

County of Loudoun

Office of Transportation Services

MEMORANDUM

DATE: November 20, 2009

TO: Judi Birkitt, Project Manager, Department of Planning

FROM: George Phillips, Senior Transportation Planner 

SUBJECT: ZMAP 2009-0005, SPEX 2009-0009 & CMPT 2009-0001-
Green Energy Partners/Stonewall (GEP/S) Hybrid Energy Park
Second Referral

LOCATION: North side of the Dulles Greenway (Route 267), west of Goose
Creek, east of Sycolin Road (Route 643) and south of Cochran Mill
Road (Route 653) and Gant Lane (Route 652)
(Attachment 1)

Background

The subject applications seek rezoning, special exception and commission permit approval to allow a utility generating plant and transmission facility on portions of five parcels totaling approximately 90.5 acres. The rezoning is proposed from the TR-10 (Transitional Residential) zoning district to MR-HI (Mineral Resource-Heavy Industry) zoning district. These applications were initially submitted as part of the Stonewall Secure Business Park/Hybrid Energy Park and were reviewed collectively by the Office of Transportation Services (OTS) with comments dated April 29, 2009; the subject applications have subsequently been separated out to proceed independently¹.

This referral updates the status of the Hybrid Energy Park applications and is based on materials received from the Department of Planning on September 4, 2009, including (1) a response letter from the applicant's representative, dated August 20, 2009, (2) a revised statement of justification from the applicant's representative, dated August 20, 2009, (3) draft proffers from the applicant's representative, dated August 20, 2009, (4) suggested conditions of approval from the applicant's

1. The Stonewall Secure Business Park (ZMAP 2008-0017, SPEX-0068, SPEX 2008-0069 & SPEX 2008-0070) is now a separate proposal for county review.

representative dated August 20, 2009, (5) a traffic study, dated September 3, 2009, from Patton Harris Rust, & Associates and (6) a concept plan and plat, dated July, 2009, by William H. Gordon Associates, Inc.

Existing, Planned and Programmed Transportation Facilities

The site is served by Sycolin Road (Route 643), Cochran Mill Road (Route 653), and Gant Lane (Route 652). Full discussion of existing conditions and planned improvements is provided in the first OTS referral (April 29, 2009). Since that time, it is noted that VDOT has completed its paving project along Sycolin Road (Route 643), and that roadway is now a paved two lane (R2) facility between the Leesburg Town Limits and Belmont Ridge Road (Route 659) in Ashburn.

Review of Applicant's Traffic Study

As noted above, the Applicant has submitted a new traffic study for only the Hybrid Energy Park applications; OTS staff review of this document is as follows:

Existing Traffic Volumes and Level-of-Service (LOS)

The applicant's traffic study (*Attachment 2*) provides existing peak hour traffic volumes and indicates that the unsignalized Cochran Mill Road (Route 653)/(Gant Lane)Route 652 intersection currently (2009) operates at an acceptable LOS. This includes LOS A during both peak hours for all movements. The unsignalized Sycolin Road (Route 643)/Cochran Mill Road (Route 653) intersection is also currently operating at an acceptable LOS. This includes LOS A for the southbound left-turn movement from Sycolin Road (Route 643) onto eastbound Cochran Mill Road (Route 653) during both peak hours and LOS B for the westbound left-turn movement from Cochran Mill Road (Route 653) onto southbound Sycolin Road (Route 643).

Background Traffic and Level-of-Service (LOS)

With the addition of forecast background traffic, the acceptable LOS remains unchanged at both intersections for the projected 2014 background year (*Attachment 3*).

Trip Generation Information

The applicant's traffic study estimates that the proposed energy park would generate 24 a.m. peak hour, 26 p.m. peak hour and 89 daily vehicle trips (*Attachment 4*). Based on the by-right TR-10 zoning, the 90.5 acre property would yield 9 single-family dwelling units. This would generate 90 daily, 16 a.m. peak hour and 12 p.m. peak hour trips. The proposed use represents an increase of 8 a.m. peak hour, 14 p.m. peak hour vehicle trips and a reduction of 1 daily vehicle trip compared to the by-right development scenario.

OTS staff notes that the source of the trip generation figures cited by the Applicant for the proposed use is not referenced in the study; additional comments on this issue are provided in Comment #2 below.

Trip Distribution

The applicant's traffic study notes that 50% of the site traffic will access the site from the east on Cochran Mill Road (Route 653) and 50% would approach from the west on Cochran Mill Road (Route 653) (*Attachment 5*). The 50% distributed west to Sycolin Road (Route 643) then splits with 30% to the north and 20% to the south on Sycolin Road (Route 643).

Forecasted Level-of-Service

Under total future conditions (background traffic plus site-generated traffic), the applicant's traffic study (*Attachment 6*) indicates that the unsignalized Cochran Mill Road (Route 653)/Gant Lane (Route 652) intersection will operate at an acceptable LOS for total future conditions in 2014 (LOS A during both peak hours for all movements). The unsignalized Sycolin Road (Route 643)/Cochran Mill Road (Route 653) intersection will also operate at an acceptable LOS (LOS A for the southbound left-turn movement from Sycolin Road (Route 643) onto eastbound Cochran Mill Road (Route 653) during both peak hours and LOS B for the westbound left turn movement from Cochran Mill Road (Route 653) onto southbound Sycolin Road (Route 643) during both peak hours.

