



**Engineering Review**  
04/16/2020 3:51:17 PM  
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March 10, 2020

Mr. Alan Toth  
Avatar Fountain  
c/o Avatar Equities  
6800 Jericho Turnpike, Suite 120W, #204  
Syosset, NY 11791

RE: River Bend Crossing  
City of Fountain, Colorado  
Updated Traffic Impact and Access Analysis  
LSC #184140

Dear Mr. Toth:

LSC Transportation Consultants, Inc. has prepared this updated traffic impact and access analysis for the proposed River Bend Crossing development to be located generally southwest of US Highway (Hwy) 85-87 (US 85-87) and Main Street in the City of Fountain and unincorporated El Paso County, Colorado. The proposed **commercial development** is the redevelopment of the existing Fountain Valley Shopping Center. The proposed **residential development** site is located just to the west of the commercial development site. Figure 1 shows the site location (both projects).

**This report addresses the traffic impacts of both the proposed commercial redevelopment (City of Fountain) and residential (unincorporated El Paso County) projects.**

## REPORT CONTENTS

The report contains the following:

- The proposed land uses for the site;
- The roadways in the study area including the number of lanes, classifications, posted speed limits, existing and proposed intersection/access spacing, lane geometries, traffic controls, etc.;
- The existing traffic volumes at the intersections of US Hwy 85-87/Main Street and US Hwy 85-87/Southmoor Drive;
- The projected future peak-hour traffic volumes for the site access points and the key area intersections;
- The resulting traffic impacts. The traffic impacts have been quantified by determining the future levels of service at the study-area intersections;
- Findings and recommendations.

# LSC Responses to PCD TIS Redlines dated April 16th 2020

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Page: 1

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 Number: 1 Author: dsdrice Subject: EPC ENG ReviewDate: 4/16/2020 15:51:26

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## SITE LAND USE AND ACCESS

The Fountain Valley Shopping Center is located within the city limits of Fountain and the residential development site is located outside the city limits in unincorporated El Paso County.

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### Commercial Development

The Fountain Valley Shopping Center, located west of US Hwy 85-87 and Main Street, includes about 83,000 square feet of floor space including a discount store, inline retail, a bowling alley, and a restaurant. The site is planned to be razed and redeveloped for new retail uses with a total of 61,599 square feet of floor space. The residential site plan and commercial site are shown in Figure 2. Note: the most recent site plan for the commercial project is shown in an attached exhibit following the report figures. **The attached commercial site plan is the most current site plan depicting the latest version of the entry drive traffic laneage.** The existing full-movement signalized access to US Hwy 85-87 (aligning with Main Street) is planned to remain.

northwest

The two existing access points to Southmoor Drive are planned to be closed and replaced with a single full-movement access about 560 feet southwest of US Hwy 85-87 (centerline to centerline) and about 100 feet northeast of the existing Fountain Valley Senior Center entrance. Figure 3 shows the existing and proposed spacing of access points on Southmoor Drive.

75? 4

520? 3

A 15,625-square-foot parcel located northwest of the intersection of US Hwy 85-87 and Main Street is not included in this development. The existing gas station with convenience market located on this parcel is under different ownership and is not part of this site or redevelopment. A right-in/right-out-only access point for the gas station to US Hwy 85-87 just north of Main Street is also outside the property boundary of this site. As required by CDOT, the applicant has updated the site plan to show a vehicular connection to/from this outparcel. This would allow for vehicular access to/from this outparcel if CDOT were to close that parcel's direct access to US Hwy 85/87 in the future.

### Residential Development

A 53-acre parcel located adjacent to and southwest of the Fountain Valley Shopping Center is planned to be developed with 221 lots for single-family homes. The residential development would have access to the signalized intersection of US Hwy 85-87/Main Street via a new Community Collector street that will extend through the redeveloped commercial parcel. An additional full-movement site access is proposed to Southmoor Drive about 925 feet south of US Hwy 85-87.

## EXISTING ROADWAY AND TRAFFIC CONDITIONS

### Area Roadways

The roadways in the study area are shown on Figure 1 and are described below.

