STAFF REPORT

To: University Heights City Council

Prepared by: Kent Ralston
Darian Nagle-Gamm

Item: May 7, 2014 PUD submittal
1300 Melrose Avenue

Date: May 30, 2014

GENERAL INFORMATION:

Applicant:	Maxwell Development LLC. 319-354-5858
Property Owner:	St. Andrew Presbyterian Church
Requested Action:	Planned Unit Development Review
Purpose:	Neighborhood commercial and multi-family residential; 78 condo units (rear building), 19,702 square feet of commercial space (front building) – option of 2,163 square feet of municipal space
Location:	The NW corner of the Melrose Avenue /Sunset Street intersection
Size:	5.30 more/less
Existing Land Use:	One building (church)
Surrounding Land Use and Zoning:	North: Institutional Land; owned by the University of Iowa South: Single Family Residential; R1 East: Single Family Residential; R1 West: Planned Unit Development; PUD, *and* Single Family Residential; R1
Zoning:	Multiple-Family Commercial PUD

INTRODUCTION

This report was created by the Metropolitan Planning Organization of Johnson County (MPOJC) planning staff at the request of the City of University Heights. This report is intended to provide general guidance to the City during review of the Planned Unit Development (PUD) submittal (dated May 7, 2014) for the St. Andrew Presbyterian Church property at 1300 Melrose Avenue.

What is a Planned Unit Development?: *"A planned unit development (PUD) is a comprehensive development plan intended to provide flexibility in design and building placement, promote attractive and efficient environments that incorporate a variety of uses, densities and dwelling types, provide for economy of shared services and facilities, and preserve natural resources" (APA Planned Unit Developments, Mandelker page 4).*

BACKGROUND INFORMATION:

The City of University Heights has received a Planned Unit Development submittal from Jeff Maxwell with interest in redeveloping the current St. Andrew Presbyterian Church property at 1300 Melrose Avenue. The applicant has been working with the City for several years on the concept and wishes to redevelop the property for both neighborhood commercial and multi-family residential uses. The applicant was successful in his request to have the property rezoned to allow for a mixed-use PUD. The subject property was rezoned from R1 Single-Family Residential to a Multiple-Family Commercial PUD zone on December, 14, 2010 - Ordinance No.180.

The subject property is approximately 5.30 acres currently containing one principal building with access via Melrose Avenue. The remainder of the property exists as paved parking and sloping undeveloped land. There is a University of Iowa owned parking lot to the north of the property with access via the subject property owned by St. Andrew Presbyterian Church.

The property, zoned Multiple-Family Commercial PUD, is abutted by Institutional/Public property owned by the University of Iowa to the north, several wooded undeveloped lots zoned Multiple Family Commercial to the east, developed Single-Family Residential lots to the south (across Melrose Ave), and a Planned Unit Development and undeveloped wooded ravine to the west.

ANALYSIS:

Zoning: The subject property was rezoned from R1 Single-Family Residential to Multiple-Family Commercial PUD in December 2010. As stated in University Heights' Ordinance No.180, the subject parcel is allowed to hold no more than two total buildings, 80 residential units, and 20,000 square feet of commercial space, among other limitations and restrictions.

Table 1 compares how the proposed PUD conforms with the development regulations and restrictions set-forth in University Heights Zoning Ordinance No.180.

Table 1: Comparison of Zoning Criteria to Proposed Planned Unit Development

UH Zoning Ordinance No.180	Planned Unit Development Submittal
• 2 total buildings • 80 residential units • 20,000 sq/ft commercial space • 45,000 sq/ft total building footprints • 38' max front building height • 76' max rear building height • 185 parking spaces (min) • 55 above ground parking spaces (max) • 33' front setback • 20' side setback from any lot line	• 2 total buildings • 78 residential units • 19,702 sq/ft commercial space • 43,946 sq/ft building footprints • 24' front building height • 76' rear building height • 185 parking spaces • 55 above ground parking spaces • 40' front setback • 20.00' setback (min)

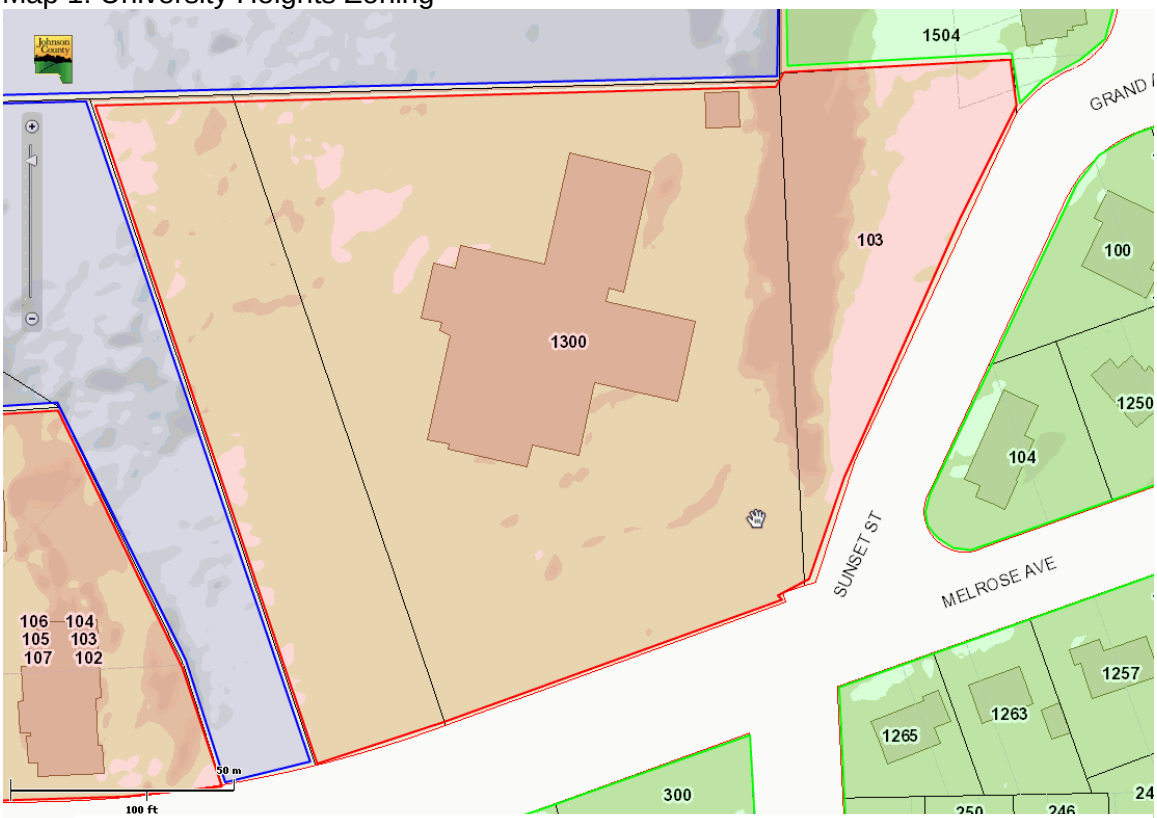
As demonstrated in Table 1, the PUD submittal meets all of the quantifiable development regulations and restrictions set forth in University Heights Zoning Ordinance No.180 Section 13.B. Provisions in Section 13.B (4) and (8), as follows, cannot be measured at this time and will need to be addressed as development occurs and as the Developers Agreement and Condominium Declarations are prepared.

