



City of Walker

Scott C. Conners, P.E. City Engineer

MEMORANDUM

TO: Frank Wash, AICP, Planning Director

FROM: Scott C. Conners, P.E, City Engineer

DATE: September 13, 2006

RE: Orchard Park Planned Unit Development

Staff has facilitated a number of meetings to review the proposed Orchard Park PUD. Those meetings have included 5 specific working groups to review engineering related issues. Those working groups are as follows:

- Street Network / Connectivity
- Traffic Study / Traffic Impacts
- Sanitary Sewer & Watermain
- Stormwater / Environmental
- Pedestrian / Bike Access / Walkability

Meetings for the staff working groups took place during the week of August 21st. We then followed up with meetings with the developer to review the issues brought up in the staff review. The developer meetings took place over a 2 day period from August 31st to September 1st. In the following paragraphs we will list all the concerns brought forward during the working group meetings along with a color coded response from the developer meetings. Answers in Green imply that the issue is largely resolved. Blue answers correspond to issues that are ongoing and may be too early to resolve with this preliminary plan. Answers in Red should be reviewed carefully. These are the issues that will require very careful analysis as we move forward. The color coded comments should provide a quick reference for planning commissioners as they begin to take on this very complicated project.

The latest version of the plans and design standards book arrived at city hall yesterday (9/12/06) so this report may not address all the issues and revisions contained within the plan. It should, however, provide a good basis for a preliminary site plan review. I'll also be in attendance at the Planning Commission to engage in the discussion.

Street Network and Connectivity

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- City should have large amount of input into design of all public streets in complex. The developer does not seem to have a problem with this requirement. The difficulty will be in negotiating a contract whereby the City takes control of the final design and construction of the critical infrastructure. This negotiation will need to be coordinated into the final area site plan conditions.
- Square-up Bristol/4 Mile intersection
 - Move north side of Bristol to east. This was discussed extensively and the developer was aware that this improvement will be a requirement of any plan approval. This change will be necessary to facilitate signalization at this location.
- Square-up Walker/4 Mile intersection
 - Based upon need for signalization
 - Need proper site distance to/from top of hill
 - Pete to provide sketch. This was discussed extensively and the developer was aware that this improvement will be a requirement of any plan approval. The actual realignment, however, may only require a slight realignment to the east of the existing intersection. It does not make sense, at this early point, to require a radical realignment to the east that will create a disjointed connection between Walker Avenue north and south of Four Mile Road.
- Baumhoff needs to be straightened-out or connected to west end of loop road
 - If connected to west end of loop road, loop road should be made public
 - Public designation required due to amount of traffic. The group had a very positive discussion resulting in a new alignment that was generally acceptable to all parties involved in the workgroups.
 - Add dedicated left turn lanes on NB and SB Bristol at 4 Mile, complex access points on 4 Mile, and SB Baumhoff at 4 Mile. This was discussed extensively and the developer was aware that this improvement will be a requirement of any plan approval. They agreed on the necessity and explained that successful operation is an essential part of a successful development.
- Address distance from east end of loop road to Bristol/Northridge intersection in greater detail
 - Distance needs to be adequate for stacking and allow for safe turn movements. The distance actually is greater than what the working group initially thought. The developer will keep this concern in mind as they fine tune the proposed road network.
- Concerns with number and types of access points on Walker and 4 Mile. The August version of the plan showed several additional driveways. The total number of access points is still reasonable if they are designed correctly. More attention needs to be paid to that detail as the project moves forward.
- Roundabouts should be strategically located
 - Consider adding one at north access point on Walker and one at east side of loop road. The intersection of Walker and Northridge is a point of concern. The developer will continue to explore the most appropriate geometry for this key

- intersection. Staff will need to review this location closely and relate the proposed volumes to a practical and functional entrance to the Orchard Park development.
- Consider linking Dreamscapes medical complex with Northridge
 - Only if positive connectivity is achieved. This is a difficult item to address. Both the developer and the working group believed that a secondary type access to this area was the best solution for connectivity. A secondary access would be a connection by way of cross access agreement or private service road at the south portion of the Orchard Park site. It will be difficult to coordinate a public road access through the Dreamscapes site without encouraging uncontrollable cut through traffic headed to the Orchard Park area.
 - Northridge/Bristol intersection needs to be at a location that will allow for expansion of Northridge to 4 Mile/Cordes. The developer expressed that they have picked the proposed alignment carefully. The alignment is based on wetland location, topography, and property lines. As the project moves forward we will validate this alignment and coordinate the review with the developer of the English Hills PUD.
 - Northridge from Bristol to 4 Mile/Cordes needs to be built during Orchard Park development
 - This could be done by the developer to east, by the city, or coordinated as part of a coordinated effort between both developers. Staff will need to urge the Planning and City Commissions to consider this carefully. The working group believes that it is necessary to force this roadway connection east in order to complete the vision of a Northridge extension. If this development is approved, the City should be prepared to cause this extension to be completed using a construction agreement, special assessment district or other mechanism to ensure project success. The favored solution would be a coordinated project as part of the Orchard Park development. There are many details to work out with this concern.
 - Northridge/Cordes/4 Mile intersection needs to address left turn movements into condos and future office
 - Possible location of roundabout or boulevard with Michigan left. All parties agree that this is necessary for safety.

