factors contribute to the success and efficiency of fixed-route systems. These factors can be divided into two categories: transit service and infrastructure, and land use and design. The General Plan update can have a larger impact on the latter through land use decisions, but can also help improve service levels through street and circulation infrastructure policies and mapping.

***Benefits of Improving Transit***

- *VMT reduction*
- *Reduced road congestion*
- *Increased mobility for non-drivers*
- *Greater flexibility and choice for local and regional commuters*
- *Boost to local businesses along transit corridors/near transit stops*

Transit Service and Infrastructure

Service levels are influenced by the following factors:

- *Extent of service area.* Effective transit systems provide service to a wide variety of destinations. Riders should be able to commute as well as reach services and entertainment by transit. The most successful transit systems provide enough stops at destinations and efficient connections to regional locations to allow users to get to all daily needs without use of a personal vehicle.

- *Service frequency.* This can also be described as the wait time for a specific route at a given stop. The more frequently a transit vehicle comes to each stop, the more flexibility and convenience are provided for riders.

- *Speed.* The speed at which a transit vehicle can travel between various destinations is a key factor in a transit system's competitiveness. The longer it takes to reach a destination using the system compared to other transportation options, the less competitive and effective the system is. The most successful transit systems provide right-of-way for transit vehicles which separates them from other roadway vehicles and traffic, either through undergrounding or overpassing or dedicated traffic lanes.

- *Price.* The more expensive a transit trip is compared to the cost of other transportation options, the less competitive the transit system is. Successful transit systems are either competitively priced with other transportation options or provide other benefits (such as speed or comfort) that other options do not. However, multiple factors can influence the price per trip, including the amount of up-front investment in a transit system and the rate of ridership for cost recovery. Higher investment costs typically require higher ridership to keep per-trip prices lower.

- *Comfort, cleanliness, and safety.* Real and perceived safety and comfort for transit riders can make or break the success of a system. Factors such as transit stop design, lighting, cleanliness, and upkeep, as well as the relative number of other passengers, can greatly impact a passenger's comfort level. Other amenities such as seating, bathrooms, concessions, temperature control, and Wi-Fi can also contribute to the overall comfort and convenience for riders, and thus competitiveness of the transit system.

Land Use and Design

The use of transit is influenced by the following factors:

- *Street design and multimodal access.* The design of streets within close proximity, typically considered to be a ½ mile, of a transit stop can impact the experience of potential transit users. A more multimodal, friendly street system in proximity to stops can positively affect transit system success.

- *Land use intensity.* Studies show that urban densities in the areas served by the transit system are key to its success. Greater density provides for greater potential ridership to support the system. While there are no one-size-fits-all density recommendations, studies suggest that a minimum density of 30 persons per gross acre, or approximately 9 dwelling units/acre, is needed to support light rail transit service. Ridership is maximized when jobs are concentrated within a ¼ mile and housing within a ½ mile of transit stations.[1] Increased ridership allows transit systems to invest in and improve service and infrastructure, as described above.

- *Transit stop proximity to destinations.* Along with density, it is important that the areas served by the transit system include a variety of land uses. Systems should serve both ends of a commute (residences and employment locations) as well as entertainment and service amenities. As noted above, ridership of transit services is maximized when there are higher concentrations of jobs

[1] Institute of Transportation Studies, UC Berkeley. September 2011. Urban Densities and Transit: A Multi-dimensional Perspective.

within a ¼ mile and housing within a ½ mile of transit stations. The greater diversity of land uses accessible by transit, the more useful the transit service is to the user.

**Alternative Service Models**

Selecting the right service type for an area involves consideration of density, available resources, and community needs. In higher-density areas where passengers are clustered together, a fixed-route service with a traditional service schedule works well. In lower-density locations, however, a variety of alternative service models may be more effective and work in conjunction with or augment available fixed-route service, including:

- *Route Deviation.* A defined path and schedule is used to define a service area, but the transit vehicle(s) may serve requests for pickup or drop-off within a specified zone around the path. The deviation zone may or may not be strictly bounded. This service type is most effective in areas with enough density to support a predictable route and schedule but could benefit from the flexibility of serving origins and destinations that are otherwise off-route.

