

September 6, 2018

El Paso County Planning and Community Development

Attn: Kari Parsons, Project Manager/Planner II
2880 International Circle
Colorado Springs, CO 80910

Re: Falcon Marketplace Preliminary Plan (SP-17-001) Response 6

Ms. Parsons,

Please accept this response letter to your review 4 comments dated August 27, 2018.

Responses to outstanding **comments** are in ***Bold Italics*** and follow each review comment.

Preliminary Plan

1. through 7 – Resolved
8. Regarding the proposed private spine road:
 - a. Resolved
 - b. Resolved
 - c. The cross-section right-of-way/easement width does not match the plan labels; revise as appropriate. See comment 8.f. regarding proposed deviations. Unresolved. ***Partially resolved; adjust the dimension labels on the plan to match the cross-section and add labels to the right-in/right-out road (see redlines). PI Easement dimensions labeled added along Spine Road and RI/RO.***
 - d. If the road through the site is not public, a maintenance turnaround will be required at the end of the Woodmen Frontage Road. Vacation of the current turnaround right-of-way is unlikely unless some other turnaround arrangement is agreed upon. Partially resolved; vacation of the turnaround right-of-way is dependent on resolution of the other proposed deviations to allow for adequate maintenance access. Partially resolved; see redlines regarding portion to be vacated. ***Unresolved; the acreage of the Preliminary Plan (in the Lot/Tract Table) includes the existing right-of-way at the east end of the Woodmen Frontage Road. Per previous redlines this ROW will not be vacated in its entirety, only possibly a portion of its northwest corner. The actual area that may be vacated will be determined with the final plat and construction plans. The size of Lot 11 should be calculated without the ROW vacation area, and the Woodmen Road ROW hatched area should be listed separately in the Lot/Tract Table so that the ownership area adds up to the correct acreage. Area of ROW to be vacated now shown correctly as area outside of proposed roundabout ROW – shown as diagonal hatch on plan. Lot/Tract table also updated to show correct acreages and clarify ROW breakout.***
 - e. ***Resolved***
 - f. ***Resolved***

9. through 12 – Resolved

13. *The landscape plan included with this submittal shows trees in existing and proposed ROW in several areas including along Meridian Road. Some of these trees need to be moved depending on final site design and construction plans. A license agreement will be required at the final plat stage for private landscaping remaining in the ROW, including the proposed roundabouts. Comment remains.* **Comment remains.**
Landscape plan adjusted after conversation review with Staff.

14. Resolved

Transportation / Traffic Impact Study (TIS)

1. **Resolved**

2. Additional offsite impacts will require mitigation if the Woodmen right-in access is approved. The TIS focuses on areas that may see improved LOS with the right-in, but it should also address additional signage, striping, signalization, and turn lane improvements at all intersections impacted by the development and specifically the shifted traffic patterns that would be caused by the right-in. The comments below mention some of the foreseen additional offsite improvements. Partially resolved;

a. through c – Resolved

d. **Note: The updated TIS shows that in both short term and 2040 background comparisons without the development (comparing “apples to apples”), the “with roundabout” option causes greater delays for the Meridian Road northbound through and left turn movements (almost all movements in the short-term). The development itself causes the northbound through movement failure for which a valid comparison would require either the third northbound lane on Meridian Road or a reduction in site-generated traffic to the extent that failure of the movement is not caused. Address this issue in general in the TIS (page 3).** **Partially resolved; the point of the analysis is not to determine the improvements or practicality of construction; it is to compare the effect of the right-in without the northbound through lanes already being at the limit of failure. Based on the Synchro report provided, the three northbound lanes would allow for this comparison if the “without right-in” was also run with the three northbound lanes. Please add that analysis (2040 total).**

LSC Response (9-6-18): The requested analysis has been added to the report.

e. *Note: Additional revisions, including proper warrant analysis, signage and auxiliary lane details will be discussed with the preliminary plan and final plat reviews.*

