3. CIRCULATION ELEMENT

Meeting the transportation needs of residents, visitors and businesses calls for comprehensive and forward-looking solutions and recognition that the transportation system must integrate multi-modal opportunities to reduce reliance on the automobile. The Circulation Element provides a policy framework for improving this system. Although it is intended to guide decisions over the life of this Plan (10-year horizon), Peoria must continue to make long-term plans and lay the groundwork for the distant future and its ultimate build-out. The City must develop transportation systems that serve local and regional travel and make infrastructure investments that will lead to a truly integrated system.

The Circulation Element is organized in the following manner:

3.a. Introduction
3.b. Goals, Objectives and Policies
3.c. Circulation Plan
3.d. Implementation Program

3.A. INTRODUCTION

The Circulation Element outlines the necessary transportation system components to serve the future needs of residents and visitors of the City and its planning area. The element utilizes the policy framework and Circulation Plan to depict and identify implementation measures to realize this system. One of the implementation tools identified in this element and discussed below is the development of a detailed Street Classification Map, consistent with the network depicted in the *Circulation Map* (Figure 3-1).

The Circulation Plan Map is a planning tool used to portray and define the envisioned roadway transportation network of the future. This network represents both the functional and locational criteria desired by citizens and City staff to provide transportation mobility and quality access to existing and future residential, recreation, and economic uses throughout the City.

The Street Classification map is both a planning and engineering tool that identifies specific road widths, number of lanes, future right-of-way needs, and intersection configurations for each collector and arterial roadway in the City. The Street Classification map is the product of a highly sophisticated traffic simulation model utilizing the build-out density of the Land Use Plan and the identified Circulation Plan. The traffic model identifies the future roadway capacity needed to maintain an acceptable level of mobility in the City.

The goals, objectives and policies contained within this element will provide guidance for future recommendations on street and other transportation system improvements. The recommendations in these plans assist the City Council and staff in decision-making on future development and redevelopment activities.

This Circulation Element also outlines bikeway, pedestrian, transit, light rail and commuter rail needs as critical components to the City's circulation system. The projected population forecasts suggest that upgrades and expanded multimodal opportunities are a high priority need.

3.B. GOALS, OBJECTIVES AND POLICIES

The following goals, objectives and policies provide the guidance for implementing the Circulation Plan and the subsequent completion of a consistent Street Classification tool.

GOAL 1:	PROVIDE FOR A MULTI-MODAL TRANSPORTATION SYSTEM THAT WILL SERVE THE COMMUNITY AND REGION IN A SAFE, EFFICIENT, COST EFFECTIVE AND AESTHETIC MANNER WHILE MINIMIZING ADVERSE IMPACTS TO NEIGHBORHOODS, BUSINESSES, AND THE NATURAL ENVIRONMENT.

Objective 1.A:
Develop a transportation system within Peoria that is compatible with and designed to compliment, the existing and proposed land uses as provided in the Land Use Plan, without diminishing the efficient movement of people, goods, and services.

Policy 1.A.1:
Maintain a Street Classification map which identifies future freeway, arterial and collector right-of-way (ROW), ROW width, typical street cross-sections and functional classification. The map shall be consistent with the General Plan Circulation Plan.

Policy 1.A.2:
Encourage land development patterns that promote the operational efficiency of the existing and future transportation system.

Policy 1.A.3:
Require conveyance of right-of-way and the design and improvement of arterials and collectors consistent with the City's Street Classification map.

Policy 1.A.4:
Require that all developments substantially meet the following criteria:

a) Development shall be located or designed in a manner that will not inhibit or impair future improvement of the transportation system.
b) Dedications of land may be required to implement the adopted Circulation Plan and Street Classification map.
c) Residences should be located away and buffered from major arterial intersections.
d) Developments shall be designed and located so that access requirements and traffic generation characteristics do not impair the safety and maintenance of the transportation system.
e) Direct access to arterial streets from individual parcels shall be discouraged. Access will be controlled through the use of median-divided arterials, frontage roads and background collector streets and vehicle non-access easements.
f) The number of driveways on arterial streets shall be limited to improve traffic flow and safety.
g) A uniform spacing pattern of all new driveways and median breaks shall be required to simplify timing to support progression for traffic signals.
h) Intersections with arterial streets should be minimized; they should be limited to intersections with other arterials, collectors and major driveways/access roads.
i) Provisions should be made for safe pedestrian and bicycle crossings of collector, arterial or key intersections where high vehicular, pedestrian and bicycle traffic volumes are common or anticipated.

j) The City should encourage and support the development of a multi-modal path and trail network as alternative safe routes that connect with adjacent regional networks.