Transportation Comments

The comments below relate to how the applicant has addressed the original OTS comments (April 29, 2009) when the proposed Hybrid Energy Park was included with the Stonewall Secure Business Park application. These include the original OTS comment, the applicant's response, and whether the issue has been adequately addressed.

1. **Initial Staff Comment (First Referral April 29, 2009):** The proposed Hybrid Energy Park is tied to the overall Stonewall Secure Business Park application (ZMAP 2008-0017, SPEX 2008-0068, SPEX 2008-0069 and SPEX 2008-0070) under review by the County. As such, any recommended road improvements for the proposed Hybrid Energy Park will be included in the review of the overall Stonewall Secure Business Park. Initial OTS comments have already been released for this application.

Applicant's Response (August 20, 2009): The proposed Hybrid Energy Park and the Stonewall Secure Business Park have been separated into different applications with this response letter.

Issue Status: The initial OTS comment is no longer relevant as the applicant has now submitted the Hybrid Energy Park as a separate application. This separate application is being reviewed independently of the proposed Stonewall Secure Business Park application. This issue has been adequately addressed.

2. **Initial Staff Comment (First Referral April 29, 2009):** The applicant's revised traffic letter, dated February 25, 2009, doesn't provide a separate transportation analysis and apparently relies on the November 5, 2008 traffic study for the overall Stonewall Secure Business Park from Wells & Associates. However, please note that this study did not include

the hybrid energy park. It included more intense office and research & development land uses which generate significantly higher site traffic. The question is, does the applicant want to revise the traffic study to accurately reflect the hybrid energy park? Or is the applicant willing to utilize the existing November 5, 2008 Wells study, which has significantly higher site traffic, for determining transportation related improvements?

Applicant's Response (August 20, 2009): *The Hybrid Energy Park will employ approximately 25 people and will generate a total of 24 A.M. peak hour trips and a total of 26 P.M. peak hour trips and 89 average daily trips. As previously stated, the applications for the Hybrid Energy Park and the Stonewall Secure Business Park have been separated into different applications with this response letter.*

Issue Status: As noted in the background section, the applicant has submitted a separate traffic study which analyzes the Hybrid Energy Park independently from the proposed Stonewall Secure Business Park. However, the trip generation for the site needs further documentation. The Applicant should indicate its basis/source for the trip generation data included in Table 2 (page 6) of the applicant's traffic study (See Attachment 4).

- Initial Staff Comment (First Referral April 29, 2009):**The applicant's proposed conditions of approval do not include any transportation-related improvements. How and under what format will needed transportation-related improvements, such as to Sycolin Road and Cochran Mill Road, be provided to serve the site? Please clarify.

Applicant's Response (August 20, 2009): *Since the applications have been separated, a draft Proffer Statement has been included with this letter for the Hybrid Energy Park. The Hybrid Energy Park will be accessed by Gant Lane.*

Issue Status: The applicant has submitted draft proffers and suggested conditions with this application. However, the draft proffers (Proffer II. 4 and 5, Transportation), only specify that on-site travel ways will be constructed in accordance with the LSDO and FSM, that these travel ways will include emergency ingress and egress, and that neither Loudoun County nor VDOT will have any responsibility for maintenance and repair. For Gant Lane (Route 652), the applicant only specifies that right-of-way (ROW) dedication will be provided. No off-site construction on Gant Lane (Route 652) is mentioned which would be necessary to connect with Cochran Mill Road (Route 653). The Applicant's suggested conditions of approval (Condition 11) state that a construction traffic management plan will be submitted to OTS for review and approval. This relates to the management of temporary construction entrances and access roads which would insure that "wide load" deliveries are scheduled during off-peak times and that access routes to and from the site are planned to minimize conflicts.

The draft proffers and suggested conditions of approval do not address the fundamental concern with the location of this facility on Gant Lane (Route 652), a narrow unpaved road, approximately 10-12 feet wide, and including a concrete bridge culvert over the Sycolin Creek with no guard rails (See Attachment 7). In order to

provide safe and adequate access to the proposed Hybrid Energy Park, as well as to the proposed Loudoun Water Treatment Plant (SPEX 2009-0021 & CMPT 2009-0007, also currently under County review) which also proposes to use Gant Lane (Route 652) for access, the Applicant should commit to construction of an improved section of Gant Lane (Route 652) south from Cochran Mill Road (Route 653) to the proposed Hybrid entrance. Both the Hybrid Energy Park and the Loudoun Water Treatment Plant will result in truck traffic along Gant Lane (Route 652). This improvement should be a paved, two-lane rural section (consistent with VDOT standards) and needs to include an improved bridge crossing over Sycolin Creek (consistent with VDOT standards). The location/alignment of an improved Gant Lane (Route 652), north of the proposed site entrance, warrants further discussion with respect to the planned CTP alignment of Cochran Mill Road (Route 653) south of Sycolin Creek and the pending Stonewall Secure Business Park applications, such that the planned alignment of Cochran Mill Road (Route 653) may serve as the bridge crossing, with a realigned Gant Lane (Route 652) intersecting Cochran Mill Road (Route 653) south of the creek (see *Attachment 8* and *Comment #4* below). Further discussion and resolution of these issues is necessary.

4. **Initial Staff Comment (First Referral April 29, 2009):** The proposed concept plan does not appear to incorporate the planned realignment of Cochran Mill Road southwest through the site to Sycolin Road as a four-lane road. This includes the bridge crossing over Sycolin Creek. In addition, the applicant does not appear to provide a road connection to either Gant Lane or Cochran Mill Road. In order to fulfill the CTP road network as detailed in Appendix 1 of the CTP and better distribute site traffic, this will need to be addressed in the overall Stonewall Secure Business Park application.