- **US Highway 85-87** is a major north/south route serving Fountain Valley. Adjacent to the site US Hwy 85-87 has two through lanes in each direction and a posted speed limit of 50 miles per hour (mph). US Hwy 85-87 is classified by the Colorado Department of Transportation as

## Page: 2

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○ Number: 1 Author: jchodsdon Subject: Oval Date: 8/17/2020 12:14:31

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☰ Number: 2 Author: dsdrice Subject: Callout Date: 4/16/2020 14:43:45

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northwest

↩ Author: jchodsdon Subject: Sticky Note Date: 8/17/2020 12:14:23  
LSC Response: Corrected as requested.

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☰ Number: 3 Author: dsdrice Subject: Callout Date: 4/16/2020 14:42:26

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520?

↩ Author: jchodsdon Subject: Sticky Note Date: 8/17/2020 12:15:21  
LSC Response: Corrected as requested.

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☰ Number: 4 Author: dsdrice Subject: Callout Date: 4/16/2020 14:42:37

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75?

↩ Author: jchodsdon Subject: Sticky Note Date: 8/17/2020 12:16:20  
LSC Response: Added as requested.

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estimated to be currently generated by land uses within the existing Fountain Valley Shopping Center that are planned to be razed/removed.

Figure 13b shows the lane geometry, traffic control, and level of service at the key intersections based on the short-term baseline volumes.

Figure 14a shows the estimated 2040 baseline traffic volumes. These volumes are based on the short-term baseline traffic volumes shown in Figure 13a plus additional growth of through traffic on the adjacent streets based on the Colorado Department of Transportation (CDOT) twenty-year growth factor for US Hwy 85-87 adjacent to the site.

 (x.x%)

Figure 14b shows the lane geometry, traffic control, and level of service at the key intersections based on the 2040 baseline volumes.

## TOTAL TRAFFIC

Figure 15a shows the projected short-term total traffic volumes at the site access points and key adjacent intersections. The short-term total traffic volumes are the sum of the short-term baseline traffic volumes from Figure 13a plus the site-generated traffic volumes due to development of the shopping center/non-residential portion of the site (from Figure 11) plus the site-generated traffic estimated to be generated by development of the residential portion of the site (from Figure 12). The volumes shown in Figure 15a represent the short-term impacts of the development.

Figure 15b shows the lane geometry, traffic control, and level of service at the key intersections based on the short-term total volumes.

Figure 16a shows the projected 2040 total traffic volumes at the site access points and key adjacent intersections. The 2040 total traffic volumes are the sum of the 2040 baseline traffic volumes from Figure 14a plus the site-generated traffic volumes due to development of the shopping center/non-residential portion of the site from (Figure 11) plus site-generated traffic estimated to be generated by development of the residential portion of the site (from Figure 12).

Figure 16b shows the lane geometry, traffic control, and level of service at the key intersections based on the 2040 total volumes.

## PROJECTED LEVELS OF SERVICE

### Intersection Levels of Service

The site access points, and key area intersections were analyzed to determine the projected levels of service for the short-term and 2040 baseline and total traffic volumes. Figures 13b through 16b show the level of service analysis results. The signalized intersection of US Hwy 85-87 was analyzed using Synchro. The intersection of US Hwy 85-87/Southmoor Drive and the site access points to Southmoor Drive were analyzed using the unsignalized/two-way, stop sign-

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Number: 1 Author: dsdrice Subject: Callout Date: 4/16/2020 14:31:34

(x.x%)

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Author: jchodsdon Subject: Sticky Note Date: 8/17/2020 12:15:56

LSC Response: Added as requested.

- The applicant has indicated that the pedestrian ramps on the northwest and southwest corners of the intersection of Highway 85/Main Street will meet ADA requirements. The pedestrian crossing distance on the west leg of the intersection is about 106 feet. This translates to a pedestrian clearance time of 30 seconds and a pedestrian interval of 24 seconds. This matches the current pedestrian interval for this leg in use at the intersection.
- Some signal modifications will be necessary including the addition of pedestrian pedestal posts on the northwest and southwest corners of the intersection such that separate push buttons can be provided for each crossing direction. Pedestrian signal heads already exist. Crosswalk markings and stop bars will need to be reinstalled. The mast arm on the signal pole on the southeast corner of the intersection is 35 feet long. Per CDOT standard plan S-614-40A, a design length of 35 feet can accommodate 3 signal heads – one for the left-turn lane and one for each eastbound through lane. However, the overhead left-turn head may not be permitted as a primary left-turn head due to the lateral alignment. Alternatively, a primary post mounted left-turn head may be added on the island in the northeast corner. The left-turn striping may need to be modified from the concept in order to meet the lateral alignment criteria in the MUTCD. The third option is to install a short mast arm perpendicular to the existing signal pole in the northeast corner island on which a left-turn head could be mounted. The fourth option would be to add an additional signal pole with 25' mast arm in the northeast corner island. These options will be evaluated in more detail with the preparation of a signal modification plan to be provided prior to issuance of a Notice-to-Proceed.