- *Section 13.B(4): 'No more than one person not a member of the family as defined in Section 3 of this Ordinance may occupy each dwelling unit as part of the individual housekeeping unit.'*

- *Section 13.B(8):'The University Heights City Council may impose additional reasonable conditions as it deems necessary to ensure that the development is compatible with adjacent land uses, will not overburden public services and facilities, and will not be detrimental to public health, safety, and welfare.'*

Another item that cannot be evaluated at this time is the developer's right to establish certain uses in the commercial portion of the development. As provided in Section 12.F (b), the following commercial uses are permitted: professional offices, bakeries, drug stores, grocery stores, barber/beauty shops, catering businesses, restaurants, coffee shops (or similar), but not drinking establishments, retail shops (not liquor), art galleries, or further uses as provided in the Development Agreement between the City and developer. It will be important to discuss other specifics in the Developers Agreement / Condominium Declaration regarding the hours of operation and specific uses of commercial property (if different than granted in Section 12.F (b) of the City Code).

Map 1: University Heights Zoning



Planned Unit Development*
Institutional – University of Iowa
R1 – Single Family Residential

* Underlying zones include Single-Family Residential and Multiple-Family Commercial uses

In terms of application requirements set-forth in Ordinance No. 180 Section 13.D, staff reviewed the PUD submittal and finds several areas where additional information is necessary:

- Deed restrictions, covenants, agreements, association bylaws and/or other documents controlling the use of the property.

- A description of building materials to be used for all exterior surfaces is not definitively provided. Possibilities for the proposed buildings include architectural precast concrete, clear low E vision glass, and metal/wood panel and trellis systems. The City Council may want to obtain more specific information when available.

Land Use and General Layout: The general layout of the commercial portion of the PUD submittal is consistent with the older commercial node on the east side of University Heights in that the building is close to the street with parking located behind the building. This will result in an *urban* presentation of the commercial space in that it is

pedestrian-oriented and a majority of the parking will be hidden from the street. With doors and windows facing the street, the commercial area should be inviting to pedestrians as well as vehicular traffic. University Heights should examine the building concepts provided by the developer. Specifically, officials will want to articulate early in the process if the City has interest in pursuing the optional community space identified at the east end of the commercial building. If the City has interest in pursuing this idea, the developer will need to know how the space is intended to be used so that the general construction of the building can accommodate the finished space as envisioned by the community. If the community space is not desired by the City, the front building could be shifted east to provide more space between the west wall of the commercial building and the entrance/exit driveway.

Regarding the proposed residential structure at the rear of the property: University Heights representatives should further analyze the images and renderings provided by the developer to gain an understanding of the height and character of the building. The developer has provided computer generated simulations of how the proposed buildings will appear from north, south, east and west.

For the general layout of the site, it is important for the development to be "connected" to the larger neighborhood. The PUD submittal accomplishes much of this by proposing wide sidewalks on both the south and east frontages of the development. University Heights will want to request a set of detailed landscape plans as the proposed development is finalized to ensure that adequate landscaping is provided around the proposed structures so that the development blends-in with the surrounding neighborhood.

Building Materials and Design: The PUD submittal indicates that possible construction materials to be used would be a combination of architectural precast concrete panels, clear low E vision glass, and metal/wood panel and trellis systems (pages 4-9). While these materials would generally conform with the comprehensive plan's statement that environmentally-friendly construction materials should be used, University Heights representatives should request to see examples of the building materials before finalizing and approving the PUD.

Regarding energy efficiency, information provided by the developer indicates the intent for the proposed structures to meet certain LEED requirements. This is consistent with the Comprehensive Plan goal of encouraging energy efficient construction. Representatives should discuss what level of LEED certification the developer intends to meet. The PUD also indicates that vegetated roof designs will be used on the front and rear buildings as well as the installation of several biocells between buildings. While this effort should be commended, proper design and a maintenance plan will be necessary. The maintenance plan should be identified in the home owner's association documents.

Mass and Scale: Mass and scale are important determining factors of how a building will blend-in with the surrounding neighborhood. Tall buildings can appear to loom over the surrounding neighborhood due to their bulk. This effect can be mitigated through the use of design strategies such as those shown in the building concepts submitted by the

developer that attempt to break up the mass by using setbacks, offsets, and other methods to articulate both the horizontal and vertical planes of the building.

The open walkway, use of large windows, and lateral off-set of the commercial building fronting Melrose Avenue helps to reduce the perceived mass of the building. The proposed building height at 24' (to the top of the parapet) conforms with City Ordinance No.180 that sets the maximum building height for this building at 38'. The building is also proposed to be set-back 40' from the Melrose Avenue right-of-way which will decrease the perceived mass of the building and provide more continuity with the surrounding neighborhood. The total height of the building has been reduced 14' when compared to the original PUD application (dated April 22, 2011; since withdrawn) that had a building height of 38'. The length of the building has been reduced 5' from 270' to 265' – not including an additional 40' of length if the optional community space is included in the design.

The PUD submittal indicates that the proposed residential building at the rear of the property will have an overall height of 76' which is the maximum height allowed by zoning standards set forth in Ordinance No.180. To minimize the perceived mass of the building the developer has proposed a flat terraced roof design. The PUD submittal indicates that the building would step-up from 6-7 stories at the east and west ends of the structure. The building heights indicated in the PUD are measured from highest point of the finished grade of Melrose Avenue (per City Ord. 79, Section 7). A notable change from previous concepts submitted by the applicant is that the terraced design begins at the 6th level rather than the 3rd. In addition, the meeting/reception space for residents and outdoor rooftop terrace have been replaced with a 6th and 7th level of condo units. The overall length of the building (when viewed from the north and south) has been reduced from 312' to 280' and the overall height has been increased from 72' to 76' – not including elevator structures and storage areas.

