Supplement to the SEQRA Compliance Analysis
Lewis Road Planned Residential Development (PRD)

RESPONSE TO TOWN CONSULTANT INFORMATION REQUEST

"Initial SEQRA-SEIS Threshold Review, Analysis and Inquiries from the Planning Board of the Town of Southampton, DLV Quogue, LLC-Lewis Road PRD, April 15, 2019"

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1.0 Introduction

This document provides a response to the "Initial SEQRA-SEIS Threshold Review, Analysis and Inquiries from the Planning Board of the Town of Southampton, DLV Quogue, LLC-Lewis Road PRD, April 15, 2019," prepared on behalf of the Town of Southampton Planning Board by B. Laing Associates, Inc. Nelson, Pope & Voorhis, LLC (NPV) prepared a SEQRA Compliance Analysis dated December 2018 to compare the proposed Lewis Road PRD with the Town Board Statement of Findings on The Hills at Southampton PDD. The SEQRA Compliance Analysis is intended to provide information to the Town Planning Board as lead agency, that will assist in determining if any proposed changes to the project by the Applicant in the Lewis Road PRD are such that they generate significant environmental impacts that were not previously studied such that a Supplemental Draft Environmental Impact Statement (SDEIS) is needed or if the project is sufficiently similar and adequately addressed in prior SEQRA documents related to The Hills PDD. The Lewis Road PRD is almost identical to the Hills MUPDD in terms of the layout and vacation style use of this resort style development. The primary change between the two projects

is the elimination of the private golf club and its outside members, the loss of all off-site community benefits related to the PDD and the addition of 12 workforce housing rental units as required by the Town of Southampton's Planning Department. The PRD is not a Development of Regional Significance (DRS) as defined in Article 57 of the NYS Environmental Conservation Law (ECL) and the Central Pine Barrens Comprehensive Land use Plan (CPB CLUP) and it complies with all restrictions and requirements of all relevant municipalities including the Town of Southampton Zoning Code Article XXIV, Central Pine Barrens Overlay District. The detailed consistency analysis of the PRD with the CPB CLUP and Town Central Pine Barrens Overlay District is provided as Appendix F of the SEQRA Compliance Analysis dated December of 2018. This document also addresses the questions generated by the Central Pine Barrens Joint Planning and Policy Commission (CPBJPPC) in their letter dated March 1, 2018.

The B. Laing review requests certain information to assist in making this determination. This document includes a point-by-point response to the comments expressed in the April 15, 2019 B. Laing document referenced above relating to any proposed changes to the project by the Applicant since the completion of the Final EIS and Findings for the PDD.

2.0 Comments and Responses

1. OCCUPANCY

At the February 28, 2019 Planning Board Work Session, a number of the Members stated their belief that it may not be possible for the Planning Board to condition an approval based upon seasonality for an as-of-right subdivision application as contained in the PRD. This situation arises from the as-of-right nature of the current subdivision application and the lack of a significant nexus to facilitate a seasonal use restriction upon the owners of the future lots/units created as a result of any approval of same by the Planning Board. If this is correct, the result would be that the seasonal use of properties could not be guaranteed. Therefore, it would be good planning practice, and consistent with SEQRA requirements, to consider the possible impacts to the natural, social, economic, etc., resources of the Town of Southampton of full time use of the Proposed Action's resultant properties and facilities.

In D/FEIS Section 5, full time use of those residences and facilities that would have resulted from several project alternatives was analyzed and discussed. DEIS Section 5.2.3 included Alternatives 2a and 2b and Section 5.3.2. included Alternative 3. Alternatives 2a and 2b are, "residential development of the project properties under their existing zoning," yielding 118 lots spread over the South Hills, Kracke and Parlato parcels and in conformance with other overlays (DEIS page 5-1) with common amenities but no golf course. Alternative 2a assumes lot by lot, independent development for each parcel and Alternative 2b assumes development as a single, coordinated effort. Alternative 3 assumes a "residential development of the project properties under their existing zoning," yielding 108 lots spread over the South Hills [sic][1], Kracke and Parlato parcels plus a public golf course and common amenities.

[1] This parcel is referred to as Hills South in the application.

The above raises several questions that should be addressed by the applicant.

- *Does the SEQRA record to-date have sufficient information to answer whether the project change to full time occupancy would result in one or more significant adverse environmental impacts not addressed in the original D/FEIS?*
- *Would time share or other fractional ownership or use of the resultant units be allowed? If so, does this affect the impact calculations for both seasonal and full time use? If so, specifically illustrate this information in each technical area where it would have an effect.*
- *In some technical areas discussed below more detail is sought in regard to the full time use scenario.*

As a broader matter, the SEQRA Findings adopted by the Town Board for the PDD (seasonal use only) referenced the evaluation of a range of alternatives. It then stated that, "The alternatives analysis within the FEIS demonstrates that all of the alternatives considered would have equal or greater adverse impacts and would not provide the economic or social environmental benefits of the Proposed Project." with a full time use of the lots/units in, "the alternatives considered."

- *Even though the Community Benefits included as part of the PDD project were not mitigation measures, does their elimination alter the evaluation of alternatives and of possible full time use?*

Also, the SEQRA Findings by the Town Board concluded that all the studied alternatives, including development under existing zoning as now proposed, would be less desirable than the PDD project.

- *How does that Findings conclusion figure into consideration of the current PRD plan both with seasonal use and full time use?*

Response: The Findings conclusion regarding The Hills PDD is completely consistent with the Findings conclusion regarding seasonal or vacation use as the residential component of the project is unchanged with respect to the basic project. There is no proposed change to the occupancy restriction and covenant from the PDD for the PRD. There is no full-time use scenario. The only changes between The Hills PDD and the Lewis Road PRD are as follows:

- The private golf club with outside memberships is eliminated; the proposed golf course is an on-site recreational amenity for the exclusive use of on-site residents and their guests, as recognized by the Town Zoning Board of Appeals (ZBA) decision dated November 15, 2018.

- The clubhouse area has been re-arranged to reflect the change in use to an on-site recreational amenity aspect of the project by reducing its mass and configuration to several smaller buildings, rather than a single large clubhouse area.

- The PDD sought to make a contribution to the Town to support Affordable Housing; however, the Town expressed a desire to have the actual housing constructed instead. The Lewis Road PRD will build twelve (12) workforce housing units in the East Quogue Union Free School District (EQUFSD) that do not have an occupancy restriction.

- Minor refinements were made to the golf course design to ensure that contiguous open space totaling 65 percent outside the golf and residential use areas is retained. There are still additional preserved areas within the development area.

- The PRD is not required to provide any community benefits and their elimination does not alter the evaluation of alternatives. Like the Hills PDD, no full-time use is proposed.

The SEQRA record has all of the information required to evaluate the nearly identical Lewis Road PRD project. There is no time share nor fractional ownership proposed. There is no full-time use scenario proposed.

With respect to vehicle trip generation, it is noted that the elimination of the membership golf course further reduces the trip generation of the proposed project from the prior MUPDD. Trip generation for the proposed project is noted as follows:

Table 1
TRIP GENERATION COMPARISON

Trips (Peak Hour)	MUPDD	Proposed Project
Weekday AM (vph)	63	31
Weekday PM (vph)	103	39
Saturday (vph)	125	51

vph = vehicles per hour

The proposed project has the lowest trip generation as compared with alternatives studies in The Hills PDD DEIS. This information is part of the DEIS record and is available to the Planning Board for consideration with regard to the Lewis Road PRD.

2. SCHOOLS

In the DEIS, Section 5, Alternatives, , it was noted that a maximum of 130 school-aged children will reside seasonally at the proposed project (p. S-22) but that the homes would primarily be used for vacations and "getaways" by owners and, thus, "will not contribute children to the school district or require the same service demand as fully occupied primary residences."

As discussed above, the PDD D/FEIS, Sections 5 include a full time use assumption for project alternatives. DEIS Section 5, Table 5-1, indicated that the potential additional school population would be 130 for Alternatives 2a and 2b and 137 for Alternative 3, resulting in deficits to the School District.

For the current PRD application, the question is whether the analyses of non-seasonally restricted alternatives in the PDD D/FEIS Section 5 are adequate to evaluate a possible scenario in which the potential PRD homes/units will be occupied year-round.

- *Clarification/calculations should be provided as to potential number of students from the PRD 118 unit Proposed Action with full time use. including with a side by side comparison to the D/FEIS Alternatives 2a and/or 2b, (as these have an additional 10 lots/units) to be comparable to the PRD Proposed Action plus the 12 affordable housing units proposed in the PRD.*

The PDD also proposed an upgrade to the East Quogue Elementary School sanitary disposal system further south on Fowler Road as a public benefit. However, no credit for nitrogen mitigation (reduction) for the project itself was taken in the groundwater analysis. The applicant, thus, properly shows, in Table ES-1 of their SEQRA Compliance Analysis, that the East Quogue Elementary School sanitary disposal system was included for the PDD application but removed from the PRD application.

However, the Planning Board's consideration of full time use of the PRD proposed project will potentially add some 130 to 137 school children to the East Quogue UFSD. As such, the sub-optimal East Quogue Elementary School sanitary disposal system would be subjected to an increased loading. This would be an indirect impact of the PRD proposed project with full time use on that system.

- *As such, if a potential new impact is identified, then additional mitigation may be warranted and would need to be accounted for in any revised SONIR modeling per Item 3 below.*

Response: As noted in the response to Comment 1, the proposed project will not generate any school-aged children that will reside in the PRD community but for the workforce units outside of the subdivision that the Town required to be constructed. The impact of these workforce housing units is negligible in terms of school-aged children. First, it is noted that the proposed project will generate substantial tax revenue. The type of workforce housing units proposed are not expected to generate a large number school-aged children. A combination of units is contemplated. This could include: 5, 1-bedroom; 5, 2-bedroom; and, 2, 3-bedroom units which would have a low school-aged child occupancy. The final mix can and rental rates can be determined in coordination with Town Housing & Community Development office. Low-rise residential apartments are projected to generate 0.07 school-aged children (SAC)/1-bedroom unit; 0.16 SAC/2-bedroom unit; and, 0.63 SAC/3-bedroom unit.[2] As a result, the 12 units are expected to result in less than 2-3 school-aged children. This is not expected to burden the East Quogue UFSD. In addition, the overall taxes and lack of school-aged children from the proposed PRD will establish a very positive fiscal benefit to the school district. As a result, there will be no significant adverse impact on the East Quogue School District, rather there will be a significantly positive impact on the EQUFSD and to local taxpayers. Per the DEIS/FEIS for The Hills PDD, and analysis provided by the Southampton Tax Assessor at that time, it is estimated that at build out, the EQUFSD school tax rate will go down by over 20 percent.

[2] Rutgers University, Center for Urban Policy Research Residential Demographic Multipliers — Estimates of the Occupants of New Housing; (Residents, School-Age Children, Public School-Age Children) by State, Housing Type, Housing Size, and Housing Price; June 2006.

3. SONIR

The applicant has provided a revised SONIR analysis in Appendix C-2 of their SEQRA Compliance Analysis. It shows a nitrogen level (i.e., 0.23 mg/l) both acceptable under the relevant standards NYSDEC (10 mg/l) and guidelines of the CPBC (2.5 mg/l).

1. *the applicant needs to provide a summary narrative of the SONIR modeling methodology, a detailed narrative of the changed inputs between the PDD and PRD and their affect [sic] upon the outputs (i.e., how was the decrease from 0.31 mg/l to 0.23 mg/l achieved)?*
2. *The applicant also needs to provide a table with a side-by-side comparison, detailing the differences in inputs between the PDD and PRD.*
3. *The applicant also needs to provide a table with a side-by-side comparison, detailing the differences in inputs between PDD Alternative 3 and the PRD.*
4. *The applicant should revise the SONIR analyses using the average of nitrogen levels from Spinney Road, well #2 after updating such data to the currently available levels from SCWA.*
5. *The SONIR inputs and outputs should be adjusted (and explained) as they are changed by questions asked about the golf course and fertigation as discussed below.*
6. *The SONIR inputs and outputs should be adjusted (if necessary) to account for a change in project facilities' assumed use from seasonal to full time.*
7. *The applicant should provide a margin of precision for the analysis.*
8. *Specific citations as to data sources should be provided.*

Response: There is no significant change in the nitrogen budget analysis that was performed for the DEIS/FEIS and the SEQRA Compliance Analysis. The overall model and basic input-output data remain the same with only slight adjustments in coverages and flow data between the PDD and the PRD as will be further described herein. As a result, the analysis remains valid given the extensive review completed during the DEIS/FEIS process.

The background with respect to the level of nitrogen budget analysis and professional review is important with respect to this comment. The SONIR model was prepared by Charles J. Voorhis, CEP, AICP of Nelson, Pope & Voorhis,[3] and reviewed by two (2) consultants and staff during the DEIS process and is part of the SEQRA record. The model was peer-reviewed by groundwater and water resource specialists, P.W. Grosser, PhD, PE (President, P.W. Grosser Consulting, Inc.), Robert Grover (Senior Scientist, GPI), and Jeffrey Seeman, CGCS/CEP (East Quogue Golf Consulting) prior to submission to the Town. Dr. Stuart Cohen, PhD, CGWP (President, Environmental & Turf Services, Inc.) assisted Jeffrey Seeman in the evaluation of pesticide use and impact modeling as part of the DEIS. Experienced professionals at Allee, King, Rosen & Fleming (AKRF) and Dr. A. Martin Petrovic (consultant to the Town of Southampton) also reviewed the model on behalf of the Town during the DEIS review process. Furthermore, an additional consultant hydrologic consulting firm, LBG, reviewed the SONIR model and provided comments on behalf of the Group for the East End during the FEIS process. These comments were responded to in Section 2.2.2 of the FEIS. The hydrologic consulting firm FPM peer-reviewed the model as part of the FEIS and presented their findings in Appendix J-4 of the FEIS. Finally, Dr. Christopher

[3] Full credentials are included in Appendix R-1 of the FEIS.

Gobler, PhD, Stony Brook University (SBU) reviewed the SONIR model results throughout the DEIS process and in the final analysis was in agreement with the nitrogen budget results indicating that the PDD had the greatest potential to reduce and mitigate nitrogen loading in the watershed.[4] [5] The Town SEQRA Findings Statement is predicated on the EIS record which includes the assessments noted above.

In addition, the 8 comments above are itemized and responded to below:

1. The SONIR model, which calculates recharge volumes and nitrogen concentration in recharge, is described in Appendix R-1 of the FEIS which includes the User Manual. The User Manual provides an explanation of the model and data inputs that are used to analyze the nitrogen budget. Data Inputs for each model "run" for the PDD and each alternative evaluated in that document are presented in Appendices R-2 through R-5; the pertinent input values are listed on Sheet 1 of 4 for each run. It is noteworthy that the nitrogen concentrations of the SONIR runs for the PDD and the PRD are very similar.

2. The Lewis Road PRD SONIR analysis is included in the SEQRA Compliance Analysis as Appendix C-2. Sheet 1 of this appendix shows all of the inputs included in that run, and the mitigation summary is on Sheet 4. The same on-site mitigation measures are proposed in the PRD as for the PDD. The table in **Attachment 1-1** lists the differences in the SONIR input values for the PDD and the PRD.

3. The table in **Attachment 1-2** lists the differences in the SONIR input values for the PRD and the D/FEIS Alternative 3.

4. The Suffolk County Water Authority (SCWA) was contacted regarding water quality in the East Quogue area. East Quogue is part of Distribution Area 20, which is a large distribution area that serves from Mastic to East Quogue on the south shore of Suffolk County. The distribution area includes an extensive system of well fields and water main distribution pipes. Well fields are interconnected by the distribution system. The nearest well field to the subject site is the Spinney Road Well Field, however, the Malloy Drive Well Field to the east and the Quogue-Riverhead Road Well Field to the west are also near the site. Spinney Road has 4 wells with 2 screened in the Magothy aquifer and 2 screened in the Upper Glacial aquifer. Quogue-Riverhead has 2 wells with 1 screened in the Magothy aquifer and 2 screened in the Upper Glacial aquifer, and Malloy Drive has 2 wells, both screened in the Upper Glacial aquifer.[6] SCWA blends water from all of these sources and continuously checks for drinking water quality. Wells may be taken off-line, treated, and/or blended as needed to maintain safe drinking water quality. It is not possible to determine what well is the source of drinking water for the Lewis Road PRD development. As a result, the water quality for Distribution Area 20 was reviewed and it was determined that the most-recent average water quality for nitrate in the area is 1.16 mg/l. In review of the SONIR model runs, it is noted that 2 mg/l was used for the entry regarding drinking water quality. Therefore, the SONIR model is conservative with respect to this input and no further analysis is needed to respond to this comment.

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[4] Town of Southampton; The Hills at Southampton; MUPDD Application; SEQRA Findings Statement, November 27, 2017.

[5] The full credentials of any of the professionals involved in this review can be found through search methods and website review.

[6] See The Hills at Southampton DEIS, September 2016, Section 2.2.1.

It is noted that the nitrogen concentration reflected in the Mitigation Summary (M1; Reuse of Irrigation Water) on Sheet 4 of the SONIR Model run is based on a concentration of 10 mg/l. This is an average conservation that was determined through the EIS review process. The DEIS documented concentrations in wells placed on the subject site, that exceeded this concentration, as did the water quality data from Spinney Road Well #2. The DEIS used a concentration of 15 mg/l, which was later lowered to 10 mg/l in response to comments and to provide a more conservative analysis of the benefit of reuse of irrigation water. As a result, no change to this value is proposed.

5. The inputs and outputs for the PRD and the PDD are identical as it pertains to the golf course and all on-site mitigation. The mitigation measures for the PRD are all on-site, through inclusion of an STP, reuse of irrigation water (denitrification program using nitrogen-laden groundwater), implementation of an Integrated Turf Health Management Plan (ITHMP), fertilizer cap of 2 pounds/1000 square feet (SF)/year, use of lined greens to capture irrigation water, and inclusion of rain gardens to capture runoff.

6. As noted under Comment 1 above, the proposed project as well as all of the alternatives considered are lower than any reasonable metric that would be apply to development as related to nitrogen in recharge, specifically, the projects would all conform with Article 6 of the SCSC and the predicted concentration is less than half the most stringent guideline of 2.5 mg/l Central Pine Barrens CLUP. In addition, and as previously stated, the PRD like the PDD does not propose full time occupancy.

7. The model has a 100 percent margin of precision based on the assumptions that are used and justified in the SONIR Computer Model Users Guide (FEIS Appendix R-1). The assumptions are fully justified and referenced and were reviewed in detail with Dr. A. Martin Petrovic and others, during the DEIS and FEIS review process and are relied upon by the Town in the Findings Statement.

8. Citations of the data sources referenced for the SONIR model are contained in the SONIR Model User's Guide, Appendix R-1 of the FEIS.

4. OUT PARCELS

The out parcel owners' information is provided in several EIS documents (e.g., Conceptual Plan: Alternatives 2a, etc.).

- *How many outparcels are developable vs. otherwise undevelopable?*
- *Now that the parcels are actually going to be physically accessible (they were always legally accessible) are they now a "growth inducing" aspect of the Proposed Action/PRD?*
- *Would full time use of the project result in other indirect, growth-inducing impacts? (i.e., add to the discussion provided in DEIS Section 4.7)*

Response: Growth-inducing aspects were addressed in the September 2016 DEIS as required in the Final Scope. There were no comments on growth-inducing aspects in the FEIS or the Findings Statement. It should be noted that the Compliance Analysis does not address growth-inducing aspects of the PRD, as the Compliance Analysis addresses compliance to the Findings Statement

for the PDD, which does not address growth-inducing aspects. In addition, the outparcels do not represent a change in the project since the PDD.

The outparcels of the PRD are not expected to represent a significant level of growth inducement. Only one outparcel (owned by Kayser; SCTM District 0900, Section 288, Block 1, Lot 124) is near the development area and is large enough to meet the minimum lot size to build according to Town Code (*see* **Attachments 2-1 and 2-2**). All of the other outparcels are either held by the County for open space purposes, are situated away from the development area or could only serve as TDR sending sites for development elsewhere. The PRD does not create physical access to the Kayser property nor does it improve any utilities for that property. As such, the Lewis Road PRD is not expected to result in any substantial inducement for development.

As noted above, only one outparcel is large enough to meet the minimum lot size to build according to Town Code. The Compliance Analysis states as follows with respect to the outparcels:

> In response to Town comments regarding maintenance of access to the outparcels within the Hills South Parcel, the project layout has been revised to provide such future access via Serenity Place, a mapped Town road opposite the Suffolk County Water Authority (SCWA) Spinney Road Well-field, and portions of mapped Smith Road.

The Kayser outparcel would be accessible off Spinney Road via Serenity Place and Smith Avenue (a paper street), but its developer would have to improve these latter two roadways, and bring in all utilities at their own expense. Based on the DEIS and the information contained herein, the project will not have any significant adverse environmental impacts with respect to growth-inducing aspects in consideration of outparcels. And as stated previously, there is no full-time use scenario for the PRD.

5. SEWAGE TREATMENT PLANT (STP)

The STP cited in the Applicant's SEQRA Compliance Analysis Section 3.2 item (xii), "will be installed and will consist of tertiary treatment with a nitrogen treatment level of 10 mg/l or less." However, the same paragraph goes on to state, "The Applicant has presented information that this system can potentially achieve compliance the NYS effluent limitation of 10 mg/l ..."

- *The applicant should provide a specification of the planned STP design either from an experienced manufacturer's standard designs or as specifically proposed for this project.*
- *These data should show that the system willl comply with a minimum nitrogen treatment level of 10 mg/l or better.*
- *The applicant (or manufacturer) should discuss base-loading of the treatment system, what the peak and lows flows are to be expected and whether or not it will be able to adjust to the varied seasonal flows.*
- *The applicant should clarify the information contained within the DEIS/FEIS to demonstrate the potential impacts of using an STP for full time use of the lots/units potentially resulting from the PRD project and provide a comparative table for the various alternatives.*
- *Has the proposed system been accepted by the Suffolk County Department of Health Services?*

Response: There is no change in the method of wastewater treatment between the PDD and the PRD. The SEQRA Compliance Analysis is consistent in its use of the word "will" with respect to the anticipated performance of the PRD's STP, and its conformance to the applicable 10 mg/l effluent nitrogen concentration. Section 1.3 of the SEQRA Compliance Analysis clearly states:

> All of the project's wastewater will be treated in an on-site tertiary STP whose performance will provide effluent having a total nitrogen concentration of less than 10 milligrams per liter (mg/l). The STP would meet the applicable standards of the Suffolk County Department of Health Services (SCDHS; through the Suffolk County Sanitary Code [SCSC]), and New York State Department of Environmental Conservation (NYSDEC).

Generally, seasonal use would cause seasonal fluctuation in the volume of effluent conveyed to an STP. The STP will be of a design recognized by SCDHS and will be reviewed and approved by that office. Seasonal use can be accommodated in the startup and reduction of flow after peak seasonable use. Connecting the on-site workforce units to the STP will help to maintain a base flow that enables the biological process to be maintained throughout the year.

An application for the STP has been filed with and is pending before SCDHS. The plan is to use a type of STP already recognized and approved by the SCDHS for the project, to meet the required nitrogen concentration. The Engineering Report for the STP includes the following description of the treatment technology on which the proposed STP operates:

> The sewage treatment plant will be a Sequenced Batch Reactor (SBR) type of plant. The plant will be capable of producing an effluent with less than 30 mg/l BOD [Biological Oxygen Demand] and suspended solids, and less than 10 mg/l of total nitrogen.
>
> The STP will be entirely enclosed within a masonry building. Area for 100% expansion of the plant shall be provided per Suffolk County Departments of Health Services and Public Works requirements. Two hundred percent of the required leaching pools will be provided at time of construction, to comply with Suffolk County Department of Public Works standards. All treatment units will be located at sufficient distances from any habitable dwelling in accordance with Suffolk County Department of Health Services requirements.

The STP has been designed for the peak flow of the project, which would be during the Summer. Based on the business model and occupancy pattern of DLC projects, this peak will never be reached.

It should also be noted that an STP is not required to meet SCDHS requirements under Article 6 of the SCSC. After the subject site was rezoned to CR-200 following the EQLUP and GEIS, the density of the project site was reduced to 1/5 of what is allowed under Article 6. In addition, none of the alternatives including those without an STP exceeded the 2.5 mg/l guideline in the Central Pine Barrens CLUP. Therefore, there is no reasonable metric that would require the STP. Nevertheless, the STP was offered by the applicant during the PDD SEQRA review process due to the importance of reducing nitrogen load to the Weesuck Creek watershed and contributing areas to western Shinnecock Bay. The STP will reduce nitrogen load and is an important aspect of the project that the Applicant is committed to providing even though it is not needed to meet Article

6 or the CLUP 2.5 mg/l guideline. The Planning Board should ensure that SCDHS approval as a standard matter related to their subdivision review as they would any other project. As a result, there are no significant adverse impacts with respect to groundwater impacts, or the approval process/operation of the STP.

6. SUFFOLK COUNTY WATER AUTHORITY (SCWA)

A new SCWA well location parcel, included as a public benefit only in the PDD, will be dropped from the seasonal use PRD as currently proposed. In D/FEIS Alternatives 2a, 2b and 3, the applicant includes the continued provision of a new SCWA well location parcel with the assumption of a Full time use. The applicant has proposed using Spinney Road well #2 (FEIS Appendix J-3 + others), which has nitrogen levels regularly exceeding the 10 mg/l standard for fertigation or another new well drilled near it. Further, the SCWA has not indicated whether or not another well will need to be installed to provide the project with potable water under either seasonal or full time use assumptions.

- *The applicant should calculate and provide changes to water potable or irrigation (including fertigation) consumption under full time use assumptions and discuss whether or not these require mitigation (i.e., an additional potable water supply well).*
- *The applicant should identify the proposed locations of both "clean" and fertigation source wells for the golf course (and residential?) water use.*
- *The applicant should provide an update of any consultations with SCWA since the issuance of the Town Board's SEQRA Findings for the PDD.*

Response: There is no full-time use scenario associated with the proposed project and there is no change in the project between the PDD and the PRD with respect to water supply. Domestic water will be obtained from the SCWA and irrigation water will be provided by on-site wells, exactly as described in the DEIS/FEIS. It is noted that similar to wastewater generation, domestic water supply is based on peak demand and therefore, water use calculations in the DEIS and FEIS are based on summer peak use. As the proposed PRD is for seasonal occupancy like the PDD, the total water consumption in a year will be substantially less than the peak demand numbers referenced in the DEIS/FEIS. Nevertheless, the documentation already contains the information requested in bullet 1 above and no impacts are expected nor is mitigation needed.

With respect to bullet 2 above, the source well intended to intercept groundwater with elevated nitrogen concentrations will coincide with TW-2 as outlined in the DEIS where the data results are included in Section 2.2.1 and the location is included in Appendix A-12. This well is to be located in the southwest part of the site, south of the workforce housing units in an existing cleared area associated with the Kracke nursery area. The "clean" well will be located in proximity to the proposed pond in the east central part of the site.

Further consultation with SCWA has occurred. The Applicant met with SCWA on March 11, 2019 to provide an update on the project and to ensure adequate water supply for domestic use.

The Applicant met again with SCWA on April 29, 2019 to discuss more of the details of the preferred locations for future infrastructure and the expected timetables for other infrastructure improvements. SCWA has provided an updated letter dated May 1, 2019 **(Attachment 1-3)** that confirms water availability based on specific improvements, as an update to the prior SCWA letter dated September 30, 2015.

Provision of a 4-acre site for a new SCWA well field was included in the PDD as a Community Benefit attributable to a recommendation of the East Quogue LUP and expressed Town input. The Lewis Road PRD will be designed to accommodate a 4-acre site to be offered to the SCWA, as part of the project or as a separate donation of land, although, per the SCWA, the use of the property is for future infrastructure improvements for the overall distribution system and benefit of the community and not a requirement to provide potable water to the PRD community. SCWA estimates that 2 acres of clearing is needed within the 4-acre area, and this will also be accommodated on the subdivision plan, such that the clearing will continue to meet the Town Pine Barrens Overlay District clearing limit of 28 percent of the site.

This demonstrates that the proposed project will be served by SCWA for domestic water use consistent with the DEIS, FEIS and Findings Statement. Consequently, there is no change from prior analyses and no significant adverse impact is expected with respect to water supply for irrigation purposes as well as domestic water use.

7. CONTAMINATION

The Applicant's SEQRA Compliance Analysis states on Figure 2-2 that there is, "No known or suspected contamination on parcel/s" but no narrative or support for this statement is found in the Applicant's SEQRA Compliance Analysis. Further, the DEIS Appendix E-3 states, Section 7, Item 2 states, "If the (Parlato) property is to be used for residential or active recreation, it is recommended that a pesticide survey be conducted in order to ensure that the surface soils have not been impacted by previous agricultural operations."

- *Given the D/FEIS discussion of Alternatives 2a, 2b and 3 with full sized lots which would be developed on the Parlato parcel, should the applicant conduct an ESA Phase 2?*
- *What ownership form will the Parlato parcel have if the PRD project footprint is implemented? That is, what entity will hold it in fee simple for preservation purposes?*
- *Have the South Hills properties been impacted by the Damascus Road contamination (discovered since the PDD process)?*

Response: There is no change in the project between the PDD and the PRD with respect to the handling of the Parlato property. The condition of that property was described in the DEIS and it was identified as being "offered" for dedication. The Appendix E-3 of the DEIS presents the Phase I ESA prepared for the Parlato Property. That document concluded as follows with respect to known and potential occurrences of contamination on that site:

> This assessment has identified the following with respect to recognized environmental conditions, historic recognized environmental conditions and de minimus conditions in connection with the subject property, subject to the methodology and limitations of this report.

One (1) recognized environmental condition was noted on the subject property based on the site reconnaissance, interviews and regulatory agency records review:

1. Several soil and debris piles were observed south of the cleared agricultural area and along the cleared dirt paths. It is possible that some of these piles have been imported or dumped from outside sources. These piles should be sampled in order to ensure that they are not adversely affecting the subsurface resources of the subject property. Following sampling, all of the debris piles should be removed and properly disposed of.

No controlled recognized environmental conditions were noted on the subject property based on the site reconnaissance, interviews and regulatory agency records review.

Three (3) de minimus conditions were noted on the subject property based on the site reconnaissance, interviews and regulatory agency records review:

1. The southernmost portion of the subject property is presently utilized for agricultural purposes.[7] In addition, historic aerial photographs revealed that the farm area previously extended further northward on the subject property. If the property is to be used for residential or active recreation, it is recommended that a pesticide survey be conducted in order to ensure that the surface soils have not been impacted by previous agricultural operations.
2. Miscellaneous litter, recreational debris, and some piles of native natural material were observed in the southern portion of the subject property and along several of the cleared dirt paths throughout the subject property. This debris is not expected to have adversely affected the subsurface resources of the subject property; however, the debris should be removed and properly disposed of.
3. A 55 gallon drum was observed on the southern edge of the cleared agricultural area. The drum was covered, unlabeled and empty. Since there was no evidence of staining in the vicinity of the drum, it is not expected to adversely affect the subject property. However, this drum should be removed and properly disposed of.

No historic recognized environmental conditions were noted on the subject property based on the site reconnaissance, interviews and regulatory agency records review.

The Applicant is offering the Parlato property for dedication. Only a limited area of this parcel was farmed in the past. The recommendation in the Phase I ESA stating that: "If the property is to be used for residential or active recreation, it is recommended that a pesticide survey be conducted in order to ensure that the surface soils have not been impacted by previous agricultural operations," is strictly precautionary if the site is to be used residentially. Sites that are not used for residential purposes are not of concern as farming has historically occurred over much of Southampton and the Town has taken ownership or purchased development rights for many similar parcels. In addition, the site is not proposed to be used for residential purposes, it will be maintained as open space. If the Town is leery of accepting this property as an open space dedication due to concerns over the past farming use of this site, the Applicant would be willing to retain this parcel and restrict its use to open space. As a result, the condition of this property is not of consequence as it relates to the SEQRA review, and the proposal remains to keep the property as open space under either Town or Applicant ownership.

[7] This prior agricultural use has long since ceased; this area is presently established in native successional meadow.

Attachment 3 contains a figure indicating the location of the closed former Town landfill site locally known as "the Damascus Road Landfill." As can be seen, the direction of flow in shallow groundwater (i.e., the Upper Glacial Aquifer) beneath this landfill is toward the southeast, parallel to and cross-gradient of groundwater beneath the project site that is also flowing in a southeasterly direction. As a result, any contaminated groundwater flowing from or passing beneath this landfill site will not flow beneath the project site. This confirms that this change in conditions is not of consequence with regard to the proposed project.

8. GOLF COURSE

The DEIS discussion of the potential impacts of Alternative 3 include Full time use of the PDD's facilities including the golf course (in Alternate 3 only). This Alternatives discussion states (page 5-28) that the Integrated Turf Management System and fertigation plans would be the same as under seasonal use.

- *The applicant should provide further discussion as to whether or not the in-use season for the golf course would be extended assuming full time use of the resultant PRD lots/units and, if this is so, account for any increased water volume and nitrogen loading use in the revised SONIR modeling per Item 3 above and in the Fertigation Item 9 below.*
- *It is presumed at this point that public use of the golf course (per D/FEIS Section 5) verses private use allowed for the PRD project does not alter the Integrated Turf Management System and fertigation plans. If this is not the case, the applicant should account for any increase use in the revised SONIR modeling per Item 3 above.*
- *Will members/owners of the applicant's other properties be allowed to use the golf course?*

Response: There is no change in the proposed golf operation between the PDD and the PRD; the only change is in the use of the course for residents and resident guests only. For the D/FEIS, Alternative 3 assumed that the same schedule for the golf course as that of the proposed PDD would be followed: the course would open in mid-April and close in mid-October. Thus, the maintenance and available playing time for the golf course is independent of the residences' occupancy, . This is also the case for the proposed PRD; the golf course would open in mid-April and close in mid-October and as stated previously, there is no change from the vacation home, resort-style approach with limited occupancy of the PDD. As a result, this does not represent a change in the project and does not affect the prior review or warrant any further nitrogen analysis.

In addition, it is expected that the same ITHMP and fertigation measures would be applied for the Proposed PRD as was proposed for the PDD and Alternatives 2a, 2b, and 3 of the D/FEIS. Consequently, there is no change in proposed operations that would warrant further analysis or change the findings with respect to these operations.

With respect to owners of other DLC properties using the golf course, only those parties that own units at the Lewis Road PRD, and their guests, would have access to the golf course. Cross-use of DLC golf courses is not part of the corporate practice. DLC golf courses are each distinct clubs, such that the golf course is an on-site recreational amenity for use by owners at the subject community only.

9. FERTIGATION

The applicant has proposed and taken nitrogen reduction credits for the proposed fertigation system1. Commenters to the D/FEIS (FEIS Appendix F-1 and others) have raised questions as to the viability of fertigation (Appendix F-1 - page 7, specifically, it "is experimental.") and how it is accounted for in the proposed Integrated Turf Management Plan. A Planning Board Member also specifically inquired as to its "hypothetical" nature. The fertigation methodology issue was extensively discussed and analyzed in the D/FEIS documents with conflicting opinions of experts.

1. *Since there is at least one, existing, functioning and local example of the integrated turf management, ponds and fertigation, that could be applicable to this project, the applicant should consider including a narrative of the existing system(s) and data to-date from this operation (or operations).*
2. *The narrative and testing results tables/charts should, to the extent possible) provide direct comparisons to the system being proposed.*
3. *A schematic of the proposed pond system to be used in the irrigation/fertigation program (DEIS Section 1.6.2, page 1-55 & 56) including proposed piping/interconnection should be provided.*
4. *A table of projected flows rates should be provided.*
5. *Expected nitrogen concentrations in each pond should be calculated and provided.*
6. *Will the proposed vegetation cause nitrogen reductions and if so, how much?*
7. *The applicant should consider methods for using water collected by lined tees and greens (DEIS Section 1.6.2, page 1-56, et. seq.) for the fertigation/recycling program and compare them to the proposed bioswale and rain garden system for potential nitrogen reduction.*
8. *If any of the above items cause a change to SONIR inputs and results, it should be explicitly tracked and explained per Item 3 above.*
9. *A detailed narrative of the above bulleted items should be provided.*

Response: There is no change in the proposed golf course irrigation/fertigation system between the PDD and the PRD. The 9 comments above related to fertigation are addressed in sequence below:

1. Fertigation, a very common practice in modern irrigation, is defined as the injection of fertilizers, used for soil amendments, water amendments and other water-soluble products into an irrigation system. This practice is in use in the Town of Southampton at Golf at the Bridge, Sebonack Golf Club, Indian Island Golf Course, Atlantic Golf Club and many other recreational sites. Golf at the Bridge and Sebonack Golf Club area local examples that provide a significant body of experience on the part of the Town of Southampton in overseeing the operation, and monitoring of these facilities. Similar measures may be used for the proposed project.

2. In the case of the PRD, the project will use an on-site well to capture nitrogen-laden groundwater for irrigation. The water will be tested for nitrogen and any other fertilizer concentration and will then be diluted or amended with fertilizer to meet the needs of the grass at the course. The grass will act as a bio-filtration system and will remove nitrogen from the aquifer system. **Attachment 4-1** provides a chart from Appendix J-4 of the Hills MUPDD FEIS that demonstrates the effectiveness of this method in reducing nitrogen loads as compared to other alternatives.

The fertigation processes at Golf at the Bridge and Sebonack Golf Club are **identical** to the proposed plan for both the PDD and the PRD. All of these processes include on-site irrigation wells, water testing, amendment or dilution and groundwater quality testing protocols. This Planning Board was involved in the imposition of these protocols for both of the aforementioned golf courses. The proof in the success of these protocols is on file the at the Town of Southampton as it has been monitoring groundwater quality, which continues to be excellent, at these two golf courses for over 10 years.