#### Roadway Improvement Fee Program

- The residential portion of the project will be required to participate in the El Paso County Road Improvement Fee Program. They will join the ten-mil PID. The ten-mil PID building permit fee portion associated with this option is \$1,221 per single-family dwelling unit. Based on 225 lots, the total building permit fee would be \$269,841.

\* \* \* \* \*

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Add a bullet point recommendation for the north bound left turn into the residential and commercial access along Southmoor. Based on Fig 14a & 14b, an auxiliary left turn lane is required. Identify the required deceleration lane, taper length and storage length.

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☰ Number: 1 Author: dsdrice Subject: Text Box Date: 4/16/2020 14:37:22

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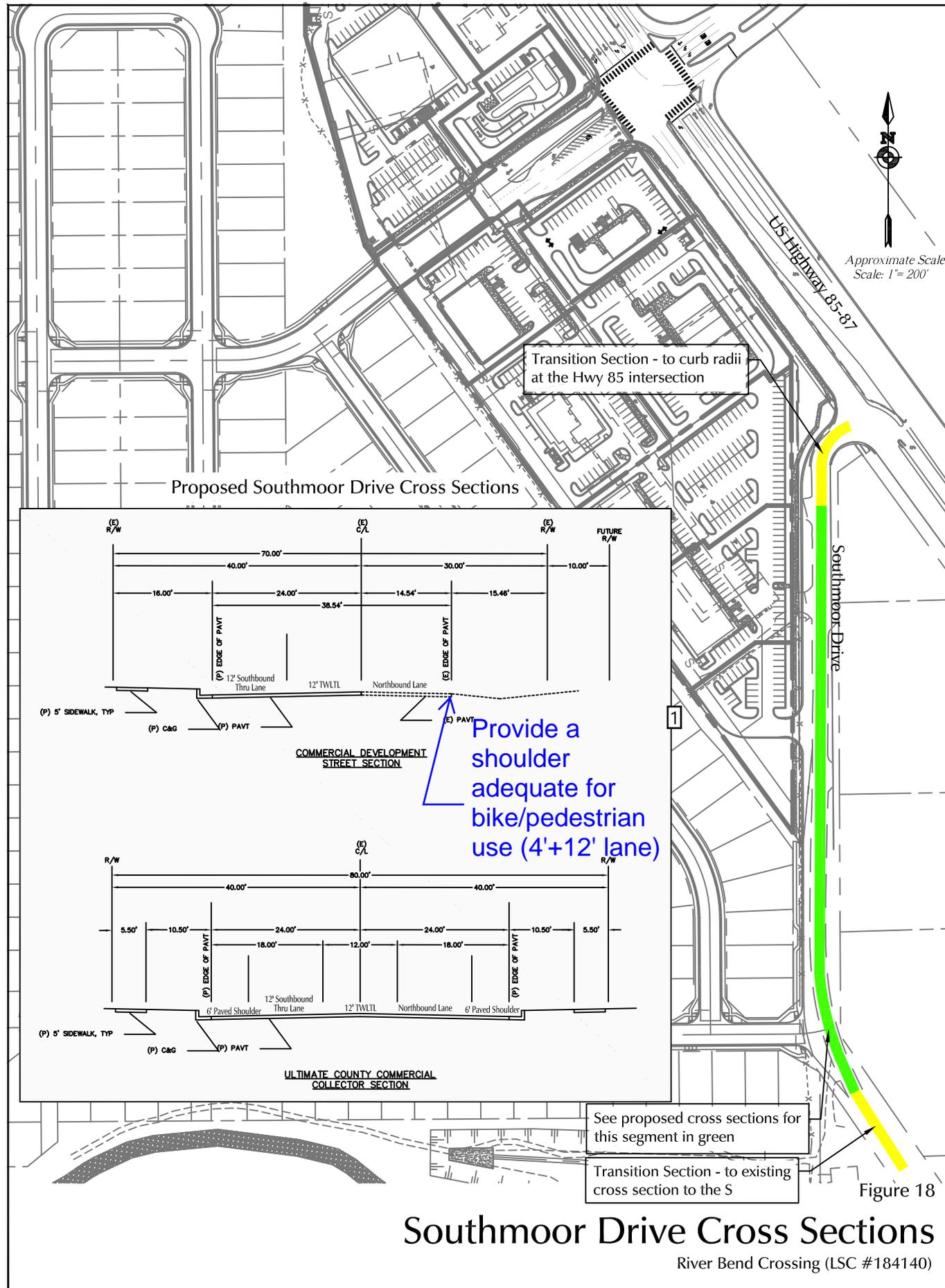
Add a bullet point recommendation for the north bound left turn into the residential and commercial access along Southmoor. Based on Fig 14a & 14b, an auxiliary left turn lane is required. Identify the required deceleration lane, taper length and storage length.

