



Stantec Consulting Services, Inc.
5 Burlington Woods Drive
Burlington, MA 01803

April 21, 2020

Susan Noyes
IT & Communications Director/Webmaster
Notary Public/Justice of the Peace
Town of Newbury
12 Kent Way, Suite 200
Byfield, MA 01922

Attn: Town of Newbury Board of Appeals

Subject: Traffic Consulting Peer Review - Proposed Village at Cricket Lane
Chapter 40B Development, Newbury, Massachusetts

Dear Members of the Board:

As requested, Stantec Consulting, Inc. has conducted a peer review of the traffic circulation and parking features of a proposed new residential development in the Town of Newbury, Massachusetts. The proposed development consists of a total of 24 single family units --17 of which would have 3-bedrooms, and 7 of which would have 4-bedrooms. The developer proposes to create a cul-de-sac approximately 880 feet in length at the rear of 55 Pearson Drive, a single access loop road. The development is proposed on undeveloped land adjacent to the $\pm 2,135$ acre Martin Burns Wildlife Management Area. Gary Hebert, PE, is our designated peer reviewer. He is a Stantec Consultant who has performed numerous traffic/parking peer reviews of Chapter 40B residential developments in communities throughout Massachusetts.

EXECUTIVE SUMMARY

Our review focused on the TEPP LLC Traffic Assessment (**TA**) of the proposed Village at Cricket Lane development. We find that, overall, the TA study was conservative and done in accordance with accepted transportation engineering practices and procedures. Reasonable traffic impact projections were included and information provided in the study plus the Technical Appendix is sufficient to determine how well study area intersections and streets will typically operate during peak hours with and without the proposed development. No traffic-related operational issues were identified in the TA and we concur with the overall assessment that this development will not significantly affect normal traffic operations and safety.

However, the Town Planning Board, the Fire Department and other reviewers identified traffic-related *safety concerns* not specifically addressed in the TA. Most of additional concerns are normally outside the purview of typical *traffic impact studies* and are not specifically identified in the *MassDOT Traffic Impact Assessment Guidelines*. Concerns raised include:

- *The proposed development results in an excessively long cul-de-sac that adversely affects its emergency vehicle access.* We concur with various Town reviewers, that this is a valid point that should be addressed if at all feasible. The length fire access route does comply

with National Fire Protection Administration standard that no more than 100 dwelling units be served along a single access road. The proposed Pearson Drive/Cricket Lane access does meet this criteria with approximately 85 dwelling units served.

- *While checked off in the Application sustainability section, we concur with Town Reviewers that the proposed development is not walkable to either work/business sites or public transportation and does not reduce auto dependence.*
- *The Fire Department raised a valid concern on how emergency and larger vehicles will reverse direction on the two proposed short dead end streets without encroaching on adjacent properties or backing back down the dead end streets. This needs to be addressed.*
- We conclude the proposed site parking supply should be adequate and generally will not overflow onto Cricket Lane.

DETAILED PEER REVIEW

1) Review of Traffic/Circulation Study Materials

Stantec reviewed the February 2020 Village at Cricket Lane Comprehensive Permit Application submitted to the Newbury Zoning Board of Appeals. Our review focused on *Appendix S, Traffic Assessment Memorandum Residential Development, Newbury, MA, prepared by TEPP LLC, revised February 4, 2020 on behalf of the Ranger Engineering Group, Inc.* We also reviewed site plans prepared by the Ranger Engineering Group, Inc. that were contained in the Application as well as the transportation sustainability features cited in the application.

During our review, we obtained information on the typical number of registered vehicles and average number of residents per unit for single-family homes within the Town of Newbury as reported in the most recently available census data.

2) Site Visit

The Peer Reviewer made a late afternoon site visit on April 7, 2020, a pleasant day with temperatures in the mid-50's. Given the on-going COVID-19 pandemic, several pedestrians were observed walking on both Pearson Drive and Orchard Street. Both roads were operating with lower than normal traffic demands and we are certain many more residents than usual were at home, as the Commonwealth of Massachusetts is under an emergency request to stay at home.

While it was not possible to observe 'normal' peak hour traffic operations, available sight lines were observed at the proposed intersection of Cricket Lane with Pearson Drive and the existing intersection of Pearson Drive with Orchard Street.

Coupled with the information contained in the TA and comments from other Town reviewers, we believe field observations made were sufficient to understand the future traffic implications of the proposed development.

