

March 21, 2019

Mr. Thomas Harrigan  
Zoning and Planning Administrator  
Village of Elm Grove  
13600 Juneau Boulevard  
Elm Grove, WI 53122-0906

Re: 13040 W. Bluemound Road  
Revised Redevelopment Plan Review

Dear Mr. Harrigan:

As requested, we have reviewed the revised documents submitted to the Village for the redevelopment of the lot at 13040 W. Bluemound Road into a multi-story, 75-unit senior apartment building. The revised documents were received on March 4, 2019. Our findings and recommendations are shown below. Comments from my February 6, 2019 letter that have been addressed were removed. Some comments remain for informational purposes. Other comments remain that have not been addressed. Comments have been renumbered as needed:

1. Previous Development: The property was previously developed with multiple buildings. The air photo taken in 1990 shows the previous development had already been demolished. The development team has provided a copy of a Phase 1 Environmental Site Assessment report completed by Professional Service Industries, Inc. and dated May 14, 2018. The report indicated there was no evidence of Recognized Environmental Conditions (RECs) in connection with this property.
2. Wetlands: Mapping from the Wisconsin Department of Natural Resources (DNR) Water Surface Data Viewer website shows wetland indicators exist across a portion of the property at the north end. In addition, the mapping also shows an unnamed waterbody exists at the north end of the property. The development team has contacted the DNR to discuss these issues. The following is a summary of my understanding of the current status regarding wetlands and surface water:
  - a. The DNR has indicated no additional wetland investigation is necessary for this project.
  - b. The DNR believes the water body is navigable. The DNR will conduct a navigability determination and establish an Ordinary High Water Mark (OHWM).

~ Elm Grove Village 38-00000 Miscellaneous Project Files > 219 Misc Engineering > Correspondence > 13040 Bluemound Road > Harrigan-20190321-13040 W Bluemound Road Revised Redevelopment Plan Review.docx~

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- c. The DNR has conducted an endangered resources review for this site. There is one follow up task that will be completed later this spring.
- d. The Village will require the improvements to maintain a 50-foot setback from the Ordinary High Water Mark (OHWM).

3. Floodplain:

FEMA Map No. 55133C0237G shows a Zone A floodplain boundary on the property. Zone A floodplains have not been studied in detail. Therefore, there are no Base Flood elevations and the boundary shown on the FEMA map is approximate. Several of the redevelopment plan drawings show and label the floodplain boundary. The label says the boundary line was scaled from the FEMA drawings. The boundary as shown appears to be reasonable.

Most of the proposed improvements are shown to be located outside of the approximate Zone A floodplain boundary. However, a storm sewer discharge pipe will be installed in a trench excavated within the floodplain using open cut methods. The Site Plan and the Grading Plan drawings show additional parking spaces may be constructed within the floodplain in the future if required by the Village. Any construction or disturbance within the floodplain boundary will need to be restored to its original condition and cannot be filled without an approved floodplain analysis and LOMR.

The applicant may want to consider preparing an elevation certificate to verify that the proposed building is outside of the floodplain for insurance purposes.

4. Sanitary Sewer Service:

According to the sanitary sewer as-built drawings, an existing 8-inch diameter sewer bisects the property within an easement at the northern end of the lot. The as-built drawings also show that a lateral connection was provided approximately 135 feet east of the existing sanitary manhole located on the 500 Elm Grove Road property. It is unknown if this lateral connection was ever used or if it exists today.

The redevelopment plan shows the proposed building will be served by a new sanitary lateral at a different connection point along the sewer main. The applicant will need to abandon any existing lateral connections that are not used per Section 232-8 of the Village Code. The applicant will need to verify if the sanitary lateral shown on the as-built drawing exists. If it does, then it will need to be severed from the sewer main and a watertight seal placed at the main connection per Section 232-8 of the Village Code. The abandonment will need to be inspected and tested to the satisfaction of the Director of Public Works.

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The revised redevelopment plan calls for construction of 75-unit apartment building. According to the plan there will be 24 single bedroom apartments and 51 two-bedroom apartments. According to our calculations using MMSD guidance, the proposed apartment building will generate approximately 35,800 gallons of sewage per day. Representatives from MMSD agree that there is enough available sewage flow allocation within Sewershed EG 3007 to accommodate the proposed development according to the 2020 Facilities Plan.

The results of my desktop analysis shows that the existing 8-inch diameter sewer downstream of the property should have enough remaining capacity to serve the proposed development. I am not able to properly evaluate the remaining capacity in larger diameter sewers downstream of the 8-inch sewers in the desktop analysis. The best way to determine remaining capacity in larger sewers is through monitoring actual existing flows in the pipeline during dry and wet weather conditions.