↩ Author: jchodsdon Subject: Sticky Note Date: 8/17/2020 12:16:29

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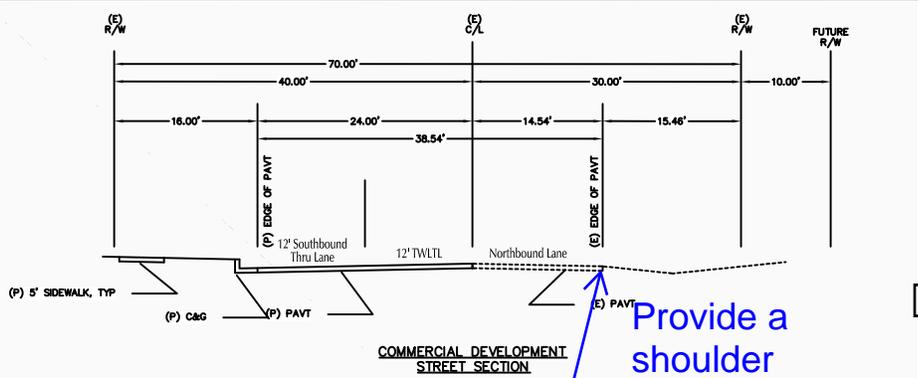
LSC Response: Added as requested.

Approximate Scale  
Scale: 1" = 200'

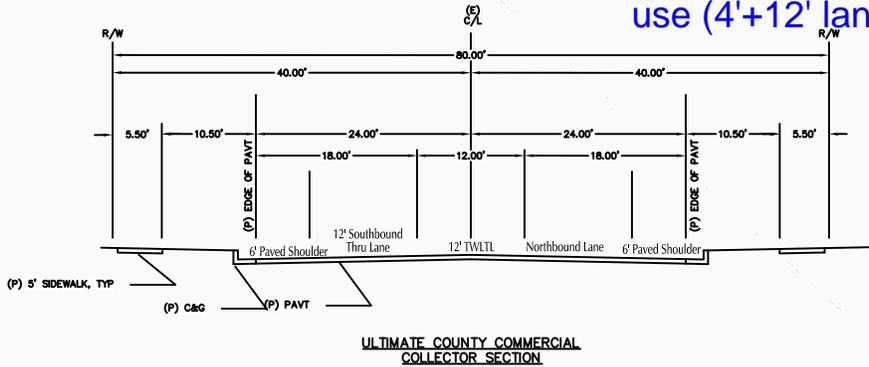


Proposed Southmoor Drive Cross Sections

Transition Section - to curb radii at the Hwy 85 intersection



Provide a shoulder adequate for bike/pedestrian use (4'+12' lane)



See proposed cross sections for this segment in green

Transition Section - to existing cross section to the S

Figure 18

# Southmoor Drive Cross Sections

River Bend Crossing (LSC #184140)

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Number: 1 Author: dsdrice Subject: Callout Date: 4/16/2020 15:49:37

Provide a shoulder adequate for bike/pedestrian use (4'+12' lane)

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Author: jchodsdon Subject: Sticky Note Date: 8/17/2020 12:16:57  
LSC Response: Revised as requested.