

## *Transportation*

***The transportation and circulation system includes the general location, purpose and function of existing and proposed arterial and collector streets, and any other modes of travel that are appropriate, all correlated with the future land use projected for the Emigration Canyon Community.***

The mobility needs of Emigration Canyon Community residents and future residents must be met by providing a safe transportation system. The transportation system should accommodate automobiles, pedestrians, bicycling, and other recreational traffic. Together, the system should effectively serve the present and anticipated population while being sensitive to the natural and built environments.

### **Transportation and Circulation Issues**

In order to facilitate the desired transportation system, several issues have been identified and considered in creating its general form.

#### *The Built Environment*

In general, any transportation system is strongly affected by the immediate environment in which it occurs, and conversely, a community form is strongly affected by the existing transportation system. Transportation planning should ensure that land use and the road systems are supportive to each other.

#### *Existing Conditions*

Emigration Canyon Road is currently in good physical condition, however, it does lack adequate shoulders, has short passing zones and lacks room for pedestrians and bicyclists. The guardrails are also deteriorating. The Canyon road has a 66-foot right of way, which was established in the 1930's. Two twelve-foot lanes exist with the narrowest

section currently having 21 feet of asphalt. Efforts to widen the road to include 4-foot bicycle & jogging lanes are currently underway. According to the Salt Lake County Transportation Engineer, Emigration Canyon Road is currently operating at a Level of Service "C."

There are in all, 6 "Levels of Service," ranging from A to F, which have been standardized by the Transportation Research Board. Level of Service (LOS) is a qualitative measure describing operating conditions within a traffic stream and their perception by motorists and/or pedestrians. A Level of Service definition generally describes these conditions in terms of factors such as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety.

The analysis methodologies utilized are from the *Highway Capacity Manual, Special Report 209*, Transportation Research Board, 1985, (1985 HCM). The 1985 HCM contains detailed procedures for the analysis of a variety of facility types. For these facility types, Levels of service are generally defined as follows:

- LOS A represents free flow conditions. Individual users are virtually unaffected by the presence of others in the traffic stream.
- LOS B is in the range of stable flow, but the presence of others in the traffic stream begins to be noticeable. Freedom to select desired speeds is relatively unaffected.

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- LOS C marks the beginning of a range of flow in which the operation of individual users becomes significantly affected by interactions with others in the traffic stream. The selection of speed is affected by the presence of others in the traffic stream.
- LOS D represents high-density, but stable flow. Speed and freedom to maneuver are severely restricted.
- LOS E represents operating conditions at or near capacity level. Operations at this level can be unstable, because increases in flow, a change in traffic composition, or a change in geometric conditions, can cause flow breakdown.
- LOS F is used to define forced or breakdown flow. This condition exists where the demand volume exceeds the facility’s capacity.

Many Canyon roads were approved prior to the current standard. Horizontal and vertical curves were not addressed, a 12% maximum road grade was allowed, and the standard roadway width was different than what would be approved today.

A typical single-family dwelling produces 10 vehicle trips per day. This number is often used to determine the capacity of the roadway.

In 1995, Fehr & Peers conducted a transportation study for Salt Lake County of Emigration Canyon Road. The Average Daily Traffic (ADT) reported in the study is shown in the following table:

Location	ADT (1995)
Pioneer Monument	4800
Above Camp Kostopulos	3400
Above Pinecrest Cutoff	900

Bicycle traffic (seasonal, peak) was determined to be 50 bicycles per hour, according to the Emigration Canyon Transportation Study done by Fehr & Peers.

In 1996, the Utah Department of Transportation also conducted a volume study with the following results:

Location	ADT (1996)
S.L. City Limits to Pinecrest Cutoff	5900
Pinecrest Cutoff to Highway 65	1895
I-80 to Emigration Canyon Road	1130

Traffic in Emigration Canyon should be based on an environmental capacity, such as determined by the Fehr & Peers study. Environmental capacity is based on the “quality of life.” Factors that affect the determination of environmental capacity include vehicle speed, snow/rain, line of sight (visibility), on-street parking, noise, travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. Based on environmental capacity, the study has identified Emigration Canyon Road to be currently operating at Level of Service “E.”

#### Public Transportation Facilities

At the present time there is no bus service provided to the Emigration Canyon Community by Utah Transit Authority.

Public transportation should be encouraged as a viable alternative to private vehicle travel. It can reduce the number of vehicles using the roads and, in effect, extend the capacity of the roads for a longer period of time, as well as reduce the amount of air pollution.