- *Point Deviation.* Service is provided within a defined zone with a set of specific stops, but the path between the stops is unspecified and the vehicle will serve locations within the zone on request. Point deviation can be most effective in an area with specific trip destinations but dispersed origins, or vice versa.

- *Demand-Responsive Connector.* The service operates entirely by demand response, but includes scheduled transfer points connecting with a fixed route. The demand-responsive connector is an effective option when there are scattered origins but a common destination once connected with the fixed-route system.

- *Request Stops.* The service operates on a scheduled fixed route in which certain stops are served only in response to passenger requests. Generally the vehicle must deviate from the fixed path to serve request stops. This is similar to route deviation, but limited to specific stops instead of a range of unspecified locations within a zone.

- *Flexible-Route Segments.* A portion of an otherwise scheduled fixed route is operated as demand response. Assigning a segment of a fixed route to flexible service can be beneficial in very low-density areas.

- *Zone Route.* A primarily demand-response service that has set departure and arrival times at its end points. The zone route is effective when there is not a defined corridor to travel, but a specific origin or destination exists within an area.

## Fixed Transit Services in Elk Grove

Bus Service

Transit services in Elk Grove are run by e-Tran, the City's public bus service. The service runs through the City's commercial core and along major arterials, serving locations such as Cosumnes River College (CRC), the Elk Grove Auto Mall, the Elk Grove Marketplace, and the Laguna Gateway Shopping Center (see Figure 5.0-1, Existing Transit Routes).

A Comprehensive Operational Analysis of transit services is being conducted in the City. The most recent update in December 2015 reported that the current service is not well-utilized, and functionality and efficiency are limited. Local and commuter service is not integrated, resulting in lower effective frequencies on arterial segments. The dominant boarding and alighting location in for local service is CRC, indicating that more than half of all local trips are to places outside of Elk Grove. Differences between weekday and weekend service, low local route frequencies, and inadequate schedules and recovery times are also cited as major contributing factors.

Commuter services tend to be well-utilized in Elk Grove, but efficiency should be reviewed on an ongoing basis which may result in improvements. Preliminary suggestions from the Comprehensive Operational Analysis include reduced time on arterial streets, expansion of peak period times, and improvements to park-and-ride lots.

Once complete, the Comprehensive Operational Analysis will provide recommendations on alternative service models, stop locations, and routes to improve service in Elk Grove.

