



Public Works Department

Capital Projects Division
18th Floor, City Hall
414 East 12th Street
Kansas City, Missouri 64106

Office: (816) 513-2720
Fax: (816) 513-2523

220269

From: Nicolas Bosonetto, PE
City Engineer

Date: March 15, 2022

To: Neighborhood Planning & Development Committee

Re: Woodhaven Subdivision – MPD Public Infrastructure Deviations

Public Works has received and reviewed the applicant's request for Public Infrastructure Deviations for the Woodhaven Subdivision per section 88-280-05 of the Master Plan Development District (MPD) ordinance. ~~The MPD ordinance allows for City Council to approve~~ deviations from strict compliance with development standards, after receiving the recommendations of the City Planning Commission, if they determine that the proposed development cannot be reasonably accommodated by other available development codes.

Public Works presented our recommendations to the City Plan Commission at the February 15th meeting, and the CPC supported our recommendations. Public Works staff has also met several times in person and virtually with the project sponsor and their representatives. The latest request for deviations from the developer are dated February 25, 2022.

The original Woodhaven applicant requested nine (9) separate deviations from standards; five (5) of which pertain to Department of Public Works. After discussion with applicant only two (2) deviations are recommended for denial:

Request #1 (1A & 1B)- Roadway Modification

1A – Roadway Sub-grade:

PW Recommends **denial** of request **with caveats**

“Per City requirements, roadway soil sub-grades are typically required to be modified to include soil modifications (cement, fly-ash, or lime treatments) for soil characteristics (atterberg limits) that do not meet the City's Liquid Limit (LL) or Plasticity Index (PI). This MPD plan requests the *removal of this requirement completely.*” (emphasis added)

KCMO Public Works has adopted construction standards per ordinance. These geotechnical standards are widely used throughout the KC metro area by other municipalities as well. The purpose of the Liquid Limit/Plasticity Index is to assure that roadbases are structurally sufficient to support the pavement and traffic loads without distortion.

Roadways built upon unsuitable soils deteriorate quickly and have a shorter life span than properly built roadways. The City of Kansas City would then be responsible for rebuilding the roadway when it fails prematurely.

After discussions with the applicant, it became clear that they are seeking clarification of the standards and not necessarily “*removal of this requirement completely.*” PW agrees, that per the applicant’s submitted geotechnical report and city standards, only the top 9-inches of the sub-grade will require modification with cementitious materials. Embankment/Fill sections (fill above the treated sub-grade) shall be composed of suitable fill material placed and compacted in lifts according to city specifications and as approved by the City Engineer/Director of Construction. The embankment/fill materials do not require additional cementitious modification as long as the material is suitable fill as defined in Section 2102.2-A-3 of the City Standards for Construction.

1B – Pavement Section:

PW Recommends **denial** of request

“Per City requirements, roadway typical sections for Residential Local Roads and Residential Collectors, are required to contain 8” and 9” of asphalt, respectively, including 6” of gravel base rock, and un-treated soil sub-grade. ***This MPD Plan requests a 3” reduction in asphalt thickness.*** This equates to 5” of asphalt (2” asphalt surface with 3” asphalt base) for residential local roads and 6” of asphalt (2” asphalt surface and 4” asphalt base) for residential collector roads. Both sections will also include 6” of gravel base rock, with the top 9” of the soil sub-grade be treated with 5% Portland Cement. This request is supported by the Geotechnical Report dated February 8th, 2022 from CFS Engineers.” (emphasis added)

KCMO Public Works has adopted pavement thickness per APWA standards and Ordinance 180970 Amended December 20, 2018. These standards are instituted to reduce life-cycle maintenance costs to the City and also ensure the efficiency of future rehabilitation activities. KCMO has the most roadway miles of any City in the United States. PW feels we cannot afford to be the outlier when it comes to standards that may result in additional maintenance of new roadways. The proposed pavement thickness of 5-inches is too thin. Additionally, reducing our standards for paving of this subdivision would create a precedent for future developments to also reduce paving thickness.