#### **Transportation Elements**

##### Safety

The transportation system must meet the required safety standards for automobiles, bicyclists and pedestrians, and by its design, encourage and educate users to follow safe travel behavior. Parking restrictions along the Canyon road may be implemented if the situation becomes unsafe. Annotated warning signs may become necessary to alert motorists of unsafe conditions.

##### The Residential/ Canyon Environment

The quality of life in the Emigration Canyon Community is associated with its natural and built environments. A properly designed and managed transportation system can increase the opportunities

for people to utilize these resources while also supporting the viability of the area. At the same time, protection of neighborhoods and mitigation of transportation-related noise will reduce negative effects of the roadway system.

The Emigration community is a canyon community and the roadway standards implemented in this area will reflect this character. This includes determining the “Environmental Capacity” of the roadway in the area. As stated earlier, environmental capacity is the level of traffic where an observer on the side of the roadway feels the capacity is at a maximum.

Roadway Categories,  
Classifications & Maintenance

Emigration Canyon Road has been designated by the Utah Department of Transportation as a major collector road. Major Collector roads should: 1) Provide to any county seat not on an arterial route, to the larger towns not directly served by the higher systems, and to other traffic generators of equivalent intracounty importance, such as consolidated schools, shipping points, county parks, important mining and agricultural areas, etc.; 2) link these places with nearby larger towns and cities, or with routes of higher classification; and 3) serve the more important intracounty travel corridors. Salt Lake County Code, Chapter 14.28 identifies the Canyon roads for which the county has maintenance responsibility and classifies the roads for the level of maintenance to be performed.

**Access**

Emigration Canyon has a history of fire and flooding. The roadway network throughout the Canyon should, where appropriate, provide multiple accesses for evacuation and emergency services. Many roads and accesses throughout the Canyon were approved prior to the adoption of the standards of today. Additional access for subdivisions may be necessary. The benefits of multiple accesses include safer roadways due to modifications and the application of AASHTO (American Association of State Highway and Transportation Organizations) standards, emergency vehicular access, and a distribution of traffic loads. The County Engineering Division is developing standard criteria

for improving access within Emigration Canyon. The criteria should be completed by the end of 1999.

**Access Management**

Due to the grade and alignment of Emigration Canyon Road, access management is required. Access management limits the number of driveways and roadways intersecting the Canyon road. New development is encouraged to minimize the number of access points onto the Canyon road. Applicants requesting permitted or conditional use permits will be required to use all means available to reduce the number of accesses along the roadway and prevent backing onto the roadway. By reducing the number of accesses, the number of conflict points is reduced, thereby creating smoother flowing traffic and increasing the overall safety along the roadway. It is recommended that existing roads which intersect Emigration Canyon Road be examined for potential turn lane additions. Salt Lake County should begin planning the construction of left turn lanes for transition in and out of new developments, as well as continuous Two Way Left Turn Lanes (TWLTL) in those areas with high residential access to Emigration Canyon Road.

Clear view and sight distance along the Canyon are also issues, which need to be addressed at the time of development.

**Mobility Through the Canyon**

Access to and from Morgan and Summit Counties contributes 1,890 vehicles per day between the Pinecrest turnoff and U-65. The ability to provide mobility to other destinations outside the Canyon is as important as providing circulation throughout the Canyon area. Access to U-65 provides a secondary access for Canyon residents to East Canyon, Little Dell, Parleys Canyon and I-80.

**Upgrading Roadways**

Private roadways had to meet the standards at the time they were approved. Over time, these standards have changed to reflect current trends, innovations and technological advancements. The result is that these standards yield increasingly safer roadways as the roadway capacity increases.

Many roads have been dedicated to the County when platted with a subdivision. These roads are not maintained by the County and will not formally be accepted by the County until such time that all current roadway standards are met.

In order to petition the County to assume responsibility for road maintenance and upkeep for private roads, the roadway must meet the current County standards. These standards include, but are not limited to vertical curves, roadway grade, and roadway width. The means by which to bring a road into compliance with County standards could be the creation of a special service district.

### **Cost Effectiveness and Funding**

Salt Lake County financial resources must be managed so that the most benefit is achieved with the fewest dollars. The County needs creative mechanisms for accomplishing its transportation goals. Long and short term financing mechanisms, such as the competitive bidding process for maintenance projects, public-private partnerships, such as agreements between Salt Lake County and development companies, as well as the use of Class-B road funds, will increase the effectiveness of each transportation dollar.

### **Future Modes of Transportation**

Emigration Canyon Road is not only being utilized as a commuter road, but also a recreational road. Bicycle traffic makes up 12.5% of all traffic along the roadway. Salt Lake County is currently widening the Canyon road to provide striped bicycle lanes. Widening shoulders and striping lanes provides a safer situation for bicyclists, motorists, walkers and joggers. Parking locations for use of off-road trail systems by bicyclists and pedestrians will reduce the amount of parked vehicles along the Canyon road.

