



BY HAND

May 20, 2025

Lynn DeLisi, Co-Chair | Gary Taylor-Co-Chair

Lincoln Planning Board

16 Lincoln Road

Lincoln, MA 01773

RE: Proposed Preliminary Development and Use Plan

North Lincoln Zoning Overlay District

Dear Ms. Delisi, Mr. Taylor and members of the Board:

On behalf of Civico Development and Brendon Properties (collectively the "Applicant"), and in accordance with §12.5 of the Lincoln Zoning Bylaw, we look forward to a continued discussion of the application for our Page Road Housing Development, a 20-unit ownership residential community to be developed by the Applicant. Included with this submission are an updated narrative, as well as Preliminary Development and Use Plans based on initial comments from stakeholders.

As you are aware, the Planning Board will sponsor the Town Meeting Warrant Articles to amend the Zoning Map to include the necessary land area off of Page Road as part of the North Lincoln Planned Development District No. 7 and to approve the proposed preliminary concept plan. The positive support we received from the community, boards and groups solidify our belief that this housing project and its greater conservation effort spearheaded by the Rural Land Foundation, will be a residential community for which Lincoln can be proud.

In the pages and plans that follow, we describe the updated proposal and concept plan and provide additional information in response to comments raised regarding potential impacts and key benefits of this housing proposal to the Lincoln community.

Very Truly yours,

A handwritten signature in black ink, appearing to read "Andrew Consigli". The signature is written in a cursive, flowing style.

Andrew Consigli



Page Road Housing Proposal

Balancing Conservation and Housing Development

PRELIMINARY DEVELOPMENT AND USE PLAN

May 20, 2025

DEVELOPMENT TEAM:

Civico Development and Brendon Properties

Union Studio Architects and Community Planning (Architects)

Hancock Associates (CIVIL ENGINEERING)

Ryan Associates (Landscape)

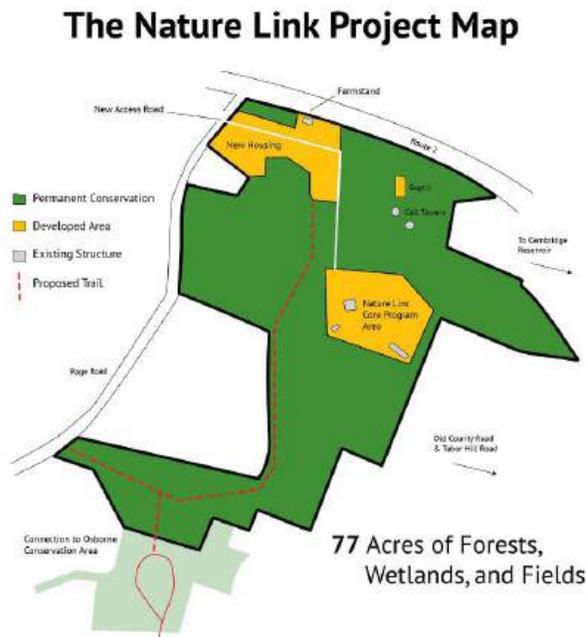
Kimley Horn (Traffic ENGINEERING)

Smolak & Vaughan, LLP (LEGAL)

Page Road Housing Proposal North Lincoln Planned Development- District No. 7

A. Introduction

“Page Road Housing” is a 20-unit residential development proposed at the corner of Route 2 (Eastbound) and Page Road in North Lincoln. The housing project is one of three components designed as a greater conservation effort proposed by the Rural Land Foundation (RLF), Farrington Memorial Nature Linc, and the Panetta Family, named the Nature Link. As a second component of this plan, and based upon a desire to maintain the existing farmstand, Area 2 is designed to maintain the rural presence of the farmstand area and associated parking for retail farmstand use. The third component involves the longstanding goal of the permanent protection of open space on the Farrington Parcel while reserving a small area for utilities and access as shown on the plans. The overall conservation and housing project consists of a total of 95 acres of land, of which 6 acres will be utilized for a total of 20 detached homes, .77 acres will be used for the retail farmstand area, and 77 acres of land will be preserved with a perpetual conservation restriction

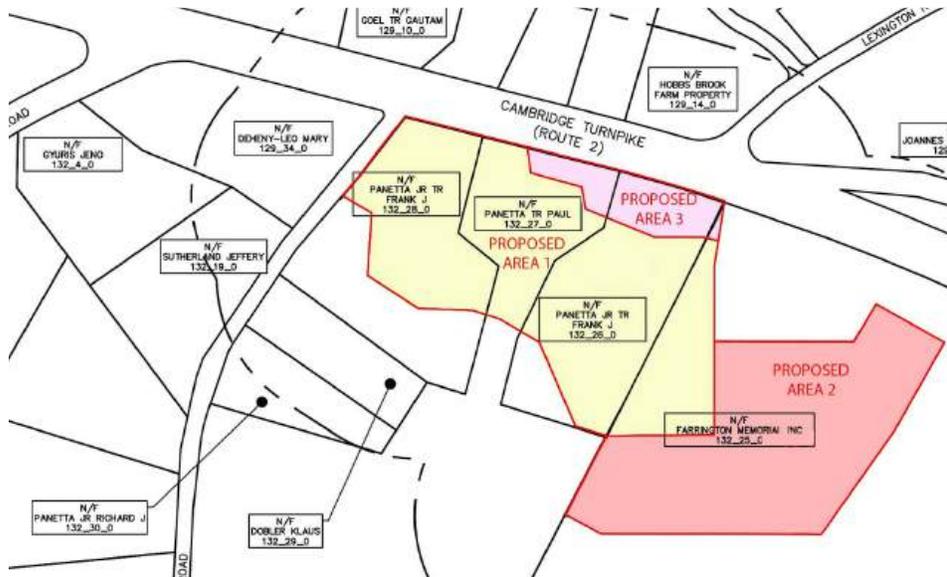


As described in greater detail herein, the Page Road Housing Development will be a traditional style neighborhood with front porches and sidewalks, focused around community and fostering neighborly interactions. The project will be designed to celebrate the Town’s characteristics of open space, and preservation of a rural farmstand area, while fostering forward thinking, eco friendly built environment.

The project will also address Lincoln's need for housing diversity by providing a range of smaller style homes geared towards first time home buyers, and empty nesters looking to downsize. In addition, 15% of the homes (or 3 Homes) to be income restricted and offered to households with income at or below 80% of the Area Median Income (AMI), with a perpetual affordable housing restriction for units qualifying as Local Initiative Program (LIP) Local Action Units in a manner generally consistent with the inclusionary zoning requirements of Section 14.5 of the Zoning Bylaw, as well as with the requirements of the Commonwealth's Executive Office of Housing and Livable Communities (EOHLC).

B. Site Location and Boundaries

The locus includes the land located at 109 Page Road, 279, 283, & 295 Cambridge Turnpike as shown on Assessors Map 132, Lots 28, 27, 26, and 25 respectively. The properties at 109 Page Road and 283 Cambridge Road are currently owned by Frank J. Panetta, Trustee of Country Farm Realty Trust. These two parcels total approximately 6 acres of land. The property at 279 Cambridge Road is currently owned by Theresa J. Panetta, Trustee of 279 Cambridge Turnpike Realty Trust No.1 and comprises approximately 1.9 acres of land. The property at 295 Cambridge Turnpike is owned by Farrington Memorial Incorporated consisting of approximately 74.5 acres of land. The above mentioned parcels are bounded by Route 2 or Cambridge Turnpike to the north, Page Road and abutting residential properties to the West, a combination of land owned by the city of Cambridge and residential properties to the East, and a combination of abutting residential properties and conservation land to the south.



Parcel Designations

C. Existing Conditions

The site is separated into three distinct areas. The first of which contains 109 Page Road, 279 & 283 Cambridge Turnpike which are residential lots with a second area at 283 Cambridge Turnpike having a commercial farm stand located along its property line adjacent to Route 2. The third area consists of 295 Cambridge Turnpike which is home to land classified as “Charity” with a dormitory building built about 1912. The existing topography of the site rises gradually from Route 2 to the existing house grades, approximately from elevation 228 to 234. The site then slopes gradually to the south to a system of wetlands and intermittent streams which are located within a mapped Surface Water Protection Zone A. The eastern portion of the site consists of land owned by Farrington Memorial Inc. which rises steeply from Route 2 from approximately elevation 224 to 236. This portion of the site is nearly entirely woodlands with the exception of an existing cell tower with associated driveway and parking area located approximately 400’ south along the driveway of 295 Cambridge Turnpike.



Aerial Photo of Existing Conditions

D. Types of Uses Permitted by Zoning (Proposed) (Section 12.5.3.(a)(i))

Principal & Accessory Uses Permitted:

Area 1 (Residential Use): While the R-1 Zoning District allows one building containing one dwelling unit, the Applicant proposes a total of 20 detached family homes on a single Lot (Area 1), along with associated utilities and infrastructure or other uses which are accessory in nature to the primary residential use and otherwise permitted by the Lincoln Zoning Bylaw, with such Dwelling Units to be developed and organized under the condominium form of ownership on Area 1;

Area 2 (Farrington Conservation): Also located within the R-1 Zoning District, the portion of the Farrington Parcel within Area 2 will be subject to a perpetual conservation restriction, but will include reserved rights for utilities such as subsurface sewerage disposal facilities and associated improvements and restrictions under Title 5 (310 CMR 15.000), stormwater improvements, and access to the private road on as emergency access which are all accessory to the housing on Area 1;

Area 3 (Farmstand/Retail Use): Also located within the R-1 Zoning District, the existing farmstand parcel (Area 3) will be preserved as a retail farmstand, along with associated parking and utilities, including septic system improvements that tie into the septic system improvements on Area 1 and Area 2. Such retail farmstand uses shall be as allowed within the R-1 Zoning District, except that such land area will be less than 5 acres in size, and will be used primarily for the sale of agricultural products and other products customarily sold at farmstands in Massachusetts without the limitation that a majority of the proceeds results from the sales of products raised within the Town, and without a dollar sales restriction as otherwise provided under Section 8.1(d), (e) & (f).

Uses Allowed by Special Permit: Other uses which are not listed in the Preliminary Development and Use Plan, but are permitted by the Lincoln Zoning Bylaw, as amended, may be permitted provided a Special Permit is granted by the Planning Board.

E. Proposed Project Summary

The proposed housing development will be located in Area 1 and will consist of 20 free standing detached homes using a condominium form of ownership, and will be accessed by a private driveway with the main entrance drive off of Page Road, and an emergency access provided via an existing private road to the east of the homes on Area 2. There will be a total of 20 detached homes, including 17 smaller style homes (1,850 sq ft avg finished area) with 3 bedrooms, and 3 mid size homes (3,600 sf) with 4 bedrooms. All homes will be 2 floors above grade level and have the option to have finished basements (not included in the SF area above) depending on site conditions. All homes will have garage space for two cars and ample driveway space for visitor parking.

With 15% of the units proposed for residents earning less than 80% of Area Median Income, there will be a total of 3 deed restricted units to remain affordable in perpetuity.

Smart growth and sustainable development principles have been kept in mind as the development plan has evolved. The homes will meet Lincoln’s Specialized Stretch Energy Code Standards and include advanced sustainable design features such as homes being all electric and solar ready. The project will satisfy a number of the Commonwealth’s Sustainable Development Principles, as further described below in Section Q.

F. Dimensional Requirements of N-Lincoln PDD #7 (Section 12.5.3.(a)(ii))

The following dimensional table for the proposed project is presented in accordance with §12.5.3 of the Lincoln Zoning Bylaw.

