



Date: November 5, 2010

To: University Heights City Council

From: John Yapp; Executive Director  
Kent Ralston; Assistant Transportation Planner

Re: Proposed Rezoning of St. Andrew Presbyterian Church Property

At your October 12, 2010 City Council meeting you requested updated trip generation figures for the proposed One University Place PUD as well as some investigation into potential designs for the Sunset Street / Melrose Avenue intersection that could increase overall intersection safety while minimizing impacts to the adjacent ravine north of the intersection.

### **Trip Generation**

To estimate trip generation for any new development, staff uses the Institute of Transportation Engineers (ITE) Trip Generation manual (7<sup>th</sup> edition volumes 2 & 3). The manual contains estimated trip generations based on real world trip generation studies. We used the following assumptions from the ITE Trip Generation Manual based on information provided to us regarding the proposed development.

- 5.86 trips/day per dwelling unit – This is the figure provided by ITE for *Residential Condominiums/Townhouses*
- 89.95 trips/day per 1,000 sqft – This is the figure provided by ITE for a *Quality Restaurant*
- 44.32 trips/day per 1,000 sqft – This is the figure provided by ITE for *Specialty Retail Centers*

Using information from proposed ordinance #180 and detail from the preliminary One University Place site plan, a development on the property in question would generate between 1,405 and 1,538 trips/day.

Please keep in mind that these trip generation figures are approximate and are only as good as the data we are provided. When provided with more information about the types of commercial tenants we will be better able to provide more accurate trip generation forecasts.

It should also be noted that there is existing traffic being generated from the St. Andrew Church property which puts the One University Place traffic generation into perspective. JCCOG counts collected the weekend of October 30<sup>th</sup> show an average daily traffic (ADT) of 694 on Saturday (Iowa home football game) and an ADT of 830 on Sunday. Counts collected November 2-5 (72 hours) show an ADT of 407.

### **Intersection Design**

Several design options for the Sunset Street / Melrose Avenue intersection have been discussed during the rezoning process for the St. Andrew Church property. The discussion has been centered on the need to realign the north leg of the intersection if/when the St. Andrew Church property is redeveloped as recommended by JCCOG. The original recommendation was intended to eliminate the skew of the north leg of the intersection to increase motorist and pedestrian safety.

There is also a desire to protect the wooded ravine on the east side of the property as much as possible. We have been evaluating several intersection design options, and will have alternatives to present to the Council during the site plan consideration process. Alternatives that we have considered include:

- A. No Change - Although not advisable from a traffic engineering perspective, the existing alignment could remain unchanged. The benefit of the current alignment is that the ravine to the north of the intersection would not be disturbed. However, as it currently exists, the skew of the intersection makes the intersection more dangerous and operate less efficiently.
- B. Five-Leg Design – A five-leg intersection design was discussed at your October 12, 2010 meeting. This design creates more conflict points for motorists and pedestrians than currently exists and decreases the safety of the intersection as a whole. This design would not correct the existing skew and would be seen as less favorable than the existing design.
- C. Sunset Street Cul-De-Sac – The elimination of the north leg of Sunset Street at the Melrose Avenue / Sunset Street intersection has been discussed. This option would create a cul-de-sac just south of 104 Sunset Street that would eliminate access to/from Melrose Avenue at the existing intersection with Sunset Street. This option would reduce cut-through traffic in the neighborhood north of Melrose Avenue and would eliminate the need to realign this portion of Sunset Street as the issue with the skewed geometry would no longer exist. However, this option is not advisable as it would shift *all* the neighborhood traffic to the intersection of Golfview Avenue / Melrose Avenue – inflating traffic volumes adjacent to neighborhood homes near the intersection. This option would also only provide one means of access to/from the neighborhood which would limit accessibility for emergency responders. This option would also eliminate the opportunity to provide a second access to/from a development on the St. Andrew Presbyterian property.
- D. Realignment of Sunset – Realigning the north leg of Sunset Street would be viewed favorably from a traffic engineering perspective. If the intersection is realigned the skewed nature of the intersection can be eliminated making the intersection safer for both motorists and pedestrians. Investigation completed by Shive-Hattery staff also shows that realigning the intersection would provide the opportunity to eliminate the ‘split-phase’ signalization that currently exists. This would allow the intersection to operate much more efficiently and decrease overall intersection delay for motorists and pedestrians.

After reviewing the realignment of the north leg of the intersection shown in the proposed PUD, both Shive-Hattery and JCCOG staff believe that the realignment could be accomplished using a much less aggressive design. Using the minimum radii allowed per statewide urban design standards, much of the ravine north of the intersection could be preserved.

- E. Sunset Street Access – After reviewing trip generation figures, staff feels it may be possible to restrict the access drive to Sunset Street for exiting traffic only. Restricting this access for exiting traffic would minimize the affects of ‘cut-through’ traffic on the neighborhood north of Melrose Avenue while still providing a controlled environment for left-turning traffic out of the development at the Sunset Street / Melrose Avenue intersection. Allowing left-turns out of the development from the main access onto Melrose Avenue is not advisable given the amount of existing traffic using the Melrose Avenue corridor. Maintaining a second access onto Sunset Street would also provide a second means of access for emergency response vehicles.

- F. Roundabout – Shive-Hattery and JCCOG staff investigated the feasibility of constructing a roundabout at the Sunset Street / Melrose Avenue intersection. The benefits of this option are that it may eliminate the need to realign the north leg of Sunset Street since visibility issues created by the existing skew would be minimized (southbound left-turns would no longer be permitted). Delay would likely be minimized for all motorists, and severity of collisions would be minimized due to the elimination of broadside and head-on accidents.

The drawbacks of a roundabout at this location is that they are typically more land-consumptive than traditional intersection designs, and they are typically not as pedestrian friendly in that traffic circulation never stops as it does at a signalized intersection – often creating more delay for pedestrians during peak travel hours.

We will be available at the November 9, 2010 City Council meeting to answer any questions you may have.