3. A complete roundabout analysis addressing basic design aspects such as design vehicle, inscribed circle diameter, entry angles and widths, fastest paths, entry spacing and vehicle tracking was not provided and is requested. There are several issues of concern with the design as proposed:

a. The roundabout entry legs do not appear to be geometrically aligned to provide for the safest fastest path operations. The westbound movement appears to be designed as a free entry or bypass into the site, which will not function properly with the other legs. Traffic exiting Woodmen Road (the westbound movement) is likely to assume it has right-of-way to enter the site freely, which will conflict with the eastbound/northbound movement, and possibly the southbound movement depending on its exit leg. Unresolved; provide complete roundabout details

meeting the specified criteria and matching modeling per comments below. The proposed deflections entering the roundabout are still of concern, and other issues remain, including appropriate overall sizing (inscribed circle) and alignments for the design vehicle and other vehicles that will utilize the roundabout. *Partially resolved; details adequate to show feasibility of a more standard design have been provided. Detailed review of all attributes will continue with the preliminary plan, final plat and construction drawings. Remaining concerns include calculation method of entry angles (which affects other design aspects) and potential conflict between Approach 2 and Approach 3. Reference NCHRP Report 672 pages 6-26 - 6-27. Partially resolved;*

- d. If the RI access with roundabout is approved, 60% to 90% roundabout technical reports and construction plans (for both roundabouts) will be required with the Preliminary Plan submittal to allow for adequate review time. **Provide 60% and 90% roundabout submittals prior to final design/final plat submittal.**
- e. **Note for final design: The Wisconsin DOT Facilities Development Manual (FDM), FDM 11-26 section is referenced where County criteria and the NCHRP Report 672 (Roundabouts: An Informational Guide) are lacking in detailed criteria. Roundabout design procedures and criteria in the FDM, including design procedures, details, signing and striping recommendations and lines of sight, should be utilized to the extent practicable. See <http://wisconsin.gov/Pages/doing-business/eng-consultants/cnslt-rsrcs/design.aspx> Regarding roundabout lighting, reference <http://wisconsin.gov/Pages/doing-business/local-government/traffic-ops/manuals-and-standards/tgm/11.aspx> / <http://wisconsin.gov/dtsdManuals/traffic-ops/manuals-and-standards/teops/11-04.pdf> for guidance. Please discuss any conflicting or redundant criteria with Staff. Provide FDM 11-26 Attachment 5.1 or equivalent prior to final design submittal. (Links: <http://wisconsin.gov/rdwy/fdm/fd-11-26-att.pdf#fd11-26a5.1> <http://wisconsin.gov/rdwy/fdm/files/fd-11-26-a0501-File01.xls>)**
- 4. Resolved
- 5. When Woodmen Road is expanded to 6 lanes, the location and function of this access point will potentially exacerbate conflicts due to anticipated higher traffic speeds on Woodmen Road. If the proposed access is approved, Staff recommends that escrow be required in the amount necessary to remove the right-in and roundabout in the future. Resolved regarding the weaving analysis; the question remains regarding actual physical construction. Potential removal of the right-in due to safety issues and/or widening of Woodmen Road will be addressed in a *license agreement, if the access is approved.* **A draft license agreement (needed with Final Plat) will be provided when available.**
- 6. Resolved
- 7. Resolved
- 8. See updated TIS redlines regarding these comments and other associated issues. **Resolved;**
- a. **Replace Table 5.**
- 9. **LSC Response (9-6-18): Completed.**

Note: the electronic review can proceed much faster with automated tools if pages are not rotated between submittals. LSC Response (9-6-18): As requested, all pages of the updated report PDF included with this submittal are oriented for viewing on the screen rather than for printing.

a.

10. Regarding Figure 26, one Right Lane Must Turn Right sign should be sufficient and suggest retaining only the upstream sign with the 500-ft plaque and adding two R3-5 signs adjacent to the arrow pavement markings. Suggest adding a Circular Intersection warning sign in place of the Yield Ahead sign.

Note: Comments 11-16 are from previous complete Preliminary Plan submittal.

11. Resolved
12. Resolved; Construction or "fair share" escrow contribution, if applicable, will need to be determined and approved by the County Engineer with the final plat or each Site Development Plan.
13. Verify whether or not the traffic signal at Meridian and Eastonville is proposed to be constructed with the first final plat connecting that intersection. If it is not, provide additional stop-condition and warrant analyses for the current and short-term conditions at this intersection. Resolved; coordination with EPC DPW will be provided at the final plat/construction stages.
14. The TIS needs to provide acceleration, deceleration, and stopping distances in accordance with current design and posted speeds. If these lengths cannot be met, provide deviation requests for shorter lengths as applicable. Resolved; reduction of the speed limit on Meridian Road between Woodmen Road and a location near Owl Lane (verify MUTCD requirement) is being considered by the County Engineer if this development proceeds.
15. Resolved
16. The deviations submitted have not approved or denied pending review of the revised TIS. Comment remains; 6/16: *Comment remains; the deviations have still not been approved or denied pending further revisions. The number of issues remaining with the proposed design is not acceptable.* 7/19/18: Unresolved. **8/24/18: The deviations need the owner's signature. Design details including entry angles/phi, center island and if necessary, traversable aprons will need to be further revised with the 60% roundabout review.** **LSC Response (9-6-18): Noted.**