This is similar to the process at the Indian Island Golf Course, where wastewater from the Riverhead STP is reused for irrigation (see **Attachment 4-2**). The wastewater is monitored for nitrogen, and then used to irrigate the golf course. Similar to the plan for the Lewis Road PRD, water is diluted or appended as necessary to meet the needs of the course while the grass acts as a bio-filtration system, removing nitrogen from the wastewater and protecting adjacent surface water.

Additional more detailed information received from the Town of Riverhead regarding the Riverhead STP is provided below in response to this comment:

> The Town of Riverhead Wastewater Reuse project is located on the north side of Riverside Drive and west of Cross River Drive in Riverhead, Suffolk County New York. The project is a joint endeavor of the county, state and federal governments and Riverhead Town through the Peconic Estuary Program.
>
> The Riverhead Sewer District plant pumps approximately 350,000 gallons per day of treated wastewater into the irrigation system of the abutting county-owned Indian Island Golf Course, during the months the course needs watering. The volume represents approximately 46% of current surface water discharge and 25% of nitrogen mass loading to Peconic Bay during the irrigation season.
>
> The Riverhead Sewer District plant was originally constructed in 1937 as a primary treatment plant with chlorination for disinfection. In 1959 the plant was upgraded to a secondary treatment facility with the installation of trickling filters. The plant was upgraded again in the year 2000. The improvements included the installation of sequencing batch reactors (SBR's) and the use of ultraviolet light for disinfection. The plants permitted capacity is 1,200,000 gallons per day with a current flow of about 900,000 gallons per day.
>
> Treated wastewater, tested to insure a total nitrogen concentration of 10 mg/l or less to meet drinking water standards will no longer be discharged into the Peconic River, which suffers from nitrogen pollution. Most of the nitrogen that is present will be absorbed by the root system of the golf course turf, reducing the need for fertilizers. Irrigation will be done at night, minimizing the chance of occasional early morning odors.
>
> Soil tests and visual observations were undertaken during a pilot study and after a positive evaluation of the health of the managed turf areas expanded to the entire County golf course. According to the project's SEQRA review, full scale implementation will not only meet the goal of the Peconic Estuary Comprehensive Conservation and Management Plan for no net increase in nitrogen input to the ecosystem, but will reduce and eventually eliminate the Riverhead Advanced Wastewater Treatment Facility contribution. The potential

for algal blooms and resultant biological oxygen demand is reduced as a result. Further, the nutrient content of the applied reclaimed water may reduce the County's need to fertilize the golf course and reducing or eliminating their need to pump irrigation water from the aquifer will reduce the potential for saltwater intrusion.

The Indian Island Golf Course use of wastewater for plant nutrients differs from the proposed project as it uses wastewater for fertigation as compared with the Lewis Road PRD plan to use groundwater with elevated nitrogen concentrations as a result of nearby agricultural activities. Nevertheless, the dissolved nutrients are generally the same, including nitrogen, and the result of denitrification by way of bio-filtration is the same. All of the information provided herein is included to be responsive to this comment.

Fertigation remains a very viable and beneficial technique to manage turf irrigation in a manner that will maximize nutrient uptake through the implementation of the ITHMP, and remove nitrogen in groundwater from legacy conditions associated with upgradient farm fields, that would otherwise migrate toward and discharge to Weesuck Creek and western Shinnecock Bay. It is noted that the fertigation system was voluntarily proposed to reduce nitrogen load, and results in a net negative nitrogen load associated with this project. Fertigation will result in the removal of 1,669.19 pounds/year of nitrogen as per the findings of the DEIS, FEIS and Findings Statement. There is no change in the proposed fertigation system which is a water quality improvement as related to the proposed project. Therefore, there is no significant adverse impact, but there is a significant net improvement, as related to nitrogen in groundwater.

3. Paul Granger, President of Aqua Agronomic Solutions, Inc., has been retained to assist with the proposed irrigation/fertigation system design. Mr. Granger is a renowned expert in design of such systems. **Attachment 4-3** includes a memo from Mr. Granger in response to comments regarding proposed irrigation/fertigation. Key points are summarized herein, in response to questions/comments from the Town consultant.

   The following schematic is provided to depict the typical golf hole irrigation system design.

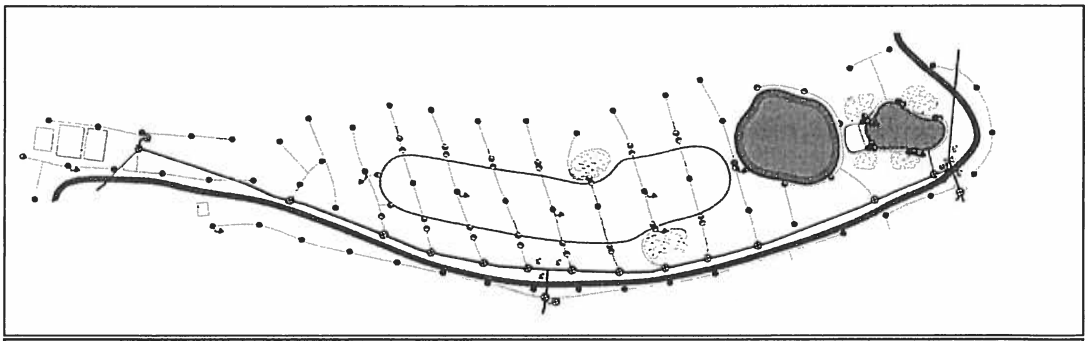


Figure 1: Sample modern irrigation layout giving golf course superintendent ability to water the fairways and rough separately. Notice how the irrigation more closely follows line of play.

The irrigation system for the Lewis Road PRD will be designed using the most up to date state of the art materials available today.

The system will be a full coverage system over the 78 acres of the developed golf course and will be designed to cover greens, tees, fairways and primary rough. It will be designed to confine irrigation to the grassed areas only and avoid irrigation into the forested areas surrounding the golf holes.

The emphasis on irrigation system design today is for smaller sprinklers on tighter spacing with less gallons per minute (gpm) flow, therefore yielding lower precipitation rates. This gives today's golf course superintendent the ability to more efficiently distribute water to where it is needed, on a much smaller scale. This has been made possible by the advancement in sprinkler and nozzle technology, allowing us to utilize these smaller spacing and smaller sprinkler flows. This equates to lower energy cost due to the lower pump horsepower requirements. The newer sprinklers also perform better in the wind at lower pressures and produce more uniform coverage.

The fairway irrigation will be a minimum of triple row with ins and outs along the outer two rows to allow the roughs to be irrigated separate from the fairways. Rough irrigation should be added where not adequately covered be the outs along the fairway edges. Coverage will also include the roughs between the tees and fairway start. Tee boxes will be irrigated with smaller sprinklers to more efficiently irrigate the tee surface and the surrounds.

Two sets of sprinklers will be installed at each green complex. One set should be part circle sprinklers to irrigate the greens with the other set being part circle directed to irrigate the surrounds without irrigating the putting surface. Any sprinkler not part of the greens irrigation such as approaches and greens surrounds directed back towards the green, shall be positioned so as not to irrigate the putting surface

Additionally, the Lewis Road PRD's control system will be based upon evapotranspiration (this is the amount of water lost during the day between the turf grass plant and the soil). In conjunction with an on-site weather station, the control system will determine how much water was lost from the plant and soil during the day, determine how long each individual station needs to run to replenish this amount, and then communicates this information to the satellite controller. This reduces the amount of excess irrigation that is done, shortens the water time window and reduces the cost of pumping.

The most critical feature that the control system offers however, is flow management. These control systems monitor the amount of water running at any given moment and can turn on sprinklers to keep the pump station running at its maximum efficiency.

In addition to the weather station, soil moisture sensors will be installed in the ground over the golf course to more specifically monitor the moisture in the soil reservoir and allow the golf course superintendent to more accurately determine real-time turf grass needs and irrigate only as needed.

The piping network to be used is High Density Polyethylene which reduces the carbon footprint over other piping materials such as PVC piping.

4. The irrigation system for the Lewis Road PRD development will be designed based on the document named "The Lewis Road PRD irrigation water use estimates based on 20-year evapotranspiration data from coastal New York, reference ET calculated using the FAO method with 75% rainfall based on 30 year historical data from Southampton NY." This document was included in Appendix R-1 of the FEIS.

   As seen in that document, the estimated total irrigation needed is 34,917,296 during the year. From this document it is noted that the month of July shows the highest deficit between evapotranspiration and rainfall. That deficit is approximately 419,318 on a daily basis. The irrigation system will need to be run at approximately 1200 to 1500 gpm to meet the six (6) hour water time window. Although, based on watering practices of the golf course, daily evapotranspiration and weather, daily irrigation could be as much as 650,000 gallons or 1800 gpm.

   The combined lake for irrigation is 4.52 acres. An irrigation cycle of 650,000 gallons would draw down the lake 5.3" during this cycle. The system would then need 1083 gpm to refill the lake by 8:00 am the following morning.

5. The irrigation plan calls for the lake to be refilled from 3 wells. The first well would be the 600 gpm north well with 2 mg/l nitrate and two additional 300 gpm wells in the south with approximately 15 mg/l nitrate. The system would be designed to monitor the nitrates leaving the wells and blend the wells used to achieve a blend of approximately 8 ppm in the irrigation lake which will also be monitored. If necessary, the irrigation lake can be supplemented with water from the north well to decrease the nitrate levels. The agronomist has stated that this is acceptable for all golf and common areas.

6. Proposed vegetation is not expected to be a factor with respect to nitrogen concentrations in the lake, as the dominant factor will be well source water that will be managed via 1 north well and 2 South wells and concentrations will be continuously monitored to blend lake water to a concentration of 8 mg/l. Any fluctuations in nitrogen concentration will be managed through well inputs as necessary for optimum irrigation/fertigation water.

7. There is no change in this aspect of the project. The proposed bioswale and rain garden system proposed was addressed as part of the DEIS/FEIS process and found to be the most feasible and effective system for managing greens/tees. During this process, extensive consideration was given to methods for using water collected by lined tees and greens for the fertigation/recycling program. Golf course elevations and the spatial relationship of the 18 holes, and 36 greens/tees make it impossible and impractical to centrally collect infiltration water for use in irrigation. It is noted that the DEIS Final Scope did not require any further assessment of the proposed water management strategy, and the DEIS/FEIS process resulted in a Findings Statement supporting project approval with respect to water resources. The fertilized area will not exceed 15 percent of the overall site in conformance with Pine Barrens standards, and the nitrogen budget for the PDD found the proposed project to have the lowest nitrogen load and nitrogen in recharge of the alternatives studied. As a result, no adverse impact with respect to nitrogen is expected, and no further analysis or comparison is warranted.

8. There are no changes to the SONIR model as the plan for fertigation for the PRD is identical to the plan from the PDD.

9. All responses have been provided for all of the above questions.

10. WORKFORCE HOUSING

The 12 workforce units will be constructed as a part of the PRD Proposed project instead of an in-lieu-of fee the applicant was to provide in the PDD Proposed Action1. The 10 apartment-style, 600 square foot units on site have been analyzed for traffic, septic system contributions, etc. However, the two off-site lots are dismissed as single and separate lots and would be SEQRA Type II actions as provided in 6 NYCRR Part 617. No further, physical information is provided. These two lots are a part of the Proposed Action PRD, if not specifically a part of the subdivision application. For the Planning Board to take a "hard look" as required by SEQRA, it has to have taken as least some look at these impacts and could then deem them significant or insignificant. Also, the Planning Board could require that the two units also be provided on site.

- *Would this be segmentation (even in a minor way) under SEQRA?*
- *Physical information about the existing condition and impacts to these two lots should be provided.*
- *It should be presumed that these units will be used full time.*

Response: With regard to bullet 1, the Applicant will agree to construct the 12 workforce units on the subject site if so desired or to construct 10 workforce units onsite and two units off-site in the same school district. This change in the project is being compelled by the Town Planning Department and is not an independent proposal by the Applicant. The Town has requested that all of the workforce units, which are expected to be used full time, be constructed rather than have the Applicant pay into a fund to facilitate workforce housing as was contemplated at the time of the FEIS. This only increases the number analyzed in the SEQRA Compliance Analysis from 10 to 12 units, which is not a significant change as will be demonstrated herein. As a result, though this was not considered to be segmentation due to the prior contemplated use of 2 single-and-separate building sites (which would be a Type II Action under SEQRA), no question of segmentation would be raised if all of the units are constructed on-site.

With respect to bullet 3, the SEQRA Compliance Analysis and this response to the Town's consultant comments both anticipate that the workforce housing units will be used full-time. Further information regarding nitrogen, school-aged children and traffic is provided herein.

<u>Nitrogen Analysis of Workforce Units</u>
At the time that the Compliance Analysis was prepared, it was anticipated that 10 of the 12 workforce units would be built on the project site, and the remaining two units would be constructed on separate lots nearby. Section 4.2.2 of the Compliance Analysis studied the impact of the 10 onsite workforce units on water resources, which showed a slight, insignificant increase in nitrogen concentration as compared to the 118-units of the PRD:

> The proposed units will be served by public water from SCWA and will be connected to the Lewis Road PRD STP. Pursuant to SCDHS design flow factors, housing units up to 600 SF have a design flow of 150 gpd. As a result, the ten (10) units will generate 1,500 gpd of sanitary waste. When added to the wastewater flow of the overall project and factored into the SONIR model run, the concentration of nitrogen in recharge increases to 0.34 mg/l (without mitigation) from 0.31 mg/l (with mitigation), and [remains at] 0.24 mg/l (with mitigation). The recharge volume increases from 442.41 MGY to 442.95 MGY. These changes are not significant and would not be expected to be significant due to the low flow and proposed treatment of wastewater.

The impact of the two remaining workforce units is also insignificant whether these units are developed on the project site (and connected to the proposed STP) or in the vicinity (and served by septic systems). In order to fully address potential groundwater impacts and nitrogen load/concentration with respect to the Lewis Road PRD, and to be responsive to the comments with respect to the workforce housing units, an additional SONIR model run was prepared to include 12 on-site workforce housing units. This model run is included in **Attachment 5**. The results indicate that the concentration of nitrogen in recharge would increase slightly with the additional units, from 0.23 to 0.25 mg/l, which would remain significantly below the 2.5 mg/l threshold from the CLUP. As a result, no groundwater impacts are expected with respect to nitrogen.

Table 2 shows the results of SONIR model runs for all 130 units and the SEQRA Compliance Analysis SONIR run.

Table 2
SONIR MODEL COMPARISON

Parameter	130 On-Site Units Using STP SONIR Run(1)	SEQRA Compliance Analysis SONIR Run (2)
Recharge Volume (MGY)	443.06	442.41
Nitrogen Concentration (mg/l)	0.25	0.23
Nitrogen Load (lbs)	1,210.59	1,151.62

(1) See **Attachment 5**; assumes 12 workforce units .developed on project site and connected to project's STP.
(2) Based on SEQRA Compliance Analysis; Appendix C-2.

No adverse impacts are expected with respect to nitrogen budget impacts based on the SONIR model analysis and comparison to applicable metrics including conformance to Article 6 and the Central Pine Barrens CLUP guideline limit of 2.5 mg/l for the concentration of nitrogen in recharge.

<u>School-aged Children Analysis of Workforce Units</u>
As noted in response to Comment 2 above, the type of units proposed are projected to generate a small number of school-aged children per unit. As a result, the 12 units are expected to result in 2-3 school-aged children. This occupancy is not expected to burden the East Quogue UFSD. In addition, the overall taxes and lack of school-aged children from the proposed project will establish a positive fiscal benefit to the school district. As a result, there will be no significant adverse impact on the EQUFSD as related to workforce housing units.

<u>Traffic/Trip Generation Analysis of Workforce Units</u>
A trip generation analysis of the 12 workforce units has been prepared as part of a Supplement to the TIS (see **Attachment 6**), and is shown in **Table 3** below. As can be seen, the additional trips associated with the workforce units are relatively small so that, as the SEQRA record demonstrates that there would be no significant impacts associated with 118 seasonal units, it would likewise not be expected that this increase would cause significant impacts.

Table 3
PEAK HOUR VEHICLE TRIP GENERATION*
PRD, with 12 Workforce Units

Peak Hour Trip Generation**	PRD (1)		
	118 Residences	12 Workforce Units	Totals
Weekday AM (vph)	26	5	31
Weekday PM (vph)	33	6	39
Saturday Midday (vph)	45	6	51

* Seasonal units occupied up to 60 days per year, workforce units occupied year-round,
** All trip generation values calculated using rates from ITE Trip Generation Manual, 10th edition.
(1) Assuming LUC 260 for 118 Recreational Homes, and LUC 221 for 12 Low-Rise Apartments; golf course not available to public.

The TIS Supplement is presented in response to Comment 13 below. The analysis includes the proposed project density of 118 units plus the 12 workforce housing units.

11. CLUBHOUSE

1. *What will be the site-specific effects, if any, of replacing a large club house structure with a series of smaller structures?*
2. *Will any of the potential impacts be varied by the various minor changes in elements such as shifting the maintenance building, adding a second maintenance building and altering roadway alignments?*
3. *How will the eight condominium style units (10 per workforce housing discussion above) be distributed?*
4. *What would be the parking requirements for the PRD proposed project with full time use?*
5. *Was parking was calculated for D/FEIS Alternative 3 and how would this compare to the PRD proposed project with full time use?*
6. *Discuss and analyze the total project parking needs and the need underground parking and potential parking alternatives.*
7. *The clubhouse(s) will have parking areas beneath them (see the Applicant's SEQRA Compliance Analysis – Concept Elevations and Concept Plans – Building 1). What is the depth to groundwater?*
8. *How will hazardous materials be prevented from entering the sub-surface (and ground water) in the event of a spill?*
9. *The applicant should either state that this configuration, as altered from the PDD to the PRD proposed projects and any materials storage or contingency plans associated with it have not changed from the D/FEIS or provide clarification of any significant changes for this space.*

Response: The only change between the PDD and PRD with respect to the clubhouse area, involves minor changes in configuration and size which reduce the mass and slightly reduce the size of the clubhouse area. The 9 comments above related to the clubhouse are addressed in sequence below:

1. The changes within the community clubhouse area from the PDD to the PRD will not result in any significant impacts and in fact may reduce some impacts as compared to the PDD as a result of the reduction in massing and modification of the clubhouse area now that a membership golf club is not proposed.

   The clubhouse area for the PRD is nearly the same size and in the same physical location as the clubhouse area for the PDD. For the PDD, the clubhouse area was to be occupied by a single, large, 2-1/2 story structure to house all of the recreational facilities and 8 residential units, as well as two levels of underground parking and storage spaces. The PRD would break these uses into four separate, smaller 1- and 2-story structures. The heights of the buildings within the clubhouse area for the PRD are lower (to meet Town Code requirements, unlike the PDD), and only two of the four buildings will have lower level basements for parking and storage

   Overall the total square footage of development for the PRD clubhouse buildings is slightly less than that of the PDD clubhouse building. There are also fewer parking spaces due to the loss of the outside golf club memberships. The clubhouse area in the PDD was 8.43 acres. The total clubhouse area is 4.52 acres with the PRD.

2. The maintenance buildings and other slight shifts to the roadways are not expected to result in any significant changes compared to the impacts of the PDD.

   The road alignments were also changed slightly in the PRD from the PDD to maximize open space, but these changes are not expected to result in any significant changes in the impacts determined for the PDD.

3. The 8 PRD condos are distributed across three buildings with 2 units on the second floor of the clubhouse, four units on the second floor of the locker room and two units on the second floor of the fitness center.

   The Applicant will construct the 10 units on-site and two units off-site, or 12 workforce units on the subject site. These units will be located in the "panhandle" area south of the site access and security booth area.

4 The parking requirements for a residential subdivision (including a PRD with associated private amenities) are contained in the Town code and would not vary based on occupancy of the residences. Based on a minimum of two spaces per unit , plus 1 additional space for each unit having more than 3 bedroom, 414 spaces would be required for the residences. This number would be provided by the 95 lots of the proposed PRD, in garages and driveways; as the 15 club cabins and 8 club condos do not have space for parking, those spaces are accommodated below-grade of the clubhouse and locker room buildings. As the golf course and clubhouse would only be available to site residents, the spaces associated with these facilities would be for the employees. The on-site workforce housing units are located in a separate building on-

site but outside of the main subdivision development area, with the required number of parking spaces provided per Town Code.

5 The number of required parking spaces for D/FEIS Alternative 3 was not estimated, but would be in excess of those for the PDD, the proposed PRD, and for both D/FEIS Alternatives 2a and 2b, due to the inclusion of substantial commercial spaces and the publicly-available golf course in that scenario.

6 Generally, it is expected that the number of parking spaces that would be required by the Town Code would be the same or similar for the PDD, the PRD and Alternatives 2a and 2b of the D/FEIS, as these scenarios include the same or similar numbers of units and facilities, and Town parking requirements do not vary with occupancy. As noted in #5 above, the number of spaces for D/FEIS Alternative 3 would be substantially greater, as this scenario would include substantial publicly-accessible facilities.

With respect to the need for underground parking, the general need to minimize clearing/maximize retention of open space supports the concept of undergrounding some of the parking where such a design would be appropriate, like the clubhouse area buildings.

7. Figure 2-3a of the DEIS shows that the clubhouse would be at an elevation of about 70 feet above sea level (asl), and DEIS Figure 2-4 shows that the water table is at an elevation of about 13 feet asl in the same area, so that, assuming that excavation for the basement parking level would extend to a depth of about 20 feet, there would remain about 37 feet of undisturbed soil between the parking level and groundwater. This should be more than adequate to conform to applicable SCDHS requirements regarding minimum depth to groundwater, particularly as little to no recharge water would be percolating downward beneath the clubhouse to carry any contamination to groundwater.

8. Additionally, conformance to SCSC Article 12 and the nature of activities in the clubhouse would preclude the presence of potentially hazardous or toxic materials. The nature of a parking level is such that no such potentially harmful chemicals would be present. Finally, it is expected that floor drains would be provided, which would be connected to the overall site drainage system, so that any washdown water carrying leaked or spilled automotive fluids would be prevented from reaching the water table.

9. Given the details noted herein with respect to the clubhouse, the PRD does not result in any significant adverse impacts that were not already considered, and in fact, would reduce the size, mass and height of the clubhouse as compared with the PDD. As a result, there is no significant change and no significant adverse impacts and the project remains consistent with the Findings.

12. CENTRAL PINE BARRENS

The DEIS Table 1-20 provides that the Central Pine Barrens Commission's (CPBC) "Conformance Review and Approval" is required for the PDD. The DEIS (Table 3-8) and the applicant's SEQRA Compliance Analysis of December 2018 (Appendix F and table entitled, CONFORMANCE TO CPB CLUP STANDARDS AND GUIDELINES FOR LAND USE) both illustrate the PDD's and PRD's Conformance with the CPBC guidance and standards. This analysis should

also be conducted for the PRD project assuming full time use. The FEIS, Section 3.2.3 states, "The Applicant will prepare an application for a Development of Regional Significance (DRS) to the CPB Commission..." Further, the Central Pine Barrens Commission, in its March 1, 2018 letter to the Town (as included in the Planning Board's ADOPTED Pre-Application Report of May 24, 2018), requests a DRS determination. CPBC Section 4.5.2.2 of the Pine Barrens Development Standards states that the ***local approving authority*** *(at this juncture, the Town of Southampton's Planning Board) is charged with making the determination as to whether a project is consistent with Pine Barrens guidance and standards and/or if it is a development of regional significance. Further, it also indicates an applicant is given an opportunity to revise a project to be consistent with the standards. If a DRS is determined to occur or, if proposed changes make it so, the project is, "subject to [direct] review and decision" of the CPBC.*

1. *In the DEIS, the intersection of Boxtree/Old Country Road will change from a LOS C to D in the Saturday PM scenario. Since CPBC regulations (4.5.5.1, item 4.) includes a decline of traffic-intersection's LOS to D as a triggering mechanism defining a DRS (and so a direct application to the CPBC for their review), why was that application not forthcoming/necessary at that time?*
2. *Was the above condition mitigated in proposed action revisions triggered under CPBC regulations 4.5.2.21 and included in the FEIS or in the PRD proposed project?*
3. *Table 2-5 PERMITS & APPROVALS REQUIRED of the Applicant's December 2018 SEQRA Compliance Analysis has no mention of the Central Pine Barrens Commission's role. Why is this so?*
4. *Following the additions/changes to the SONIR modeling discussed in Item 3 above, please restate compliance (or lack of same) with the CPBC CLUP guidance and standards.*
5. *The analysis of the PRD proposed project with full time use should be put in a separate table for compliance (or not) with the CPBC CLUP guidance and standards.*
6. *Pine Barrens Credits have been transferred in this process. Information relating to the total transfer of all Pine Barrens Credits including those which were used for yield, mitigation or public benefit is spread throughout the SEQRA record to-date. We request that the applicant provide a complete, single table or chart with this information and an accompanying, specific narrative.*
7. *Did the use of Pine Barrens Credits figure in the potential DRS determination per CPBC Section 4.5.2.2? If so, provide specific calculations.*
8. *The applicant will respond point by point to the CPBC letter of March 1, 2018. These responses shall be adjusted according to any changes in the applicant's CLUP compliance analysis resulting from this inquiry of the Planning Board (e.g., any changes to SONIR inputs or outputs, etc.). The response shall include the assumptions of both seasonal and full time use of the units and facilities which would result from a Planning Board approval.*

Response: The Lewis Road PRD is not a DRS and it complies with all Town of Southampton Central Pine Barrens Overlay District standards (and therefore CPB CLUP requirements as well). The following provides responses to each of the number comments above, in sequence:

1. A DRS application was not made for the DEIS as it would have been premature until the Town Board determined if the project would move forward with respect to the change of zone. As it turned out, though the Findings Statement to approve the project was approved by a majority

vote of the Town Board, the change of zone was not approved as a majority plus one vote was needed but not attained. As a result, this is a moot point.

2. No specific mitigation measure was proposed for the PDD with respect to the above-named intersection. As the revised TIS for the PRD (Appendix D of the Compliance Analysis) indicated that this intersection would not experience a decline in LOS to D or lower, no threshold indicating the project would be a DRS was triggered for this intersection or any others.

3. The Compliance Analysis did not mention the CPBC's role, as the submission at hand was directed to the Town Planning Board, which maintains jurisdiction in regard to conformance with the Town Pine Barrens Overlay District and no threshold was exceeded that would result in the project being defined as a DRS (see **Attachment 7**).

4. The results of the revised SONIR model analysis indicate that the proposed PRD, like the PDD, will conform to the applicable nitrogen standards and guidelines of the CPB CLUP.

5. As discussed in response to Comment 1 above, the proposed PRD is for seasonal use. Therefore, no discussion of the conformance of a full-time subdivision with the Town Central Pine Barrens Overlay District or CPBC CLUP standards and guidelines will be provided.

6. As discussed in the Compliance Analysis, the proposed PRD does not include the use, redemption, transfer or retirement of Pine Barrens Credits (PBCs). Therefore, an effort to provide a complete, single table or chart with this information and an accompanying, specific narrative, would be moot.

7. Not applicable; see above.

8. The Applicant will follow the Town Planning Board's direction with respect to an analysis of the proposed PRD's characteristics as compared to the definition of a DRS, as discussed in the Town Planning Board letter of April 11, 2019 (see **Attachment 7**). Based on analyses presented in this document, the proposed project does not meet the definition of a DRS. The complete analysis of the PRD's conformance with the Town Central Pine Barrens Overlay District (and the CPB CLUP) is in the SEQRA Compliance Analysis provided to the Town Planning Board in December of 2018, Appendix F. This provides answers to all of the questions from the CPBJPPC letter to the Town of Southampton, dated March 1, 2018.

Appendix F of the Compliance Analysis contained a full review of the proposed PRD's conformance to the CPB CLUP, including an evaluation of the project's potential classification as a DRS. As summarized in Section 2.2.1 of the Compliance Analysis:

> An estimated 140.35 acres of the site (23.85%) are within the Core Preservation Area (CPA) of the CPB, and the remaining 448.04 acres (76.15%) are in the Compatible Growth Area (CGA). No development is proposed within the CPA; all development is in the CGA, as intended by the CPB CLUP. The proposed project has been reviewed in comparison to the Standards and Guidelines of the CPB CLUP for a Development of Regional Significance (DRS) and has been found to conform to these Standards and Guidelines. The Lewis Road PRD is similar to The Hills MUPDD which was "called-up" by the Pine Barrens Commission and therefore may also require Pine Barrens Commission review, though it is a different project that no longer requires a change of zone. The change that eliminates the private golf course open to outside memberships will reduce vehicle

trips and traffic impacts and the project will not decrease the Level of Service (LOS) at any intersections by two (2) LOS levels or to LOS D. As a result, the subdivision/site plan development should be considered a different action by the Pine Barrens Commission. Nevertheless, the project complies with the Town CPB Overlay District and the Standards and Guidelines of the CPB CLUP.

Thus, the PRD does not exceed any of the tests for DRS status as it is not a commercial use, has fewer than 200 residential units, conforms to the standards and guidelines of the CPB CLUP, and would cause no decreases in existing levels of service at the local roadway intersections as compared to a No Build scenario (see pertinent tables from Supplemental TIS, **Attachment 8**). Further, the impacts of the workforce housing units are evaluated in Section 4.0 of the Compliance Analysis and, as determined in the revised TIS, the impacts are insignificant. The Town will review this information regarding the lack of status as a DRS, upon consideration of this information.

13. TRANSPORTATION RESOURCES

- *The analysis and discussion of Alternatives to the Proposed Action in the Town's PDD considered impacts to Transportation Resources, specifically traffic. Chapter 5 of the DEIS Table 5-1 provides a numerical comparison of the seasonal-use PDD proposed action to the full-time use Alternatives. In DEIS Section 5.2.2, Transportation Resources, for Alternative 2a it states, "...trip generation associated with Alternative 2a would extend over the full year." A very similar discussion is provided in DEIS Sections 5.2.4 for Alternative 2b (and is apparently presumed to be the same as 2a). The traffic discussion for Alternative 3 begins by mirroring Alternatives 2a and 2b but adds, "However, the golf course presumed for Alternative 3 will be a public amenity, for which a substantial numbers of vehicle trips would be generated." The discussion then goes on to describe this added impact. Table 5-1 in the DEIS provides varying traffic numbers by Alternative. However, these are described in Appendix H as "estimates" and are not fully modeled using a Highway Capacity Manual-based program. Alternative 3 was estimated to be the "worst" by a multiple of up to 9.36 for Saturday peak hour traffic. In the FEIS, the Alternatives are apparently not re-visited in Chapter 5.0, and no traffic Appendices are found. The applicant should provide a calculation of traffic generated (including Levels of Service) by the PRD project assuming both full time use and only membership in the Golf Course by future lot/units owners.*
- *This result should be compared side by side with the PRD as proposed and D/FEIS Alternative 3.*

Response: Attachment 6 contains a Supplement to the PRD Traffic Impact Study that analyzes the proposed project 118 units plus 12 workforce housing units. **Table 4** below compares the peak hour vehicle trips for the PRD. It is noteworthy that:

- the trip generation rates for seasonal homes (ITE Land Use Code [LUC] 260 assumed) are substantially lower than those for year-round occupancy homes (LUC 210 assumed);
- no or minimal numbers of outside trips would be generated by the golf course for the PRD (assumed to be a private facility for the exclusive use of the site's residents),
- As with the PDD and the PRD, the golf course would be playable only from mid-April through mid-October and the PRD will also have the same occupancy restriction as the PDD.

Table 4
PEAK HOUR VEHICLE TRIP GENERATION COMPARISON*
PRD and D/FEIS Alternative 3

Peak Hour Trip Generation	PRD **		D/FEIS Alternative 3***
	Seasonal (1)	Year-Round (2)	Year-Round (3)
Weekday AM (vph)	31	94	196
Weekday PM (vph)	39	125	846
Saturday Midday (vph)	51	123	1,170

* Seasonal units occupied up to 60 days per year, workforce units occupied year-round
** Using ITE Trip Generation Manual, 10th edition.
*** Using ITE Trip Generation Manual, 9th edition.
(1) Assuming LUC 260 for 118 Recreational Homes, and LUC 221 for 12 Low-Rise Apartments.
(2) Assuming LUC 210 for 118 Single-Family Homes, and LUC 221 for 12 Low-Rise Apartments;
(3) Per DEIS, plus LUC 210 for 12 Low-Rise Apartments.

14. AIR QUALITY

An Air Quality screening analysis per NYSDOT EPM Chapter 1, Level 1 was not included in the record to-date.

- *An Air Quality screening analysis per NYSDOT EPM Chapter 1 should be added by the applicant, especially in light of the golf Course/Club traffic as proposed and with Full time use of the project.*

Response: The Final Scope for The Hills PDD DEIS did not include air as a resource category to be analyzed in that document, and did not mention, let alone require, performing an air quality screening analysis in association with the TIS for the PDD. Consequently, the Town Board Findings Statement did not address air quality impacts. As the Compliance Analysis addressed the PRD's conformance to the items and issues included in the Findings Statement, air quality impacts were not addressed in that document.

Nevertheless, based on the updated trip generations in the revised TIS and including the 12 workforce units (see **Table 3**), the Applicant has prepared a Level I Screening Analysis for the PRD, included herein. Any development that may attract mobile source activity is considered an indirect source of air contamination, as it may result in a net increase in carbon monoxide emissions. CO pollution is a localized problem, and tends to accumulate in areas where vehicles idle, such as at roadway intersections. The proposed project will produce additional vehicle trips on area roadways. Thus, the increase in traffic must be evaluated to determine potential impact on air quality.

Chapter 1.1 of the NYSDOT Environmental Procedures Manual provides criteria for determining the appropriate level of air quality review. Microscale analysis assesses air quality on a localized level, looking specifically at increases in CO emissions. Mesoscale analysis is conducted for projects that significantly affect traffic conditions over a large area. Microscale analysis utilizes air

quality computer models to assess impact. The MOBILE emissions model generates emission factors in grams per vehicle per mile for CO, VOCs, and NOx. CAL3QHC is a line source air dispersion model that determines CO concentrations based on meteorological, traffic volume and intersection information.

The outcome of the consideration of three levels of criteria establish the need to perform microscale air quality analysis. The three levels are as follows:

- Level of Service (LOS) Screening
- Capture Criteria Screening
- Volume Threshold Screening

The CO Microscale Analysis Screening discussed herein may be utilized to determine the need for further analysis. If the threshold of one screening test is exceeded, the next test is applied. If all three are exceeded, microscale analysis is necessary to evaluate the project's impact with respect to air quality.

Projected levels of service (LOS) and increases in traffic volumes at area intersections in comparison to No-Build conditions for this analysis were based upon the Traffic Impact Study prepared by Nelson & Pope for the proposed project for the peak AM, PM and Saturday hours.

1. Level of service screening

Level of service (LOS) is a term utilized to describe vehicular delays at intersections. Intersections impacted by a project with estimated time of completion (ETC), ETC +10 and ETC +20 with a LOS of A, B or C are excluded from microscale analysis unless there are potentially sensitive receptors, in which case, microscale analysis may be warranted. The EPM notes that regardless of the LOS, if there are potentially sensitive receptors, i.e. schools, hospitals, retirement communities, etc. for DOT projects, a microscale analysis may be appropriate. The western property line of the East Quogue Elementary School is located approximately 450' south of the intersection of Lewis Road an Old Country Road/Box Tree Road. In this case, the LOS for northbound vehicles making left turns at the intersection of Old Country/Box Tree Road and Lewis Road was determined to be LOS "D" for the PM peak. However, this LOS does not vary between the No-Build and Build conditions for the AM peak and Saturday peak hours and for the PM peak hour, this minor additional delay is due to the addition by the project of eleven (11) vehicles to the intersection (of which, one additional vehicle is added to the northbound movement for the PM peak). Since the added volume to the intersection in the Build condition as compared to the No-Build condition is between 10 and 15 vehicles (10 for the AM peak and 15 for the Saturday peak), it is clear that the additional volume will not result in a change in the ambient air quality due to vehicle queuing. However, the additional criterion tests described below provide another layer of confirmation that microscale analysis is not necessary to conclude that no significant impact in air quality will result from mobile sources from the proposed project.

As noted, the capacity analysis for the proposed project indicates that there is only one intersection, the Lewis Road an Old Country Road/Box Tree Road intersection, which will not achieve this threshold as it will operate at a LOS D for the estimated time of completion. It is noted that this condition will exist both with and without the project in the PM and Saturday peak hours. However, since the TIS does not provide the data to allow extrapolation of LOS for ETC+10 or ETC+20

for the purpose of this screening at any of the intersections studied; the second threshold screening has been performed to be conservative in review of all intersections.

2. Capture Criteria Screening

Capture criteria screening provides a hierarchy of thresholds, which eliminate the need for microscale analysis since it has been determined that lower thresholds will not significantly increase air emissions. If the affected intersections do not meet the criteria, a microscale air quality analysis is not required. **Table 5** summarizes the criteria and provides a discussion of applicability with respect to the proposed project.

Table 5
CAPTURE CRITERIA SCREENING

	Criteria	Applicability/Discussion
1.	A 10% or more reduction in the source-receptor distance.	Not applicable. This standard is applicable for roadway widening projects, or changes in nodes which reduce the distance between a sensitive receptor and the travel lanes or queuing lanes.
2.	A 10% or more increase in traffic volume	This criterion has been applied and it was determined that for all existing intersections, the percent increase over the no-build volume is less than 10%. It is noted that to be conservative, the new intersection at the site driveway has been considered – and at ETC will result in a 10% or more volume increase; though for ETC+10 and ETC+20, the percent increase is less than 10% at all peak hours.
	A 10% or more increase in vehicle emissions.	Not applicable. This item is related to changes in vehicle emissions due to speed changes, changes in vehicle mix etc. which applies to major changes on segments of roads and highways (such as reduction from two lanes to one which could result in increasing queues of vehicles and resulting emissions).
	An increase in queued lanes.	Not applicable for this project.
	A 10% reduction in speed, for roadway with speed of 30 mph or less.	Not applicable. This project will not result in a change in speed of vehicle travel.

