WWC ENGINEERING

1275 MAPLE STREET SUITE F, HELENA, MT 59601 | 406.443.3962

December 13, 2022

Christopher Brink, AICP, Director
City of Helena Community Development Department
316 North Park Avenue
Helena, MT 59601

Re: West Side Woods Major Phased Major Subdivision Preliminary Plat, 2nd Sufficiency Review with Annexation Comment Responses

Dear Mr. Brink:

In response to your letter dated December 9, 2022, we have prepared additional information for the above-referenced project to address your comments and concerns. The following information reiterates your comments and our specific responses to each comment as follows:

Transportation System Comments:

1. Please submit deviation/variance requests for all proposed deviations from City Engineering Standards or City Code requirements; including but not limited to:
    a. The 100-foot radius horizontal curve at the construction of Hauser Blvd at Overlook Estates. This has been included as part of the submittal and the deviation is relevant to both the preliminary plat and the annexation request.
    b. The alignment of Flowerree Court and Flowerree Street (see Engineering Standards 5.2.5, "Two streets meeting a third street from opposite sides shall meet at the same point, or their centerlines shall be off-set at least 125".")

    Response: Per our meeting and discussion with City Staff on December 12, 2022, the applicant understands that these comments are for informational purposes and that these concerns will need to be addressed during engineering review prior to construction and final plat. The applicant will work with the Transportation Systems on the roadway designs prior to construction. We respectfully request these concerns be deferred until engineering review prior to final plat.

2. The asphalt road width for Local Road - Typical Section 1 and Typical Section 2, should be 32' as was shown in the first submittal. Although the width is different from the Engineering Standards, this will not be considered a deviation because the IFC requires an unobstructed roadway width of not less than 20 feet, for emergency vehicles. (This 32 foot width includes two 10-foot travel lanes and two 6-foot wide on street parking lanes.)

Response: As part of the 1st sufficiency response, the applicant revised the design to meet the current engineering standards which requires a 30-ft width to address transportation system comments. The current design meets the current City of Helena Engineering Standards. Per our meeting with City Staff on December 12, 2022, it is our understanding that this comment is for informational purposes only. We understand that prior to construction of infrastructure for each phase, infrastructure will need to be designed and constructed to the engineering standards that are adopted at that time. The applicant will adjust the final design, if necessary, to meet the current engineering standards prior to construction of infrastructure for each phase. We respectfully request the City defer specific design issues related to transportation design until engineering plans are submitted for each phase of the development.

TIS Comments:

3. Page 1. Executive Summary. Reference to the TIS evaluation being conducted according to the "Transportation Research Board's Highway Capacity Manual (HCM) - Special Report 209" remains. All HCM references should be reviewed and verified.

   Response: This has been updated to the Highway Capacity Manual 7th Edition: A Guide for Multimodal Mobility Analysis.

4. Appendix D. LOS Modeling. All HCS TWSC Reports say "HCS7" and "TWSC Version 7.9.5". The intersection LOS analysis should utilize latest edition, HCS 2022 (version 8.1 released 12/15/21, or newer). The references have been changed in the body of the report but all HCS data/worksheets should be reviewed and verified.

   Response: The LOS modeling sheets have been updated to the most current version of the software. The updated sheets are provided in the updated report.

5. Page 16. Queuing Analysis. Queuing analysis language and Table 11 reference year 2027. It is assumed this is intended to reference year 2029 for full project buildout. Should be reviewed and verified.

   Response: This has been updated to 2029.

6. Appendix D. LOS Modeling. HCS reports refer to year 2027 analysis. It is assumed that this is intended to reference year 2029 for full project buildout. Should be reviewed and verified.

   Response: The LOS modeling sheets have been updated for the design year of 2029.

Public Works Comments are as follows (Please confer with Public Works staff regarding sufficiency or general review applicability:

1. Water – Cross Town Connector Main - The existing City of Helena 24-inch diameter steel water main crossing the proposed subdivision, known as the cross-town connector, must be kept at its current burial configuration, and kept so that it is no shallower than 6.5 feet below ground surface (BGS) and no deeper than 7.5 feet BGS and its current alignment must be maintained. No additional fill shall be placed on top of its current

alignment that will put it greater than 7.5 feet BGS. No cut shall occur on top of its current alignment that will put it less than 6.5 feet BGS. Its future accessibility for maintenance, repair and replacement must be ensured in perpetuity without undue impacts to private property/residences, water, sewer and/or transportation infrastructure.

Response: Per our meeting with City Staff on December 12, 2022, it is our understanding that this comment is for informational purposes only. The applicant will work with the City to address the bury depths of the cross town connector during engineering design of Phases 1 and 2.

2. Water – Cross Town Connector Main - The City makes no claims or assertions as to the condition or overall integrity of the Cross Town Connector main and any damage or adverse impacts to this main or its appurtenances as a result of the proposed development shall be the sole responsibility of the developer.

   Response: Per our meeting with City Staff on December 12, 2022, it is our understanding that this comment is for informational purposes only. The applicant understands this concern and will work with the City on ensuring integrity of the water main is maintained during construction.