Traffic Study and Traffic Impacts

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(follow up comments on this issue will be provided by Pete LaMourie, P.E.)

- Metro has advised us that the land uses/sizes and the site access has changed since this June report was completed and new future conditions data will be submitted soon. The focus at this point in the process is more macro in nature in any case so this initial June data is still helpful.
- Overall the study format and process is acceptable. In terms of the future conditions (with the project), the consultant used the trip generation factors and trip distribution percentages defined earlier in the review process.
- The existing conditions analyses weren't surprising, other than the apparent lack of calculated congestion/delay on Bristol at 4 Mile. However, the URS analyses appear to back up this finding.
- There are concerns that improvements recommended for background conditions are more than what may be needed to simply address future no build conditions. The Walker Road/4 Mile intersection may be one example where left turn lanes are recommended along with signalization. Also, it's unclear that the I-96 eastbound off-ramp/Walker intersection will truly warrant a signal under background/no build conditions. The Walker/3 Mile intersection should also be double-checked to make sure a simple phasing/timing change wouldn't address existing and background eastbound left turn problems instead of the proposed dual left (there will be 330 lefts expected to oppose 500 thru/rights in two lanes in the pm peak). The consultant will need to confirm that those improvements are all needed under no build conditions.
- In any case, it was agreed that signalization of the Walker/4 Mile intersection, with its current angled north/south approaches, would not be acceptable. Signalization (eliminating the four-way stop) will require slight realignment of the north and south approaches to provide for safer and more efficient operations.
- In terms of new/revised future build analyses and reports, recommended changes/comments include:
 - Separate left-turn lanes along 4 Mile will need to be assumed in the analyses of site driveways
 - The analyses and report will need to discuss the need for alignment of the two Bristol Road approaches to 4 Mile
 - An additional graphic is needed to better illustrate the trip distribution percentages
 - 11 x 17 fold-out graphics would allow for easier reading of the data
 - Color or other changes would allow to differentiate symbols on those graphics (e.g. signal symbols)
 - Existing signal timing sheet data used should be included in the appendix or provided separately

Sanitary Sewer and Watermain

25 Aug 06

General

- Public utilities within the proposed public road system should be designed and built by the local agency. The preliminary design can be by the developer but the development agreement should allow Walker to oversee the final design and construction of those utilities. **Similar to the public roadway system, we need to incorporate the terms of this construction into a development agreement. The final design and construction must come under city control.**
- Water tank and pressure reducing valve design should also fall under the publicly designed category. **There did not seem to be any concern about the desire of Grand Rapids to control the design and construction of these necessary improvements.**
- Utilities in the southeast corner of the site should also be master planned on the conceptual site plan. Simply showing an arrow is not enough at this time. **The developer agreed that this is an essential part of the preliminary area site plan and are now shown on the plan.**

Sanitary Sewer

- 0.612 MGD is proposed from this facility with this conceptual design. The GR master plan only called for 0.306 MGD. Can some of the flow be directed east to the sewer in Bristol? **It does appear that a substantial portion of this flow can be directed east. Regardless of the boundaries for this service, great care will need to be taken to review total volume proposed and compare to total volume available.**
- It may be necessary for the 18" sanitary trunk sewer (immediately downstream) to be upgraded depending on the final flow calculations. **Black and Veatch will be assisting Grand Rapids in determining the extent, if any, of downstream upgrades required for the proposed flow from this site. The more dense the development, the greater the volume of wastewater flow proposed. This development will be responsible to ensure that they do not cause sanitary sewer capacity issues or reduce the available capacity of other undeveloped properties within the same tributary area.**
- Is there any way to fine tune the anticipated flow by estimating the residential units, hotel sizes, and restaurant seating? **As the project moves forward, the calculations will be fine tuned and incorporated as conditions for final development density.**
- Include detail on residential density in the REU calculations contained in the narrative. **The developer agreed to the importance of this data.**

Watermain

- A water tank will be needed for increased efficiency and fire flow capabilities. The GR master plan calls for a tank somewhere along 4 Mile Road. **At a minimum, the developer will be required to participate in the construction of a new tank at the same cost per acre that was developed during the Dreamscapes project. That amount was \$450 per acre but it will likely have to be increased due to the density and public water requirements of this site. One acre of Orchard**

Park will use substantially more water than one acre of residential property. The developer will have to agree to an equitable formula.