The proposed density of the PUD is approximately 15 dwelling units per acre. The architect has provided information that each unit in the PUD will have the potential for two bedrooms. An emphasis on units with fewer bedrooms results in fewer people per unit than would three or four bedroom units. If each unit has two bedrooms, there would be a total of 156 bedrooms; 130 underground parking spaces are proposed providing less than 1 parking space per bedroom. This will likely not be an issue given that approximately 43% of University Height's residents use public transit or walk/bike to commute to work (2006-2010 American Community Survey information). ADA parking spaces will need to be identified in the residential building without reducing the overall number of parking spaces as a minimum of 130 spaces need to be maintained to meet the restrictions of Zoning Ordinance No. 180.

Streetscape: The perimeter of the site is an important element to consider in that it serves as the transition from the new development to the existing neighborhood. In a commercial building, elements like large windows, canopies, and appropriate signage integrated into the building façade can enhance the appearance. The PUD submittal includes a landscaped area within the 40' set-back between Melrose Avenue and the front of the building. Concepts for the area show the extensive use of columnar trees as

well as stamped/colored concrete walkways that would ease the transition from the surrounding neighborhood to the newly constructed buildings; benches and bike racks can further contribute to the site becoming a destination for University Heights residents.

While the developer has provided a site concept illustration, University Heights's officials should request additional details on street furniture and landscaping plans.

Slopes and Drainage: The subject property exhibits steep slopes (18-25%) in the northwest, east, and northeast quadrants of the subject property as indicated in the University Heights Sensitive Areas Ordinance (Comprehensive Plan page A-9). The storm water management system will need to be designed as part of the development of final design plans. The developer has proposed some fill near the top of the ravines on the east and west sides of the property and shows retaining walls adjacent to the proposed exit onto Sunset Street and the main entrance to the development. The City will want to ensure that the proposal does not affect the critical and protected slopes on the property, particularly those located in the ravine to the east of the development. It appears as though the storm drain on page C-101 of the submittal projects onto the State owned property to the north of the subject parcel; an easement will need to be obtained for this to occur – this should be verified by the City Engineer.

It is unclear how storm water management will be handled. In previous concepts the architect had indicated that storm water management would have been provided using two separate underground detention basins that met the provisions of the University Heights storm water ordinance. The University Heights Engineer will want to verify what plans the developer has for storm water management and ensure that the storm water management system is adequate for the development.

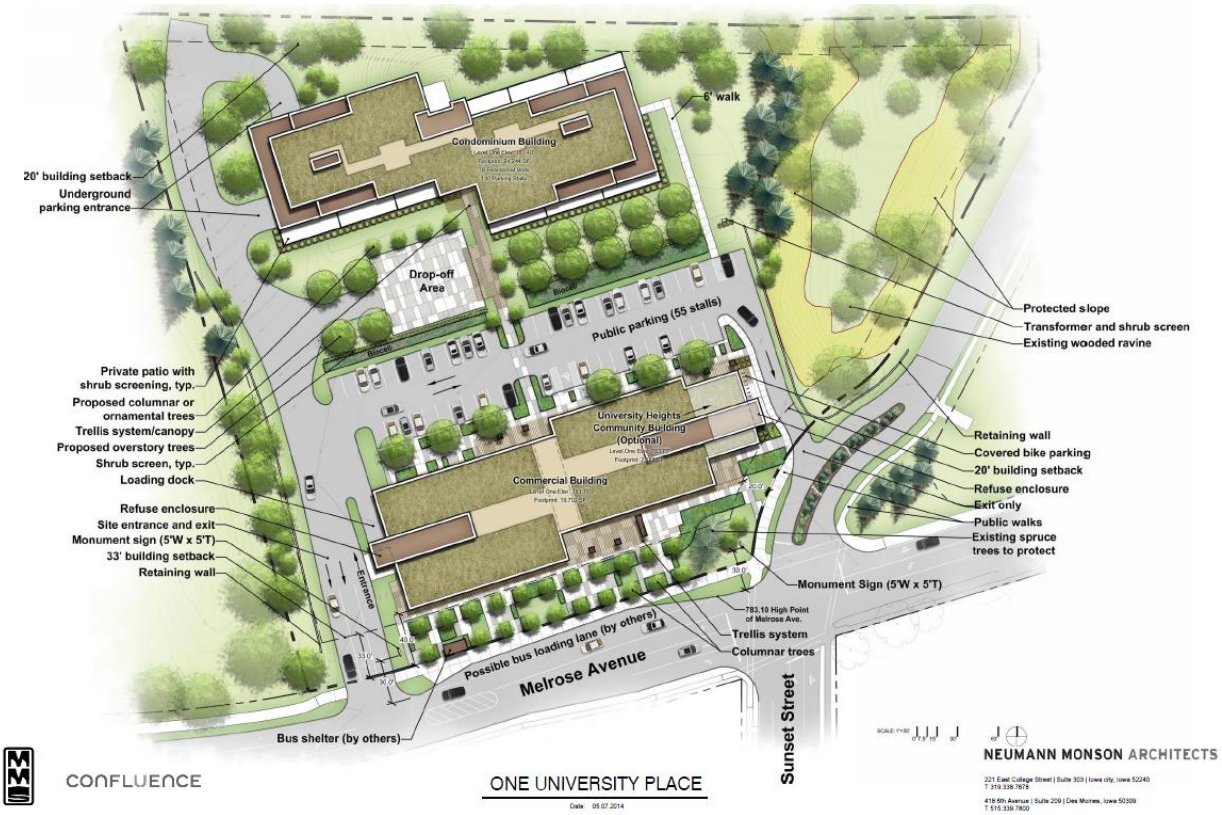
Transportation and Traffic Circulation: Melrose Avenue (near the subject property) is congested at peak travel times with an Average Daily Traffic (ADT) of 13,000 in 2010 (Iowa DOT). In 2010, Melrose Avenue operated at a Volume to Capacity (V/C) ratio of 0.80 -1.2 (2012 MPOJC Long-Rang Transportation Plan). Corridors exhibiting V/C ratios of 1.0 or greater are considered to be functioning over capacity and are congested to some degree during peak travel periods.