Following are applicable November 2, 2007 comments (renumbered 7-15) that were remaining to be addressed from the rezone approval (CR-07-001, condition of approval #2). Address as appropriate with the updated TIS:

7. The overall study for the Latigo Area should include a fair and equitable cost from each developer that would need to be determined prior to final plat. This equation should address the cost sharing of all regional improvements. 10/29/07: *Many improvements have been identified to develop commercial in the area. Costs that are regional or part of the subarea should be shared among developers. These costs and contributions will be identified with the final plat.* Resolved; any off-site improvement contributions (or potential cost recovery) will be identified with the final plat.
8. through 11 – Resolved
12. Levels of service E are shown at the intersection of Eastonville and Meridian Road and Woodmen and Golden Sage. Provide methods of mitigating these unacceptable levels of service. A possible solution is to specify uses to trip generation that would bring the turn lanes into conformance. 10/29/07: *These deviations will be evaluated further with the preliminary plan.* Comment remains regarding the

Eastonville/Meridian intersection; conditions may be placed on the deviation request by the County Engineer.

Preliminary Drainage Report (PDR) / Drainage Plans

1. Provide all required PDR checklist items ~~(attached)~~. The known missing/incomplete items have been highlighted. Comment remains; see remaining items and redlines for clarification. Existing conditions and proposed on-site conditions need to be fully addressed. *See remaining items and redlines. Note: revisions and additional reviews will be required to address the access from Woodmen Road if that design is proposed. Partially resolved;*
 - a. **Resolved.**
 - b. Provide approximate flow rates entering the subdivision with all necessary calculations (checklist item #28). Label Pond SR4 release rates (96" pipe flows) for each design storm. Partially resolved; see redlines. **Partially resolved; see updated redlines. Additional basin added for the area north of the development to the west. PDR and plan sheet updated accordingly.**
 - c. Regarding checklist item #30, alignment, material and structure type, the roundabout designs will require additional details at the final design stage to ensure that drainage facilities do not conflict with the required roundabout attributes (grading, sight distance control, etc.).
2. *through 5 – Resolved*
6. Address how the proposed design accommodates the existing petroleum pipeline and other utilities along the south and east property lines. Provide documentation that the easement holders have no objections to the proposed drainage design. Comment remains. *Provide documentation when available. Comment remains.* Unresolved. **Unresolved. Copies of email correspondence and a draft encroachment agreement have been included with this submittal. Nustar are working on finalizing the agreement.**
7. *through 9 – Resolved*
10. Provide preliminary storm drain, channel, headwater, freeboard and spillway sizing calculations. Partially resolved;
 - a. Additional detail and clarification will be required for features to be constructed with the overlot grading or in the FDR for subdivision construction items. See redlines. *See remaining/updated redlines.* Partially resolved; see updated redlines. **Partially resolved; see updated redlines.**
 - b. *Resolved*
 - c. *Resolved*
11. Geotechnical issues (also see Geotech. study comments below)
 - a. Page 31 of the geotech. study states that "In no case should water be allowed to pond near or adjacent to foundation elements, hardscaping, utility trench alignments, etc." Discuss how the proposed drainage design accomplishes this. Partially resolved; final *liner* details need to be provided with FDR or in this report prior to pond construction. *Comment remains. Partially resolved see redlines regarding liner details. Requirements for quality control, testing and final certifications for the pond liner will need to be discussed and agreed to prior to construction. The thickness of topsoil mixture above the liner (liner depth) needs to be discussed*

and verified. Comment remains; provide specifications when available. *Unresolved. PSI letter detailing liner specifications was provided to staff and included with this submittal.*

