

ITEM # 25a-d,f  
DATE 10/23/07

**COUNCIL ACTION FORM**

**SUBJECT: MAJOR SITE DEVELOPMENT PLAN FOR PROPOSED LIFESTYLE CENTER IN THE "O-GNE" (NORTHEAST GATEWAY OVERLAY DISTRICT)**

**BACKGROUND:**

**Applicant:** Wolford Development Options, LLC

**Owners:** Rueter, Cecil and Rueter, Todd & KCSL Ames, Iowa, LLC  
Payer, Patrick T. Irrevocable Trust ½ & Hunziker, Christine A. ½  
Barilla America, Inc.,  
Wolford Development Options, LLC

**Request:** Approval of the Major Site Development Plan for the Proposed Lifestyle Center

**Location:** Generally located northeast of the intersection of East 13<sup>th</sup> Street and Interstate 35

**Area:** 96 acres

**Description of surrounding area:**

Area	LUPP Designation	Zoning	Land Uses
North	Ag/Farmstead & Greenway	Agricultural (A1, Story Co.)	Crop Production Ketelsen Marsh
South	Regional Commercial	Planned Regional Commercial (PRC) pending & Northeast Gateway Overlay	Crop Production
East	Planned Industrial	Agricultural (A1, Story Co.)	Crop Production
West	Government/Airport	Government/Airport (GA)	Interstate 35 & Veterinary Research

**Land Use Policy Plan (LUPP) Goals and Policies.** The proposed Major Site Development Plan is consistent with the LUPP Map designation, which is "Regional Commercial".

**Zoning.** The City Council has approved a zoning designation of "PRC" (Planned Regional Commercial) with an "O-GNE" (Northeast Gateway Overlay District) designation and directed that this zoning take effect when the developer purchases the property. The proposed Major Site Development Plan is consistent with the PRC and

O-GNE zoning designations. **Therefore, any approval of the Major Site Development Plan should be conditional upon the PRC and O-GNE zoning designations taking effect (see Conditions below).**

**Major Site Development Plan.** The City Council approved the Master Plan for the development of all property within the Northeast Gateway Overlay District on December 19, 2006. The Master Plan is conceptual and sets how the overall development will meet the design standards of the City Zoning Ordinance. The Major Site Development Plan is to contain the design detail needed to understand how the Master Plan will be carried out on each property.

A Major Site Development Plan applies to specific platted lots. Preliminary and Final Plats create such lots. At the time of this Major Site Development Plan review, the Preliminary Plat is also being reviewed and has not yet been approved. Following that approval, the Final Plat and a number of other supporting documents can be submitted and reviewed for City Council approval. **It is only after approval of a Final Plat and recording it with Story County that there is a platted lot to which this Major Site Development Plan applies, so final approval of the Major Site Development Plan must follow recording of a Final Plat (see Conditions below).**

The Major Site Development Plan under consideration at this time includes all of the property within the "ring road" of the Lifestyle Center, the required marsh buffer in Outlot A, the stormwater features in Outlots B and C and the entry roads: Lots C, D, F, H (see Sheet A-1 Site Development Plan). The major anchor stores on Lots 2 and 4 are not included at this time. There will be future Major Site Development Plans for each of these lots.

Approval of a Major Site Development Plan by the City Council is required prior to the issuance of a Building/Zoning Permit for development on any lot, tract, or parcel of land in the "O-GNE" district. The Major Site Development Plan must comply with City general development standards, as well as development standards for the Planned Regional Commercial District and for the Northeast Gateway Overlay District.

The Major Site Development Plan consists of 45 drawings, a narrative and supplemental information on signs, lighting, hydrogeology, and stormwater management. Approval of this Major Site Development Plan is approval of all of these documents. A complete list is attached. This report refers to selected portions of these documents, which are attached to printed copies of this report and are on the City of Ames web site from the link **E. 13th Street Regional Commercial Development Documents** on the home page at [www.cityofames.org](http://www.cityofames.org). A disk of all of the Major Site Development Plan documents was provided to the City Council last Friday (October 12, 2007) and can be obtained at the Department of Planning and Housing, 515 Clark, 239-5400. Print copies of all these documents can also reviewed at this location.

**General & Planned Regional Commercial Development Standards.** Taken together, Chapter 29, Article 4 and Section 29.805 of the *Municipal Code* establish the standards for the Major Site Development Plan. Section 29.1109 supplements and in some cases modifies these standards for this specific location, the northeast gateway to Ames. The

compliance of this Major Site Development Plan with these General Development Standards and with the standards for the Planned Regional Commercial zoning district is summarized here.

Setbacks are to be as specified on the Master Plan and in this case only relate to the lots within the ring road. The Master Plan shows a setback for buildings to be at least ten feet from the ring road. All of the proposed buildings for this Major Site Development Plan are contained in the Lifestyle Center in the middle of Lot 1, which meets this setback standard (see Sheet A-1 Site Development Plan).

Landscaping is to cover 15% of the site or more. Landscaping includes sidewalk and pedestrian plazas. Within the portion of the site governed by this Major Site Development Plan, more than 15% of landscaped space is provided (see Sheet C2.01 Overall Landscape Plan).

Parking lot landscaping follows the alternative standard set forth in Section 29.403 (4)(f)(i) and is described below under "Guidelines for Landscaping."

Off-Street parking requirement for all of the buildings covered by this Major Site Development Plan is 2,836 parking spaces, which includes the parking required for three major anchor stores. To allow for expansion of retail buildings and to meet industry standards 3,460 parking spaces are provided. Sheet A-1 Site Development Plan contains the parking calculations and illustrates the parking areas. Sheet A-3 shows the parking area and parking space dimensions, which conform to City standards.

Handicap parking requirement is 45 spaces and 54 spaces are provided. **Orientation or dimensioning of these handicap parking spaces should provide an eight-foot wide striped area on the passenger side of all parking spaces to be designated as van accessible (see Conditions below).**

Off-Street loading requirement is seven spaces. Five service courts are provided providing more than the area required. (See Sheet A-2 Overall Center Floor Plan).

Outdoor lighting standards are as required for every project in Ames and additional standards apply in the gateway area. This is described below under "Signage and Lighting."

Fire safety requires Post Indicator Valves at locations along the fire supply water line accessible by fire fighters. **The Major Site Development Plan shows those water supply lines and the Fire Department can set appropriate locations for the Post Indicator Valves as these water lines are installed. (See Conditions below)**

Mechanical Rooms are shown on the Plans for most buildings. **The building plans need to show the mechanical rooms for Building 900 (Cinema) and for the two Major Anchor Stores (see Conditions below).**

Public utilities are included within the area of this Major Site Development Plan. They are also required on the Preliminary Plat. **Major Site Development Plan must show easements for all public storm sewers (except building drainage lines), sanitary sewer mains, and water mains. All public utilities must be constructed to Urban Standards Specifications for Public Improvements. (See Conditions below)**

Electric Utilities for this project are provided by Consumers Energy. City staff sent the related portion of the Major Site Development Plan to Consumers Energy for comment, but staff has not received any comments. This is not a requirement for approval of a Major Site Development Plan. It is the Applicant's responsibility to coordinate the locations of private utilities with other site improvements.

Stormwater management in this Major Site Development Plan includes grading on this site and on the property south of East 13<sup>th</sup> Street to create vegetated swales, bioswales, and detention areas. All of this work will result in a stormwater discharge rate for the 100-year storm from the south property (under the railroad tracks) that is slightly less than the current discharge rate, even with the increase in impervious surfaces. This grading work will also change the floodplain on these two areas. The Zoning Board of Adjustment has approved a condition use permit for this grading within the General Floodplain. This portion of the Plan has undergone some changes based on staff recommendations. **The stormwater management plans needs to be updated and resubmitted. Also, the developer must follow the comments on the Construction SWPPP Review Checklist (see Conditions below).**

**“O-GNE” Northeast Gateway Overlay District.** The intent of the “O-GNE” (Northeast Gateway Overlay) district is to ensure that regional commercial development, which occurs on land with the “O-GNE” zoning designation, results in a high quality development, which is representative of the most desirable design quality and character that exists in the community. Over the entire district, the design is to integrate open space, landscaping, entry features and artwork, stormwater management, buildings, parking, access by all modes of transportation, lighting, and signs in a manner that respects the environment, is representative of the native Iowa landscape, and exhibits energy efficiency.

To meet this intent, the O-GNE district regulations contain Design Guidelines and Design Standards. The Design Guidelines are intended to express the intent of the community for the development of land in the “O-GNE” district. The Design Standards are the minimum design requirements established to implement each particular Design Guideline. The narrative of the approved Master Plan and the Commission Action Form prepared by staff on that Master Plan described how the project meets City requirements for the Northeast Gateway Overlay District. Rather than repeat that

information, the following Action Form summarizes the additional detail provided by the Major Site Development Plan and emphasizes important new information.

## **GUIDELINES FOR OVERALL DESIGN**

### **Section 29.1109 (7)**

***The overall design is cohesive and one of continuity with the landscape. The design shows a respect for the natural features of the site and surrounding properties, as well as exhibiting the best the community has to offer and informing the visitor of the community's common design values through the use of building materials and design features.***

***The site design and gateway appearance shall be reflective of the community. This is accomplished through the use of materials common to the area; through the repetition of architectural design features found elsewhere in the community; through the use of energy efficient and environmentally friendly measures; by placing a variety of buildings in a naturalistic park-like setting; by using design elements of other community gateways; by portraying the people and history of Ames in the design; and, by providing convenient and safe access for pedestrians, bicyclists, and motorists.***

The development of this portion of Northeast Gateway carries out the Master Plan with native landscape and architectural elements that reflect Ames and its sense of place. These elements include site edges with native landscape materials, tree-lined avenues with sidewalk and bike paths, use of brick and stone and architectural elements at building corners that refer to familiar Ames and campus buildings.

In addition to referring to the native prairie and savanna for plant materials, the landforms left by the last glacier is the source for the earth forms and boulders used in the center plaza and other pedestrian courts along the shopping street. The bioswales with native grasses and flowers lining the south side of the parking areas function much as the native prairie potholes, absorbing water from small storms and melting snow (see Sheet C2.01 Overall Landscape Plan and other landscape drawings).

In a change from the Master Plan, the theme for the entry landscaping along East 13<sup>th</sup> Street, the primary entry feature, and the entry monument signs is prairie architecture in a prairie landscape (see pages 1.0 and 2.0 of the Project Signage and Graphic materials). Tiles integrated with the Lifestyle Center will still interpret the theme of inventors rooted in Iowa State University, such as windmill innovator LaVerne Noyes.

The prairie landscape is more naturally displayed at Jim Ketelsen Greenwing Marsh to the north of this project site, but its preservation requires separation from this project site. A six-foot high earth berm and a chain link fence prevent direct access between the properties. These are within a 17.83 acre buffer area planted with native plants, whose seed source is the Central Zone (Iowa Crop Improvement Association) (See Sheet C2.01 Overall Landscape Plan). The developer, Biologist Tre Wilson, and City

staff coordinated the design of this area with the Director of the Story County Conservation Board. The berm and plantings will help promote infiltration of surface runoff into the soil. This subsoil moisture is protected from excess drainage by placing the ring road and the storm water swale along the northern side of the road at the highest practicable elevation, by limiting the depth of underground structures and other techniques, following the Hydrogeologic Evaluation prepared by Allender Butzke and Barker Lamar Engineers of Des Moines. This care will maintain the characteristics that preserve the marsh.

## **GUIDELINES FOR SITE LAYOUT**

### **Section 29.1109(9)**

***The site layout is guided by the Master Plan, which integrates the roadways, bikeways, pedestrian walkways, parking, buildings, and landscaping in a coordinated fashion into a naturalistic landscape, properly manages storm water, and provides convenient and safe access for all modes of travel to and within the site. Design of the commercial development is to create a unique site plan unified with the entire "O-GNE" District.***

Two axes within a generally rectilinear grid of parking areas and roadways define and organize the overall site, and will integrate and unify it with the rest of the Northeast Gateway area. The east-west Shopping Street is defined by the Lifestyle Center buildings on either side and has major anchor stores as its focal points. The north-south entrance drive is defined by the Lifestyle Center buildings on either side with the movie theater as its focal point. The locations of future buildings to the south, similar to the locations of the Lifestyle Center buildings, will further emphasize the north-south entrance corridor.