3) Review Study Area and Existing Volumes

The study area documented by TEPP LLC in the TA is reasonable and acceptable. Traffic volumes counted at the intersection of Pearson Drive at Orchard Street during October 2017 and documented in the TA are acceptable as being representative of typical pre-pandemic and post-pandemic traffic operational conditions.

4) Review Study Methodology, Trip Generation and Trip Distribution Assumptions

Traffic analysis procedures used to conduct the Cricket Lane Estates traffic impact study are reasonable and acceptable and comply with MassDOT Traffic Impact and Access Study guidelines. The proposed development does not trigger any Massachusetts Environmental Policy Act traffic review or parking review thresholds. Study elements provided are in sufficient detail to explain how the TA reached its conclusions.

The TA estimated Cricket Lane development trip generation as follows:

- Typical weekday 24-hour period: 141 trips in/142 trips out for a total of **283 trips per day**.
- Typical AM peak hour: 7 trips in/20 trips out for a total of **27 trips per AM peak hour**.
- Typical PM peak hour: 18 trips in/11 trips out for a total of **29 trips per PM peak hour**.
- Typical Saturday 24-hour period: 143 trips in/135 trips out for a total of **269 trips per Saturday**.
- Typical Saturday peak hour: 16 trips in/14 trips out for a total of **30 trips per Saturday peak hour**.

The above estimates were compared to ITE Trip Generation 10th Edition (2020) estimates of single-family residences by various independent variables – number of units, estimated number of residents, and estimated number of vehicles. The TA estimates cited above are acceptable and reasonable.

Future trips in the TA were distributed according to volumes counted under existing conditions at the intersection of Pearson Drive with Orchard Street. This is a reasonable and acceptable approach for traffic analysis.

Because October 2017 traffic volumes are typically approximately 7% higher than average annual volumes in the Town of Newbury according to MassDOT historical data, the TA did not reduce

traffic volumes. This is a reasonable and acceptable procedure as it provides conservative, or high side, results.

5) Review Accident Analysis

A check of historical crash data on the MassDOT website for the years 2010-2017 indicates no relevant crashes were identified in the study area. We concur with this finding. Traffic crashes and rates are not an issue for the Cricket Lane site.

6) Review Background Traffic Growth

Traffic generated by the site was added to the base traffic volumes measured during October 2017 AM and PM peak hours. Build AM and PM peak hour analyses were developed by adding expected new trips to existing traffic volumes without the site. We are not aware of any 'background' traffic growth that would be added to traffic above and beyond the proposed site-generated vehicle trips. This is an acceptable and reasonable procedure.

7) Review and Evaluate Level of Service (LOS) Analyses

The TA indicates that the intersection of Pearson Drive with Orchard Street will operate at an acceptable level-of-service A -- the best traffic operations condition -- during the AM and PM peak hours. The LOS analyses as presented are acceptable and reasonable.

8) Assess the Adequacy of Proposed Traffic Mitigation Measures

Traffic operations mitigation measures are not proposed as no traffic operations or traffic safety issues were identified in the TA in connection with this proposed development. A sidewalk is proposed on one side of Cricket Lane. Recreational neighborhood bike circulation will be acceptable due to the low traffic volumes on Cricket Lane and the connecting Pearson Drive loop road.

9) Check the Adequacy of the Site Plan Circulation Measures

Cul-de-sac Access

Under existing local zoning, the proposed new 880' cul-de-sac is longer than the maximum 500-foot length allowed by the Town's zoning for cul-de-sac. The proposed 22' width of Cricket Lane is acceptable from a traffic circulation as long as parking is not permitted along it. The Town's cul-de-sac length requirement is a common emergency access requirement for Massachusetts communities. More importantly, this development proposes a cul-de-sac *added onto the end of an existing single access loop road system*. In its entirety, the new cul-de-sac 'dead-end system' between Orchard Street and the end of the new cul-de-sac would entail approximately 3,850' in length.

Of that total length, more than 1,850' of the cul-de-sac 'dead end system' would be via single roads. This includes the 1,100' long segment between the divided segment of Pearson Drive and the Pearson Drive loop intersection plus the 880' cul-de-sac.

The Cricket Lane cul-de-sac proposed on the end of another single point access road represents an undesirable emergency access precedence within the Town or other similar developments within the Commonwealth of Massachusetts.

The National Fire Prevention Administration (NFPA) provides guidance on this issue. NFPA 1141, 'Standard for Fire Protection Infrastructure for Land Development in Wildland, Rural, and Suburban Areas' Table 5.1.4.1 (a) Required Number of Access Routes for Residential Areas find that **a single access route serving up to 100 households is acceptable**. With the 24 units added, this single access road would provide access to approximately 85 units.