Melrose Avenue / Sunset Street Intersection (looking north)

Based on information provided in the PUD, the amount of traffic generated by the new development could exceed 1,000 vehicles per day. This number is based on the assumption that the development will include 78 condos, 3,000 square feet of restaurant space, 4,000 square feet of convenience market space, 2,000 square feet of general office space, 6,000 square feet of specialty retail space, and 4,000 square feet of fitness center space. The current land use, a church, produces 830 vehicles per day on Sundays based on 2010 traffic counts.

Turn Lanes: As proposed in the PUD submittal, staff agrees that a dedicated 100' left-turn lane for eastbound traffic at the main entrance is necessary. This turn-lane will remove turning traffic from the through travel lane and minimize delay to eastbound traffic.

Previous concepts proposed by the applicant restricted left-turning traffic out of the proposed development at the Melrose Avenue access. As can be seen in the proposed site concept illustration below, the applicant is now proposing a full service access where left and right exiting turning movements are permitted. Due to this change, additional traffic modeling was performed to determine the impact of this change to the Melrose Avenue access as well as the Sunset Street / Melrose intersection.



Proposed Site Concept Illustration

Traffic Signal Analysis: A planning-level traffic signal warrant analysis was completed and shows that without a traffic signal at the main entrance to the development, southbound exiting traffic from the development would experience lengthy delays in the PM peak travel hour (see attached memorandum). Although the proposed southbound left-turning movements will experience lengthy delays, queuing traffic will be on private property and should not affect mainline movements. The main source of concern when excessive delays are anticipated is that motorists become frustrated and can exhibit unsafe driving behaviors which can create safety concerns within the public right-of-way. Staff anticipates that much of this delay will 'self-correct' as motorists choose to exit the development at the Sunset/Melrose intersection – taking advantage of the signalized / controlled environment. While it was determined that the development-generated traffic added to the system would not satisfy the requirements for a traffic signal to be installed, approximately 20-30 more vehicles exiting the development during the PM peak travel hour would satisfy a single traffic signal warrant. *The MUTCD has 9 warrants that can be met to indicate the need for a traffic signal; meeting one warrant does not mandate that a signal be installed.*

Given that this analysis is based on a set of assumption for how the commercial building will be utilized, and that those assumption will likely change based on actual tenants that will occupy the building, staff recommends revisiting this study at full 'build-out' of the development to analyze the need for a traffic signal or other traffic engineering improvements at the main entrance to the development.

Note: If development occurs to the north of the subject property, and shares the same access onto Melrose Avenue, a reevaluation of intersection operations and potential for necessary infrastructure improvements should be triggered.

Sunset Street / Melrose Avenue Intersection: From a transportation planning perspective it would be beneficial to realign the north leg of the Sunset intersection as shown in the proposed site concept illustration. Given that the existing geometry of the intersection is skewed, visibility for both motorists and pedestrians is reduced; therefore decreasing overall safety at the intersection. Specifically, the north leg of the intersection (Sunset Street) veers to the northeast at approximately 45 degrees, instead of the more desirable 90 degrees as proposed. Realigning the intersection as proposed in the PUD would also eliminate the need for the current split-signal phasing for north and southbound movements at the Sunset Street / Melrose Avenue traffic signal. These modifications would allow for additional 'green-time' for eastbound and westbound motorists during peak travel hours thereby reducing the overall vehicle delay experienced and increasing the level-of-service of the intersection.

As shown in the site concept illustration, the PUD proposes that the access onto Sunset Street function as an 'exit only'. This restriction is likely to be viewed favorably by neighborhood residents as it will eliminate cut-through traffic on Grand Avenue.

The addition of a dedicated left-turn lane at the Sunset Street / Melrose Avenue intersection as proposed is not necessary from an intersection level-of-service perspective. However, the turn lane may be necessary for proper alignment of lanes and

intersection geometry and should be further evaluated by the City Engineer.

Sidewalks: Constructing an 8' wide sidewalk on the south frontage of the development as proposed in the PUD is consistent with the wide-sidewalk recently constructed along Melrose Avenue east of the development. The site concept illustration on page C-101 of the PUD shows where sections of the 8' wide sidewalk are proposed to be constructed immediately adjacent to Melrose Avenue. American Association of State Highway and Transportation Officials (AASHTO) guidance notes that the buffer width (green space) between an arterial corridor and the adjacent sidewalk should be a minimum of 5 ft. (*Guide for Planning, Design, and Operation of Pedestrian Facilities* - Page 59). This minimum buffer is provided to improve pedestrian safety and to allow space for snow storage, utility poles, signs, trash pick-up, and streetscaping. If the minimum recommended buffer cannot be achieved, staff recommends investigating alternative solutions.

In regards to the site plan, staff recommends constructing a sidewalk adjacent to, and the length of, the main access drive. Such a sidewalk would allow pedestrians traveling from the west direct access to the residential building at the rear of the lot and to any future development on the property north of the subject parcel. Staff also recommends University Heights discuss constructing a sidewalk along the west side of Sunset Street, north of Melrose Avenue if desired.

Transit: City officials should discuss the desire to include a bus pull-off in the final design of the development - as shown in the PUD materials. If desired, the City should require the pull-off to be constructed to Iowa City Transit standards as they are the authority that would provide service to the stop. Similarly, a discussion on the necessity of the bus shelter should also be vetted. Plans for such amenities, and the agreement for cost/maintenance, would be included in the Developers agreement.

Lighting: Lighting is a 'negative externality' that can be obtrusive to surrounding residents. University Heights representatives should request that any and all light fixtures on the site be downcast and shielded to not allow more than one foot-candle of light spillage beyond the property line. One foot-candle is a widely used measurement of light, and is approximately the amount of light given by a full moon at night. Planimetric maps showing the amount of lighting on the property should be requested of the developer.

The architect has indicated that while the exterior lighting concepts have not been developed at this time, very stringent requirements will be adopted as part of the developer's agreement. Such an agreement would read as follows:

"Design exterior lighting so that all site and building-mounted luminaires produce a maximum initial illuminance value no greater than 0.10 horizontal and vertical footcandles at the site boundary and no greater than 0.01 horizontal footcandles 10 feet beyond the site boundary. Document that no more than 2% of the total initial designed fixture lumens (sum total of all fixtures on site) are emitted at an angle of 90 degrees or higher from nadir (straight down)."(U.S. Green Building Council).

Signage: Another thing to consider is the size and style of the commercial signage used. Large signs, illuminated signs, and flashing or blinking signs can significantly detract from the residential feel of Melrose Avenue. University Heights representatives will want to request that details of the size, illumination, and animation of signs on the site be included in the Developer's Agreement and/or Condominium Declaration. The current PUD shows the use of two ground-mounted 5'x5' monument type signs near the southeast and southwest corners of the property. MPO staff is available to provide examples of signage restrictions for commercial signs in residential areas upon request.

