WASHINGTON CITY
ACCESS MANAGEMENT PLAN

September 2005

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INTRODUCTION

The Washington City Access Management Plan is designed to assist the City in maintaining an efficient transportation system that is consistent with the general plan, land use, and transportation master plan. The access management plan presents a toolbox of techniques for improving the operational capacity of arterial and collector roadways while maintaining appropriate access to land parcels. An effective, local access management program can play an important role in preserving roadway capacity, reducing crashes, and avoiding or minimizing costly remedial roadway improvements. Although the primary focus of the access management plan relates to automobile traffic, all travel modes including cyclists and pedestrians will benefit from its implementation.

The Citywide application of access management standards will direct the city in planning a community that provides appropriate access and helps to resolve the demands due to increased traffic. These standards will also provide for safer and more efficient roadways. The implementation of this plan will provide benefit to businesses with increased business vitality and taxpayers with more effective use of their money. The city will benefit from the relatively low cost of access management and can use their capital improvement funds for other needs.

The Federal Highway Administration's official definition of access management is "the process that provides access to land development while simultaneously preserving the flow of traffic on the surrounding system in terms of safety, capacity, and speed." In other words, it means managing the number of driveways that a vehicle may encounter without hampering reasonable access to a property and removing slower, turning vehicles from the roadway as efficiently as possible. Access management is aimed at addressing the following issues:

- Access management controls traffic problems caused by unmanaged development before they occur.
- Access management controls how land is accessed along roadways.
- Access management focuses on mitigating traffic problems arising from development and increased traffic volume.
- Access management assists the city's planning and zoning to address overall patterns of growth and the aesthetic issues arising from development.

The overall goal of this access management plan is to protect mobility and define appropriate access by:

- Limiting the number of conflict points that a vehicle may experience on a particular roadway. This is especially true at intersections and driveways where vehicle, pedestrian and bicycle paths cross, merge, and diverge. Generally, as the number of conflict points increase, so does the potential for crashes. Eleven conflict points are present at the intersection of a four-lane roadway and a two-lane driveway. In comparison, by restricting left-turn ingress and egress movements at the same driveway, the number of conflict points is reduced to two.

- Separating conflict points that cannot be completely eliminated. Where conflict points occur, it is desirable to provide adequate spacing between conflict points to provide motorists, pedestrians and cyclists adequate time to react, one conflict point at a time.
- Removing slower turning vehicles from through travel lanes. Motorists need time to react and decelerate to avoid vehicles exiting, entering, or turning across the roadway. Providing turning lanes and restricting turning movements allows turning and merging traffic to appropriately adjust travel speeds with minimal impact to through travel movements.
- Providing adequate on-site circulation and storage. The proper design of internal site circulation and vehicle storage can improve operations on the major roadway.

These four basic means of eliminating or separating conflicts can be achieved in many ways. Good land use planning, sensible regulation and reasonable site planning guidelines can all help improve traffic operations. The need for invasive improvement measures can be avoided when access management techniques are appropriately implemented during the initial planning stages of a project. Similarly, the implementation of access management techniques as a "retro-fit" activity can significantly improve conditions along a corridor where traffic conditions have deteriorated below acceptable levels. In these situations, costly improvements can oftentimes be avoided without compromising safety.

ROADWAY NETWORK AND ACCESS MANAGEMENT STANDARDS

Washington City's roadway network consists of a hierarchy of streets that range in function from providing a high level of mobility and limited access (arterial street) to a high level of access and limited mobility (local street). As defined in the Master Transportation Plan, the roadway network consists of Freeways/Expressways, Arterials, Collectors, and Local Streets. Table 1 shows the access management category for each roadway in the city. Access onto these roadways will be determined as presented in Table 2.