Ideally, this site should have two accesses or an internal loop road in lieu of the proposed cul-de-sac, but with its wetland constraints are significant.

We also find that the proposed cul-de-sac turnaround at 140' diameter exceeds the 120' minimum diameter that NFPA recommends for cul-de-sacs, so we have no particular issues with its design from a traffic operations perspective.¹

Walkability and Dependence on Private Automobiles

Town reviewers questioned the 'walkable to public transportation', and the 'reduction of dependence on private automobiles' boxes checked off as site sustainability benefits in the Application. The nearest public transportation is the Newburyport Branch Rowley commuter rail station more than 6 miles from the site and there are some park and ride lots in Georgetown slightly further away. No work or single-family service destinations are located within 1 mile walking distance of the site. The Orchard Road school bus stop is more than 0.6 of a mile from the site.

Therefore, we concur with commenters that public transportation is not available to the site's future residents and that the site has a very low walkability to public transportation and will be highly auto dependent for most trips. We concur that these two traffic sustainability boxes should not have been checked off as applying to this particular site location.

Our review of the site plan indicates its ADA features are expected to comply with ADA/MAAB requirements. We defer to the Town's Site/civil peer reviewer, Mr. Serwatka's April 13, 2020 letter for additional comments pertaining to this issue.

Two dead ends

Two dead ends, prohibited under Newbury zoning, are proposed. Emergency access and egress along with the needs of moving vans, or trash removal vehicles are the biggest issues pertaining to

¹ The Town's site civil peer reviewer, Mr. Joseph Serwatka, PE in his letter dated April 13, 2020 brought up many design issues that should be addressed separately.

Reference: Proposed Village at Cricket Lane Chapter 40B Residential Development
April 21, 2020

these proposed two dead-ends that require fire engines to back down the dead ends in reverse. This issue, brought up by the Newbury Fire Department, needs to be addressed. The Applicant should provide a drawing showing the turning movement sweeping path for the largest vehicle for the Newbury Fire Department (e.g., AutoTurn ® or equivalent).

Parking Supply

The proposed supply of 48 parking spaces or 2 per dwelling unit should suffice within the context of the average *Town of Newbury single-family residence registrations* of 2 vehicles per unit. We do not believe that under normal circumstances, parking demands from the proposed 24 single-family homes will encroach onto Cricket Lane. All but a few of the proposed homes will have enough driveway space behind the garage doors to accommodate up to two vehicles in tandem. Thus, most visitor parking demands can be accommodated on site complementing the garage spaces. Parking on Cricket Lane and the cul-de-sac *should be prohibited for emergency access requirements*.

Reference: Proposed Village at Cricket Lane Chapter 40B Residential Development
April 21, 2020

Conclusion

The proposed development of the Cricket Lane site will not have significant normal traffic impacts. Its trip generation is low enough to be safely accommodated at the critical intersections of Cricket Lane at Pearson Drive and Pearson Drive at Orchard Street. The Traffic Assessment prepared by TEPP LLC is acceptable.

However, its emergency access features, auto dependence, and the two short dead ends are drawbacks of this proposed development.

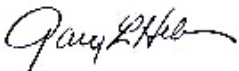
A slide summary of this letter's key findings is attached to help clarify issues.

Stantec appreciates the opportunity to provide assistance to the Town of Newbury with this highly important development. If you have any questions pertaining to the findings in this peer review letter, please do not hesitate to contact me.

I look forward to answering any questions you may have at the upcoming Board of Appeals hearing tentatively scheduled for mid-May.

Regards,

Stantec Consulting Services, Inc.



Gary L. Hebert, P.E.

Consultant/Peer Reviewer

Phone: 781-249-0419

Email: Gary.Hebert@stantec.com

Ref: 179410850

Attachment: Presentation Summary of Findings

Traffic and Parking Peer Review Summary

Village at Cricket Lane

55 (Rear) Pearson Drive
Newbury, Massachusetts

Prepared For: Town of Newbury Zoning Board of Appeals

Prepared By: Stantec Consulting, Inc.
Gary Hebert, PE, Peer Reviewer

April 2020

What was done

- ◎ Review TEPP LLC Traffic Assessment Study of Comprehensive Permit Chapter 40B Application for proposed 24 single family units on a cul-de-sac
- ◎ Review Town comments on the study pertaining to traffic, parking, and site circulation
- ◎ Visit site/neighborhood on 4/7/2020
- ◎ Coordinated with TEPP LLC/Site Engineer/Newbury Fire Chief on questions
- ◎ Prepare and submit traffic/circulation/parking peer review findings letter (4/21/2020)