Hours of Operation: While University Heights cannot dictate all uses of the commercial property (any use allowed in the Multiple-Family Commercial Zone in the adopted Zoning Ordinance would be allowed), you may restrict the hours of operation of the site to mitigate against any late-night noise issues. While the site is well buffered to the northeast and west, there are residential properties on the south side of Melrose Avenue and on the east side of Sunset Street. If noise from commercial activities is a concern, University Heights will want to discuss with the developer hours of operation, outdoor seating for restaurants, cafes, or bars, exterior loudspeakers and/or other noise creating elements. Any restrictions to these elements of the development should be enumerated in the Developer's Agreement or Condominium Declaration.

Utilities: The University Heights City Engineer will need to ensure that utilities are adequate for the proposed development. Adequate water pressure, sewer capacity, storm sewer capacity and electrical and gas services should all be included in such a review. If existing utilities are not adequate, University Heights officials will need to discuss what upgrades to the system, if any, will be required of the developer.

Fire and Police Protection: The University Heights Police Department and the Coralville Fire Departments should be consulted as to their capabilities to provide protection to the proposed development. Both provided letters indicating they were able to provide protection to this property and could do so with the current capacity of their departments during the initial PUD application in April 2011.

Developer's Agreement: The Developer's Agreement is a legally binding document that typically includes items such as: descriptions of property (including covenants, easements, and restrictions), final plans and specs, construction/phasing timelines, condominium declarations, dedications, maintenance agreements, agreements for costs to be incurred by the developer, environmental requirements, assurances against damage to publicly owned property, and other items related to the development.

The City should require that the developer prepare the agreement for review by the University Heights City Attorney.

SUMMARY:

In summary, the following points should be considered as part of the development review process, it will be important to articulate to the developer what elements of the proposal are appropriate. These are staff recommendations for University Heights City Council consideration.

- The subject property exhibits several steep, critical and protected slopes, as indicated in the adopted Sensitive Areas Ordinance, which should be protected. Grading plans and tree protection plans should be reviewed by the University Heights' Engineer.

- Any storm water retention required of the development should be identified by the City Engineer. Plans to manage storm water should be provided by the developer.

- City officials will want to articulate early in the process if the City has interest in pursuing the optional community space identified at the east end of the commercial building. If the City has interest in pursuing this idea, the developer will need to know how the space is intended to be used so that the general construction of the building can accommodate the finished space envisioned by the community.

- The PUD indicates that dumpsters will be kept in enclosures at the east and west ends of the commercial building and that all mechanical units will be within the building and/or on the roof so not to disturb/detract from the neighborhood. It is unclear where the dumpsters will be located in the residential building.

- The PUD indicates that that truck deliveries will take place at a loading dock the west end of the commercial building. Additional vegetative or 'hard' screening may be desired to limit visibility of the loading dock.

- The University Heights Engineer should confirm that the appropriate utilities are available to support the development. If they are not sufficient, the Engineer should identify what utilities will need to be improved and at what cost to the City.

- The construction of a dedicated left-turn lane for eastbound traffic at the property entrance as proposed, and correcting the skewed geometry of the Melrose Avenue/Sunset Street as proposed by the developer are viewed favorably from a traffic engineering perspective. Both of these measures will decrease delay for through traffic on Melrose Avenue and increase the level of service at those intersections.

- Staff recommends revisiting the traffic study at full 'build-out' of the development to analyze the need for a traffic signal or other traffic engineering improvements at the main entrance to the development. Provision of this traffic signal (and/or other improvements) may be a requirement of development approval or may be part of the developer's agreement to be installed with agreed-upon traffic conditions. If

development occurs to the north of the subject property, and shares the same access onto Melrose Avenue, a reevaluation of intersection operations and potential for necessary infrastructure improvements should also be triggered.

- Disallowing entering traffic and left-turning traffic out of the development onto Sunset Street will eliminate cut-through traffic on Grand Avenue and will likely be viewed favorably by the neighborhood to the east of the PUD.

- The construction of an 8' sidewalk on south frontage of the property as proposed in the PUD submittal will be advantageous for bicyclists and pedestrians. A sidewalk on the west side of Sunset Street north of Melrose would also be advantageous from a traffic engineering perspective and should be discussed by City officials.

- Staff recommends that a sidewalk be constructed adjacent to the main access drive. This will provide direct access to the residential building for pedestrians traveling from the west and provide future access to the University owned parcel north of the subject PUD.

- Although the rear building is proposed to be much taller (76') than the building fronting Melrose Avenue (24'), the perceived heights of the buildings may not appear as such depending on the viewer's vantage point. Computer generated images of the site could address these perceptions by showing the proposed buildings in concert with proposed grading, set-backs, trees, and view sheds from adjacent properties. University Heights officials will want to discuss whether the techniques (setbacks, terracing, rooflines, and landscaping) for minimizing the mass and scale of the buildings are adequate for the property.

- University Heights representatives should request to see additional examples of the proposed construction materials before finalizing the development approval process.

- We recommend University Heights representatives request that any and all light fixtures on the site be downcast and shielded to not allow more than one foot-candle of light spillage beyond the property line. Planimetric (lighting impact) maps should be produced.

- University Heights representatives should discuss with the developer the appropriate size, illumination, and animation of any signs on the site. Current plans identify two 5'x5' monument signs to be erected on the property. These items should be enumerated in the Developer's Agreement.

- University Heights should discuss with the developer hours of commercial operation, outdoor seating for restaurants, cafes, bars or balconies, and/or exterior loudspeakers or other noise creating elements. These items should be enumerated in the Developer's Agreement.

- Inclusion of plans for a bus pull-off and shelter in the PUD should be discussed by the City Council. The cost and maintenance agreements for the amenities should be outlined in the Developer's agreement.

Conclusion and Standards for Approval: We find that the proposed development is substantially consistent with the zoning criteria adopted for this parcel (Ordinance No.180) in terms of height, density, setbacks, parking, number of units, and residential and commercial square footage.

Other standards for approval should include: final plans and specifications, construction/phasing timelines, condominium declarations, dedications, maintenance agreements, agreements for costs to be incurred by the developer, environmental requirements, assurances against damage to publicly owned property, and other items related to the development. These items should be enumerated in the Developer's Agreement and/or other documents for the City of University Heights.