Within the Lifestyle Center, the plantings, lighting, decorative paving, street furnishings, and shop facades provide a pedestrian scale space with a "sense of place." Trees in raised medians along the east-west shopping street delineate it into two spaces. Earth berms, trees, shrubs and perennials in wider portions of these medians and in planters along the sidewalk buffer the views of cars and provide detail that reinforces the pedestrian nature of these spaces. Landforms, native plants and architectural details and styles derived from familiar places and historical styles reinforce the sense of place (See Architectural Sheets A -9 & A-10 and Landscape Sheets C2.04 & C2.05). **When the City Council approved the Master Plan for this project, it included a stipulation deferring approval of the Shopping Street space between the specialty stores (Item 5 in Resolution 06-506 approved on December 19, 2006). The landscape and hardscape features in this Major Site Development Plan have satisfied this stipulation of Master Plan approval.**

Native species trees at 30 to 35-foot spacing will define the space along the roads with sidewalks connecting the Lifestyle Center to the future buildings on outlots north and south of the Lifestyle Center. Beyond the developed portion of the property to the north, a serpentine six-foot high earth berm and native grasses and forbs will separate the

sights and sounds of this commercial activity from the property to the north and from Greenwing /Ketelson Marsh beyond. Trees and shrubs of mostly native species will buffer the views of the parking lots from Interstate 35.

**GUIDELINES FOR ACCESS AND CIRCULATION**

Section 29.1109(11)

***Traffic, access, and circulation accounts for all modes of travel. The road design accommodates the anticipated motor vehicle traffic volume and promotes pedestrian safety. The transportation system facilitates visitors to explore the community.***

Access and circulation within the Lifestyle Center integrates cars, people, and cyclists, all moving slowly - with pedestrians having the right of way. Pedestrian cross walks will be elevated to create speed tables, with texture, color and material being different from the roadway paving, to accentuate that vehicular movement is secondary to pedestrians in this environment. (See Landscape Sheets C1.04 & C1.05) **The City does not require these speed tables and they should be installed at the developer's discretion. The locations shown for these on the landscaping plan and the traffic signage plan should be coordinated (see Conditions below).**

The Major Site Development Plan documents contain the dimensions, exact locations, and other details of drive aisles, sidewalks, bike paths, and other physical traffic improvements. Bicycle parking is provided at convenient locations integrated with the planting, lighting, and signs.

Beyond the Lifestyle Center, this Major Site Development Plan also provides for access into and around the site, accommodating and coordinating multiple modes of travel in a safe and efficient manner. South of the portion of Lifestyle Center building where space for a Welcome Center is provided, a bus stop facilitates access to and from the rest of the community. Also, to the south from this point, a ten-foot-wide multi-use path along the west side of the entrance street provides bicycle access. The details of both East 13<sup>th</sup> Street access points for cars, bicycles and pedestrians are covered by the public improvement plans, to be reviewed by Public Works Engineering. The Plan also notes the requirement for additional walks to be installed with development of the outparcels.

**GUIDELINES FOR LANDSCAPING**

Section 29.1109(13)

***The site design shall employ landscaping, open space, green space, public space, trees, buffering, and the natural environment to integrate the buildings, parking lots, artwork, and architectural entry features.***

The landscape development, as shown on the Major Site Development Plan, follows through on the Master Plan with design incorporating elements of Ames' tree-lined streets, parks, and the campus of Iowa State University. Roads are lined with trees at 30- to 35-foot spacing, except where shade could be a problem for native prairie species. Identification signs are placed in landscaped beds. Many groupings of perennial plants line the Shopping Street. Landscaping is used to reinforce the spatial organization of the site; provide definition to movement systems; define entryways; and provide shading, screening, and buffering. The natural setting of Story County is seen in the native plants or cultivars used for the majority of plant material (see Landscape Plan Sheet C2.01).

Three "Low Impact Development" techniques, as called for in the zoning standards, or Best Management Practices, as called for in the zoning agreement between City and Developer, have been included: a vegetated swale on the north side of the ring road, bioswales on the south side of the south parking areas, and storm water detention ponds. (Sheet C2.01 illustrates the location of the bioswales. Sheet A-1 illustrates the location of the stormwater areas. The grading plans show the vegetated swale.) These features will support native grasses, forbs, trees and shrubs, all major components of the image and functions of the site. **Drainage easements must be shown on the Major Site Development Plan for the stormwater detention ponds. Also, the bioswale in the northwest corner of the parking lots has no pipe discharge. If there is to be no discharge from this bioswale, infiltration rates for the bioswale should be provided in the stormwater calculations (see Conditions below).**

These bioswales are major aspects of the alternative approach to meeting the City's requirement for parking lot landscaping. Zoning Code Section 29.403 (4)(f)(i) allows approval of this landscaping when a Major Site Development Plan is being provided and when the City Council finds that the landscaping meets the purposes for parking lot landscaping. Section 29.403(4)(a) states these purposes:

*The purpose of this section is to protect and promote the public health, safety and general welfare by requiring the landscaping of surface parking lots in such a manner as will serve to reduce the effects of wind and air turbulence, heat and noise, and the glare of automobile lights; to preserve ground water strata; to act as a natural drainage system and ameliorate stormwater drainage problems; to reduce the level of carbon dioxide and return oxygen to the atmosphere; to prevent soil erosion; to conserve and stabilize property values and to otherwise facilitate the creation of a convenient, attractive and harmonious community; to relieve the blight of the appearance of surface parking lots; and to generally preserve a healthful and pleasant environment.*

Some of the landscaped medians and islands normally required to break up the expanse of paving in parking lots have been eliminated, providing space for the larger islands south of the parking lots and north of the ring road. These islands define the edge of the ring road as separate from the parking lot and contain bioswales. These bioswales act as a natural drainage system, improving infiltration and reducing run-off. They provide on-site treatment of sediment and other pollutants and serve as an attractive alternative to traditional stormwater management systems. Rather than the



traditional parking lot shrubs, bioswales support native grasses and wildflowers, many of which can grow tall enough to also soften the views of parking areas and to fulfill many of the other purposes of parking lot landscaping.

Rather than placing trees in small islands surrounded by paving, the trees have been grouped in the medians between and parallel to the parking aisles, where the soil and water and temperature conditions will help them thrive. In some cases, these medians are further apart than normally required, but the trees at 35-foot spacing are closer than the 50-foot spacing normally required. The total number of trees in the parking areas is close to the quantity usually provided under the conventional ordinance approach. Perimeter shrubs and trees are still provided at the edges of the parking lot and ring road.

## **GUIDELINES FOR BUILDING DESIGN**

### **Section 29.1109(15)**

***Building design includes a variety of building sizes of high quality design and materials for which there is wide latitude for creativity within the framework of the Master Plan for the entire site. Buildings will be designed to reduce the massive scale and the uniform, impersonal appearances of large commercial buildings, for energy efficiency, and to provide visual interest that will be consistent with the community's identity, character, and scale.***

***Architectural design shall create and contribute to the uniqueness and sense of place of the development. Building elevations shall consider the character of the community and incorporate design elements representative of such community character.***

This Major Site Development Plan only guides the Lifestyle Center buildings to be constructed by the overall project developer. This includes specialty shops and minor anchors. Separate Major Site Development Plans will govern the major anchor stores and the buildings on the other lots, outside the ring road. The architectural design detail provided for the Lifestyle Center buildings is consistent with the conceptual illustrations that accompanied the Master Plan submittal. The following examples illustrate this:

- The buildings on the corners of the shopping street reflect the character of buildings downtown and at the University, such as the northeast corner of building 300 (See illustration A on Sheet A-5), the southwest corner of building 800 (See illustrations B & G on Sheet A-6), and the southeast corner of building 1000 (See illustrations E and H on Sheet A-7). Other familiar styles can be seen on upper facades within the shopping street blocks.
- Brick and reconstructed stone masonry materials are used as architectural features or accents on all building elevations. Where the plans refer to "masonry units, the material is generally to be a reconstructed stone facing (not concrete block) and where the plans refer to a fine textured area labeled as "masonry" the

material is generally brick. Although concrete block and EIFS will be used on other portions of the facades, these materials are not prohibited. **Although the City can expect some minor adjustments in where specific materials are used, it will help staff to continue reviewing these materials at the building plan review and permit stage if the Major Site Development Plan documents are more clear on what specific materials are to be used in which locations in order to meet this design standard for accent materials. (See Conditions below)**

- All of these materials, including the applied EIFS, will have muted earth tones as the predominant colors.
- Variation is provided in parapet heights giving the appearance of variation in building height. In some locations, upper windows provide the appearance of a second story. (As an example, see illustration E on Sheet A-7.) Although there is no usable interior space behind most of these windows, these upper facades will turn and extend away from the street far enough to avoid the appearance of a false façade. Variation is also provided in façade materials, color, and texture.
- Consistent architectural detail and character is provided on all sides of the buildings; there is really no back of these buildings visible to the public.
- Changes in parapet height and in materials are used to define shop widths and to bring attention to building entrances. Projecting porticos and higher rooflines are used at entrances on building corners.
- Architectural detail with depth is provided along the parapet and at openings of building frontages along ground floor pedestrian areas.

Section 29.1109(14)(h) states:

*Incorporate a combination of arcades, pedestrian-level display windows, multiple fenestrations, storefronts, and store entrances into building frontages and sides of buildings oriented to the street, or other public areas (i.e. parks, open space, walkways, or vista corridors).*

**Required variations are not provided sufficiently on two facades that face Interstate 35: the west façade of Building 200 (Illustration J on sheet A-4) and the west façade of Building 900 (Same as east elevation, Illustration B on sheet A-7). This is a very visible portion of the project and should comply more clearly with this design standard.**

It is important to understand the scope of the design presented in this Major site Development Plan and how it relates to the finished project. The overall developer will be constructing what is shown on these drawings. For the specialty shops, this building shell is the framework into which they apply their front, their display windows, their entrances, their lighting, and their signs, in many instances again standardized to project their brand. These tenants will also need to maintain consistency with the

design guidelines and standards of the City Zoning Ordinance, which City staff will be reviewing through the building permit process.

The developer has presented three color illustrations of how the finished project will evolve (attached): one illustration showing one building façade when the shell is completed by the overall project developer, one illustration showing the same facade with the tenant work completed, and a third illustration showing the façade complete with the adjacent sidewalk streetscape in place.

When the City Council approved the Master Plan for this project, it included two stipulations related to building design (Resolution 06-506 approved on December 19, 2006):

- Stipulation 3 concerned the major anchor stores and will still be addressed when those Major Site Development Plans are considered.
- Stipulation 4 concerned the buildings on the other lots and the Power Center south of East 13<sup>th</sup> Street. It will be addressed when those Major Site Development Plans are considered.

## **GUIDELINES FOR SIGNAGE**

### **Section 29.1109(17)**

***Signage shall be tasteful, simple, as unobtrusive as possible, and integrated with the entry design elements. Signs shall be designed to be easily recognized and relate to all modes of travel on the site.***

***Include a comprehensive system of signage conveying messages essential to the function, safety, and security of users and residents.***

***Achieve a consistency of display with a hierarchy of signage. Use a minimum number of sign sizes to provide easy "way finding" for all modes of circulation.***

The Major Site Development Plan provides for a system of signs that includes:

- a primary 35-foot pylon sign at the southwest corner of the overall project site
- a seven-foot high entry monument sign at each drive entrance from public streets
- four entry directional signs that provide directions to destinations as one enters the overall site
- four 5.5-foot high commemorative light towers along the Shopping Street that provide information on significant inventors that have connections to Ames and Iowa State University
- four backlit directories along the Shopping Street showing locations of specific shops
- various traffic signs, such as stops, pedestrian crossings, bike paths and no parking

The size of these signs is integrated with their surroundings and function. They all have a similar design character that is integrated with the native prairie theme of the landscape, with monuments architecturally referencing prairie style, using brick, graphic motifs, and internal lighting. The signs along East 13<sup>th</sup> Street will have stone bases, a material common to most entries to Ames. Brick and stone are also materials used on all of the proposed buildings. Signage Sheet 002 "Signage Locations" shows all signs and Signage Sheets 1.0 through 6.0 illustrate all of the signs. Detailed technical specifications were also submitted.