- We may be able to locate the tank on this site if it is desirable. Locating it further west may raise issues with property acquisition and the need for additional watermain to finish the connections. If desired on this site, staff will cause Fishbeck, Thompson, Carr & Huber to review the location with respect to the modeling efforts in the GR master plan. It appears that the developer does not wish to have the tower located on this property. Grand Rapids will have to be engaged to accelerate the site selection and design of an appropriate location in north Walker. This will need to take place immediately following any preliminary plan approval by the Planning Commission.
- The watermain in Northridge (extended) will need to be 16" watermain. Plan changes have been made.
- The 12" watermain within the development is ok for serving those private areas. No problem.
- Wherever the tank is constructed, it must be connected with 16" watermain to this system. This may present a problem with extensions to the future tank location. The further west this tank is located the greater cost of connecting that tank to the system. Again, Grand Rapids will have to be engaged to conduct this review at our earliest opportunity. The cost of the additional watermain is a subject for additional discussion as the City Commission negotiates the terms of the infrastructure improvements.
- The proposed location of the pressure reducing valves should be shown on the plan. The developer agreed to show their proposed location. Those details will need to be coordinated with Grand Rapids Water Department.
- How does the developer intend to irrigate and sprinkle the development? Is there an opportunity for recycling stormwater or will public watermain be the source? Will there be a need for water to supplement the water features in dry months? The developer has not yet determined the source or extent of supplemental irrigation water needed.
- The watermain should be looped to the south property line for connection to the Dreamscape development. This is not yet shown on the plan but should be a minor addition to the final utility plan.

Stormwater and Environmental

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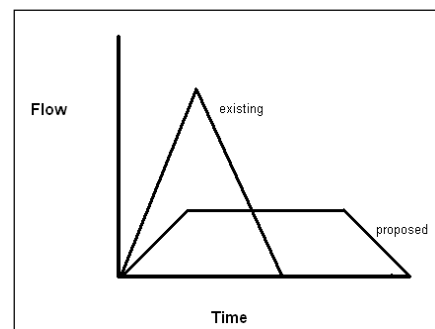
- Overall, the community impact analysis for Orchard Park Development does not provide sufficient detail with regard to items relating to stormwater management, wetlands, soil erosion, grading or earthwork for a detailed review of work proposed. **This will need to be rectified as the plan moves forward to final area site plan review.**

Brownfield

- The developer has requested that the entire 250-acre project be designated as a Brownfield. Preliminary samples have indicated that there are two farm dumps present on the site and arsenic and lead contamination to depths of approximately 18". **These are serious concerns but they will exist whether this development is approved or not. Great care will need to be taken when incorporating brownfield and cleanup issues into the grading plan.**
- The city commission must approve the proposed change to the City Brownfield plan before the area can be designated as a Brownfield and become eligible for the tax capture cleanup funding. Concerns related to cleanup include the eligibility of certain grading, paving and other activities for clean up funding. Specifically, if these items must be completed regardless of Brownfield status, should they be reimbursable under the Brownfield clean up costs. At this time the Brownfield authority is reviewing several conditional approval and phased approval options to limit costs on the Brownfield cleanup to those directly related to clean up of contaminated materials. **This is one of the most pivotal issues related to the plan. It will be necessary for the City Commission and Brownfield Authority to carefully assess the implications of granting official Brownfield assistance. This working group will provide assistance as necessary to help evaluate cost, necessity, and eligibility of various clean up items.**
- Costs associated with Brownfield cleanup, additions to infrastructure including utility, police and fire service must be able to balance with the benefits such a development could bring to the city. **Again, this is a key issue to be discussed but this working group will assess the plans based on engineering and not political or financial implications.**

Stormwater Management

- Concerns regarding the implications of long term extended flow discharges on Indian Mill Creek were discussed. The Engineering department plans to address this through requiring the stormwater management plan to include innovative designs such as bio-swales, rain gardens and pervious pavement. At this time it is unclear how these items will specifically incorporated into the plan. The intent of the stormwater management plan overall is to change the existing conditions of discharge to Indian Mill Creek during which there is a peak discharge to a condition in which the flow remains lower but is stretched out over a longer period of time. This will serve to reduce impacts of the development on Indian Mill Creek. **The developer is exploring some “outside the box” ideas to lesson the impact on Indian Mill Creek. One of those ideas could actually provide regional detention east and south of the site that could be utilized by future developments in the area. This**



idea is still in it's infancy but staff is agreeable to exploring this idea as a way to facilitate drainage from this development. The developer has also agreed to use the innovative technologies mentioned above wherever possible on the site. Discharges from the site will also be reduced from an allowable release rate of 0.13 cubic feet per acre to 0.05 cubic feet per acre in consideration for the existing problems and concerns with Indian Mill Creek.