Policy 1.A.5:

Require the provision of parking facilities in a manner that will support the economic vitality of the land uses served, by ensuring that:

a) Off-street parking facilities are designed and located to minimize disruption and inconvenience to adjacent properties and streets.
b) Large parking areas are developed with screen walls or landscaped perimeter planting strips, bays and islands to provide visual screening from direct traffic flow and high speed travel areas.
c) Adequate lighting is provided to minimize safety hazards.

Policy 1.A.6:

Promote the construction of new street system segments in coordination with its adopted Land Use Plan, Growth Areas, Street Classification map and Capital Improvement Program (CIP).

Policy 1.A.7:

Monitor the condition and use of all existing streets, and maintain these streets, as required, on a regular phased basis.

Policy 1.A.8:

Conduct an assessment that identifies street improvement projects, estimates costs, establishes timing and identifies revenue sources to implement the projects in the CIP on an annual basis.

Policy 1.A.9:

Coordinate its efforts in transportation, transit, light rail, commuter rail and major roadway capital improvements programming with the Arizona Department of Transportation (ADOT), Maricopa County Department of Transportation (MCDOT), Maricopa Association of Governments (MAG), Regional Public Transit Authority and Valley Metro to ensure timely provision of required transportation improvements.

Policy 1.A.10:

Develop designated routes for heavy use such as freight traffic and heavily utilized regional highways. These include Roads of Regional Significance (RRS), State Routes, freeways, and City major arterial roadways.

Objective 1.B:

Provide for the functional needs of the City's transportation system by addressing urban, suburban, and rural conditions.

Policy 1.B.1:

Maintain a hierarchy of arterials, collectors and transit service levels based principally upon:

a) Existing one-mile grid system in urban areas.
b) Identified major and minor arterials and collectors in suburban and rural areas.
c) Land management regulations to maintain the established heirarchy.

Policy 1.B.2:

Require that new transportation facilities are developed as necessary to support the planned incremental growth of Peoria and designed to their planned function.

Policy 1.B.3:

Ensure that as the City grows, it will be prepared to design and employ traffic control and access management measures to ensure that roadways function as intended.

Objective 1.C:
Develop neighborhood street (local) patterns and circulation systems which preserve neighborhood integrity and serve local traffic and discourages non-local or through traffic.

Policy 1.C.1:

Approve the design and construction of local and residential collector streets that contribute to the residential environment and minimize cut-through traffic and speeding.

Policy 1.C.2:

a. Ensure that residential areas have convenient access to local and collector roadways that connect to arterial streets. Residential developments may be permitted access to arterial roadways contingent on a site plan review that assesses the size of the development, daily trips generated, and impact on the functional integrity of the arterial roadway.
b. Connections to the arterial grid system should not result in a negative impact to the functional integrity of the roadway or in a manner that would reduce safety and mobility.

Policy 1.C.3:

Discourage private streets unless the Peoria City Council determines that the streets meet the adopted standards and that the benefit to the City exceeds the liability.

Any private street permitted must meet all access and connectivity standards established by the City.

Objective 1.D:
Develop and maintain certain limited-access or controlled-access roadways throughout Peoria.

Policy 1.D.1:

Maintain Lake Pleasant Parkway, Happy Valley Road, El Mirage Road, and Vistancia Boulevard as limited-access arterial roadways.

Policy 3.1.D.2:

Enforce the goals and objectives of the State Route 74 Access Management Plan.

Policy 1.D.3:

Enforce the goals and objectives of the Northern Parkway design concept report.

Objective 1.E:
Develop a comprehensive, coordinated, and continuous multi-modal transportation system.