## **GUIDELINES FOR LIGHTING**

### Section 29.1109(17)

***Lighting shall be varied by intensity, location, time of use, and direction in an effort to protect viewing of the night sky and the biology of the Ketelsen Marsh from light interference.***

***Outdoor illumination shall provide a unified lighting system that: will allow a quality image that is perceivable, yet unobtrusive; reinforce the hierarchy and delineation of the circulation system; provide sufficient illumination; and, enhance safety and visibility in the "O-GNE" District.***

The Major Site Development Plan documents describe a unified and coordinated site lighting system. The following types of lights comprise this system:

- 1) Site lighting for the large parking areas beyond the buildings of the Lifestyle Center consist of 50 foot tall light poles with one, two, and three 750-watt metal halide luminaries mounted atop the poles. Poles subject to being bumped by automobiles are mounted on top of 2'-6" high concrete foundation/pedestals. Site lighting will provide a minimum 1.5 minimum maintained foot-candles on the parking surface.
- 2) Site lighting for the entry drive roadways will consist of 35-foot high light poles with the identical 750-watt metal halide luminaries (one or two per pole) mounted atop the 35-foot high poles. Entry road lighting provides a 4.0 minimum maintained footcandles on the drive surface.
- 3) Site lighting for the Shopping Street, the smaller center pedestrian circulation area and parking bordered on all sides by small tenant buildings and major department stores of the Lifestyle Center, consist of the following fixtures that together will provide approximately 2.0 minimum maintained foot-candles on the parking/walkway surface:
  - i) Down the center medians, 25 foot tall decorative lighting poles mounted on top of 2'-6" high concrete foundation/pedestals with two 250 watt metal halide decorative luminaries.

- ii) Along the pedestrian walks and in the pedestrian plazas, 12-foot tall decorative lighting poles with one 100-watt metal halide decorative luminaire
  - iii) In the pedestrian plazas, 42-inch high decorative bollards with 70-watt metal halide lamps
  - iv) Architectural features and building entrances along the pedestrian circulation areas will have decorative wall sconces with lighting directed downward or lighting fixtures recessed in roof overhangs or canopies primarily to provide area aesthetics and atmosphere. These are fixtures of various types, ranging from 26 watts to 100 watts.
- 4) Lighting in the service courts and employee entrance areas behind the Lifestyle Center buildings consist of wall-mounted fixtures with 175-watt metal halide luminaires to provide approximately 1.5 minimum maintained foot-candles on the surface.

Maximum permitted light levels at 150,000 lumens per gross acre minimize the impact of lighting on the surrounding areas. This standard allows 20,950,000 lumens for the entire property north of East 13<sup>th</sup> Street, with 15,968,000 lumens used for lighting included in this Major Site Development Plan. This means that approximately 75% of the total allowed lumens will light about 69% of the total site. This seems a reasonable proportion considering that the current Plan covers the most intensively developed portion of the site.

Lighting types 1, 2, and 3.1 above are included in this calculation. The other lighting is for pedestrian circulation areas and building entrances and is not required to be included in the total lumens calculation. The proposed lighting in these areas does not approach the allowed 20-foot candles measured at ground level, but rather has an upper level of four-foot candles.

**Fairly uniform lighting levels are provided in this pedestrian area. Higher light levels at the pedestrian crossing would reinforce their mid-block locations within the rows of parking spaces and thus would enhance safety.**

For the lighting of signs and of future development on the other lots, 4,982,000 lumens are available. City staff will monitor the light provided for signs. The standards for review of the lighting in Major Site Development Plans for the other lots will be based on the proportion of the remaining site area each lot comprises.

Technical information in the form of lighting fixture cut sheets, photometrics, point-by-points, etc., have been provided and reviewed. These show that all fixtures comply with the City's Outdoor Lighting Ordinance for controlling where light goes and minimizing glare. Point-by-point light output diagrams for the entire site show that there is no light trespass and glare beyond the property boundary to the north. "House side shields" limit light trespass to Interstate 35 on the west. Lighting levels to 570<sup>th</sup> Street on the east and to East 13<sup>th</sup> Street are minimal in terms of standards normally applied to streets, with higher light levels normally provided at intersections.

A zoning code provision requires all lighting for commercial activities to be reduced to security levels between 11:00 p.m., or one hour after the business closes (whichever is later), and sunrise. Following construction, this will be monitored.

**Conditions for Approval.** The following conditions address the issues raised above.

In order to assure that the Lifestyle Center will be consistent with the intent of all City of Ames zoning regulations, the following conditions should be met before the staff certifies approval of the Major Site Development Plan for the proposed Lifestyle Center in the "O-GNE" (Northeast Gateway Overlay) District:

- 1) The PRC and O-GNE zoning designations must take legal effect.
- 2) The Final Plat must be recorded with Story County.
- 3) The orientation or dimensioning of handicap parking spaces on the Major Site Development Plan must be changed to provide an eight-foot wide striped area on the passenger side of all parking spaces that are designated as van accessible.
- 4) On the Major Site Development Plan, easements must be shown for all public storm sewers (except building drainage lines), sanitary sewer mains, and water mains, and the plans must indicate that all public utilities must be constructed to Urban Standards Specifications for Public Improvements.
- 5) City staff shall review and approve an updated stormwater management plan.
- 6) The locations shown on the landscaping plans and the traffic signage plan for the speed tables shall be coordinated. (Locations can be selected at the developer's discretion.)
- 7) Drainage easements shall be shown on the Major Site Development Plan for all stormwater detention ponds.
- 8) A discharge pipe for the bioswale in the northwest corner of the parking lots must be shown on the Major Site Development Plan, or infiltration rates must be provided in the stormwater management plan indicating that there will be no standing water that would require a discharge pipe.
- 9) On the Major Site Development Plan, specific material types and material locations shall be shown that meet the building design standard for accent materials.
- 10) On the Major Site Development Plan, the architectural variations referenced by Section 29.1109(14)(h) shall be shown on two facades that face Interstate 35: the west façade of Building 200, and the west façade of Building 900.
- 11) On the Major Site Development Plan, higher light levels at the pedestrian crossings within the Lifestyle Center Shopping Street shall be provided.

After City staff certifies approval of the Major Site Development Plan, the following conditions must be met:

- 1) The comments on the Construction SWPPP Review Checklist shall be followed before the Grading and Stormwater Permit will be issued.
- 2) The mechanical rooms for Building 900 (Cinema) and for the two Major Anchor Stores must be shown on the future building plans before building permits will be issued.
- 3) Post Indicator Valves shall be installed in locations approved by the Fire Department as the fire supply water lines are installed during construction.

**Recommendation of the Planning & Zoning Commission.** At its meeting of October 17, 2007, the Planning and Zoning Commission held a public hearing. Several people spoke either against approval or supporting a delay. Issues addressed by these people included:

- Mr. Joe Rippetoe emphasized the need for the Planning and Zoning Commission to let the public review the final traffic study before making a decision on the Major Site Development Plan.
- The amount of square footage of building space and the area of land rezoned in comparison to other regional commercial centers. Sue Ravenscroft presented a list of shopping centers both locally and nationally describing building square footage and land area for each shopping center.
- Ms. Sue Ravenscroft also described an area of the acreage of the lifestyle center site imposed over the urban core area of Ames to illustrate the extent of the urban core area in comparison to the size of the proposed Lifestyle Center Subdivision. She wished to compare traffic volumes in the urban core area to that which may occur as a result of the lifestyle center development.
- Mr. Rippetoe said that the developers should purchase all of the property and show evidence of leases and financing before the Major Site Development Plan is considered.
- Ms. Sheila Condon inquired about the location of the bike path on the south side of 13<sup>th</sup> Street. She stated that she was a bicyclist and that for safety reasons the location of the multi-use path on 13<sup>th</sup> Street should minimize crossings of 13<sup>th</sup> Street by pedestrians and bicycles.

With a vote of 6-0, the Planning and Zoning Commission recommended approval of the Major Site Development Plan with the conditions described in this Action Form, and made a finding that the Major Site Development Plan meets:

- A. The guidelines and standards of the "O-GNE" (Northeast Gateway Overlay District); and,
- B. The purposes of landscaping requirements for surface parking lots, as described in Section 29.403 (4a) of the Municipal Code.

The Commission also requested that the Traffic Impact Study for this development be available to the public, and that it be presented to the Council when they take action on this subject.

**ALTERNATIVES:**

1. The City Council can approve the Major Site Development Plan for the proposed Lifestyle Center in the "O-GNE" (Northeast Gateway Overlay District), with the conditions described in this Action Form, and make a finding that the Major Site Development Plan meets:
  - A. The guidelines and standards of the "O-GNE" (Northeast Gateway Overlay District); and,
  - B. The purposes of landscaping requirements for surface parking lots, as described in Section 29.403 (4a) of the Municipal Code.
2. The City Council can approve the Major Site Development Plan for the proposed Lifestyle Center in the "O-GNE" (Northeast Gateway Overlay District), with modifications to the conditions specifying what changes are needed for the Plan to meet the standards in the Zoning Ordinance, and to make a finding that the Major Site Development Plan meets:
  - A. The guidelines and standards of the "O-GNE" (Northeast Gateway Overlay District); and,
  - B. The purposes of landscaping requirements for surface parking lots, as described in Section 29.403 (4a) of the Municipal Code.
3. The City Council can deny approval of the Major Site Development Plan for the proposed Lifestyle Center and Power Center in the "O-GNE" (Northeast Gateway Overlay District) and make findings describing how the Major Site Development Plan fails to meet the standards in the Zoning Ordinance.

**MANAGER'S RECOMMENDED ACTION:**

Staff has indicated areas of the Major Site Development Plan for which more information, or design detail is needed, in the "Conditions for Approval" in this report. In all other respects, staff finds that the applicant has complied with City general development standards, as well as development standards for the Planned Regional Commercial District and for the Northeast Gateway Overlay District. Staff believes that the portion of the development as proposed, and with the conditions met, integrates open space, landscaping, entry features and artwork, stormwater management, buildings, parking, access by all modes of transportation, lighting, and signs in a manner that respects the environment and is representative of the native Iowa landscape. In many ways, the project reflects and represents of the most desirable design quality and character of Ames.



Therefore, it is the recommendation of the City Manager that Alternative #1 be adopted. This is a recommendation that the City Council approve the Major Site Development Plan for the proposed Lifestyle Center in the "O-GNE" (Northeast Gateway Overlay District), with the conditions described in this Action Form, and makes a finding that the Major Site Development Plan meets:

- A. The guidelines and standards of the "O-GNE" (Northeast Gateway Overlay District); and,
- B. The purposes of landscaping requirements for surface parking lots, as described in Section 29.403 (4a) of the Municipal Code.