Metropolitan Planning Organization of Johnson County

Date: May 23, 2014

To: University Heights City Council

From: Kent Ralston; Acting Executive Director

Re: One University Place - Updated Traffic Analysis

Background

This analysis is an update to the technical memorandum performed by Shive-Hattery (dated May 23, 2011) and submitted to the MPO and University Heights City Council. This update uses the most recent data available with respect to the residential and commercial components of the proposed development and provides a review of traffic operations at both the Melrose/Sunset and Melrose/Main Entrance intersections as they relate to the One University Place development (**Figure 1**).

The following assumptions are used for the analysis:

- The main entrance to the development includes both left and right turn lanes for exiting traffic and one lane for entering traffic
- The driveway north of Melrose on Sunset Street (shown in Figure 2) is for exiting traffic only; and the realignment of Sunset Street improves intersection operations by allowing for improved traffic signal operations
- 100% of *entering* traffic uses the Main Entrance – 50% from the east, 10% from the south, and 40% from the west
- 80% of the *exiting* traffic uses the Main Entrance – 50% to the east, 10% to the south, and 40% to the west
- 20% of the *exiting* traffic uses the Sunset exit only drive – 50% to the east, 10% to the south, and 40% to the west

Figure 1 - Development Site

Figure 2 - Proposed Site Plan

Table 1 shows the estimated traffic generated by the proposed development. Projected trips to and from the development were calculated using the Institute of Traffic Engineers (ITE) Trip Generation manual 7th Edition.

Table 1 – Estimated Trip Generation

Land Use (ITE code)	Leasable Area (1,000 SF)	Dwelling Units	Average Rate	Vehicle Trips
Residential Condominium / Townhouse (230)				
Average Daily Traffic (50% in / 50% out)	-	78	5.86	228 in 229 out
AM Peak Hour (17% in / 83% out)	-	78	0.44	6 in 28 out
PM Peak Hour (67% in / 33% out)	-	78	0.52	27 in 14 out
Quality Restaurant (931)				
Average Daily Traffic (50% in / 50% out)	3.0	-	89.95	135 in 135 out
AM Peak Hour (82% in / 18% out)	3.0	-	0.81	1 in 1 out
PM Peak Hour (67% in / 33% out)	3.0	-	7.49	15 in 7 out
Convenience Market (852)				
Average Daily Traffic (50% in / 50% out)	4.0	-	*	-
AM Peak Hour (50% in / 50% out)	4.0	-	31.02	62 in 62 out
PM Peak Hour (49% in / 51% out)	4.0	-	34.57	67 in 71 out
General Office (710)				
Average Daily Traffic (50% in / 50% out)	2.0	-	11.01	11 in 11 out
AM Peak Hour (88% in / 12% out)	2.0	-	1.55	2 in 1 out
PM Peak Hour (17% in / 83% out)	2.0	-	1.49	1 in 2 out
Specialty Retail (814)				
Average Daily Traffic (50% in / 50% out)	6.0	-	44.32	133 in 133 out
AM Peak Hour (44% in / 56% out)	6.0	-	6.84	18 in 24 out
PM Peak Hour (44% in / 56% out)	6.0	-	2.71	7 in 9 out
Fitness Center (492)				
Average Daily Traffic (50% in / 50% out)	4.0	-	*	-
AM Peak Hour (42% in / 58% out)	4.0	-	1.21	2 in 3 out
PM Peak Hour (51% in / 49% out)	4.0	-	4.05	8 in 8 out
Total AM Peak Hour	-	-	-	91 in 119 out
Total PM Peak Hour	-	-	-	125 in 111 out

*Data not available

Intersection Capacity Analyses

To complete the level-of-service (LOS) analysis at the intersections adjacent to the proposed development, the estimated trip generation figures from Table 1 were added to the existing peak hour traffic data and modeled using Synchro Software. The Sunset/Melrose intersection was modeled with and without a proposed dedicated eastbound left-turn lane to see how the intersection would function under either scenario – this additional analysis was completed as the left-turn warrant at this location is *not* met, but is very close to being met in the PM peak (**Figure 4**).

Figure 3
Sunset / Melrose AM Peak Hour Left-Turn Lane Warrant (L= % of Left-Turns in Advancing Volume) Not Warranted

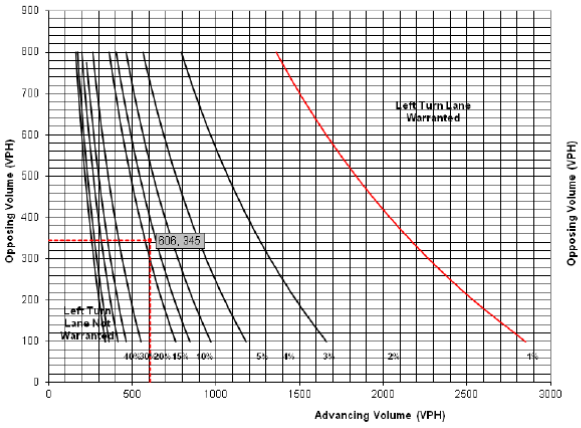
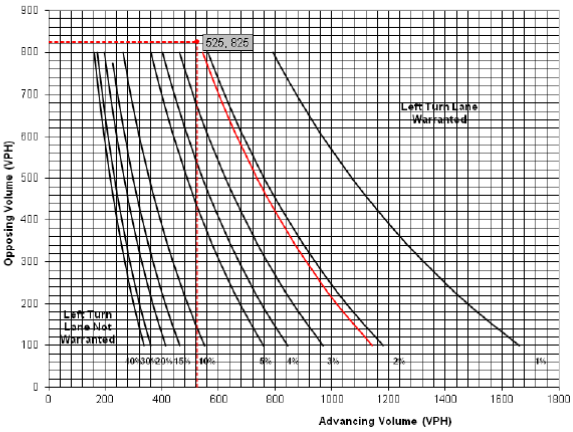


Figure 4
Sunset / Melrose PM Peak Hour Left-Turn Lane Warrant (L= % of Left-Turns in Advancing Volume) Not Warranted



An eastbound dedicated left-turn lane at the Main Entrance is warranted in both the AM and PM peak hours (**Figures 5 & 6**) and therefore the LOS analysis only includes a scenario with a dedicated left-turn lane. The left-turn lane is warranted during the PM peak period even with a 50% reduction in estimated left-turning residential traffic (accounting for 2006-2010 American Community Survey information shows that 43% of University Heights residents used modes other than private vehicles to get to work).