Policy 1.E.1:

Continually monitor, evaluate and update the adopted Trails Master Plan. The alternative modes identified in the Trails Master Plan should be consistent with emerging development patterns, and respond to opportunities presented, particularly in north Peoria.

Policy 1.E.2:
Continually monitor, evaluate, and update a city-wide Bicycle Development Plan.

Policy 1.E.3:
Develop a safe and convenient network of sidewalks, crossings, and paths for walking and bicycling that provide connections between schools, recreation facilities, residential areas and business centers.

Policy 1.E.4:
Design, construct and revise culvert and bridge details as needed to allow for safe pedestrian/bicycle crossings**.**

Policy 1.E.5:
Work with the adjacent jurisdictions, Flood Control District of Maricopa County, Maricopa County, and the Maricopa Association of Governments (MAG) to ensure bicycle and pedestrian network continuity at municipal boundaries.

Objective 1.F:
Efficiently expand Peoria's transit and express route system, and identify the light rail corridor and the commuter rail access points as an attractive and convenient alternative for Peoria's residents, workforce, and visitors.

Policy 1.F.1:
Plan and adopt both short-term and long-term fixed route and express route transit services.

Policy 1.F.2:
Seek to increase the frequency and service area of transit service.

Policy 1.F.3:
Seek express route service at strategic City locations to major employment centers.

Policy 1.F.4:
Partner with Valley Metro Rail in the identification and adoption of a light rail route that extends from Glendale into the West Valley.

Policy 1.F.5:
Partner with MAG and ADOT in the development of a commuter rail access plan along the BNSF railroad corridor.

Policy 1.F.6:
Develop a Transit Master Plan that identifies potential locations for multi-modal stations and other transit related features.

Objective 1.G:
Provide for the existing and future linkage of pedestrian and automobile traffic with existing and future public transit, light rail and commuter rail systems and facilities.

Policy 1.G.1:
Coordinate with the Regional Public Transportation Authority (RPTA) to develop passenger transit and Park-and-Ride facilities at selected locations in commuter corridors.

Policy 1.G.2:

Encourage site planning and transit-oriented design and land uses around future express route, light rail and commuter rail transit centers to emphasize the ease and safety of pedestrian circulation and orientation of compatible and mutually supportive uses.

Policy 1.G.3:

Include sidewalks, bus pullout bays and transit shelters within future development located along designated commuter corridors and transit routes.

Policy 1.G.4:

Establish transit-oriented and rail-oriented development regulations, guidelines and incentives to provide land uses and improvements around future transit and rail centers that facilitate and encourage ridership.

3.C. CIRCULATION PLAN

The transportation system for Peoria should be well maintained and improved to accommodate the existing needs and long-range objectives for growth, revitalization, and redevelopment. Each component of the Circulation Element achieves a wide range of objectives which, when combined into a comprehensive network, allow for the satisfaction of a variety of travel demands throughout the City.

To address each of the identified issues, a functional classification system establishing a hierarchy of streets has been prepared to meet the needs of the designated land uses and functional circulation components. The functional classification system addresses both urban and rural conditions (based on the character of the recommended land use pattern) and provides for the comprehensive needs for all citizens whether they are driving a car to work, riding a bus to the store, riding a bicycle to school or walking to the neighborhood park.

In general, the primary purpose of roadway classifications is to:

- Establish a logical, integrated system for each jurisdiction;
- Relate geometric traffic control and other design standards to the roadways in each classification; and
- Establish a basis for developing long-range programs, improvement priorities and fiscal plans.
- Define the relationship between accessibility and mobility on existing and planned roadways.

The functional classification characteristics describe the service performed, typical trip lengths, access spacing and continuity of the Peoria roadway system. For transportation system planning, as well as specific design purposes, roadways are most effectively classified by function.

Roadways have two basic functions:

- To provide mobility from point to point, and
- To provide access to adjacent land uses.

From a design standpoint, these two functions are incompatible. For property access with ingress and egress, low speeds are desirable, usually accompanied by inconsistent flows with a large number of turning movements. Mobility demands higher speeds and uniform flows with limited turning movement interference.

FUNCTIONAL CLASSIFICATION

In the City of Peoria, five functional categories are used to classify roadways. These categories are:

- Freeway
- Major Arterial ;
- Minor Arterial ;
- Major Collector ;
- Minor Collector
- Local ; and
- Rural.