Under this recommendation, all of the conditions 1 through 11 above must be met before City staff will certify approval of the Major Site Development Plan for the proposed Lifestyle Center in the "O-GNE" (Northeast Gateway Overlay District). **Therefore, the Major Site Development Plan will not be returned to the Planning and Zoning Commission or City Council for further action.**

## MAJOR SITE DEVELOPMENT PLAN DOCUMENTS

### Lifestyle Center at East 13<sup>th</sup> Street & I-35

Sheet	File	Title	Date
Cover	Cover Sheet	Cover Sheet	October 1, 2007
<b>Architectural</b>			
A-1	LCAIA-1	Site Development Plan	October 4, 2007
A-2	LCAIA-2	Overall Center Floor Plan	October 1, 2007
A-3	LCAIA-3	Part Plan – Parking Lot	October 1, 2007
A-4	LCAIA-4	Elevations	October 1, 2007
A-5	LCAIA-5	Elevations	October 1, 2007
A-6	LCAIA-6	Elevations	October 1, 2007
A-7	LCAIA-7	Elevations	October 1, 2007
A-8	LCAIA-8	Elevations	October 1, 2007
A-9	LCAIA-9	Illustrative Rendering 1	October 1, 2007
A-10	LCAIA-10	Illustrative Rendering 2	October 1, 2007
<b>Landscaping</b>			
C1.01	C1.01	Hardscape Reference Plan	October 1, 2007
C1.02	C1.02	Hardscape Plan Northwest	October 1, 2007
C1.03	C1.03	Hardscape Plan Northeast	October 1, 2007
C1.04	C1.04	Hardscape Plan Southwest	October 1, 2007
C1.05	C1.05	Hardscape Plan Southeast	October 1, 2007
C2.01	C2.01	Overall Landscape Plan	October 1, 2007
C2.02	C2.02	Landscape Plan Northwest	October 1, 2007
C2.03	C2.03	Landscape Plan Northeast	October 1, 2007
C2.04	C2.04	Landscape Plan West Central	October 1, 2007
C2.05	C2.05	Landscape Plan East Central	October 1, 2007
C2.06	C2.06	Landscape Plan Southwest	October 1, 2007
C2.07	C2.07	Landscape Plan Southeast	October 1, 2007
C2.08	C2.08	Detail Plans (Plazas)	October 1, 2007
C2.09	C2.09	Detail Plans (Entry)	October 1, 2007
C3.01	C3.01	Details	October 1, 2007
<b>Grading &amp; Utilities</b>			
C-0	C-0	Major Site Development Key Plan	October 1, 2007
C-1	C-1	Grading, Drainage and Utility Plan	October 1, 2007
C-2	C-2	Grading, Drainage and Utility Plan	October 1, 2007
C-3	C-3	Grading, Drainage and Utility Plan	October 1, 2007
C-4	C-4	Grading, Drainage and Utility Plan	October 1, 2007
C-5	C-5	Grading, Drainage and Utility Plan	October 1, 2007
C-6	C-6	Grading, Drainage and Utility Plan	October 1, 2007
C-7	C-7	Drainage Features Plan	October 1, 2007
C-8	C-8	Stormwater Pollution Prevention Plan	October 1, 2007
C-9	C-9	Overall Grading and Utility Plan	October 1, 2007
C-10	C-10	Traffic Signage Plan	October 1, 2007
<b>Electrical</b>			
SL1	Site Lighting	Site Lighting Plan	October 1, 2007
PBP1	LCAIPBP1	Site Lighting Point-by-Point Plan – Area “A”	October 1, 2007
PBP2	LCAIPBP2	Site Lighting Point-by-Point Plan – Area “B”	October 1, 2007
PBP3	LCAIPBP3	Site Lighting Point-by-Point Plan – Area “C”	October 1, 2007
PBP4	LCAIPBP4	Site Lighting Point-by-Point Plan – Area “D”	October 1, 2007
PBP5	LCAIPBP5	Site Lighting Point-by-Point Plan – Area “E”	October 1, 2007
PBP6	LCAIPBP6	Site Lighting Point-by-Point Plan – Area “F”	October 1, 2007
EOL1	LCAIEOL1	Electrical One-Line Diagram	October 1, 2007
68	NA	LIGHTING FIXTURE CUTSHEETS AND	October 1, 2007


pages		PHOTOMETRIC REPORTS	
15 pages	Shops at East Prairie Signs- combined	Shops at East Prairie – Project Graphics and Signage (Pages A through AAAAA, 001 & 002, 1.0 through 8.0)	August 14, 2007
15 pages	NA	Major Site Development Plan Narrative	October 1, 2007
33 pages	NA	Stormwater Management Report	October 1, 2007
70 pages	NA	Hydrogeologic Evaluation	June 2007



# MEMO

Public Works Department • Engineering Division  
City Hall • 515 Clark Avenue • Ames, IA • 50010-0811  
Phone: (515) 239-5275 • FAX: (515) 239-5404  
Email: dpregitzer@city.ames.ia.us

**To:** Steve Schainker, City Manager

**From:** Damion Pregitzer, Traffic Engineer 

**Date:** October 23, 2007

**Subject:** Traffic Impact Study (TIS) for proposed commercial development at I35 and 13<sup>th</sup> Street

Here is the revised TIS for the proposed northeast regional commercial area as submitted by Wolford Development Inc. This update to the study is the final revision to the October 2003 and January 2007 studies. Final comments have been received from the Federal Highway Administration (FHWA); they indicated that this study does not propose any actions that would trigger FHWA involvement and therefore have no concerns or comments. Comments have been received from the Iowa Department of Transportation (IDOT).

Included is the report itself in narrative form only; this is due to the size and number of figures and appendices. For anyone wanting to see the full study it is available for review at the Public Works office in City Hall. This report summarizes the approach and intent of the TIS as well as summarizes the proposed onsite and offsite recommended roadway improvements.

**SITE TRAFFIC IMPACT REPORT**

**I-35 and 13<sup>th</sup> STREET DEVELOPMENT**

**AMES, IOWA**

**JULY, 2007**

**(An Update to the October 2003 Report)  
(An Update to the January 2007 Report)**

**Submitted To:**

**WOLFORD DEVELOPMENT, INC.**

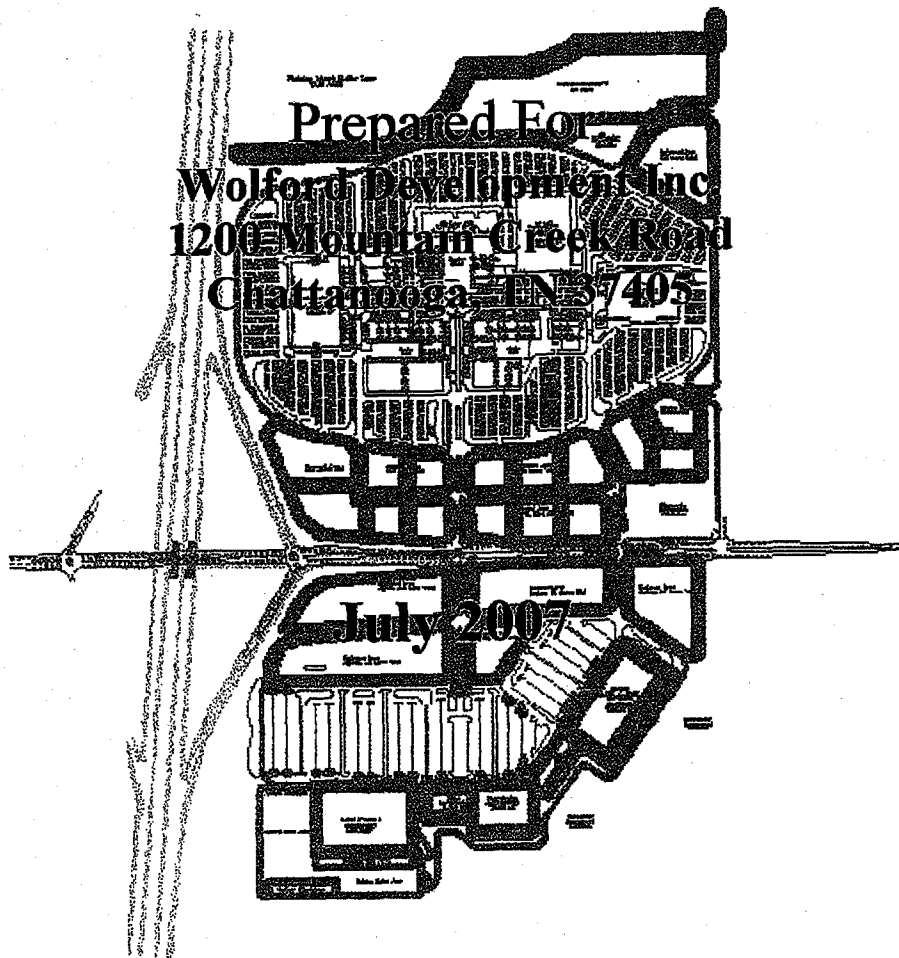
**Prepared By:**

**MILLER-MCCOY, INC.**

# Site Traffic Impact Report

## I-35 and 13<sup>th</sup> Street Development

Ames, Iowa



Prepared By:

**MILLER <sup>1</sup>/<sub>7</sub> M<sup>c</sup>COY, INC.**

CONSULTING ENGINEERS

915 CREEKSIDE ROAD CHATTANOOGA, TENNESSEE 37406  
PHONE (423) 698-2681 FAX (423) 698-2664

## TABLE OF CONTENTS

<b>CHAPTER 1: INTRODUCTION</b> .....	<b>1-1</b>
1.1 BACKGROUND .....	1-1
1.2 STUDY APPROACH.....	1-1
<b>CHAPTER 2: BASE CONDITIONS</b> .....	<b>2-1</b>
2.1 EXISTING TRAFFIC CONDITIONS .....	2-1
2.2 2030 AVERAGE DAILY TRAFFIC.....	2-1
2.3 2030 BASE PM PEAK HOUR TURNING MOVEMENTS.....	2-1
<b>CHAPTER 3: TRAFFIC PROJECTIONS</b> .....	<b>3-1</b>
3.1 TRIP GENERATION .....	3-1
3.2 TRIP DISTRIBUTION AND ASSIGNMENT .....	3-1
3.3 BUILDOUT TRAFFIC VOLUMES .....	3-1
<b>CHAPTER 4: INTERSECTION CAPACITY ANALYSIS</b> .....	<b>4-1</b>
4.1 INTERSECTION ANALYSIS – LEVEL OF SERVICE.....	4-1
4.2 SIGNAL WARRANT ANALYSIS .....	4-1
4.2.1 2030 BASE.....	4-1
4.2.2 2030 BUILDOUT.....	4-1
4.3 LEVEL OF SERVICE.....	4-6
4.3.1 LEVEL OF SERVICE METHODOLOGY .....	4-6
4.3.2 INPUT PARAMETERS.....	4-7
4.3.3 CAPACITY ANALYSIS.....	4-7
4.4 QUEUE LENGTH ANALYSIS.....	4-7
<b>CHAPTER 5: RECOMMENDATIONS</b> .....	<b>5-1</b>
5.1 SUMMARY OF RECOMMENDED IMPROVEMENTS.....	5-1

## LIST OF FIGURES

<u>FIGURES</u>	<u>PAGE</u>
1-1 SITE PLAN.....	1-2
2-1 EXISTING CONDITIONS - BASE .....	2-2
2-2 YEAR 2030 CONDITIONS - BASE .....	2-3
3-1 SHOPPER DISTRIBUTION .....	3-5
3-2 SHOPPER ASSIGNMENT.....	3-6
3-3 PM PEAK HOUR TURNING MOVEMENTS VOLUMES - 2030 FULL BUILDOUT .....	3-6
4-1 YEAR 2030 FULL BUILDOUT PROPOSED LANE CONFIGURATION .....	4-2
4-2 YEAR 2030 FULL BUILDOUT PROPOSED LANE CONFIGURATION .....	4-3
4-3 YEAR 2030 FULL BUILDOUT PROPOSED LANE CONFIGURATION .....	4-4
4-4 YEAR 2030 FULL BUILDOUT PROPOSED LANE CONFIGURATION .....	4-5



# Chapter 1 INTRODUCTION

---

## 1.1 Background

Wolford Development, Inc. is proposing a development on the outside of I-35 and 13<sup>th</sup> Street Interchange in Ames, Iowa. The preliminary site plan for the future development can be seen in Figure 1-1. Miller-McCoy, Inc. has been retained to update the October 2003 and January 2007 traffic studies conducted for this development. This report expands the previous study area to include 13<sup>th</sup> Street at Grand Avenue and 13<sup>th</sup> Street at Dayton Avenue to the west. Also, new intersections to the east and south are included. The study area now spans from 580<sup>th</sup> Avenue at 13<sup>th</sup> Street to the east and 580<sup>th</sup> Avenue at Lincoln Way and Highway 30 to the south.