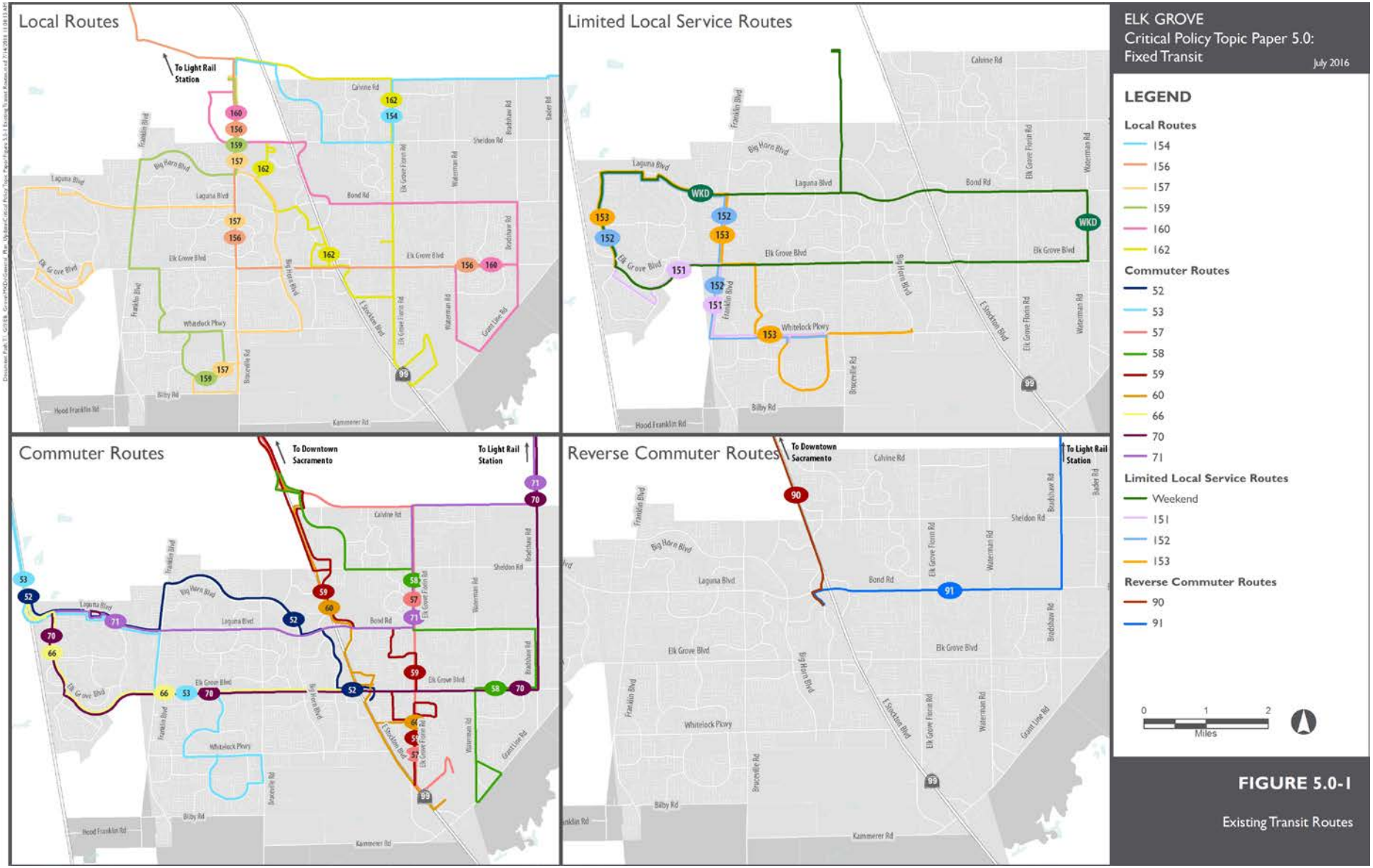
Bus Rapid Transit

The City of Elk Grove has proposed a Bus Rapid Transit (BRT) project, which would include two transit corridors covering a total of 15 miles with 28 boarding locations. The two transit corridors proposed are one north/south corridor and one east/west corridor, which would intersect at the City's future Civic Center in central Elk Grove. BRT service is proposed to operate weekdays from 5:00 a.m. to 10:30 p.m., and weekends from 10:00 a.m. to 5:00 p.m. with 15-minute frequencies. During the weekday peak hours, BRT would run on a 10-minute frequency.

The proposed north/south corridor is an 8.4-mile route beginning at CRC and connecting the main CRC campus with a major recreational center, the Kaiser medical center, the future Civic Center, and the southern CRC campus, and ending at the regional mall.

The east/west corridor would be parallel to Elk Grove Boulevard beginning at Interstate 5, connect several shopping centers, the future Civic Center, Old Town Elk Grove, and end at a shopping center in the eastern portion of the City.

**FIGURE 5.0-1 EXISTING TRANSIT ROUTES**



Light Rail

The Sacramento Regional Transit District recently opened the latest extension of the Blue Line, which is part of the regional light rail system. The current system terminates with a stop at CRC and provides direct access to downtown Sacramento. The Blue Line operates at 15-minute headways from 4:46 AM to 11:56 PM. A future extension of the Blue Line (Phase 3) is anticipated along Bruceville Road and Big Horn Boulevard into the City, providing access to the Southeast Policy Area and the regional mall. An additional extension could provide service to the proposed multimodal transportation facility to be located in the southern portion of the City (see Figure 5.0-2, Existing and Proposed Blue Line Alignment).