These categories comprise the hierarchy of functional roadway classes in Peoria and relate directly to the different types and lengths of generated trips as well as Access. Travel demand determines these characteristics.

Freeway is a major highway that provides access via interchanges only.

Major Arterial is a roadway that is of regional importance and is intended to serve high volumes of traffic traveling relatively long distances. A major arterial is intended primarily to serve through traffic, and access is controlled.

Minor Arterial is a roadway that is similar in function to major arterials, but operated under lower traffic volumes, serves trips of shorter distances, and provides a higher degree of property access than major arterials.

Major Collector is a roadway that provides for traffic movement between arterials and local streets and carries moderate traffic volumes over moderate distances

Minor Collector is a roadway that is similar in function to a major collector, but carries lower traffic volumes over shorter distances and has a higher degree of property access. Minor Collectors may also provide direct access to abutting properties except individual residence.

Local is a roadway that is intended to provide access to abutting properties, tends to accommodate lower traffic volumes, serves short trips, and provides connection to collector streets.

Rural is the same as local, just in a rural setting versus an urban or suburban setting for local.~~)~~,

Roadway function establishes the type of transportation service provided, which is related to the degree of access control. Increasing access control allows traffic to travel at higher speeds in a more uniform manner. Table 3-1, *Functional Classification System,* illustrates the relationship between roadway categories, primary function and degree of access control.

TABLE 3-1 -- Functional Classification System

Roadway Category	Primary Function	Degree of Private Access Control
Freeway	Mobility	High
Major Arterial	Mobility	High
Minor Arterial	Mobility	High
Major Collector	Mobility and Accessibility	Moderate
Minor Collector	Transition	Moderate
Local	Accessibility	Low

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In addition to the ability of each classification to satisfy various travel demands, facility spacing, continuity and access control mechanisms are key distinguishing features of the functional system. Table 3-1 documents important characteristics of each functional class.

The three major Functional Classification's (Freeway, Arterial (major and minor)), and Collector (major and minor) to serve the proposed Land Use Plan is illustrated on Figure 3-1, *Circulation Plan*. The Street Classification Map, that is maintained through the Engineering Department, provides the differentiation per Arterial and Collector definitions as defined above.

The Major Arterial system should carry the major portion of trips entering and leaving the urban area, as well as the majority of through movements desiring to bypass major City centers. In addition, significant internal travel between commercial business districts and outlying residential areas, between older mature communities and between suburban centers should be served by this classification of roadway. Lake Pleasant Parkway currently serves as a Major Arterial connecting to the Carefree Highway (State Route 74). Loop 303, when completed, will provide a regional freeway route complementing Loop 101. In accordance with the Regional Transportation Plan, Northern Parkway, from 71st Avenue to 115th Avenue, Happy Valley Parkway, from 67th Avenue to Litchfield Road, and El Mirage, L 303 to SR 74, will also serve as Major Arterials, and will maintain access control as outlined within this section.

Because of the nature of the traffic volumes served by the Major Arterial system, all fully controlled access facilities will be part of this functional classification. Design types that are often included under the Major Arterial system are Limited Access Controlled Roadways (e.g., Lake Pleasant Parkway).

The distance between Major Arterials will depend upon the developed densities/intensities of particular portions of the urban and suburban areas. The spacing of Major Arterials may vary from less than two miles in highly developed central business areas to five miles or more in undeveloped areas in the north. The addition of the seven interchanges on Loop 303 within the planning area will also directly impact the Principal Arterial system.

For Major Arterials, service to abutting land is secondary to the provision of service for major traffic movements. It should be noted that only partially controlled access facilities are capable of providing any direct access to land, and such service should be incidental to the primary functional responsibility of mobility.

The Minor Arterial street system for the City of Peoria should interconnect and augment the Major Arterial system to provide service trips of moderate length and a somewhat lower level of travel mobility than principal arterials. This system also distributes travel to geographic areas smaller than those

identified in the Major Arterial system, and provides north-south and east-west continuity within the City.