<u>DIMENSIONAL REQUIREMENTS OF N-LINCOLN PDD</u>	<u>REQUIRED (R-1)</u>	<u>PROPOSED</u>		
		<u>AREA 1</u>	<u>AREA 2</u>	<u>AREA 3</u>
TOTAL AREA OF N-LPDD		267,000 SF	189,150 SF	33,700 SF**
TOTAL DEVELOPABLE SITE AREA		267,000 SF	*	N/A
AREA OF OPEN LAND	NOT SPECIFIED	166,730 SF (DEVELOPMENT PARCEL)	*	23,800 SF
MAXIMUM HEIGHT	LESSER OF 36 FEET OR 2.5 STORIES	36 FEET	*	<36 FEET
MINIMUM FRONTAGE	120 FEET	200 FEET (PAGE ROAD)	*	410 FEET
MINIMUM LOT WIDTH	250 FEET	300 FEET	*	300 FEET
MINIMUM FRONT YARD	50 FEET (RES.) 75 FEET (NON RES.)	102 FEET	*	25 FEET**
MINIMUM SIDE YARD	50 FEET (RES.) 75 FEET (NON RES.)	14 FEET**	*	58 FEET**
MINIMUM REAR YARD	50 FEET (RES.) 75 FEET (NON RES.)	29 FEET**	*	29 FEET**
MAXIMUM GROSS FLOOR AREA (GFA)	NOT SPECIFIED	42,250 SF	*	2,800±SF
MAXIMUM LOT COVERAGE (GFA/DEVELOPABLE LAND)	0.25	0.16	*	0.08
MAXIMUM NUMBER OF DWELLINGS	1	20**	*	N/A
MAXIMUM DENSITY (UNITS/DEVELOPABLE LAND[Ac])	0.54 (1 UNIT/80,000SF)	3.26 UNITS/Ac**	*	N/A
IMPERVIOUS RATIO (IMPERVIOUS/DEVELOPABLE LAND)	NOT SPECIFIED	100,270/267,000 =37.6%	*	9,900/33,700=29.4%
MAXIMUM NUMBER OF PARKING SPACES	NOT SPECIFIED	80 (4/UNIT:2 GARAGE + 2 DRIVEWAY SPACES)	*	APPROX. 6 SPACES (NO MARKED SPACES)
MINIMUM NUMBER OF PARKING SPACES / UNIT	1 (AREA 1)	3	*	N/A
MINIMUM NUMBER OF SPACES/290SF (NON-RESID)	11.8 (AREA 3)	N/A	*	6**
MINIMUM VISITOR SPACES / UNIT	1 (AREA 1)	1	*	N/A
MINIMUM NUMBER OF LOADING BAYS	N/A	N/A	*	N/A

¹ GFA Does Not Include Parking Spaces Within Structures (Garages) Or Unfinished Or Finished Basement Areas.

* Proposed Area 2 Will Include A Future Conservation Restriction, Subject To Certain Reserved Utility And Access Rights

** A Waiver Is Requested From The Otherwise Applicable Dimensional Requirement.

G. Breakdown of Impervious and “Green” Site Elements

Buildings 38,600±SF <i>(Residential units)</i>	14.5%
Impervious 38,950±SF <i>(Roadway and Drives)</i>	14.6%
Trails and Sidewalks 14,030±SF	5.3%
Green Space 182,870±SF	68.5%
Open Space 196,900±SF <i>(Green + Trails and Sidewalks)</i>	73.7%
Total Impervious 91,580±SF <i>(Buildings + Impervious + Trails and Sidewalks)</i>	34.3%

**Document continues on next page*

I. Site Plan Design

The site layout features a unifying private road with a continuous tree lined sidewalk, connected throughout by a series of “pock parks” and open spaces. The homes will be clustered, while offering various levels of privacy and a close knit sense of community and neighborhood.

Primary access to the homes on Area 1 will be from Page Road on the westerly side of Area 1 through the existing driveway entrance on 109 Page Road, and will wind through the community. There will be emergency access onto the existing private road located to the easterly side of Area 1. This private road is owned by Farrington Memorial and maintains ingress and egress off of Cambridge Turnpike.

Utilities including water, septic system, electrical and telecommunications will extend through Area 1, and water, septic system, and stormwater management improvements as well as access, will extend onto Area 2 (a portion of the Farrington Memorial Property) as reserved rights under a conservation restriction.

A new lot (Area 3) will be created specifically for the preservation of the existing farmstand that is currently owned by the Panetta Family. Vehicular access off of Route 2 Eastbound (Cambridge Turnpike) will remain as is currently configured.



Landscape Plan featuring Open Space and Infrastructure

J. Homes

Home Type and Sizes

We have sought to maximize efficiency across the site, while maintaining open space and not overwhelming the location. The proposed home type distribution is such that 17 of the 20 total homes will be an average of 1,850 sf above grade. A total of 3(15%) of those 17 homes will be deeded as income restricted 3-bedroom homes. A total of 3 additional homes will be provided at an average of 3,600 sf above grade. Depending on site conditions, the owner may have a finished basement area. This home mix addresses the affordable and market rate housing needs for the target population of entry level home buyers and downsizing households, while providing homes for families as well-creating a much needed diverse housing community.

The table below illustrates the two main unit types, their size, and the estimated sale price for both market rate and income restricted units:

Unit Type	Bedrooms/ Baths	Area /Unit average above grade	Estimated Sales/Unit (market/affordable)
Type A (14 market, 3 affordable)	3BR, 2.5BA	1,850 sf	\$990,000 / \$350,000
Type B (3 market)	4BR, 3.5BA	3,600 sf	\$1,700,000

Market sale prices are based on Civico's review of comps and financial proforma. The affordable sales prices are calculated based on a monthly housing payment that is no more than 30% of 80% of HUD published median income for the area, adjusted for family size.



Typical Home Design

Perpetual Affordability We anticipate a deed restriction on all three affordable homes that will maintain affordability at no more than 80% AMI level in perpetuity, consistent with the requirements of the EOHLC's LIP Program and the Town's Inclusionary Zoning Bylaw requirements. Lastly, we will work with the Town to identify and have consensus regarding the locations of the affordable homes at the property.

K. List of Preliminary Development and Use Plans

1. Development Concept Plan (C1), prepared by Hancock Associates, dated May 20, 2025.
2. Site Analysis Plan (SA), prepared by Hancock Associates, dated May 20, 2025.
3. North Lincoln Planned Development District Plan (1) , prepared by Hancock Associates, dated May 20, 2025.
4. Abutter Summary(1), prepared by Hancock Associates, dated May 20,2025.
5. Illustrative Site Plan, prepared by Civico | BP | Union, dated May 20, 2025.
6. Cottage Home Type 1, prepared by Civico | BP | Union, dated May 20, 2025
7. Cottage Home Type 2, prepared by Civico | BP | Union, dated May 20, 2025
8. Typical Home Type 1, prepared by Civico | BP | Union, dated May 20, 2025
9. Landscape Plan, prepared by Ryan Associates, dated May 20, 2025
- 10.Grading Plan, prepared by Ryan Associates, dated May 20, 2025

L. List of Parties Receiving the Preliminary Development and Use Plan

- Town Clerk (1 +PDF)
- Selectmen (1 via Clerk + PDF)
- Planning Board (1 via Clerk + 7 + PDF)
- Conservation Commission (1 via Clerk)
- Fire Department (1 via Clerk)
- Police Department (1 via Clerk)
- Affordable Housing Trust (PDF)
- Housing Commission (PDF)
- Public Works (PDF)
- Historic Commission (PDF)

This Submission package is being circulated to all the above electronically in PDF form on March 20, 2025. In addition, six (6) hard copies have been submitted to the Town Clerk in accordance with the list above.

M. Application Fee

While it is uncertain what the application fee might be in accordance with bylaw §12.5.8(a), the project has numerous community stakeholders and a significant conservation component. Therefore, we request a waiver of the application fee.

N. Municipal Impact (Section 12.5.3.(a)(v))

Fuat Koro, Lincoln Finance Committee member, prepared a study titled “Fiscal Impact Study for Page Road Development” dated May 13, 2025. This report summarizes anticipated fiscal impacts related to the Rural Land Foundation’s plans to acquire 95 acres in the Town.

The potential revenue impacts are principally from property taxes and motor vehicle excise taxes, while increases to Town operating expenses could stem from public education and public safety. The property’s roads will be private, and maintenance would be the responsibility of the homeowner’s association.

Estimated property taxes are anticipated to be a net increase of ~\$200,000 per year from the current tax bills of the properties. Additionally, assuming 34 cars (1.7/unit) could add an additional ~\$6,000 of income.

Student enrollment, using a 0.38 students/unit estimate (greater than the Massachusetts average of 0.30) would lead to an expectation of 8 new students enrolling. The cost of these students is modeled at ~\$115,000. Public safety impacts, to service the area would be nominal and is expected to be absorbed by current staffing levels.

On a net basis, the project is expected to contribute over \$90,000 to the Town’s net income. If students were underestimated by ½, the project would still be net neutral from a purely fiscal perspective.

O. Traffic Analysis (Section 12.5.3.(a)(iv))

Kimley Horn Associates has prepared a preliminary traffic analysis to evaluate the impact of vehicles entering and exiting the proposed community from area roads and intersections.

The analysis summarizes both the existing and future traffic volumes to determine Level of Services (LOS), volume to capacity ratio, and delay during the AM and PM peak hours. The Development team will continue to work with the Town during the definitive site plan review process to finalize the specifics on the traffic circulation, resolve any open items, and be responsive to concerns from the community.

P. Environmental Impact (Section 12.5.3.(a)(vi))

The proposed design preserves the existing areas of the forested landscape, including the upland forest on the south side of the property. Given the current state of the property, including the presence of existing driveways, roads, buildings and lawns, and limited tree growth within the developable area, impact to wildlife habitat will be limited. The proposed housing development is not anticipated to have an adverse impact on local wildlife habitats or corridors, as it utilizes existing disturbed areas and avoids any disturbance to the critical forested upland and wetland areas and aligns with the existing environmental context of the site.

All building footprints are located beyond the 100-foot Buffer Zone to the south of the property. Due to the presence of wetland resources within and adjacent to the site, the proposed development is subject to permitting under the Wetlands Protection Act (WPA) and the local Lincoln Wetlands Protection Bylaw. The project has been designed to minimize impacts to these resource areas to the greatest extent practicable given proximity to wetlands and the Cambridge Reservoir.

The Project's suggested plant palette is focused on native and naturalized plantings, lessening the need for fertilizer and water use. Soil tests will be conducted on existing and imported soils to allow for proper amendments where necessary. The Project will specify the use of slow-release organic fertilizers and/or compost and use in accordance with the manufacturer's coverage and application recommendations. Specified treatments will be subject to Conservation Commission review and Order of Conditions. Road salt and fertilizer will be limited to the extent possible and be stored within a covered storage area on the property for maintenance use. Snow storage areas will be located on the property, away from the wetland resource areas.

Best management practices will be used to mitigate construction period impacts. These include crushed stone construction entrances to reduce tracking soil onto roadways and erosion control barriers to avoid erosion and transportation of soil surfaces prior to stabilization. As there are wetlands and water resource areas located on and in proximity to the site, extra care shall be taken in selecting erosion control methods and maintenance thereof. The development design incorporates low impact design and LEED friendly elements.

The increase to site impervious areas will result in the need for additional stormwater management practices. Best management practices and Limited Impact Design (LID) include methods for pretreatment, treatment and infiltration of stormwater. Fully engineered plans for stormwater management shall be completed in compliance with MA DEP stormwater management guidelines, including but not limited to, no increase in runoff rate, provide required groundwater recharge, and provide adequate treatment of runoff. The site is currently served by municipal water, with electric, cable, and telephone services provided via above-ground utility

lines along Page Road and Cambridge Turnpike. Proposed utilities on-site will be underground.

With regard to building features, the homes will use recycled building materials, install a solar-ready roof area, electric vehicle charging stations, use energy recovery ventilators, install an all-electric HVAC system, comply with the Home Energy Rating System (HERS) Index, use high efficiency domestic water heating, use Energy Star fixtures and appliances, and reduce lighting power.

Q. Sustainable Development Principles

The Commonwealth of Massachusetts has developed guidelines for project consistency with the Commonwealth’s Sustainable Development Principles. These principles, and how the Development Team has designed this housing proposal to comply with them, are summarized in the table below.