The development consists of a Lifestyle Center (LSC) on the north side of 13<sup>th</sup> Street between I-35 and 570<sup>th</sup> Avenue and a power center on the south side of 13<sup>th</sup> Street between I-35 and 570<sup>th</sup> Avenue. The north development has direct access to both 13<sup>th</sup> Street and 570<sup>th</sup> Avenue, while the south development only has access to 13<sup>th</sup> Street. The study is to determine the impact of traffic generated by this development on the existing street system in the vicinity of the site.

## 1.2 Study Approach

The approach of this study is to use the information already developed and accepted by the various city agencies. The approach can be summarized as follows:

### **Task 1.0 – Data Collection**

1.1 Document the current and future geometrics and traffic control at the following intersections:

1. 13<sup>th</sup> Street and Grand Avenue
2. 13<sup>th</sup> Street and Dayton Avenue
3. 13<sup>th</sup> Street and I- 35 (West Terminal)
4. 13<sup>th</sup> Street and I- 35 (East Terminal)
5. West site entrance on 13<sup>th</sup> Street
6. East site entrance on 13<sup>th</sup> Street
7. 13<sup>th</sup> Street and 570<sup>th</sup> Avenue
8. 580<sup>th</sup> Avenue and 13<sup>th</sup> Street
9. 580<sup>th</sup> Avenue and Lincoln Way
10. 580<sup>th</sup> Avenue and Hwy 30

## LIST OF TABLES

<u>TABLES</u>	<u>PAGE</u>
3-1 TRIP GENERATION FOR THE NORTH DEVELOPMENT.....	3-3
3-2 TRIP GENERATION FOR THE SOUTH DEVELOPMENT.....	3-4
3-3 AMES POPULATION PROJECTIONS.....	3-7
4-1 INTERSECTION CAPACITY ANALYSIS - LOS .....	4-1
4-2 QUEUE LENGTH ANALYSIS.....	4-8



NTS

I-35

Kelesney North Buffer Zone  
17.8 Acres

FUTURE DEVELOPMENT  
18.8 Acres

Stormwater  
Management  
Facilities

Detention Area  
8.0 Acres Total

Building 505  
PROPOSED OFFICE  
46,370 S.F. 2,640 Seats

FUTURE  
DEPARTMENT  
STORE  
Approximately  
140,000 S.F.

DEPARTMENT  
STORE 1  
Approximately  
100,000 S.F.

DEPARTMENT  
STORE 2  
Approximately  
140,000 S.F.

Detention Area  
3.52 Acres Total

Detention Area  
2.04 Acres Total

Detention Area  
3.15 Acres Total

Detention Area  
Approx. 3.54 Acres Total

Detention Area  
Approx. 4.0 Acres Total

Detention Area  
Approx. 3.0 Acres Total

Detention Area  
Approx. 3.5 Acres Total

13TH STREET

Detention Area  
Approx. 4.5 Acres Total

Detention Area  
Approx. 1.5 Acres Total

FUTURE  
MAJOR  
ANCHOR(S)  
Approximately  
150,000 S.F.

Stormwater  
Management  
Facilities

MAJOR ANCHOR 1  
Approximately  
100,000 S.F.

Stops  
Approximately  
30,000 S.F.

Minor Anchor  
Approximately  
70,000 S.F.

Stormwater  
Management  
Facilities

Outdoor Seating Area  
Loading/Unloading Area  
Outdoor Seating Area  
Outdoor Seating Area

SITE PLAN  
FIGURE 1-1

1.2 Obtain maps, construction plans and other geometric information from the City of Ames or Iowa Department of Transportation (Iowa DOT) for the intersections in question.

1.3 Obtain a listing of programmed improvements adjacent to the study area from appropriate agencies.

1.4 Obtain from Wolford Development data regarding site plans to be studied, including land use, hours of operation, size, site orientation and other data as required to properly estimate traffic characteristics for the site.

### **Task 2.0- Regional and Site Traffic Forecasts**

2.1 Conduct analysis using Iowa DOT TransCAD model to determine changes in daily traffic patterns at the intersection listed in Task 1.1 following base and full buildout:

- (Base) Year 2030 analysis without the proposed development.
- (Buildout) Year 2030 base traffic plus full buildout of development.

2.2 Prepare a trip generation table (trip rates, daily and P.M. peak hour volumes) for the proposed development, using data obtained from Wolford Development and trip rates documented in the ITE Trip Generation Manual.

2.3 Develop an expected directional orientation of site generated trips by analyzing demographic data existing traffic volumes and relative locations of major roadways and population centers.

2.4 Distribute and assign site generated trips to the road system in accordance with the estimated directional distribution and minimum travel paths.

2.5 Prepare base and full buildout traffic forecasts for a weekday P.M. peak hour at the key intersections listed in Task 1.1.

### **Task 3.0 – Traffic Analysis**

3.1 Conduct intersection capacity analysis at key intersections. The peak hours of 13<sup>th</sup> Street will be used for analysis purposes. Deficiencies discovered in the future base and buildout conditions will be noted and considered in the report. The 2000 *Highway Capacity Manual* methodology will be used to conduct these analysis and to identify and evaluate potential mitigative roadway improvements.

3.2 Evaluate the need and appropriateness of various access scenarios as they relate to the intersections listed in Task 1.1. The evaluation will include the identification of auxiliary turning lanes, and traffic signals.

3.3 Conduct queuing analysis to determine required storage distances for left and right turning vehicles at key intersections. The analysis will include identifying locations for driveways and other local street access.

## Chapter 2 BASE CONDITIONS

---

### 2.1 Existing Traffic Conditions

The existing P.M. peak hour traffic counts are shown in Figure 2-1. This figure also displays the 2003 average daily traffic (ADT) volumes.

### 2.2 2030 Average Daily Traffic

The year 2030 ADT volumes used for this study were developed as part of the Ames Area Long Range Transportation Plan (LRTP) update. The year 2030 Approved Network Average Daily Traffic volumes from the LRTP were utilized for this study. These volumes incorporate all existing and committed transportation improvement projects along with all planned and approved street and highway improvements for the Ames area. These projects are planned for construction by year 2030.

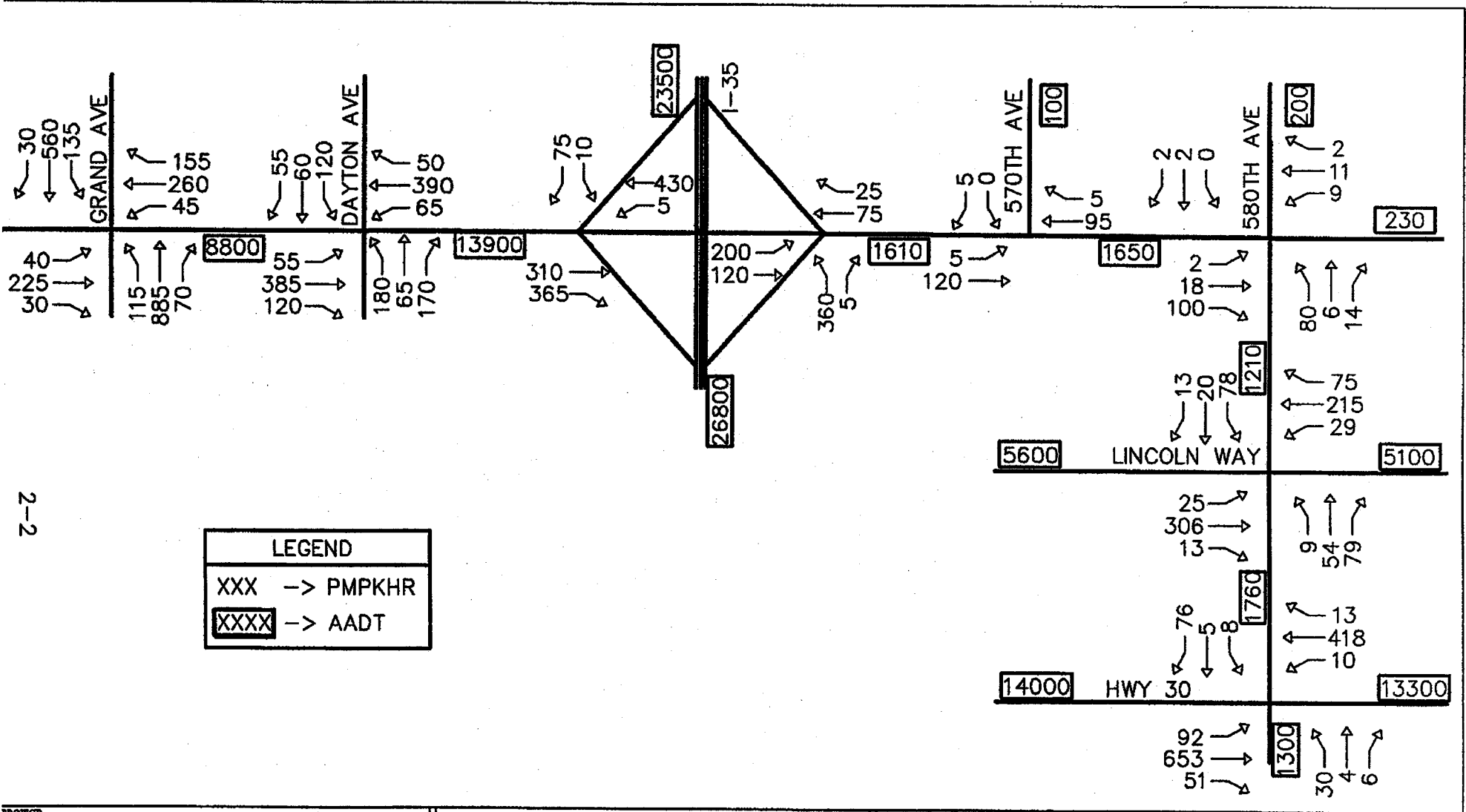
The Ames LRTP model assumed a certain amount of commercial development would occur within the study area; however, the assumed commercial development does not accurately reflect what is currently proposed for the area. In order to accurately determine the impacts the proposed development would have on the nearby traffic network, the assumed commercial development was removed from the model. This traffic was removed from the traffic analysis zones on the north and south side of 13<sup>th</sup> Street between I-35 and 580<sup>th</sup> Avenue. It should be noted that the industrial trips from the traffic analysis zone on the north side of 13<sup>th</sup> Street was left in because it is not part of the development proposed in this report. The ADT volumes with assumed commercial development removed is referred to as the year 2030 base average daily traffic volumes. These traffic volumes are displayed in Figure 2-2. This base scenario was used to determine traffic operations on the nearby street network in the year 2030 with no development.

It should be noted that the year 2030 ADT on the west leg of the I-35 and 13<sup>th</sup> Street interchange exhibited little to no growth according to the LRTP projection. Through discussions with Iowa DOT, this ADT was adjusted to reflect a reasonable amount of growth.

Once the year 2030 base traffic conditions were determined, trips generated by land uses proposed in this report were added to the year 2030 base traffic conditions. This was done in order to determine the traffic impacts created by the proposed development in the year 2030.

### 2.3 2030 Base P.M. Peak Hour Turning Movements

Once the year 2030 base ADT volumes were determined, year 2030 base P.M. peak hour turning movements were developed. Figure 2-2 displays these turning movements.