3. Volume Threshold Screening

If the project results in levels which exceed the/ above criteria, it is necessary to determine whether the volume of traffic would result in air quality exceedance for an intersection based upon road trip and vehicle mix. It is noted that the only intersection that exceeded the capture criteria threshold was the driveway at Lewis Road at the estimated time of completion, which results in an increase of 13.9% in the AM Peak Hour, 10.4% in the PM Peak Hour and 13.3% in the Saturday Peak Hour.

The next screening procedure known as the volume threshold screening process identifies the number of vehicles based upon an emission factor calculated utilizing upon several variables such as vehicle mix and local conditions. For two-way free flow sites and applying the maximum emission factor (200 g/mi), an increase of 292 vehicles would trigger the need to perform microscale analysis utilizing CAL3QHC. Because the maximum increase in this location for a peak hour is 73 vehicles in the Saturday Peak Hour it is far lower than the 292 vehicle threshold, and thus, the volume threshold screening values are not exceeded, even if applying the highest of emission factors.

Thus, based on this air quality threshold criteria analysis, it is concluded that the proposed project will not result in a significant adverse impact to the local air quality from mobile sources and no further analysis is necessary.

15. ENDANGERED AND THREATENED SPECIES

The northern long-eared bat (Myotis septentrionalis) was determined to have a potential occurrence on site. It has recently been listed as a Federally-Threatened species under the Endangered Species Act. No Phase II analysis was conducted in the D/FEIS. The applicant has included a tree-cutting restriction from June 1 to July 31 each year (DEIS Section 2.3.3). However, the USFWS' guidance calls for a tree-cutting restriction from April 1 to September 30 each year. June and July are definitely too short a tree-cutting restriction window.

- *Will the applicant amend this restriction? Eastern Long Island is some distance from the nearest hibernacula on the mainland so a full tree-cutting restriction window may not be needed (if not, the applicant must supply data supporting their position).*

Response: The Applicant agrees to abide by the requirements of NYS ECL Article 11, as administered by the NYSDEC, including the dates of permitted tree-clearing activities.

At the present time, the New York Natural Heritage Program has reported (but not confirmed) the presence of this species on the site, but the NYSDEC ERM states that they are present. Assuming that the bats are indeed present at the site as summer residents, the property would be subject to the tree clearing measures indicated below.

Per the NYSDEC:

> For projects requiring tree removal to convert forest habitat to another land use between April 1 and October 31 that are within 5 miles of an occupied hibernaculum or 1.5 miles of a documented summer occurrence, the following recommendations must be followed unless a permit is obtained from the Department.
>
> Additionally, the following are the restrictions for tree cutting outside of the above time period (November 1 through March 31):

- During this period of time, the Northern Long-Eared Bats (NLEB) are inactive and are within the hibernation sites.
- No cutting of any trees may occur within the ¼ mile buffer around a hibernation site.
- No activities that may result in disturbance to a hibernation site including, but not limited to, actions that would alter the hydrology, increase noise or introduce fill may occur.
    - Please note that if any development or tree clearing activities are planned within ¼ mile of a hibernation area for NLEB, a permit may be required from the USFWS and the NYSDEC.
- For cutting of trees outside of the ¼ mile buffer around hibernacula:
    - No restrictions, with the following voluntary measures recommended:
        - Leave uncut all known and documented roost trees, and any trees within a 150 foot radius of a documented summer occurrence.
        - Leave uncut *all* snag and cavity trees unless their removal is necessary for protection of human life and property. For the purposes of this guidance, protection of human life and property includes removal of trees that, if not removed, could result in the loss of electric service. Snag and cavity trees are defined under DEC Program Policy ONR-DLF-2 Retention on State Forests.

Since there are no hibernacula on the subject site, just summer roosting occurrences, the Applicant would be free to cut without restriction in the winter.

Note that the June 1 to July 31 restriction is an informal recommendation from the NYSDEC. Outside documented occurrence of the species, an applicant is under no legal obligation to adhere to the tree clearing restriction or obtain a permit, but the NYSDEC requests that tree-cutting be restricted in June and July as it is the height of pup season for the bats.

16. OPEN SPACE

It does appear that the applicant has attempted to maximize the proposed, contiguous, natural, open space with little change between the PDD and the PRD.

- *Has contiguous Open Space been maximized?*
- *We request that the applicant provide a figure matching the 11" by 17" format of Figure 1-9 from the DEIS in its SEQRA Compliance Analysis to show how the somewhat revised configuration relates to other preserved open spaces.*
- *Please also provide a table or chart of this preserved/open space acreage by location and a comparison between the PDD and PRD.*
- *Also, how does the PRD's proposed clearing compare with that of D/FEIS Alternative 3? Provide this in the same graphic and tabular format as the D/FEIS.*
- *Have construction impacts been minimized? The applicant should explain if the construction areas, expected schedule, methods and/or mitigating measures have changed in any significant way or not from the PDD to the PRD.*
- *If they have changed, these changes should be elucidated as a narrative, a figure and/or tables directly comparable to the D/FEIS format.*

Response: Contiguous open space has been maximized with very little change between the PDD and the PRD. **Table 6** below compares the anticipated Open Space acreages for the PDD, the PRD, and DEIS Alternative 3. Note that the overall project site is 591.00 acres for the PDD and DEIS Alternative 3, while the site is slightly reduced for the PRD, at 588.39 acres.

Table 6
PRESERVED OPEN SPACE
PDD, PRD & DEIS/Alternative 3

PDD (1)		PRD (2)		DEIS/Alternative 3 (1)	
424.14 acres	71.77%	427.58 acres	72.67%	425.45 acres	71.99%

(1)Assumes site is 591.00 acres in size.
(2)Assumes site is 588.39 acres in size.

Attachment 9 contains two figures titled "Contiguity of Open Space with Addition of Project Related Public and Private Open Space," depicting the pattern and contiguity of open spaces for the PDD (Figure 1-9, and taken from the DEIS) and the PRD (prepared for this document) with that of the open spaces in the surrounding area. As can be seen, the two site layouts are very similar and offer only minor differences in the golf course fairway alignments and widths, and in the lot and roadway configurations in the central portions of the property. These minor plan changes are the result of a Town determination for the PRD application that the Open Space standard of 65% applies to open spaces outside of the project's clearing limit. As a result, the layout of the PRD was "tightened up" slightly from that of the PDD so that, for the area of the site outside of the developed area, 385.18 acres (65.46%) of the site will be open space, meeting the applicable standard. The construction impacts are the same as the PDD.

3.0 Conclusions

The following conclusions are derived from the analyses contained within this document:

- The changes in the proposed project were analyzed in detail in the December 2018 SEQRA Compliance Analysis, which found the proposed project to be consistent with the Findings Statement issued by the Town Board on November 27, 2018.
- This document responds to 16 comments posed by the Planning Board and their consultant with respect to the SEQRA Compliance Analysis, as well as underlying information contained in the DEIS and FEIS for The Hills PDD.
- The proposed project remains consistent with the Findings Statement as demonstrated by the relevant documentation.
- By virtue of conformance with the Findings Statement, the proposed project will minimize adverse environmental impacts to the maximum extent practicable.

- As there are no changes that will result in significant adverse environmental impacts, a Supplemental EIS is not required pursuant to 6NYCRR Part 617; §617.9(a)(7):

> (7) Supplemental EISs.
> (i) The lead agency may require a supplemental EIS, limited to the specific significant adverse environmental impacts not addressed or inadequately addressed in the EIS that arise from:
> (a) changes proposed for the project;
> (b) newly discovered information; or
> (c) a change in circumstances related to the project.

None of these factors are present, therefore, a Supplemental EIS is not required and the Planning Board may proceed with review of the project and adoption of their own Findings Statement.

ATTACHMENTS

Attachment 1-1
Comparison of Input Parameters for SONIR Computer Model Runs

Hills at Southampton PDD vs. Lewis Road PRD

Table 1-1
COMPARISON OF SONIR MODEL INPUTS
Hills PDD vs. Lewis Road PRD

Input Cell	Parameter[1]	PDD Input	PRD Input	Explanation
A. Site Recharge Parameters				
A1	Area of Site	591.00 acres	588.39 acres	Site acreage reduced for PRD, for access for outparcels.
A19	Acreage of Natural/Natural Reveg.	468.19 acres	465.58 acres	Site acreage reduced for PRD, for access for outparcels.
A30	Number of Dwellings	117 units	118 units	1 unit added for PRD; no workforce housing exemption.
A33	Wastewater Design Flow (total)	41,514 gpd	39,157 gpd	Updated flow for PRD; see SEQRA Compliance Analysis.
A34	Adjusted WW Design Flow (total)	6,824 gpd	6,437 gpd	Updated flow for PRD; see SEQRA Compliance Analysis.

Note: gpd-gallons per day; mg/l-milligrams per liter
1 - Only those values that vary between the two model runs are listed.

Attachment 1-2
Comparison of Input Parameters for SONIR Computer Model Runs

Lewis Road PRD vs. Hills at Southampton D/FEIS Alternative 3

Attachment 1-2
COMPARISON OF SONIR MODEL INPUTS
Lewis Road PRD vs. D/FEIS Alternative 3

Input Cell	Parameter	PRD	D/FEIS Alternative 3	Explanation
A. Site Recharge Parameters				
1	Acreage of Rough/Res/Golf/Landscaping	588.39 acres	591.00 acres	Site acreage reduced for PRD, for access for outparcels.
3	Acreage of Rough/Res/Golf/Landscaping	46.81 acres	46.53 acres	Due to differing site uses, yields and/or layouts.
6	Runoff from above	0.50 inches	0.35 inches	Due to change in assumed runoff rate.
7	Acreage of Greens/Tees/Fairways	41.24 acres	42.00 acres	Due to differing site uses, yields and/or layouts.
8	Fraction of above	0.070	0.071	Due to differing site acreage.
10	Ruoff from above	0.50 inches	0.35 inches	Due to change in assumed runoff rate
13	Evapotranspiration from above	6.36 inches	21.20 inches	Change due to review of pertinent scientific studies.
15	Acreage of Water/Ponds/Wetlands	7.26 acres	5.85 acres	Due to differing site uses, yields and/or layouts.
16	Fraction of Site in above	0.12	0.10	Due to differing site uses, yields and/or layouts.
19	Acreage of Natural/Natural revegetation	468.19 acres	469.62 acres	Due to differing site uses, yields and/or layouts.
20	Fraction of above	0.792	0.795	Due to differing site acreage.
23	Acreage of Impervious/Paved/Building	23.80 acres	23.30 acres	Due to differing site uses, yields and/or layouts.
24	Fraction of Land in above	0.040	0.039	Due to differing site acreage.
24	Fraction of Land in [Rain Gardens]	0.002	0.061	Due to differing site uses, yields and/or layouts.
25	Evapotranspiration from [Rain Gardens]	23.90 inches	30.00 inches	Change due to review of pertinent scientific studies.
27	Acreage of Land Irrigated	88.71 acres	88.53 acres	Due to differing site uses, yields and/or layouts.
29	Irrigation Rate	21.40 inches	24.00 inches	Change due to input from irrigation consultant.
30	Number of Dwellings	117	108	Due to differing site uses, yields and/or layouts.
32	Wastewater Design Flow (units)	0	6,414 gpd	Due to differing site uses, yields and/or layouts.
33	Wastewater Design Flow (total)	41,514 gpd	38,814 gpd	Due to differing site uses, yields and/or layouts.
34	Adjusted WW Design Flow (total)	6,824 gpd	38,814 gpd	Due to differing site uses, yields and/or layouts.
B. Nitrogen Budget Parameters				
1	Persons per Dwelling	2.90	2.50	Due to differing site uses, yields and/or layouts.
3a	Sanitary N Leaching Rate	84%	50%	Due to assumed use of STP for PRD
3b	Treated Sanitary N Leaching Rate	100%	90%	Due to assumed use of STP for PRD
4	Fertilized Landscaping (Rough, Residences)	46.81 acres	46.53 acres	Due to differing site uses, yields and/or layouts.
7	Fertilized Land (Greens/Tees/Fairways)	41.24 acres	42.00 acres	Due to differing site uses, yields and/or layouts.
10	Outdoor Cat Population	0.74 cats/dwelling	---	Parameter added for PRD analysis

11	Cat Waste N Load	3.22 lbs/cat/year	---	Parameter added for PRD analysis
12	Outdoor Dog Population	1.40 dogs/dwelling	---	Parameter added for PRD analysis
13	Dog Waste N Load	4.29 lbs/dog/year	---	Parameter added for PRD analysis
14	Pet Waste N Leaching Rate	25%		Due to review of pertinent scientific studies; see #11 below.
15	Adjusted Pet Waste (days/year occupied)	16%	---	Parameter added for PRD analysis
16	Area of Land Irrigated	88.71 acres	---	Due to differing site uses, yields and/or layouts; see #12 below.
17	Irrigation Rate	21.40 inches	---	Change due to input from irrigation consultant; see #13 below.
19	Atmos N Leaching Rate	0.04 lbs/1,000 SF	---	Parameter added for PRD analysis
20	Atmos N Leaching Rate (Natural/Wetlands)	25%	---	Parameter added for PRD analysis
21	Atmos N Leaching Rate (Turf 30%; Golf 20%)	20%	---	Parameter added for PRD analysis
22	Atmos N Leaching Rate (Ag; Impervious)	40%	---	Parameter added for PRD analysis
24	N in Sanitary Flow- 1	10.00 mg/l	---	Reduction due to assumed use of STP; see #18 below.
25	N in Sanitary Flow - 2	10.00 mg/l	---	Reduction due to assumed use of STP; see #19 below.
10	Pet Waste Application Rate	---	3.19 lbs/year	Parameter not needed for Alt. 3 analysis.
11	Per Waste N Leaching Rate	---	50%	Due to review of pertinent scientific studies; see #14 above.
12	Area of Land Irrigated	---	88.53 acres	Due to differing site uses, yields and/or layouts; see #16 above.
13	Irrigation Rate	---	24.00 inches	Change due to input from irrigation consultant; see #17 above.
15	N in Precipitation	---	0.75 mg/l	Parameter not needed for Alt. 3 analysis.
16	Precipitation N Leaching Rate	---	15%	Parameter not needed for Alt. 3 analysis.
18	N in Sanitary Flow – 1	---	50.00 mg/l	Reduction due to assumed use of STP; see #24 above.
19	N in Sanitary Flow – 2		19.00 mg/l	Reduction due to assumed use of STP; see #25 above.

Attachment 1-3
Updated Letter of Water Availability

SCWA

May 1, 2019

SUFFOLK COUNTY WATER AUTHORITY

Paul J. Kuzman
Director of
Construction-Maintenance
pkuzman@scwa.com

4060 Sunrise Hwy., Oakdale, New York 11769
(631) 563-0339

May 1, 2019

Gary Becker, P.E.
Nelson & Pope,
572 Walt Whitman Rd.
Melville, NY 11747-2188

Re: Water Availability – Lewis Rd PRD N&P Project # 05105

Dear Mr. Becker:

We are in receipt of your letter dated 3-18-19 regarding the above project. It is our understanding that the water supply requirements for the revised project have not changed. As such, the improvements as outlined in my letter of September 30, 2015 necessary to supply this project remain unchanged. These improvements are needed in order to bring two sources of intermediate zone pressure water into the development and are as follows:

1) A water main extension from the existing water main on Lewis Rd east onto the proposed entrance road and into our Spinney Road. well field property - approximately 5500'. Service into the development would be in the vicinity of Spinney Rd well field.

2) The addition of pumping facilities: a) An upgrade of the pumping capacity at our Quogue - Riverhead Rd. booster station and b) Construction of an additional booster at Spinney Road.

In addition to the above improvements there is a need for additional supply in order to meet the demands of this new development and those associated with growth in the East Quogue area. There has been an understanding by the developers of the need to set aside land for future supply and storage since SCWA became aware of this project. The 2008 East Quogue land plan identified this need and the previous plan for "The Hills" included a four acre parcel within the development for water supply purposes. As such, we are anticipating that under this proposal the developer will continue in that direction and make provisions for setting aside a similar sized parcel for much needed water supply. This parcel could be on the main development property or on the Parlotto property which we understand will be preserved as part of the project.

We are confident that by making the above improvements, we can supply your project. Per your request, we are updating the cost of the improvements and will provide a formal estimate for the main installation and pumping system improvements under separate cover. As the project moves forward and the scope is further refined we will work together to develop the plan and determine the appropriate arrangement for sharing costs. The developer then would have to execute a contract with SCWA and fund their portion of the construction. Specifics on service size, location and required backflow control devices would be addressed at that time.

If you have any additional questions or concerns, you can contact me at the number above or Lisa Cetta, New Construction Manager at (631) 563-5672, email lisa.cetta@scwa.com.

Sincerely,

Paul J. Kuzman
Director of Construction-Maintenance

cc: Joseph Pokorny P.E
Lisa Cetta

SCWA Ref. # 4361893

Attachment 2-1
Tax Lot Numbers

Outparcels

OUTPARCEL DETAILS

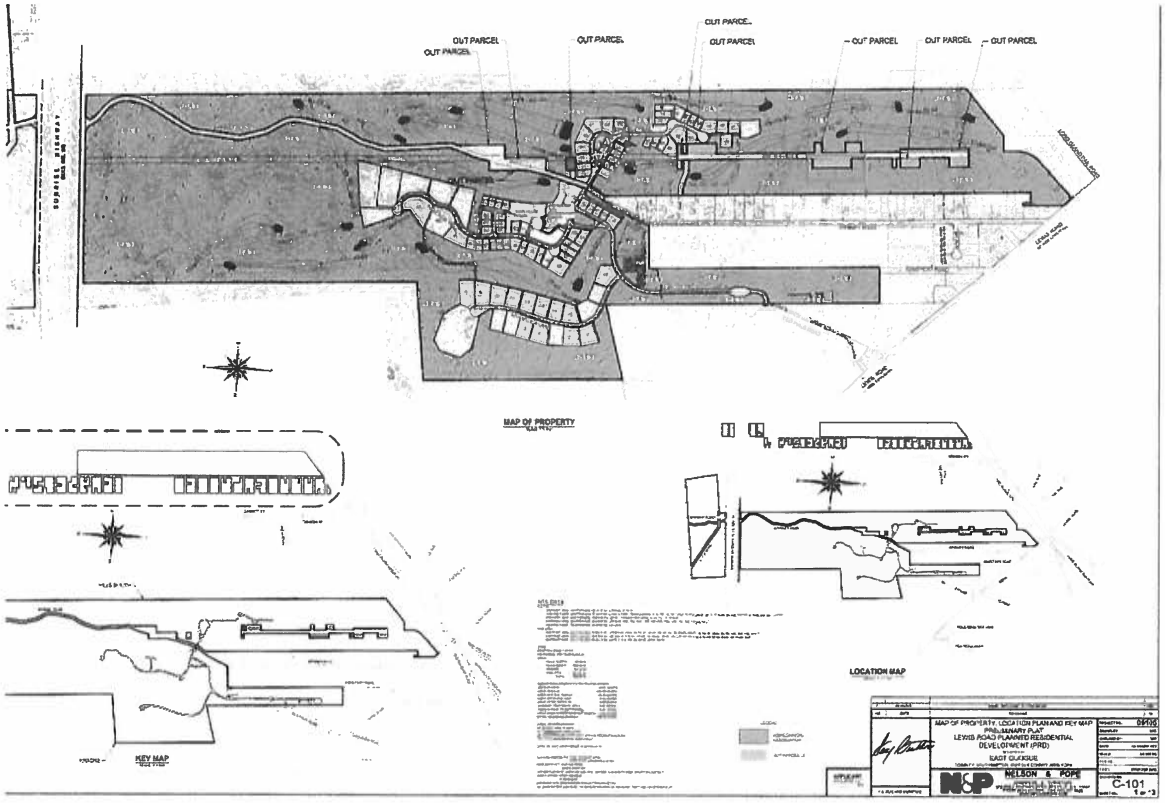
				TOS Assessed
Name	**Tax Map #**	**Acres**	**Sq.ft.**	**Value**
Butterfly / Mayo	0900-250-03-10	0.230	10,001	$1,700
Roanoke Sand	0900-250-03-12	0.115	5,001	$1,000
Mikus	0900-288-01-135	0.199	8,647	$1,728
Maggio / McCarthy	0900-288-01-134	0.199	8,647	$1,500
Richard Kayser	0900-288-01-124	0.918	40,001	$6,800
Mary McDonaugh	0900-288-01-126	0.092	3,999	$700
Edith Green	0900-250-03-08	0.430	18,744	$16,800
	0900-250-03-16	0.374	16,309	$16,200
	0900-250-03-07	0.454	19,768	$16,800

Bronx purchaser	0250-3-15	0.5	20,000	$ 265,300
County Parcels	288-01-128	0.2	10,000	$ 1,700
	288-01-129	0.2	10,000	$ 1,700
	288-01-131	0.4	20,000	$ 3,400
	288-01-137	0.2	10,000	$ 1,500
	288-01-139	0.2	10,900	$ 1,900
	288-01-140	0.4	21,600	$5,700

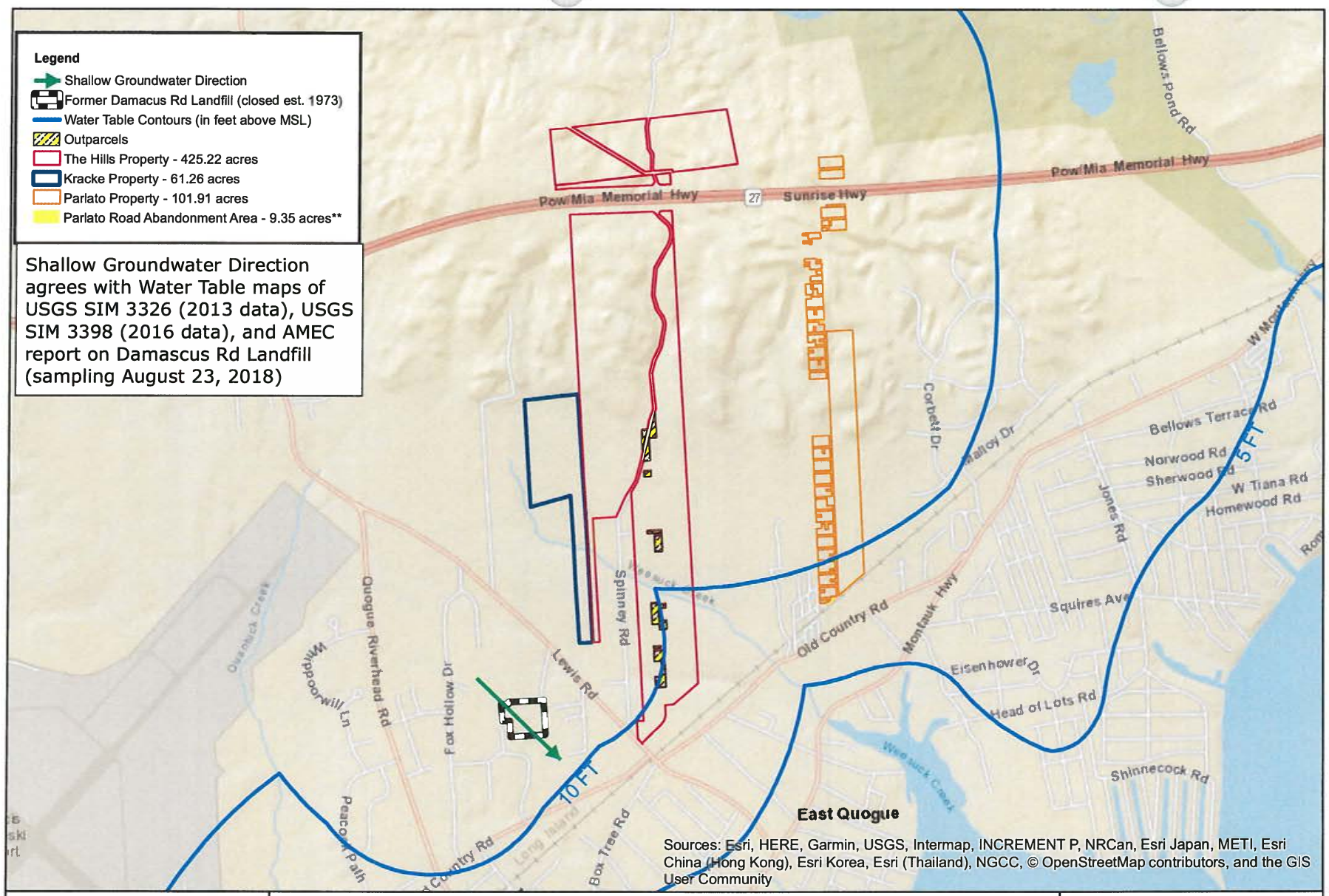
Attachment 2-2
Outparcel Location, Kayser Parcel

Per PRD

KAYSER PARCEL LOCATION WITHIN LEWIS ROAD PRD



Attachment 3
Map Depicting Assumed Direction of Groundwater Contamination Plume



NELSON, POPE & VOORHIS, LLC
ENVIRONMENTAL • PLANNING • CONSULTING

ATTACHMENT 3
NEARBY GROUNDWATER ISSUES

Source:ESR WMS; USGS data 2016,, SIM 3398; property locations appx.
Scale: 1 inch = 2,500 feet

N

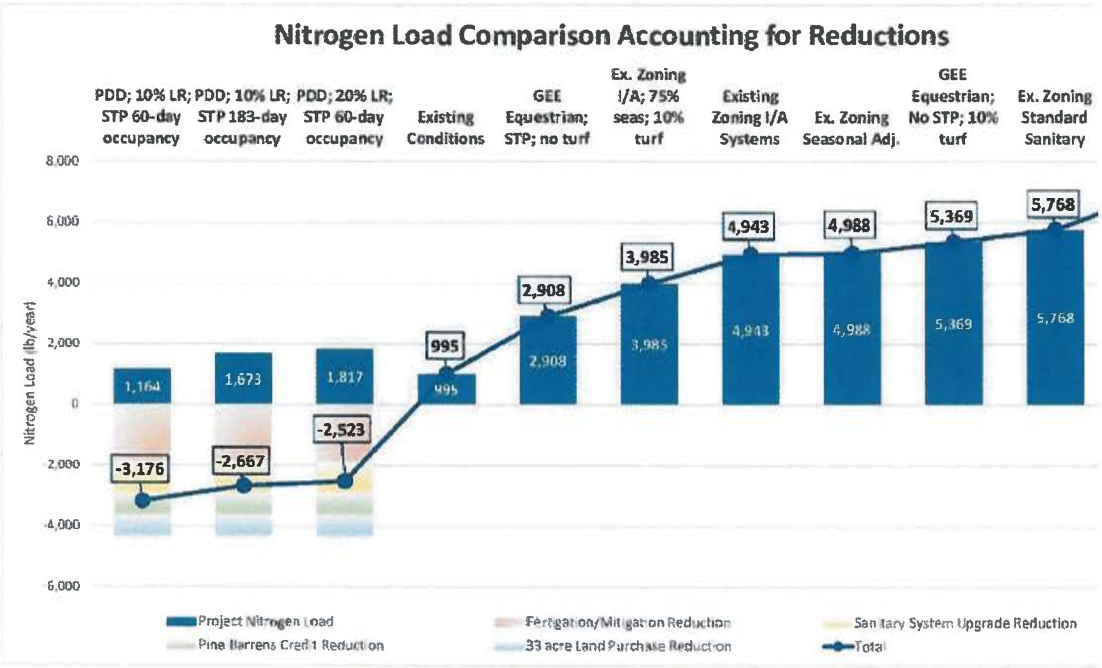
Lewis Rd PRD

SEQRA Compliance Analysis

Attachment 4-1
Nitrogen Load Comparison Accounting for Reduction

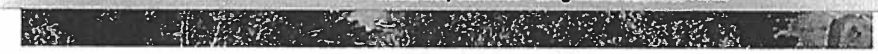
Hills at Southampton FEIS

Chart from Appendix J-4 of the Hills MUPDD FEIS - Peer Review by FPM Engineering



Attachment 4-2
Newspaper Article Describing Example of Use of Treated Wastewater Fertigation on Indian Island Golf Course

March 28, 2017



Aerial view of the upgraded Riverhead sewage treatment plant and the adjacent Indian Island Golf Course.

Waste not, want not

By: David Winzelberg March 28, 2017 Comments Offon Waste not, want not

A $23 million project that allows wastewater to be re-used to irrigate a Riverhead golf course may be a model for conserving precious water resources across Long Island.

Designed by Melville-based engineering firm H2M and implemented last September by the Town of Riverhead Sewer District, the Advanced Wastewater Treatment Facility treats up to 1.5 million gallons of wastewater daily and can provide up to 450,000 gallons per day for re-use in irrigation of the adjacent Suffolk County-owned Indian Island Golf Course.

Though there are similar wastewater re-use systems in other states, particularly in the Southwest, the Riverhead facility is the first of its kind in New York, according to Frank M. Russo, senior vice president and director of wastewater engineering at H2M.

There are a few benefits from the re-use system, not the least of which is water conservation. Other upsides include lowering the nitrogen levels of the resulting effluent that flows in the Peconic River; keeping golf course groundwater levels high, which staves off saltwater intrusion; and limiting the use of well water that's rich in iron. Iron from the well water clogs plumbing and sprinkler heads, so reducing the iron saves on labor and maintenance costs.

"From an environmental standpoint, there are dual benefits involved," said Peter Scully, Suffolk's deputy county executive for administration. "We reduce the amount of treated effluent being discharged into our bays and harbors, while also reducing significantly the amount of clean water removed from the aquifer to irrigate the golf course."

As it is with most infrastructure projects, the major obstacle for upgrading sewage plants into re-use systems is money. The upgrade to a re-use facility costs between 15 and 20 percent more than a regular sewage treatment plant. However, when other costs and the benefits of the re-use systems are factored in, it may be worth it for local municipalities to explore.

"You have to look at everything, including the costs of pulling water out of the ground," said Michael Reichel, superintendent of the Riverhead Sewer District, who spearheaded the wastewater re-use effort. In 2015, Reichel received an Environmental Champion Award from the U.S. Environmental

The Riverhead plant was upgraded with the help of an $8 million grant from Suffolk County and $2 million from the state Department of Environmental Conservation. And while the county searches for funding for septic system upgrades and other water quality measures, it's possible that some money from Gov. Andrew Cuomo's recently announced $2 billion for critical water infrastructure could trickle down to fund wastewater re-use upgrades.

"If we're serious about protecting our precious water supply, then this becomes a viable option," Russo said.

And though the Riverhead system isn't designed to provide drinking water, it's been brought up to the limits of technology and uses the same filtration system that bottled-water companies use.

"We may be meeting the criteria for potable water," Reichel said. "We're planning to test it with the state Department of Health before the end of the year."

The success of the Riverhead upgrade now has county officials considering expanding wastewater re-use systems to some of its other sewage plants.

"Planning department staff has identified 23 golf courses in Suffolk County that are within a half-mile of a sewage treatment plant," Scully said. "We should focus on identifying the next viable re-use scenarios and pursue the next site with vigor."

Russo agrees.

"It's the right thing to do," he said.

Attachment 4-3
Lewis Road PRD Irrigation and Well Overview

Aqua Agronomic Solutions, Inc.

May 2, 2019

AASI
Paul Granger | President | Aqua Agronomic Solutions, Inc. | P.O. Box 5532 | Clinton | New Jersey | 08809 |
Office (908) 730-7887 | Cell (908) 391-9471 | Skype paul.granger2

Lewis Road PRD Irrigation and Well Overview

The irrigation system for the Lewis Road PRD will be designed using the most up to date state of the art materials available today.

The system will be a full coverage system over the 78 acres of the developed golf course and will be designed to cover greens, tees, fairways and primary rough. It will be designed to confine irrigation to the grassed areas only and avoid irrigation into the forested areas surrounding the golf holes.

The emphasis on irrigation system design today is for smaller sprinklers on tighter spacing with less gpm flow, therefore yielding lower precipitation rates. This gives today's golf course superintendent the ability to more efficiently distribute water to where it is needed, on a much smaller scale. This has been made possible by the advancement in sprinkler and nozzle technology, allowing us to utilize these smaller spacing and smaller sprinkler flows. This equates to lower energy cost due to the lower pump horsepower requirements. The newer sprinklers also perform better in the wind at lower pressures and produce more uniform coverage.

The fairway irrigation will be a minimum of triple row with ins and outs along the outer two rows to allow the roughs to be irrigated separate from the fairways. Rough irrigation should be added where not adequately covered by the outs along the fairway edges. Coverage will also include the roughs between the tees and fairway start. Tee boxes will be irrigated with smaller sprinklers to more efficiently irrigate the tee surface and the surrounds.

Two sets of sprinklers will be installed at each green complex. One set should be part circle sprinklers to irrigate the greens with the other set being part circle directed to

irrigate the surrounds without irrigating the putting surface. Any sprinkler not part of the greens irrigation such as approaches and greens surrounds directed back towards the green, shall be positioned so as not to irrigate the putting surface.

Additionally, the Lewis Road PRD's control system will be based upon evapotranspiration (this is the amount of water lost during the day between the turf grass plant and the soil). In conjunction with an on-site weather station, the control system will determine how much water was lost from the plant and soil during the day, determine how long each individual station needs to run to replenish this amount, and then communicates this information to the satellite controller. This reduces the amount of excess irrigation that is done, shortens the water time window and reduces the cost of pumping.

The most critical feature that the control system offers however is flow management. These control systems monitor the amount of water running at any given moment and can turn on sprinklers to keep the pump station running at its maximum efficiency.

In addition to the weather station, soil moisture sensors will be installed in the ground over the golf course to more specifically monitor the moisture in the soil reservoir and allow the golf course superintendent to more accurately determine real-time turf grass needs and irrigate only as needed.

The piping network to be used is High Density Polyethylene which reduces the carbon footprint over other piping materials such as PVC piping.

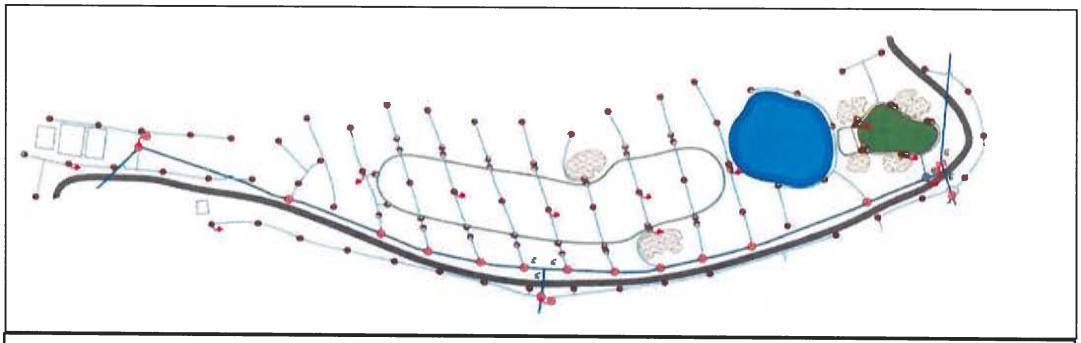


Figure 10: Sample modern irrigation layout giving golf course superintendent ability to water the fairways and rough separately. Notice how the irrigation more closely follows line of play.

The irrigation system for the irrigation of the Lewis Road PRD development will be designed based on the document named "The Lewis Road PRD irrigation water use estimates based on 20 year evapotranspiration data from coastal New York, reference ET calculated using the FAO method with 75% rainfall based on 30 year historical data from Southampton NY," which was included as Appendix R-1 in The Hills PDD FEIS.

The estimated total irrigation needed is 34,917,296 gallons during the year. From precipitation/evapotranspiration data it is noted that the month of July shows the highest deficit between evapotranspiration and rainfall. That deficit is approximately 419,318 gallons on a daily basis. The irrigation system will need to be run at approximately 1,200 to 1,500 gpm to meet the six (6) hour water time window. Although, based on watering practices of the golf course, daily evapotranspiration and weather, daily irrigation could be as much as 650,000 gallons or 1800 gpm.

The combined lake for irrigation is 4.52 acres. An irrigation cycle of 650,000 gallons would draw down the lake 5.3" during this cycle. As a result, 1,083 gpm would be needed to refill the lake by 8:00 am the following morning.

The plan would then be to refill the pond with 3 wells. The first well would be the 600 gpm North well with 2 ppm. nitrates and two additional 300 gpm. wells in the south with approximately 15 ppm nitrates. We would monitor the nitrates leaving the wells and blend the wells used to achieve a blend of approximately 8 ppm. in the irrigation lake which will also be monitored. If necessary, the irrigation lake can be supplemented with water from the north well to decrease the Nitrate levels. The agronomist has stated that this is acceptable for all golf and common areas.