Sustainable Principles	Page Road Housing Development
<p>1. Concentrate Development. Support development that is compact, conserves land, protects historic resources....</p>	<p>The homes will be clustered to help to conserve land.</p>
<p>2. Advance Equity. Promote equitable sharing of the benefits and burdens of development. Provide technical and strategic support for inclusive community planning and decision making to ensure social, economic, and environmental justice. Ensure that the interests of future generations are not compromised by today's decisions.</p>	<p>The project has involved significant stakeholders, which has helped for more voices to be heard. Additionally, 15% of the homes will be affordable, providing much needed affordable ownership opportunities to households at or below 80% AMI</p>
<p>3. MAKE EFFICIENT DECISIONS. Make regulatory and permitting processes for development clear, predictable, coordinated, and timely in accordance with smart growth and environmental stewardship.</p>	<p>Lincoln has accomplished this goal by adopting the North-Lincoln Planned Development District.</p>

<p>4. PROTECT LAND AND ECOSYSTEMS. Protect and restore environmentally sensitive lands, natural resources, agricultural lands, critical habitats, wetlands and water resources, and cultural and historic landscapes. Increase the quantity, quality and accessibility of open spaces and recreational opportunities.</p>	<p>After completion, the residents will have usable outdoor space, and as noted, the development helps the Rural Land Foundation’s vision for protecting over 77 acres of adjacent land.</p>
<p>5. USE NATURAL RESOURCES WISELY. Construct and promote developments, buildings, and infrastructure that conserve natural resources by reducing waste and pollution through efficient use of land, energy, water, and materials.</p>	<p>The homes themselves will be energy efficient, and the construction process will seek to reduce waste. The development itself is also relatively compact, keeping the homes near each other to concentrate land disturbance.</p>
<p>6. EXPAND HOUSING OPPORTUNITIES. Support the construction and rehabilitation of housing to meet the needs of people of all abilities, income levels and household types. Develop multifamily housing that is compatible with a community’s character and vision.</p>	<p>The project increases the number of ownership units within Lincoln, and expands opportunities by having the vast majority of homes being less than 2,000 square feet. The design of the homes will seek to reflect Lincoln’s historical architectural character.</p>
<p>7. PROVIDE TRANSPORTATION CHOICE. Maintain and expand transportation options that maximize mobility, reduce congestion, conserve fuel and improve air quality.</p>	<p>The site is right near Route 2, which allows commuters easy access to a major roadway, and does require them to traverse more residential back roads to reach it.</p>
<p>8. INCREASE JOB OPPORTUNITIES. Attract businesses and jobs to locations near housing, infrastructure, and transportation options. Expand access to educational and entrepreneurial opportunities.</p>	<p>The project will create a significant number of construction jobs, and as noted, being near Route 2 allows commuters the ability to be nearer higher commercial areas.</p>
<p>9. PROMOTE CLEAN ENERGY. Maximize energy efficiency and renewable energy opportunities.</p>	<p>The project intends to be fully electric and solar ready, advancing a key goal of to reduce fossil fuel usage.</p>

<p>10. PLAN REGIONALLY. Support the development and implementation of local and regional, state and interstate plans that have broad public support and are consistent with these principles.</p>	<p>Many local and regional plans include the construction of housing, particularly homes that are smaller and not requiring significant individual sized lots. One of the goals in Lincoln’s Comprehensive Plan (2014) specifically states: Encourage retention or creation of smaller homes in order to maintain a range of housing stock available to smaller households and those in early or later stages of life.</p>
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R. Project Team

Co-Developer:
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Andrew Consigli

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Tom Ryan

Fiscal impact study for Page Road Development

Draft 5/13/2025



Prepared by Fuat Koro for discussion

Introduction

Scope & Framing Question

The Rural Land Foundation of Lincoln (RLF), in collaboration with the Farrington Memorial, Nature Linc, and the Panetta Family, is pursuing a land acquisition project in Lincoln. The initiative is intended to enhance conservation efforts and promote greater housing diversity.

This study assesses the potential fiscal impact of new housing production to provide relevant information to the Planning Board, Finance Committee, and Town residents in advance of a warrant article related to the project, which will be presented at the Special Town Meeting on June 25, 2025.

Out of Scope

This study will **not** consider the potential non-fiscal impact relative to:

- Aesthetics
- Environment
- Traffic
- Affordable housing

Methodology

The study will use:

- Analysis framework developed for the Housing choice act fiscal impact study: <https://www.lincolntown.org/DocumentCenter/View/85766/HCA-fiscal-impact-v3f>
- Marginal analysis (i.e. net new housing units, students, taxes, expenses, etc.)
- Fiscal 2025 dollars and tax rates

This study considers fiscal impact to have three components

1

Revenue

Property Tax

+

Motor
Vehicle Excise
Tax

2

Operating
Expense

Public Education

+

Public Safety

3

Capital
Expense

The project does not anticipate any infrastructure spend beyond what the property owner is expected to provide.

20 units can drive roughly \$205K of net new revenue from taxes



Property taxes from new housing

\$243K



Foregone property taxes from the removal of current houses

\$44K



New Motor Vehicle taxes

\$6K

Assumptions

Type	No	Sales Price	Taxes
3-bed affordable	3	\$0.35M	\$12,778
3-bed	14	\$1M	\$170,373
4-bed	3	\$1.65M	\$60,239
Total			\$243,390

Existing Houses	FY25 Tax
Panetta 1	\$13,538
Panetta 2	\$13,900
Panetta 3	\$16,808
Farrington	Tax exempt
Total	\$44,246

Units	Cars/unit	Tax/unit
17	2	\$185
Total		\$6,290

Notes

- *Tax rate:* FY25 residential property rate is 1.281%. (Excludes CPA surcharge of 3% which is conservative.)
- *Assessment to Sales Ratio:* Assume 95% on par with Lincoln's historic ratio. MA Department of Revenue requires ASR to be within 90-100% as part of its certification process.
- *Motor Vehicle tax:* Assume 2 vehicles/unit on par with MA average. Assume \$185/car on par with Lincoln average. (Sources: The Census Bureau and MVE Lincoln Tax data)

K12 enrollment can increase by an additional 8 students

We can triangulate a student/unit value based on multiple data sources.

Examine different scales.

Community	Students	Housing Units	Student Unit
Oriole Landing	2	60	0.03
Lincoln Woods	30	125	0.24
Average 9 MA 100+ unit condo complexes ²	421	2,212	0.19
Lincoln	596	2,100	0.28
Massachusetts	896,103	3,036,334	0.30

Examine correlation with unit size/ # of bedrooms.

MA Housing Unit Structure Type	Student unit	Multifamily examples	1 2 3 bedroom % split/sq ft
Single Family Detached	0.38	Lincoln Woods 125 units	32% 58% 12%
Multifamily 2-4 units	0.32	Oriole 60 unit	618–1,023 ft ² 1008–1,423 ft ²
Multifamily 5-19 units	0.22	Proposed Mall Complex ~40 units	650 850 ft ²
Multifamily 20+ units	0.1		

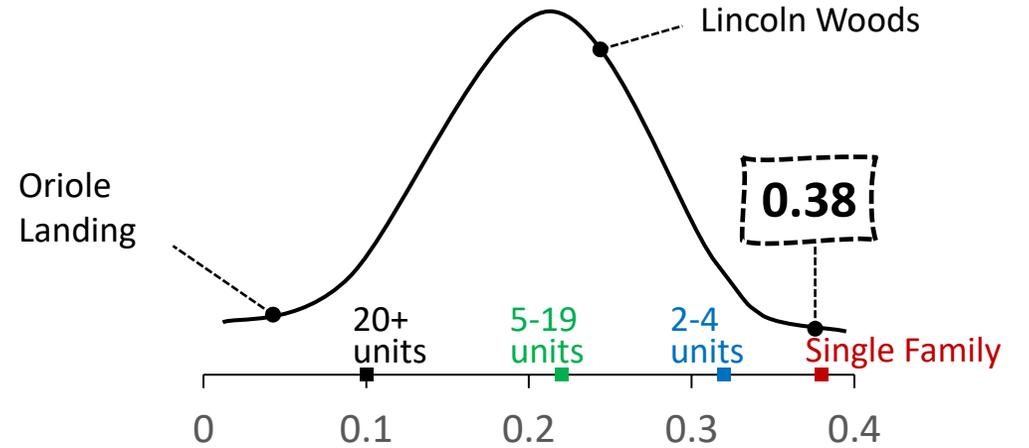
Avoid sample bias.

Not included	Student unit
Hanscom AFB	>1
Ryan Estate	0

Sources:

- LPS and Town of Lincoln
- US Census Bureau, 2022
- One Public School Child for Every Three Homes Special Studies 5|1|20 By Na Zhao, Ph.D NAHB Economics & Housing Policy Group
- Fiscal Impact Analysis Oriole Landing 01|22|18 By Fougere Planning & Development

We can set a “baseline” students/unit ratio based on a probability range



20 units x 0.38 students/unit

~ 8 students¹

The incremental students cluster into LPS and LSRH²

6 students

2 students



LPS K-8

LSRH 9-12

¹ No current students from the existing properties

² Based on current enrollment split

8 incremental public-school students can drive \$114K of new expenses

<i>Public School</i>	<i>Likely Students</i>	<i>Cost/pupil</i>	<i>Total Expense</i>
LPS	6	\$11,980	\$71,880
LSRH	2	\$21,200	\$42,200
Total			\$114,280

Notes

- LPS: Marginal cost/pupil calculated based on 2.5% CAGR from 22/23 school year shown in appendix
- LSRH: Marginal cost/pupil calculated based on 3% CAGR from 22-23 school year shown in appendix

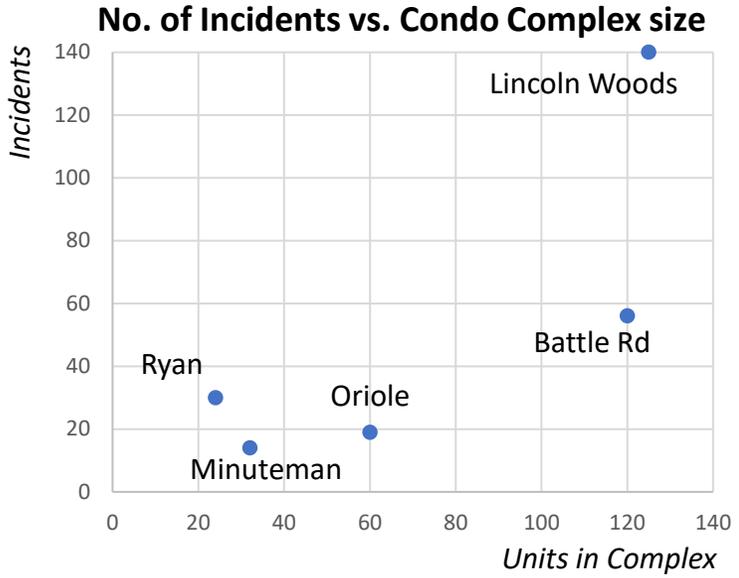
Rise in Public Safety incidents can be managed without financial impact

Lincoln Incidents

Police Department

~ 8000

2023 Condo Complex Incidents



Fiscal Impact from Population Growth

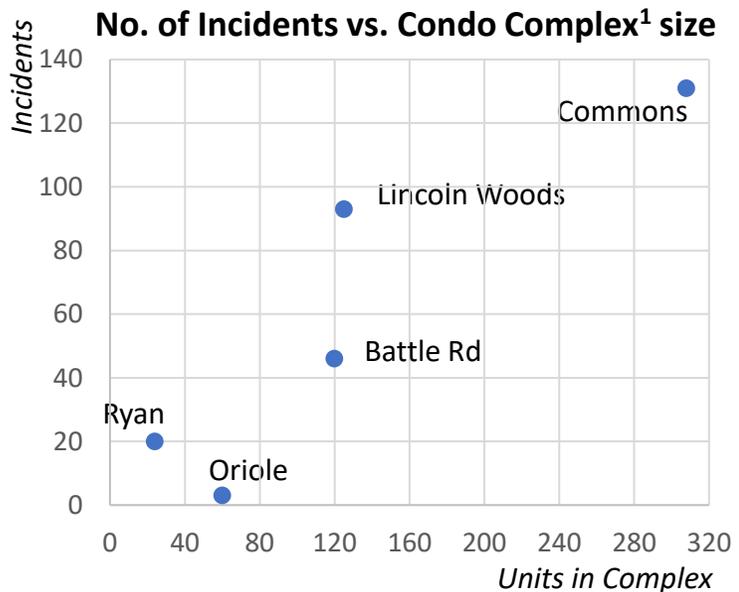
Given the limited scale of the development – adding just 17 net new units – the resulting increase in call volume is expected to have a minimal impact on public safety operations and budgets.