The Minor Arterial system includes facilities that allow more land access than the Major Arterial system, at a lower level of traffic mobility. Such facilities provide inter-community continuity, but ideally should not penetrate identifiable neighborhoods. Because of the potential destination type land uses that has a high multi-modal (pedestrian and bicycle) destination and located near the Arterial system, additional specific area access plans may be required as the development of the area adjacent to the Arterial occurs.

The spacing of Major and Minor Arterial streets may vary from ½ mile to 1 mile in central commercial areas, but may be more than two to three miles elsewhere in the City, based on physical barriers. In the central and southern portions of the City, the Major and Minor arterial streets are usually located along and within the section-line grid system.

The Major and Minor Collector Street system differs from the Major and Minor Arterial system by penetrating neighborhoods and distributing trips from the Arterial system to the ultimate destination, which may be on a Local or Collector street. In some cases, because of the design of the street system, through traffic may be carried on some Collector streets. The Collector system provides land access and local traffic movement within commercial and industrial areas and to residential neighborhoods.

The Local Street system comprises all facilities that are not included within the higher classification systems. This system provides direct access to abutting land and access to the higher roadway systems with minimal through traffic movement. On-street parking is generally permitted on local streets, unless otherwise posted.

Table 3-2, *Right-of-Way Widths,* provides examples of recommended right-of-way widths for each functional classification (see Street Classification Map for specific location) which include:

TABLE 3-2 -- Roadway Widths

Roadway Type	Minimum Right-of-Way Width
Principal Arterial	150’
Arterial	130’-110’
Collector	60’
Rural Collector	60’
Local	50’
Rural Local	50’

Source: City of Peoria, 1999

BIKEWAYS, TRAILS AND PEDESTRIAN CIRCULATION

The Circulation Plan illustrated on Figure 3-1, *Circulation Plan,* includes the desired Street System. The Street System includes Major and Minor Collectors, Major and minor Arterials and Freeways. The City’s PROST Plan establishes corridors that have the potential to become the recreational “spines” of the City and provide significant transportation benefits. The Trails Vision is significant relating to recreation, transportation, and civic pride. *It states:*

> *“We envision a City with an inter-linked trails network from Lake Pleasant to Northern Avenue that includes connections to other trails outside Peoria. The trails network has been developed to transition from the natural environment that exists in the northern region of the City to an urbanized character through the developed City. The network of trails provides a safe, non-motorized pathway system for diverse user groups as well as public safety and emergency personnel. The trail system was implemented through a public/private partnership and invites*

all trail users to enjoy the outdoors and the high quality of life in the City. The system relies on a dedicated group of Peoria private citizens for assistance with ongoing improvements, surveillance and maintenance."

The Trails Plan identifies four types of system categories. They include:

- **On-Street Bicycle Routes** that consist of designated and non-designated on-street bicycle lanes that serve as on-street connectors to other bicycle facilities and multi-use paths and trails. Standards for on-street bicycle lanes are identified on the City's Street Classification Map.
- **Paved Multi-Use Paths** that consist of a paved off-street facility used by multiple user groups such as bicyclists, walkers, runners, hikers, strollers, in-line skaters, skateboarders, and others.
- **Unpaved Multi-Use Trails** that consist of an unpaved off-street facility used by multiple user groups such as mountain bicyclists, walkers, runners, hikers, equestrians, and others.
- **Equestrian Trail** that consists of an unpaved off-street facility designated only for equestrian use that may connect to paved or unpaved multi-use trails.

Each of the trail elements are desired to be integrated into residential areas, City parks, and major activity centers creating a network promoting bicycling, recreational activities, and non-vehicular circulation access. Residential developers are encouraged to develop spur and through trails to neighborhood parks, schools, and business centers. Commercial development is encouraged to develop trail access that minimizes conflict between motorists, pedestrians and cyclists and provide pedestrian amenities such as bike storage racks, water faucets, pedestrian shade structures and benches.

The Bicycle Development Plan is a supplement to the Parks, Recreation, Open Space, and Trails Master Plan (PROST) by addressing the on-street network of bicycle lanes and bicycle routes, with a goal of establishing a network of bicycle facilities on all collector and arterial roadways.

FIGURE 3-1
CIRCULATION PLAN