Figure 5
Sunset / Main Ent. AM Peak Hour Left-Turn Lane Warrant (L= % of Left-Turns in Advancing Volume) **Warranted**

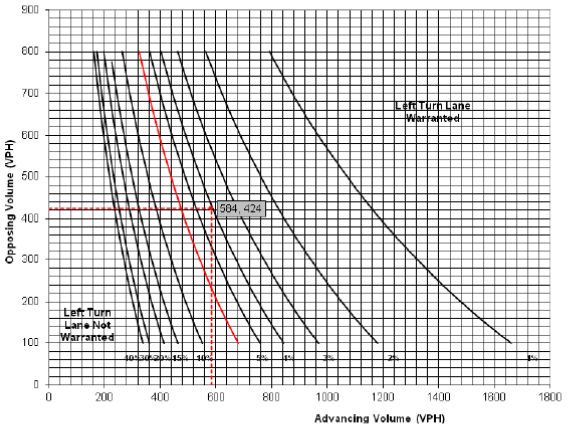
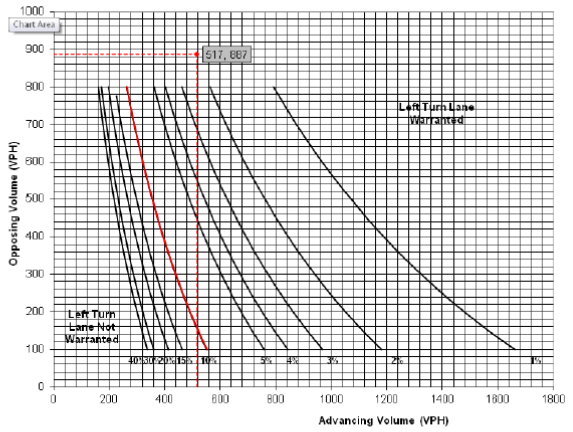


Figure 6
Sunset / Main Ent. PM Peak Hour Left-Turn Lane Warrant (L= % of Left-Turns in Advancing Volume) **Warranted**



Melrose Avenue / Sunset Street Intersection

Existing intersection capacity under signalized conditions was analyzed using Synchro software. Delay and LOS are calculated using the same methodology as unsignalized intersections, but the delay parameters are a little longer. Longer delays are acceptable at signalized intersections because the driver has a longer delay expectancy than at unsignalized intersections. **Table 2** (Synchro Exhibit 16-2) exhibits the LOS with its control delay ranges at signalized intersections. A LOS of A represents the best operating conditions (free-flow movement) and LOS F represents the worst conditions, i.e. extreme congestion and stop-and-go conditions.

Table 2 - Level of Service Criteria for Signalized Intersections

Level of Service	Average Control Delay (s/veh)
A	< 10
B	> 10 - 20
C	> 20 - 35
D	> 35 -55
E	> 55 - 80
F	> 80

Figure 7 shows the level-of-service (LOS) results of both existing and proposed conditions at the Sunset/Melrose intersection. Under existing conditions, the eastbound through movement operates at a LOS F and the southbound through and northbound left-turning movements operate at a LOS E during the PM peak hour – all other movements in the AM and PM peak hours operate at an acceptable level of service of D or better.

Figure 7 – Melrose / Sunset Intersection Operations

Melrose Avenue / Sunset Street												
Direction	Existing Conditions (with split-phase)				Proposed Conditions W/O EB Left-Turn Lane (split-phase removed – add development traffic)				Proposed Conditions With EB Left-Turn Lane (split-phase removed – add development traffic)			
	Control Delay (s/veh)		LOS		Control Delay (s/veh)		LOS		Control Delay (s/veh)		LOS	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Melrose Avenue												
EB thru	19.3	125.1	B	F	21.7	31.6	C	C	22.2	22.4	C	C
- right	15.1	17.0	B	B	11.1	15.6	B	B	11.2	16.2	B	B
- left	-	-	-	-	-	-	-	-	11.0	15.6	B	B
WB thru/right	13.0	39.5	B	D	9.4	38.2	A	D	9.5	32.9	A	C
- left	12.3	12.2	B	B	9.1	10.6	A	B	9.2	10.1	A	B
Sunset Street												
NB thru/right	39.6	28.2	D	C	27.1	22.0	C	C	26.6	22.0	C	C
- left	44.4	60.3	D	E	35.2	42.6	D	D	34.2	42.6	C	D
SB	48.5	80.0	D	E	26.8	22.0	C	C	26.3	22.0	C	C

When comparing existing to proposed conditions, the LOS of all movements improves to a LOS D or better; with the scenario including an eastbound left-turn lane showing slight advantages over the scenario without the addition of an eastbound left-turn lane. Both 'proposed conditions' scenarios show improvement to the LOS of the intersection (even with the addition of development traffic) primarily as a result of the elimination of the split-signal phasing for the north and southbound movements.

The removal of the split-phase also reduces the eastbound AM peak hour traffic queue from approximately 625' to 450' – the main entrance to the development would be blocked when the queue reaches approximately 400'. The elimination of the split-phase becomes possible due to the realignment of the north leg of Sunset Street and the removal of the skewed geometry currently present.

Melrose Avenue / Main Entrance Intersection

Existing intersection capacity was analyzed using unsignalized intersection capacity analysis methods outlined in the latest edition of the Highway Capacity Manual (HCM) and using Synchro software. By using HCM methods, control delay is calculated as seconds of delay per vehicle and a corresponding level of service (LOS) is also shown. Level of service describes operating conditions based on a number of factors including speed and travel time, freedom to maneuver, traffic interruptions, and comfort & convenience. Table 6 (Synchro Exhibit 17-2) exhibits the LOS with its control delay ranges at two-way stop-controlled intersections. A LOS A represents the best operating conditions (free-flow movement) and LOS F represents the worst conditions, i.e. extreme congestion and stop-and-go conditions.

Table 3 - Level of Service Criteria for Stop-Controlled Intersections

Level of Service	Average Control Delay (s/veh)
A	0 - 10
B	> 10 - 15
C	> 15 - 25
D	> 25 - 35
E	> 35 - 50
F	> 50

Figure 8 shows the level-of-service (LOS) results of both existing and proposed conditions at the Melrose / Main Entrance intersection. Under both existing and proposed conditions, all east and westbound movements experience negligible delay of less than 12 seconds per vehicle. However, southbound left-turning movements experience lengthy delays under existing and proposed conditions at a LOS E (39.9 sec/veh) and LOS F (155.6 sec/veh) respectively.