Public safety departments can accommodate the projected demand – estimated to be fewer than 20 additional incidents per year – within current staffing levels, without any significant effect on service levels such as response times.

Fire Department & EMS

~ 1500

Fire and EMS split:
50% | 50%



The project is not expected to have an adverse fiscal impact

Baseline scenario contributes \$91K

1 Revenue

Net new taxes
\$205K

2 Operating Expense

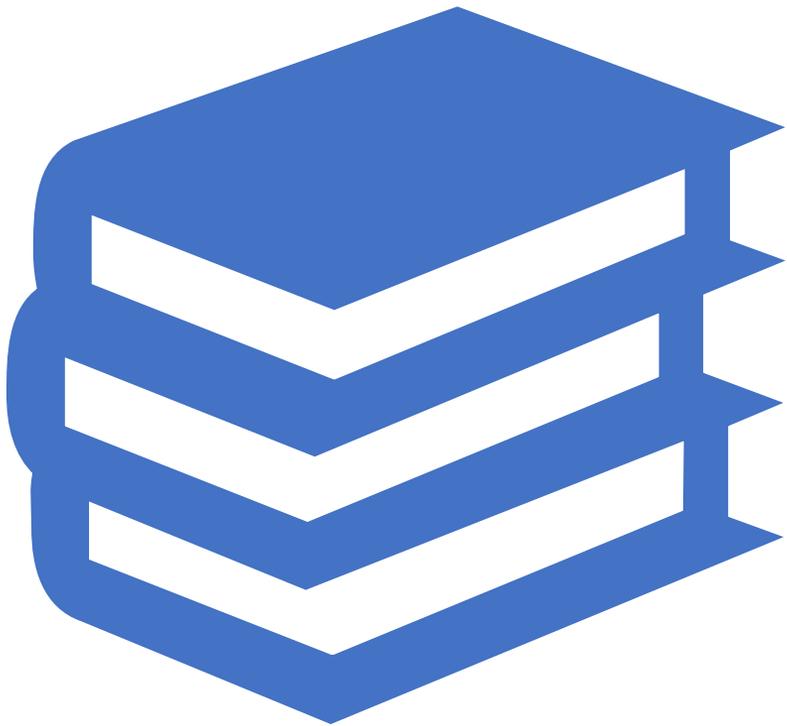
Education + **Public Safety**
\$114K *Negligible*

3 Capital Expense

None

Breakeven scenario suggests there is adequate cushion

- Breakeven is reached at 15 public school students.
- Reaching breakeven requires 0.72 students per unit – nearly double the estimated average for a single-family house.



Appendix

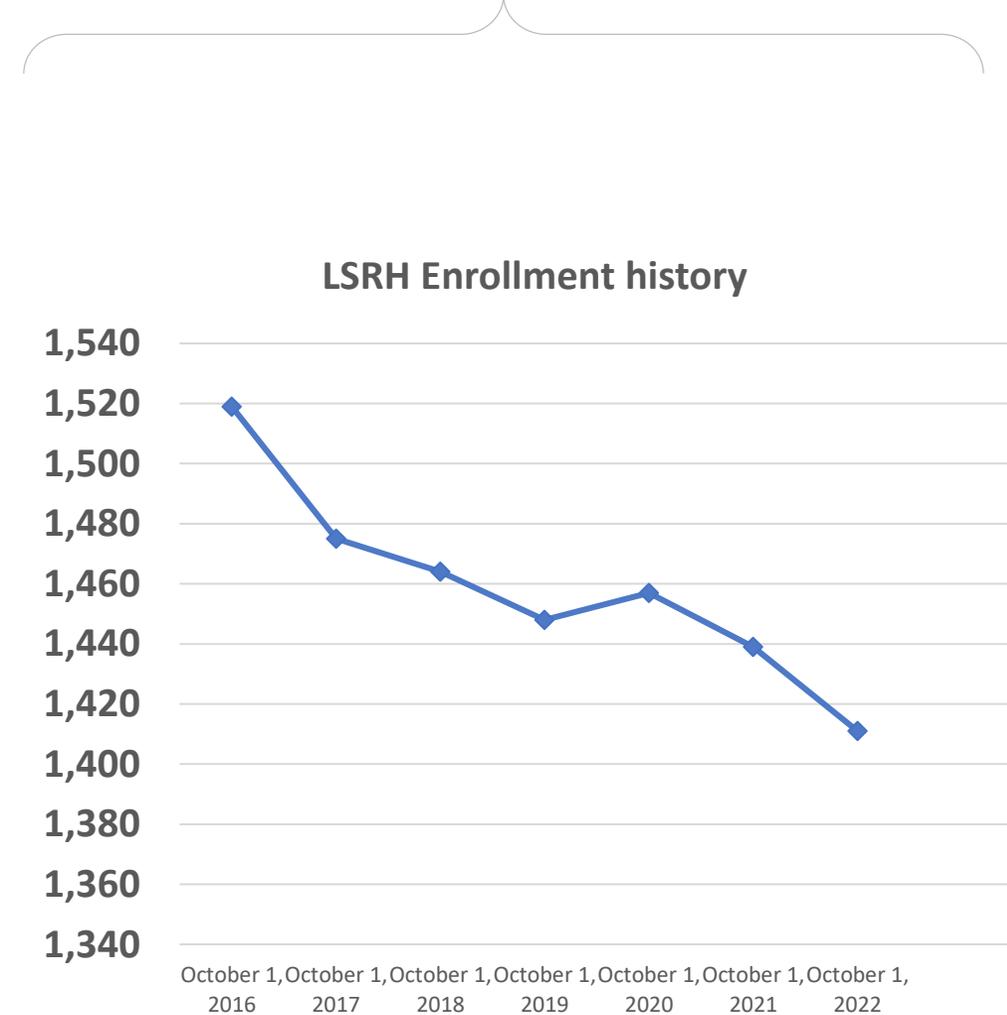
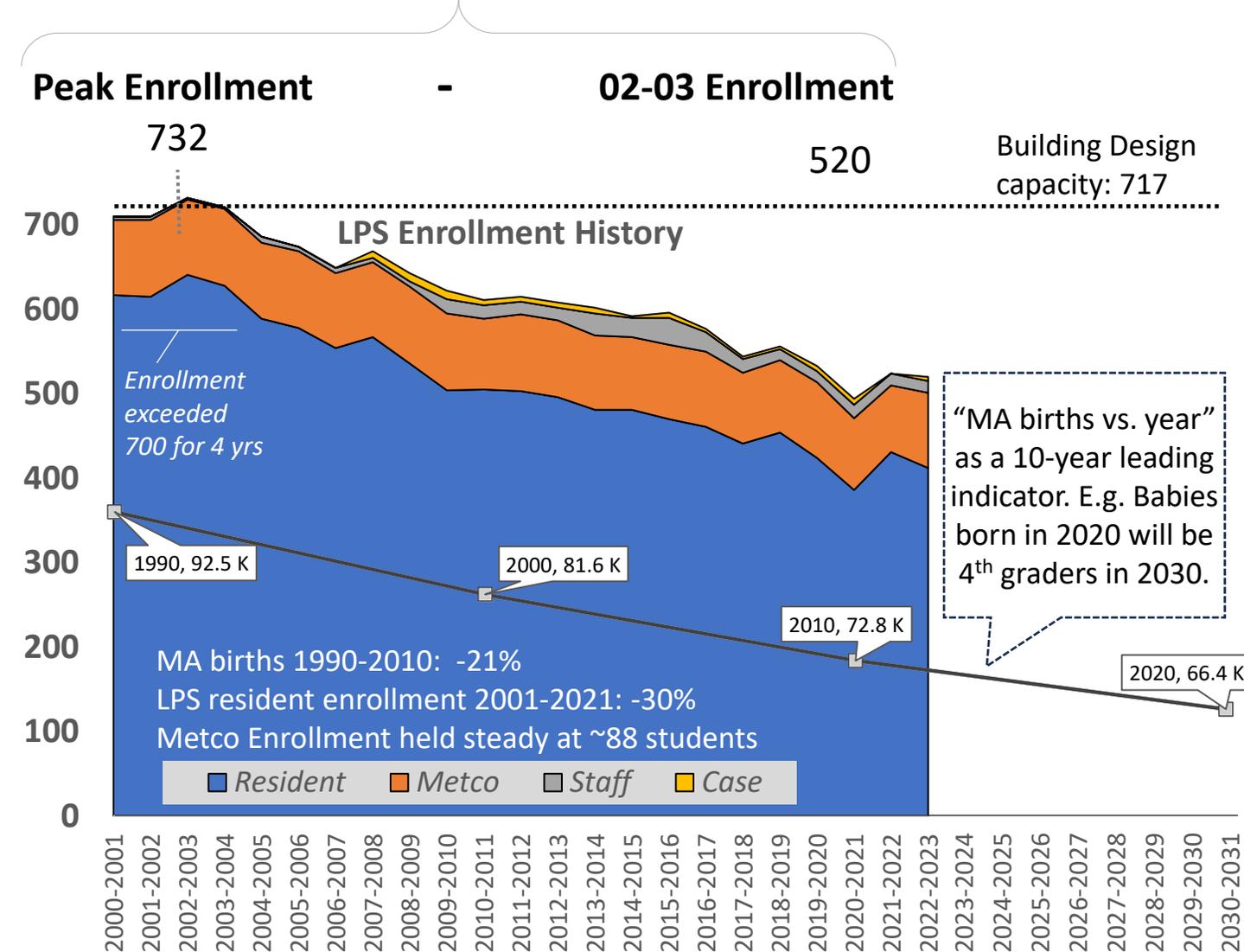
School related expenses
Leverages HCA Fiscal Impact Study

<https://www.lincolntown.org/DocumentCenter/View/85766/HCA-fiscal-impact-v3f>

Enrollment trends suggest schools will not face facility-related capacity issues

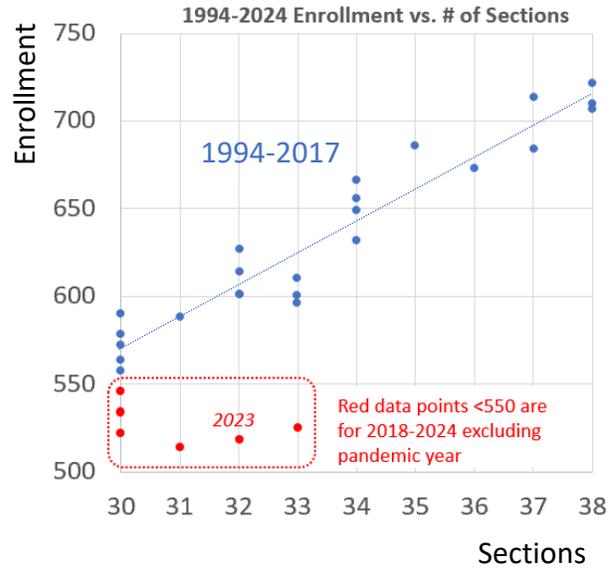
22-23 Enrollment is ~212 students fewer compared to peak enrollment in the 02-03 academic year