2-2

LEGEND	
XXX	-> PMPKHR
XXXX	-> AADT

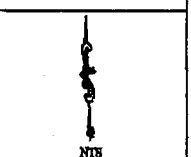
PROJECT: I-35 AND 15TH STREET DEVELOPMENT  
LIFESTYLE CENTER  
AMES, IOWA

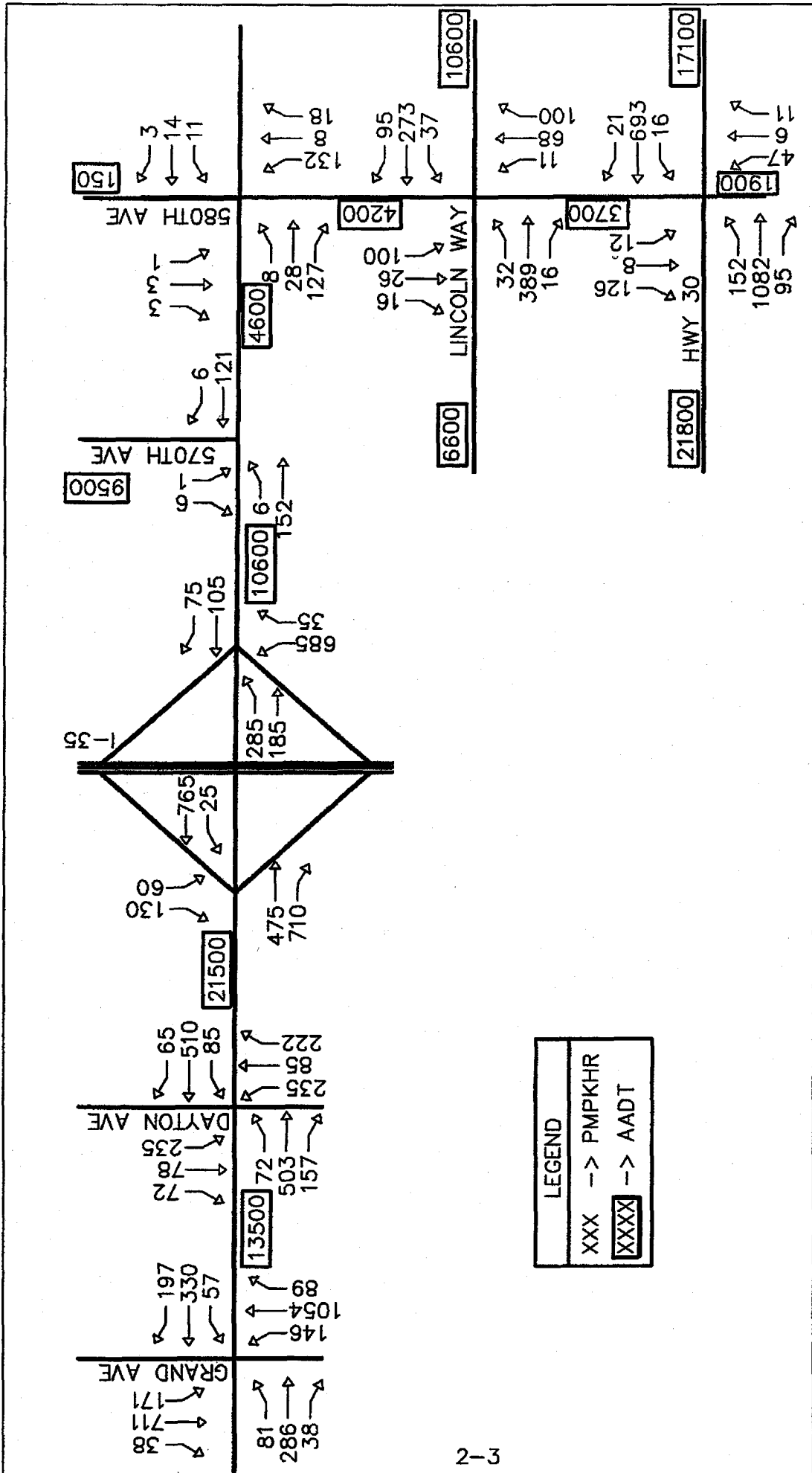
:\Projects\0548\0wg\0548\_IntersectionBase.dwg

**EXISTING P.M. PK HR COUNTS**  
**2003 BASE CONDITIONS**  
**FIGURE 2-1**

CIVIL ENGINEER:  
**MILLER-McCOY, INC.**  
CONSULTING ENGINEERS  
818 CREEKSIDE ROAD CHATTANOOGA, TENNESSEE 37408  
PHONE (423) 898-2881 FAX (423) 898-2884

© Copyright 2005 Miller-McCoy, Inc.





**PROJECT**  
 I-35 AND 15TH STREET DEVELOPMENT  
 LIFESTYLE CENTER  
 AMES, IOWA

**CIVIL ENGINEER:**  
**MILLER-McCOY, INC.**  
 CONSULTING ENGINEERS  
 618 CRESSIDE ROAD, CHATTANOOGA, TENNESSEE 37408  
 PHONE (423) 888-3881 FAX (423) 888-3884  
 © Copyright 2005 Miller-McCoy, Inc.

**NO BUILD P.M. PK HR COUNTS  
 2030 BASE CONDITIONS  
 FIGURE 2-2**

2: \Projects\0548\Dev\0548\_IntersectionBase.dwg

## Chapter 3 TRAFFIC PROJECTIONS

---

### 3.1 Trip Generation

The number of vehicle trips that will be generated by the proposed development was estimated using the trip generation rates and equations published in the *Institute of Transportation Engineers (ITE) Trip Generation Manual* (seventh edition, 2003). The *ITE Trip Generation Manual* is the industry standard for estimating traffic generation characteristics for various development types.

For this study, the development scenario included a lifestyle center on the north side of 13<sup>th</sup> Street and a power center on the south side of 13<sup>th</sup> Street. This is referred to as full buildout scenario. It should be noted that the exact land uses for this development have not been defined. Presumed land uses were provided by the developer for the trip generation analysis in order to approximate the traffic impact. The trip generation volumes for the north and south developments are shown in Tables, 3-1 and 3-2, respectively.

The internal reduced trips account for the trips that take place between the different land uses within each development. Passer-by trips are the portion of trips attracted to the sites from the passing traffic on the way from an origin to an ultimate destination. The passer by and internal reduction rates were based on statistics contained in Chapter 5 of the *ITE Trip Generation Handbook*.

### 3.2 Trip Distribution and Assignment

Once the trip generation was determined, these trips were distributed across the study area traffic network. Trip distribution percentages for this study were developed through engineering judgment and guidance from the City of Ames. Figure 3-1 displays the trip distribution percentages for the study area.

Once the trip generation and trip distribution for the proposed development was determined, trips were assigned to the street network. The trip assignment pattern is shown in Figure 3-2.

### 3.3 Buildout Traffic Volumes

The buildout traffic volumes were calculated by adding the peak hour trip generation traffic volumes to the year 2030 base P.M. peak hour traffic volumes. Figure 3-3 illustrates the year 2030 buildout PM peak hour traffic volumes.

### 3.4 Ames Area MPO Long Range Transportation Plan

As stated in the Introduction section of this report, the purpose of preparing an update to the Ames Area LRTP was to have a document that embodied the community's vision for transportation consistent with the adopted Land Use Policy Plan (LUPP) for the metropolitan area. This section of the report discusses the study area's existing and future land use. It was developed using various documents obtained from the City of Ames Department of Planning and



Housing.

The City of Ames has been experiencing a 0.75 percent annual population growth. According to the U.S. Census Bureau, the City's Population was 47,198 in 1990, 48,691 in 1995, and 50,731 in 2000.

Population within the City of Ames Planning Area is projected to grow from approximately 50,000 in 1990 to between 65,000 and 67,000 by the year 2030, as shown in Table 4.1. The population increase is 15,000 to 17,000 or 30 to 34 percent. The annual rate of growth is 0.7% - 0.8%. This is comparable to the trend experienced in the 1990's.

FOR PUPOSE OF THIS REPORT, A 1% ANNUAL GROWTH FACTOR WAS USED.

**Table 3-3: Ames, Iowa Population Projections**

Year	Low	High
1990	50,000	50,200
1995	51,850	52,300
2000	53,750	54,400
2005	55,700	56,500
2010	57,600	58,600
2015	59,500	60,800
2020	61,400	62,900
2030	65,000	67,000

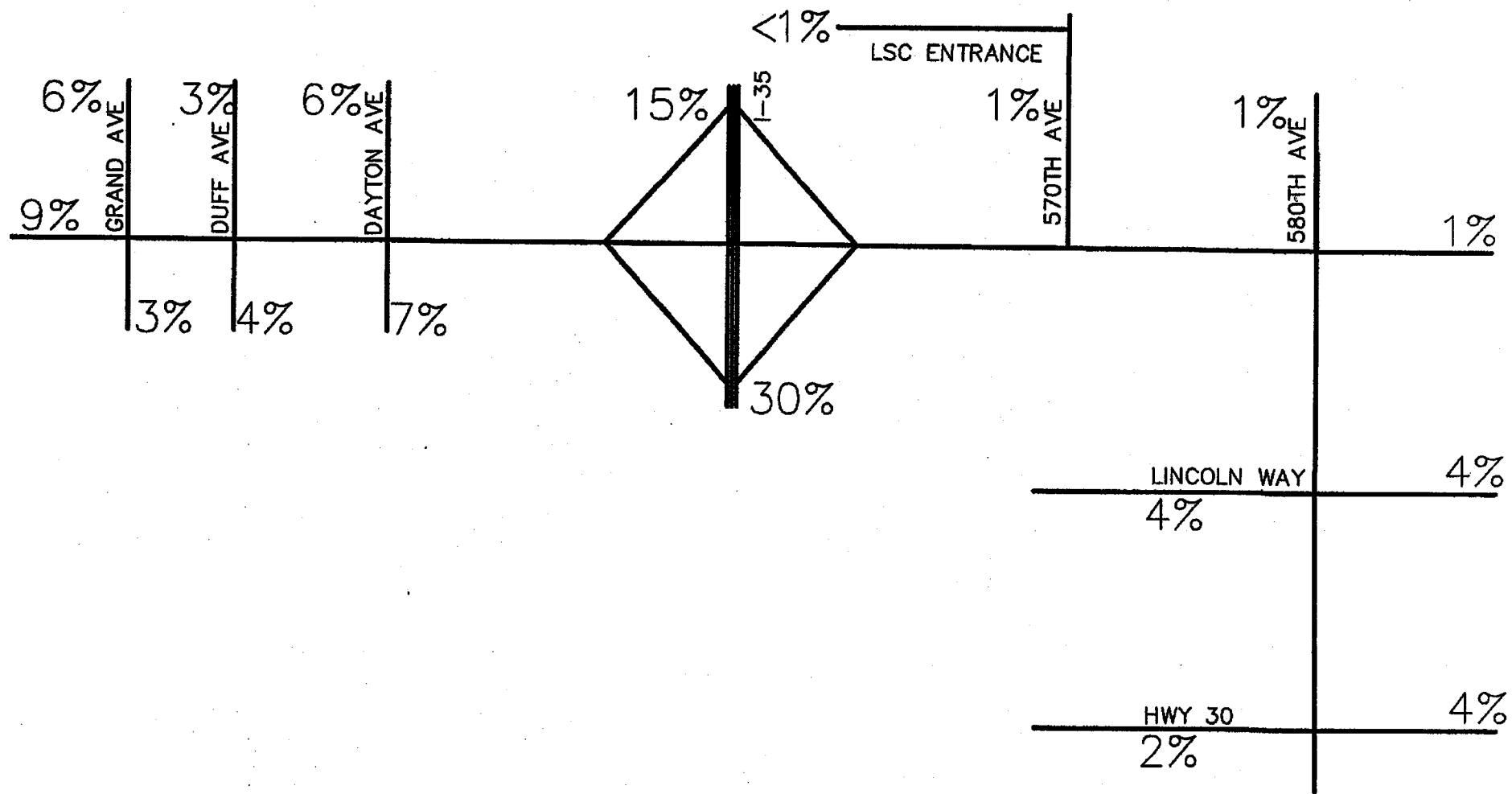
**Table 3-1. Trip Generation for the North Development**