Projected Cricket Lane Traffic Generation

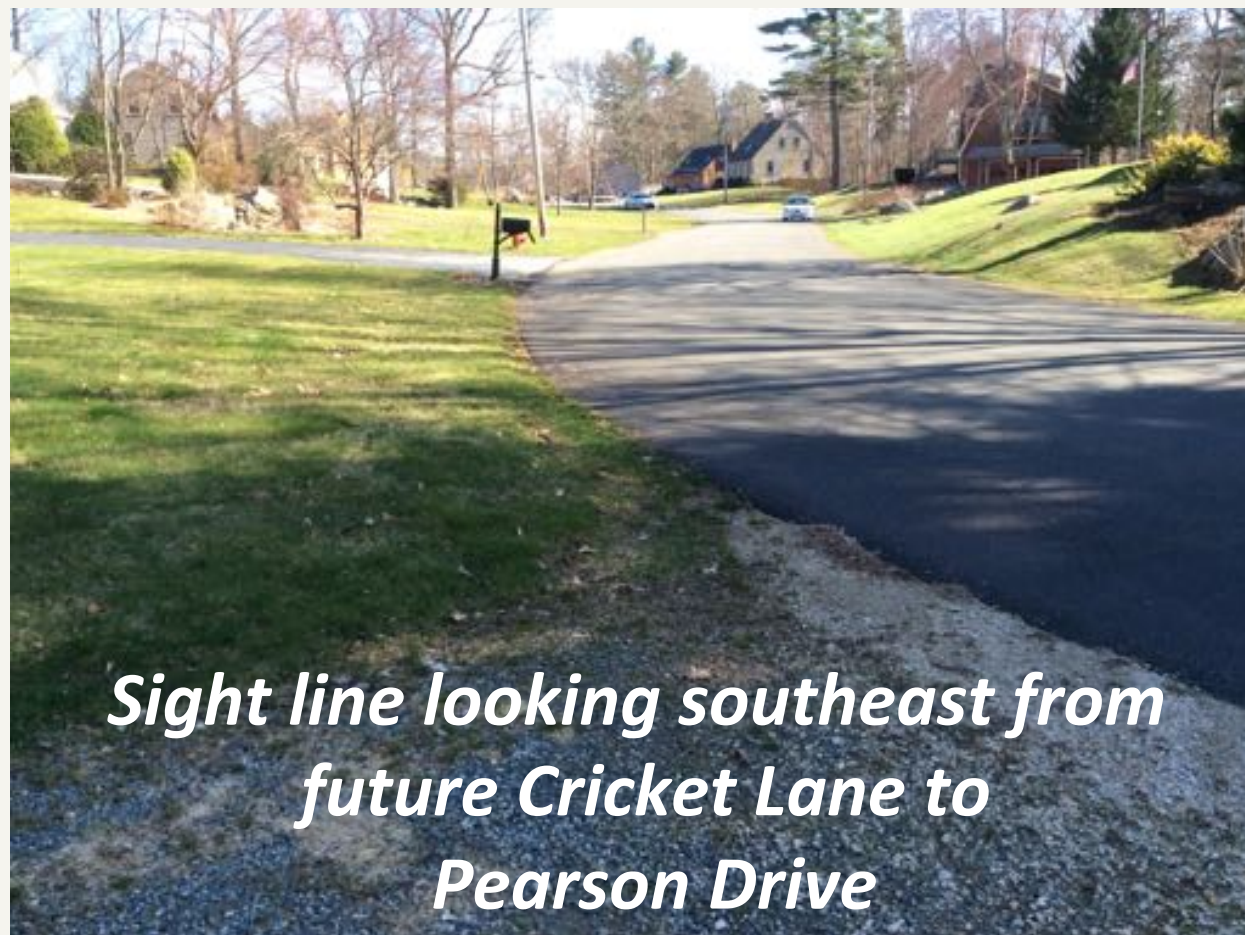
Comparison of ITE Trip Generation 7th vs. 10th Edition Using Various Independent Variables