TABLE 1 – ACCESS MANAGEMENT CATEGORY

Roadway	Beginning At	Ending At	Access Category
100 East/Main	Industrial Road	500 South	3
1100 East	Telegraph Road	Washington Parkway	2
20 East	City Limit	2000 South	4
240 West	City Limit	2000 South	5
300 East	Merrill Road	3650 South	5
2000 South/Sandia	800 West	Washington Fields Road	4
2550 South/Merrill Road	Washington Fields Road	City Limit	2
3050 East/Green Springs Drive	Telegraph Road	City Limit	4

3090 South	City Limit	Washington Fields Road	4
3650 South	Southern Corridor	City Limit	3
540 West	City Limit	Merrill Road	5
840 South	City Limit	300 East/ Washington Fields Road	4
Buena Vista	Green Springs Drive	Northern Corridor	3
Bulloch Street	300 East	1100 East	5
Camino Real	Washington Fields Road	Washington Dam Road	5
Camino Real	Washington Fields Road	20 East	5
Coral Canyon Blvd	SR-9	Telegraph Road	4
Fairway Drive	Green Springs Drive	Northern Corridor	5
Frontage Road	300 East	1100 East	4
Foothill Drive	100 East/Main Street	Washington Fields Road	5
Green Springs	Cove Drive	1860 North	2
Green Springs	Telegraph Road	Cove Drive	3
Green Springs	1860 North	Northern Corridor	3
Harvest Lane	20 East	Merrill Road	5
Indian Springs Drive	Washington Fields Road	Seminole Way	4
Industrial Road	City Limit	Washington Fields Road	4
Landfill Road	Sunrise Valley	Telegraph Road	3
Landfill Road	Warner Valley Road	Southern Corridor	2
Liberty Greens Drive	Coral Canyon Blvd	Coral Canyon Blvd	5
Long Valley Road	3650 South	Washington Dam Road	4
Main Street	600 South	Northern Corridor	3
Majestic Drive	Washington Fields Road	Long Valley Road	5
Middleton Drive	City Limit	Green Springs	3
Noble Drive	3650 South	Majestic Drive	5
Northern Corridor	I-15	City Limit	1
Red Cliffs Drive	City Limit	Green Springs	3
Seminole Way	Washington Dam Road	Apache Drive	5
Fairgrounds Road	Southern Corridor	SR-9	3
Telegraph Road	Washington Parkway	SR-9	2

Telegraph Road	300 East	Washington Parkway	3
Warner Valley Road	Washington Fields Road	Southern Corridor	3
Warner Valley Road	Southern Corridor	Landfill Road	3
Washington Dam Road	Washington Fields Road	Camino Real	2
Washington Dam Road	Camino Real	Southern Corridor	3
Washington Fields Road	Airport/Southern Corridor	3650 South	1
Washington Fields Road	3650 South	400 South	2
Washington Fields Road/300 East	400 South	Telegraph Road	3
300 East	Telegraph Road	Frontage Road	5
Washington Parkway	Telegraph Road	I-15	1
Washington Parkway Extension	Washington Dam Road	Telegraph Road	1
Sunrise Valley Road	Washington Dam Road	Fairgrounds Road	4

Some of the City's arterial streets fall under the jurisdiction of the Utah Department of Transportation (UDOT) and are subject to statewide access management standards. Refer to UDOT's "Accommodation of Utilities and the Control and Protection of State Highway Rights of Way" for access management standards for these roadways. For all other streets, Washington City access management standards apply.

Table 2 presents the Washington City access management standards. These standards address the following access management issues:

- Minimum driveway spacing including upstream and downstream driveways, opposing upstream driveways, and opposing downstream driveways.
- Public street unsignalized intersection spacing.
- Geometric design of driveway access including approach widths and curb return radii for residential and commercial/multi-family land uses.
- Minimum signal spacing.