Proposed Multimodal Transportation Facility

Currently programmed into the Capital Improvements Program is a proposed multimodal transportation facility to link multiple modes of transportation, including pedestrian, cyclist, cars, buses and trains, at a single facility. The proposed facility would be located adjacent to the Union Pacific Railroad alignment at the southern end of the City near Grant Line Road (see Figure 5.0-2, Existing and Proposed Blue Line Alignment) and would consist of an approximately 600-foot-long passenger loading platform, a 100-space parking lot, and drop-off/loading zones for passengers and buses.

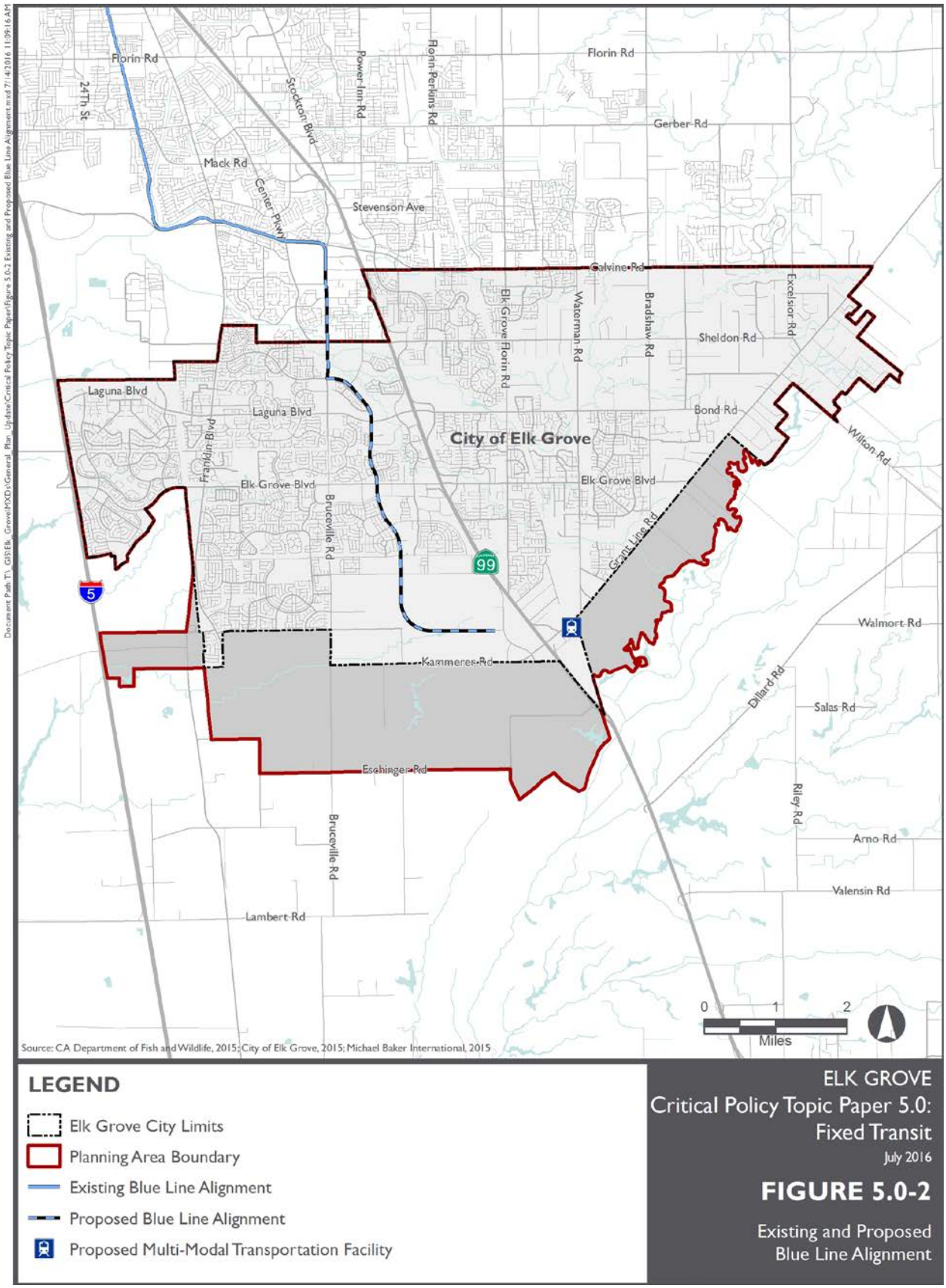
## PROPOSED ACTIONS

As mentioned above, the General Plan update can have a larger impact on land use and design factors to support fixed transit. However, policies supporting service provision, including prioritizing resources for transit systems, are also appropriate for the General Plan and have been incorporated into the recommendations below, as appropriate.

To support both existing and future extensions of transit service, the General Plan should plan for increased densities near transit stops and along transit corridors as well as allow for a mix of uses in these locations. Street design in the vicinity, including designs to support all modes of travel, is also a factor that affects users' access to transit stops and surrounding destinations.

*Refer to Policy Topic Paper 4.0: Complete Streets for additional information and specific recommendations on planning for all modes of transportation.*

**FIGURE 5.0-2: EXISTING AND PROPOSED BLUE LINE ALIGNMENT**



## SUMMARY RECOMMENDATIONS

Based on the discussion contained in this policy topic paper, staff recommends the items below for consideration. Commission and Council direction on these items will be consolidated with that provided on other key policy topics to inform the direction and contents of the draft General Plan update.

**Policy Topic 5.0: Fixed Transit**

5.1. Amend the General Plan Land Use map and/or land use designation descriptions to provide for increased densities and a mix of uses on opportunity sites throughout the Planning Area to support existing and future transit services, where appropriate. While there are opportunities for higher than average densities at sites such as Sheldon Farms (intersection of Sheldon Road and Bruceville Road) and in the Southeast Policy Area, much of the area between the two ends is already developed. Opportunities for reuse of some of these sites with employment or higher-density residential uses would help to drive demand for fixed transit service.

5.2 Consider the following goals and policies for incorporation into the General Plan.