Applicant's Response (August 20, 2009): *As stated previously, the applications have been separated and the planned realignment of Cochran Mill Road does not impact the Hybrid Energy Park applications. Access to the Hybrid Energy Park will be from Gant Lane.*

Issue Status: A review of the adopted **2001 Revised CTP** alignment for Cochran Mill Road (Route 653) south of Sycolin Creek does indeed show that the planned realignment will traverse the northwest portion of the site (See *Attachment 8*); this alignment needs to be accommodated by these applications (see *Comment #3* above). It appears that the planned structures for the proposed site would be avoided by the CTP alignment. This issue remains outstanding and needs further discussion.

5. **Initial Staff Comment (First Referral April 29, 2009):** In order to accommodate the widening of Cochran Mill Road along the site frontage and within the site, the applicant needs to dedicate all planned right-of-way in keeping with the CTP for these facilities. In addition, adequate right-of-way would need to be dedicated for Gant Lane, a local road, in the event it is to be utilized to serve the proposed development. It would include 70 feet of right-of-way to accommodate the relocated Cochran Mill Road through the site. In addition, all necessary construction-related easements need to be provided, including drainage, utility and grading easements where needed.

Applicant's Response (August 20, 2009): *The Hybrid Energy Park does not front onto Cochran Mill Road and the necessary improvements to Gant Lane will be made to serve the Hybrid Energy Park.*

Issue Status: The applicant is correct that the new application, now separated from the larger proposed Stonewall Secure Business Park, no longer fronts on existing Cochran Mill Road (Route 653). The applicant also notes that the necessary improvements to Gant Lane (Route 652) will be made to serve the Hybrid Energy Park. However, other than right-of-way dedication, the applicant has not provided for any physical improvements to Gant Lane (Route 652) in the draft proffers or suggested draft conditions. As stated in Comment #3 above, OTS recommends that the applicant commit to pave Gant Lane (Route 652) from the site entrance north to Cochran Mill Road (Route 653) to a VDOT standard two lane rural facility including improvement of the bridge culvert over Sycolin Creek to VDOT specifications. Coordination of this improvement with the CTP alignment of Cochran Mill Road (Route 653) south of Sycolin Creek warrants consideration. This issue remains outstanding.

6. **Initial Staff Comment (First Referral April 29, 2009):** The status of existing Gant Lane needs to be clarified. It appears that this road is not planned to remain in use within the proposed development. If this is the case, a road abandonment procedure would need to be initiated by the applicant and its function replaced by a similar type of facility.

Applicant's Response (August 20, 2009): *The plans have been revised to more clearly show existing Gant Lane. Gant Lane is proposed to remain in use for the Hybrid Energy Park as well as for Loudoun Water to access their property where their water treatment plant is proposed to be located.*

Issue Status: The applicant has adequately clarified the status of Gant Lane (Route 652) noting that it will remain in use as a public road. TOTS reiterates the need for improvements to Gant Lane (Route 652).

7. **Initial Staff Comment (First Referral April 29, 2009):** All entrances need to be constructed to VDOT requirements including the provision of turn lanes and adequate sight distance.

Applicant's Response (August 20, 2009): *All entrances and work within the road right of way will conform to the VDOT requirements.*

Issue Status: As noted in Comments #3 and #5 above, commitments to construct improvements to Gant Lane (Route 652) are necessary.