Respectfully Submitted

Aqua Agronomic Solutions Inc.
Paul Granger
President

Attachment 5
SONIR Model Results, Workforce Units Included, PRD

130 On-Site Units Using STP

SIMULATION OF NITROGEN IN RECHARGE (SONIR)

NELSON, POPE & VOORHIS, LLC MICROCOMPUTER MODEL

NAME OF PROJECT

Lewis Road PRD - SEQRA Compliance Analysis
118 resort homes; 12 WF Units; golf; STP; 10% Turf LR; 60d

DATA INPUT FIELD

A	Site Recharge Parameters	Value	Units
1	Area of Site	588.39	acres
2	Precipitation Rate	49.90	inches
3	Acreage of Rough/Res/Golf Landsc.	46.81	acres
4	Fraction of Land in above	0.080	fraction
5	Evapotranspiration from above	23.00	inches
6	Runoff from above	0.50	inches
7	Acreage of Greens/Tees/Fairways	41.24	acres
8	Fraction of above	0.070	fraction
9	Evapotranspiration from above	23.90	inches
10	Runoff from above	0.50	inches
11	Acreage of Unvegetated/Dirt Roads	2.30	acres
12	Fraction of above	0.004	fraction
13	Evapotranspiration from above	6.36	inches
14	Runoff from above	1.05	inches
15	Acreage of Water/Ponds/Wetlands	7.26	acres
16	Fraction of Site in above	0.012	fraction
17	Evaporation from above	30.00	inches
18	Makeup Water (if applicable)	0.00	inches
19	Acreage of Natural/Natural Reveg.	465.58	acres
20	Fraction of above	0.791	fraction
21	Evapotranspiration from above	23.00	inches
22	Runoff from above	0.35	inches
23	Acreage of Impervious/Paved/Bldgs	23.80	acres
24	Fraction of Land in above	0.040	fraction
25	Evapotrans. from above	4.99	inches
26	Runoff from Impervious	0.00	inches
23	Acreage of Other (Rain Gardens)	1.40	acres
24	Fraction of Land in above	0.002	fraction
25	Evapotrans. from above	23.90	inches
26	Runoff from above	0.00	inches
27	Acreage of Land Irrigated	88.71	acres
28	Fraction of Land Irrigated	0.151	fraction
29	Irrigation Rate	21.40	inches
30	Number of Dwellings	130	units
31	Water Use per Dwelling	300	gal/day
32	Wastewater Design Flow (units)	0	gal/day
33	Wastewater Design Flow (total)	40,957	gal/day
34	Adjusted WW Design Flow (total)	9,137	gal/day

B	Nitrogen Budget Parameters	Value	Units
1	Persons per Dwelling	2.90	persons
2	Nitrogen per Person per Year	10.0	lbs
3	a. Sanitary Nitrogen Leaching Rate	84%	percent
3	b. Treated Sanitary Nitrogen Leaching Rate	100%	percent
4	Fertilized Land (Golf Rough/Res/Golf Landsc.)	46.81	acres
5	Fertilizer Application Rate (for above)	1.00	lbs/1000 sq ft
6	Fertilizer Nitrogen Leaching Rate (for above)	10%	percent
7	Fertilized Land (Greens/Tees/Fairways)	41.24	acres
8	Fertilizer Application Rate (for above)	2.50	lbs/1000 sq ft
9	Fertilizer Nitrogen Leaching Rate (for above)	10%	percent
10	Outdoor Cat Population	0.74	pets/dwelling
11	Cat Waste Nitrogen Load	3.22	lbs/pet/year
12	Outdoor Dog Population	1.40	pets/dwelling
13	Dog Waste Nitrogen Load	4.29	lbs/pet/year
14	Pet Waste Nitrogen Leaching Rate	25%	percent
15	Adjusted Pet Waste (days/year occupied)	16%	percent
16	Area of Land Irrigated	88.71	acres
17	Irrigation Rate	21.40	inches
18	Irrigation Nitrogen Leaching Rate	10%	percent
19	Atmospheric Nitrogen Application/Load	0.04	lbs/1000 sq ft
20	Atmos. N Leaching Rate (Natural/Wetlands)	25%	percent
21	Atmos. N Leaching Rate (Turf 30%; Golf 20%)	20%	percent
22	Atmos. N. Leaching Rate (Ag; Imperv; Other)	40%	percent
23	Nitrogen in Water Supply	2.00	mg/l
24	Nitrogen in Sanitary Flow -1	10.00	mg/l
25	Nitrogen in Sanitary Flow -2	10.00	mg/l

C	Comments
1)	Please refer to user manual for data input instructions; updated per LINAP.
2)	Runoff for turfed areas increased/adjusted to 2.1% of ppt.
3)	Irrigation includes April-Oct.; based on 51,456,148 gpy; irrigation equals ET.
4)	Greens area equals 2.62 acres and does not include rain gardens.
5)	Bunkers and rain gardens are not fertilized or irrigated.
6)	Evapotranspiration from Unvegetated is 30% of ET for vegetated surfaces.
7)	Evapotranspiration from Rain Gardens is similar to other landscaping.
8)	Rain Garden runoff is adjusted to be similar to natural areas.
9)	Fertilizer nitrogen leaching rate is 10%; all landscaping maintained by GC
10)	Irrigation adjusted to increase runoff to 2.1% of ppt, and add leaching.
11)	Area of land irrigated includes all turf/landscaping, plus golf rough.
12)	Wastewater flow adjusted for maximum of 183 days/year; ensured by C&R.
13)	Rain Gardens adjusted for 70% Nitrogen removal efficiency (see Sheet 4).
	Developed Area 119.11 20%
	Natural/Unvegetated/Revegetated Area 471.89 80%
	Total Acreage Check 588.39 100%

SIMULATION OF NITROGEN IN RECHARGE (SONIR)

NELSON, POPE & VOORHIS, LLC MICROCOMPUTER MODEL

118 resort homes; 12 WF Units; golf; STP; 10% Turf LR; 60d

SITE RECHARGE COMPUTATIONS

A	Golf Rough/Res/Golf Lands:	Value	Units
1	A = Fraction of Land in Cover Type	0.080	fraction
2	P = Precipitation Rate	49.90	inches
3	E = Evapotranspiration Rate	23.00	inches
4	Q = Runoff Rate	0.50	inches
5	R(a) = P - (E + Q)	26.40	inches
6	R(A) = R(a) x A	2.10	inches

B	Greens/Tees/Fairways	Value	Units
1	A = Fraction of Land in Cover Type	0.070	fraction
2	P = Precipitation Rate	49.90	inches
3	E = Evapotranspiration Rate	23.90	inches
4	Q = Runoff Rate	0.50	inches
5	R(b) = P - (E + Q)	25.50	inches
6	R(B) = R(b) x A	1.79	inches

C	Unvegetated/Dirt Roads	Value	Units
1	A = Fraction of Land in Cover Type	0.004	fraction
2	P = Precipitation Rate	49.90	inches
3	E = Evapotranspiration Rate	6.36	inches
4	Q = Runoff Rate	1.05	inches
5	R(c) = P - (E + Q)	42.49	inches
6	R(C) = R(c) x A	0.17	inches

D	Water/Ponds/Wetlands		
1	A = Fraction of Site in Water	0.012	fraction
2	P = Precipitation Rate	49.90	inches
3	E = Evaporation Rate	30.00	inches
4	Q = Runoff Rate	0.00	inches
5	M = Makeup Water	0.00	inches
6	R(d) = {P - (E+Q)} - M	19.90	inches
7	R(D) = R(d) x A	0.25	inches

E	Natural/Natural Revegetation		
1	A = Fraction of Land in Cover Type	0.791	fraction
2	P = Precipitation Rate	49.90	inches
3	E = Evapotranspiration Rate	23.00	inches
4	Q = Runoff Rate	0.35	inches
5	R(e) = P - (E + Q)	26.55	inches
6	R(E) = R(e) x A	21.01	inches

F	Impervous/Paved/Roads	Value	Units
1	A = Fraction of Land in Cover Type	0.040	fraction
2	P = Precipitation Rate	49.90	inches
3	E = Evapotranspiration Rate	4.99	inches
4	Q = Runoff Rate	0.00	inches
5	R(f) = P - (E + Q)	44.91	inches
6	R(F) = R(f) x A	1.82	inches

F	Rain Gardens		
1	A = Fraction of Land in Cover Type	0.002	fraction
2	P = Precipitation Rate	49.90	inches
3	E = Evapotranspiration Rate	23.90	inches
4	Q = Runoff Rate	0.00	inches
5	R(g) = P - (E + Q)	26.00	inches
6	R(G) = R(g) x A	0.06	inches

H	Irrigation Recharge		
1	A = Fraction of Land Irrigated	0.151	fraction
2	I = Irrigation Rate	21.40	inches
3	E = Evaptranspiration Rate	21.40	inches
4	Q = Runoff Rate	0.00	inches
5	R(h) = I - (E + Q)	0.00	inches
6	R(H) = R(H) x A	0.00	inches

I	Wastewater Recharge		
1	WDF = Wastewater Design Flow	9,137	gal/day
2	WDF = Wastewater Design Flow	445,890	cu ft/yr
3	A = Area of Site	25,630,268	sq ft
4	R(j) = WDF/A	0.02	feet
5	R(I) = Wastewater Recharge	0.21	inches

J	Runoff Recharge		
1	Q(A) = Runoff from Rough/Landscaped	0.040	inches
2	Q(B) = Runoff from Tees/Fairways	0.035	inches
3	Q(C) = Runoff from Unvegetated	0.004	inches
4	Q(E) = Runoff from Natural	0.276	inches
5	Q(H) = Runoff from Rain Gardens	0.000	inches
6	Q(I) = Runoff from Irrigation	0.00	inches
7	Q(tot) = Q(A)+Q(B)+Q(C)+Q(E)+Q(H)+Q(I)	0.36	inches

Total Site Recharge		
R(T) =	R(A)+R(B)+R(C)+R(D)+R(E)+R(F)+R(G)+R(H)+R(I)+R(J)+Q(tot)	
R(T) =	27.75	Inches

SIMULATION OF NITROGEN IN RECHARGE (SONIR)

NELSON, POPE & VOORHIS, LLC MICROCOMPUTER MODEL

118 resort homes; 12 WF Units; golf; STP; 10% Turf LR; 60d

SITE NITROGEN BUDGET

A	Sanitary Nitrogen-Residential	Value	Units
1	Number of Dwellings	0	units
2	Persons per Dwelling	2.90	capita
3	P = Population	0.00	capita
4	N = Nitrogen per person	10	lbs
6	N = (total; pre loss/removal)	0	lbs
7	LR = Leaching Rate	84%	percent
8	N(S) = P x N x LR	0.00	lbs
9	N = loss/removed	0.00	lbs

B	Cat Waste Nitrogen	Value	Units
1	Number of Cats per Dwelling	0.74	cats/dwelling
2	Number of Cats (Cats/dwelling x dwellings)	96	cats
3	Cat Waste Nitrogen Load	3.22	lbs/cat/year
4	N(p) = AR x cats x Adjustment (if applicable)	50.92	lbs/year
5	LR = Leaching Rate	25%	percent
6	N(P) = N(p) x LR	12.73	lbs
7	N = (loss/removed)	38.19	lbs

B'	Dog Waste Nitrogen	Value	Units
1	Number of Dogs per Dwelling	1.40	dogs/dwelling
2	Number of Cats (Cats/dwelling x dwellings)	182	dogs
3	Dog Waste Nitrogen Load	4.29	lbs/dog/year
4	N(p) = AR x dogs x Adjustment (if applicable)	128.35	lbs/year
5	LR = Leaching Rate	25%	percent
6	N(P) = N(p) x LR	32.09	lbs
7	N = (loss/removed)	96.26	lbs

C	Sanitary Nitrogen (Wastewater Design Flow)		
1	CF = Commercial/STP Flow	9,137	gal/day
2	CF = Commercial/STP Flow	12,622,994	liters/yr
3	N = Nitrogen (1)	10.00	mg/l
4	N = Nitrogen (1)	278.34	lbs
5	N =Nitrogen (2)	10.00	mg/l
6	N = Nitrogen (2)	278.34	lbs
7	LR = Leaching Rate	100%	percent
8	N(S) = CF x N x LR	126,229,939	milligrams
9	N(S) = Sanitary Nitrogen	278.34	lbs
10	N = loss/removed	0.00	lbs

D	Water Supply Nitrogen (other than wastewater, if applicable)		
1	WDF = Wastewater Design Flow	0	gal/day
2	WDF = Wastewater Design Flow	0	liters/yr
3	N = Nitrogen in Water Supply	10.00	mg/l
4	N(WW) = WDF x N	0	milligrams
5	N(WW) = Wastewater Nitrogen	0.00	lbs

E	Fertilized Land (Golf Rough/Res/Golf Landscaped)		
1	A = Area of Land Fertilized 1	2,039,044	sq ft
2	AR = Application Rate	1.00	lbs/1000 sf
3	N(T) = Nitrogen (total applied)	2039.04	lbs
4	LR = Leaching Rate	10%	percent
5	N(F1) = A x AR x LR	203.90	lbs
6	N = loss/removed	1835.14	lbs

F	Fertilized Land (Greens/Tees/Fairways)		
1	A = Area of Land Fertilized 2	1,796,414	sq ft
2	AR = Application Rate	2.50	lbs/1000 sf
3	N(T) = Nitrogen (total applied)	4491.04	lbs
4	LR = Leaching Rate	10%	percent
5	N(F2) = A x AR x LR	449.10	lbs
6	N = loss/removed	4041.93	lbs

G	Atmospheric Nitrogen (existing condition)		
1	Application Load	0.041	lbs/1000 sf
2	Area of Natural/Wetlands/1000 sf	20,658	1000 sf
3	Leaching Rate	25%	percent
4	Atmos. N Load-1 (natural/wetlands)	211.74	lbs/year
5	Area of turf/golf/1000 sf	3,835	1000 sf
6	Leaching Rate	20%	percent
7	Atmos. N Load-2 (golf/turf)	31.45	lbs/year
8	Area of Impervious/Agricult/1000 sf	1,137	1000 sf
9	Leaching Rate	40%	percent
10	Atmos. N Load-3 (ag; imperv; other)	18.65	lbs/year
11	N(at) = N Load 1 + 2 +3	261.84	lbs
12	N = loss/removed	789.00	lbs

H	Irrigation Nitrogen		
1	R = Irrigation Recharge (inches)	0.00	inches
2	R = Irrigation Rate (feet)	0.0001	feet
3	A = Area of Land Irrigated	932,376	sq ft
4	R(I) = R(irr) x A	52	cu ft
5	R(I) = Site Irrigation (liters)	1,460	liters
6	N = Nitrogen in Water Supply	2.00	mg/l
7	N(T) = Nitrogen (total applied)	0.01	lbs
8	LR = Leaching Rate	10%	percent
9	N(irr) = R(I) x N x LR	292	milligrams
10	N(irr) = Irrigation Nitrogen	0.00	lbs
11	N = loss/removed	0.01	lbs

Total Site Nitrogen		
N=	N(S) + N(P) + N(WW) + N(F1) + N(F2) + N(ppt) + N(irr)	
N=	1,238.00	lbs

SIMULATION OF NITROGEN IN RECHARGE (SONIR)

NELSON, POPE & VOORHIS, LLC MICROCOMPUTER MODEL

NAME OF PROJECT

Lewis Road PRD - SEQRA Compliance Analysis
118 resort homes; 12 WF Units; golf; STP; 10% Turf LR; 60d

FINAL COMPUTATIONS

A	Nitrogen in Recharge	Value	Units
1	N = Total Nitrogen (lbs)	1,238.00	lbs
2	N = Total Nitrogen (milligrams)	562,052,950	milligrams
3	R(T) = Total Recharge (inches)	27.75	inches
4	R(T) = Total Recharge (feet)	2.31	feet
5	A = Area of Site	25,630,268	sq ft
6	R = R(T) x A	59,272,927	cu ft
7	R = Site Recharge Volume	1,678,609,298	liters
9	NR = N/R	0.33	mg/l

CONCENTRATION OF NITROGEN IN RECHARGE

Pre-Mitigation 0.33

A	Nitrogen in Recharge	Value	Units
1	N = Total Nitrogen (lbs)	944.02	lbs
2	N = Total Nitrogen (milligrams)	428,583,636	milligrams
3	R(T) = Total Recharge (inches)	27.75	inches
4	R(T) = Total Recharge (feet)	2.31	feet
5	A = Area of Site	25,630,268	sq ft
6	R = R(T) x A	59,272,927	cu ft
7	R = Site Recharge Volume	1,678,609,298	liters
9	NR = N/R	0.26	mg/l

CONCENTRATION OF NITROGEN IN RECHARGE

With Mitigation (not including well pumping) 0.26

B	Site Recharge Summary	Value	Units
1	R(T) = Total Site Recharge	0.00	inches/yr
2	R = Site Recharge Volume	59,272,927	cu ft/yr
3	R = Site Recharge Volume	443,392,317	gal/yr
4	R = Site Recharge Volume	443.39	MG/yr

Conversions used in SONIR
Acres x 43,560 = Square Feet
Cubic Feet x 7.48052 = Gallons
Cubic Feet x 28.32 = Liters
Days x 365 = Years
Feet x 12 = Inches
Gallons x 0.1337 = Cubic Feet
Gallons x 3.785 = Liters
Grams / 1,000 = Milligrams
Grams x 0.002205 = Pounds
Milligrams / 1,000 = Grams

Mitigation Summary	
M1 Reuse of Irrigation Water	1,669.19
M2 Lined Greens	199.72
M3 Rain Gardens	6.07
Total	1,874.97
Total Nitrogen	
Site Nitrogen (No Mitigation)	1,238.00
Mitigation Nitrogen	1,874.97
Adusted Total Site Nitrogen	-636.97
Total Anthropogenic Nitrogen	
Site Nitrogen (No Mitigation)	976.16
Mitigation Nitrogen	1,874.97
Adusted Total Site Nitrogen	-898.81

MITIGATION COMPUTATIONS

M1	Reuse of Irrigation Water	Value	Units
1	IW = Reused Irrigation Water	54,795	gal/day
2	IW = Reused Irrigation Water	75,700,000	liters/yr
3	N = Nitrogen in Aquifer	10.00	mg/l
4	AF = Additional Factor (n/a)	100%	percent
5	N(IW) = IW x N x AF	757,000,000	milligrams
6	N(IW) = Irrigation N Reduction	1669.19	lbs

M2	Lined Greens	Value	Units
1	A = Area of Land Fertilized 2	114,127	sq ft
2	AR = Application Rate	2.50	lbs/1000 sf
4	N(LG) = A x AR x LR	285.32	lbs
5	N(LG) = Potential Lined Greens N Reduction	285.32	lbs
6	N(LGeff) = Effective Lined Greens N Reduction	199.72	lbs (70% eff)

M3	Rain Gardens	Value	Units
1	RG = RG Recharge (inches)	0.36	inches
2	RG = RG Recharge (feet)	0.03	feet
3	A = Area of Golf Runoff (SF)	1,796,414	SF
4	RG = RG Recharge Volume (CF)	53,191	CF
5	RG = RG Recharge (Gallons/year)	397,894	gal/yr
6	RG = RG Recharge (Liters/year)	1,506,029	liters/yr
8	N = Nitrogen in Runoff (mg/l)	2.61	mg/l
9	N = Nitrogen Load (milligrams)	3,930,736	milligrams
10	N(IW) = IW x N x AF	8.67	lbs
12	N(RG) = Potential Rain Garden N Reduction	8.67	lbs
13	N(RGeff) = Effective Rain Garden N Reduction	6.07	lbs (70% eff)

ATTACHMENT 6 : Traffic Impact Supplement

Attachment 6
Supplement to the Traffic Impact Study for the Lewis Road PRD

N&P, LLP

May 7, 2019

NELSON & POPE
ENGINEERS & SURVEYORS

Lewis Road PRD
N&P Property No.: 05105

	Proposed PRD		
	118 Recreation Homes	12 Apartment Units	TOTAL
	LUC 260	LUC 221	
AM	17 enter 9 exit 26 total	1 enter 4 exit 5 total	18 enter 13 exit 31 total
PM	14 enter 19 exit 33 total	4 enter 2 exit 6 total	18 enter 21 exit 39 total
SAT	22 enter 23 exit 45 total	3 enter 3 exit 6 total	25 enter 26 exit 51 total

	DEIS Alternative 3			
	108 Single Family Homes	18 Hole Public Golf Course	90,760 SF Banquet Facility	TOTAL
	LUC 210	LUC 430	LUC 931	
AM	20 enter 61 exit 81 total	25 enter 7 exit 32 total	53 enter 13 exit 66 total	98 enter 81 exit 179 total
PM	69 enter 40 exit 109 total	28 enter 24 exit 52 total	470 enter 232 exit 702 total	567 enter 296 exit 863 total
SAT	59 enter 50 exit 109 total	27 enter 28 exit 55 total	567 enter 394 exit 961 total	653 enter 472 exit 1,125 total

Lewis Road PRD (Proposed Action) Distribution Sheets

NELSON & POPE
ENGINEERS & SURVEYORS

NELSON & POPE

AM PEAK HOUR
Project Name: LEWIS ROAD PRD
N&P Project No. 05105

GROWTH FACTOR: 1.90%
NO. OF YEARS: 2
GROWTH RATE: 1.039
118 RECREATION HOMES - ITE LUC 260
12 APARTMENTS - ITE LUC 220

LOCATION	DIR	MVMT	EXISTING VOLUME	AMBIENT NO BUILD VOLUME
	NB	LEFT	0	0
LEWIS RD		THROUGH	110	115
AT		RIGHT	5	6
QUOGUE-RIVERHEAD RD	SB	LEFT	219	228
		THROUGH	250	260
1		RIGHT	0	0
	EB	LEFT	0	0
		THROUGH	0	0
		RIGHT	0	0
	WB	LEFT	5	6
		THROUGH	0	0
		RIGHT	205	213
	NB	LEFT	0	0
LEWIS RD		THROUGH	0	0
AT		RIGHT	0	0
SITE ACCESS	SB	LEFT	0	0
		THROUGH	0	0
2		RIGHT	0	0
	EB	LEFT	0	0
		THROUGH	188	196
		RIGHT	0	0
	WB	LEFT	0	0
		THROUGH	227	236
		RIGHT	0	0
	NB	LEFT	0	0
		THROUGH	0	0
LEWIS RD		RIGHT	0	0
AT	SB	LEFT	15	16
SPINNEY RD		THROUGH	0	0
		RIGHT	1	2
3	EB	LEFT	5	6
		THROUGH	183	191
		RIGHT	0	0
	WB	LEFT	0	0
		THROUGH	226	235
		RIGHT	7	8
	NB	LEFT	6	7
LEWIS RD		THROUGH	0	0
AT		RIGHT	71	74
OLD COUNTRY RD	SB	LEFT	0	0
		THROUGH	0	0
4		RIGHT	0	0
	EB	LEFT	0	0
		THROUGH	187	195
		RIGHT	13	14
	WB	LEFT	59	62
		THROUGH	194	202
		RIGHT	0	0
	NB	LEFT	13	14
LEWIS RD		THROUGH	20	21
AT		RIGHT	2	3
BOX TREE RD/OLD COUNTRY RD	SB	LEFT	4	5
		THROUGH	9	10
5		RIGHT	180	188
	EB	LEFT	157	164
		THROUGH	67	70
		RIGHT	14	15
	WB	LEFT	2	3
		THROUGH	75	78
		RIGHT	10	11

NELSON & POPE

AM PEAK HOUR
Project Name: LEWIS ROAD PRD
N&P Project No. 05105

OTHER
PLANNED
PROJECTS
118 RECREATION HOMES - ITE LUC 260
12 APARTMENTS - ITE LUC 220

	NONE	
	VOL	SUBTOTAL TRAFFIC GENERATED BY OTHER PROJECTS
ENTER		
EXIT		
TOTAL	0	

LOCATION	DIR	MVMT	%EN	%EX	1 VOL	SUBTOTAL VOL
	NB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	SB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	EB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	WB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
LEWIS RD AT QUOGUE-RIVERHEAD RD 1						
	NB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	SB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	EB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	WB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
LEWIS RD AT SITE ACCESS 2						
	NB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	SB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	EB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	WB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
LEWIS RD AT SPINNEY RD 3						
	NB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	SB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	EB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	WB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
LEWIS RD AT OLD COUNTRY RD 4						
	NB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	SB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	EB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	WB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
LEWIS RD AT BOX TREE RD/OLD COUNTRY RD 5						
	NB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	SB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	EB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	WB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0

NELSON & POPE

AM PEAK HOUR
Project Name: LEWIS ROAD PRD
N&P Project No. 05105

118 RECREATION HOMES - ITE LUC 260
12 APARTMENTS - ITE LUC 220

LOCATION	DIR	MVMT	AMBIENT NO BUILD VOLUME	SUBTOTAL TRAFFIC GENERATED BY OTHER PROJECTS	SUBTOTAL NO BUILD VOLUME
	NB	LEFT	0	0	0
LEWIS RD		THROUGH	115	0	115
AT		RIGHT	6	0	6
QUOGUE-RIVERHEAD RD	SB	LEFT	228	0	228
		THROUGH	260	0	260
1		RIGHT	0	0	0
	EB	LEFT	0	0	0
		THROUGH	0	0	0
		RIGHT	0	0	0
	WB	LEFT	6	0	6
		THROUGH	0	0	0
		RIGHT	213	0	213
	NB	LEFT	0	0	0
LEWIS RD		THROUGH	0	0	0
AT		RIGHT	0	0	0
SITE ACCESS	SB	LEFT	0	0	0
		THROUGH	0	0	0
2		RIGHT	0	0	0
	EB	LEFT	0	0	0
		THROUGH	196	0	196
		RIGHT	0	0	0
	WB	LEFT	0	0	0
		THROUGH	236	0	236
		RIGHT	0	0	0
	NB	LEFT	0	0	0
		THROUGH	0	0	0
LEWIS RD		RIGHT	0	0	0
AT	SB	LEFT	16	0	16
SPINNEY RD		THROUGH	0	0	0
		RIGHT	2	0	2
3	EB	LEFT	6	0	6
		THROUGH	191	0	191
		RIGHT	0	0	0
	WB	LEFT	0	0	0
		THROUGH	235	0	235
		RIGHT	8	0	8
	NB	LEFT	7	0	7
LEWIS RD		THROUGH	0	0	0
AT		RIGHT	74	0	74
OLD COUNTRY RD	SB	LEFT	0	0	0
		THROUGH	0	0	0
4		RIGHT	0	0	0
	EB	LEFT	0	0	0
		THROUGH	195	0	195
		RIGHT	14	0	14
	WB	LEFT	62	0	62
		THROUGH	202	0	202
		RIGHT	0	0	0
	NB	LEFT	14	0	14
LEWIS RD		THROUGH	21	0	21
AT		RIGHT	3	0	3
BOX TREE RD/OLD COUNTRY RD	SB	LEFT	5	0	5
		THROUGH	10	0	10
5		RIGHT	188	0	188
	EB	LEFT	164	0	164
		THROUGH	70	0	70
		RIGHT	15	0	15
	WB	LEFT	3	0	3
		THROUGH	78	0	78
		RIGHT	11	0	11

NELSON & POPE

AM PEAK HOUR
Project Name: LEWIS ROAD PRD
N&P Project No. 05105

118 RECREATION HOMES - ITE LUC 260
12 APARTMENTS - ITE LUC 220

	118 RECREATION HOMES		12 APT. UNITS		SUBTOTAL TRAFFIC GENERATED
	VOL		VOL		
ENTER	27	ENTER	1		
EXIT	28	EXIT	4		
TOTAL	55	TOTAL	5		

LOCATION	DIR	MVMT	%EN	%EX	1 VOL	%EN	%EX	2 VOL	SUBTOTAL VOL
	NB	LEFT			0			0	0
LEWIS RD		THROUGH			0			0	0
AT		RIGHT			0			0	0
QUOGUE-RIVERHEAD RD	SB	LEFT	70		19	70		1	20
		THROUGH			0			0	0
1		RIGHT			0			0	0
	EB	LEFT			0			0	0
		THROUGH			0			0	0
		RIGHT			0			0	0
	WB	LEFT			0			0	0
		THROUGH			0			0	0
		RIGHT		70	20		70	3	23
	NB	LEFT			0			0	0
LEWIS RD		THROUGH			0			0	0
AT		RIGHT			0			0	0
SITE ACCESS	SB	LEFT		30	8		30	1	9
		THROUGH			0			0	0
2		RIGHT		70	20		70	3	23
	EB	LEFT	70		19	70		1	20
		THROUGH			0			0	0
		RIGHT			0			0	0
	WB	LEFT			0			0	0
		THROUGH			0			0	0
		RIGHT	30		8	30		0	8
	NB	LEFT			0			0	0
		THROUGH			0			0	0
LEWIS RD		RIGHT			0			0	0
AT	SB	LEFT			0			0	0
SPINNEY RD		THROUGH			0			0	0
		RIGHT			0			0	0
3	EB	LEFT			0			0	0
		THROUGH		30	8		30	1	9
		RIGHT			0			0	0
	WB	LEFT			0			0	0
		THROUGH	30		8	30		0	8
		RIGHT			0			0	0
	NB	LEFT	10		3	10		0	3
LEWIS RD		THROUGH			0			0	0
AT		RIGHT			0			0	0
OLD COUNTRY RD	SB	LEFT			0			0	0
		THROUGH			0			0	0
4		RIGHT			0			0	0
	EB	LEFT			0			0	0
		THROUGH		20	6		20	1	7
		RIGHT		10	3		10	0	3
	WB	LEFT			0			0	0
		THROUGH	20		5	20		0	5
		RIGHT			0			0	0
	NB	LEFT	5		1	5		0	1
LEWIS RD		THROUGH			0			0	0
AT		RIGHT			0			0	0
BOX TREE RD/OLD COUNTRY RD	SB	LEFT			0			0	0
		THROUGH			0			0	0
5		RIGHT	10		3	10		0	3
	EB	LEFT		10	3		10	0	3
		THROUGH		5	1		5	0	1
		RIGHT		5	1		5	0	1
	WB	LEFT			0			0	0
		THROUGH	5		1	5		0	1
		RIGHT			0			0	0

NELSON & POPE

AM PEAK HOUR
Project Name: LEWIS ROAD PRD
N&P Project No. 05105

118 RECREATION HOMES - ITE LUC 260
12 APARTMENTS - ITE LUC 220

LOCATION	DIR	MVMT	SUBTOTAL NO BUILD VOLUME	TRAFFIC GENERATED BY PROPOSED PROJECT	TOTAL BUILD VOLUME
	NB	LEFT	0	0	0
LEWIS RD		THROUGH	115	0	115
AT		RIGHT	6	0	6
QUOGUE-RIVERHEAD RD	SB	LEFT	228	20	248
		THROUGH	260	0	260
1		RIGHT	0	0	0
	EB	LEFT	0	0	0
		THROUGH	0	0	0
		RIGHT	0	0	0
	WB	LEFT	6	0	6
		THROUGH	0	0	0
		RIGHT	213	23	236
	NB	LEFT	0	0	0
LEWIS RD		THROUGH	0	0	0
AT		RIGHT	0	0	0
SITE ACCESS	SB	LEFT	0	9	9
		THROUGH	0	0	0
2		RIGHT	0	23	23
	EB	LEFT	0	20	20
		THROUGH	196	0	196
		RIGHT	0	0	0
	WB	LEFT	0	0	0
		THROUGH	236	0	236
		RIGHT	0	8	8
	NB	LEFT	0	0	0
		THROUGH	0	0	0
LEWIS RD		RIGHT	0	0	0
AT	SB	LEFT	16	0	16
SPINNEY RD		THROUGH	0	0	0
		RIGHT	2	0	2
3	EB	LEFT	6	0	6
		THROUGH	191	9	200
		RIGHT	0	0	0
	WB	LEFT	0	0	0
		THROUGH	235	8	243
		RIGHT	8	0	8
	NB	LEFT	7	3	10
LEWIS RD		THROUGH	0	0	0
AT		RIGHT	74	0	74
OLD COUNTRY RD	SB	LEFT	0	0	0
		THROUGH	0	0	0
4		RIGHT	0	0	0
	EB	LEFT	0	0	0
		THROUGH	195	7	202
		RIGHT	14	3	17
	WB	LEFT	62	0	62
		THROUGH	202	5	207
		RIGHT	0	0	0
	NB	LEFT	14	1	15
LEWIS RD		THROUGH	21	0	21
AT		RIGHT	3	0	3
BOX TREE RD/OLD COUNTRY RD	SB	LEFT	5	0	5
		THROUGH	10	0	10
5		RIGHT	188	3	191
	EB	LEFT	164	3	167
		THROUGH	70	1	71
		RIGHT	15	1	16
	WB	LEFT	3	0	3
		THROUGH	78	1	79
		RIGHT	11	0	11

NELSON & POPE

PM PEAK HOUR
Project Name: LEWIS ROAD PRD
N&P Project No. 05105

GROWTH FACTOR: 1.90%
NO. OF YEARS: 2
GROWTH RATE: 1.039
118 RECREATION HOMES - ITE LUC 260
12 APARTMENTS - ITE LUC 220

LOCATION	DIR	MVMT	EXISTING VOLUME	AMBIENT NO BUILD VOLUME
	NB	LEFT	0	0
LEWIS RD		THROUGH	214	223
AT		RIGHT	9	10
QUOGUE-RIVERHEAD RD	SB	LEFT	263	274
		THROUGH	128	133
1		RIGHT	0	0
	EB	LEFT	0	0
		THROUGH	0	0
		RIGHT	0	0
	WB	LEFT	12	13
		THROUGH	0	0
		RIGHT	250	260
	NB	LEFT	0	0
LEWIS RD		THROUGH	0	0
AT		RIGHT	0	0
SITE ACCESS	SB	LEFT	0	0
		THROUGH	0	0
2		RIGHT	0	0
	EB	LEFT	0	0
		THROUGH	296	308
		RIGHT	0	0
	WB	LEFT	0	0
		THROUGH	267	278
		RIGHT	0	0
	NB	LEFT	0	0
		THROUGH	0	0
LEWIS RD		RIGHT	0	0
AT	SB	LEFT	10	11
SPINNEY RD		THROUGH	0	0
		RIGHT	12	13
3	EB	LEFT	5	6
		THROUGH	291	303
		RIGHT	0	0
	WB	LEFT	0	0
		THROUGH	255	265
		RIGHT	16	17
	NB	LEFT	9	10
LEWIS RD		THROUGH	0	0
AT		RIGHT	65	68
OLD COUNTRY RD	SB	LEFT	0	0
		THROUGH	0	0
4		RIGHT	0	0
	EB	LEFT	0	0
		THROUGH	278	289
		RIGHT	4	5
	WB	LEFT	50	52
		THROUGH	278	289
		RIGHT	0	0
	NB	LEFT	20	21
LEWIS RD		THROUGH	13	14
AT		RIGHT	3	4
BOX TREE RD/OLD COUNTRY RD	SB	LEFT	12	13
		THROUGH	20	21
5		RIGHT	237	247
	EB	LEFT	237	247
		THROUGH	90	94
		RIGHT	19	20
	WB	LEFT	4	5
		THROUGH	73	76
		RIGHT	11	12

NELSON & POPE

PM PEAK HOUR
Project Name: LEWIS ROAD PRD
N&P Project No. 05105

OTHER
PLANNED
PROJECTS
118 RECREATION HOMES - ITE LUC 260
12 APARTMENTS - ITE LUC 220

NONE

	VOL
ENTER	
EXIT	
TOTAL	0

SUBTOTAL TRAFFIC GENERATED BY OTHER PROJECTS

LOCATION	DIR	MVMT	%EN	%EX	1 VOL	SUBTOTAL VOL
LEWIS RD AT QUOGUE-RIVERHEAD RD 1	NB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	SB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	EB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	WB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
LEWIS RD AT SITE ACCESS 2	NB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	SB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	EB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	WB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
LEWIS RD AT SPINNEY RD 3	NB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	SB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	EB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	WB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
LEWIS RD AT OLD COUNTRY RD 4	NB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	SB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	EB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	WB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
LEWIS RD AT BOX TREE RD/OLD COUNTRY RD 5	NB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	SB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	EB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	WB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0

NELSON & POPE

PM PEAK HOUR
Project Name: LEWIS ROAD PRD
N&P Project No. 05105

118 RECREATION HOMES - ITE LUC 260
12 APARTMENTS - ITE LUC 220

LOCATION	DIR	MVMT	AMBIENT NO BUILD VOLUME	SUBTOTAL TRAFFIC GENERATED BY OTHER PROJECTS	SUBTOTAL NO BUILD VOLUME
	NB	LEFT	0	0	0
LEWIS RD		THROUGH	223	0	223
AT		RIGHT	10	0	10
QUOGUE-RIVERHEAD RD	SB	LEFT	274	0	274
		THROUGH	133	0	133
1		RIGHT	0	0	0
	EB	LEFT	0	0	0
		THROUGH	0	0	0
		RIGHT	0	0	0
	WB	LEFT	13	0	13
		THROUGH	0	0	0
		RIGHT	260	0	260
	NB	LEFT	0	0	0
LEWIS RD		THROUGH	0	0	0
AT		RIGHT	0	0	0
SITE ACCESS	SB	LEFT	0	0	0
		THROUGH	0	0	0
2		RIGHT	0	0	0
	EB	LEFT	0	0	0
		THROUGH	308	0	308
		RIGHT	0	0	0
	WB	LEFT	0	0	0
		THROUGH	278	0	278
		RIGHT	0	0	0
	NB	LEFT	0	0	0
		THROUGH	0	0	0
LEWIS RD		RIGHT	0	0	0
AT	SB	LEFT	11	0	11
SPINNEY RD		THROUGH	0	0	0
		RIGHT	13	0	13
3	EB	LEFT	6	0	6
		THROUGH	303	0	303
		RIGHT	0	0	0
	WB	LEFT	0	0	0
		THROUGH	265	0	265
		RIGHT	17	0	17
	NB	LEFT	10	0	10
LEWIS RD		THROUGH	0	0	0
AT		RIGHT	68	0	68
OLD COUNTRY RD	SB	LEFT	0	0	0
		THROUGH	0	0	0
4		RIGHT	0	0	0
	EB	LEFT	0	0	0
		THROUGH	289	0	289
		RIGHT	5	0	5
	WB	LEFT	52	0	52
		THROUGH	289	0	289
		RIGHT	0	0	0
	NB	LEFT	21	0	21
LEWIS RD		THROUGH	14	0	14
AT		RIGHT	4	0	4
BOX TREE RD/OLD COUNTRY RD	SB	LEFT	13	0	13
		THROUGH	21	0	21
5		RIGHT	247	0	247
	EB	LEFT	247	0	247
		THROUGH	94	0	94
		RIGHT	20	0	20
	WB	LEFT	5	0	5
		THROUGH	76	0	76
		RIGHT	12	0	12