22-23 Enrollment is ~108 students fewer compared to 16-17 enrollment

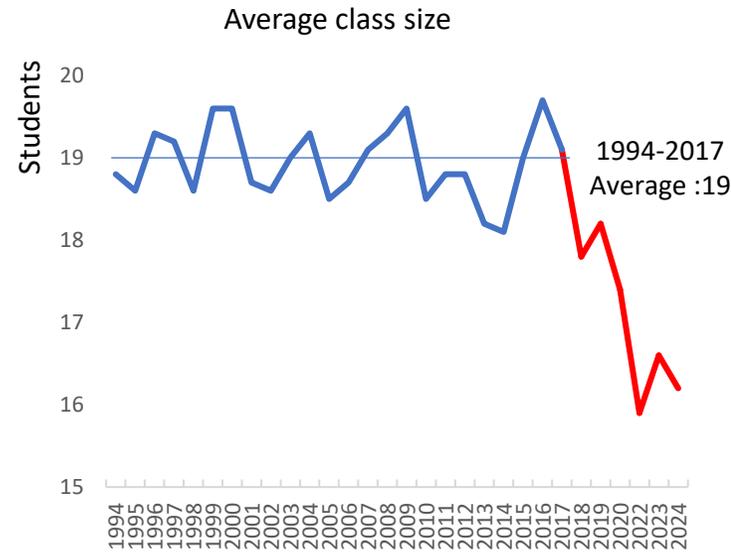


LPS average class size is below historical norms – suggesting excess capacity

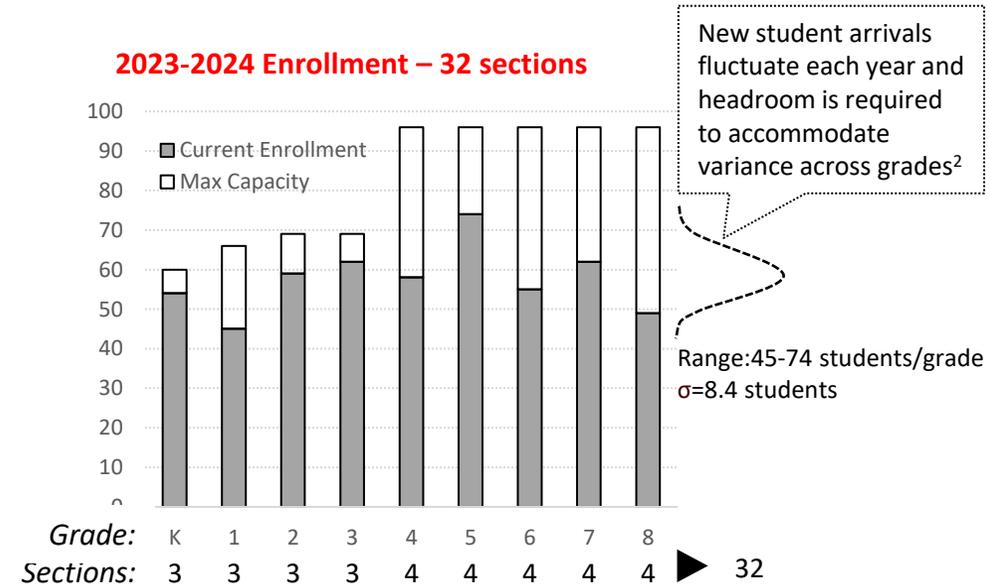
Number of sections have adapted in response to changes in enrollment from 1994 to 2017¹, but this trend did not persist since 2018.



Consequently, average class size has dropped since 2018.



There is significant capacity to increase enrollment without adding additional sections beyond 2023 levels if average class size returns to pre-2018 levels.



School committee class size guidelines

	K	1	2	3	4	5	6	7	8
Recommend	18	20	21	21	22	22	24	24	24
Maximum	20	22	23	23	24	24	24	24	24

Enrollment based on average class size of 19

Enrollment	Sections
570	≤30
589	≤31
608	≤32
627	≤33
646	≤34

19 has historically allowed the school to maintain class size per school committee guidelines

¹ Excludes pandemic year

² K-5 teachers can flex ± 1 grade to accommodate enrollment variances

The LPS marginal cost/pupil for 70 students is \$11.4K for school year 22-23

The costs to run the school roll up to four high-level buckets: Faculty, Student, Transportation, School.

LPS 22-23 Actual Spend Breakdown of \$12.1M

Faculty 63.4% | Supplies 5.3% | Transport 4.1% | School 27.2%



Incremental costs can be mapped to these four buckets.

Grades	Impact	Faculty	Expense
K-5	4 FTEs	<ul style="list-style-type: none"> Open two new sections based on current capacity. Each section has a fully dedicated teacher & assistant Teacher salary+35% benefits+ 8% stipend, subs, misc: \$114K Instructional Assistant salary+35% benefits: \$47,250 	\$323K
6-8	1.5 FTEs	<ul style="list-style-type: none"> Add 1.5 FTEs for 23 additional students. 1 FTE addresses ~20 students based on current capacity. Middle school can accommodate fractional FTEs. Teacher salary+35% benefits+ 8% stipend, subs, misc: \$114K 	\$172K
K-8	1 FTE	<ul style="list-style-type: none"> 14 special ed students at current participation rate of 20%. A teacher can support 15 special ed students 	\$114K
Grades	Impact	General Supplies	Expense
K-8	70 Misc.	<ul style="list-style-type: none"> Textbooks, software, Published Materials Durable Consumable Supplies at ~\$1300/student 	\$91K
Grades	Impact	Transportation	Expense
K-8	1 Bus	<ul style="list-style-type: none"> Buses aren't operating at capacity, but if route optimization can't match supply and demand, an extra bus is needed. Cost/bus \$80K. A but fits 55-70 students. Bus ridership is ~50%. Option C housing is <2 mi of school, not within transportation policy, but students are offered to ride at a cost 	\$80K
Grades	Impact	School	Expense
K-8	-	<ul style="list-style-type: none"> OoD not included. There're currently two students in the program. Significant fluctuations can be handled by a reserve. Current level of administrators, support staff, and facilities expenses can address the increase 	-

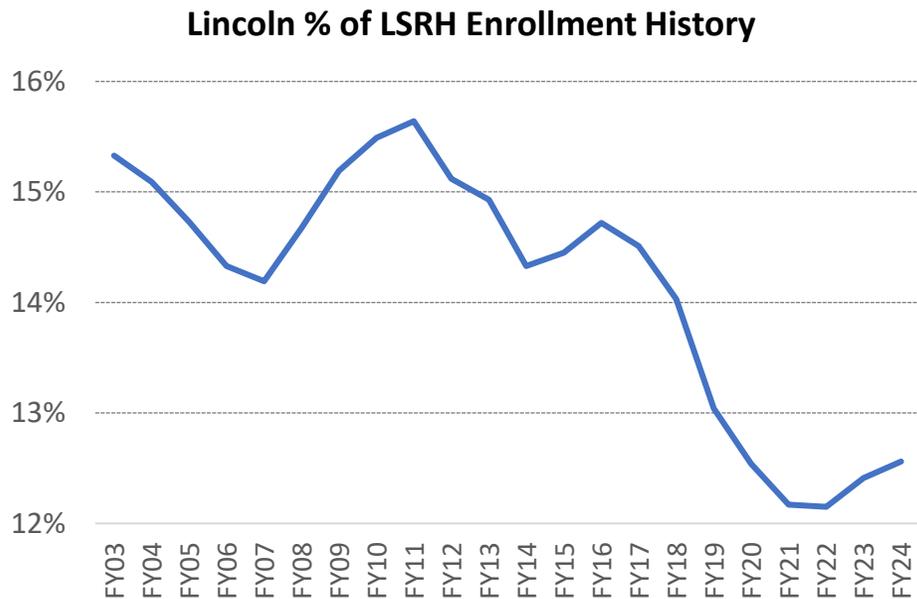
Average cost per pupil:\$23.3K (22-23) The average cost for 70 extra costs \$11.4K

The LSRH marginal cost/pupil for 30 students is \$20K for school year 22-23

The impact of 30 students on LSRH costs is minimal considering the school's substantial total enrollment – 1411 in October 2022. But, Lincoln's portion of the budget varies depending on the enrollment split between the two towns. The budget split is computed using a two-part formula:

1. A three-year rolling enrollment split (\$2M in FY23)
2. A state-defined minimum contribution (\$2M in FY23)

Although the state-defined minimum contribution considers factors beyond enrollment, such as “ability to pay” and “municipal growth”, historically it closely mirrors the enrollment ratio. (i.e. # 1 ≈ # 2) Hence, the fiscal impact will be computed only based on changes in this ratio.



The following table illustrates the change to Lincoln’s contribution to LSRH budget based on FY23 data and a hypothetical increase of 30.

	Enrollment change		Change
	Enrollment Oct 2022 Actual	Lincoln grows by 30 Sudbury stays flat	
Lincoln	176	206	30 ³
Sudbury	1235	1235	0
LSRH	1411	1441	30
Lincoln %¹	12.5%	14.3%	1.82%

	Budget Split	Budget Split change	Contribution Change
Lincoln	\$4.0M	\$4.6M	\$0.6M
Sudbury	\$27.9M	\$27.8M	(\$0.1M)
Total assessment	\$31.9M ²	\$32.4M ⁴	

Assumptions:

- ¹ Rolling 3-year average.
- ² Total assessment= Total budget \$35.9M – total revenue \$4M.
- ³ 30 students can be absorbed into 1411 without any capacity concerns.
- ⁴ Budget growth = 85% enrollment growth. Costs scale linearly with enrollment except for Administration, support staff, facilities'

The average cost for 30 extra students is ~ \$20K.

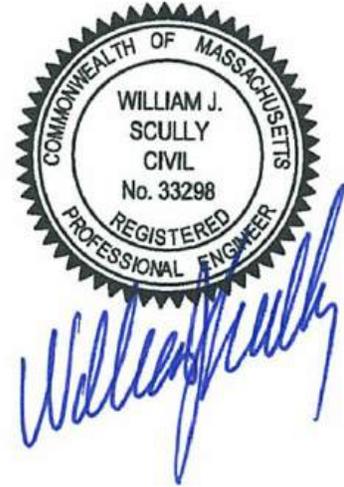
MEMORANDUM

To: Andrew Consigli
Civico Development LLC
40 Jackson Street, Suite 3200
Worcester, MA 01608

From: William J, Scully, P.E., RSP₁

Date: May 19, 2025

**Subject: 109 Page Road Residential Development
Traffic Assessment
Lincoln, Massachusetts**



INTRODUCTION

The purpose of this memorandum is to review the traffic access regarding the proposed development located at 109 Page Road in the Town of Lincoln, Massachusetts, just south of Route 2. The development site is illustrated in **Figure 1**. The proposed plan consists of twenty single family home (20) lots with access from Page Road. An emergency connection to the private road on the east side of the development site will also exist. The illustration of the proposed site development plan is included in the **Appendix**. While this is a relatively small development, the town regulations request traffic conditions and the characteristics of eth proposed development be examined as part of the local review process.



Figure 1. Project Site

PROJECT LOCATION

The traffic assessment focused on the site access point's intersection with Page Road. Page Road is a two lane, two way public street that runs between Trapelo Road to the south and Route 2 on the north end. The roadway is approximately 17-18 feet wide in the area of the project. The private road on the east side of the development site also connects with Route 2 but is dead ended to the south providing access to the Farrington Memorial property. Unless one is traveling to the east towards Boston or wishes to connect to I-95, the majority of site related traffic will utilize Page Road as it connects south to the town center and other streets that ultimately provide connections to the west and south. Route 2 in this area is a multiple lane, divided highway with a raised center median. As a result, movements at the Route 2 intersection with Page Road would be limited to a right turn into Page Road or a right turn out of Page Road. Page Road is classified as a Local Road and is under the jurisdiction of the Town of Lincoln. The speed limit south of the project site is posted at 30 mph with warning speeds posted at various horizontal curves along the route. The context of Page Road is a rural type roadway with some homes along the roadway but also a heavily wooded corridor. There is no sidewalk along Page Road. The following photos illustrate current conditions of Page Road in the vicinity of the proposed project site.



Page Road Looking South from Site



Page Road Looking North from Site

DATA COLLECTION

An automatic traffic recorder (ATR) count was conducted on Wednesday and Thursday, May 7-8, 2025, along Page Road as well as the private road. These counts provided data on travel speeds as well as providing volume information needed to assess the future site driveway operating conditions.

The average daily traffic volume observed on Page Road was measured to be approximately 224 vehicles per day (VPD) (total of both directions) which in general, would classify Page Road as a low volume roadway. The collected data also showed that the average travel speed was measured to be between 21 and 29 MPH depending on the direction of travel while the 85th percentile speed was observed to be approximately 30 MPH depending on the travel direction. The counter location was approximately 500 feet south of Route 2. Table 1 summarizes the traffic data collected for this study.