Conclusion

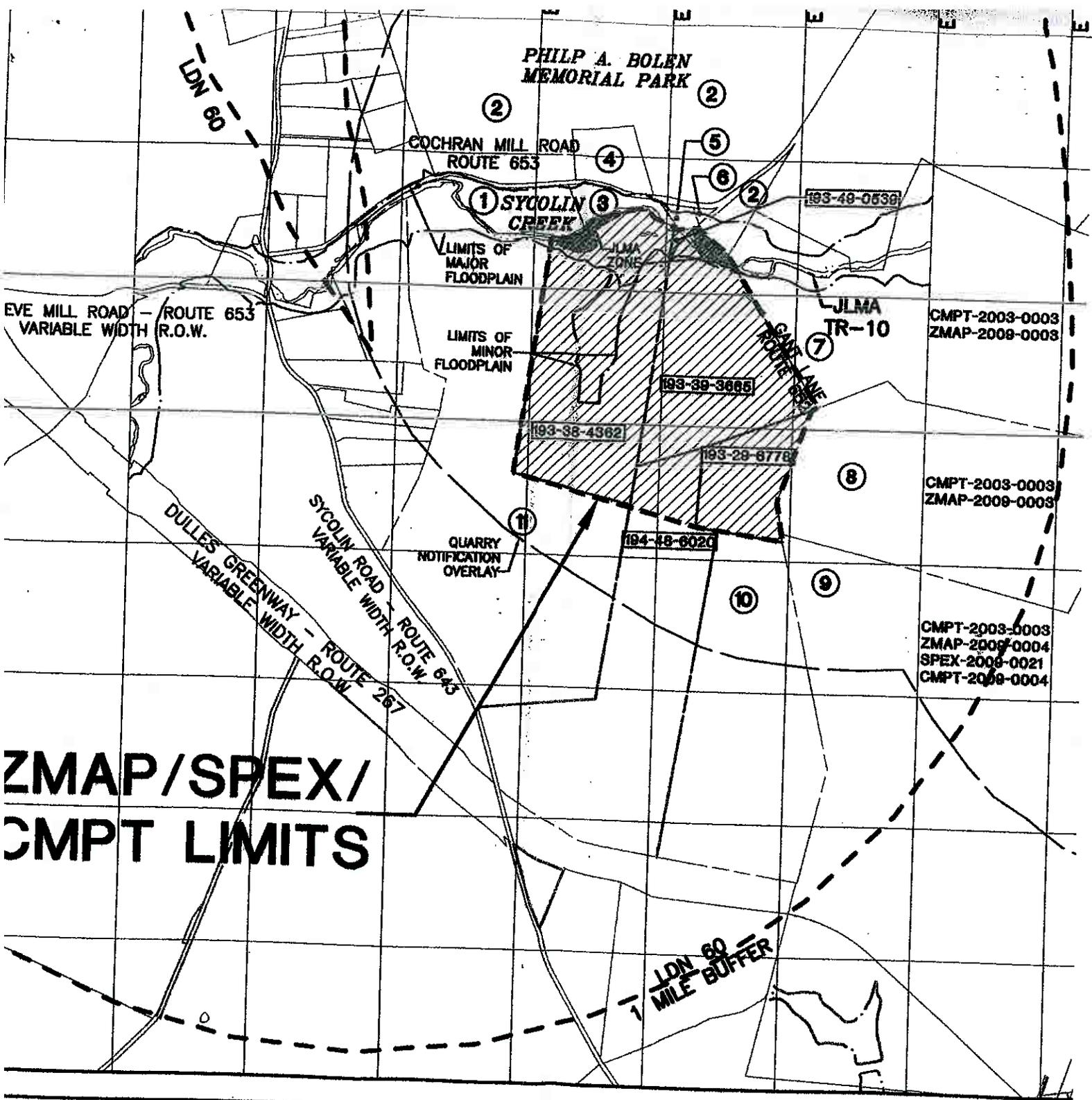
The Office of Transportation Services has no recommendation at this time. OTS will provide a recommendation once the issues identified in this referral have been adequately addressed. Transportation staff is available to meet with the Applicant to discuss the issues identified in this referral.

ATTACHMENTS

1. Site Vicinity Map
2. Existing Traffic and Levels of Service (Traffic Study Figure 1)
3. Background Traffic and Levels-of-Service (Traffic Study Figure 2)
4. Site Trip Generation (Traffic Study Table 2)
5. Site Trip Distribution and Trip Assignments (Traffic Study Figure 3)
6. Forecasted Traffic and Levels-of-Service (Traffic Study Figure 4)
7. Web Logis map showing the existing Gant Lane (Route 652) Bridge Crossing over Sycolin Creek
8. Adopted 2001 CTP Map Showing the realignment of Cochran Mill Road (Route 653)

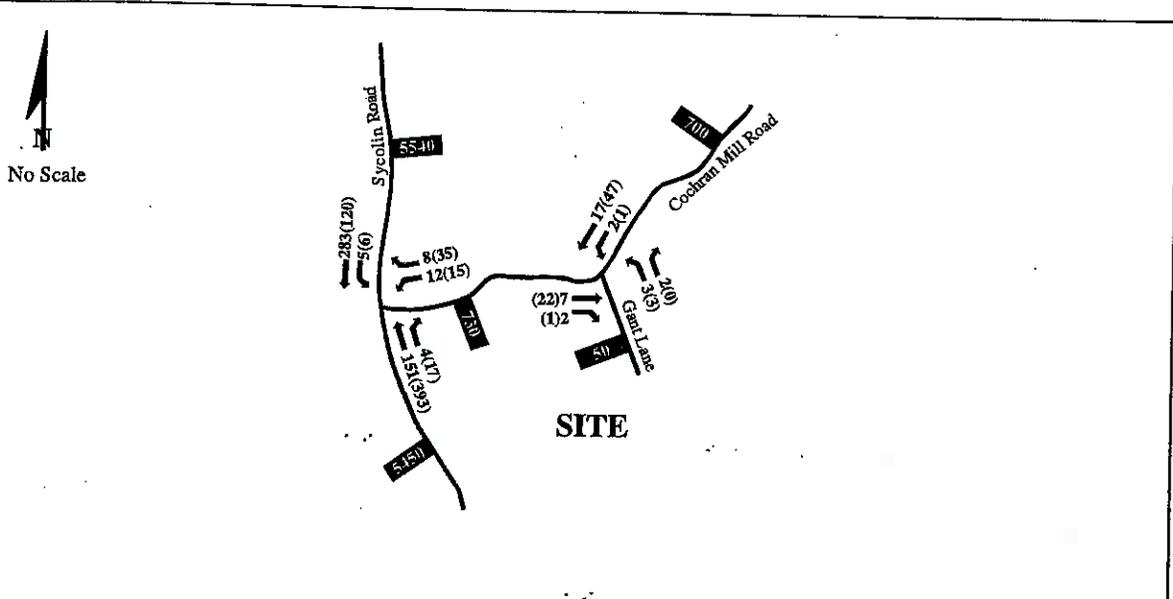
cc: Andrew Beacher, Assistant Director, OTS
Lou Mosurak, Senior Coordinator, OTS

ZMAP 2009-0005, SPEX 2009-0009 & CMPT 2009-0001, Green
Energy Partners Stonewall (GEP/S) Hybrid Energy Park OTS-2nd ref 11-19-09/GRP.doc