Request #2 - Sidewalks on Both sides of the Street PW has **no comment** on this request

“Per City requirements, sidewalks are required on both sides of residential streets. This MPD plan requests the removal of sidewalk on one side of the street for residential local roads. The proposed sidewalk locations are shown within this plan, to identify the proposed locations of sidewalks.”

KCMO Public Works recognizes that the sidewalk requirement has been waived in the past for similar subdivisions. We will rely on the Planning Commission and City Council to make the determination as to whether the sidewalk requirement should be waived.

Request #4 - Sanitary Sewer Manhole Locations

Applicant has **withdrawn** this request

“Per City requirements, sanitary sewer manholes are required to be outside of the roadway paving, generally behind the curb, or in the front yards of the homes. This MPD plan requests the allowance for sewer manholes to be located within the street paving, provided they are located in locations that do not receive typical wheel loading from vehicles. Allowable locations would be located in the center of the roadway, or center of the travel lane.”

After discussions between the applicant’s team and KCMO staff, the applicant has withdrawn this variance request per email of Matt Kist on March 7, 2022. The sanitary sewer manhole locations will now be placed on the side of the road that has no sidewalks installed per variance #2.

Request #6 – Flowable Fill Material

PW Recommends **granting** request with **caveat**

“Per City requirements, all utilities located underneath the proposed roadway paving, is required to have flowable fill backfill. This MPD plan requests the removal of this requirement entirely, provided the backfill material (suitable soil material or aggregate) meets the recommendation of the final geotechnical report.”

KCMO Public Works updated the standard specifications for trenching last fall to include options for either using flowable fill or backfilling with suitable material and compaction requirements. Public Works City Engineer and the Director of Construction are of the opinion that the KCMO City standard drawing SR-1 (per ordinance 210692 passed 9/13/21) clearly states in note #3 that backfill material may be either flowable fill or untreated compacted aggregate.

“3. BACKFILL – Backfill shall not be placed in water or mud. Clean graded rock or frozen material shall not be used as backfill. Backfill material and

placement shall meet flowable fill meeting 2102.12 **or** untreated compacted aggregate meeting 2202. Utilities using untreated compacted aggregate will need to provide all compaction prior to completion of permit.” (from SR-1, emphasis added)

It is our opinion that the standards are clear that flowable fill or compact aggregate is allowed, as long as compaction and lifts are completed according to city specifications and as ordered by the City Engineer/Director of Construction. The applicant may substitute flowable fill with proper backfill methods as specified by Public Works standards and final determination of the City Engineer.

Request #7 – Public Street Lighting Levels

PW Recommends **denial** of request

“Per City requirements, typical residential street lighting levels are 1.5 times greater than IES (Illumination Engineering Society) standards. This MPD plan requests a decreased lighting level, and to allow for proposed lighting levels equal to IES, which is approximately a 2/3 reduction in lighting levels.”

KCMO Public Works has been using APWA Section 5800 as the street lighting standard since at least 2001 (Ordinance 010189). In 2019, City Council, after several rounds of public participation and discussion, approved ordinance #190475 to adopt the modified Section 5800 standard which included LED lighting. The standard light multiplier for residential streets is 1.5 to 2.2. This standard has been applied throughout the city and deviating from this standard would cause substandard lighting in the proposed neighborhood and also open the door for future developers to request a waiver of the lighting standards.

It is important to note that the applicant is incorrect in stating that the IES is “approximately 2/3 reduction in lighting levels” – the reduction would be 1/3. Furthermore, the cost savings of the proposed reduced lighting levels would not be significant, since the location and number of poles is dictated by lot lines and the necessity to meet uniform light coverage. The number of poles, bases, conduit and wiring would not be reduced by 1/3 if the requested lower lighting standards would be used.

For these reasons, Public Works respectfully recommends that the waiver of lighting requirements be denied.