NELSON & POPE

PM PEAK HOUR
Project Name: LEWIS ROAD PRD
N&P Project No. 05105

118 RECREATION HOMES - ITE LUC 260
12 APARTMENTS - ITE LUC 220

	VOL
ENTER	24
EXIT	31
TOTAL	55

118 RECREATION HOMES

	VOL
ENTER	4
EXIT	2
TOTAL	6

12 APT. UNITS

LOCATION	DIR	MVMT	%EN	%EX	1 VOL	%EN	%EX	2 VOL	SUBTOTAL VOL
	NB	LEFT			0			0	0
LEWIS RD		THROUGH			0			0	0
AT		RIGHT			0			0	0
QUOGUE-RIVERHEAD RD	SB	LEFT	70		17	70		3	20
		THROUGH			0			0	0
1		RIGHT			0			0	0
	EB	LEFT			0			0	0
		THROUGH			0			0	0
		RIGHT			0			0	0
	WB	LEFT			0			0	0
		THROUGH			0			0	0
		RIGHT		70	22		70	1	23
	NB	LEFT			0			0	0
LEWIS RD		THROUGH			0			0	0
AT		RIGHT			0			0	0
SITE ACCESS	SB	LEFT		30	9		30	1	10
		THROUGH			0			0	0
2		RIGHT		70	22		70	1	23
	EB	LEFT	70		17	70		3	20
		THROUGH			0			0	0
		RIGHT			0			0	0
	WB	LEFT			0			0	0
		THROUGH			0			0	0
		RIGHT	30		7	30		1	8
	NB	LEFT			0			0	0
		THROUGH			0			0	0
LEWIS RD		RIGHT			0			0	0
AT	SB	LEFT			0			0	0
SPINNEY RD		THROUGH			0			0	0
		RIGHT			0			0	0
3	EB	LEFT			0			0	0
		THROUGH		30	9		30	1	10
		RIGHT			0			0	0
	WB	LEFT			0			0	0
		THROUGH	30		7	30		1	8
		RIGHT			0			0	0
	NB	LEFT	10		2	10		0	2
LEWIS RD		THROUGH			0			0	0
AT		RIGHT			0			0	0
OLD COUNTRY RD	SB	LEFT			0			0	0
		THROUGH			0			0	0
4		RIGHT			0			0	0
	EB	LEFT			0			0	0
		THROUGH		20	6		20	0	6
		RIGHT		10	3		10	0	3
	WB	LEFT			0			0	0
		THROUGH	20		5	20		1	6
		RIGHT			0			0	0
	NB	LEFT	5		1	5		0	1
LEWIS RD		THROUGH			0			0	0
AT		RIGHT			0			0	0
BOX TREE RD/OLD COUNTRY RD	SB	LEFT			0			0	0
		THROUGH			0			0	0
5		RIGHT	10		2	10		0	2
	EB	LEFT		10	3		10	0	3
		THROUGH		5	2		5	0	2
		RIGHT		5	2		5	0	2
	WB	LEFT			0			0	0
		THROUGH	5		1	5		0	1
		RIGHT			0			0	0

NELSON & POPE

PM PEAK HOUR
Project Name: LEWIS ROAD PRD
N&P Project No. 05105

118 RECREATION HOMES - ITE LUC 260
12 APARTMENTS - ITE LUC 220

LOCATION	DIR	MVMT	SUBTOTAL NO BUILD VOLUME	TRAFFIC GENERATED BY PROPOSED PROJECT	TOTAL BUILD VOLUME
	NB	LEFT	0	0	0
LEWIS RD		THROUGH	223	0	223
AT		RIGHT	10	0	10
QUOGUE-RIVERHEAD RD	SB	LEFT	274	20	294
		THROUGH	133	0	133
1		RIGHT	0	0	0
	EB	LEFT	0	0	0
		THROUGH	0	0	0
		RIGHT	0	0	0
	WB	LEFT	13	0	13
		THROUGH	0	0	0
		RIGHT	260	23	283
	NB	LEFT	0	0	0
LEWIS RD		THROUGH	0	0	0
AT		RIGHT	0	0	0
SITE ACCESS	SB	LEFT	0	10	10
		THROUGH	0	0	0
2		RIGHT	0	23	23
	EB	LEFT	0	20	20
		THROUGH	308	0	308
		RIGHT	0	0	0
	WB	LEFT	0	0	0
		THROUGH	278	0	278
		RIGHT	0	8	8
	NB	LEFT	0	0	0
		THROUGH	0	0	0
LEWIS RD		RIGHT	0	0	0
AT	SB	LEFT	11	0	11
SPINNEY RD		THROUGH	0	0	0
		RIGHT	13	0	13
3	EB	LEFT	6	0	6
		THROUGH	303	10	313
		RIGHT	0	0	0
	WB	LEFT	0	0	0
		THROUGH	265	8	273
		RIGHT	17	0	17
	NB	LEFT	10	2	12
LEWIS RD		THROUGH	0	0	0
AT		RIGHT	68	0	68
OLD COUNTRY RD	SB	LEFT	0	0	0
		THROUGH	0	0	0
4		RIGHT	0	0	0
	EB	LEFT	0	0	0
		THROUGH	289	6	295
		RIGHT	5	3	8
	WB	LEFT	52	0	52
		THROUGH	289	6	295
		RIGHT	0	0	0
	NB	LEFT	21	1	22
LEWIS RD		THROUGH	14	0	14
AT		RIGHT	4	0	4
BOX TREE RD/OLD COUNTRY RD	SB	LEFT	13	0	13
		THROUGH	21	0	21
5		RIGHT	247	2	249
	EB	LEFT	247	3	250
		THROUGH	94	2	96
		RIGHT	20	2	22
	WB	LEFT	5	0	5
		THROUGH	76	1	77
		RIGHT	12	0	12

NELSON & POPE

SATURDAY PEAK HOUR
Project Name: LEWIS ROAD PRD
N&P Project No. 05105

GROWTH FACTOR: 1.90%
NO. OF YEARS: 2
GROWTH RATE: 1.039
118 RECREATION HOMES - ITE LUC 260
12 APARTMENTS - ITE LUC 220

LOCATION	DIR	MVMT	EXISTING VOLUME	SEASONALLY ADJUSTED VOLUMES	AMBIENT NO BUILD VOLUME
	NB	LEFT	0	0	0
LEWIS RD		THROUGH	110	130	136
AT		RIGHT	13	16	17
QUOGUE-RIVERHEAD RD	SB	LEFT	187	221	230
		THROUGH	113	134	140
1		RIGHT	0	0	0
	EB	LEFT	0	0	0
		THROUGH	0	0	0
		RIGHT	0	0	0
	WB	LEFT	16	19	20
		THROUGH	0	0	0
		RIGHT	233	275	286
	NB	LEFT	0	0	0
LEWIS RD		THROUGH	0	0	0
AT		RIGHT	0	0	0
SITE ACCESS	SB	LEFT	0	0	0
		THROUGH	0	0	0
2		RIGHT	0	0	0
	EB	LEFT	0	0	0
		THROUGH	215	254	264
		RIGHT	0	0	0
	WB	LEFT	0	0	0
		THROUGH	245	289	301
		RIGHT	0	0	0
	NB	LEFT	0	0	0
		THROUGH	0	0	0
LEWIS RD		RIGHT	0	0	0
AT	SB	LEFT	14	17	18
SPINNEY RD		THROUGH	0	0	0
		RIGHT	6	8	9
3	EB	LEFT	4	5	6
		THROUGH	211	249	259
		RIGHT	0	0	0
	WB	LEFT	0	0	0
		THROUGH	239	282	293
		RIGHT	16	19	20
	NB	LEFT	5	6	7
LEWIS RD		THROUGH	0	0	0
AT		RIGHT	47	56	59
OLD COUNTRY RD	SB	LEFT	0	0	0
		THROUGH	0	0	0
4		RIGHT	0	0	0
	EB	LEFT	0	0	0
		THROUGH	222	262	273
		RIGHT	4	5	6
	WB	LEFT	47	56	59
		THROUGH	250	295	307
		RIGHT	0	0	0
	NB	LEFT	17	21	22
LEWIS RD		THROUGH	12	15	16
AT		RIGHT	1	2	3
BOX TREE RD/OLD COUNTRY RD	SB	LEFT	7	9	10
		THROUGH	16	19	20
5		RIGHT	189	223	232
	EB	LEFT	145	171	178
		THROUGH	111	131	137
		RIGHT	15	18	19
	WB	LEFT	0	0	0
		THROUGH	93	110	115
		RIGHT	5	6	7

NELSON & POPE

SATURDAY PEAK HOUR
Project Name: LEWIS ROAD PRD
N&P Project No. 05105

OTHER
PLANNED
PROJECTS
118 RECREATION HOMES - ITE LUC 260
12 APARTMENTS - ITE LUC 220

	NONE
	VOL
ENTER	
EXIT	
TOTAL	0

SUBTOTAL TRAFFIC GENERATED BY OTHER PROJECTS

LOCATION	DIR	MVMT	%EN	%EX	1 VOL	SUBTOTAL VOL
	NB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	SB	LEFT			0	0
		THROUGH			0	0
1		RIGHT			0	0
	EB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	WB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	NB	LEFT			0	0
LEWIS RD		THROUGH			0	0
AT		RIGHT			0	0
SITE ACCESS	SB	LEFT			0	0
		THROUGH			0	0
2		RIGHT			0	0
	EB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	WB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	NB	LEFT			0	0
		THROUGH			0	0
LEWIS RD		RIGHT			0	0
AT	SB	LEFT			0	0
SPINNEY RD		THROUGH			0	0
		RIGHT			0	0
3	EB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	WB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	NB	LEFT			0	0
LEWIS RD		THROUGH			0	0
AT		RIGHT			0	0
OLD COUNTRY RD	SB	LEFT			0	0
		THROUGH			0	0
4		RIGHT			0	0
	EB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	WB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	NB	LEFT			0	0
LEWIS RD		THROUGH			0	0
AT		RIGHT			0	0
BOX TREE RD/OLD COUNTRY RD	SB	LEFT			0	0
		THROUGH			0	0
5		RIGHT			0	0
	EB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	WB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0

NELSON & POPE

SATURDAY PEAK HOUR
Project Name: LEWIS ROAD PRD
N&P Project No. 05105

118 RECREATION HOMES - ITE LUC 260
12 APARTMENTS - ITE LUC 220

LOCATION	DIR	MVMT	AMBIENT NO BUILD VOLUME	SUBTOTAL TRAFFIC GENERATED BY OTHER PROJECTS	SUBTOTAL NO BUILD VOLUME
	NB	LEFT	0	0	0
LEWIS RD		THROUGH	136	0	136
AT		RIGHT	17	0	17
QUOGUE-RIVERHEAD RD	SB	LEFT	230	0	230
		THROUGH	140	0	140
1		RIGHT	0	0	0
	EB	LEFT	0	0	0
		THROUGH	0	0	0
		RIGHT	0	0	0
	WB	LEFT	20	0	20
		THROUGH	0	0	0
		RIGHT	286	0	286
	NB	LEFT	0	0	0
LEWIS RD		THROUGH	0	0	0
AT		RIGHT	0	0	0
SITE ACCESS	SB	LEFT	0	0	0
		THROUGH	0	0	0
2		RIGHT	0	0	0
	EB	LEFT	0	0	0
		THROUGH	264	0	264
		RIGHT	0	0	0
	WB	LEFT	0	0	0
		THROUGH	301	0	301
		RIGHT	0	0	0
	NB	LEFT	0	0	0
		THROUGH	0	0	0
LEWIS RD		RIGHT	0	0	0
AT	SB	LEFT	18	0	18
SPINNEY RD		THROUGH	0	0	0
		RIGHT	9	0	9
3	EB	LEFT	6	0	6
		THROUGH	259	0	259
		RIGHT	0	0	0
	WB	LEFT	0	0	0
		THROUGH	293	0	293
		RIGHT	20	0	20
	NB	LEFT	7	0	7
LEWIS RD		THROUGH	0	0	0
AT		RIGHT	59	0	59
OLD COUNTRY RD	SB	LEFT	0	0	0
		THROUGH	0	0	0
4		RIGHT	0	0	0
	EB	LEFT	0	0	0
		THROUGH	273	0	273
		RIGHT	6	0	6
	WB	LEFT	59	0	59
		THROUGH	307	0	307
		RIGHT	0	0	0
	NB	LEFT	22	0	22
LEWIS RD		THROUGH	16	0	16
AT		RIGHT	3	0	3
BOX TREE RD/OLD COUNTRY RD	SB	LEFT	10	0	10
		THROUGH	20	0	20
5		RIGHT	232	0	232
	EB	LEFT	178	0	178
		THROUGH	137	0	137
		RIGHT	19	0	19
	WB	LEFT	0	0	0
		THROUGH	115	0	115
		RIGHT	7	0	7

NELSON & POPE

SATURDAY PEAK HOUR
Project Name: LEWIS ROAD PRD
N&P Project No. 05105

118 RECREATION HOMES - ITE LUC 260
12 APARTMENTS - ITE LUC 220

					118 RECREATION HOMES			12 APT. UNITS	SUBTOTAL TRAFFIC GENERATED
					VOL			VOL	
				ENTER	33		ENTER	3	
				EXIT	36		EXIT	3	
				TOTAL	69		TOTAL	6	

LOCATION	DIR	MVMT	%EN	%EX	1 VOL	%EN	%EX	2 VOL	SUBTOTAL VOL
	NB	LEFT			0			0	0
LEWIS RD		THROUGH			0			0	0
AT		RIGHT			0			0	0
QUOGUE-RIVERHEAD RD	SB	LEFT	70		23	70		2	25
		THROUGH			0			0	0
1		RIGHT			0			0	0
	EB	LEFT			0			0	0
		THROUGH			0			0	0
		RIGHT			0			0	0
	WB	LEFT			0			0	0
		THROUGH			0			0	0
		RIGHT		70	25		70	2	27
	NB	LEFT			0			0	0
LEWIS RD		THROUGH			0			0	0
AT		RIGHT			0			0	0
SITE ACCESS	SB	LEFT		30	11		30	1	12
		THROUGH			0			0	0
2		RIGHT		70	25		70	2	27
	EB	LEFT	70		23	70		2	25
		THROUGH			0			0	0
		RIGHT			0			0	0
	WB	LEFT			0			0	0
		THROUGH			0			0	0
		RIGHT	30		10	30		1	11
	NB	LEFT			0			0	0
		THROUGH			0			0	0
LEWIS RD		RIGHT			0			0	0
AT	SB	LEFT			0			0	0
SPINNEY RD		THROUGH			0			0	0
		RIGHT			0			0	0
3	EB	LEFT			0			0	0
		THROUGH		30	11		30	1	12
		RIGHT			0			0	0
	WB	LEFT			0			0	0
		THROUGH	30		10	30		1	11
		RIGHT			0			0	0
	NB	LEFT	10		3	10		0	3
LEWIS RD		THROUGH			0			0	0
AT		RIGHT			0			0	0
OLD COUNTRY RD	SB	LEFT			0			0	0
		THROUGH			0			0	0
4		RIGHT			0			0	0
	EB	LEFT			0			0	0
		THROUGH		20	7		20	1	8
		RIGHT		10	4		10	0	4
	WB	LEFT			0			0	0
		THROUGH	20		7	20		1	8
		RIGHT			0			0	0
	NB	LEFT	5		2	5		0	2
LEWIS RD		THROUGH			0			0	0
AT		RIGHT			0			0	0
BOX TREE RD/OLD COUNTRY RD	SB	LEFT			0			0	0
		THROUGH			0			0	0
5		RIGHT	10		3	10		0	3
	EB	LEFT		10	4		10	0	4
		THROUGH		5	2		5	0	2
		RIGHT		5	2		5	0	2
	WB	LEFT			0			0	0
		THROUGH	5		2	5		0	2
		RIGHT			0			0	0

NELSON & POPE

SATURDAY PEAK HOUR
Project Name: LEWIS ROAD PRD
N&P Project No. 05105

118 RECREATION HOMES - ITE LUC 260
12 APARTMENTS - ITE LUC 220

LOCATION	DIR	MVMT	SUBTOTAL NO BUILD VOLUME	TRAFFIC GENERATED BY PROPOSED PROJECT	TOTAL BUILD VOLUME
	NB	LEFT	0	0	0
LEWIS RD		THROUGH	136	0	136
AT		RIGHT	17	0	17
QUOGUE-RIVERHEAD RD	SB	LEFT	230	25	255
		THROUGH	140	0	140
1		RIGHT	0	0	0
	EB	LEFT	0	0	0
		THROUGH	0	0	0
		RIGHT	0	0	0
	WB	LEFT	20	0	20
		THROUGH	0	0	0
		RIGHT	286	27	313
	NB	LEFT	0	0	0
LEWIS RD		THROUGH	0	0	0
AT		RIGHT	0	0	0
SITE ACCESS	SB	LEFT	0	12	12
		THROUGH	0	0	0
2		RIGHT	0	27	27
	EB	LEFT	0	25	25
		THROUGH	264	0	264
		RIGHT	0	0	0
	WB	LEFT	0	0	0
		THROUGH	301	0	301
		RIGHT	0	11	11
	NB	LEFT	0	0	0
		THROUGH	0	0	0
LEWIS RD		RIGHT	0	0	0
AT	SB	LEFT	18	0	18
SPINNEY RD		THROUGH	0	0	0
		RIGHT	9	0	9
3	EB	LEFT	6	0	6
		THROUGH	259	12	271
		RIGHT	0	0	0
	WB	LEFT	0	0	0
		THROUGH	293	11	304
		RIGHT	20	0	20
	NB	LEFT	7	3	10
LEWIS RD		THROUGH	0	0	0
AT		RIGHT	59	0	59
OLD COUNTRY RD	SB	LEFT	0	0	0
		THROUGH	0	0	0
4		RIGHT	0	0	0
	EB	LEFT	0	0	0
		THROUGH	273	8	281
		RIGHT	6	4	10
	WB	LEFT	59	0	59
		THROUGH	307	8	315
		RIGHT	0	0	0
	NB	LEFT	22	2	24
LEWIS RD		THROUGH	16	0	16
AT		RIGHT	3	0	3
BOX TREE RD/OLD COUNTRY RD	SB	LEFT	10	0	10
		THROUGH	20	0	20
5		RIGHT	232	3	235
	EB	LEFT	178	4	182
		THROUGH	137	2	139
		RIGHT	19	2	21
	WB	LEFT	0	0	0
		THROUGH	115	2	117
		RIGHT	7	0	7

DEIS Alternative 3 Distribution Sheets

NELSON & POPE
ENGINEERS & SURVEYORS

NELSON & POPE

AM PEAK HOUR
Project Name: LEWIS ROAD PRD
N&P Project No. 05105

GROWTH FACTOR: 1.90%
NO. OF YEARS: 2
GROWTH RATE: 1.039
108 SINGLE FAMILY HOMES - ITE LUC 210
18 HOLE GOLF COURSE - ITE LUC 430
BANQUET CENTER - ITE LUC 931

LOCATION	DIR	MVMT	EXISTING VOLUME	AMBIENT NO BUILD VOLUME
	NB	LEFT	0	0
LEWIS RD		THROUGH	110	115
AT		RIGHT	5	6
QUOGUE-RIVERHEAD RD	SB	LEFT	219	228
		THROUGH	250	260
1		RIGHT	0	0
	EB	LEFT	0	0
		THROUGH	0	0
		RIGHT	0	0
	WB	LEFT	5	6
		THROUGH	0	0
		RIGHT	205	213
	NB	LEFT	0	0
LEWIS RD		THROUGH	0	0
AT		RIGHT	0	0
SITE ACCESS	SB	LEFT	0	0
		THROUGH	0	0
2		RIGHT	0	0
	EB	LEFT	0	0
		THROUGH	188	196
		RIGHT	0	0
	WB	LEFT	0	0
		THROUGH	227	236
		RIGHT	0	0
	NB	LEFT	0	0
		THROUGH	0	0
LEWIS RD		RIGHT	0	0
AT	SB	LEFT	15	16
SPINNEY RD		THROUGH	0	0
		RIGHT	1	2
3	EB	LEFT	5	6
		THROUGH	183	191
		RIGHT	0	0
	WB	LEFT	0	0
		THROUGH	226	235
		RIGHT	7	8
	NB	LEFT	6	7
LEWIS RD		THROUGH	0	0
AT		RIGHT	71	74
OLD COUNTRY RD	SB	LEFT	0	0
		THROUGH	0	0
4		RIGHT	0	0
	EB	LEFT	0	0
		THROUGH	187	195
		RIGHT	13	14
	WB	LEFT	59	62
		THROUGH	194	202
		RIGHT	0	0
	NB	LEFT	13	14
LEWIS RD		THROUGH	20	21
AT		RIGHT	2	3
BOX TREE RD/OLD COUNTRY RD	SB	LEFT	4	5
		THROUGH	9	10
5		RIGHT	180	188
	EB	LEFT	157	164
		THROUGH	67	70
		RIGHT	14	15
	WB	LEFT	2	3
		THROUGH	75	78
		RIGHT	10	11

NELSON & POPE

AM PEAK HOUR
Project Name: LEWIS ROAD PRD
N&P Project No. 05105

OTHER
PLANNED
PROJECTS
108 SINGLE FAMILY HOMES - ITE LUC 210
18 HOLE GOLF COURSE - ITE LUC 430
BANQUET CENTER - ITE LUC 931

					NONE	
					VOL	SUBTOTAL TRAFFIC GENERATED BY OTHER PROJECTS
				ENTER		
				EXIT		
				TOTAL	0	

LOCATION	DIR	MVMT	%EN	%EX	1 VOL	SUBTOTAL VOL
	NB	LEFT			0	0
		THROUGH			0	0
LEWIS RD		RIGHT			0	0
AT	SB	LEFT			0	0
QUOGUE-RIVERHEAD RD		THROUGH			0	0
		RIGHT			0	0
1	EB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	WB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	NB	LEFT			0	0
		THROUGH			0	0
LEWIS RD		RIGHT			0	0
AT	SB	LEFT			0	0
SITE ACCESS		THROUGH			0	0
		RIGHT			0	0
2	EB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	WB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	NB	LEFT			0	0
		THROUGH			0	0
LEWIS RD		RIGHT			0	0
AT	SB	LEFT			0	0
SPINNEY RD		THROUGH			0	0
		RIGHT			0	0
3	EB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	WB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	NB	LEFT			0	0
		THROUGH			0	0
LEWIS RD		RIGHT			0	0
AT	SB	LEFT			0	0
OLD COUNTRY RD		THROUGH			0	0
		RIGHT			0	0
4	EB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	WB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	NB	LEFT			0	0
		THROUGH			0	0
LEWIS RD		RIGHT			0	0
AT	SB	LEFT			0	0
BOX TREE RD/OLD COUNTRY RD		THROUGH			0	0
		RIGHT			0	0
5	EB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	WB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0

NELSON & POPE

AM PEAK HOUR
Project Name: LEWIS ROAD PRD
N&P Project No. 05105

108 SINGLE FAMILY HOMES - ITE LUC 210
18 HOLE GOLF COURSE - ITE LUC 430
BANQUET CENTER - ITE LUC 931

LOCATION	DIR	MVMT	AMBIENT NO BUILD VOLUME	SUBTOTAL TRAFFIC GENERATED BY OTHER PROJECTS	SUBTOTAL NO BUILD VOLUME
	NB	LEFT	0	0	0
LEWIS RD		THROUGH	115	0	115
AT		RIGHT	6	0	6
QUOGUE-RIVERHEAD RD	SB	LEFT	228	0	228
		THROUGH	260	0	260
1		RIGHT	0	0	0
	EB	LEFT	0	0	0
		THROUGH	0	0	0
		RIGHT	0	0	0
	WB	LEFT	6	0	6
		THROUGH	0	0	0
		RIGHT	213	0	213
	NB	LEFT	0	0	0
LEWIS RD		THROUGH	0	0	0
AT		RIGHT	0	0	0
SITE ACCESS	SB	LEFT	0	0	0
		THROUGH	0	0	0
2		RIGHT	0	0	0
	EB	LEFT	0	0	0
		THROUGH	196	0	196
		RIGHT	0	0	0
	WB	LEFT	0	0	0
		THROUGH	236	0	236
		RIGHT	0	0	0
	NB	LEFT	0	0	0
		THROUGH	0	0	0
LEWIS RD		RIGHT	0	0	0
AT	SB	LEFT	16	0	16
SPINNEY RD		THROUGH	0	0	0
		RIGHT	2	0	2
3	EB	LEFT	6	0	6
		THROUGH	191	0	191
		RIGHT	0	0	0
	WB	LEFT	0	0	0
		THROUGH	235	0	235
		RIGHT	8	0	8
	NB	LEFT	7	0	7
LEWIS RD		THROUGH	0	0	0
AT		RIGHT	74	0	74
OLD COUNTRY RD	SB	LEFT	0	0	0
		THROUGH	0	0	0
4		RIGHT	0	0	0
	EB	LEFT	0	0	0
		THROUGH	195	0	195
		RIGHT	14	0	14
	WB	LEFT	62	0	62
		THROUGH	202	0	202
		RIGHT	0	0	0
	NB	LEFT	14	0	14
LEWIS RD		THROUGH	21	0	21
AT		RIGHT	3	0	3
BOX TREE RD/OLD COUNTRY RD	SB	LEFT	5	0	5
		THROUGH	10	0	10
5		RIGHT	188	0	188
	EB	LEFT	164	0	164
		THROUGH	70	0	70
		RIGHT	15	0	15
	WB	LEFT	3	0	3
		THROUGH	78	0	78
		RIGHT	11	0	11

NELSON & POPE

AM PEAK HOUR
Project Name: LEWIS ROAD PRD
N&P Project No. 05105

108 SINGLE FAMILY HOMES - ITE LUC 210
18 HOLE GOLF COURSE - ITE LUC 430
BANQUET CENTER - ITE LUC 931

					108 SINGLE FAMILY HOMES			18 HOLE GOLF COURSE			90,760 SF BANQUET CENTER		SUBTOTAL TRAFFIC GENERATED
					VOL			VOL			VOL		
				ENTER	20		ENTER	25		ENTER	53		
				EXIT	61		EXIT	7		EXIT	13		
				TOTAL	81		TOTAL	32		TOTAL	66		
LOCATION	**DIR**	**MVMT**	**%EN**	**%EX**	**1 VOL**	**%EN**	**%EX**	**2 VOL**	**%EN**	**%EX**	**1 VOL**		SUBTOTAL VOL
	NB	LEFT			0			0			0		0
LEWIS RD		THROUGH			0			0			0		0
AT		RIGHT			0			0			0		0
QUOGUE-RIVERHEAD RD	SB	LEFT	70		14	70		18	80		42		74
		THROUGH			0			0			0		0
1		RIGHT			0			0			0		0
	EB	LEFT			0			0			0		0
		THROUGH			0			0			0		0
		RIGHT			0			0			0		0
	WB	LEFT			0			0			0		0
		THROUGH			0			0			0		0
		RIGHT		70	43		70	5		80	10		58
	NB	LEFT			0			0			0		0
LEWIS RD		THROUGH			0			0			0		0
AT		RIGHT			0			0			0		0
SITE ACCESS	SB	LEFT		30	18		30	2		20	3		23
		THROUGH			0			0			0		0
2		RIGHT		70	43		70	5		80	10		58
	EB	LEFT	70		14	70		18	80		42		74
		THROUGH			0			0			0		0
		RIGHT			0			0			0		0
	WB	LEFT			0			0			0		0
		THROUGH			0			0			0		0
		RIGHT	30		6	30		8	20		11		25
	NB	LEFT			0			0			0		0
		THROUGH			0			0			0		0
LEWIS RD		RIGHT			0			0			0		0
AT	SB	LEFT			0			0			0		0
SPINNEY RD		THROUGH			0			0			0		0
		RIGHT			0			0			0		0
3	EB	LEFT			0			0			0		0
		THROUGH		30	18		30	2		20	3		23
		RIGHT			0			0			0		0
	WB	LEFT			0			0			0		0
		THROUGH	30		6	30		8	20		11		25
		RIGHT			0			0			0		0
	NB	LEFT	10		2	10		3	10		5		10
LEWIS RD		THROUGH			0			0			0		0
AT		RIGHT			0			0			0		0
OLD COUNTRY RD	SB	LEFT			0			0			0		0
		THROUGH			0			0			0		0
4		RIGHT			0			0			0		0
	EB	LEFT			0			0			0		0
		THROUGH		20	12		20	1		10	1		14
		RIGHT		10	6		10	1		10	1		8
	WB	LEFT			0			0			0		0
		THROUGH	20		4	20		5	10		5		14
		RIGHT			0			0			0		0
	NB	LEFT	5		1	5		1			0		2
LEWIS RD		THROUGH			0			0			0		0
AT		RIGHT			0			0			0		0
BOX TREE RD/OLD COUNTRY RD	SB	LEFT			0			0			0		0
		THROUGH			0			0			0		0
5		RIGHT	10		2	10		3	10		5		10
	EB	LEFT		10	6		10	1		10	1		8
		THROUGH		5	3		5	0			0		3
		RIGHT		5	3		5	0			0		3
	WB	LEFT			0			0			0		0
		THROUGH	5		1	5		1			0		2
		RIGHT			0			0			0		0

NELSON & POPE

AM PEAK HOUR
Project Name: LEWIS ROAD PRD
N&P Project No. 05105

108 SINGLE FAMILY HOMES - ITE LUC 210
18 HOLE GOLF COURSE - ITE LUC 430
BANQUET CENTER - ITE LUC 931

LOCATION	DIR	MVMT	SUBTOTAL NO BUILD VOLUME	TRAFFIC GENERATED BY PROPOSED PROJECT	TOTAL BUILD VOLUME
	NB	LEFT	0	0	0
LEWIS RD		THROUGH	115	0	115
AT		RIGHT	6	0	6
QUOGUE-RIVERHEAD RD	SB	LEFT	228	74	302
		THROUGH	260	0	260
1		RIGHT	0	0	0
	EB	LEFT	0	0	0
		THROUGH	0	0	0
		RIGHT	0	0	0
	WB	LEFT	6	0	6
		THROUGH	0	0	0
		RIGHT	213	58	271
	NB	LEFT	0	0	0
LEWIS RD		THROUGH	0	0	0
AT		RIGHT	0	0	0
SITE ACCESS	SB	LEFT	0	23	23
		THROUGH	0	0	0
2		RIGHT	0	58	58
	EB	LEFT	0	74	74
		THROUGH	196	0	196
		RIGHT	0	0	0
	WB	LEFT	0	0	0
		THROUGH	236	0	236
		RIGHT	0	25	25
	NB	LEFT	0	0	0
		THROUGH	0	0	0
LEWIS RD		RIGHT	0	0	0
AT	SB	LEFT	16	0	16
SPINNEY RD		THROUGH	0	0	0
		RIGHT	2	0	2
3	EB	LEFT	6	0	6
		THROUGH	191	23	214
		RIGHT	0	0	0
	WB	LEFT	0	0	0
		THROUGH	235	25	260
		RIGHT	8	0	8
	NB	LEFT	7	10	17
LEWIS RD		THROUGH	0	0	0
AT		RIGHT	74	0	74
OLD COUNTRY RD	SB	LEFT	0	0	0
		THROUGH	0	0	0
4		RIGHT	0	0	0
	EB	LEFT	0	0	0
		THROUGH	195	14	209
		RIGHT	14	8	22
	WB	LEFT	62	0	62
		THROUGH	202	14	216
		RIGHT	0	0	0
	NB	LEFT	14	2	16
LEWIS RD		THROUGH	21	0	21
AT		RIGHT	3	0	3
BOX TREE RD/OLD COUNTRY RD	SB	LEFT	5	0	5
		THROUGH	10	0	10
5		RIGHT	188	10	198
	EB	LEFT	164	8	172
		THROUGH	70	3	73
		RIGHT	15	3	18
	WB	LEFT	3	0	3
		THROUGH	78	2	80
		RIGHT	11	0	11

NELSON & POPE

PM PEAK HOUR
Project Name: LEWIS ROAD PRD
N&P Project No. 05105

GROWTH FACTOR: 1.90%
NO. OF YEARS: 2
GROWTH RATE: 1.039
108 SINGLE FAMILY HOMES - ITE LUC 210
18 HOLE GOLF COURSE - ITE LUC 430
BANQUET CENTER - ITE LUC 931

LOCATION	DIR	MVMT	EXISTING VOLUME	AMBIENT NO BUILD VOLUME
	NB	LEFT	0	0
LEWIS RD		THROUGH	214	223
AT		RIGHT	9	10
QUOGUE-RIVERHEAD RD	SB	LEFT	263	274
		THROUGH	128	133
1		RIGHT	0	0
	EB	LEFT	0	0
		THROUGH	0	0
		RIGHT	0	0
	WB	LEFT	12	13
		THROUGH	0	0
		RIGHT	250	260
	NB	LEFT	0	0
LEWIS RD		THROUGH	0	0
AT		RIGHT	0	0
SITE ACCESS	SB	LEFT	0	0
		THROUGH	0	0
2		RIGHT	0	0
	EB	LEFT	0	0
		THROUGH	296	308
		RIGHT	0	0
	WB	LEFT	0	0
		THROUGH	267	278
		RIGHT	0	0
	NB	LEFT	0	0
		THROUGH	0	0
LEWIS RD		RIGHT	0	0
AT	SB	LEFT	10	11
SPINNEY RD		THROUGH	0	0
		RIGHT	12	13
3	EB	LEFT	5	6
		THROUGH	291	303
		RIGHT	0	0
	WB	LEFT	0	0
		THROUGH	255	265
		RIGHT	16	17
	NB	LEFT	9	10
LEWIS RD		THROUGH	0	0
AT		RIGHT	65	68
OLD COUNTRY RD	SB	LEFT	0	0
		THROUGH	0	0
4		RIGHT	0	0
	EB	LEFT	0	0
		THROUGH	278	289
		RIGHT	4	5
	WB	LEFT	50	52
		THROUGH	278	289
		RIGHT	0	0
	NB	LEFT	20	21
LEWIS RD		THROUGH	13	14
AT		RIGHT	3	4
BOX TREE RD/OLD COUNTRY RD	SB	LEFT	12	13
		THROUGH	20	21
5		RIGHT	237	247
	EB	LEFT	237	247
		THROUGH	90	94
		RIGHT	19	20
	WB	LEFT	4	5
		THROUGH	73	76
		RIGHT	11	12

NELSON & POPE

PM PEAK HOUR
Project Name: LEWIS ROAD PRD
N&P Project No. 05105

OTHER
PLANNED
PROJECTS
108 SINGLE FAMILY HOMES - ITE LUC 210
18 HOLE GOLF COURSE - ITE LUC 430
BANQUET CENTER - ITE LUC 931

	NONE
	VOL
ENTER	
EXIT	
TOTAL	0

SUBTOTAL TRAFFIC GENERATED BY OTHER PROJECTS

LOCATION	DIR	MVMT	%EN	%EX	1 VOL	SUBTOTAL VOL
LEWIS RD AT QUOGUE-RIVERHEAD RD 1	NB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	SB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	EB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	WB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
LEWIS RD AT SITE ACCESS 2	NB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	SB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	EB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	WB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
LEWIS RD AT SPINNEY RD 3	NB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	SB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	EB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	WB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
LEWIS RD AT OLD COUNTRY RD 4	NB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	SB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	EB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	WB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
LEWIS RD AT BOX TREE RD/OLD COUNTRY RD 5	NB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	SB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	EB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	WB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0

NELSON & POPE

PM PEAK HOUR
Project Name: LEWIS ROAD PRD
N&P Project No. 05105

108 SINGLE FAMILY HOMES - ITE LUC 210
18 HOLE GOLF COURSE - ITE LUC 430
BANQUET CENTER - ITE LUC 931

LOCATION	DIR	MVMT	AMBIENT NO BUILD VOLUME	SUBTOTAL TRAFFIC GENERATED BY OTHER PROJECTS	SUBTOTAL NO BUILD VOLUME
	NB	LEFT	0	0	0
LEWIS RD		THROUGH	223	0	223
AT		RIGHT	10	0	10
QUOGUE-RIVERHEAD RD	SB	LEFT	274	0	274
		THROUGH	133	0	133
1		RIGHT	0	0	0
	EB	LEFT	0	0	0
		THROUGH	0	0	0
		RIGHT	0	0	0
	WB	LEFT	13	0	13
		THROUGH	0	0	0
		RIGHT	260	0	260
	NB	LEFT	0	0	0
LEWIS RD		THROUGH	0	0	0
AT		RIGHT	0	0	0
SITE ACCESS	SB	LEFT	0	0	0
		THROUGH	0	0	0
2		RIGHT	0	0	0
	EB	LEFT	0	0	0
		THROUGH	308	0	308
		RIGHT	0	0	0
	WB	LEFT	0	0	0
		THROUGH	278	0	278
		RIGHT	0	0	0
	NB	LEFT	0	0	0
		THROUGH	0	0	0
LEWIS RD		RIGHT	0	0	0
AT	SB	LEFT	11	0	11
SPINNEY RD		THROUGH	0	0	0
		RIGHT	13	0	13
3	EB	LEFT	6	0	6
		THROUGH	303	0	303
		RIGHT	0	0	0
	WB	LEFT	0	0	0
		THROUGH	265	0	265
		RIGHT	17	0	17
	NB	LEFT	10	0	10
LEWIS RD		THROUGH	0	0	0
AT		RIGHT	68	0	68
OLD COUNTRY RD	SB	LEFT	0	0	0
		THROUGH	0	0	0
4		RIGHT	0	0	0
	EB	LEFT	0	0	0
		THROUGH	289	0	289
		RIGHT	5	0	5
	WB	LEFT	52	0	52
		THROUGH	289	0	289
		RIGHT	0	0	0
	NB	LEFT	21	0	21
LEWIS RD		THROUGH	14	0	14
AT		RIGHT	4	0	4
BOX TREE RD/OLD COUNTRY RD	SB	LEFT	13	0	13
		THROUGH	21	0	21
5		RIGHT	247	0	247
	EB	LEFT	247	0	247
		THROUGH	94	0	94
		RIGHT	20	0	20
	WB	LEFT	5	0	5
		THROUGH	76	0	76
		RIGHT	12	0	12