5. Public Water Service:

The revised redevelopment plan shows a new water main will be extended from the northeast corner of Elm Grove Road and Bluemound Road along the south side of the property at 500 Elm Grove Road and the south side of the subject property. The following items are necessary for the water main extension:

- a. The Village desires the public water main extension to be available to serve the Emerald Woods and the Douglas Plaza developments.
- b. Public water main will need to be turned over to the Village of Elm Grove who will then turn it over to the City of Brookfield because the City is the current owner and operator of the water system in Elm Grove.
- c. The water main extension will need to be designed in accordance with City of Brookfield standards.
- d. The City of Brookfield and the Village of Elm Grove will need to approve the design and the proposed easement.
- e. The new public water main along Bluemound Road shall be at least 12-inches in diameter. However, the final water main sizing will need to be approved by the City of Brookfield and the Village.
- f. The City of Brookfield will likely require the property owner to pay the City for inspection services during construction of the water main extension.
- g. As-built drawings of the new public water main will need to be prepared according to the City of Brookfield standards.
- h. We recommend the development team coordinate with the owner of 500 Elm Grove Road to possibly shorten the existing water service line to their building by abandoning portions that parallel the new public water main and moving the water service connection farther east.

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- i. See additional Utility Plan comments below.

The existing survey drawing shows the property is currently served by an existing well that will be abandoned in accordance with Village Code Chapter 283 and WDNR Administrative Code NR812.

The public water main extension will need to be approved by the Department of Natural Resources. The applicant will need to prepare fire flow calculations for the water main extension as part of the approval application submittal. Alternatively, the applicant may coordinate with the City of Brookfield to determine if they will provide the calculations.

6. Site Plan:

- a. The development team will need to send the construction drawings to existing utility easement grantees for their review and approval. Recent response from the development team is that AT&T has provided approval of the proposed improvements within their easement. We recommend We Energies also be contacted for potential impacts to existing overhead wires, buried cables and buried gas facilities.
- b. The property is petitioned to be rezoned as an RM-2 district with a Planned Development Overlay District (PDO). We did not review the rezoning/PDO petition. You have indicated the PDO would provide flexibility at the Village's discretion on certain zoning requirements such as building height, building setbacks, density and on-site parking requirements. Our understanding is there is no known objection by the Village regarding the building height, building setbacks, density and parking plan as currently proposed.
- c. Impervious Area Calculations:  
The revised redevelopment plan shows the proposed building footprint area and total impervious area for the property meets the coverage limitations per Section 335-21.1 of the Village Code for the proposed RM-2 zoning.
- d. Building Grade: The redevelopment plan shows the following:
  - i. Proposed first floor is approximately 3.8 feet higher than the neighboring building to the east.
  - ii. Proposed first floor is approximately 0.6 feet lower than the exposed lower level parking garage floor for the neighboring building to the west.
  - iii. Proposed lower level parking garage floor at elevation 740.50, which is approximately 3 feet higher than the overtopping elevation of the access drive to the Emerald Woods development north of the property and is approximately 2.4 feet above 1% Chance Flood Elevation shown on the

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LOMR prepared for Building No 3 of the Emerald Woods development (north of and adjacent to the unnamed creek).

- iv. Based on the above, the proposed first floor elevation appears to be reasonable for this lot.
  - e. Improvements within the right-of-way of Bluemound Road will require a permit from DOT.
  - f. A traffic control plan needs to be added to the redevelopment plan and will be subject to DOT and Village approval.
  - g. A temporary access plan for Emerald Woods was provided in the revised submittal.
    - i. A provision needs to be added to the plan for snow removal assuming that construction will progress through winter months.
    - ii. The access plan needs to be discussed with representatives from Emerald Woods so they know how temporary access will be handled during construction.
7. Site Plan Specifications:
- a. Temporary access requirements during construction for the Emerald Woods development need to be added to the construction sequence on the drawing.
  - b. A prominent note needs to be added to the drawing requiring the contractor to maintain access for emergency, resident, staff, visitor, delivery and pick-up vehicles at all times during construction.
  - c. Specifications for the water main extension need to follow City of Brookfield standards.
8. Grading and Erosion Control Plan:
- a. Guardrail details need to be provided.
  - b. Retaining wall and railing details need to be provided.
  - c. It appears the intent is for the elevation of the sidewalk adjacent to the west side of the parking lot is to be at the same elevation as the asphalt. However, there is some confusing spot grades near the loading zone for the ADA accessible spaces that show otherwise. These grades should be reviewed and revised if necessary.
  - d. Some sidewalk spot grades on the west side of the driveway near Bluemound Road appear to be mislabeled as retaining wall grades and should be revised.
9. Utility Plan:
- a. The 6-inch diameter water service extending northerly from Bluemound Road will need to be a public water main located in an easement. It will need to be sized to

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serve the Emerald Woods and the Douglas Plaza developments. It will also need to be designed and constructed in accordance with City of Brookfield standards and approved by the Village of Elm Grove.