TABLE 2 – WASHINGTON CITY ACCESS MANAGEMENT STANDARDS [1]

Access Category (General Definition)	Minimum Driveway Spacing (feet) [2,3,4,5,6]			Public Street Unsignalized Intersection Spacing (feet)	Geometric Design of Driveway Access			Recommended Signal Spacing (feet) Requires a Traffic Study
	Upstream and Downstream	Opposing Upstream	Opposing Downstream		Residential Driveways	Commercial, Retail or Multi-family Driveways		
					Approach Width (feet)	Approach Width (feet)	Curb Return Radius (feet)	
State Owned Arterial or Freeway	State of Utah Highway Access Management Standards Apply							
1 (Major Arterial)	Requires a Traffic Study		125'	1320'	N/A	Requires a Traffic Study		1,320'
2 (Arterial with posted speed > 45 mph)				650'		26' min. 35' max	15' min. 30' max	1,320'
3 (Arterial with posted speed ≤ 45 mph)				650'				1,320'
4 (Major Collector)	150'	150'		250'				1,320'
5 (Residential Collector)	50'	50'	50'	250'	12' min. 27' max			N/A
Residential Standard/ Local Residential	50'	50'		150'				N/A

1 As determined by the city, engineering judgment shall override the recommended dimensions set forth in this table if warranted by specific traffic conditions.
2 Driveway spacing is measured as shown in Figure 1.
3 Driveway width is measured as shown in Figure 2.
4 Corner clearance requirements for access points should meet or exceed the minimum driveway spacing requirements.
5 Wider driveway widths may be permitted as determined by the city, to accommodate additional turning and/or acceptance lanes.
6 Driveways are to be measured from the Point of Curvature (PC). The PC is shown in Figure 3.

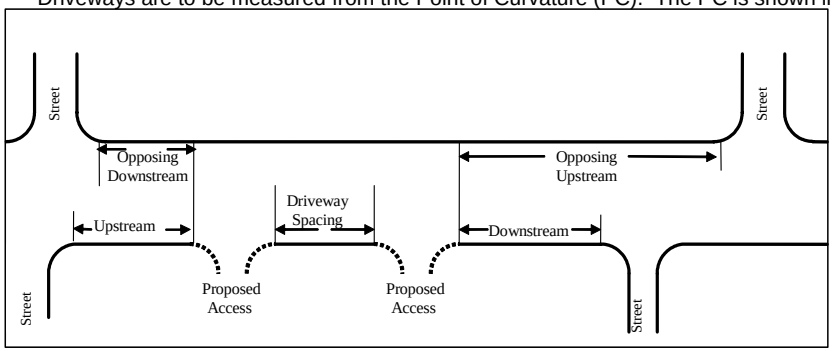


Figure 1: Measurements for Minimum Access Spacing Standards

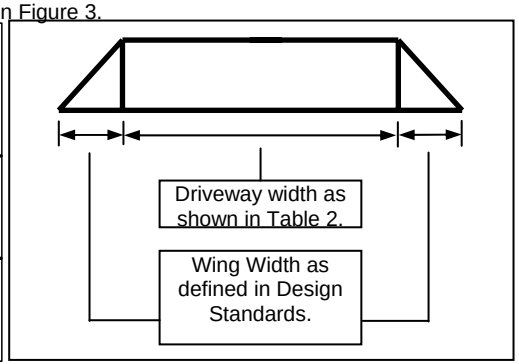


Figure 2: Driveway Widths

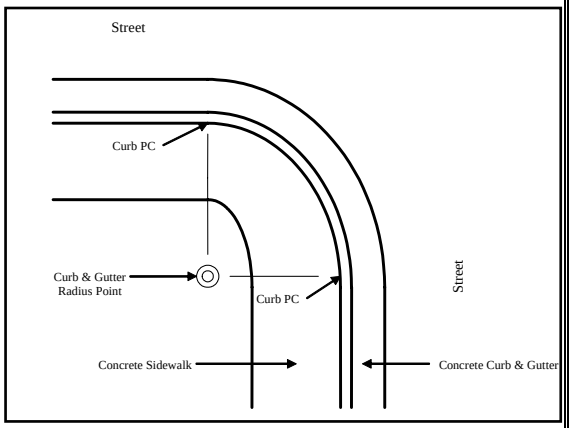


Figure 3: Point of Curvature (PC)

MINIMUM DRIVEWAY SPACING

In general, driveways introduce conflicts and friction into the traffic stream as vehicles enter and leave the through travel lanes. Short spacing between driveways further complicates the driving process by requiring the driver to simultaneously monitor multiple potential conflicts while maintaining the vehicle's forward control together with monitoring vehicles ahead, behind, and in adjacent travel lanes. Greater spacing simplifies the driving task by reducing the amount of information the driver must monitor and process.