North Development					PM Peak Hour				Internal Reduced Trips				Passer-By Reduced Trips			
ITE CODE	Land Use	Quantity	Unit	ADT	Rate	In	Out	Total	Rate	In	Out	Total	Rate	In	Out	Total
820	Department Store - D	100,000	S.F.													
	Department Store - Future	100,000	S.F.													
	Department Store - P	83,000	S.F.													
	Theater	47,000	S.F.													
	Minor Anchor	93,000	S.F.													
	Shops	180,000	S.F.													
	Sit-Down Restaurant	5,000	S.F.													
	Sit-Down Restaurant	5,000	S.F.													
	Sit-Down Restaurant	5,000	S.F.													
	Sit-Down Restaurant	5,000	S.F.													
	Sit-Down Restaurant	5,000	S.F.													
	Sit-Down Restaurant	5,000	S.F.													
	Specialty Retail	13,000	S.F.													
	Specialty Retail	21,000	S.F.													
	Bank	3,500	S.F.													
General Office	15,000	S.F.														
820	Shopping Center Subtotal	690,500	S.F.	23,845	Equ.	1076	1165	2241	0%	1076	1165	2241	30%	753	816	1569
310	Hotel	100	Rooms	522	0.59	31	28	59	15%	27	24	50	0%	27	24	50
	<b>TOTAL</b>			<b>24,367</b>		<b>1,107</b>	<b>1,193</b>	<b>2,300</b>		<b>1,102</b>	<b>1,189</b>	<b>2,291</b>		<b>780</b>	<b>839</b>	<b>1,619</b>

Table 3-2. Trip Generation for the South Development

South Development					PM Peak Hour				Internal Reduced Trips				Passer-By Reduced Trips			
ITE CODE	Land Use	Quantity	Unit	ADT	Rate	In	Out	Total	Rate	In	Out	Total	Rate	In	Out	Total
862	Home Improvement Super Store	160,000	S.F.	4768	2.45	184	208	392	15%	157	177	333	20%	125	141	267
814	Specialty Retail	80,000	S.F.	3546	2.71	95	121	217	15%	81	103	184	20%	65	83	147
866	Pet Supply Super Store	30,000	S.F.	NA	4.96	74	74	149	15%	63	63	126	20%	51	51	101
814	Specialty Retail	70,000	S.F.	3102	2.71	83	106	190	15%	71	90	161	20%	57	72	129
814	Specialty Retail	30,000	S.F.	1330	2.71	36	46	81	15%	30	39	69	20%	24	31	55
934	Fast-Food Restaurant with Drive Through	3,200	S.F.	1588	34.64	58	53	111	15%	49	45	94	50%	24	23	47
934	Fast-Food Restaurant with Drive Through	3,200	S.F.	1588	34.64	58	53	111	15%	49	45	94	50%	24	23	47
934	Fast-Food Restaurant with Drive Through	3,200	S.F.	1588	34.64	58	53	111	15%	49	45	94	50%	24	23	47
912	Drive in Bank	3,500	S.F.	863	45.74	80	80	160	15%	68	68	136	47%	36	36	72
932	High-Turnover (Sit-Down) Restaurant	5,000	S.F.	636	10.92	33	21	55	15%	28	18	46	43%	16	10	26
934	Fast-Food Restaurant with Drive Through	3,200	S.F.	1588	34.64	58	53	111	15%	49	45	94	50%	24	23	47
814	Specialty Retail	9,800	S.F.	434	2.71	12	15	27	15%	10	13	23	20%	8	10	18
814	Specialty Retail	31,000	S.F.	1374	2.71	37	47	84	15%	31	40	71	20%	25	32	57
310	Hotel	100	Rm	522	0.59	31	28	59	15%	27	24	50	0%	27	24	50
	TOTAL	432,100		22,924		897	959	1,856		763	815	1,578		532	580	1,112

5-5



PROJECT  
**I-35 AND 13TH STREET DEVELOPMENT**  
**LIFESTYLE CENTER**  
**AMES, IOWA**

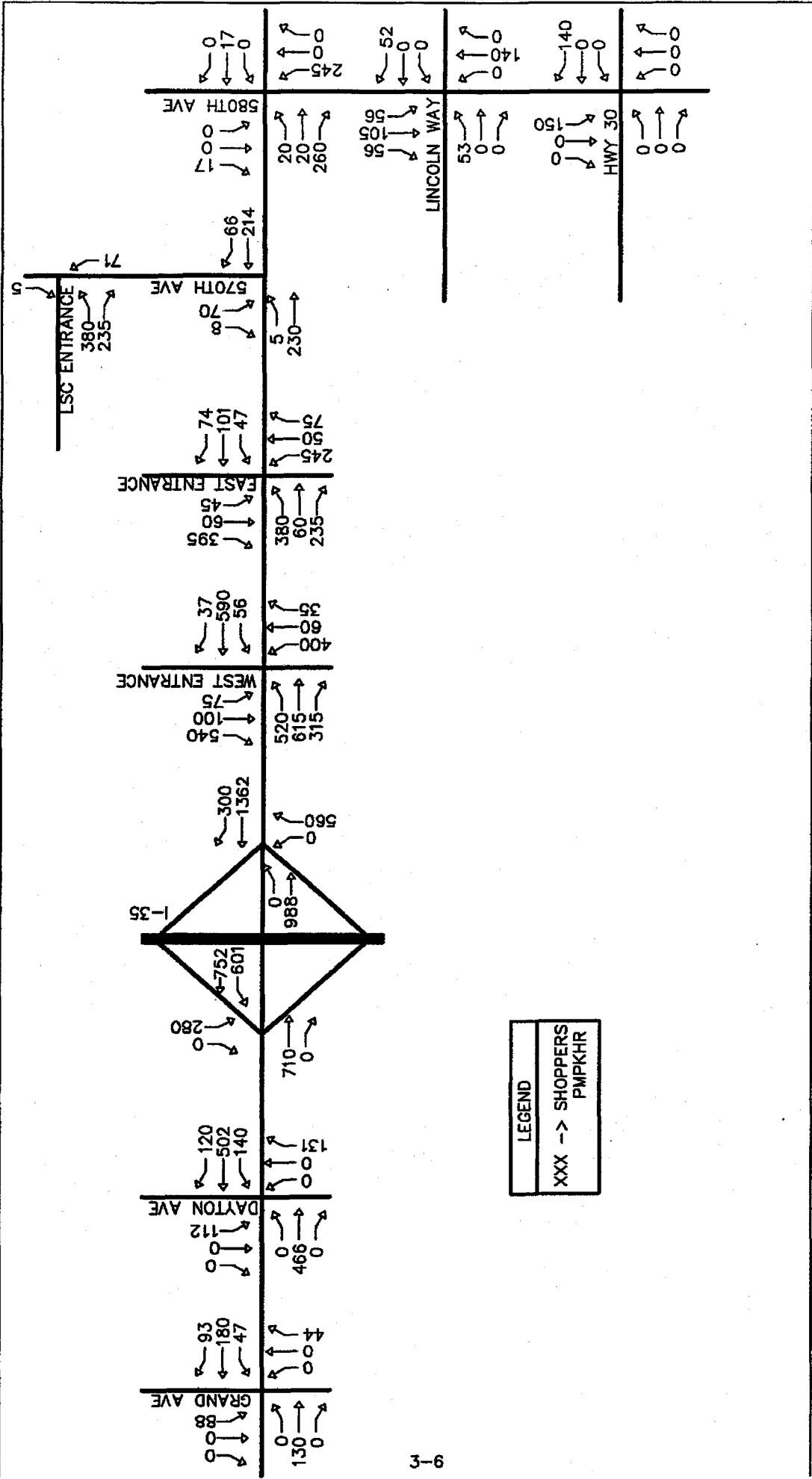
\\Projects\0548\Dwg\0548\_IntersectionBase.dwg

**SHOPPER DISTRIBUTION**

**FIGURE 3-1**

CIVIL ENGINEER:  
**MILLER-McCOY, INC.**  
**CONSULTING ENGINEERS**  
 918 CREEKSIDE ROAD CHATTANOOGA, TENNESSEE 37408  
 PHONE (423) 898-2881 FAX (423) 898-2884  
 © Copyright 2005 Miller-McCoy, Inc.



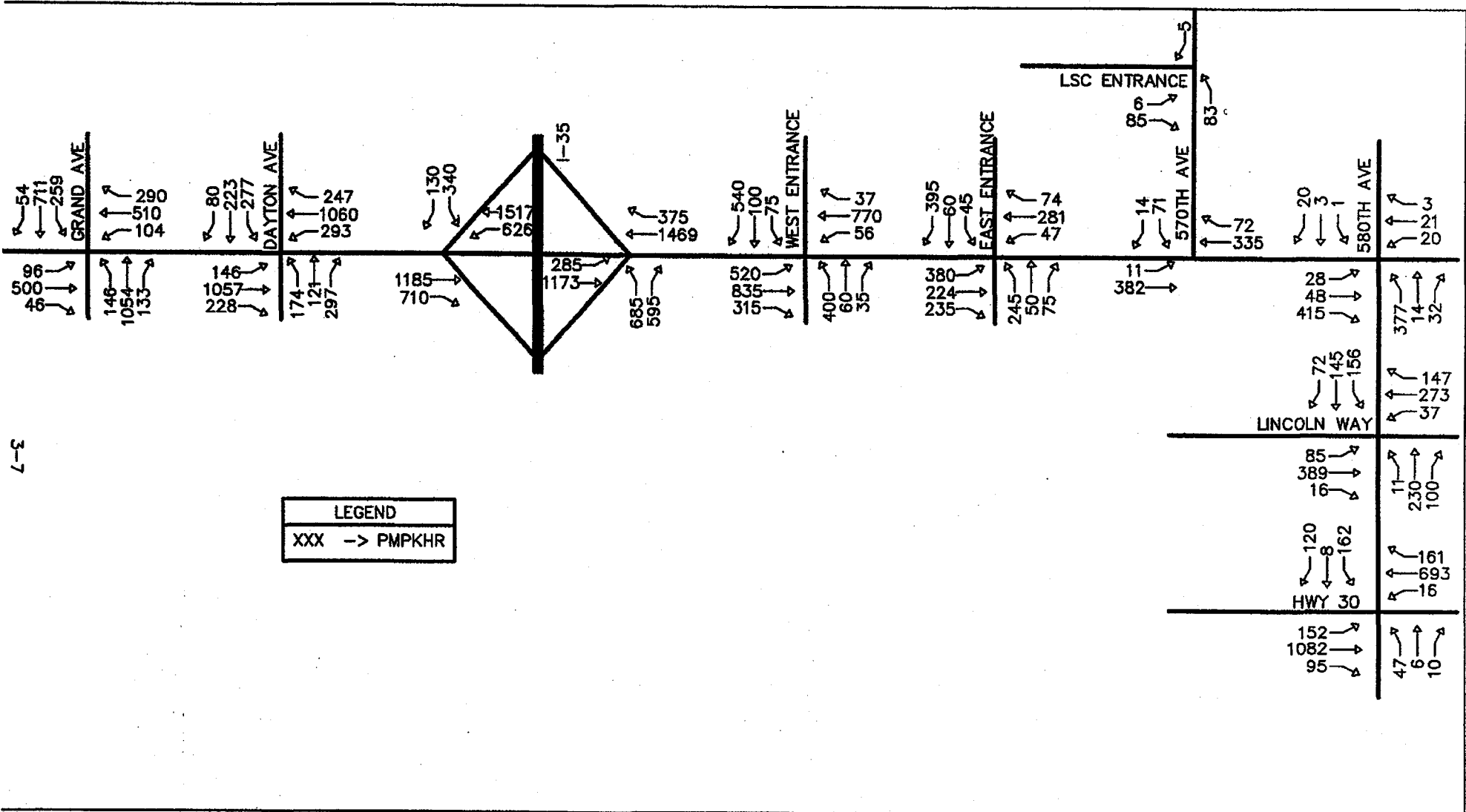


LEGEND  
 XXX -> SHOPPERS  
 PMPK/HR

PROJECT: I-35 AND 13TH STREET DEVELOPMENT  
 LIFESTYLE CENTER  
 AMES, IOWA

SHOPPER ASSIGNMENT  
 FIGURE 3-2

CIVIL ENGINEER:  
**MILLER MCCOY, INC.**  
 CONSULTING ENGINEERS  
 915 ORCHARD ROAD CHATTANOOGA, TENNESSEE 37406  
 PHONE (423) 898-5881 FAX (423) 898-5884  
 Copyright 2005 Miller-McCoy, Inc.