NELSON & POPE

PM PEAK HOUR
Project Name: LEWIS ROAD PRD
N&P Project No. 05105

108 SINGLE FAMILY HOMES - ITE LUC 210
18 HOLE GOLF COURSE - ITE LUC 430
BANQUET CENTER - ITE LUC 931

			108 SINGLE FAMILY HOMES			18 HOLE GOLF COURSE			90,760 SF BANQUET CENTER			SUBTOTAL TRAFFIC GENERATED
					VOL			VOL			VOL	
				ENTER	69		ENTER	28		ENTER	470	
				EXIT	40		EXIT	24		EXIT	232	
				TOTAL	109		TOTAL	52		TOTAL	702	
LOCATION	**DIR**	**MVMT**	**%EN**	**%EX**	**1 VOL**	**%EN**	**%EX**	**2 VOL**	**%EN**	**%EX**	**1 VOL**	SUBTOTAL VOL
	NB	LEFT			0			0			0	0
		THROUGH			0			0			0	0
LEWIS RD		RIGHT			0			0			0	0
AT	SB	LEFT	70		48	70		20	80		376	444
QUOGUE-RIVERHEAD RD		THROUGH			0			0			0	0
		RIGHT			0			0			0	0
1	EB	LEFT			0			0			0	0
		THROUGH			0			0			0	0
		RIGHT			0			0			0	0
	WB	LEFT			0			0			0	0
		THROUGH			0			0			0	0
		RIGHT		70	28		70	17		80	186	231
	NB	LEFT			0			0			0	0
		THROUGH			0			0			0	0
LEWIS RD		RIGHT			0			0			0	0
AT	SB	LEFT		30	12		30	7		20	46	65
SITE ACCESS		THROUGH			0			0			0	0
		RIGHT		70	28		70	17		80	186	231
2	EB	LEFT	70		48	70		20	80		376	444
		THROUGH			0			0			0	0
		RIGHT			0			0			0	0
	WB	LEFT			0			0			0	0
		THROUGH			0			0			0	0
		RIGHT	30		21	30		8	20		94	123
	NB	LEFT			0			0			0	0
		THROUGH			0			0			0	0
LEWIS RD		RIGHT			0			0			0	0
AT	SB	LEFT			0			0			0	0
SPINNEY RD		THROUGH			0			0			0	0
		RIGHT			0			0			0	0
3	EB	LEFT			0			0			0	0
		THROUGH		30	12		30	7		20	46	65
		RIGHT			0			0			0	0
	WB	LEFT			0			0			0	0
		THROUGH	30		21	30		8	20		94	123
		RIGHT			0			0			0	0
	NB	LEFT	10		7	10		3	10		47	57
		THROUGH			0			0			0	0
LEWIS RD		RIGHT			0			0			0	0
AT	SB	LEFT			0			0			0	0
OLD COUNTRY RD		THROUGH			0			0			0	0
		RIGHT			0			0			0	0
4	EB	LEFT			0			0			0	0
		THROUGH		20	8		20	5		10	23	36
		RIGHT		10	4		10	2		10	23	29
	WB	LEFT			0			0			0	0
		THROUGH	20		14	20		6	10		47	67
		RIGHT			0			0			0	0
	NB	LEFT	5		3	5		1			0	4
		THROUGH			0			0			0	0
LEWIS RD		RIGHT			0			0			0	0
AT	SB	LEFT			0			0			0	0
BOX TREE RD/OLD COUNTRY RD		THROUGH			0			0			0	0
		RIGHT	10		7	10		3	10		47	57
5	EB	LEFT		10	4		10	2		10	23	29
		THROUGH		5	2		5	1			0	3
		RIGHT		5	2		5	1			0	3
	WB	LEFT			0			0			0	0
		THROUGH	5		3	5		1			0	4
		RIGHT			0			0			0	0

NELSON & POPE

PM PEAK HOUR
Project Name: LEWIS ROAD PRD
N&P Project No. 05105

108 SINGLE FAMILY HOMES - ITE LUC 210
18 HOLE GOLF COURSE - ITE LUC 430
BANQUET CENTER - ITE LUC 931

LOCATION	DIR	MVMT	SUBTOTAL NO BUILD VOLUME	TRAFFIC GENERATED BY PROPOSED PROJECT	TOTAL BUILD VOLUME
	NB	LEFT	0	0	0
LEWIS RD		THROUGH	223	0	223
AT		RIGHT	10	0	10
QUOGUE-RIVERHEAD RD	SB	LEFT	274	444	718
		THROUGH	133	0	133
1		RIGHT	0	0	0
	EB	LEFT	0	0	0
		THROUGH	0	0	0
		RIGHT	0	0	0
	WB	LEFT	13	0	13
		THROUGH	0	0	0
		RIGHT	260	231	491
	NB	LEFT	0	0	0
LEWIS RD		THROUGH	0	0	0
AT		RIGHT	0	0	0
SITE ACCESS	SB	LEFT	0	65	65
		THROUGH	0	0	0
2		RIGHT	0	231	231
	EB	LEFT	0	444	444
		THROUGH	308	0	308
		RIGHT	0	0	0
	WB	LEFT	0	0	0
		THROUGH	278	0	278
		RIGHT	0	123	123
	NB	LEFT	0	0	0
		THROUGH	0	0	0
LEWIS RD		RIGHT	0	0	0
AT	SB	LEFT	11	0	11
SPINNEY RD		THROUGH	0	0	0
		RIGHT	13	0	13
3	EB	LEFT	6	0	6
		THROUGH	303	65	368
		RIGHT	0	0	0
	WB	LEFT	0	0	0
		THROUGH	265	123	388
		RIGHT	17	0	17
	NB	LEFT	10	57	67
LEWIS RD		THROUGH	0	0	0
AT		RIGHT	68	0	68
OLD COUNTRY RD	SB	LEFT	0	0	0
		THROUGH	0	0	0
4		RIGHT	0	0	0
	EB	LEFT	0	0	0
		THROUGH	289	36	325
		RIGHT	5	29	34
	WB	LEFT	52	0	52
		THROUGH	289	67	356
		RIGHT	0	0	0
	NB	LEFT	21	4	25
LEWIS RD		THROUGH	14	0	14
AT		RIGHT	4	0	4
BOX TREE RD/OLD COUNTRY RD	SB	LEFT	13	0	13
		THROUGH	21	0	21
5		RIGHT	247	57	304
	EB	LEFT	247	29	276
		THROUGH	94	3	97
		RIGHT	20	3	23
	WB	LEFT	5	0	5
		THROUGH	76	4	80
		RIGHT	12	0	12

NELSON & POPE

SATURDAY PEAK HOUR
Project Name: LEWIS ROAD PRD
N&P Project No. 05105

GROWTH FACTOR: 1.90%
NO. OF YEARS: 2
GROWTH RATE: 1.039
108 SINGLE FAMILY HOMES - ITE LUC 210
18 HOLE GOLF COURSE - ITE LUC 430
BANQUET CENTER - ITE LUC 931

LOCATION	DIR	MVMT	EXISTING VOLUME	SEASONALLY ADJUSTED VOLUMES	AMBIENT NO BUILD VOLUME
	NB	LEFT	0	0	0
LEWIS RD		THROUGH	110	130	136
AT		RIGHT	13	16	17
QUOGUE-RIVERHEAD RD	SB	LEFT	187	221	230
		THROUGH	113	134	140
1		RIGHT	0	0	0
	EB	LEFT	0	0	0
		THROUGH	0	0	0
		RIGHT	0	0	0
	WB	LEFT	16	19	20
		THROUGH	0	0	0
		RIGHT	233	275	286
	NB	LEFT	0	0	0
LEWIS RD		THROUGH	0	0	0
AT		RIGHT	0	0	0
SITE ACCESS	SB	LEFT	0	0	0
		THROUGH	0	0	0
2		RIGHT	0	0	0
	EB	LEFT	0	0	0
		THROUGH	215	254	264
		RIGHT	0	0	0
	WB	LEFT	0	0	0
		THROUGH	245	289	301
		RIGHT	0	0	0
	NB	LEFT	0	0	0
		THROUGH	0	0	0
LEWIS RD		RIGHT	0	0	0
AT	SB	LEFT	14	17	18
SPINNEY RD		THROUGH	0	0	0
		RIGHT	6	8	9
3	EB	LEFT	4	5	6
		THROUGH	211	249	259
		RIGHT	0	0	0
	WB	LEFT	0	0	0
		THROUGH	239	282	293
		RIGHT	16	19	20
	NB	LEFT	5	6	7
LEWIS RD		THROUGH	0	0	0
AT		RIGHT	47	56	59
OLD COUNTRY RD	SB	LEFT	0	0	0
		THROUGH	0	0	0
4		RIGHT	0	0	0
	EB	LEFT	0	0	0
		THROUGH	222	262	273
		RIGHT	4	5	6
	WB	LEFT	47	56	59
		THROUGH	250	295	307
		RIGHT	0	0	0
	NB	LEFT	17	21	22
LEWIS RD		THROUGH	12	15	16
AT		RIGHT	1	2	3
BOX TREE RD/OLD COUNTRY RD	SB	LEFT	7	9	10
		THROUGH	16	19	20
5		RIGHT	189	223	232
	EB	LEFT	145	171	178
		THROUGH	111	131	137
		RIGHT	15	18	19
	WB	LEFT	0	0	0
		THROUGH	93	110	115
		RIGHT	5	6	7

NELSON & POPE

SATURDAY PEAK HOUR
Project Name: LEWIS ROAD PRD
N&P Project No. 05105

OTHER
PLANNED
PROJECTS
108 SINGLE FAMILY HOMES - ITE LUC 210
18 HOLE GOLF COURSE - ITE LUC 430
BANQUET CENTER - ITE LUC 931

	NONE
	VOL
ENTER	
EXIT	
TOTAL	0

SUBTOTAL TRAFFIC GENERATED BY OTHER PROJECTS

LOCATION	DIR	MVMT	%EN	%EX	1 VOL	SUBTOTAL VOL
	NB	LEFT			0	0
LEWIS RD		THROUGH			0	0
AT		RIGHT			0	0
QUOGUE-RIVERHEAD RD	SB	LEFT			0	0
		THROUGH			0	0
1		RIGHT			0	0
	EB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	WB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	NB	LEFT			0	0
LEWIS RD		THROUGH			0	0
AT		RIGHT			0	0
SITE ACCESS	SB	LEFT			0	0
		THROUGH			0	0
2		RIGHT			0	0
	EB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	WB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	NB	LEFT			0	0
		THROUGH			0	0
LEWIS RD		RIGHT			0	0
AT	SB	LEFT			0	0
SPINNEY RD		THROUGH			0	0
		RIGHT			0	0
3	EB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	WB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	NB	LEFT			0	0
LEWIS RD		THROUGH			0	0
AT		RIGHT			0	0
OLD COUNTRY RD	SB	LEFT			0	0
		THROUGH			0	0
4		RIGHT			0	0
	EB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	WB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	NB	LEFT			0	0
LEWIS RD		THROUGH			0	0
AT		RIGHT			0	0
BOX TREE RD/OLD COUNTRY RD	SB	LEFT			0	0
		THROUGH			0	0
5		RIGHT			0	0
	EB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0
	WB	LEFT			0	0
		THROUGH			0	0
		RIGHT			0	0

NELSON & POPE

SATURDAY PEAK HOUR
Project Name: LEWIS ROAD PRD
N&P Project No. 05105

108 SINGLE FAMILY HOMES - ITE LUC 210
18 HOLE GOLF COURSE - ITE LUC 430
BANQUET CENTER - ITE LUC 931

LOCATION	DIR	MVMT	AMBIENT NO BUILD VOLUME	SUBTOTAL TRAFFIC GENERATED BY OTHER PROJECTS	SUBTOTAL NO BUILD VOLUME
	NB	LEFT	0	0	0
LEWIS RD		THROUGH	136	0	136
AT		RIGHT	17	0	17
QUOGUE-RIVERHEAD RD	SB	LEFT	230	0	230
		THROUGH	140	0	140
1		RIGHT	0	0	0
	EB	LEFT	0	0	0
		THROUGH	0	0	0
		RIGHT	0	0	0
	WB	LEFT	20	0	20
		THROUGH	0	0	0
		RIGHT	286	0	286
	NB	LEFT	0	0	0
LEWIS RD		THROUGH	0	0	0
AT		RIGHT	0	0	0
SITE ACCESS	SB	LEFT	0	0	0
		THROUGH	0	0	0
2		RIGHT	0	0	0
	EB	LEFT	0	0	0
		THROUGH	264	0	264
		RIGHT	0	0	0
	WB	LEFT	0	0	0
		THROUGH	301	0	301
		RIGHT	0	0	0
	NB	LEFT	0	0	0
		THROUGH	0	0	0
LEWIS RD		RIGHT	0	0	0
AT	SB	LEFT	18	0	18
SPINNEY RD		THROUGH	0	0	0
		RIGHT	9	0	9
3	EB	LEFT	6	0	6
		THROUGH	259	0	259
		RIGHT	0	0	0
	WB	LEFT	0	0	0
		THROUGH	293	0	293
		RIGHT	20	0	20
	NB	LEFT	7	0	7
LEWIS RD		THROUGH	0	0	0
AT		RIGHT	59	0	59
OLD COUNTRY RD	SB	LEFT	0	0	0
		THROUGH	0	0	0
4		RIGHT	0	0	0
	EB	LEFT	0	0	0
		THROUGH	273	0	273
		RIGHT	6	0	6
	WB	LEFT	59	0	59
		THROUGH	307	0	307
		RIGHT	0	0	0
	NB	LEFT	22	0	22
LEWIS RD		THROUGH	16	0	16
AT		RIGHT	3	0	3
BOX TREE RD/OLD COUNTRY RD	SB	LEFT	10	0	10
		THROUGH	20	0	20
5		RIGHT	232	0	232
	EB	LEFT	178	0	178
		THROUGH	137	0	137
		RIGHT	19	0	19
	WB	LEFT	0	0	0
		THROUGH	115	0	115
		RIGHT	7	0	7

NELSON & POPE

SATURDAY PEAK HOUR
Project Name: LEWIS ROAD PRD
N&P Project No. 05105

108 SINGLE FAMILY HOMES - ITE LUC 210
18 HOLE GOLF COURSE - ITE LUC 430
BANQUET CENTER - ITE LUC 931

	108 SINGLE FAMILY HOMES VOL	18 HOLE GOLF COURSE VOL	90,760 SF BANQUET CENTER VOL	SUBTOTAL TRAFFIC GENERATED
ENTER	59	27	567	
EXIT	50	28	394	
TOTAL	109	55	961	

LOCATION	DIR	MVMT	%EN	%EX	1 VOL	%EN	%EX	2 VOL	%EN	%EX	1 VOL	SUBTOTAL VOL
	NB	LEFT			0			0			0	0
LEWIS RD		THROUGH			0			0			0	0
AT		RIGHT			0			0			0	0
QUOGUE-RIVERHEAD RD	SB	LEFT	70		41	70		19	80		454	514
		THROUGH			0			0			0	0
1		RIGHT			0			0			0	0
	EB	LEFT			0			0			0	0
		THROUGH			0			0			0	0
		RIGHT			0			0			0	0
	WB	LEFT			0			0			0	0
		THROUGH			0			0			0	0
		RIGHT		70	35		70	20		80	315	370
	NB	LEFT			0			0			0	0
LEWIS RD		THROUGH			0			0			0	0
AT		RIGHT			0			0			0	0
SITE ACCESS	SB	LEFT		30	15		30	8		20	79	102
		THROUGH			0			0			0	0
2		RIGHT		70	35		70	20		80	315	370
	EB	LEFT	70		41	70		19	80		454	514
		THROUGH			0			0			0	0
		RIGHT			0			0			0	0
	WB	LEFT			0			0			0	0
		THROUGH			0			0			0	0
		RIGHT	30		18	30		8	20		113	139
	NB	LEFT			0			0			0	0
		THROUGH			0			0			0	0
LEWIS RD		RIGHT			0			0			0	0
AT	SB	LEFT			0			0			0	0
SPINNEY RD		THROUGH			0			0			0	0
		RIGHT			0			0			0	0
3	EB	LEFT			0			0			0	0
		THROUGH		30	15		30	8		20	79	102
		RIGHT			0			0			0	0
	WB	LEFT			0			0			0	0
		THROUGH	30		18	30		8	20		113	139
		RIGHT			0			0			0	0
	NB	LEFT	10		6	10		3	10		57	66
LEWIS RD		THROUGH			0			0			0	0
AT		RIGHT			0			0			0	0
OLD COUNTRY RD	SB	LEFT			0			0			0	0
		THROUGH			0			0			0	0
4		RIGHT			0			0			0	0
	EB	LEFT			0			0			0	0
		THROUGH		20	10		20	6		10	39	55
		RIGHT		10	5		10	3		10	39	47
	WB	LEFT			0			0			0	0
		THROUGH	20		12	20		5	10		57	74
		RIGHT			0			0			0	0
	NB	LEFT	5		3	5		1			0	4
LEWIS RD		THROUGH			0			0			0	0
AT		RIGHT			0			0			0	0
BOX TREE RD/OLD COUNTRY RD	SB	LEFT			0			0			0	0
		THROUGH			0			0			0	0
5		RIGHT	10		6	10		3	10		57	66
	EB	LEFT		10	5		10	3		10	39	47
		THROUGH		5	3		5	1			0	4
		RIGHT		5	3		5	1			0	4
	WB	LEFT			0			0			0	0
		THROUGH	5		3	5		1			0	4
		RIGHT			0			0			0	0

NELSON & POPE

SATURDAY PEAK HOUR
Project Name: LEWIS ROAD PRD
N&P Project No. 05105

108 SINGLE FAMILY HOMES - ITE LUC 210
18 HOLE GOLF COURSE - ITE LUC 430
BANQUET CENTER - ITE LUC 931

LOCATION	DIR	MVMT	SUBTOTAL NO BUILD VOLUME	TRAFFIC GENERATED BY PROPOSED PROJECT	TOTAL BUILD VOLUME
	NB	LEFT	0	0	0
		THROUGH	136	0	136
LEWIS RD		RIGHT	17	0	17
AT	SB	LEFT	230	514	744
QUOGUE-RIVERHEAD RD		THROUGH	140	0	140
		RIGHT	0	0	0
1	EB	LEFT	0	0	0
		THROUGH	0	0	0
		RIGHT	0	0	0
	WB	LEFT	20	0	20
		THROUGH	0	0	0
		RIGHT	286	370	656
	NB	LEFT	0	0	0
		THROUGH	0	0	0
LEWIS RD		RIGHT	0	0	0
AT	SB	LEFT	0	102	102
SITE ACCESS		THROUGH	0	0	0
		RIGHT	0	370	370
2	EB	LEFT	0	514	514
		THROUGH	264	0	264
		RIGHT	0	0	0
	WB	LEFT	0	0	0
		THROUGH	301	0	301
		RIGHT	0	139	139
	NB	LEFT	0	0	0
		THROUGH	0	0	0
LEWIS RD		RIGHT	0	0	0
AT	SB	LEFT	18	0	18
SPINNEY RD		THROUGH	0	0	0
		RIGHT	9	0	9
3	EB	LEFT	6	0	6
		THROUGH	259	102	361
		RIGHT	0	0	0
	WB	LEFT	0	0	0
		THROUGH	293	139	432
		RIGHT	20	0	20
	NB	LEFT	7	66	73
		THROUGH	0	0	0
LEWIS RD		RIGHT	59	0	59
AT	SB	LEFT	0	0	0
OLD COUNTRY RD		THROUGH	0	0	0
		RIGHT	0	0	0
4	EB	LEFT	0	0	0
		THROUGH	273	55	328
		RIGHT	6	47	53
	WB	LEFT	59	0	59
		THROUGH	307	74	381
		RIGHT	0	0	0
	NB	LEFT	22	4	26
		THROUGH	16	0	16
LEWIS RD		RIGHT	3	0	3
AT	SB	LEFT	10	0	10
BOX TREE RD/OLD COUNTRY RD		THROUGH	20	0	20
		RIGHT	232	66	298
5	EB	LEFT	178	47	225
		THROUGH	137	4	141
		RIGHT	19	4	23
	WB	LEFT	0	0	0
		THROUGH	115	4	119
		RIGHT	7	0	7

Level of Service Summary Tables

NELSON & POPE
ENGINEERS & SURVEYORS

LEVELS OF SERVICE AND DELAY - AM Peak										
			Existing		No Build		Proposed Project (118 Recreation Homes + 12 Workforce Units)		Alternative 3 (108 Single Family Homes + 18 Hole Golf Course + Banquet Facility)	
Unsignalized Intersections	**Approach**	**Movt.**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**
Quogue-Riverhead Road at	WB	L	19.8	C	20.8	C	22.3	C	26.9	D
Lewis Road		R	10.4	B	10.5	B	10.8	B	11.2	B
	SB	L	8.1	A	8.2	A	8.2	A	8.4	A
Spinney Road at	EB	LT	7.8	A	7.8	A	7.9	A	7.9	A
Lewis Road	SB	LR	12.6	B	12.8	B	13.0	B	13.5	B
Old Coutnry Road at	WB	L	8.0	A	8.0	A	8.1	A	8.1	A
Lewis Road	NB	LR	10.7	B	11.0	B	11.3	B	12.0	B
Old Country Road/Box Tree Road at	EB	LTR	8.0	A	8.0	A	8.1	A	8.1	A
Lewis Road	WB	LTR	7.4	A	7.4	A	7.4	A	7.5	A
	NB	LTR	21.6	C	23.2	C	24.5	C	26.0	D
	SB	LTR	11.5	B	12.0	B	12.1	B	12.3	B
Site Access at	EB	LT	-	-	-	-	7.8	A	8.0	A
Lewis Road	SB	LR	-	-	-	-	10.6	B	11.9	B

LEVELS OF SERVICE AND DELAY - PM Peak										
			Existing		No Build		Proposed Project (118 Recreation Homes + 12 Workforce Units)		Alternative 3 (108 Single Family Homes + 18 Hole Golf Course + Banquet Facility)	
Unsignalized Intersections	**Approach**	**Movt.**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**
Quogue-Riverhead Road at	WB	L	22.3	C	23.8	C	25.0	C	231.4	F
Lewis Road		R	11.9	B	12.2	B	12.6	B	19.3	C
	SB	L	8.5	A	8.6	A	8.7	A	12.0	B
Spinney Road at	EB	LT	7.8	A	7.8	A	7.9	A	8.2	A
Lewis Road	SB	LR	11.4	B	11.6	B	11.7	B	13.4	B
Old Coutnry Road at	WB	L	7.9	A	8.0	A	8.0	A	8.2	A
Lewis Road	NB	LR	11.0	B	11.2	B	11.4	B	16.9	C
Old Country Road/Box Tree Road at	EB	LTR	7.8	A	7.8	A	7.9	A	7.9	A
Lewis Road	WB	LTR	7.4	A	7.4	A	7.4	A	7.4	A
	NB	LTR	23.5	C	25.1	D	26.0	D	33.6	D
	SB	LTR	12.2	B	12.6	B	12.7	B	13.7	B
Site Access at	EB	LT	-	-	-	-	7.9	A	10.7	B
Lewis Road	SB	LR	-	-	-	-	11.6	B	358.8	F

LEVELS OF SERVICE AND DELAY - Saturday Peak										
			Existing		No Build		Proposed Project (118 Recreation Homes + 12 Workforce Units)		Alternative 3 (108 Single Family Homes + 18 Hole Golf Course + Banquet Facility)	
Unsignalized Intersections	**Approach**	**Movt.**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**
Quogue-Riverhead Road at	WB	L	16.7	C	17.4	C	18.7	C	173.3	F
Lewis Road		R	10.9	B	11.1	B	11.4	B	20.7	C
	SB	L	8.0	A	8.0	A	8.1	A	10.5	B
Spinney Road at	EB	LT	7.9	A	7.9	A	8.0	A	8.3	A
Lewis Road	SB	LR	12.5	B	12.8	B	13.0	B	16.0	C
Old Coutnry Road at	WB	L	7.9	A	8.0	A	8.0	A	8.3	A
Lewis Road	NB	LR	10.7	B	11.0	B	11.4	B	19.6	C
Old Country Road/Box Tree Road at	EB	LTR	7.8	A	7.8	A	7.8	A	7.9	A
Lewis Road	WB	LTR	7.5	A	7.5	A	7.5	A	7.5	A
	NB	LTR	21.5	C	22.7	C	24.1	C	34.0	D
	SB	LTR	12.0	B	12.4	B	12.5	B	13.9	B
Site Access at	EB	LT	-	-	-	-	8.0	A	11.9	B
Lewis Road	SB	LR	-	-	-	-	11.8	B	1202.1	F

Capacity Analysis Worksheets

NELSON & POPE
ENGINEERS & SURVEYORS

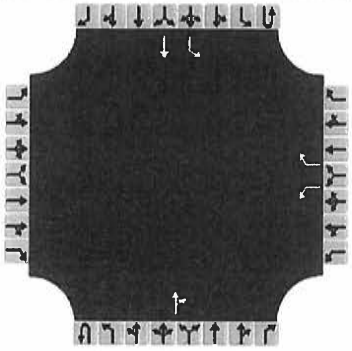
Existing Condition Capacity Analysis Worksheets

NELSON & POPE
ENGINEERS & SURVEYORS

HCS 2010 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	MCM	Intersection	Lewis Rd @ CR 104
Agency/Co.	Nelson & Pope	Jurisdiction	
Date Performed	3/21/18	East/West Street	Lewis Road
Analysis Year	Existing 2018	North/South Street	CR 104
Time Analyzed	AM Peak	Peak Hour Factor	0.87
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Lewis Rd PRD		

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		1	0	1	0	0	1	0	0	1	1	0
Configuration						L		R				TR		L	T	
Volume, V (veh/h)						5		205			110	5		219	250	
Percent Heavy Vehicles (%)						0		9						9		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						6		236						252		
Capacity, c (veh/h)						249		903						1412		
v/c Ratio						0.02		0.26						0.18		
95% Queue Length, Q_{95} (veh)						0.1		1.0						0.6		
Control Delay (s/veh)						19.8		10.4						8.1		
Level of Service, LOS						C		B						A		
Approach Delay (s/veh)						10.6								3.8		
Approach LOS						B										

HCS 2010 Two-Way Stop-Control Report

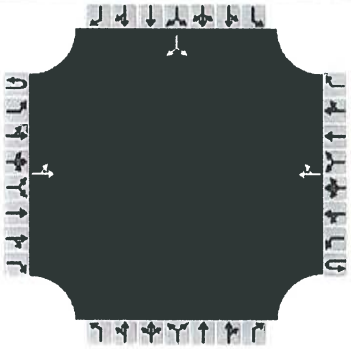
General Information

Analyst	
Agency/Co.	Nelson & Pope
Date Performed	3/21/18
Analysis Year	Existing 2018
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	Lewis Rd PRD

Site Information

Intersection	Spinney Rd @ Lewis Rd
Jurisdiction	
East/West Street	Lewis Rd
North/South Street	Spinney Rd
Peak Hour Factor	0.83
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	0
Configuration		LT						TR							LR	
Volume, V (veh/h)		5	183				226	7						15		1
Percent Heavy Vehicles (%)		0												27		0
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		6													19	
Capacity, c (veh/h)		1294													491	
v/c Ratio		0.00													0.04	
95% Queue Length, Q_{95} (veh)		0.0													0.1	
Control Delay (s/veh)		7.8													12.6	
Level of Service, LOS		A													B	
Approach Delay (s/veh)		0.2												12.6		
Approach LOS														B		

HCS 2010 Two-Way Stop-Control Report

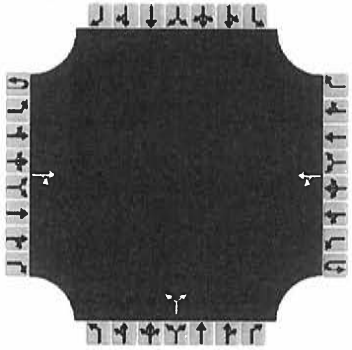
General Information

Analyst	
Agency/Co.	Nelson & Pope
Date Performed	3/21/18
Analysis Year	Existing 2018
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	Lewis Rd PRD

Site Information

Intersection	Lewis Rd @ Old Country Rd
Jurisdiction	
East/West Street	Lewis Rd
North/South Street	Old Country Road
Peak Hour Factor	0.82
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	0
Configuration				TR		LT					LR					
Volume, V (veh/h)			187	13		59	194			6		71				
Percent Heavy Vehicles (%)						12				17		14				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						72					94					
Capacity, c (veh/h)						1272					725					
v/c Ratio						0.06					0.13					
95% Queue Length, Q_{95} (veh)						0.2					0.4					
Control Delay (s/veh)						8.0					10.7					
Level of Service, LOS						A					B					
Approach Delay (s/veh)						2.3					10.7					
Approach LOS											B					

HCS 2010 Two-Way Stop-Control Report

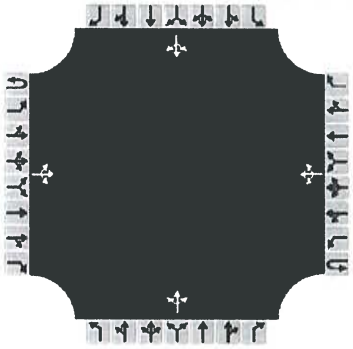
General Information

Analyst	
Agency/Co.	Nelson & Pope
Date Performed	3/21/18
Analysis Year	Existing 2018
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	Lewis Rd PRD

Site Information

Intersection	Lewis Rd@Box Tree-Old Country
Jurisdiction	
East/West Street	Lewis Rd
North/South Street	Box Tree Rd-Old Country Rd
Peak Hour Factor	0.72
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume, V (veh/h)		157	67	14		2	75	10		13	20	2		4	9	180
Percent Heavy Vehicles (%)		8				0				0	5	0		25	0	7
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

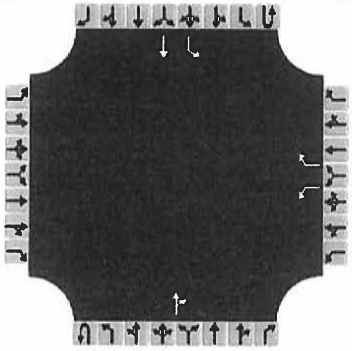
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		218				3					49				268	
Capacity, c (veh/h)		1416				1490					265				817	
v/c Ratio		0.15				0.00					0.18				0.33	
95% Queue Length, Q_{95} (veh)		0.5				0.0					0.7				1.4	
Control Delay (s/veh)		8.0				7.4					21.6				11.5	
Level of Service, LOS		A				A					C				B	
Approach Delay (s/veh)		5.7				0.2				21.6				11.5		
Approach LOS										C				B		

HCS 2010 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	MCM	Intersection	Lewis Rd @ CR 104
Agency/Co.	Nelson & Pope	Jurisdiction	
Date Performed	3/21/18	East/West Street	Lewis Road
Analysis Year	Existing 2018	North/South Street	CR 104
Time Analyzed	PM Peak	Peak Hour Factor	0.90
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Lewis Road PRD		

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		1	0	1	0	0	1	0	0	1	1	0
Configuration						L		R				TR		L	T	
Volume, V (veh/h)						12		250			214	9		263	128	
Percent Heavy Vehicles (%)						0		1						2		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

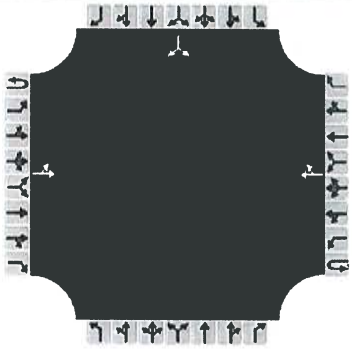
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						13		278						292		
Capacity, c (veh/h)						221		798						1317		
v/c Ratio						0.06		0.35						0.22		
95% Queue Length, Q_{95} (veh)						0.2		1.6						0.8		
Control Delay (s/veh)						22.3		11.9						8.5		
Level of Service, LOS						C		B						A		
Approach Delay (s/veh)						12.4								5.7		
Approach LOS						B										

HCS 2010 Two-Way Stop-Control Report

General Information		Site Information	
Analyst		Intersection	Spinney Rd @ Lewis Rd
Agency/Co.	Nelson & Pope	Jurisdiction	
Date Performed	3/21/18	East/West Street	Lewis Rd
Analysis Year	Existing 2018	North/South Street	Spinney Rd
Time Analyzed	PM Peak	Peak Hour Factor	0.94
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Lewis Road PRD		

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	0
Configuration		LT						TR							LR	
Volume, V (veh/h)		5	291				255	16						10		12
Percent Heavy Vehicles (%)		0												0		0
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		5													24	
Capacity, c (veh/h)		1286													590	
v/c Ratio		0.00													0.04	
95% Queue Length, Q_{95} (veh)		0.0													0.1	
Control Delay (s/veh)		7.8													11.4	
Level of Service, LOS		A													B	
Approach Delay (s/veh)		0.2												11.4		
Approach LOS														B		

HCS 2010 Two-Way Stop-Control Report

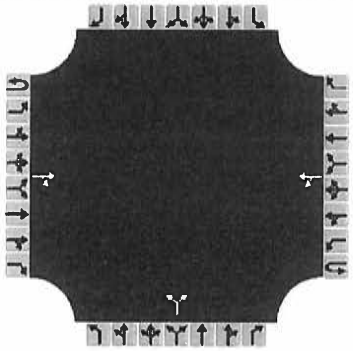
General Information

Analyst	
Agency/Co.	Nelson & Pope
Date Performed	3/21/18
Analysis Year	Existing 2018
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	Lewis Road PRD

Site Information

Intersection	Lewis Rd @ Old Country Rd
Jurisdiction	
East/West Street	Lewis Rd
North/South Street	Old Country Road
Peak Hour Factor	0.96
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	0
Configuration				TR		LT					LR					
Volume, V (veh/h)			278	4		50	278			9		65				
Percent Heavy Vehicles (%)						0				0		2				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						52					77					
Capacity, c (veh/h)						1279					681					
v/c Ratio						0.04					0.11					
95% Queue Length, Q_{95} (veh)						0.1					0.4					
Control Delay (s/veh)						7.9					11.0					
Level of Service, LOS						A					B					
Approach Delay (s/veh)						1.5				11.0						
Approach LOS										B						

HCS 2010 Two-Way Stop-Control Report

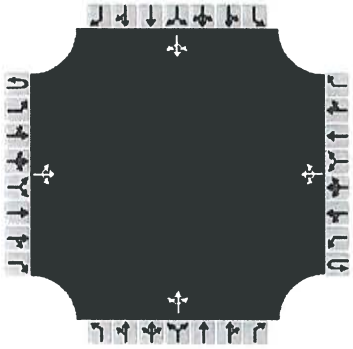
General Information

Analyst	
Agency/Co.	Nelson & Pope
Date Performed	3/21/18
Analysis Year	Existing 2018
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	Lewis Road PRD

Site Information

Intersection	Lewis Rd@Box Tree-Old Country
Jurisdiction	
East/West Street	Lewis Rd
North/South Street	Box Tree Rd-Old Country Rd
Peak Hour Factor	0.97
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume, V (veh/h)		237	90	19		4	73	11		20	13	3		12	20	237
Percent Heavy Vehicles (%)		1				0				0	8	0		0	0	1
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		244				4					37				277	
Capacity, c (veh/h)		1523				1489					232				779	
v/c Ratio		0.16				0.00					0.16				0.36	
95% Queue Length, Q_{95} (veh)		0.6				0.0					0.6				1.6	
Control Delay (s/veh)		7.8				7.4					23.5				12.2	
Level of Service, LOS		A				A					C				B	
Approach Delay (s/veh)		5.8				0.4					23.5				12.2	
Approach LOS											C				B	

HCS 2010 Two-Way Stop-Control Report

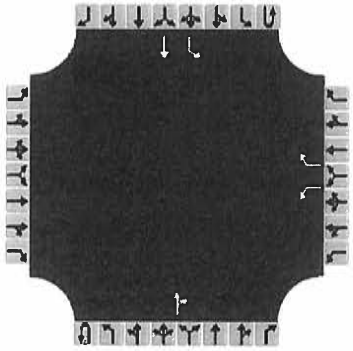
General Information

Analyst	
Agency/Co.	Nelson & Pope
Date Performed	3/21/18
Analysis Year	Existing 2018
Time Analyzed	Saturday Peak
Intersection Orientation	North-South
Project Description	Lewis Road PRD

Site Information

Intersection	Lewis Rd @ CR 104
Jurisdiction	
East/West Street	Lewis Road
North/South Street	CR 104
Peak Hour Factor	0.97
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		1	0	1	0	0	1	0	0	1	1	0
Configuration						L		R				TR		L	T	
Volume, V (veh/h)						19		275			130	16		221	134	
Percent Heavy Vehicles (%)						0		6						2		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

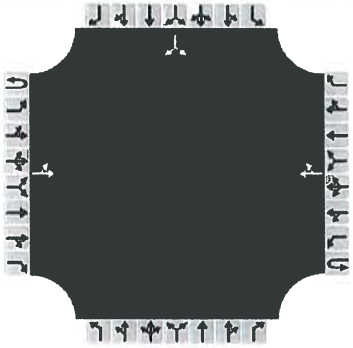
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						20		284						228		
Capacity, c (veh/h)						327		896						1430		
v/c Ratio						0.06		0.32						0.16		
95% Queue Length, Q_{95} (veh)						0.2		1.4						0.6		
Control Delay (s/veh)						16.7		10.9						8.0		
Level of Service, LOS						C		B						A		
Approach Delay (s/veh)						11.3								5.0		
Approach LOS						B										

HCS 2010 Two-Way Stop-Control Report

General Information		Site Information	
Analyst		Intersection	Spinney Rd @ Lewis Rd
Agency/Co.	Nelson & Pope	Jurisdiction	
Date Performed	3/21/18	East/West Street	Lewis Rd
Analysis Year	Existing 2018	North/South Street	Spinney Rd
Time Analyzed	Saturday Peak	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Lewis Road PRD		