The minimum driveway spacing standards presented in Table 2 seek to balance the need to provide adequate spacing with the need to appropriately accommodate access to adjacent land parcels. The standards take into consideration the location and orientation of the subject driveway in relation to adjacent driveways and the nature of possible vehicular movements.

Corner clearance represents the minimum distance that is required between an intersection and the nearest driveway. Inadequate corner clearances can result in various traffic-operation, safety, and capacity problems. Problems include blocked driveway ingress and egress movements, conflicting and confusing turns at intersections, insufficient weaving distances, and backups from a downstream driveway into or through an intersection. Corner clearance requirements should meet or exceed the minimum driveway spacing standards.

In addition to providing adequate intersection and driveway spacing, steps should be taken to promote the use of shared access between adjacent properties. In addition, numerous closely spaced driveways that provide access to the same parcel should be consolidated where feasible. Where possible, on-site circulation elements should be carefully designed to provide motorists the opportunity to circulate between adjacent land uses without having to use the primary roadway.

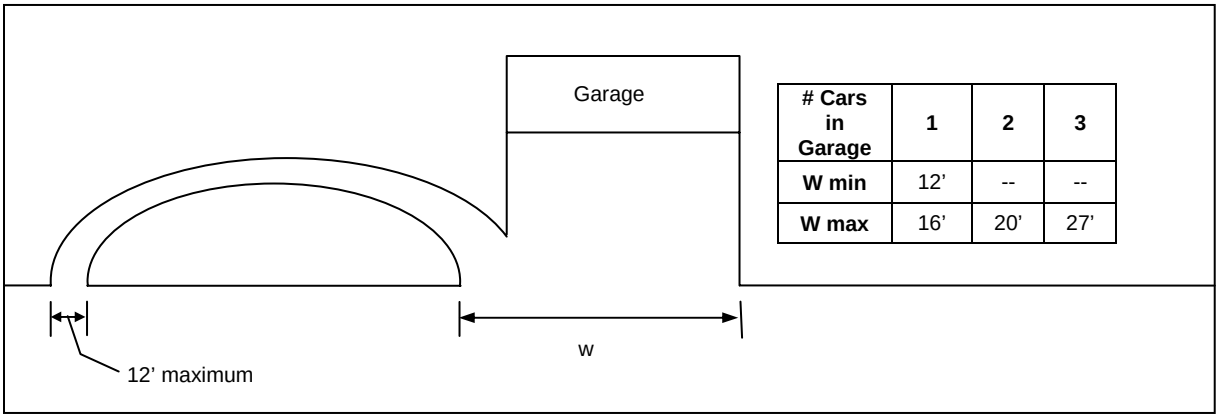
UNSIGNALIZED INTERSECTION SPACING

Unsignalized intersection spacing guidelines govern the spacing between unsignalized public intersections, which generally accommodate higher traffic volumes. Unsignalized access should be located so as to not interfere with queues or maneuvering areas of signalized intersections. They should also be located to take advantage of gaps in traffic flow or between platoons of vehicles. Higher volume private driveways may also be required to meet this standard and will be determined by the city on a case-by-case basis.

GEOMETRIC DESIGN OF DRIVEWAY ACCESS

The speed at which a vehicle is able to turn off a roadway and safely enter a driveway has a significant effect on the operations and safety of the roadway. The primary geometric factors that govern this ingress are driveway approach width, curb return radii, and the profile grade through the driveway. Table 2 presents the driveway width and curb radii for all types of driveway accesses. The profile grade through an access should never have more than a 12% difference in grade. Driveways should also be designed to accommodate pedestrians and adhere to ADA standards. Providing a good driveway entrance protects the integrity of the mainline roadway. New residential developments shall not have driveway access on arterials and major collectors. For corner properties, access to public streets