- b. Address anticipated pond SR4 embankment settlement. Provide additional study and construction requirements when available. *Resolved; tracking of settlement will be addressed at construction stage.*
- c. Consider replacing the proposed area drain and pipe at the northwest corner with a swale along the north property line to the proposed rundown. Maintenance access appears likely to be difficult as proposed and the geotech. study recommends “properly designed drainage swale” at the tops of excavation slopes. Partially resolved; stabilization of and maintenance access to the 3:1 (and steeper?) excavated slope along the north side of Pond SR4 will need to be further addressed with the final pond design. *(If the extent of overlot grading includes the slopes, this needs to be addressed with overlot grading.) Comment remains; access road design, offsite grading (requiring easements) sheet flow locations and rundowns and the concrete rundown need additional detail to ensure adequate access and functioning.* **Unresolved. *Partially resolved; see remaining redlines. Swale has been revised to a pipe drain with riprap apron upstream. Design details have been coordinated with staff.***
- d. Discuss the required geotechnical and dam analyses appropriate for detention pond SR4. See DCM Sections 6.6, 11.3.3, and Attachment A (Chapter 11). Partially resolved; provide additional study and construction requirements when available. *Partially resolved with PSI memo; provide copies of State Engineer correspondence and additional geotechnical requirements (if applicable) when available. See redlines regarding details and material at downstream edge of spillway.* **Unresolved. *Unresolved. PSI letter detailing liner specifications, and correspondence with State Engineer was provided to staff and included with this submittal.***

12. Resolved

13. Drainage Plan:

- a. Resolved.
- b. ***Resolved.***
- c. *Resolved*
- d. Provide a design point summary of 5- and 100-year flow rates at all surface and pipe design points on both the existing and proposed plans. Partially resolved; address per local basin and DP redlines. *Comment remains; see redlines regarding flows from the north. Comment remains.* **Unresolved. *Unresolved. Additional basin added for the area north of the development to the west. PDR and plan sheet updated accordingly.***
- e. *Note: The determination of crown location and inlet or sheet flow for the additional paving on Meridian Road (and at other offsite locations if required due to approval of the Woodmen Road right-in) will need to be determined with the Final Drainage Report and offsite CDs.*

14. through 16 – Resolved

17. All runoff from Falcon Market Place (road) needs to be treated for WQCV or a deviation approved for areas that are not treated (southwest area?). See redlines regarding Pond #3. *Comment remains (the drainage plan shows some inlets draining directly to the channel area).* If a deviation is needed it can be provided with the FDR.

18. Adequate separation of the inlet and outlet for Pond #2 needs to be provided. Reference UDFCD USDCM Volume 3 EDB Design Procedure and Criteria, page EDB-3. Consider shifting the inlet to the west and/or the outlet to the east. Another option would be to construct a wall directing flows toward the end of the pond before reaching the outlet. *Comment remains for both Pond #2 and Pond #3. Note that the location of Pond #3 in existing County right-of-way is not able to be approved until resolution of the overall road design issues.* These details can be worked out with the FDR.
19. *Resolved*
20. *Resolved*
21. *Note:* If any of the CLOMR excerpts have been revised with the design (i.e. StormCAD), provide revised versions in the report calculations.
22. Verify outlet grate velocity of Pond SR4. Address compliance with UDFCD safety criteria (see redlines). **Unresolved. Outlet grate velocity is compliant with UDFCD criteria – see included SDI worksheet.**
23. *Note:* Details on upstream diversions done with the Bent Grass project will need to be addressed with the Falcon Marketplace FDR.

Grading and Erosion Control Plan / SWMP / Geotechnical Issues

Note that in order to obtain the Early Grading permit, most of the drainage and all of the Grading and Erosion control comments need to be addressed with detail to the final design level.

1. *Note:* Regarding the request for pre-development site grading (“early grading”), a checklist of final submittal requirements *was previously provided*. The separate Construction Drawing review (CDR-16-007) (*comments incorporated below*) needs to be complete and those plans approved along with the GEC plans prior to overlot grading. The PDR will need final-level details as well, including complete pipe and pond design, if the Final Drainage Report is not to be submitted and approved prior to overlot grading.
2. GEC Plan:
 - a. Provide all required GEC checklist items (attached). The known missing/incomplete items have been highlighted. You may need to split sheet 2 into two sheets (north and south) or more to show all information and detail required. *Comment remains. See remaining items. For the overlot/early grading permit, an interim plan will be necessary showing only the grading and drainage improvements necessary for the overlot grading. This will exclude work outside of the property lines and storm drains that serve the future lots. If the Pond SR4 embankment will be completed, the pond outlet and downstream storm drain (or interim channel) will need to be installed. Partially resolved; see updated checklist.* **Partially resolved; see updated checklist. Plans and checklist updated per redlines.**
 - b. through j – *Resolved*
 - k. *See new redlines and incorporate applicable drainage plan redlines.* *Comment remains.* **Partially resolved; see updated redlines. Plans and checklist updated per redlines.**