TABLE 1. SUMMARY OF OBSERVED TRAFFIC VOLUMES

Location	Direction	Posted Speed Limit	85 th Percentile Speed (MPH)	Average Weekday Volume (rounded)	Weekday AM Peak Hour	Weekday PM Peak Hour
					Volume	Volume
Page Road	NB	30 MPH	31 MPH	224	26	15
	SB		29 MPH		8	10

Note: May 7-8, 2025 count data.

The data collected is included in the Appendix.

FUTURE CONDITIONS

Future traffic conditions without the proposed development were developed by applying an overall growth rate to the observed data. Traffic growth on the transportation network was determined by historic growth trends at nearby MassDOT traffic count stations and population census data. An annual growth of 1.0 percent (1.0%) was selected as a reasonable background growth rate and will be applied annually to the existing traffic volumes in developing the future (2032) conditions.

SITE TRAFFIC GENERATION

The proposed development project’s site generated trips were estimated using the trip generation models published by the Institute of Transportation Engineers (ITE) for Land Use Code (LUC) 210 (Single-Family Detached Housing) documented in the ITE *Trip Generation Manual, 11th Edition*.

A summary of the daily and weekday peak hour estimates is included in **Table 2**. As shown, the proposed development of twenty (20) single family homes is estimated to generate a total of 230 vehicle trips vehicles on a typical weekday with 115 entering trips and 115 exiting trips. During the AM Peak hour, it is estimated that the project will generate seventeen (17) vehicle trips with the majority exiting the site. During the PM peak hour, twenty-two (22) vehicle trips are estimated with the majority of these entering the site. The trip generation calculations are provided in the **Appendix**. The proposed development project can be characterized as a low traffic generator.

**Table 2. Summary of Site Generated Trip Generation
Single Family Detached Housing (20 Dwelling Units)**

In	Weekday Out	Total	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
115	115	230	4	13	17	14	8	22

Note: ITE Land use Code 210

In terms of peak hour movements to and from the project site, it is anticipated that a majority of trips would be to and from the east to reach I-95 or continue east towards Cambridge and Boston. As a result, leaving the site most of the trips would turn towards Route 2 and then turn right, Those motorists wishing to travel to the west would likely travel south along Page Road, reach Trapelo Road and turn west to reach the traffic signal at the intersection of Route 2 at Beford Street. For analysis purposes, the peak hour trip distribution patterns have been assumed as follows:

- 70% coming to/from the east (towards I-95 or Boston and points east)
- 20% coming to/from the west
- 10% coming to/from the south (local roadways)

The peak hour volume networks for the proposed site drive under Build conditions are shown in Figure 2.

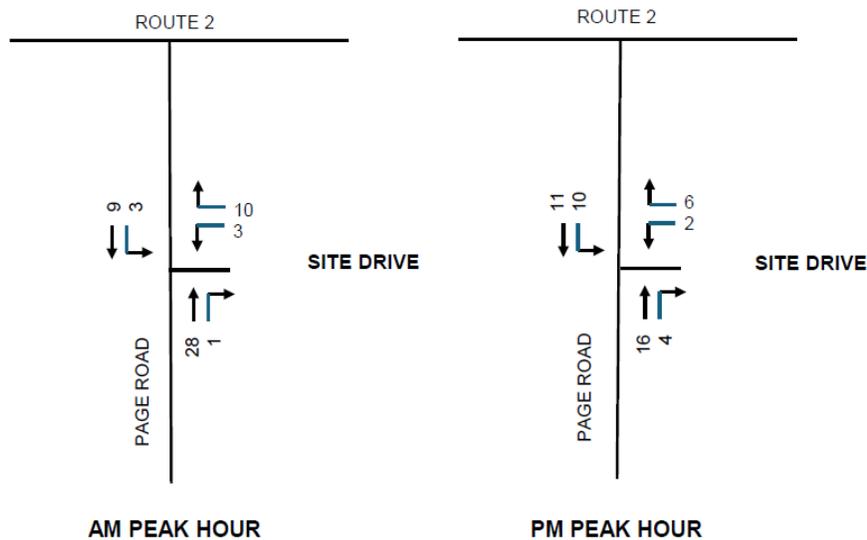


Figure 2. Estimated Build Peak Hour Traffic Volumes

Analysis

Intersection capacity analyses were performed for the estimated Build Conditions (2032) for the site drive intersection with Page Road. The analyses were performed using the HCS Software, which utilizes methodologies contained in the *Highway Capacity Manual (7th Edition)* for signalized and unsignalized intersections. According to the *HCM 7th Edition*, capacity is defined as the maximum number of vehicles that can pass over a particular road segment or through a particular intersection within a fixed time duration. The analysis provides a qualitative measure of Level of Service (LOS) to indicate the operating characteristics of a road segment or intersection based on vehicle delay experienced. The *HCM* defines six levels of service, LOS A through LOS F, with LOS A being the best and LOS F being the worst. Typically, a LOS D or better at signalized and unsignalized intersections is preferred, although lower levels are tolerated in more urban type areas during peak travel hours.

The ranges of delay for each level of service for both signalized and unsignalized intersections are shown in **Table 3**.

Table 3. Level of Service Range of Delay		
Level of Service (LOS)	Delay per Vehicle (seconds per vehicle)	
	Signalized Intersections	Unsignalized Intersections
A	≤ 10	≤ 10
B	10 -20	10 -15
C	20 – 35	15 – 25
D	35 – 55	25 – 35
E	55 – 80	35 – 50
F	≥ 80	≥ 50

Intersection Capacity Analysis Summary

A summary of the intersection capacity analysis for the weekday AM and PM peak hours for the estimated 2032 Future Conditions and can be found in **Table 4**. The intersection analysis worksheets are contained in the **Appendix**.

The key finding of the intersection capacity analysis as it pertains to the proposed project is that site traffic will be able to enter and exit the site very efficiently with a LOS A operating condition during each peak period.

**TABLE 4. SUMMARY OF LEVEL OF SERVICE ANALYSIS
PAGE ROAD AT SITE DRIVE**

Movement	AM Peak Hour			PM Peak Hour		
	LOS	Delay	95th % Queue Lengths (feet)	LOS	Delay	95th % Queue Lengths (feet)
Site WB Exit	A	8.5	0	A	8.5	0
SB Left	A	7.3	0	A	7.3	0

Sight Distance Analysis

In addition to the trip estimates and intersection operating conditions, sight distances in relation to the proposed site drive were also examined. Adequate sight distance is an important safety consideration at intersections and driveways. The sight distances were reviewed relative to the proposed site drive location with Page Road. Stopping sight distance (SSD) is the distance required for an approaching driver (with an eye height of 3.5 feet) to perceive and stop in time to avoid a collision with an object 2 feet high in the roadway. The values are based on a perception and reaction time of 2.5 seconds and braking distance required under wet, level pavements. Corner or intersection sight distance (ISD) is based upon the time required to perceive, react and complete a desired exiting maneuver from a driveway once the driver decides to execute the maneuver. ISD is more related to operations and to some degree, the convenience or inconvenience of oncoming motorists.

The posted speed of 30 mph begins just south of the proposed site drive. Approaching in the northbound direction, Page Road is straight and the motorist has good visibility. Route 2 meets Page Road approximately 180 feet to the north. Vehicles approaching the site drive from Route 2 will be turning onto Page Road at a slower speed typically 15-20 mph with good visibility. At 20 or 25 mph on that turn, the minimum SSD would be 150 or less. The motorist exiting the site drive will have clear visibility to Route 2 as well as looking to the south. The minimum criteria are defined by the American Association of State and Highway and Transportation Officials (AASHTO)¹. SSD relates specifically to safety. As indicated by AASHTO, if available ISD meets or exceeds the minimum SSD criteria, then there is an adequate safe sight distance available for motorists to avoid collisions.

Based on the analysis, it can be concluded that the minimum criteria is satisfied. The analysis does presume the corners of the site drive intersection will be cleared and leveled sufficiently to not affect visibility. Table 5 summarizes the distances.

**TABLE 5
SUMMARY OF AVAILABLE SIGHT DISTANCES**

View/Direction	Measured Distance (feet)	Required for 30mph (feet)
Approaching Drive from North	180	200*
Approaching Drive from South	300+	200
Looking to the North from Site Drive	180	200*
Looking to the South from Site Drive	250+	200

*Turning traffic will be at 15-20 mph and required distance criteria would be 150 feet or less.

¹ American Association of State Highway and Transportation Officials (AASHTO), A Policy on Geometric Design of Highways and Streets, (Green Book) Washington, D.C., 2018.

CONCLUSIONS

The analysis of traffic with respect to the proposed development of 20 single family homes at 109 Page Road was completed following standard practices and guidelines. The key findings of this traffic assessment are as follows:

- Page Road is a low volume roadway under current conditions.
- The proposed development is estimated to generate a relatively low number of new trips over the course of the day as well as during peak periods with most of the peak hour traffic oriented towards Route 2.
- Site traffic will be able to enter and exit the site safely and efficiently without creating measurable delay to vehicles presently on Page Road.
- Safe sight distances will be provided with respect to the location of the proposed site drive – an existing driveway serving an existing home.

While the project is not anticipated to create new deficiencies, it is recommended that the site drive be STOP sign controlled, and have landscaping and signage low lying and set back so as not to infringe on sight visibility.

APPENDIX



Project Entrance

Right In/Right Out Only

Page Road

Play Space

Cambridge Turnpike

Lexington Road

Gerard's Nursery

Linear Green

emergency vehicles only

Typical Cottage:
(10) Total

100' Wetland Setback

Wetland Delineation

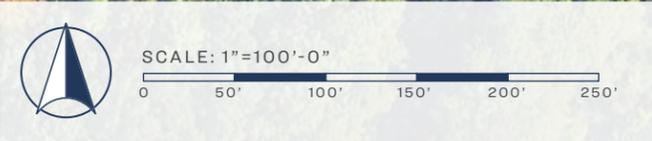
Existing Pond

Typical Walkout
Cottage: (7) Total

Typical Home:
(2) Total

[Private Road]

Walkout Home:
(1) Total



109 Page Road

PRELIMINARY SITE SCHEME
APRIL 28, 2025



VOLUME

Page Rd S/O Cambridge Tpke/SR 2 (42.434304,-71.275887)