L-3

PROJECT:  
**I-35 AND 15TH STREET DEVELOPMENT**  
**LIFESTYLE CENTER**  
**AMES, IOWA**  
 : \Projects\0548\Dwg\0548\_IntersectionBase.dwg

**2030 FULL BUILD OUT**  
**FIGURE 3-3**

CIVIL ENGINEER:  
**MILLER-McCOY, INC.**  
**CONSULTING ENGINEERS**  
 915 CREEKSIDE ROAD CHATTANOOGA, TENNESSEE 37406  
 PHONE (423) 898-2881 FAX (423) 898-2884  
 © Copyright 2005 Miller-McCoy, Inc.



## Chapter 4 INTERSECTION CAPACITY ANALYSIS

Once turning movement volumes were determined, a capacity analysis was performed. As part of the capacity analysis, lane configurations were determined for full buildout scenario. Level of service will be explained in a section later in this chapter. In addition to proposed lane configurations, signal warrant analyses were performed for the unsignalized intersections to determine if signals were warranted for the full buildout.

Figures 4-1, 4-2, 4-3, and 4-4 illustrate the roadway improvements necessary to accommodate year 2030 peak full buildout traffic volumes.

### 4.1 Intersection Analysis – Level of Service (LOS)

**Table 4-1: Level of Service Summary**

	<b>2030 no build</b>	<b>2030 full buildout</b>
13 <sup>th</sup> St. Grand Ave (1)	C	C
13 <sup>th</sup> St. Dayton Ave	B	C
13 <sup>th</sup> St. West Terminal	B	B
13 <sup>th</sup> St. East Terminal	C	C
13 <sup>th</sup> St. West Entrance	N/A	C
13 <sup>th</sup> St. East Entrance	N/A	C
13 <sup>th</sup> St. 570 <sup>th</sup> Ave (2)	N/A	A
13 <sup>th</sup> St. 580 <sup>th</sup> Ave (2)	A	C
580 <sup>th</sup> Ave Lincoln Way (2)	B	C
580 <sup>th</sup> Ave & Hwy 30 (2)	A	B

- (1) CITY IMPROVEMENTS
- (2) STOP SIGN CONTROLLED

### 4.2 Signal Warrant Analysis

In order to perform the capacity analysis for this study, signal warrant analyses were performed at unsignalized intersections within the study area. The *Manual on Uniform Traffic Control Devices, 2003 Edition (MUTCD)* was used to determine if a traffic signal was warranted. For this study, the peak hour warrant (Warrant 3) was utilized. The peak hour signal warrant is intended for use at a location where traffic conditions are such that for a minimum of 1 hour of an average day, the minor-street traffic suffers undue delay when entering or crossing the major street.

#### 4.2.1: 2030 Base

For the base, the east and west terminals of I-35 and 13<sup>th</sup> Street along with the intersection of 13<sup>th</sup> Street and 570<sup>th</sup> Avenue were analyzed to determine if each intersection met peak hour signal warrants. The results of the analysis indicated that signals were warranted at both terminals of I-35 and 13<sup>th</sup> Street while the intersection of 13<sup>th</sup> Street and 570<sup>th</sup> Avenue did not satisfy the warrant. It is

recommended that the traffic volumes at these intersections be monitored and signals installed when the warrant is met. For these reasons, each I-35 terminal was evaluated as signalized while the intersection of 13<sup>th</sup> Street and 570<sup>th</sup> Avenue was evaluated as unsignalized for the year 2030 no build.

#### **4.2.2: 2030 Buildout**

For the full buildout, the same intersections were analyzed as the previous scenario. In addition, the two new LSC access points were analyzed as well. It is anticipated that projected year 2030 buildout traffic volumes for these intersections will satisfy the peak hour warrant. However, the volumes at the intersection of 13<sup>th</sup> Street and 570<sup>th</sup> Street will not satisfy the peak hour warrants. For these reasons, each intersection was analyzed as signalized for the year 2030 buildout scenario, except for the intersection of 13<sup>th</sup> Street and 570<sup>th</sup> Avenue, which was evaluated as unsignalized.

### **4.3 Level of Service**

Levels of Service (LOS) were determined as described in the 2000 Highway Capacity Manual. Level of service is a qualitative system of ranking intersection performance using average control delay per vehicle as the evaluation criteria.

#### **4.3.1: Level of Service Methodology**

Standard techniques outlined in the 2000 *Highway Capacity Manual* were utilized through Synchro 7.0, Traffic Software, developed by Trafficware, for the analysis of the signalized intersections. The results obtained from the capacity analysis indicate the predicted intersection operation during the P.M. peak hour.

For signalized intersections, level of service is defined in terms of the average stop delay per vehicle. A brief description of the LOS criteria for signalized intersections follows:

LOS A- This represents the ideal situation with traffic flow delays of less than 10.0 seconds per vehicle. Most vehicles do not stop at all.

LOS B- At this point slightly more vehicles stop than for LOS A, causing delays in the range of 10.1 to 20.0 seconds per vehicle.

LOS C- The number of vehicles stopping is significant at this level, however many still pass through the intersection without stopping. Traffic operations are still acceptable with average delays in the range of 20.1 to 35.0 seconds per vehicle.

LOS D- Average delays in the range of 35.1 to 55.0 seconds per vehicle. It is likely each vehicle approaching will proceed through the intersection during a green light.

LOS E- This is considered to be the limit of acceptable delay. Traffic will begin to break down. It is likely that a signalized intersection can process all vehicles during one cycle and average delays are in the range of 55.1- 80.0 seconds per



vehicle.

LOS F- This represents condition where traffic demand exceeds roadway and intersection supply. Traffic generally will have to wait more than one green light to proceed through the intersection. Average delays are greater than 80.1 seconds.

#### **4.3.1.1 : Input Parameters**

The following are selected signal timing variables used for this study:

- Cycle Length 90 seconds
- Peak Hour Factor (New) 0.92
- Peak Hour Factor (Existing) 0.92-0.98
- Yellow + All Red 4.0 seconds
- Percent Trucks 5%

#### **4.3.1.2 : Capacity Analysis**

The acceptable intersection LOS varies from community to community. For the purpose of this study a LOS 'C' was used as an acceptable level of service per the City of Ames request. However, as permissible by the city guidelines, a LOS 'D' or better was used for the individual movements.

### **4.4 Queue Length Analysis**

A queue length analysis was performed for P.M. peak hour traffic volumes. It is recommended to construct the auxiliary lanes using the recommended storage lengths as a minimum, where applicable. The 95<sup>th</sup> percentile queue length from Synchro software was used to determine the minimum storage lengths for each auxiliary lane. A minimum of 150' was used for this analysis except at locations where existing storage lengths were shorter. In addition, 95<sup>th</sup> percentile queue lengths were rounded up to the nearest 15 feet. The queuing analyses can be found in Table 4-2.

Queuing Analysis  
Table 4-2  
2030 Full Build Out  
Weekday PM Peak

Intersection	Approach	Volumes Existing + Site	Required Storage (FT)	Existing Storage (FT)	Storage To Be Provided (FT)
13th & Grand	*****	CITY	IMPROVEMENT	PROJECT	*****
13th & Dayton	EBR	228	49	0	150
	SBL	277	254	200	75
	SBT	223	203	130	95
	SBR	80	40	70	30
13th & West Terminal	SBL	340	198 (2)	0	225 (2)
	SBR	130	101	0	125
	WBL	626	183 (2)	0	200 (2)
	EBR	710	339	4	350
13th & East Terminal	NBL	685	296	493	300 (2)
	NBR	595	312	0	300 (2)
	WBR	375	0	0	RTL
	EBL	285	195	0	200
13th & West Entrance	EBL	520	234 (2)	0	350 (2)
	EBR	315	0	0	150
	WBL	56	66	0	200
	WBR	37	6	0	150
13th & East Entrance	EBL	380	147 (2)	0	300 (2)
	EBR	235	55	0	150
	WBL	47	27	0	150
	WBR	74	26	0	150
13th & 570th	EBL	11	150	0	150
	WBR	72	0	0	0
580th & Lincoln	EBL	85	150	0	150
	SBL	193	150	0	150

## Chapter 5 RECOMMENDATIONS

---

### 5.1 Summary of Recommended Improvements

This report examined the traffic conditions for the year 2030 with the proposed development.

- **13<sup>th</sup> Street and Grand Ave (No figure)**

The analysis shows that this development will not require any additional improvements beyond the city project scheduled. The 1% growth applied per LRTP per paragraph 3.4 (page 3-1 and 3-2).

- **13<sup>th</sup> Street and Dayton Ave (Figure 4-3)**

The analysis shows that the EB approach requires a RTL. The SB approach requires a LTL, a thru lane and a RTL.

- **13<sup>th</sup> Street and I-35 SB off Ramp (Figure 4-1)**

This analysis shows that the SB off ramp approach will require a three-lanes approach- One (1) RTL and two (2) LTL's. The WB approach on 13<sup>th</sup> Street will require two (2) thru Lanes and two (2) LTL's. The EB approach will require two (2) thru lanes and one (1) RTL. Install traffic signal and provide east/west pedestrian crosswalk and pedestrian signals on south side of 13<sup>th</sup> Street.

- **13<sup>th</sup> Street and I-35 NB off Ramp (Figure 4-1)**

The analysis shows that the NB off ramp approach will require two (2) LTL's and two (2) RTL's. The WB approach will require two (2) thru lanes and an exclusive RTL from the LSC West Entrance to the NB on ramp. The EB approach requires two (2) thru lanes and one (1) LTL. Install traffic signal and provide east/west pedestrian crosswalk and pedestrian signals on south side of 13<sup>th</sup> Street.

- **13<sup>th</sup> Street and LSC West Entrance (Figure 4-2)**

The analysis shows that the EB approach requires two (2) LTL, two (2) thru lanes and one (1) RTL. The WB approach requires one (1) LTL, two (2) thru lanes and one (1) RTL. The SB approach will require one (1) free flow RTL, one (1) LTL and one (1) thru lane. The NB approach requires two (2) LTL's and one (1) shared thru right. Install traffic signal and provide east/west pedestrian control on all four (4) approaches.

- **13<sup>th</sup> Street and LSC East Entrance (Figure 4-2)**

The analysis shows that the EB approach requires two (2) LTL's two (2) thru lanes and one (1) RTL. The WB approach requires one (1) LTL, one

(1) RTL and two (2) thru lanes. The SB approach requires one (1) RTL, one (1) LTL and one (1) thru lane. The NB approach requires two (2) LTL's and one (1) shared thru and right. Install traffic signal and provide east/west pedestrian control on all four (4) approaches.

- **13<sup>th</sup> Street and 570<sup>th</sup> Avenue (Figure 4-2)**

The analysis shows that the EB approach requires one (1) LTL and two (2) thru lanes. The WB approach requires two (2) thru lanes with shared right.

- **580<sup>th</sup> Avenue and Lincoln Way (Figure 4-4)**

The analysis shows that the SBL and EBL approach requires LTL's. Additional lanes and other improvements will be attributed as network improvements by the city of Ames.

- **580<sup>th</sup> Avenue and Hwy 30 (No figure)**

The analysis shows that this development does not require any improvements. The approach LOS for no build and full build out is F. The development does not negatively impact LOS F for this intersection.