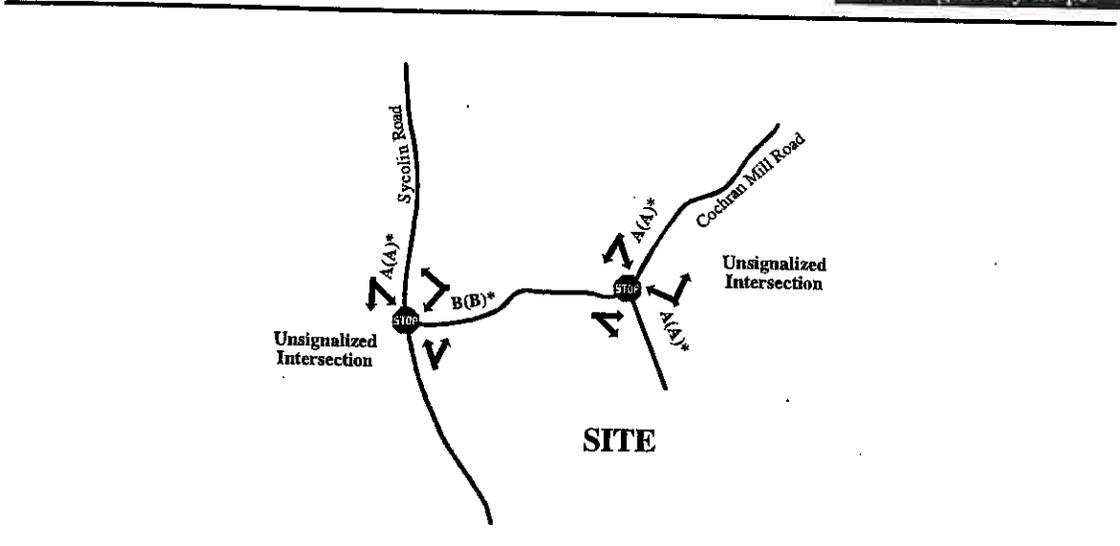
**ZMAP/SPEX/
CMPT LIMITS**

VICINITY MAP



Existing AM/PM Peak Hour Traffic Volumes

AM Peak (PM Peak)
Average Daily Trips



Existing AM/PM Peak Hour Levels of Service

AM Peak (PM Peak)

* Denotes Unsignalized Critical Movement



Figure 1

Existing Traffic Conditions

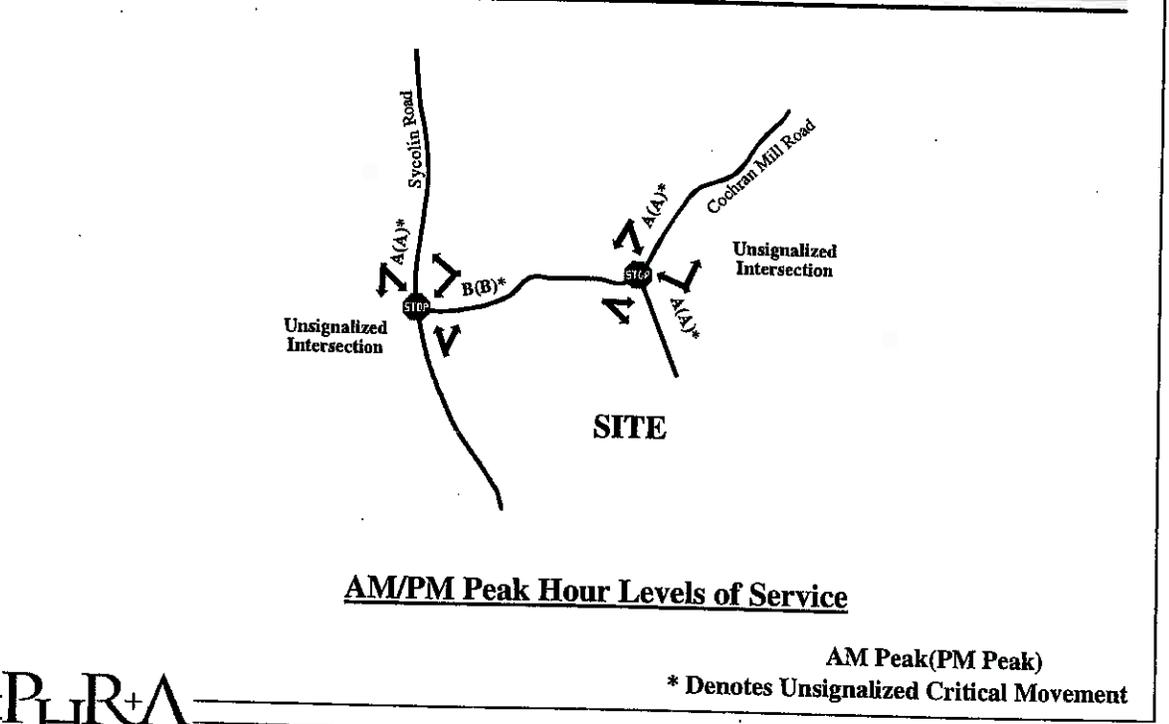
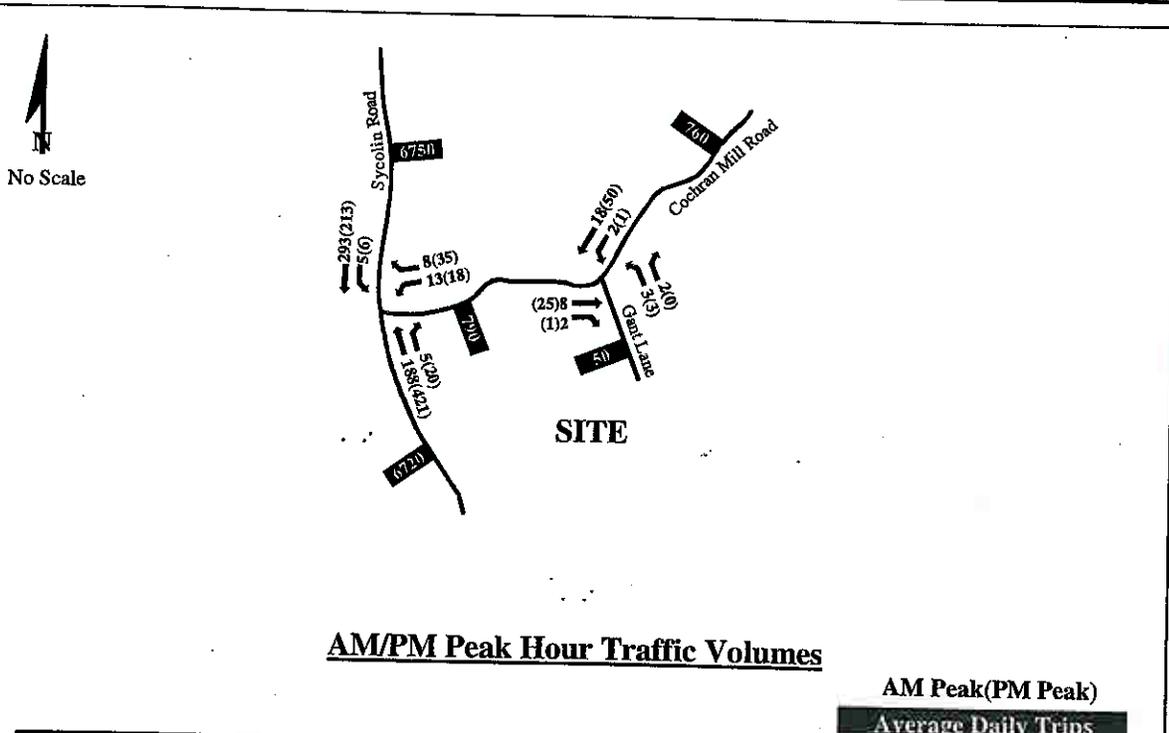