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	0
Configuration		LT						TR							LR	
Volume, V (veh/h)		5	249				289	19						17		8
Percent Heavy Vehicles (%)		0												14		0
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		5													27	
Capacity, c (veh/h)		1236													505	
v/c Ratio		0.00													0.05	
95% Queue Length, Q_{95} (veh)		0.0													0.2	
Control Delay (s/veh)		7.9													12.5	
Level of Service, LOS		A													B	
Approach Delay (s/veh)		0.2												12.5		
Approach LOS														B		

HCS 2010 Two-Way Stop-Control Report

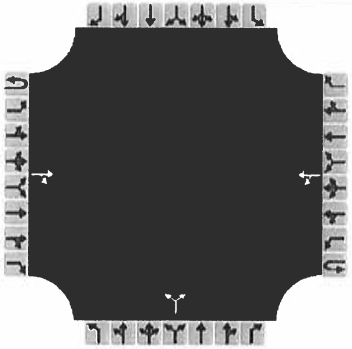
General Information

Analyst	
Agency/Co.	Nelson & Pope
Date Performed	3/21/18
Analysis Year	Existing 2018
Time Analyzed	Saturday Peak
Intersection Orientation	East-West
Project Description	Lewis Road PRD

Site Information

Intersection	Lewis Rd @ Old Country Rd
Jurisdiction	
East/West Street	Lewis Rd
North/South Street	Old Country Road
Peak Hour Factor	0.93
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	0
Configuration				TR		LT					LR					
Volume, V (veh/h)			262	5		56	295			6		56				
Percent Heavy Vehicles (%)						2				0		2				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized			No				No				No				No	
Median Type/Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

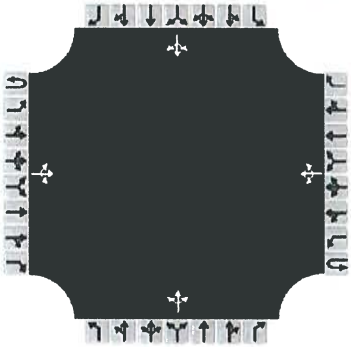
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						60					66					
Capacity, c (veh/h)						1287					695					
v/c Ratio						0.05					0.09					
95% Queue Length, Q_{95} (veh)						0.1					0.3					
Control Delay (s/veh)						7.9					10.7					
Level of Service, LOS						A					B					
Approach Delay (s/veh)						1.6					10.7					
Approach LOS											B					

HCS 2010 Two-Way Stop-Control Report

General Information		Site Information	
Analyst		Intersection	Lewis Rd@Box Tree-Old Country
Agency/Co.	Nelson & Pope	Jurisdiction	
Date Performed	3/21/18	East/West Street	Lewis Rd
Analysis Year	Existing 2018	North/South Street	Box Tree Rd-Old Country Rd
Time Analyzed	Saturday Peak	Peak Hour Factor	0.94
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Lewis Road PRD		

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume, V (veh/h)		171	131	18		0	110	6		21	15	2		9	19	223
Percent Heavy Vehicles (%)		3				0				0	0	0		0	0	4
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		182				0					40				267	
Capacity, c (veh/h)		1477				1434					259				782	
v/c Ratio		0.12				0.00					0.15				0.34	
95% Queue Length, Q_{95} (veh)		0.4				0.0					0.5				1.5	
Control Delay (s/veh)		7.8				7.5					21.5				12.0	
Level of Service, LOS		A				A					C				B	
Approach Delay (s/veh)		4.7				0.0					21.5				12.0	
Approach LOS											C				B	

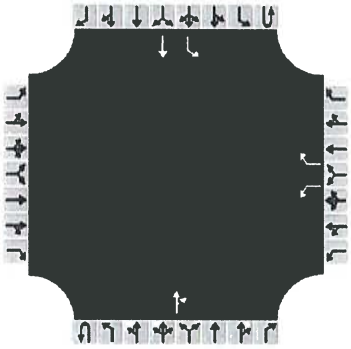
No Build Condition Capacity Analysis Worksheets

NELSON & POPE
ENGINEERS & SURVEYORS

HCS 2010 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	MCM	Intersection	Lewis Rd @ CR 104
Agency/Co.	Nelson & Pope	Jurisdiction	
Date Performed	3/21/18	East/West Street	Lewis Road
Analysis Year	No Build 2021	North/South Street	CR 104
Time Analyzed	AM Peak	Peak Hour Factor	0.87
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Lewis Rd PRD		

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		1	0	1	0	0	1	0	0	1	1	0
Configuration						L		R				TR		L	T	
Volume, V (veh/h)						6		213			115	6		228	260	
Percent Heavy Vehicles (%)						0		9						9		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						7		245						262		
Capacity, c (veh/h)						234		895						1403		
v/c Ratio						0.03		0.27						0.19		
95% Queue Length, Q_{95} (veh)						0.1		1.1						0.7		
Control Delay (s/veh)						20.8		10.5						8.2		
Level of Service, LOS						C		B						A		
Approach Delay (s/veh)						10.8								3.8		
Approach LOS						B										

HCS 2010 Two-Way Stop-Control Report

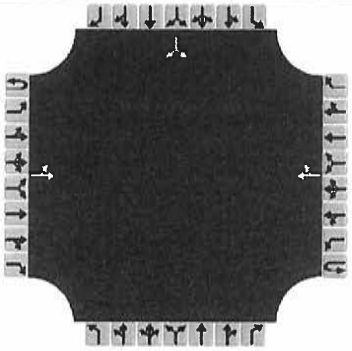
General Information

Analyst	
Agency/Co.	Nelson & Pope
Date Performed	3/21/18
Analysis Year	No Build 2021
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	Lewis Rd PRD

Site Information

Intersection	Spinney Rd @ Lewis Rd
Jurisdiction	
East/West Street	Lewis Rd
North/South Street	Spinney Rd
Peak Hour Factor	0.83
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	0
Configuration		LT						TR							LR	
Volume, V (veh/h)		6	191				235	8						16		2
Percent Heavy Vehicles (%)		0												27		0
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		7													21	
Capacity, c (veh/h)		1280													483	
v/c Ratio		0.01													0.04	
95% Queue Length, Q_{95} (veh)		0.0													0.1	
Control Delay (s/veh)		7.8													12.8	
Level of Service, LOS		A													B	
Approach Delay (s/veh)		0.3												12.8		
Approach LOS														B		

HCS 2010 Two-Way Stop-Control Report

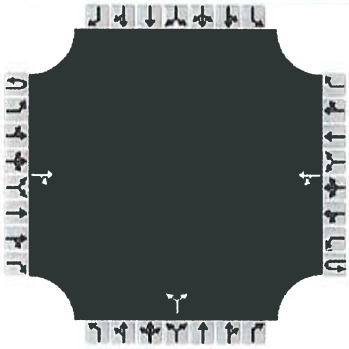
General Information

Analyst	
Agency/Co.	Nelson & Pope
Date Performed	3/21/18
Analysis Year	No Build 2021
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	Lewis Rd PRD

Site Information

Intersection	Lewis Rd @ Old Country Rd
Jurisdiction	
East/West Street	Lewis Rd
North/South Street	Old Country Road
Peak Hour Factor	0.82
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	0
Configuration				TR		LT					LR					
Volume, V (veh/h)			195	14		62	202			7		74				
Percent Heavy Vehicles (%)						12				17		14				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						76					99					
Capacity, c (veh/h)						1260					702					
v/c Ratio						0.06					0.14					
95% Queue Length, Q_{95} (veh)						0.2					0.5					
Control Delay (s/veh)						8.0					11.0					
Level of Service, LOS						A					B					
Approach Delay (s/veh)						2.3					11.0					
Approach LOS											B					

HCS 2010 Two-Way Stop-Control Report

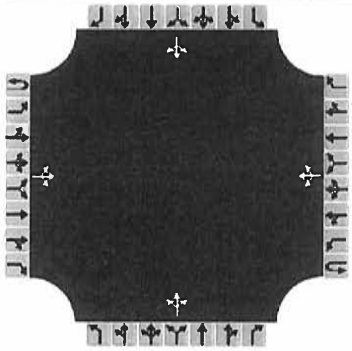
General Information

Analyst	
Agency/Co.	Nelson & Pope
Date Performed	3/21/18
Analysis Year	No Build 2021
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	Lewis Rd PRD

Site Information

Intersection	Lewis Rd@Box Tree-Old Country
Jurisdiction	
East/West Street	Lewis Rd
North/South Street	Box Tree Rd-Old Country Rd
Peak Hour Factor	0.72
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume, V (veh/h)		164	70	15		3	78	11		14	21	3		5	10	188
Percent Heavy Vehicles (%)		8				0				0	5	0		25	0	7
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

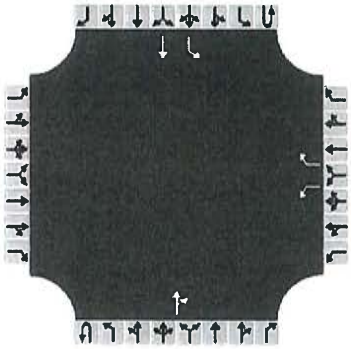
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		228				4					52				282	
Capacity, c (veh/h)		1410				1483					249				792	
v/c Ratio		0.16				0.00					0.21				0.36	
95% Queue Length, Q_{95} (veh)		0.6				0.0					0.8				1.6	
Control Delay (s/veh)		8.0				7.4					23.2				12.0	
Level of Service, LOS		A				A					C				B	
Approach Delay (s/veh)		5.8				0.3				23.2				12.0		
Approach LOS										C				B		

HCS 2010 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	MCM	Intersection	Lewis Rd @ CR 104
Agency/Co.	Nelson & Pope	Jurisdiction	
Date Performed	3/21/18	East/West Street	Lewis Road
Analysis Year	No Build 2021	North/South Street	CR 104
Time Analyzed	PM Peak	Peak Hour Factor	0.90
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Lewis Road PRD		

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		1	0	1	0	0	1	0	0	1	1	0
Configuration						L		R				TR		L	T	
Volume, V (veh/h)						13		260			223	10		274	133	
Percent Heavy Vehicles (%)						0		1						2		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						14		289						304		
Capacity, c (veh/h)						206		787						1305		
v/c Ratio						0.07		0.37						0.23		
95% Queue Length, Q_{95} (veh)						0.2		1.7						0.9		
Control Delay (s/veh)						23.8		12.2						8.6		
Level of Service, LOS						C		B						A		
Approach Delay (s/veh)						12.7								5.8		
Approach LOS						B										

HCS 2010 Two-Way Stop-Control Report

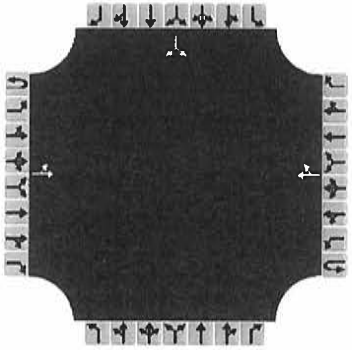
General Information

Analyst	
Agency/Co.	Nelson & Pope
Date Performed	3/21/18
Analysis Year	No Build 2021
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	Lewis Road PRD

Site Information

Intersection	Spinney Rd @ Lewis Rd
Jurisdiction	
East/West Street	Lewis Rd
North/South Street	Spinney Rd
Peak Hour Factor	0.94
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	0
Configuration		LT						TR							LR	
Volume, V (veh/h)		6	303				265	17						11		13
Percent Heavy Vehicles (%)		0												0		0
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		6													26	
Capacity, c (veh/h)		1273													574	
v/c Ratio		0.00													0.05	
95% Queue Length, Q_{95} (veh)		0.0													0.1	
Control Delay (s/veh)		7.8													11.6	
Level of Service, LOS		A													B	
Approach Delay (s/veh)		0.2												11.6		
Approach LOS														B		

HCS 2010 Two-Way Stop-Control Report

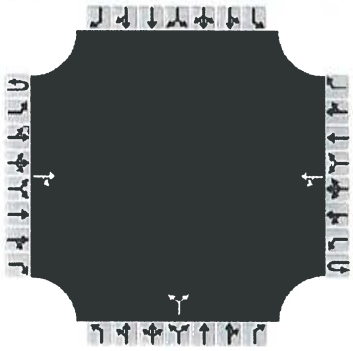
General Information

Analyst	
Agency/Co.	Nelson & Pope
Date Performed	3/21/18
Analysis Year	No Build 2021
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	Lewis Road PRD

Site Information

Intersection	Lewis Rd @ Old Country Rd
Jurisdiction	
East/West Street	Lewis Rd
North/South Street	Old Country Road
Peak Hour Factor	0.96
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	0
Configuration				TR		LT					LR					
Volume, V (veh/h)			289	5		52	289			10		68				
Percent Heavy Vehicles (%)						0				0		2				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						54					81					
Capacity, c (veh/h)						1266					664					
v/c Ratio						0.04					0.12					
95% Queue Length, Q_{95} (veh)						0.1					0.4					
Control Delay (s/veh)						8.0					11.2					
Level of Service, LOS						A					B					
Approach Delay (s/veh)						1.6				11.2						
Approach LOS										B						

HCS 2010 Two-Way Stop-Control Report

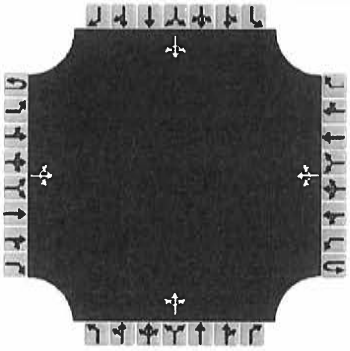
General Information

Analyst	
Agency/Co.	Nelson & Pope
Date Performed	3/21/18
Analysis Year	No Build 2021
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	Lewis Road PRD

Site Information

Intersection	Lewis Rd@Box Tree-Old Country
Jurisdiction	
East/West Street	Lewis Rd
North/South Street	Box Tree Rd-Old Country Rd
Peak Hour Factor	0.97
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume, V (veh/h)		247	94	20		5	76	12		21	14	4		13	21	247
Percent Heavy Vehicles (%)		1				0				0	8	0		0	0	1
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		255				5					40				290	
Capacity, c (veh/h)		1518				1483					218				760	
v/c Ratio		0.17				0.00					0.18				0.38	
95% Queue Length, Q_{95} (veh)		0.6				0.0					0.7				1.8	
Control Delay (s/veh)		7.8				7.4					25.1				12.6	
Level of Service, LOS		A				A					D				B	
Approach Delay (s/veh)		5.8				0.4				25.1				12.6		
Approach LOS										D				B		

HCS 2010 Two-Way Stop-Control Report

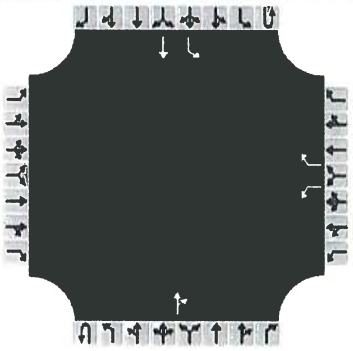
General Information

Analyst	
Agency/Co.	Nelson & Pope
Date Performed	3/21/18
Analysis Year	No Build 2021
Time Analyzed	Saturday Peak
Intersection Orientation	North-South
Project Description	Lewis Road PRD

Site Information

Intersection	Lewis Rd @ CR 104
Jurisdiction	
East/West Street	Lewis Road
North/South Street	CR 104
Peak Hour Factor	0.97
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		1	0	1	0	0	1	0	0	1	1	0
Configuration						L		R				TR		L	T	
Volume, V (veh/h)						20		286			136	17		230	140	
Percent Heavy Vehicles (%)						0		6						2		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						21		295						237		
Capacity, c (veh/h)						311		888						1421		
v/c Ratio						0.07		0.33						0.17		
95% Queue Length, Q_{95} (veh)						0.2		1.5						0.6		
Control Delay (s/veh)						17.4		11.1						8.0		
Level of Service, LOS						C		B						A		
Approach Delay (s/veh)						11.5								5.0		
Approach LOS						B										

HCS 2010 Two-Way Stop-Control Report

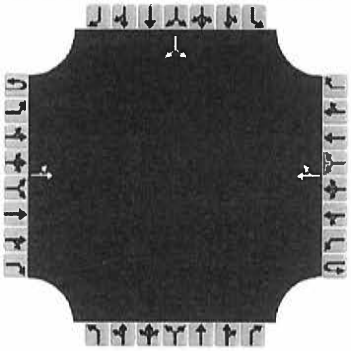
General Information

Analyst	
Agency/Co.	Nelson & Pope
Date Performed	3/21/18
Analysis Year	No Build 2021
Time Analyzed	Saturday Peak
Intersection Orientation	East-West
Project Description	Lewis Road PRD

Site Information

Intersection	Spinney Rd @ Lewis Rd
Jurisdiction	
East/West Street	Lewis Rd
North/South Street	Spinney Rd
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	0
Configuration		LT						TR							LR	
Volume, V (veh/h)		6	259				293	20						18		9
Percent Heavy Vehicles (%)		0												14		0
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		7													30	
Capacity, c (veh/h)		1231													494	
v/c Ratio		0.01													0.06	
95% Queue Length, Q_{95} (veh)		0.0													0.2	
Control Delay (s/veh)		7.9													12.8	
Level of Service, LOS		A													B	
Approach Delay (s/veh)		0.2												12.8		
Approach LOS														B		

HCS 2010 Two-Way Stop-Control Report

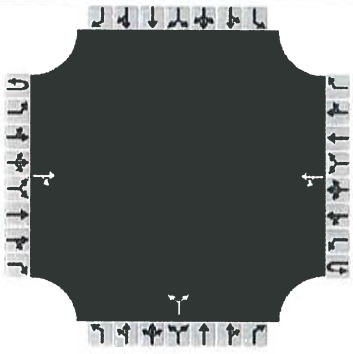
General Information

Analyst	
Agency/Co.	Nelson & Pope
Date Performed	3/21/18
Analysis Year	No Build 2021
Time Analyzed	Saturday Peak
Intersection Orientation	East-West
Project Description	Lewis Road PRD

Site Information

Intersection	Lewis Rd @ Old Country Rd
Jurisdiction	
East/West Street	Lewis Rd
North/South Street	Old Country Road
Peak Hour Factor	0.93
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	0
Configuration				TR		LT					LR					
Volume, V (veh/h)			273	6		59	307			7		59				
Percent Heavy Vehicles (%)						2				0		2				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						63					71					
Capacity, c (veh/h)						1273					666					
v/c Ratio						0.05					0.11					
95% Queue Length, Q_{95} (veh)						0.2					0.4					
Control Delay (s/veh)						8.0					11.0					
Level of Service, LOS						A					B					
Approach Delay (s/veh)						1.7				11.0						
Approach LOS										B						

HCS 2010 Two-Way Stop-Control Report

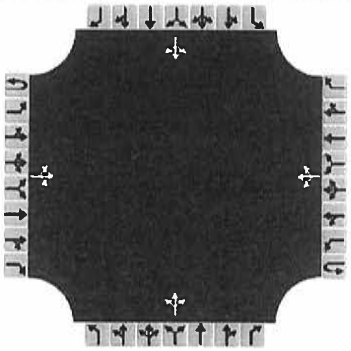
General Information

Analyst	
Agency/Co.	Nelson & Pope
Date Performed	3/21/18
Analysis Year	No Build 2021
Time Analyzed	Saturday Peak
Intersection Orientation	East-West
Project Description	Lewis Road PRD

Site Information

Intersection	Lewis Rd@Box Tree-Old Country
Jurisdiction	
East/West Street	Lewis Rd
North/South Street	Box Tree Rd-Old Country Rd
Peak Hour Factor	0.94
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume, V (veh/h)		178	137	19		0	115	7		22	16	3		10	20	232
Percent Heavy Vehicles (%)		3				0				0	0	0		0	0	4
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		189				0					43				279	
Capacity, c (veh/h)		1469				1425					246				765	
v/c Ratio		0.13				0.00					0.17				0.36	
95% Queue Length, Q_{95} (veh)		0.4				0.0					0.6				1.7	
Control Delay (s/veh)		7.8				7.5					22.7				12.4	
Level of Service, LOS		A				A					C				B	
Approach Delay (s/veh)		4.7				0.0					22.7				12.4	
Approach LOS											C				B	

Build Condition Capacity Analysis Worksheets: Lewis Road PRD (Proposed Action)

NELSON & POPE
ENGINEERS & SURVEYORS

HCS 2010 Two-Way Stop-Control Report

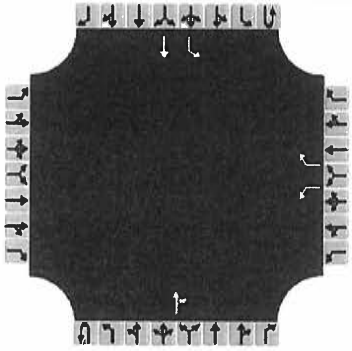
General Information

Analyst	RECREATION HOMES
Agency/Co.	Nelson & Pope
Date Performed	4/19/19
Analysis Year	Build 2021
Time Analyzed	AM Peak
Intersection Orientation	North-South
Project Description	Lewis Rd PRD

Site Information

Intersection	Lewis Rd @ CR 104
Jurisdiction	
East/West Street	Lewis Road
North/South Street	CR 104
Peak Hour Factor	0.87
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		1	0	1	0	0	1	0	0	1	1	0
Configuration						L		R				TR		L	T	
Volume, V (veh/h)						6		236			115	6		248	260	
Percent Heavy Vehicles (%)						0		9						9		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

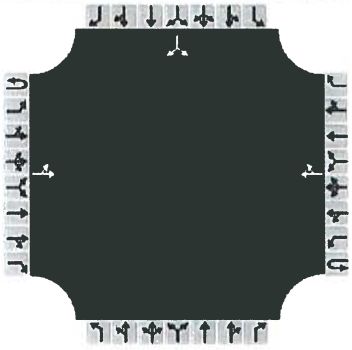
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						7		271						285		
Capacity, c (veh/h)						215		895						1403		
v/c Ratio						0.03		0.30						0.20		
95% Queue Length, Q_{95} (veh)						0.1		1.3						0.8		
Control Delay (s/veh)						22.3		10.8						8.2		
Level of Service, LOS						C		B						A		
Approach Delay (s/veh)						11.1								4.0		
Approach LOS						B										

HCS 2010 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	RECREATION HOMES	Intersection	Site Access @ Lewis Rd
Agency/Co.	Nelson & Pope	Jurisdiction	
Date Performed	4/19/19	East/West Street	Lewis Rd
Analysis Year	Build 2021	North/South Street	Site Access
Time Analyzed	AM Peak	Peak Hour Factor	0.90
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Lewis Rd PRD		

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	0
Configuration		LT						TR							LR	
Volume, V (veh/h)		20	196				236	8						9		23
Percent Heavy Vehicles (%)		2												2		2
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		22													36	
Capacity, c (veh/h)		1304													675	
v/c Ratio		0.02													0.05	
95% Queue Length, Q_{95} (veh)		0.1													0.2	
Control Delay (s/veh)		7.8													10.6	
Level of Service, LOS		A													B	
Approach Delay (s/veh)		0.9												10.6		
Approach LOS														B		

HCS 2010 Two-Way Stop-Control Report

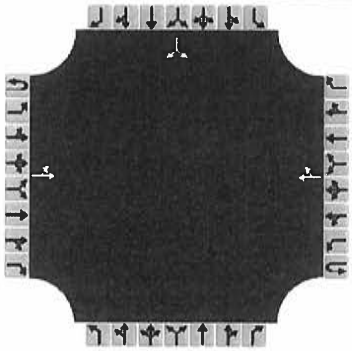
General Information

Analyst	RECREATION HOMES
Agency/Co.	Nelson & Pope
Date Performed	4/19/19
Analysis Year	Build 2021
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	Lewis Rd PRD

Site Information

Intersection	Spinney Rd @ Lewis Rd
Jurisdiction	
East/West Street	Lewis Rd
North/South Street	Spinney Rd
Peak Hour Factor	0.83
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	0
Configuration		LT						TR							LR	
Volume, V (veh/h)		6	200				243	8						16		2
Percent Heavy Vehicles (%)		0												27		0
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		7													21	
Capacity, c (veh/h)		1270													469	
v/c Ratio		0.01													0.04	
95% Queue Length, Q_{95} (veh)		0.0													0.1	
Control Delay (s/veh)		7.9													13.0	
Level of Service, LOS		A													B	
Approach Delay (s/veh)		0.3												13.0		
Approach LOS														B		

HCS 2010 Two-Way Stop-Control Report

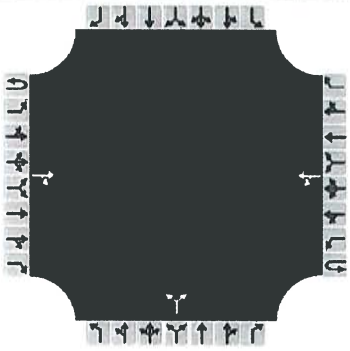
General Information

Analyst	RECREATION HOMES
Agency/Co.	Nelson & Pope
Date Performed	4/19/19
Analysis Year	Build 2021
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	Lewis Rd PRD

Site Information

Intersection	Lewis Rd @ Old Country Rd
Jurisdiction	
East/West Street	Lewis Rd
North/South Street	Old Country Road
Peak Hour Factor	0.82
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	0
Configuration				TR		LT					LR					
Volume, V (veh/h)			202	17		62	207			10		74				
Percent Heavy Vehicles (%)						12				17		14				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						76					102					
Capacity, c (veh/h)						1247					676					
v/c Ratio						0.06					0.15					
95% Queue Length, Q_{95} (veh)						0.2					0.5					
Control Delay (s/veh)						8.1					11.3					
Level of Service, LOS						A					B					
Approach Delay (s/veh)						2.3					11.3					
Approach LOS											B					

HCS 2010 Two-Way Stop-Control Report

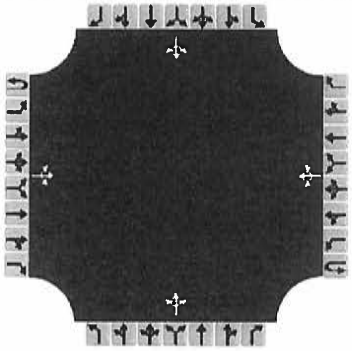
General Information

Analyst	RECREATION HOMES
Agency/Co.	Nelson & Pope
Date Performed	4/19/19
Analysis Year	Build 2021
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	Lewis Rd PRD

Site Information

Intersection	Lewis Rd@Box Tree-Old Country
Jurisdiction	
East/West Street	Lewis Rd
North/South Street	Box Tree Rd-Old Country Rd
Peak Hour Factor	0.72
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume, V (veh/h)		167	71	16		3	79	11		15	21	3		5	10	191
Percent Heavy Vehicles (%)		8				0				0	5	0		25	0	7
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		232				4					54				286	
Capacity, c (veh/h)		1408				1479					238				789	
v/c Ratio		0.16				0.00					0.23				0.36	
95% Queue Length, Q_{95} (veh)		0.6				0.0					0.8				1.7	
Control Delay (s/veh)		8.1				7.4					24.5				12.1	
Level of Service, LOS		A				A					C				B	
Approach Delay (s/veh)		5.8				0.3					24.5				12.1	
Approach LOS											C				B	

HCS 2010 Two-Way Stop-Control Report

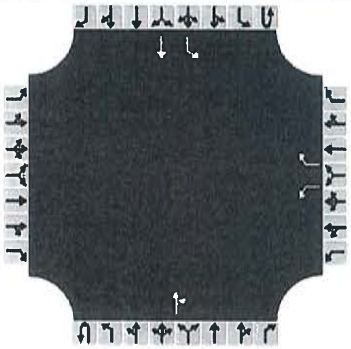
General Information

Analyst	RECREATION HOMES
Agency/Co.	Nelson & Pope
Date Performed	4/19/19
Analysis Year	Build 2021
Time Analyzed	PM Peak
Intersection Orientation	North-South
Project Description	Lewis Rd PRD

Site Information

Intersection	Lewis Rd @ CR 104
Jurisdiction	
East/West Street	Lewis Road
North/South Street	CR 104
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		1	0	1	0	0	1	0	0	1	1	0
Configuration						L		R				TR		L	T	
Volume, V (veh/h)						13		283			223	10		294	133	
Percent Heavy Vehicles (%)						0		1						2		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						14		314						327		
Capacity, c (veh/h)						194		787						1305		
v/c Ratio						0.07		0.40						0.25		
95% Queue Length, Q_{95} (veh)						0.2		1.9						1.0		
Control Delay (s/veh)						25.0		12.6						8.7		
Level of Service, LOS						C		B						A		
Approach Delay (s/veh)						13.1								6.0		
Approach LOS						B										

HCS 2010 Two-Way Stop-Control Report

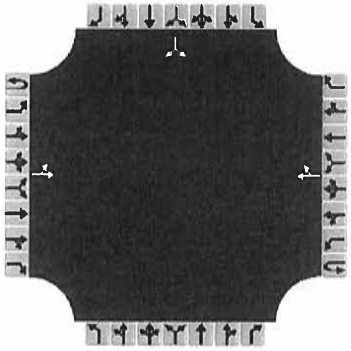
General Information

Analyst	RECREATION HOMES
Agency/Co.	Nelson & Pope
Date Performed	4/19/19
Analysis Year	Build 2021
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	Lewis Rd PRD

Site Information

Intersection	Site Access @ Lewis Rd
Jurisdiction	
East/West Street	Lewis Rd
North/South Street	Site Access
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	0
Configuration		LT						TR							LR	
Volume, V (veh/h)		20	308				278	8						10		23
Percent Heavy Vehicles (%)		2												2		2
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		22													37	
Capacity, c (veh/h)		1254													586	
v/c Ratio		0.02													0.06	
95% Queue Length, Q_{95} (veh)		0.1													0.2	
Control Delay (s/veh)		7.9													11.6	
Level of Service, LOS		A													B	
Approach Delay (s/veh)		0.6												11.6		
Approach LOS														B		

HCS 2010 Two-Way Stop-Control Report

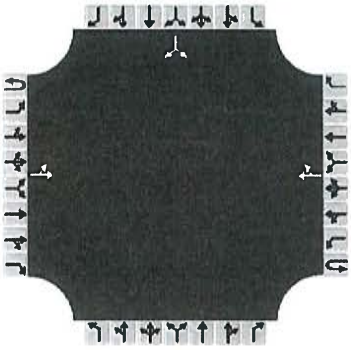
General Information

Analyst	RECREATION HOMES
Agency/Co.	Nelson & Pope
Date Performed	4/19/19
Analysis Year	Build 2021
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	Lewis Rd PRD

Site Information

Intersection	Spinney Rd @ Lewis Rd
Jurisdiction	
East/West Street	Lewis Rd
North/South Street	Spinney Rd
Peak Hour Factor	0.94
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	0
Configuration		LT						TR							LR	
Volume, V (veh/h)		6	313				273	17						11		13
Percent Heavy Vehicles (%)		0												0		0
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		6													26	
Capacity, c (veh/h)		1264													563	
v/c Ratio		0.00													0.05	
95% Queue Length, Q_{95} (veh)		0.0													0.1	
Control Delay (s/veh)		7.9													11.7	
Level of Service, LOS		A													B	
Approach Delay (s/veh)		0.2												11.7		
Approach LOS														B		

HCS 2010 Two-Way Stop-Control Report

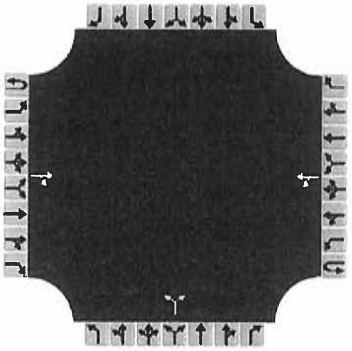
General Information

Analyst	RECREATION HOMES
Agency/Co.	Nelson & Pope
Date Performed	4/19/19
Analysis Year	Build 2021
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	Lewis Road PRD

Site Information

Intersection	Lewis Rd @ Old Country Rd
Jurisdiction	
East/West Street	Lewis Rd
North/South Street	Old Country Road
Peak Hour Factor	0.96
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	0
Configuration				TR		LT					LR					
Volume, V (veh/h)			295	8		52	295			12		68				
Percent Heavy Vehicles (%)						0				0		2				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						54					83					
Capacity, c (veh/h)						1257					645					
v/c Ratio						0.04					0.13					
95% Queue Length, Q_{95} (veh)						0.1					0.4					
Control Delay (s/veh)						8.0					11.4					
Level of Service, LOS						A					B					
Approach Delay (s/veh)						1.6				11.4						
Approach LOS										B						

HCS 2010 Two-Way Stop-Control Report

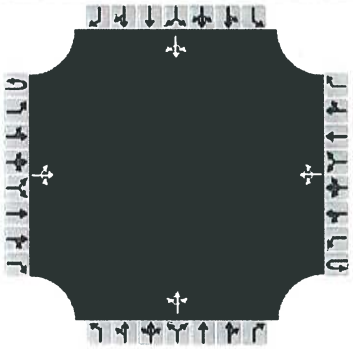
General Information

Analyst	RECREATION HOMES
Agency/Co.	Nelson & Pope
Date Performed	4/19/19
Analysis Year	Build 2021
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	Lewis Road PRD

Site Information

Intersection	Lewis Rd@Box Tree-Old Country
Jurisdiction	
East/West Street	Lewis Rd
North/South Street	Box Tree Rd-Old Country Rd
Peak Hour Factor	0.97
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume, V (veh/h)		250	96	22		5	77	12		22	14	4		13	21	249
Percent Heavy Vehicles (%)		1				0				0	8	0		0	0	1
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		258				5					41				292	
Capacity, c (veh/h)		1517				1478					212				756	
v/c Ratio		0.17				0.00					0.19				0.39	
95% Queue Length, Q_{95} (veh)		0.6				0.0					0.7				1.8	
Control Delay (s/veh)		7.9				7.4					26.0				12.7	
Level of Service, LOS		A				A					D				B	
Approach Delay (s/veh)		5.8				0.4					26.0				12.7	
Approach LOS											D				B	

HCS 2010 Two-Way Stop-Control Report

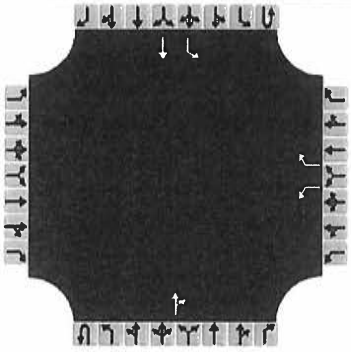
General Information

Analyst	RECREATION HOMES
Agency/Co.	Nelson & Pope
Date Performed	4/19/19
Analysis Year	Build 2021
Time Analyzed	Saturday Peak
Intersection Orientation	North-South
Project Description	Lewis Road PRD

Site Information

Intersection	Lewis Rd @ CR 104
Jurisdiction	
East/West Street	Lewis Road
North/South Street	CR 104
Peak Hour Factor	0.97
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		1	0	1	0	0	1	0	0	1	1	0
Configuration						L		R				TR		L	T	
Volume, V (veh/h)						20		313			136	17		255	140	
Percent Heavy Vehicles (%)						0		6						2		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						21		323						263		
Capacity, c (veh/h)						284		888						1421		
v/c Ratio						0.07		0.36						0.19		
95% Queue Length, Q_{95} (veh)						0.2		1.7						0.7		
Control Delay (s/veh)						18.7		11.4						8.1		
Level of Service, LOS						C		B						A		
Approach Delay (s/veh)						11.8								5.2		
Approach LOS						B										

HCS 2010 Two-Way Stop-Control Report

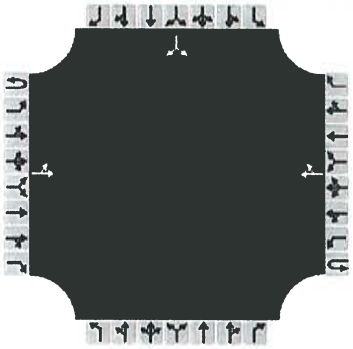
General Information

Analyst	RECREATION HOMES
Agency/Co.	Nelson & Pope
Date Performed	4/19/19
Analysis Year	Build 2021
Time Analyzed	Saturday Peak
Intersection Orientation	East-West
Project Description	Lewis Road PRD

Site Information

Intersection	Site Access @ Lewis Rd
Jurisdiction	
East/West Street	Lewis Rd
North/South Street	Site Access
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	0
Configuration		LT						TR							LR	
Volume, V (veh/h)		25	264				301	11						12		27
Percent Heavy Vehicles (%)		2												2		2
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		28													43	
Capacity, c (veh/h)		1224													576	
v/c Ratio		0.02													0.07	
95% Queue Length, Q_{95} (veh)		0.1													0.2	
Control Delay (s/veh)		8.0													11.8	
Level of Service, LOS		A													B	
Approach Delay (s/veh)		0.9												11.8		
Approach LOS														B		

HCS 2010 Two-Way Stop-Control Report

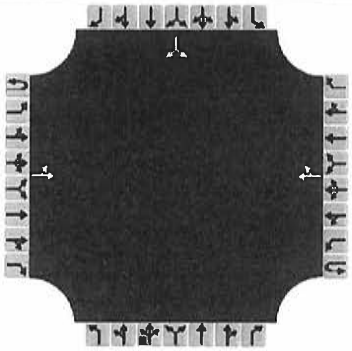
General Information

Analyst	RECREATION HOMES
Agency/Co.	Nelson & Pope
Date Performed	4/19/19
Analysis Year	Build 2021
Time Analyzed	Saturday Peak
Intersection Orientation	East-West
Project Description	Lewis Road PRD

