

CHAPTER THREE
MOBILITY

MAJOR THOROUGHFARES

Operations. The City of Ames is served by a combination of federal, state and local highways/streets that are interlinked in creating a regional and inter-city system. Most north-south regional access is provided by Interstate 35 which connects with the Minneapolis metropolitan area approximately 200 miles to the north and the Des Moines Metropolitan area approximately 35 miles to the south. Most east-west regional access is provided by U.S. Highway 30 which initially connects with Cedar Rapids approximately 90 miles to the east and Carroll approximately 70 miles to the west.

Intracity north-south connections are provided primarily through either a Duff Avenue/Grand Avenue or Elwood Drive/Grand Avenue combination. As a reflection of the discontinuity, either combination requires a third street to make a full north-south connection. Limited north-south connections can be made using Dayton Road, County Line Road R-38 and North Dakota/South Dakota Avenues. Only Dayton Road has an interchange with Highway 30. Inter-city east-west connections are provided through either Lincoln Way, which does not have an interchange with I-35, or 13th Street/Ontario Street, which includes a 13th Street interchange with I-35.

Facilities are classified into five types based on capacity and access. The following is an inventory of each type found in the City:

- Limited Access - Interstate 35 and Highway 30;
- Major Arterial - Ontario Road; 13th Street; Grand Avenue; North Dakota Avenue; South Dakota Avenue; Duff Avenue; Lincoln Way; Elwood Drive; and Stange Road;
- Minor Arterial - State Avenue; Mortensen Parkway; Beach Avenue; S. 16th Street; Airport Road; Oakwood Road; S. 4th Street; S. 3rd Street; 24th Street; Duff Avenue; 6th Street; Hyland Avenue; Sheldon Avenue; and Dayton Road;
- Collector - Top-O-Hollow Road; Hoover Avenue; Northwestern Avenue; 16th Street; 20th Street; Storm Street; West Street; Clark Avenue; Walnut Street; S. 5th Street; 9th Street; Knapp Street; Cessna/Country Club Drive; Franklin Avenue; Dotson Drive; Jewell Drive; Ken Maril Road; 30th Street; Grant Avenue; Hyland Avenue; Welch Avenue; and Stagecoach Road; and,
- Local - All other streets.

Table 6 FUNCTIONAL CLASSIFICATION CHARACTERISTICS City of Ames		
Limited Access	Major & Arterials	Minor Collectors
<i>Service Performed</i>	<i>Service Performed</i>	<i>Service Performed</i>
traffic movement, no direct access	traffic movement, minimal land access	both traffic movement & land access
<i>Trip Length</i>	<i>Trip Length</i>	<i>Trip Length</i>
inter-state & regional	sub-regional & inter-community	within sub-regions & community
<i>Spacing</i>	<i>Spacing</i>	<i>Spacing</i>
1-3 miles	1/2-1 mile	1/4-1/2 mile
<i>Continuity</i>	<i>Continuity</i>	<i>Continuity</i>
totally interconnected over entire region	interconnector with regional thoroughfares & continuous within subregions	interconnected with arterials & continuous within subregions & community
<i>Access Type</i>	<i>Access Type</i>	<i>Access Type</i>
interchanges at 1 mile & major signalized intersections at 1/2 mile, no private access	signalized intersections at 1/4 mile, private access usually restricted	signalized & stop sign controlled intersections at 1/8 mile

Level of Service. In order to convert design criteria (volume to capacity ratios, travel speeds) to a qualitative evaluation of traffic operations as perceived by the roadway user, level of service (LOS) standards are established to measure the operating efficiency of each roadway, or segment thereof. LOS is designated by a letter rating system in which "A" is the most desirable and "F" is the least desirable. The description of traffic operations occurring for each LOS is identified in the following.

- Level of Service "A" describes a condition of free flow, with low volumes and high speeds. Traffic density is low, with speeds controlled by drivers' desire, speed limits and physical roadway conditions. There is little or no restriction in maneuverability due to the presence of other vehicles, and drivers can maintain their desired speeds with little or no delay. For freeway facilities, traffic volumes

are less than 35 percent of the roadway capacity and speeds are unrestricted other than by law.