Figure 2

2014 Background Traffic Conditions

Site Trip Generation

The development land uses would include Hybrid Energy Park located within the proposed MR-HI property, which would accommodate 25 full time employees. The development would generate a total of 89 daily trips. Table 2 is provided below to show the peak hour trips associated with the proposed development.

Table 2
Hybrid Energy Park
2014 Trip Generation Summary

ITE CODE	Land Use	Amount	AM Peak Hour			PM Peak Hour			ADT
			In	Out	Total	In	Out	Total	
N/A	Hybrid Energy Park	25 Employees	22	2	24	3	23	26	89
		Total Trips	22	2	24	3	23	26	89

Site Traffic Distribution And Traffic Assignments

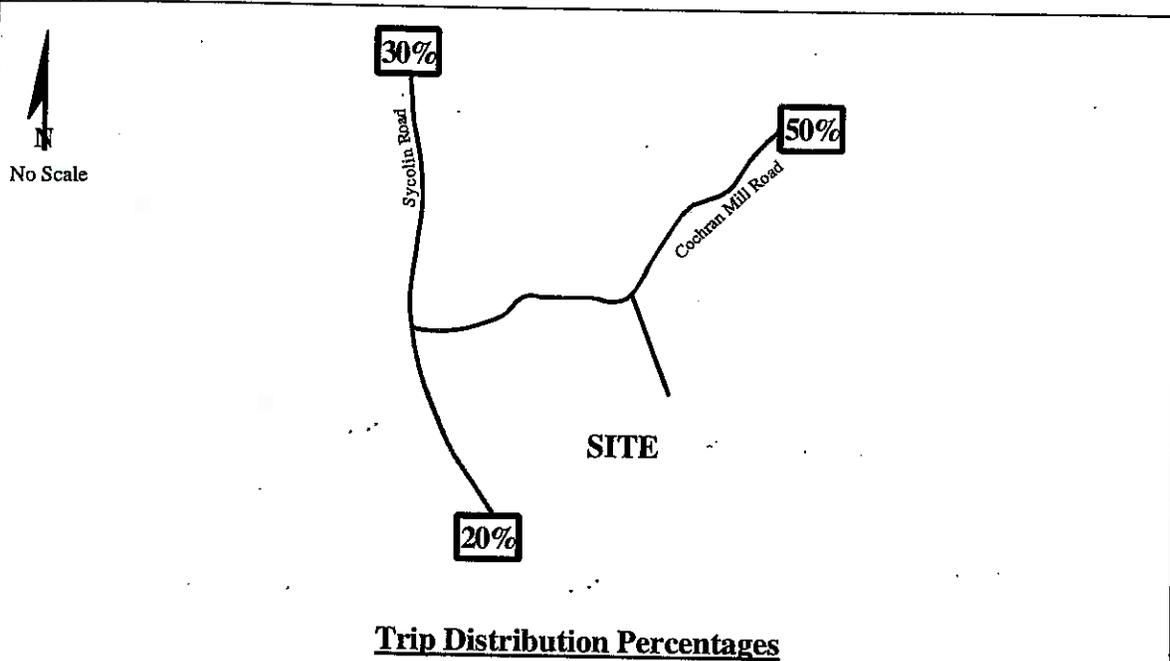
PHR+A utilized the trip distribution percentages shown in Figure 3 to assign the Hybrid Energy Park trips (Table 2) throughout the study area roadway network. Figure 3 also provides the corresponding development-generated weekday AM/PM peak hour traffic volumes and ADT assignments.