TA Weekday 7th Edition 24 homes			Weekday 10th Edition 24 homes			Weekday 10th Edition 61 residents			Weekday 10th Edition 48 vehicles		
In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
141	142	283	113	114	227	81	81	162	152	153	305
TA AM Street Peak 7th Edition 24 homes			AM Street Peak 10th Edition 24 homes			AM Street Peak 10th Edition 61 residents			AM Street Peak 10th Edition 48 vehicles		
In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
7	20	27	4	14	18	4	9	13	7	17	24
TA PM Street Peak 7th Edition 24 homes			PM Street Peak 10th Edition 24 homes			PM Street Peak 10th Edition 61 residents			PM Street Peak 10th Edition 48 vehicles		
In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
18	11	29	15	9	24	11	6	17	22	11	33
TA Saturday Daily 7th Edition 24 homes			Saturday Daily 10th Edition 24 homes			Saturday Daily 10th Edition 61 residents			Saturday Daily 10th Edition 48 vehicles		
In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
143	135	269	114	115	229	75	76	151	141	142	283
TA Saturday Site Peak Hour 7th Edition 24 homes			Saturday Site Peak Hour 10th Edition 24 homes			Saturday Site Peak Hour 10th Edition 61 residents			Saturday Site Peak Hour 10th Edition 48 vehicles		
In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
16	14	30	12	10	22	8	8	16	18	20	38
*Estimated using average ITE rates.											

Conclusion: TA has reasonable & acceptable trip generation estimates.

Sight Line Findings (1 of 2)

- ⦿ Sight line measurements – 490' to the southeast and 265' to the southwest --at the proposed Cricket Lane with Pearson Drive intersection. These measurements, as presented in the TA are reasonable and adequate for conditions based on observations.



Sight Line Findings (2 of 2)

- ⦿ Sight line measurements presented in the TA report -- 700' to the north and 690' to the south for the Orchard Street at Pearson Drive intersection -- are reasonable and adequate for conditions based on observations.
- ⦿ Note: This is an off-site intersection that already exists. The intersection did not experience any reported crashes during the past 5 years and is not a high hazard intersection. As an existing off-site intersection, it is not the responsibility of the Applicant to address its sight lines.