Site Information

Intersection	Spinney Rd @ Lewis Rd
Jurisdiction	
East/West Street	Lewis Rd
North/South Street	Spinney Rd
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	0
Configuration		LT						TR							LR	
Volume, V (veh/h)		6	271				304	20						18		9
Percent Heavy Vehicles (%)		0												14		0
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		7													30	
Capacity, c (veh/h)		1218													479	
v/c Ratio		0.01													0.06	
95% Queue Length, Q_{95} (veh)		0.0													0.2	
Control Delay (s/veh)		8.0													13.0	
Level of Service, LOS		A													B	
Approach Delay (s/veh)		0.2												13.0		
Approach LOS														B		

HCS 2010 Two-Way Stop-Control Report

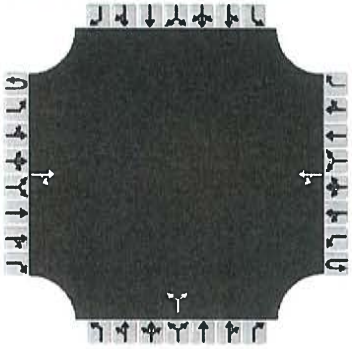
General Information

Analyst	RECREATION HOMES
Agency/Co.	Nelson & Pope
Date Performed	4/19/19
Analysis Year	Build 2021
Time Analyzed	Saturday Peak
Intersection Orientation	East-West
Project Description	Lewis Road PRD

Site Information

Intersection	Lewis Rd @ Old Country Rd
Jurisdiction	
East/West Street	Lewis Rd
North/South Street	Old Country Road
Peak Hour Factor	0.93
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	0
Configuration				TR		LT					LR					
Volume, V (veh/h)			281	10		59	315			10		59				
Percent Heavy Vehicles (%)						2				0		2				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						63					74					
Capacity, c (veh/h)						1259					633					
v/c Ratio						0.05					0.12					
95% Queue Length, Q_{95} (veh)						0.2					0.4					
Control Delay (s/veh)						8.0					11.4					
Level of Service, LOS						A					B					
Approach Delay (s/veh)						1.7				11.4						
Approach LOS										B						

HCS 2010 Two-Way Stop-Control Report

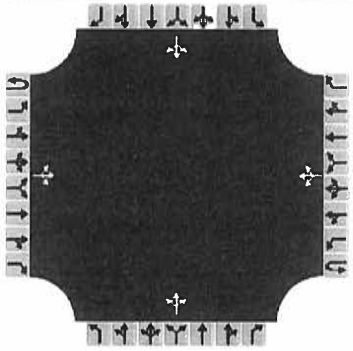
General Information

Analyst	RECREATION HOMES
Agency/Co.	Nelson & Pope
Date Performed	4/19/19
Analysis Year	Build 2021
Time Analyzed	Saturday Peak
Intersection Orientation	East-West
Project Description	Lewis Road PRD

Site Information

Intersection	Lewis Rd@Box Tree-Old Country
Jurisdiction	
East/West Street	Lewis Rd
North/South Street	Box Tree Rd-Old Country Rd
Peak Hour Factor	0.94
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume, V (veh/h)		182	139	21		0	117	7		24	16	3		10	20	235
Percent Heavy Vehicles (%)		3				0				0	0	0		0	0	4
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		194				0					46				282	
Capacity, c (veh/h)		1467				1420					234				759	
v/c Ratio		0.13				0.00					0.20				0.37	
95% Queue Length, Q_{95} (veh)		0.5				0.0					0.7				1.7	
Control Delay (s/veh)		7.8				7.5					24.1				12.5	
Level of Service, LOS		A				A					C				B	
Approach Delay (s/veh)		4.7				0.0				24.1				12.5		
Approach LOS										C				B		

Build Condition Capacity Analysis Worksheets: DEIS Alternative 3

NELSON & POPE
ENGINEERS & SURVEYORS

HCS 2010 Two-Way Stop-Control Report

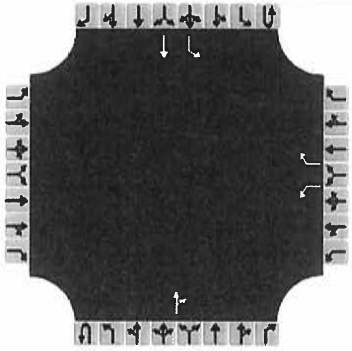
General Information

Analyst	MCM
Agency/Co.	Nelson & Pope
Date Performed	4/19/19
Analysis Year	Build 2021
Time Analyzed	AM Peak
Intersection Orientation	North-South
Project Description	ALTERNATIVE 3

Site Information

Intersection	Lewis Rd @ CR 104
Jurisdiction	
East/West Street	Lewis Road
North/South Street	CR 104
Peak Hour Factor	0.87
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		1	0	1	0	0	1	0	0	1	1	0
Configuration						L		R				TR		L	T	
Volume, V (veh/h)						6		271			115	6		302	260	
Percent Heavy Vehicles (%)						0		9						9		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

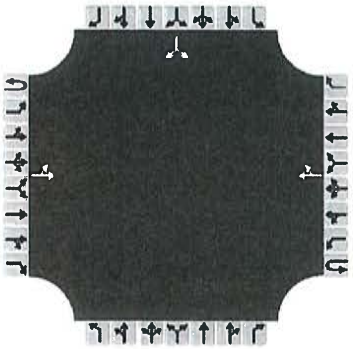
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						7		311						347		
Capacity, c (veh/h)						172		895						1403		
v/c Ratio						0.04		0.35						0.25		
95% Queue Length, Q_{95} (veh)						0.1		1.6						1.0		
Control Delay (s/veh)						26.9		11.2						8.4		
Level of Service, LOS						D		B						A		
Approach Delay (s/veh)						11.5								4.5		
Approach LOS						B										

HCS 2010 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	MCM	Intersection	Site Access @ Lewis Rd
Agency/Co.	Nelson & Pope	Jurisdiction	
Date Performed	4/19/19	East/West Street	Lewis Rd
Analysis Year	Build 2021	North/South Street	Site Access
Time Analyzed	AM Peak	Peak Hour Factor	0.90
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	ALTERNATIVE 3		

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	0
Configuration		LT						TR							LR	
Volume, V (veh/h)		74	196				236	25						23		58
Percent Heavy Vehicles (%)		2												2		2
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		82													90	
Capacity, c (veh/h)		1284													608	
v/c Ratio		0.06													0.15	
95% Queue Length, Q_{95} (veh)		0.2													0.5	
Control Delay (s/veh)		8.0													11.9	
Level of Service, LOS		A													B	
Approach Delay (s/veh)		2.6												11.9		
Approach LOS														B		

HCS 2010 Two-Way Stop-Control Report

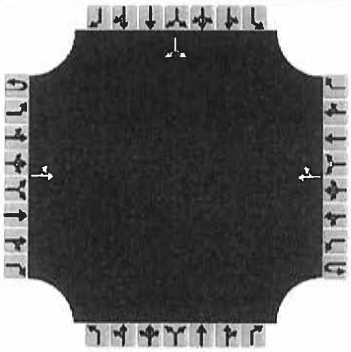
General Information

Analyst	MCM
Agency/Co.	Nelson & Pope
Date Performed	4/19/19
Analysis Year	Build 2021
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	ALTERNATIVE 3

Site Information

Intersection	Spinney Rd @ Lewis Rd
Jurisdiction	
East/West Street	Lewis Rd
North/South Street	Spinney Rd
Peak Hour Factor	0.83
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	0
Configuration		LT						TR							LR	
Volume, V (veh/h)		6	214				260	8						16		2
Percent Heavy Vehicles (%)		0												27		0
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

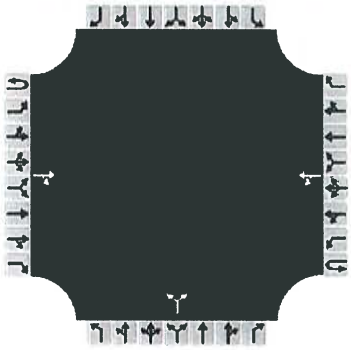
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		7													21	
Capacity, c (veh/h)		1248													447	
v/c Ratio		0.01													0.05	
95% Queue Length, Q_{95} (veh)		0.0													0.1	
Control Delay (s/veh)		7.9													13.5	
Level of Service, LOS		A													B	
Approach Delay (s/veh)		0.3												13.5		
Approach LOS														B		

HCS 2010 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	MCM	Intersection	Lewis Rd @ Old Country Rd
Agency/Co.	Nelson & Pope	Jurisdiction	
Date Performed	4/19/19	East/West Street	Lewis Rd
Analysis Year	Build 2021	North/South Street	Old Country Road
Time Analyzed	AM Peak	Peak Hour Factor	0.82
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	ALTERNATIVE 3		

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	0
Configuration				TR		LT					LR					
Volume, V (veh/h)			209	22		62	216			17		74				
Percent Heavy Vehicles (%)						12				17		14				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						76					111					
Capacity, c (veh/h)						1231					622					
v/c Ratio						0.06					0.18					
95% Queue Length, Q_{95} (veh)						0.2					0.6					
Control Delay (s/veh)						8.1					12.0					
Level of Service, LOS						A					B					
Approach Delay (s/veh)						2.3					12.0					
Approach LOS											B					

HCS 2010 Two-Way Stop-Control Report

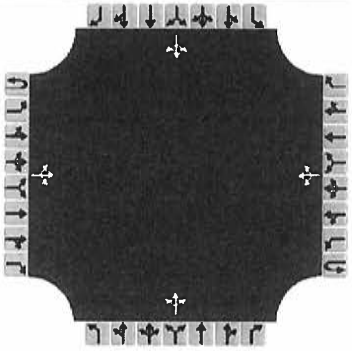
General Information

Analyst	MCM
Agency/Co.	Nelson & Pope
Date Performed	4/19/19
Analysis Year	Build 2021
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	ALTERNATIVE 3

Site Information

Intersection	Lewis Rd@Box Tree-Old Country
Jurisdiction	
East/West Street	Lewis Rd
North/South Street	Box Tree Rd-Old Country Rd
Peak Hour Factor	0.72
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume, V (veh/h)		172	73	18		3	80	11		16	21	3		5	10	198
Percent Heavy Vehicles (%)		8				0				0	5	0		25	0	7
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		239				4					55				296	
Capacity, c (veh/h)		1407				1473					226				787	
v/c Ratio		0.17				0.00					0.24				0.38	
95% Queue Length, Q_{95} (veh)		0.6				0.0					0.9				1.8	
Control Delay (s/veh)		8.1				7.5					26.0				12.3	
Level of Service, LOS		A				A					D				B	
Approach Delay (s/veh)		5.8				0.3					26.0				12.3	
Approach LOS											D				B	

HCS 2010 Two-Way Stop-Control Report

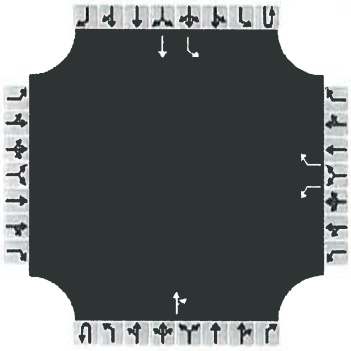
General Information

Analyst	MCM
Agency/Co.	Nelson & Pope
Date Performed	4/19/19
Analysis Year	Build 2021
Time Analyzed	PM Peak
Intersection Orientation	North-South
Project Description	ALTERNATIVE 3

Site Information

Intersection	Lewis Rd @ CR 104
Jurisdiction	
East/West Street	Lewis Road
North/South Street	CR 104
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		1	0	1	0	0	1	0	0	1	1	0
Configuration						L		R				TR		L	T	
Volume, V (veh/h)						13		491			223	10		718	133	
Percent Heavy Vehicles (%)						0		1						2		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

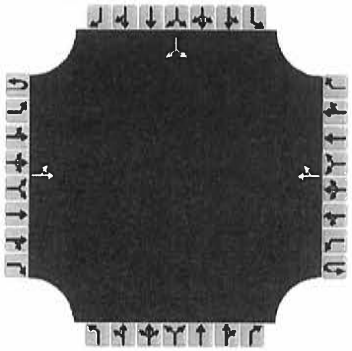
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						14		546						798		
Capacity, c (veh/h)						27		787						1305		
v/c Ratio						0.51		0.69						0.61		
95% Queue Length, Q_{95} (veh)						1.6		5.7						4.4		
Control Delay (s/veh)						231.4		19.3						12.0		
Level of Service, LOS						F		C						B		
Approach Delay (s/veh)						24.6								10.1		
Approach LOS						C										

HCS 2010 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	MCM	Intersection	Site Access @ Lewis Rd
Agency/Co.	Nelson & Pope	Jurisdiction	
Date Performed	4/19/19	East/West Street	Lewis Rd
Analysis Year	Build 2021	North/South Street	Site Access
Time Analyzed	PM Peak	Peak Hour Factor	0.90
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	ALTERNATIVE 3		

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	0
Configuration		LT						TR							LR	
Volume, V (veh/h)		444	308				278	123						65		231
Percent Heavy Vehicles (%)		2												2		2
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		493													329	
Capacity, c (veh/h)		1125													199	
v/c Ratio		0.44													1.66	
95% Queue Length, Q_{95} (veh)		2.3													21.9	
Control Delay (s/veh)		10.7													358.8	
Level of Service, LOS		B													F	
Approach Delay (s/veh)		8.7												358.8		
Approach LOS														F		

HCS 2010 Two-Way Stop-Control Report

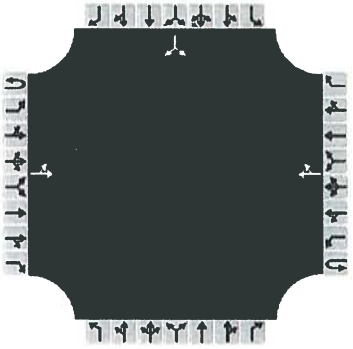
General Information

Analyst	MCM
Agency/Co.	Nelson & Pope
Date Performed	4/19/19
Analysis Year	Build 2021
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	ALTERNATIVE 3

Site Information

Intersection	Spinney Rd @ Lewis Rd
Jurisdiction	
East/West Street	Lewis Rd
North/South Street	Spinney Rd
Peak Hour Factor	0.94
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	0
Configuration		LT						TR							LR	
Volume, V (veh/h)		6	368				388	17						11		13
Percent Heavy Vehicles (%)		0												0		0
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		6													26	
Capacity, c (veh/h)		1139													456	
v/c Ratio		0.01													0.06	
95% Queue Length, Q_{95} (veh)		0.0													0.2	
Control Delay (s/veh)		8.2													13.4	
Level of Service, LOS		A													B	
Approach Delay (s/veh)		0.2												13.4		
Approach LOS														B		

HCS 2010 Two-Way Stop-Control Report

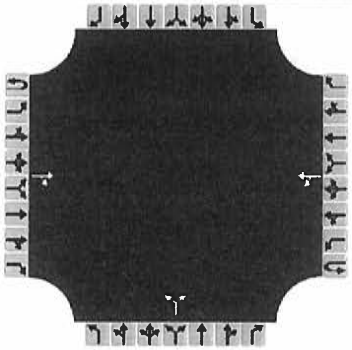
General Information

Analyst	MCM
Agency/Co.	Nelson & Pope
Date Performed	4/19/19
Analysis Year	Build 2021
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	ALTERNATIVE 3

Site Information

Intersection	Lewis Rd @ Old Country Rd
Jurisdiction	
East/West Street	Lewis Rd
North/South Street	Old Country Road
Peak Hour Factor	0.96
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	0
Configuration				TR		LT					LR					
Volume, V (veh/h)			325	34		52	356			67		68				
Percent Heavy Vehicles (%)						0				0		2				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						54					141					
Capacity, c (veh/h)						1196					443					
v/c Ratio						0.05					0.32					
95% Queue Length, Q_{95} (veh)						0.1					1.4					
Control Delay (s/veh)						8.2					16.9					
Level of Service, LOS						A					C					
Approach Delay (s/veh)						1.4					16.9					
Approach LOS											C					

HCS 2010 Two-Way Stop-Control Report

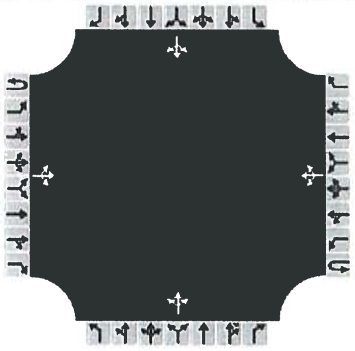
General Information

Analyst	MCM
Agency/Co.	Nelson & Pope
Date Performed	4/19/19
Analysis Year	Build 2021
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	ALTERNATIVE 3

Site Information

Intersection	Lewis Rd@Box Tree-Old Country
Jurisdiction	
East/West Street	Lewis Rd
North/South Street	Box Tree Rd-Old Country Rd
Peak Hour Factor	0.97
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume, V (veh/h)		276	97	23		5	80	12		25	14	4		13	21	304
Percent Heavy Vehicles (%)		1				0				0	8	0		0	0	1
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

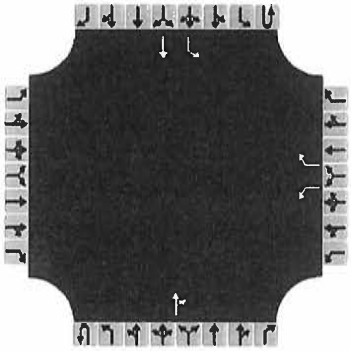
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		285				5					44				348	
Capacity, c (veh/h)		1513				1476					169				759	
v/c Ratio		0.19				0.00					0.26				0.46	
95% Queue Length, Q_{95} (veh)		0.7				0.0					1.0				2.4	
Control Delay (s/veh)		7.9				7.4					33.6				13.7	
Level of Service, LOS		A				A					D				B	
Approach Delay (s/veh)		6.0				0.4				33.6				13.7		
Approach LOS										D				B		

HCS 2010 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	MCM	Intersection	Lewis Rd @ CR 104
Agency/Co.	Nelson & Pope	Jurisdiction	
Date Performed	4/19/19	East/West Street	Lewis Road
Analysis Year	Build 2021	North/South Street	CR 104
Time Analyzed	Saturday Peak	Peak Hour Factor	0.97
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	ALTERNATIVE 3		

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		1	0	1	0	0	1	0	0	1	1	0
Configuration						L		R				TR		L	T	
Volume, V (veh/h)						20		656			136	17		744	140	
Percent Heavy Vehicles (%)						0		6						2		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

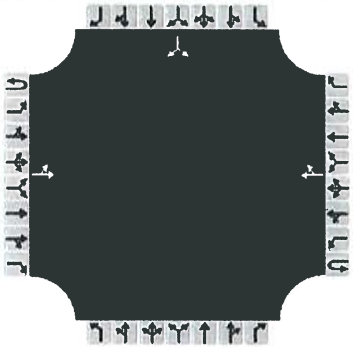
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						21		676						767		
Capacity, c (veh/h)						39		888						1421		
v/c Ratio						0.53		0.76						0.54		
95% Queue Length, Q_{95} (veh)						1.9		7.5						3.4		
Control Delay (s/veh)						173.3		20.7						10.5		
Level of Service, LOS						F		C						B		
Approach Delay (s/veh)						25.3								8.8		
Approach LOS						D										

HCS 2010 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	MCM	Intersection	Site Access @ Lewis Rd
Agency/Co.	Nelson & Pope	Jurisdiction	
Date Performed	4/19/19	East/West Street	Lewis Rd
Analysis Year	Build 2021	North/South Street	Site Access
Time Analyzed	Saturday Peak	Peak Hour Factor	0.90
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	ALTERNATIVE 3		

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	0
Configuration		LT						TR							LR	
Volume, V (veh/h)		514	264				301	139						102		370
Percent Heavy Vehicles (%)		2												2		2
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		571													524	
Capacity, c (veh/h)		1086													148	
v/c Ratio		0.53													3.53	
95% Queue Length, Q_{95} (veh)		3.2													50.8	
Control Delay (s/veh)		11.9													1202.1	
Level of Service, LOS		B													F	
Approach Delay (s/veh)		10.5												1202.1		
Approach LOS														F		

HCS 2010 Two-Way Stop-Control Report

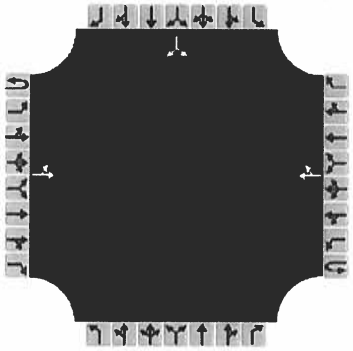
General Information

Analyst	MCM
Agency/Co.	Nelson & Pope
Date Performed	4/19/19
Analysis Year	Build 2021
Time Analyzed	Saturday Peak
Intersection Orientation	East-West
Project Description	ALTERNATIVE 3

Site Information

Intersection	Spinney Rd @ Lewis Rd
Jurisdiction	
East/West Street	Lewis Rd
North/South Street	Spinney Rd
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	0
Configuration		LT						TR							LR	
Volume, V (veh/h)		6	361				432	20						18		9
Percent Heavy Vehicles (%)		0												14		0
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		7													30	
Capacity, c (veh/h)		1082													356	
v/c Ratio		0.01													0.08	
95% Queue Length, Q_{95} (veh)		0.0													0.3	
Control Delay (s/veh)		8.3													16.0	
Level of Service, LOS		A													C	
Approach Delay (s/veh)		0.2												16.0		
Approach LOS														C		

HCS 2010 Two-Way Stop-Control Report

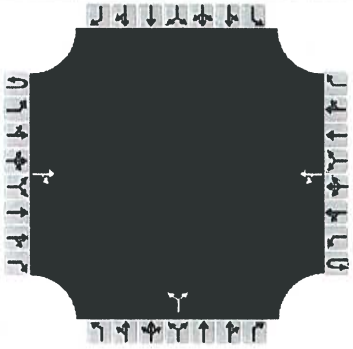
General Information

Analyst	MCM
Agency/Co.	Nelson & Pope
Date Performed	4/19/19
Analysis Year	Build 2021
Time Analyzed	Saturday Peak
Intersection Orientation	East-West
Project Description	ALTERNATIVE 3

Site Information

Intersection	Lewis Rd @ Old Country Rd
Jurisdiction	
East/West Street	Lewis Rd
North/South Street	Old Country Road
Peak Hour Factor	0.93
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	0
Configuration				TR		LT					LR					
Volume, V (veh/h)			328	53		59	381			73		59				
Percent Heavy Vehicles (%)						2				0		2				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						63					141					
Capacity, c (veh/h)						1160					386					
v/c Ratio						0.05					0.37					
95% Queue Length, Q_{95} (veh)						0.2					1.6					
Control Delay (s/veh)						8.3					19.6					
Level of Service, LOS						A					C					
Approach Delay (s/veh)						1.6				19.6						
Approach LOS										C						

HCS 2010 Two-Way Stop-Control Report

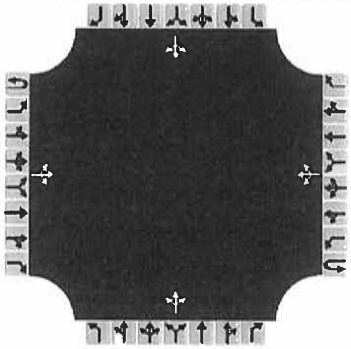
General Information

Analyst	MCM
Agency/Co.	Nelson & Pope
Date Performed	4/19/19
Analysis Year	Build 2021
Time Analyzed	Saturday Peak
Intersection Orientation	East-West
Project Description	ALTERNATIVE 3

Site Information

Intersection	Lewis Rd@Box Tree-Old Country
Jurisdiction	
East/West Street	Lewis Rd
North/South Street	Box Tree Rd-Old Country Rd
Peak Hour Factor	0.94
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume, V (veh/h)		225	141	23		0	119	7		26	16	3		10	20	298
Percent Heavy Vehicles (%)		3				0				0	0	0		0	0	4
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		239				0					48				349	
Capacity, c (veh/h)		1463				1415					171				752	
v/c Ratio		0.16				0.00					0.28				0.46	
95% Queue Length, Q_{95} (veh)		0.6				0.0					1.1				2.5	
Control Delay (s/veh)		7.9				7.5					34.0				13.9	
Level of Service, LOS		A				A					D				B	
Approach Delay (s/veh)		5.2				0.0				34.0				13.9		
Approach LOS										D				B		

Attachment 7
Town Planning Board Letter to Central Pine Barrens Joint Planning & Policy Commission

April 11, 2019

Copy

Town of Southampton

DEPARTMENT OF LAND MANAGEMENT
PLANNING BOARD
116 Hampton Road
Southampton, NY 11968

Phone: (631) 287-5735
Fax: (631) 287-5706

JAY SCHNEIDERMAN
TOWN SUPERVISOR

CHAIR
JACQUI LOFARO

VICE CHAIRPERSON
DENNIS FINNERTY

SECRETARY
PHILIP KEITH

BOARD MEMBERS
ROBIN LONG JOHN BLANEY
JOHN D. ZUCCARELLI GLORIAN BERK

April 11, 2019

John W. Pavacic, Executive Director
Long Island Central Pine Barrens Commission
624 Old Riverhead Road
Westhampton Beach, NY 11978

RE: Southampton Town Planning Board Response to Central Pine Barrens Commission Referral Comments Dated March 1, 2018

Dear Mr. Pavacic:

The Planning Board is in receipt of the Central Pine Barrens Commission's ("CPBC") letter dated March 27, 2019 requesting a response to the CPBC's referral comments dated March 1, 2018, as well as to discuss how the Lewis Road PRD project conforms to the Central Pine Barrens Comprehensive Land Use Plan (the "CLUP"). Please note, the March 1, 2018 correspondence was received by the Planning Board during the Pre-Application review process in response to our solicitation for comments from involved or interested agencies, which is the procedure used for all subdivision applications. Indeed, referral comments are reviewed by the Planning Board and ultimately incorporated into the Pre-Application Report. This was the case with the CPBC's letter of March 1, 2018, which was reviewed by the Planning Board and included in the Adopted Pre-Application Report dated May 24, 2018. Compliance determinations with the CPBC's requirements, or any other agency standards for that matter, would not typically be made during the Pre-Application stage, which is intended to provide the subdivider with the benefit of the Planning Board's input as to form, layout, development constraints, zoning, environmental impacts and other issues as may be identified by other referral agencies - such as the CPBC - before a formal application is submitted. Rather, any compliance determination is typically made during the Preliminary Application phase, which is where the application currently rests.

As a reminder of this project's history, and by way of background, an application was initially presented to the Town Board in the form of a change-of-zone petition. After a lengthy and comprehensive public hearing process and SEQRA review conducted by the Town Board, the change-of-zone was denied. The project was subsequently revised to omit the 250-member private golf club component (the basis for the change of zone application), and the applicant submitted a subdivision application to the Southampton Town Planning Board for an as-of-right housing development with a golf course, as an accessory recreational amenity. It is here that the application currently remains but is incomplete since the Planning Board, pursuant to its SEQRA obligations, is currently

engaged in a detailed and careful review of the Town Board's adopted FEIS and positive Finding Statement to determine whether a Supplemental EIS is required in light of any project changes. After the Planning Board completes its SEQRA review, the application can be deemed complete and a determination can be made as to whether the project complies with the standards pursuant to (i) Southampton Town Code §330-220, Development within Compatible Growth Area, and (ii) §5.5, Compatible Growth Area, of the Central Pine Barrens Comprehensive Land Use Plan.

As the local approving authority, the Planning Board fully understands their role to review this project in accordance with CLUP and will do so during its continued review of the Preliminary Application. We are also aware that this project, as presented in the change of zone application, was previously considered a "Development of Regional Significance" and thus within the Commission's jurisdiction. During the Planning Board's current SEQRA review of the project as amended, it will be determined if this project is within the Commission's jurisdiction pursuant to §§4.5.5 or 4.5.2 of the CLUP, and §330-220 of the Town Code, and the applicant and the CPBC will be notified of same.

Thank you for giving the Southampton Town Planning Board the opportunity to address the Central Pine Barrens Commission. We will advise of any determinations made regarding compliance with the CLUP or the Commission's jurisdiction upon completion of our SEQRA review.

Sincerely,

Jacqui Lofaro
Chair, Southampton Town Planning Board

Attachment 8
LOS Comparison Tables

LEVELS OF SERVICE AND DELAY - AM Peak										
			Existing		No Build		Proposed Project (118 Recreation Homes + 12 Workforce Units)		Alternative 3 (108 Single Family Homes + 18 Hole Golf Course + Banquet Facility)	
Unsignalized Intersections	Approach	Movt.	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Quogue-Riverhead Road at	WB	L	19.8	C	20.8	C	22.3	C	26.9	D
Lewis Road		R	10.4	B	10.5	B	10.8	B	11.2	B
	SB	L	8.1	A	8.2	A	8.2	A	8.4	A
Spinney Road at	EB	LT	7.8	A	7.8	A	7.9	A	7.9	A
Lewis Road	SB	LR	12.6	B	12.8	B	13.0	B	13.5	B
Old Coutnry Road at	WB	L	8.0	A	8.0	A	8.1	A	8.1	A
Lewis Road	NB	LR	10.7	B	11.0	B	11.3	B	12.0	B
Old Country Road/Box Tree Road at	EB	LTR	8.0	A	8.0	A	8.1	A	8.1	A
Lewis Road	WB	LTR	7.4	A	7.4	A	7.4	A	7.5	A
	NB	LTR	21.6	C	23.2	C	24.5	C	26.0	D
	SB	LTR	11.5	B	12.0	B	12.1	B	12.3	B
Site Access at	EB	LT	-	-	-	-	7.8	A	8.0	A
Lewis Road	SB	LR	-	-	-	-	10.6	B	11.9	B

LEVELS OF SERVICE AND DELAY - PM Peak										
			Existing		No Build		Proposed Project (118 Recreation Homes + 12 Workforce Units)		Alternative 3 (108 Single Family Homes + 18 Hole Golf Course + Banquet Facility)	
Unsignalized Intersections	Approach	Movt.	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Quogue-Riverhead Road at	WB	L	22.3	C	23.8	C	25.0	C	231.4	F
Lewis Road		R	11.9	B	12.2	B	12.6	B	19.3	C
	SB	L	8.5	A	8.6	A	8.7	A	12.0	B
Spinney Road at	EB	LT	7.8	A	7.8	A	7.9	A	8.2	A
Lewis Road	SB	LR	11.4	B	11.6	B	11.7	B	13.4	B
Old Coutnry Road at	WB	L	7.9	A	8.0	A	8.0	A	8.2	A
Lewis Road	NB	LR	11.0	B	11.2	B	11.4	B	16.9	C
Old Country Road/Box Tree Road at	EB	LTR	7.8	A	7.8	A	7.9	A	7.9	A
Lewis Road	WB	LTR	7.4	A	7.4	A	7.4	A	7.4	A
	NB	LTR	23.5	C	25.1	D	26.0	D	33.6	D
	SB	LTR	12.2	B	12.6	B	12.7	B	13.7	B
Site Access at	EB	LT	-	-	-	-	7.9	A	10.7	B
Lewis Road	SB	LR	-	-	-	-	11.6	B	358.8	F

LEVELS OF SERVICE AND DELAY - Saturday Peak										
			Existing		No Build		Proposed Project (118 Recreation Homes + 12 Workforce Units)		Alternative 3 (108 Single Family Homes + 18 Hole Golf Course + Banquet Facility)	
Unsignalized Intersections	Approach	Movt.	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Quogue-Riverhead Road at	WB	L	16.7	C	17.4	C	18.7	C	173.3	F
Lewis Road		R	10.9	B	11.1	B	11.4	B	20.7	C
	SB	L	8.0	A	8.0	A	8.1	A	10.5	B
Spinney Road at	EB	LT	7.9	A	7.9	A	8.0	A	8.3	A
Lewis Road	SB	LR	12.5	B	12.8	B	13.0	B	16.0	C
Old Coutnry Road at	WB	L	7.9	A	8.0	A	8.0	A	8.3	A
Lewis Road	NB	LR	10.7	B	11.0	B	11.4	B	19.6	C
Old Country Road/Box Tree Road at	EB	LTR	7.8	A	7.8	A	7.8	A	7.9	A
Lewis Road	WB	LTR	7.5	A	7.5	A	7.5	A	7.5	A
	NB	LTR	21.5	C	22.7	C	24.1	C	34.0	D
	SB	LTR	12.0	B	12.4	B	12.5	B	13.9	B
Site Access at	EB	LT	-	-	-	-	8.0	A	11.9	B
Lewis Road	SB	LR	-	-	-	-	11.8	B	1202.1	F

Attachment 9
Open Space Configurations and Contiguity, PDD & PRD

ATTACHMENT 9a CONTIGUITY OF OPEN SPACE WITH ADDITION OF PROJECT RELATED PUBLIC AND PRIVATE OPEN SPACE WITH PDD PLANS

Source: NYSGIS Orthoimagery Program, 2016; NPV GIS Library; Vita Landscape Architect Master Plan, PDD 2016
Scale: 1 inch = 1,500 feet

N

The Hills at Southampton PDD

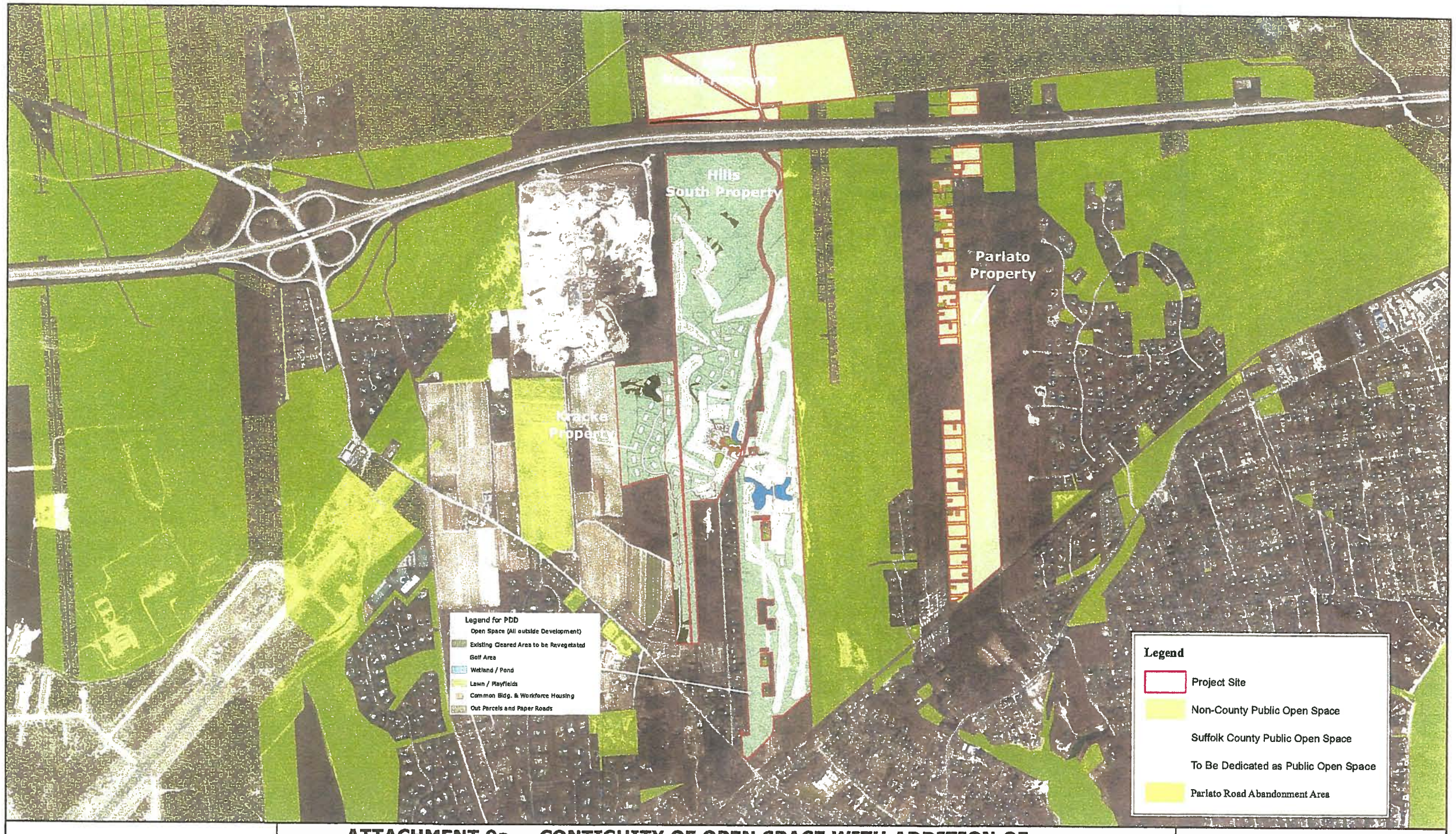
DEIS

ATTACHMENT 9b CONTIGUITY OF OPEN SPACE WITH ADDITION OF PROJECT RELATED PUBLIC AND PRIVATE OPEN SPACE WITH PRD PLANS

Source: NYSGIS Orthoimagery Program, 2016; NPV GIS Library; Vita Landscape Architect Master Plan PRD, Dec. 2018
Scale: 1 inch = 1,500 feet

Lewis Road PRD

SEQRA Compliance



NP&V
NELSON POPE & VOORHIS LLC
ENVIRONMENTAL • PLANNING • CONSULTING

ATTACHMENT 9a CONTIGUITY OF OPEN SPACE WITH ADDITION OF PROJECT RELATED PUBLIC AND PRIVATE OPEN SPACE WITH PDD PLANS

Source: NYSGIS Orthoimagery Program, 2016; NPV GIS Library; Vita Landscape Architect Master Plan, PDD 2016
Scale: 1 inch = 1,500 feet

N

The Hills at Southampton PDD

DEIS

ATTACHMENT 9b CONTIGUITY OF OPEN SPACE WITH ADDITION OF PROJECT RELATED PUBLIC AND PRIVATE OPEN SPACE WITH PRD PLANS

Source: NYSGIS Orthoimagery Program, 2016; NPV GIS Library; Vita Landscape Architect Master Plan PRD, Dec. 2018
Scale: 1 inch = 1,500 feet

N

Lewis Road PRD

SEQRA Compliance