2014 Build-out Traffic Conditions

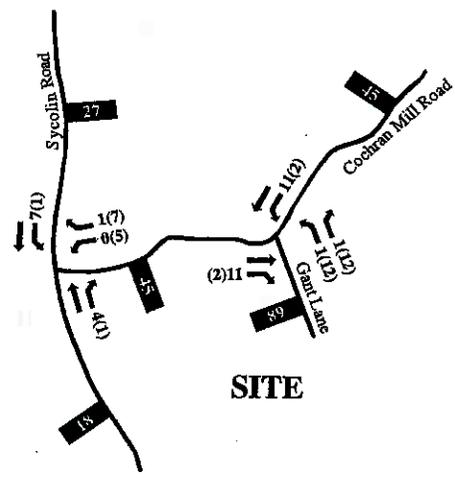
The Hybrid Energy Park trips were added to the 2014 background traffic volumes to obtain 2014 build-out conditions. Figure 4 shows the 2014 build-out weekday ADT as well as AM/PM peak hour traffic volumes at key locations. Figure 4 also shows the respective 2014 build-out lane geometry and weekday AM/PM peak hour levels of service.

Conclusion

Based upon the HCS+ analysis, the study area intersections of Cochran Mill Road/Gant Lane and Cochran Mill Road/Sycolin Road will operate with levels of service "B" or better during 2014 build-out conditions. Trips generated by the proposed Hybrid Energy Park will have minimal impact on the study area network and can be easily accommodated by the existing infrastructure.



Trip Distribution Percentages



Development-Generated Trip Assignments

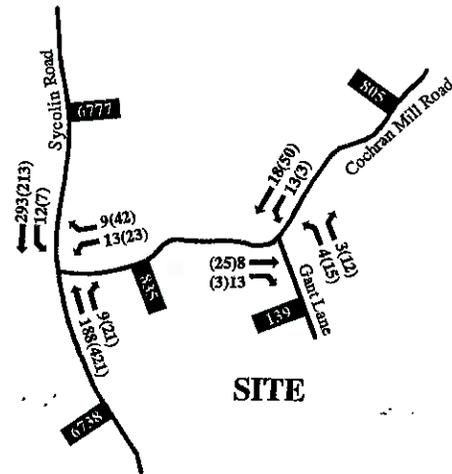
AM Peak (PM Peak)

Average Daily Trips



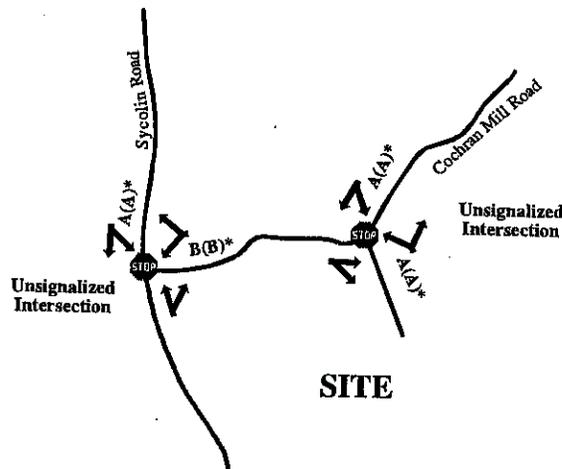
Figure 3

Trip Distribution and Trip Assignments



AM/PM Peak Hour Traffic Volumes

AM Peak(PM Peak)
Average Daily Trips



AM/PM Peak Hour Levels of Service

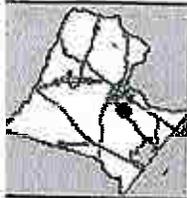
AM Peak(PM Peak)