*Sight line looking northeast from
Pearson Drive to Orchard Street*



*Sight line looking southwest from
Pearson Drive to Orchard Street*

Cricket Lane Neighborhood Context

● SITE

I-95

Pearson Drive Loop Rd

Pearson Drive

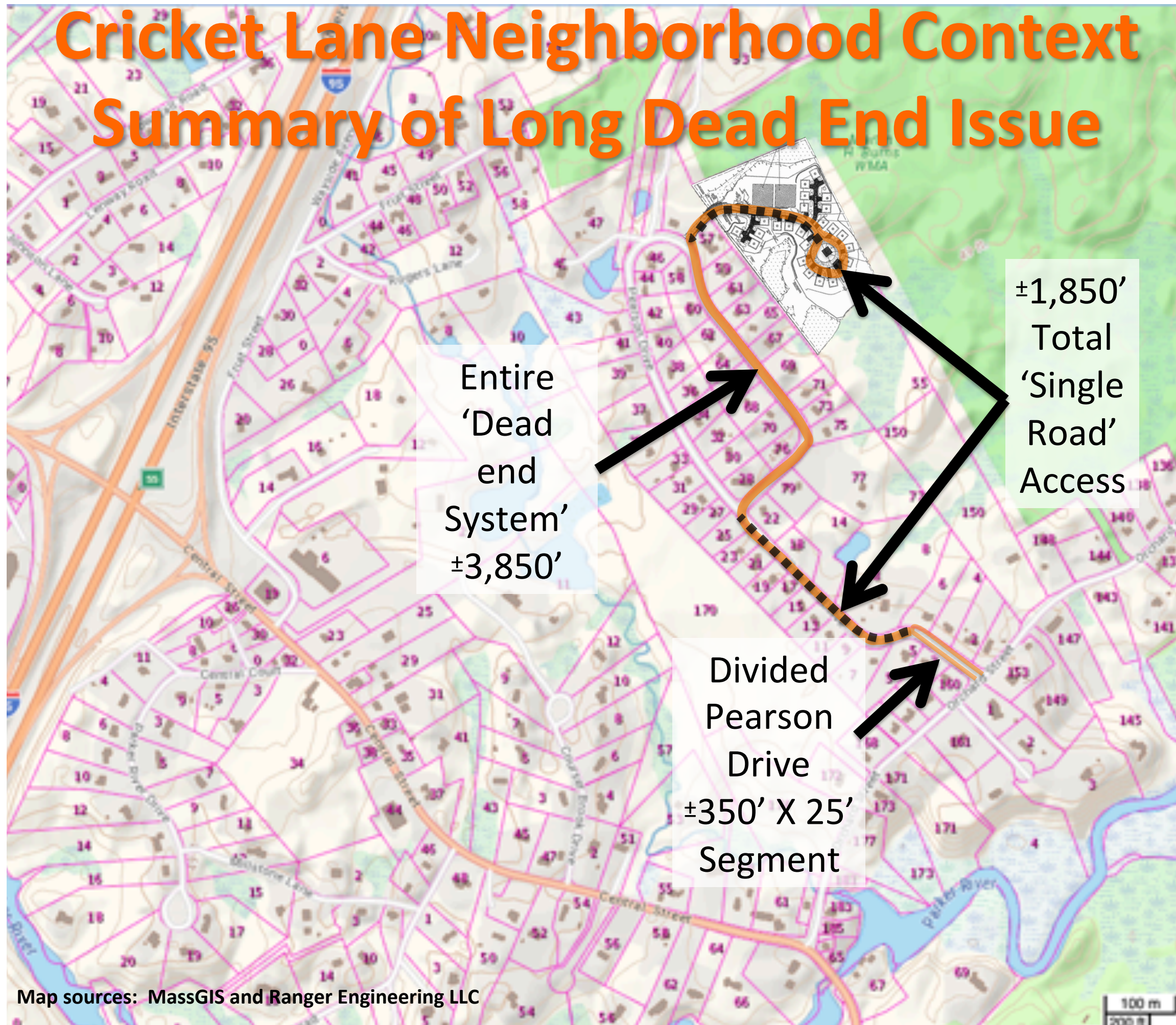
Orchard St

Central St

Map source: MassGIS

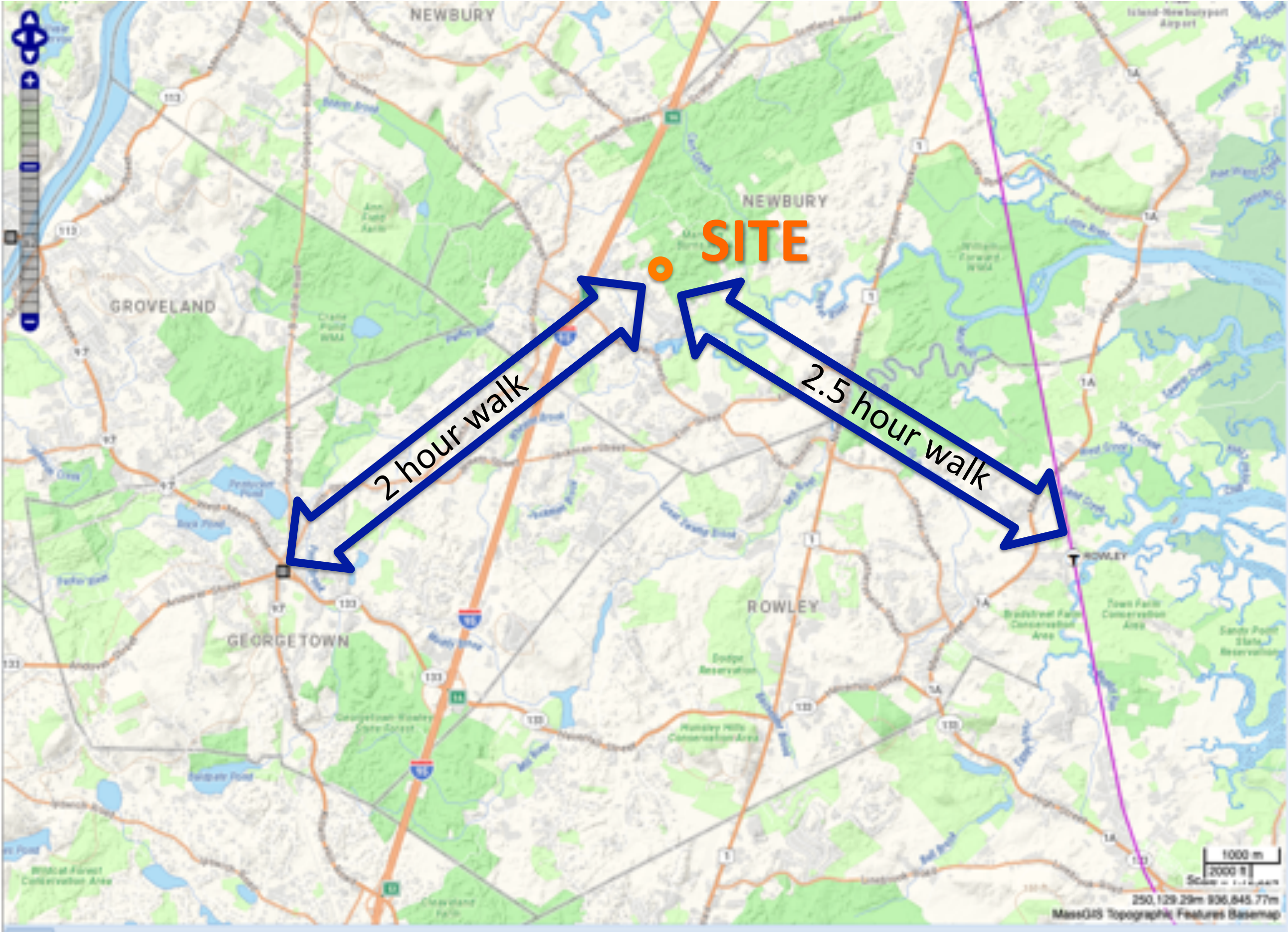
Cricket Lane Neighborhood Context

Summary of Long Dead End Issue



Conclusion:
Proposed single access route much longer than cul-de-sac systems recommended in vast majority of Massachusetts communities, but minimum NFPA requirements are met.

Nearest Public Transportation Services



Conclusion:
Not convenient
to public
transportaion

Cricket Lane Site 'Walk Score' Estimate

Walk Score

Walk Score®

Description

70–89	Very Walkable Most errands can be accomplished on foot.
50–69	Somewhat Walkable Some errands can be accomplished on foot.
25–49	Car-Dependent Most errands require a car.
0–24	Car-Dependent Almost all errands require a car.

55 Pearson Drive

[Add scores to your site](#)

A location in Newbury

Commute to **Downtown Newburyport**

🚗 25 min 🚲 60+ min 🚶 60+ min [View Routes](#)

📍 Favorite

🗺 Map

🏠 Nearby Apartments

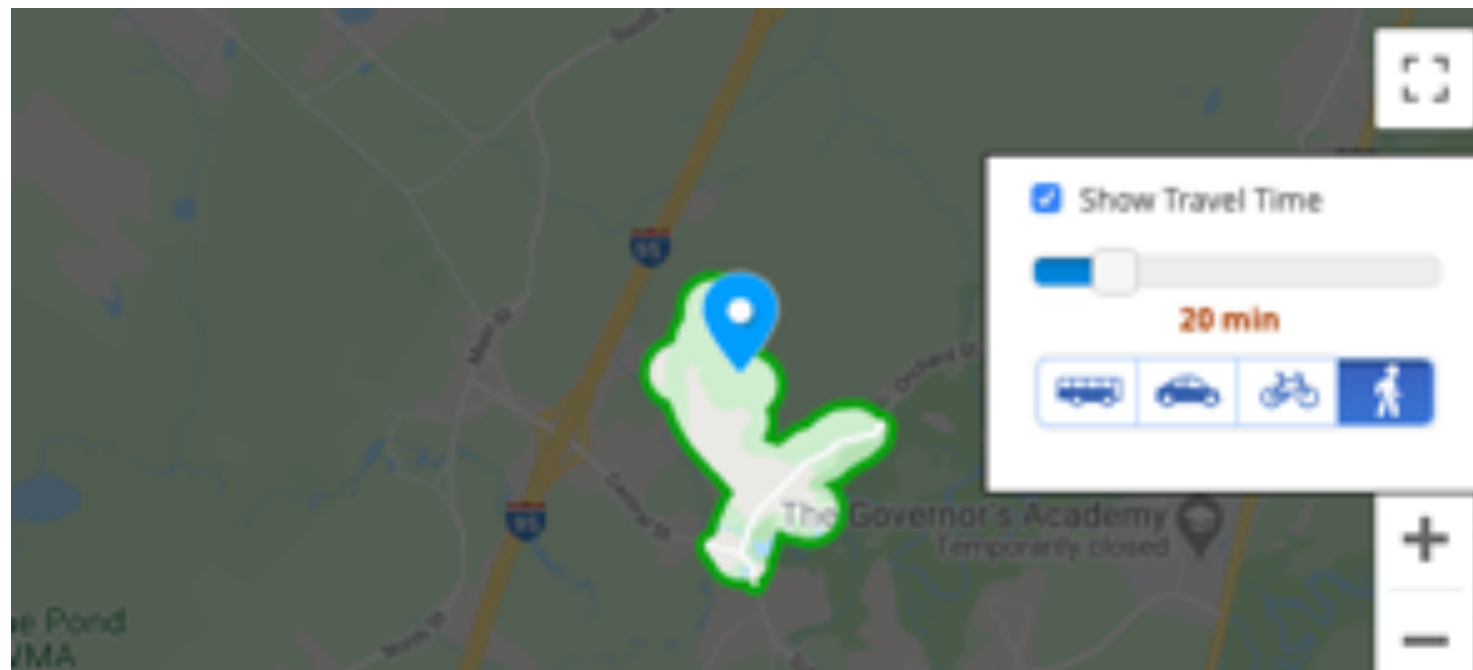
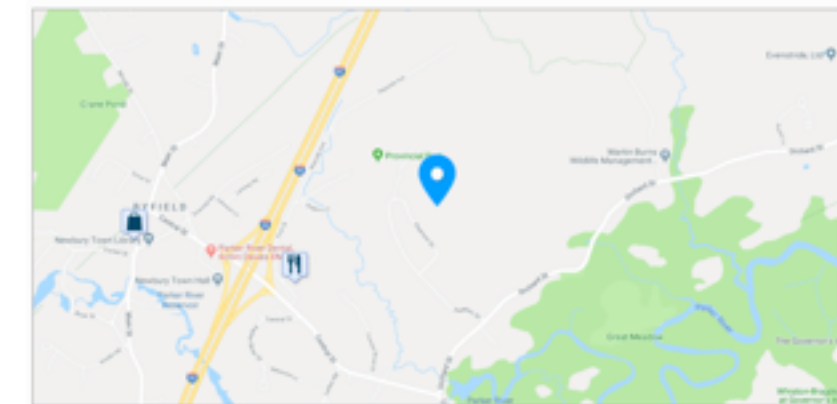
[More about 55 Pearson Drive](#)