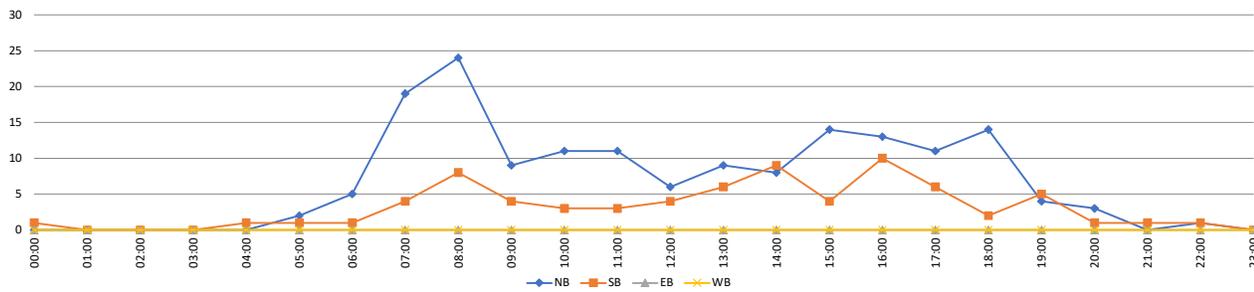
Day: Wednesday

City: Lincoln

Date: 5/7/2025

Project #: MA25_430065_001

DAILY TOTALS						NB	SB	EB	WB	Total	DAILY TOTALS						
						164	75	0	0	239							
15-Minutes Interval											Hourly Intervals						
TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB	EB	WB	TOTAL
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0:15	0	0			0	12:15	1	1			2	01:00	0	0			0
0:30	0	0			0	12:30	2	1			3	02:00	0	0			0
0:45	0	0			0	12:45	1	1			2	03:00	0	0			0
1:00	0	0			0	13:00	2	1			3	04:00	0	1			1
1:15	0	0			0	13:15	4	2			6	05:00	2	1			3
1:30	0	0			0	13:30	1	2			3	06:00	5	1			6
1:45	0	0			0	13:45	2	1			3	07:00	19	4			23
2:00	0	0			0	14:00	2	1			3	08:00	24	8			32
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2:30	0	0			0	14:30	4	3			7	10:00	11	3			14
2:45	0	0			0	14:45	0	3			3	11:00	11	3			14
3:00	0	0			0	15:00	5	2			7	12:00	6	4			10
3:15	0	0			0	15:15	2	1			3	13:00	9	6			15
3:30	0	0			0	15:30	3	1			4	14:00	8	9			17
3:45	0	0			0	15:45	4	0			4	15:00	14	4			18
4:00	0	0			0	16:00	5	5			10	16:00	13	10			23
4:15	0	0			0	16:15	0	1			1	17:00	11	6			17
4:30	0	0			0	16:30	6	3			9	18:00	14	2			16
4:45	0	1			1	16:45	2	1			3	19:00	4	5			9
5:00	0	0			0	17:00	3	0			3	20:00	3	1			4
5:15	0	0			0	17:15	3	2			5	21:00	0	1			1
5:30	1	0			1	17:30	4	1			5	22:00	1	1			2
5:45	1	1			2	17:45	1	3			4	23:00	0	0			0
6:00	0	0			0	18:00	4	0			4	STATISTICS					
6:15	0	0			0	18:15	2	0			2		NB	SB	EB	WB	TOTAL
6:30	1	1			2	18:30	6	0			6	Peak Period	00:00	to	12:00		
6:45	4	0			4	18:45	2	2			4	Volume	81	26			107
7:00	0	2			2	19:00	1	1			2	Peak Hour	7:45	8:00			7:45
7:15	5	0			5	19:15	2	1			3	Peak Volume	26	8			32
7:30	6	1			7	19:30	1	2			3	Peak Hour Factor	0.650	0.667			0.727
7:45	8	1			9	19:45	0	1			1	Peak Period	12:00	to	00:00		
8:00	4	1			5	20:00	2	0			2	Volume	83	49			132
8:15	4	3			7	20:15	0	0			0	Peak Hour	15:45	14:15			15:45
8:30	10	1			11	20:30	0	1			1	Peak Volume	15	10			24
8:45	6	3			9	20:45	1	0			1	Peak Hour Factor	0.625	0.833			0.600
9:00	4	1			5	21:00	0	1			1	Peak Period	07:00	to	09:00		
9:15	2	2			4	21:15	0	0			0	Volume	43	12			55
9:30	2	1			3	21:30	0	0			0	Peak Hour	7:45	8:00			7:45
9:45	1	0			1	21:45	0	0			0	Peak Volume	26	8			32
10:00	2	1			3	22:00	0	0			0	Peak Hour Factor	0.650	0.667			0.727
10:15	2	1			3	22:15	0	0			0	Peak Period	16:00	to	18:00		
10:30	6	1			7	22:30	1	1			2	Volume	24	16			40
10:45	1	0			1	22:45	0	0			0	Peak Hour	16:30	16:00			16:00
11:00	2	0			2	23:00	0	0			0	Peak Volume	14	10			23
11:15	5	0			5	23:15	0	0			0	Peak Hour Factor	0.583	0.500			0.575
11:30	3	0			3	23:30	0	0			0						
11:45	1	3			4	23:45	0	0			0						
TOTALS	81	26	0	0	107	TOTALS	83	49	0	0	132						
SPLIT %	76%	24%	0%	0%	45%	SPLIT %	63%	37%	0%	0%	55%						



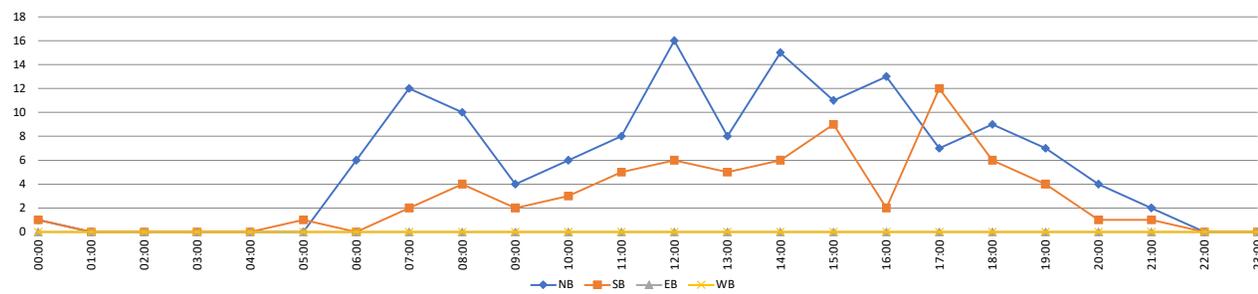
VOLUME

Page Rd S/O Cambridge Tpke/SR 2 (42.434304,-71.275887)

Day: Thursday
Date: 5/8/2025

City: Lincoln
Project #: MA25_430065_001

DAILY TOTALS						NB	SB	EB	WB	Total	DAILY TOTALS						
						139	70	0	0	209							
15-Minutes Interval											Hourly Intervals						
TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB	EB	WB	TOTAL
0:00	0	0			0	12:00	3	2			5	00:00 01:00	1	1			2
0:15	0	0			0	12:15	9	2			11	01:00 02:00	0	0			0
0:30	0	1			1	12:30	2	2			4	02:00 03:00	0	0			0
0:45	1	0			1	12:45	2	0			2	03:00 04:00	0	0			0
1:00	0	0			0	13:00	2	1			3	04:00 05:00	0	0			0
1:15	0	0			0	13:15	1	2			3	05:00 06:00	0	1			1
1:30	0	0			0	13:30	1	0			1	06:00 07:00	6	0			6
1:45	0	0			0	13:45	4	2			6	07:00 08:00	12	2			14
2:00	0	0			0	14:00	4	1			5	08:00 09:00	10	4			14
2:15	0	0			0	14:15	5	2			7	09:00 10:00	4	2			6
2:30	0	0			0	14:30	5	1			6	10:00 11:00	6	3			9
2:45	0	0			0	14:45	1	2			3	11:00 12:00	8	5			13
3:00	0	0			0	15:00	0	2			2	12:00 13:00	16	6			22
3:15	0	0			0	15:15	3	3			6	13:00 14:00	8	5			13
3:30	0	0			0	15:30	5	2			7	14:00 15:00	15	6			21
3:45	0	0			0	15:45	3	2			5	15:00 16:00	11	9			20
4:00	0	0			0	16:00	4	0			4	16:00 17:00	13	2			15
4:15	0	0			0	16:15	1	1			2	17:00 18:00	7	12			19
4:30	0	0			0	16:30	4	1			5	18:00 19:00	9	6			15
4:45	0	0			0	16:45	4	0			4	19:00 20:00	7	4			11
5:00	0	0			0	17:00	0	4			4	20:00 21:00	4	1			5
5:15	0	0			0	17:15	4	3			7	21:00 22:00	2	1			3
5:30	0	0			0	17:30	3	3			6	22:00 23:00	0	0			0
5:45	0	1			1	17:45	0	2			2	23:00 00:00	0	0			0
6:00	1	0			1	18:00	4	4			8	STATISTICS					
6:15	1	0			1	18:15	1	1			2						
6:30	0	0			0	18:30	0	0			0	Peak Period	00:00	to	12:00		
6:45	4	0			4	18:45	4	1			5	Volume	47	18		65	
7:00	1	1			2	19:00	2	1			3	Peak Hour	7:15	8:15		7:45	
7:15	4	0			4	19:15	1	2			3	Peak Volume	14	6		18	
7:30	4	0			4	19:30	3	1			4	Peak Hour Factor	0.875	0.750		0.643	
7:45	3	1			4	19:45	1	0			1	Peak Period	12:00	to	00:00		
8:00	3	0			3	20:00	2	0			2	Volume	92	52		144	
8:15	2	2			4	20:15	2	1			3	Peak Hour	13:45	17:00		13:45	
8:30	5	2			7	20:30	0	0			0	Peak Volume	18	12		24	
8:45	0	0			0	20:45	0	0			0	Peak Hour Factor	0.900	0.750		0.857	
9:00	1	2			3	21:00	1	0			1	Peak Period	07:00	to	09:00		
9:15	2	0			2	21:15	1	1			2	Volume	22	6		28	
9:30	0	0			0	21:30	0	0			0	Peak Hour	7:15	7:45		7:45	
9:45	1	0			1	21:45	0	0			0	Peak Volume	14	5		18	
10:00	1	1			2	22:00	0	0			0	Peak Hour Factor	0.875	0.625		0.643	
10:15	0	1			1	22:15	0	0			0	Peak Period	16:00	to	18:00		
10:30	3	0			3	22:30	0	0			0	Volume	20	14		34	
10:45	2	1			3	22:45	0	0			0	Peak Hour	16:00	17:00		16:45	
11:00	2	1			3	23:00	0	0			0	Peak Volume	13	12		21	
11:15	0	0			0	23:15	0	0			0	Peak Hour Factor	0.813	0.750		0.750	
11:30	4	3			7	23:30	0	0			0						
11:45	2	1			3	23:45	0	0			0						
TOTALS	47	18	0	0	65	TOTALS	92	52	0	0	144						
SPLIT %	72%	28%	0%	0%	31%	SPLIT %	64%	36%	0%	0%	69%						



Single-Family Detached Housing (210)

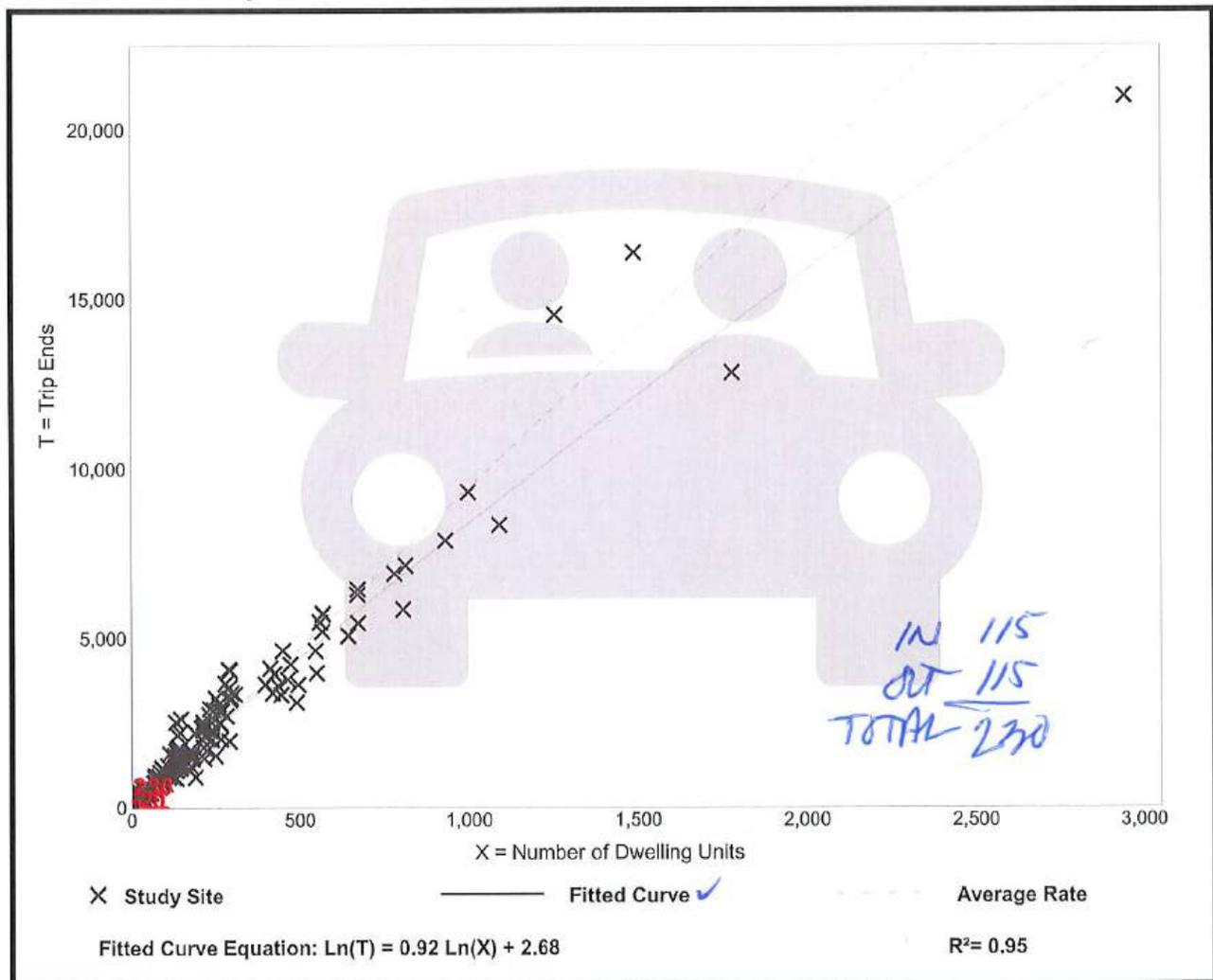
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 174
Avg. Num. of Dwelling Units: 246
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
9.43	4.45 - 22.61	2.13