**GOAL: The Transportation System Meets Resident, Employee, and Visitor Needs**

- Offer bus routes and schedules that recognize the needs of all segments of the population, including youth and the elderly, and provide increased opportunities for their mobility.
    - Ensure, where feasible, that schedules and routes are capable of providing a complete transportation system that allows all people to conduct needed activities without significant delay or hindrance.
    - Increase and/or expand weekend transit services, to the extent rider demand and budget support the services, that recognize nontraditional work patterns for commuting.
- Continue to strongly advocate for local and state funding to finance upgrades to services, facilities, and routes.

**GOAL: A Connected and Efficient Transit System**

- Continue to coordinate connections between local and regional transit systems.
    - Evaluate the regional transit service and identify areas of opportunity for linkages.
    - Utilize the results of the City Council-adopted Comprehensive Operational Analysis to configure routes and services that address system deficiencies and capitalize on opportunities while operating within transit budgetary constraints.

  - Regularly review the transit system to identify new deficiencies and opportunities and make changes to the system to reflect this analysis, including identifying and prioritizing resources for implementation.

  - Use the best available technology to streamline and link destinations and improve rider convenience and safety.

  - Work with transit providers to provide infrastructure and service technologies such as real-time route schedules at stops and on websites, route-planning apps, website and app pickup requests, and other innovative methods of streamlining transit travel information.

  - Consider alternative service models, as necessary, to improve or augment fixed-route service, such as demand-stop service, route deviations, and flexible route service.

- Identify and minimize potential impediments to transit users.

  - Evaluate pricing for services and adjust as feasible to encourage transit use.

  - Continue to maintain clean, safe, and welcoming facilities and buses.

- Consider access to and from designated transit routes and stops in the evaluation of new development applications.

  - Require adequate connections for all modes of travel from new development projects to facilitate access to existing and planned transit locations.

  - Continue to require the fair-share dedication (or in-lieu fee, as appropriate) of rights-of-way and station sites along the planned fixed-transit alignment during the development review and approval process.