3. Water – Hauser Boulevard 10 Inch Water Main - The existing ten-inch water main proposed for multiple connections to the proposed subdivision located on Hauser Boulevard is approximately 123 years in age and currently has no known connections. The City makes no claims or assertions as to the condition or overall integrity of this main. The developer shall connect to this main at their own risk and shall mitigate, repair, replace and remedy any damage and/or impact(s) to this water main and any associated infrastructure and residences/private property as a result of their development of the subdivision, disturbance and/or installation of connection(s) to this main. This includes having City personnel tap and or install connections to this main.

   Response: Per our meeting with City Staff on December 12, 2022, it is our understanding that this comment is for informational purposes only. The applicant understands this concern and will work with the City on ensuring integrity of the water main is maintained during construction.

4. Sanitary Sewer – Downstream Sanitary Sewer Capacity - The wastewater capacity analysis presented in the development PER does not use a minimum Manning coefficient of n = 0.013 as required by the City of Helena Engineering Standards Section 3.4.1. When the reviewer ran the capacity analysis using the submitted numbers from the PER and the Manning coefficient as per City standards, it was found that 74-75 downstream sewer mains exceeded 50% capacity post development.

   For the proposed subdivision Phase I design flows presented in the PER (which could be low, due to flows measured during the COVD pandemic) and using a Manning coefficient of n = 0.13 as per City Design Standards, it was found that 74 downstream sewer mains exceeded 50% capacity, with 28 mains at 50-60%, and 46 at 61-75% capacity.

   For the proposed subdivision Phase II design flows presented in the PER (which could be low, due to flows measured during the COVD pandemic) and using a Manning coefficient of n = 0.13 as per City Design Standards, it was found that 74 downstream sewer mains exceeded 50% capacity, with 25 mains at 50-60%, 48 at 61-75% capacity,

and 1 main at over 75% capacity.

For the proposed subdivision Phase III design flows presented in the PER (which could be low, due to flows measured during the COVD pandemic) and using a Manning coefficient of n = 0.13 as per City Design Standards, it was found that 75 downstream sewer mains exceeded 50% capacity, with 23 mains at 50-60%, 39 at 61-75% capacity, and 13 mains at over 75% capacity.

For the proposed subdivision Phase IV design flows presented in the PER (which could be low, due to flows measured during the COVD pandemic) and using a Manning coefficient of n = 0.13 as per City Design Standards, it was found that 75 downstream sewer mains exceeded 50% capacity, with 20 mains at 50-60%, 38 at 61-75% capacity, and 17 mains at over 75% capacity.

A figure showing the impacted downstream sanitary sewer mains believed to be exceeding 50% capacity as per preliminary calculations for each of the proposed subdivision phases has been included.1

The wastewater capacity analysis in the PER bases its flow assumptions on sewer flow readings taken during the COVID pandemic, when the schools and businesses were closed and much of the nonresidential uses within the City were not contributing to wastewater flows. The flow numbers presented are not indicative of typical flows. The final design should be engineered/based on up to date and non-pandemic sanitary sewer flows. Calculations based on information presented in the PER for the proposed subdivision indicate that significant downstream impacts to the sanitary sewer collection system are likely to be expected because of the proposed subdivision.

The developer of the proposed subdivision will need to demonstrate and ensure that adequate downstream sanitary sewer collection system capacity exists within the existing City of Helena sanitary sewer system, upsize existing downstream sewer segments impacted by the proposed development as per City of Helena Engineering Standards Section 3.4.1 and/or mitigate potential impacts to the existing City of Helena Sanitary Sewer Collection System.

Response: Per our meeting with City Staff on December 12, 2022, it is our understanding that this comment is for informational purposes only. An updated Preliminary Engineering Report (PER) was provided with the original submittal as well as the 1st sufficiency response that includes the evaluation of downstream capacity with a Manning coefficient of n=0.013 as well as evaluation of percent full versus flow depth. Further, the PER provided with the 1st sufficiency response removes the lift station that was planned for the City of Helena west side project which reduces the peak instantaneous flow. This results in all downstream sewer mains having adequate capacity for the proposed development without upgrades. The applicant will work with the City to update flow meter readings prior to each phase and will update the downstream sewer capacity calculations accordingly. We respectfully request the City defer any additional downstream sewer calculations until engineering plans are submitted for each phase of the development. We have provided sufficient information with the application to show there is downstream sewer capacity to serve the proposed subdivision.

5. Water - Water Storage in the Malben High/Low/ Valley pressure zones will need to be analyzed as part of the infrastructure design of this subdivision. Finished water storage may be required to be constructed for a development of this size.

   Response: A water system analysis memo was provided as an appendix to the Preliminary Engineering Report with the subdivision application that shows the City has adequate water capacity to serve the proposed development and that no additional water storage is necessary to meet the City's pressure and flow requirements for fire flows. We respectfully request the City defer any additional water system calculations until engineering plans are submitted for each phase of the development. We have provided sufficient information with the application to show there is water system capacity to serve the proposed subdivision.

It is our sincere hope that these comments have been adequately addressed and that the **West Side Woods Major Phased Subdivision Preliminary Plat** can proceed to sufficiency review as soon as possible. Please do not hesitate to contact us should you have any further questions or require additional clarification.

Sincerely,

Jeremy Fadness, P.E., AICP
Project Manager

JF/mh

cc Sussex Development, Derek Davis

K:\Helena\ECO DEVELOPMENT LLC\2022292 West Side Subdivision 2nd Submittal\02Corr\OUTGOING\COH Preliminary Plat Sufficiendy Review Comment Response Letter 12-13-2022.docx