Figure 8 – Melrose / Main Entrance Intersection Operations

Melrose Avenue / Main Entrance								
Direction	Existing Conditions				Proposed Conditions with EB Left-Turn Lane & add development traffic			
	Control Delay (s/veh)		LOS		Control Delay (s/veh)		LOS	
	AM	PM	AM	PM	AM	PM	AM	PM
Melrose Avenue								
Eastbound thru	0.0	0.0	A	A	0.0	0.0	A	A
- left	8.2	10.4	A	B	8.5	11.5	A	B
Westbound thru	0.0	0.0	A	A	0.0	0.0	A	A
- right	0.0	0.0	A	A	0.0	0.0	A	A
Main Entrance								
Southbound right	10.7	18.0	B	C	11.4	21.6	B	C
- left	19.6	39.3	C	E	30.2	155.6	D	F

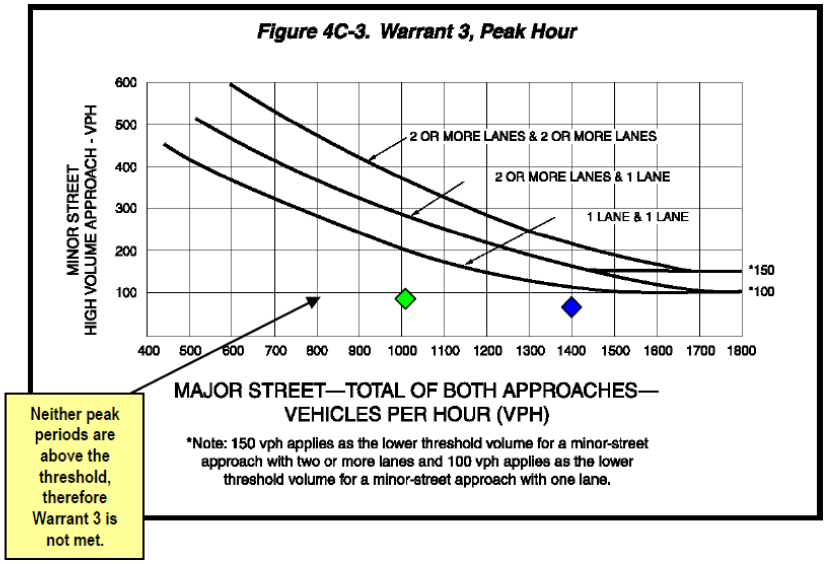
Although the proposed southbound left-turning movements will experience lengthy delays, queuing traffic will be on private property and should not affect mainline movements. The main source of concern when excessive delays are anticipated is that motorists become frustrated and exhibit unsafe driving behaviors which can create safety concerns within the public right-of-way. Staff anticipates that much of this delay will 'self-correct' as motorists choose to exit the development at the Sunset/Melrose intersection – taking advantage of the signalized / controlled environment.

To evaluate whether a traffic signal is warranted at the 'main entrance' intersection we utilize peak hour trip generation figures from Table 1 and apply them to the Manual on Uniform Traffic Control Devices (MUTCD) peak-hour signal Warrant 3. As shown in Figure 9, using our current assumptions, a signal is not warranted in either the AM or PM peak hour. For a traffic signal to become warranted there would need to be an additional (approximate) 105 vehicles exiting in the AM peak hour and approximately 22 additional vehicles exiting the development in the PM peak hour. However, if assumptions on commercial uses should change, a signal may become warranted upon 'build-out' of the development – the signal analysis should be updated at that time.

Figure 9 – MUTCD Peak Hour Signal Warrant #3

Warrant 3, Peak Hour Melrose Avenue / Main Entrance							
Main Entrance		Melrose Avenue Entering Traffic		Warranted?		Legend	
AM	PM	AM	PM	AM	PM	AM	PM
95	88	1005	1399	No	No	◆	◆

Figure 10 – Peak Hour Signal Warrant & Observed Volumes



Bicycle, Pedestrian and Transit Accommodations

Pedestrian Level-of-Service

While not included in this analysis, staff intends to perform a pedestrian level-of-service evaluation at the Melrose/Sunset intersection. This analysis will provide information as to the level-of-service that pedestrians can expect to receive upon completion of the proposed improvements at the intersection – including the removal of the split-phase signal phasing as a result of the realignment of the north leg of Sunset Street. Staff will submit this evaluation to the City of University Heights upon completion.

Bicycle Accommodations

It is assumed that the existing wide-sidewalk on the north side of Melrose Avenue will remain – connecting to the existing wide-sidewalk to the east and west of the subject parcel. This wide-sidewalk is a critical piece of infrastructure given the pedestrian/bicycle activity in the area (2006-2010 American Community Survey information shows that 43% of University Heights residents used modes other than private vehicles to get to work).

While it is not feasible to add bike lanes to Melrose Avenue west of Sunset Street (the current street width is 28'), consideration should be given to the use of 'shared-lane arrows'. The MPO will be conducting a future analysis of the feasibility of adding on-street bike facilities on Melrose Avenue through University Heights as part of the MPO FY15 Work Program. As is the case, consideration should be given to on-street bicycle facilities if/when street improvements are made as part of the St. Andrew Presbyterian Church site redevelopment.

Transit

Bus movements/stops are infrequent in nature and do not typically cause measureable delay with respect overall level-of-service. While a bus pull-off is not necessary at this location, it should be viewed as an amenity. A bus pull-off does not appear to be included in the most recent concept plans. Staff will further comment on this issue as part of the Planned Unit Development (PUD) staff report.

Conclusions

The following items are based on current assumptions used for this analysis, should assumptions change based on type of commercial tenants or number of residential units, this analysis should be revised.

- A dedicated eastbound left-turn lane *is* warranted at the main entrance to the development.
- A dedicated eastbound left-turn lane *is not* warranted at the Sunset/Melrose intersection.
- A traffic signal *is not* warranted during the AM or PM peak hour at the main entrance to the development[1]. Staff recommends revisiting this study at full 'build-out' of the development to analyze the need for a traffic signal or other traffic engineering improvements.
- A realignment of the north leg of Sunset Street eliminates the need for the existing split-phase signalization. Even with the additional traffic generated by the development, overall intersection level-of-service is improved – this should be viewed favorably by University Heights.
- At the main entrance, southbound left-turning movements experience lengthy delays under proposed conditions at a LOS F (155.6 sec/veh). Staff anticipates that much of this delay will 'self-correct' as motorists choose to exit the development at the Sunset/Melrose intersection.

[1]The addition of approximately 20-30 more vehicles would satisfy the PM peak hour warrant. The MUTCD has 9 warrants that can be met to indicate the need for a traffic signal; meeting one warrant does not mandate that a signal be installed.