3. Ground Engineering Geotechnical Report dated October 18, 2016:
 - a. Resolved
 - b. There is only one boring in the SR4 pond area, which indicates very shallow groundwater. Recommendations on how to keep the groundwater from infiltrating the pond (which is to be excavated approximately 10 feet deeper than the groundwater level) need to be provided. If a separate geotech. study will be provided for pond construction, let us know. Comment remains; provide additional study when available.
 - c. Resolved
 - d. Note: Comments regarding pavement design for the proposed spine road will be provided with the Final Plat review, dependent on final design/layout and determination of public or private maintenance. Final geotechnical study and review of construction plans by the geotechnical P.E. will be required at the Final Plat stage.
4. SWMP:
 - a. Provide remaining items highlighted in blue on attached checklist. Comment remains. Unresolved. **Partially resolved; see remaining items. Report and checklist updated per redlines.**
 - b. Items highlighted in yellow need to be provided in the on-site SWMP when construction begins.
 - c. Resolved

CLOMR Report and Construction Plans (#1-#13 from CLOMR comments)

2. Resolved
11. Note: A soils/geotechnical investigation as appropriate for detention pond and embankment construction will be required with the Construction drawings submitted for County approval. Reference ECM Section 2.2.6. For the complete construction drawing review, all County submittal requirements need to be met, including the following: (to be revised with CDs) 2/17: Comment remains. 5/30: Comment remains. 7/6: Partially resolved:
 - a. Survey horizontal and vertical control points (*not found*). Resolved; to be addressed further with as-builts.
 - b. All necessary onsite and offsite drainage and access easements. Comment remains. **Unresolved; also provide documentation from Nustar concurring with the CDs when available. Unresolved. Copies of email correspondence and a draft encroachment agreement have been included with this submittal. Nustar are working on finalizing the agreement.**
 - c. Resolved
 - d. Liner design specifications and details. Comment remains (to be agreed upon with County Engineer). Unresolved; see PDR comment #11. **Unresolved. PSI letter detailing liner specifications was provided to staff and included with this submittal.**
13. Annotated FIRM contains some illegible text (PDF scrambled). 5/30: Provide final (approved version) CLOMR CD when available. Unresolved. **Unresolved. Copy of CLOMR submittal and approval was provided to staff and included with the last submittal.**
14. Resolved

15. *Resolved*
16. *Reference attached UDFCD outlet structure design details. Specific items that need to be incorporated into the project's outlet structure designs include the orifice plate design and notes, water quality plate details (type and thickness), stainless steel well screen (page OS-9) and neoprene gasket. Complete review of sheet C7.9 will be provided after revisions. Sheets C7.11 and C7.12 will be reviewed with the subdivision CDs. Partially resolved; see redline regarding specific calculations for trash rack (now sheet C7.5). Partially resolved; see updated redlines.*
17. *Provide a detailed liner design drawing with elevations and extents. Ensure that conflicts with the other pond features are addressed. Partially resolved; see redlines regarding conflicts and cover depth. Partially resolved; see PDR comment #11.*
18. *See redlines on CDs. See new redlines. Partially resolved; see updated redlines. **Partially resolved; see updated redlines.** Plans updated per redlines.*

Financial Assurance Estimate Form/Other

1. **Resolved**
2. *Resolved*
3. *Provide PDB/BMP agreement exhibits A and B when available. If an access easement other than the to-be platted pond tracts/easements is desired, an Exhibit "C" can be provided. **Provide when available.***

We trust you find our responses to the 5th review of the Falcon Marketplace Preliminary Plan acceptable. We look forward to working with the County in processing the submittal. Please call if you have any questions or require any additional information.

Respectfully,

Drexel, Barrell & Co.



Tim D. McConnell, P.E.