- Level of Service "B" represents stable flow, with operating speeds beginning to be restricted somewhat by traffic conditions. Drivers still have reasonable freedom to select their speed and lane of operation. Reductions in speed are not unreasonable, with a low probability of traffic flow being restricted. Volumes are normally less than 50 percent of the roadway capacity and speeds of 55 mph or greater are readily maintained on controlled access roadways.
- Level of Service "C" is still in the zone of stable flow, but speeds and maneuverability are more restricted by the higher volumes. Most drivers are restricted in their freedom to select their own speed, change lanes or pass. A relatively satisfactory operating speed is still obtained. Freeways operate at 50 mph or greater and volumes are less than 75 percent of capacity at Level "C".
- Level of Service "D" approaches unstable flow, with tolerable operating speeds being maintained, although considerably affected by changes in operating conditions. Fluctuations in volume and temporary restrictions to flow may cause substantial drops in operating speeds. Drivers have little freedom to maneuver. Comfort and convenience are low, but conditions can be tolerated for short periods of time. Level "D" operations on a freeway occur when volumes are less than 90 percent of capacity and speeds are restricted to 40 mph.
- Level of Service "E" represents operations at even lower operating speeds than at Level "D", with volumes at or near the capacity of the highway. At capacity, speeds are typically in the neighborhood of 30 mph and 100 percent of capacity is reached. Flow is unstable, and there may be stops of momentary duration.
- Level of Service "F" describes forced flow operation at low speeds, where volumes are actually below capacity. These conditions usually result from vehicle queues backing up from a restriction downstream. Speeds are substantially reduced and stoppage may occur for short or long periods of time due to downstream congestion. In the extreme, both speed and volume can drop to zero.

The City of Ames has chosen level "C" as the standard for its system. Major thoroughfares that are at or near capacity at peak hours currently include Lincoln Way, Grand Avenue and portions of Duff Avenue near Downtown.

Growth Impact. The establishment of a southwest growth priority area creates additional demand on east-west arterial thoroughfare connections. While the capacity of Lincoln Way is limited, its location, coupled with South Dakota Avenue and County Line Road, provides convenient access to the southwest area. Highway 30 also provides access to the southwest area by way of the Elwood Drive interchange. To reach Highway 30's full potential in serving the southwest, an additional interchange is needed at South Dakota Avenue or County Line Road.

Implementation of a northwest growth priority area, in addition to its impact on the east-west connectors of Lincoln Way and 13th Street/Ontario Street, creates additional demand on the area's north-south arterial thoroughfare connections. Current north-south connections lack capacity and are disjointed. Major improvements of an arterial nature are necessary if the northwest area is to be adequately served. Improvements of North Dakota Avenue and/or County Line Road are needed for north-south connections. A major east-west connector across the northern part of the growth area is also needed. The alignment might ultimately connect Bloomington Road or some alternative with North Dakota Avenue and/or County Line Road. If such an alignment is ever initiated, consideration should be given to extending an arterial thoroughfare to Dayton Road, thus creating a community circumferential route ultimately linking with Highway 30.

Arterial Thoroughfare Improvements. Depending on the extent of development in the northwest growth priority area, improvements are required to meet Ames' growth by the year 2030. The following major improvements are recommended.

New Western Interchange at Highway 30. A new interchange is recommended at either South Dakota Avenue (Option A) or County Line Road (Option B). South Dakota Avenue has an existing overpass at Highway 30 with four-lane capacity. County Line Road has an existing overpass at Highway 30 with two-lane capacity and would require major reconstruction of the overpass to provide the required four-lane capacity.

North-South Connector Serving the Western Edge of the Community. An improved north-south corridor serving the western-most part of the community is recommended. Two options are available depending on the location of the new western interchange at Highway 30. Option A is North Dakota Avenue and South Dakota Avenue. Option B is County Line Road.