* Denotes Unsignalized Critical Movement



Figure 4

2014 Build-out Traffic Conditions



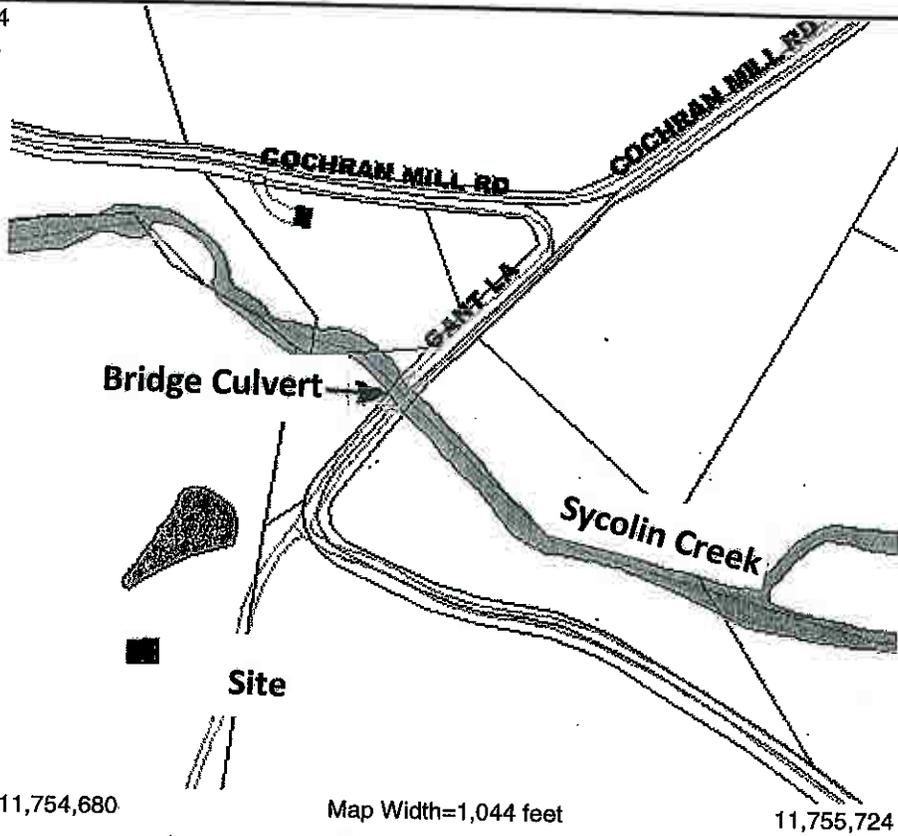
Click Map to:

Pan (Center at Cursor)

Zoom: 2x 4x 6x

[Print Preview](#)

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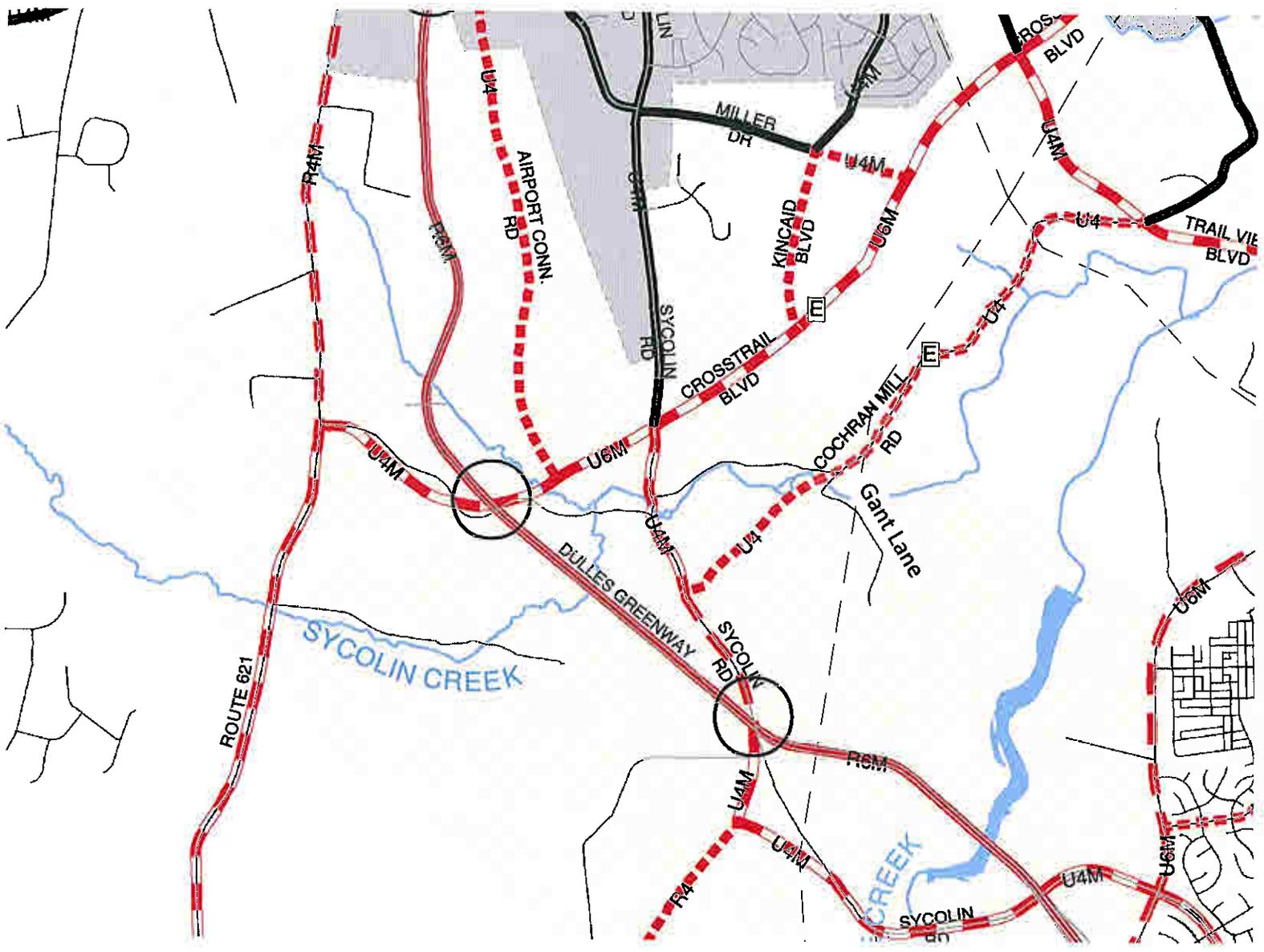
11,754,680

Map Width=1,044 feet

11,755,724

Water Bodies	
	Double Line Stream
	Lake Or Pond

ATTACHMENT 7



ATTACHMENT 8