### **Goals**

#### General

1. Provide a safe transportation system that will meet the needs of the Emigration Canyon Community residents, while minimizing associated impacts on the environment, air quality and adjacent development.

2. Ensure that Emigration Canyon Road is not overburdened by basing calculations and decisions regarding the use of the road on its environmental capacity, such as determined by the Fehr & Peers report or similar study.

#### New Roads

1. Ensure that all new public and private roads are built to County Standards.
2. Apply access management practices to the development of new roads.
3. Provide lanes on new roads to accommodate bicycle and jogging use.
4. Ensure that new roads include trail-head parking where possible.

#### Upgrading Roadways

1. Ensure the roadway system is not detrimental to public safety and welfare.

### **Objectives**

#### General

1. Base calculations and decisions regarding the use of Emigration Canyon Road on its environmental capacity, such as determined by the Fehr & Peers report or similar study.
2. Maintain existing public roads in the area to county Canyon standards, where appropriate.
3. Maintain existing and future private roads to county Canyon standards, where appropriate.
4. Actively promote public involvement in the planning stages of all roadway improvements and expansions.
5. Salt Lake County should complete a financial analysis to determine if additional road monies are required to augment federal, state and county road funds. If such a program is needed, it should include consideration of impact fees assessed to new development, creation of a special improvement district, or property taxes to spread the costs of improvements equitably among existing and future users.

6. Conduct a study by Salt Lake County to determine which rights-of-way in platted subdivisions could be vacated and which may be needed for access or trails.
7. Indicate where roads are actually built in replatted subdivisions.

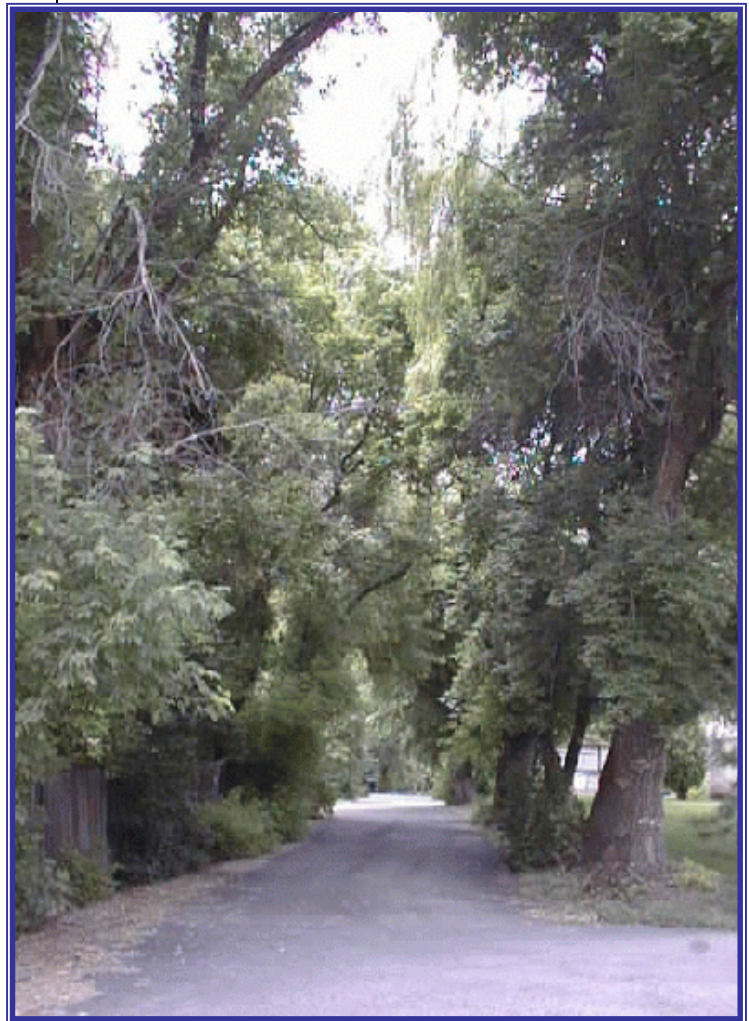
New Roads

1. Balance the need, extent and public funding of the transportation system with new development.

Upgrading Roadways

1. Salt Lake should acquire the necessary right-of-way on roads identified for improvements and county maintenance.

2. Follow the improvement schedule identified in the Salt Lake County Five-Year Roadway Plan to maximize the level of service on arterial and collector roads within the confines of available county, state and federal resources.
3. Utilize the available federal aid programs to make the proposed road improvements.



*Typical Private Road in Emigration Canyon.*

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