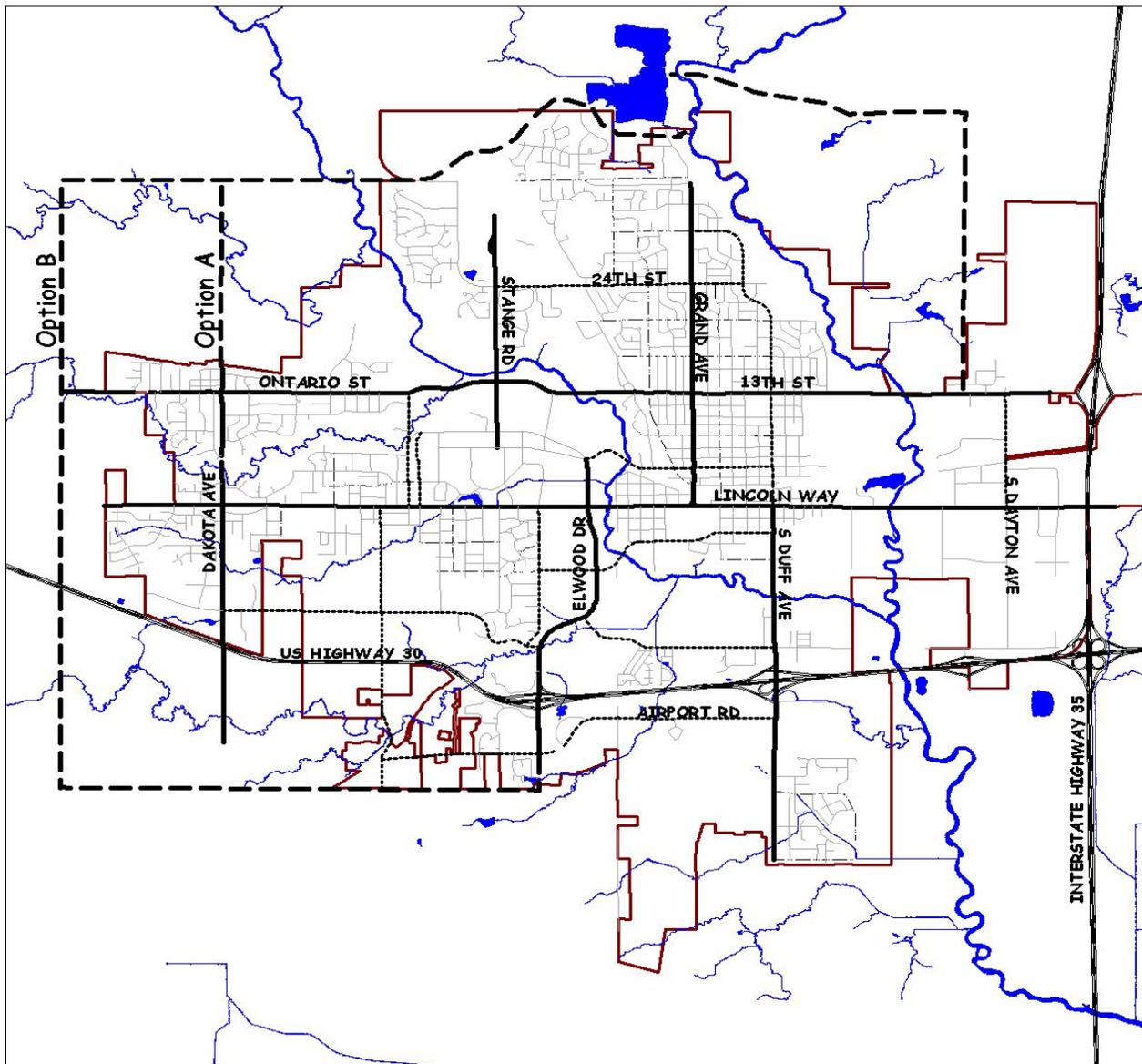
East-West Connector Serving the Northern Edge of the Community. A combination new and improved east-west corridor serving the northern-most part of the community is recommended. The recommendation is based on implementation of the northwest growth priority area. The connector should link Option A or Option B above with Grand Avenue. The east-west connector should also consider extending the linkage to Dayton Road.

Dayton Road Improvement. Improvement of Dayton Road from 13th Street to any connector across the northern-most part of the community is recommended. Improvements involve design changes to up-grade Dayton Road from a minor arterial to a major arterial.

South 3rd Street/Grand Avenue Connector. A realignment of South 3rd Street to connect with Grand Avenue is recommended. The realignment would involve cutting through the Lincoln Center parking lot in creating a more direct north-south connection.

Zumwalt Station Road Improvement. Improvement of Zumwalt Station Road to a minor arterial status is recommended. The improvement should connect with Elwood Drive and the north-south connector on the western edge of the community in serving the proposed southwest growth priority area.

MAJOR THOROUGHFARES MAP



Major Thoroughfare Plan

*1999 City of Ames Planning and Housing

- COLLECTOR
- LIMITED ACCESS
- LOCAL
- MAJOR ARTERIAL
- MINOR ARTERIAL
- Proposed Thoroughfare Improvements

DAILY TRAFFIC COUNTS MAP

DAILY TRAFFIC COUNTS MAPS
See Transportation Plan