should be provided from the lesser (lowest functional classification) street. "Flag lots" are discouraged along arterials and major collectors. Accesses to these are under the same standards as listed in Table 2. When two or more accesses serve adjacent single-family residential property, the minimum distance between the nearest points of the two accesses shall be at least 10 feet. For corner and double frontage residential lots, one access on each frontage may be permitted only if it is determined by the city that two driveways are needed to provide safe access. Single family residential access driveways shall be a minimum of 12 feet in width and a maximum of 16 feet of width for a single garage, 20 feet of width for a double garage, and 27 feet of width for a triple garage as shown in Table 2. Additional access width will be granted for every additional 150 feet of property frontage and will be equivalent to a single access as stated above. Circular driveways are considered a single access and are limited to a width of 12 feet. When a circular driveway is adjacent to another driveway on the same property it is included in the width of the main driveway. Circular driveways are not allowed when there is a gap between the circular driveway and another driveway on the same property (see Figure 4) unless the gap separation between the two driveways is greater than the minimum access spacing allowed in Table 2. Driveways in right-turn lane transition areas should be discouraged. For the benefit of traffic safety and flow, access points may be required to restrict certain types of turning conflicts.



# Cars in Garage	1	2	3
W min	12'	--	--
W max	16'	20'	27'

Figure 4 – Circular Driveway Access Requirements

MINIMUM SIGNAL SPACING

The appropriate spacing of signalized intersections is crucial to maintaining efficient operations along a roadway. Closely or irregularly spaced traffic signals on arterial and collector streets typically result in excessive stops, unnecessary delay, increased fuel consumption, increased vehicular emissions, and higher crash rates. By providing adequate or uniform traffic signal spacing, traffic signal timing plans can be optimized to provide efficient traffic flow and operations along a roadway. Signal cycles should be as short as possible without compromising capacity, pedestrian clearance, and coordination requirements.

OTHER CONSIDERATIONS

In making a determination as to the location of driveway access, the following issues should be considered:

- Characteristics of the proposed land use;

- Property location, size, and orientation;
- Existing traffic flow conditions and the anticipated future traffic demand;
- Travel speeds of adjacent roadways;
- Number and location of driveways servicing adjacent and opposite properties;
- Number of driveways needed to accommodate proposed traffic volumes;
- Proposed geometric design of driveways;
- Location and capacity of adjacent intersections/driveways;
- Spacing between adjacent and opposing driveways;
- Proposed on-site circulation elements; and
- Sight distance.

A traffic study will be required on **all** projects, except for a single single-family-detached dwelling unit, to address access locations regardless of the trips generated in the peak hour. A traffic study is required on all other projects when the anticipated peak hour trips are greater than 100. Traffic impact studies will be required to define the access category for each roadway in and adjacent to the development. Access management features for one mode of travel may not be appropriate for another mode of travel. For example, by providing larger curb return radii at driveways, vehicular turning movements are more easily accomplished at higher speeds, thus reducing the impact on through movements. However, provisions for larger curb return radii result in increased pedestrian crossing distances and higher vehicular turning speeds. This increase in speed may not be desirable for the adjacent property and may increase the risk for pedestrians and cyclists crossing the driveway. When implementing access management standards engineering judgment shall be applied and all issues shall be considered.

RAISED MEDIANS

The presence, or absence, of a median has substantial impact on roadway operations and safety and the provision of left-turn access to abutting properties. Median types can be grouped as follows:

- Non-traversable: A raised or depressed median that cannot be crossed or actively discourages crossing and provides positive physical control of left turns.
- Traversable: A flush or slightly raised median that a vehicle may easily cross and has no positive control of crossing or left-turning maneuvers.
- Continuous two-way left-turn lane (TWLTL): A flush center lane used to provide storage for vehicles making left-turns from the roadway in both directions.

As an access management feature, non-traversable medians are generally used to limit conflict points by controlling the location and frequency of left-turn movements as the construction of a raised median physically prevents the movements.

When constructed, full median openings are generally restricted to locations that conform to the signalized intersection spacing standards. Between full median openings, directional openings can be constructed that permit specific turning movements. The location and configuration of directional median openings should be based on an engineering study.