Walk Score
4

Car-Dependent

Almost all errands require a car.

[About your score](#)



Walkability Index

📅 Metadata Updated: **December 18, 2019**

The Walkability Index dataset characterizes every Census 2010 block group in the U.S. based on its relative walkability. Walkability depends upon characteristics of the built environment that influence the likelihood of walking being used as a mode of travel. The Walkability Index is based on the EPA's previous data product, the Smart Location Database (SLD). Block group data from the SLD was the only input into the Walkability Index, and consisted of four variables from the SLD weighted in a formula to create the new Walkability Index. This dataset shares the SLD's block group boundary definitions from Census 2010. The methodology describing the process of creating the Walkability Index can be found in the documents located at <ftp://newftp.epa.gov/EPADataCommons/OP/WalkabilityIndex.zip>. You can also learn more about the Smart Location Database at <https://edg.epa.gov/data/Public/OP/SLD/SmartLocationDB.zip>.

Key Peer Review Findings

- ⦿ TEPP Traffic Assessment (TA) findings of *typical vehicle* traffic operations and traffic safety are acceptable and reasonable.
- ⦿ Trip generation, trip distribution, and future travel forecasts pertaining to vehicle traffic are acceptable and reasonable.
- ⦿ The proposed total of 48 garaged spaces @ 2/dwelling unit on site (typical for Newbury) should be able to accommodate typical site vehicle ownership demands. Most visitor parking demands will be on driveways without overflowing on street.

Cul-de-sac and Dead End Emergency Access

- ⦿ Connected street access is always preferred when possible, and this site, while constrained by wetlands, is no exception. Newbury's cul-de-sac maximum 500' requirement is well below the proposed 880' cul-de-sac. This requirement is very common in Massachusetts. After reviewing various sources of information on the maximum length allowed for fire emergency access, we find that the National Fire Protection Administration (NFPA) 1141 – Standard for Fire Protection Infrastructure for Land Development in Wildland, Rural, and Suburban Areas applies to this site. This national source indicates the access route proposed will in fact meet the minimum requirements for acceptable fire service as fewer than 100 homes are served. This fire service route would serve approximately 85 homes.
- ⦿ Emergency vehicle access on the site's proposed two dead ends needs to be addressed.

Transit and Pedestrian Activity

- ⦿ New residents will be a highly auto-dependent with virtually no scheduled public transportation services or business/work walking destinations within a reasonable walking time of 20 minutes.