- In addition to overall discharge, the need for temporary stormwater management was discussed including the use of temporary ponds to address detention needs during the long construction process. A detailed soil erosion and grading plan will be created to show phases and minimize the extent of disturbed area as the site is developed. This design will be required to address both construction related pollution and long term pollution from the developed area.

Mass Grading

- Discussion of mass grading focused on the narrative's use of cells to minimize contamination of unpolluted areas and to assist in phasing of the earth disturbance. All those present agreed that this description was unclear and would require substantially more detail to be incorporated into an approvable grading plan. Again, the use of cells or phases to minimize the disturbed area will be required. The developer is well aware that they will not be able to simply open cut the entire project area at one time.

Finally it was noted that many of the items discussed above would have to be addressed in the proposed Brownfield remediation plan in greater detail in order for the plan to be approvable.

Pedestrian and Non-motorized Transportation

24 Aug 06

- Entire complex needs to be walkable

- In order to encourage walkability, city is willing to allow variances, such a wide sidewalk/pathway on one side of a road vs. a smaller sidewalk on both sides of a road. The developer agreed that walkability is a key component of a healthy planned unit development. They also were interested in the option of widening sidewalks or bike trails on roads that were fully developed on one side. They have incorporated these ideas into the plan.
- County to develop 4 mile bike trail
 - Should be on Walker side to allow for easy access to complex
 - Need to coordinate with Roger at Kent County Parks commission. We were unsuccessful at engaging the County Parks Department in this process. Our hope is to coordinate their efforts with this development to make the county trail an integral part of the residential development along Four Mile Road. The most recent modifications to that residential area seem to compliment this idea. The key here is to get the County involved as soon as possible.
- Developer needs to add spur from 4 mile bike trail to complex. The developer is now proposing connections and looping of the bike trail throughout the development. Staff is pleased with the initial layout of this loop system.
- Developer could also add trail system within complex
 - Through detention pond area
 - Linking downtown area and tourist area. The current design does add most of this connectivity. It does not provide a spur to the tourist oriented area but it does span the entire length of the Northridge extension. Sidewalks will serve the tourist oriented loop effectively.
- Need standard sidewalk detail for downtown area
 - How will strollers, bikes, rollerblades, skateboards, etc. be handled?
 - Location of bike racks needs to be addressed. The new plan book includes details for the downtown sidewalk area along with intersection details to encourage walkability. The design standards appear to be consistent with the wishes of the working group. It appears that the development will direct bike and recreational activities to the outer loop of the development. The sidewalks in the downtown area will be intended for pedestrians rather than non-motorized transportation. The plan seems to accommodate both desires in a reasonable manner.
- Public restrooms should be available
 - Lockers should be considered for personal storage (helmets, shopping bags, etc.) These final details will be worked out as the plan matures to final area site plan status. The developer has expressed a desire to make these amenities a key part of the final design.
- Need to link downtown area with tourist area for pedestrians
 - Ideas include trolley, pathway with tunnel under Northridge, and pedestrian islands on roundabouts. After some good debate the working group agreed that crossover pedestrian traffic between the facilities will be difficult. Most visitors will simply drive between the two uses. Nevertheless, the proposed bike trail and sidewalk network will facilitate those movements. Crossing of Northridge must be carefully designed using the roundabouts and medians to limit the distance a pedestrian must travel at one time. The intent is to cross short distances with traffic yielding to pedestrians when appropriate. The group also talked about

- using the countdown pedestrian signals in this area where signalization was required. These signals give the pedestrians a timer to make them aware of how many seconds are left to cross the roadway.
- Possibly locate a skate park somewhere in complex. The developer is still exploring what type of public space to incorporate into the plan. They are not agreeable to operating a skate park because of the liability issues. They will continue to look at the Parks and Recreation Master Plan as they focus on how best to incorporate public space into the design.

Again, we have only had the revised plans for about 24 hours so this report may not entirely reflect the changes made since our working group meetings. We do believe, however, that the changes we have observed are appropriate and generally in keeping with the wishes of our technical review teams.

I plan on attending the September 20th Planning Commission meeting to provide a brief report on these topics and answer questions about this review.

Cc: Mark Koning, Building Official
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Pete LaMourie, P.E., Progressive AE
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Mike Oezer, P.E., Progressive AE
Peter DeBoer, West Michigan Trails and Greenways Coalition
Brian Mulligan, Kent County Parks
Dennis Kneibel, Friends of the Walker Highland Trails
Michael Hood, Friends of the Walker Highland Trails