- b. Plan and profile drawings of the public water main extension need to be included in the plan set.
- c. At least 10 feet of horizontal separation will be required between proposed water main piping and sewers.
- d. The plan appears to show two different storm sewer pipes labeled as “Pipe 4”.
- e. Indirect conflicts with several existing utilities are anticipated during construction. Construction drawings will need to be sent to all utility companies for coordination.
- f. Proposed utilities located within the right-of-way for Bluemound Road will require a permit from DOT.

10. Storm Water and Erosion Control Calculations:

- a. Two separate underground storm water detention systems are proposed. Storm Trap System A is located under the surface parking lot. Storm Trap System B is located along the north side of the building. We assume the two systems are proprietary precast concrete box structures of the same name. Calculations identify the dimensions of Storm Trap System A as 101.7” x 60” and being 3 rows and 4 chambers. The dimensions of Storm Trap System B are identified as 82.7”x 42” and being 2 rows of 4 chambers.

Plan Sheet C1.4 Stormwater management and Utility Plan has references to Storm Trap System A and System B respectively with a (See Detail) designation. No details for the Storm Trap structures were provided. The details need to be added to the plan drawing set and submitted for review.

- b. The submitted calculations show the storm water management facilities meet MMSD Chapter 13 storm water requirements using the volumetric method. However, the calculations indicate the outlet conditions for the two systems to be free flowing. The storm water calculations need to be revised to assume the tailwater elevation at the outfall is at least equal to the water surface elevation during the 10-year flood event of the unnamed creek.

The designer will need to calculate an appropriate 10-year storm peak flow at the culvert crossing the access drive for the Emerald Woods development. The designer will then need to conduct a culvert analysis to determine the headwater elevation for this flow. For this analysis to be reasonable the culvert tailwater elevation will need to be determined. We recommend the 10-year peak flow be modeled in the

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downstream channel to determine this value. The calculated culvert headwater elevation will need to be used as the tailwater elevation for the proposed on-site storm sewer improvements. A copy of all on-site system tailwater elevation calculations and assumptions will need to be included in the resubmittal.

- c. The storm water management plan does not account for the additional runoff from any future additional parking spaces, which is appropriate at this time. However, if additional impervious surfacing is added to the site, the storm water management plan and associated storm water management facilities will need to be modified to account for the additional runoff at that time.
- d. The calculations show the storm water management facilities remove approximately 80.3% of the total suspended solids (TSS) in the runoff.
- e. The storm water maintenance plan will need to include provisions for periodic structural inspections of the underground chambers by a Professional Structural Engineer.
- f. The storm water calculations need to be revised to include a map showing the different roof areas.
- g. Pipe data for “Pipe 4” and “Pipe 7” shown on the storm sewer pipe sizing spreadsheet conflicts with the information on the plan drawing and needs to be corrected.
- h. The storm sewer pipe sizing spreadsheet needs to be revised to show each pipe segment called out on the utility plan including downspouts and outfalls.
- i. The storm sewer pipe sizing spreadsheet needs to be revised to show the incremental additional flow from each downspout or inlet and cumulative flow to that point of the storm sewer system.
- j. We recommend the storm sewer pipe sizing spreadsheet be organized in order from upstream to downstream for easier reference.

#### 11. Landscape Plan:

- a. The Site Information at the top of revised Sheet LSP 1.0 is missing and needs to be provided. The information will need to match the Site Plan drawing.
- b. The development team will need to send the landscape plan to existing utility easement grantees for their review and approval. Recent response from the development team is that AT&T has provided approval of the proposed improvements within their easement. We recommend We Energies also be contacted for potential impacts to existing overhead wires, buried cables and buried gas facilities.

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12. Permits and Approvals: A copy of all permits and approvals obtained from regulatory agencies having jurisdiction over the improvements need to be provided to the Village when they are obtained by the development team.

We recommend the items listed above be addressed to the Village's satisfaction prior to approval. Please contact our office with any questions regarding this matter. Thank you for allowing us to be of service to the Village of Elm Grove.

Very truly yours,

RUEKERT & MIELKE, INC.



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