Data Plot and Equation



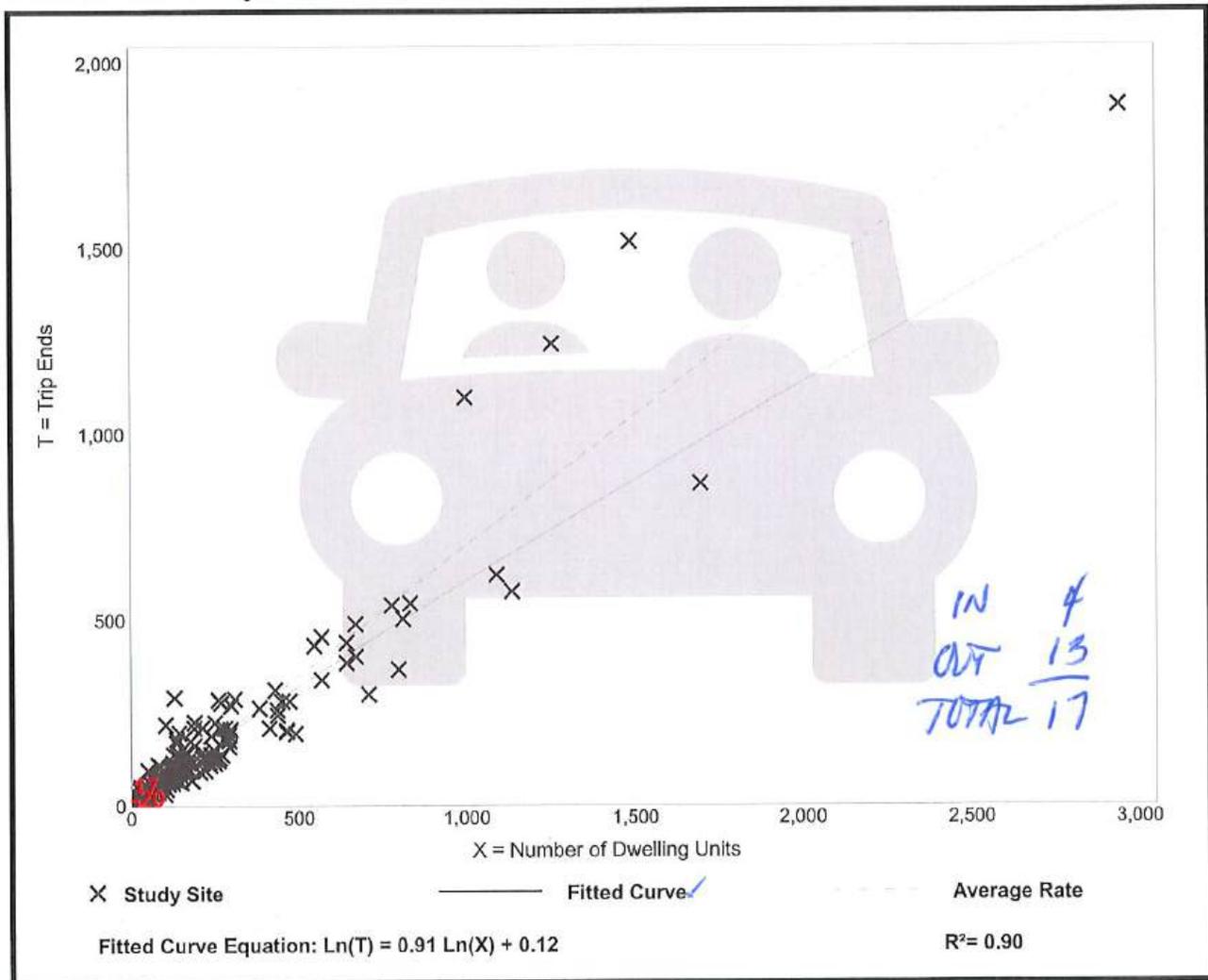
Single-Family Detached Housing (210)

Vehicle Trip Ends vs: Dwelling Units
 On a: Weekday,
 Peak Hour of Adjacent Street Traffic,
 One Hour Between 7 and 9 a.m.
 Setting/Location: General Urban/Suburban
 Number of Studies: 192
 Avg. Num. of Dwelling Units: 226
 Directional Distribution: 25% entering, 75% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.70	0.27 - 2.27	0.24

Data Plot and Equation



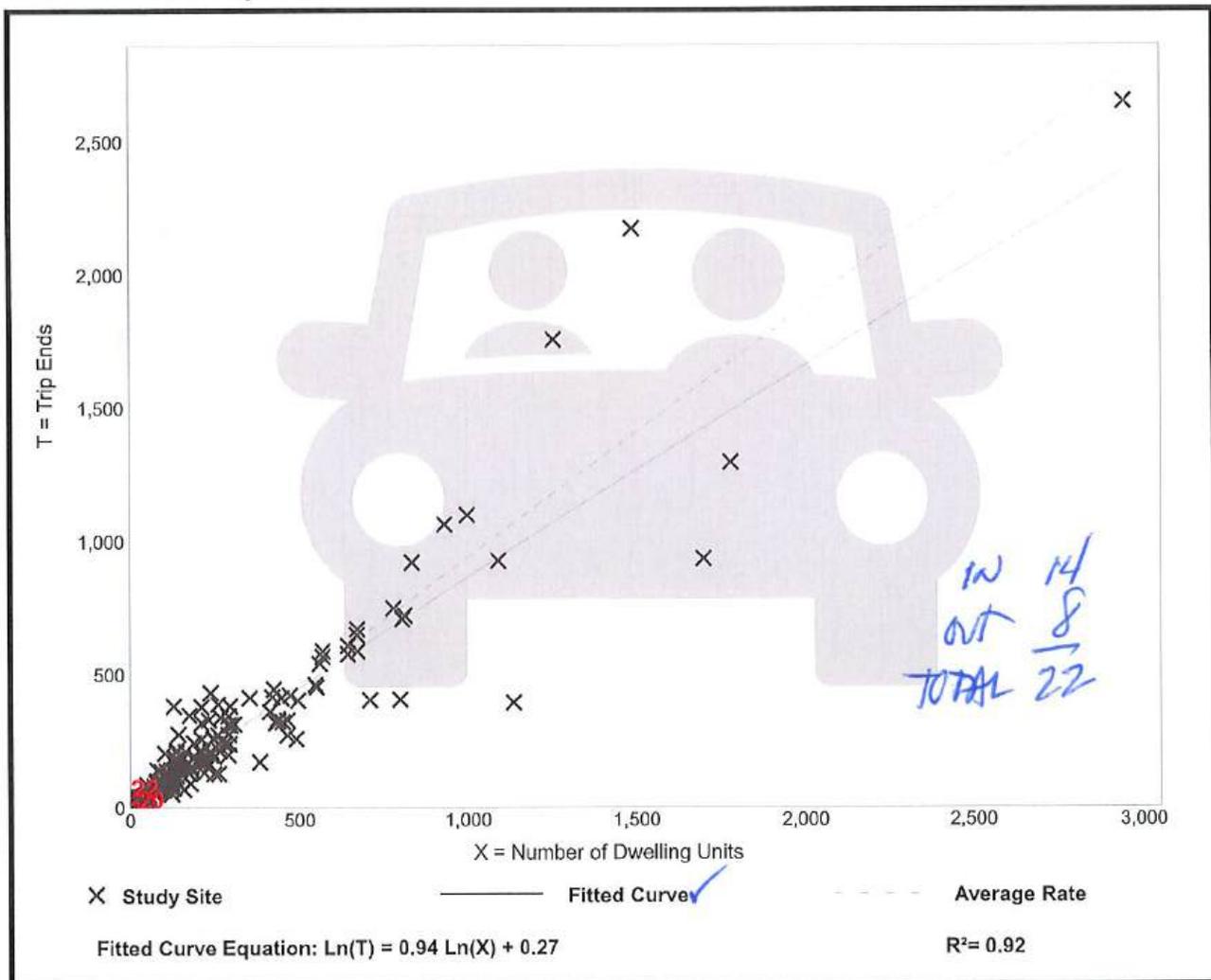
Single-Family Detached Housing (210)

Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: General Urban/Suburban
 Number of Studies: 208
 Avg. Num. of Dwelling Units: 248
 Directional Distribution: 63% entering, 37% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.94	0.35 - 2.98	0.31

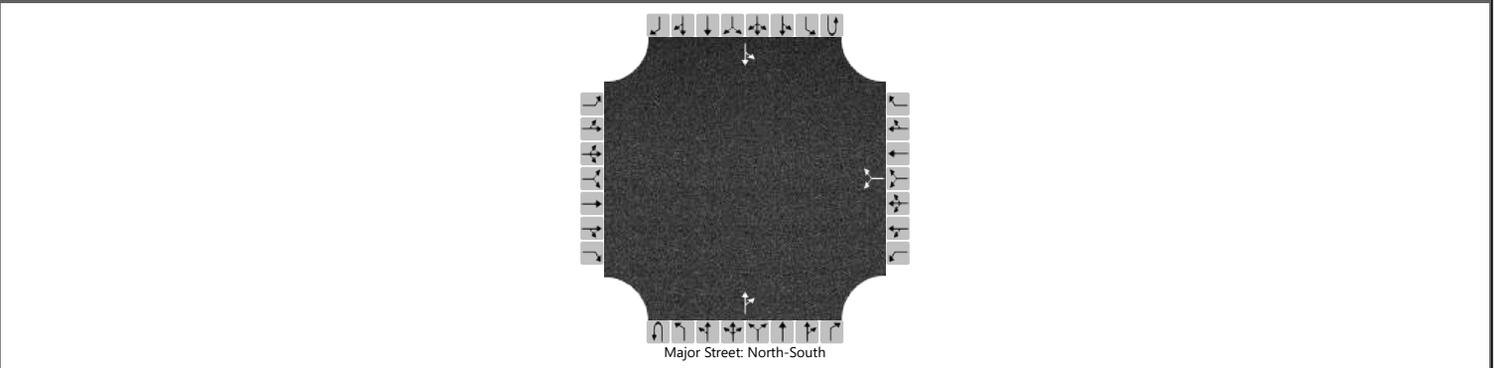
Data Plot and Equation



HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	wjs	Intersection	Page Road at Site Drive
Agency/Co.	Kimley-Horn	Jurisdiction	Lincoln
Date Performed	5/19/2025	East/West Street	Site Drive
Analysis Year	2032	North/South Street	Page Road
Time Analyzed	AM Peak Hour	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Prop 109 Page Road Residential		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	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		0	1	0		0	1	0		0	1	0
Configuration							LR					TR		LT		
Volume (veh/h)						3		10			28	1		3	9	
Percent Heavy Vehicles (%)						0		0						0		
Proportion Time Blocked																
Percent Grade (%)					0											
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2						4.1		
Critical Headway (sec)						6.40		6.20						4.10		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.50		3.30						2.20		

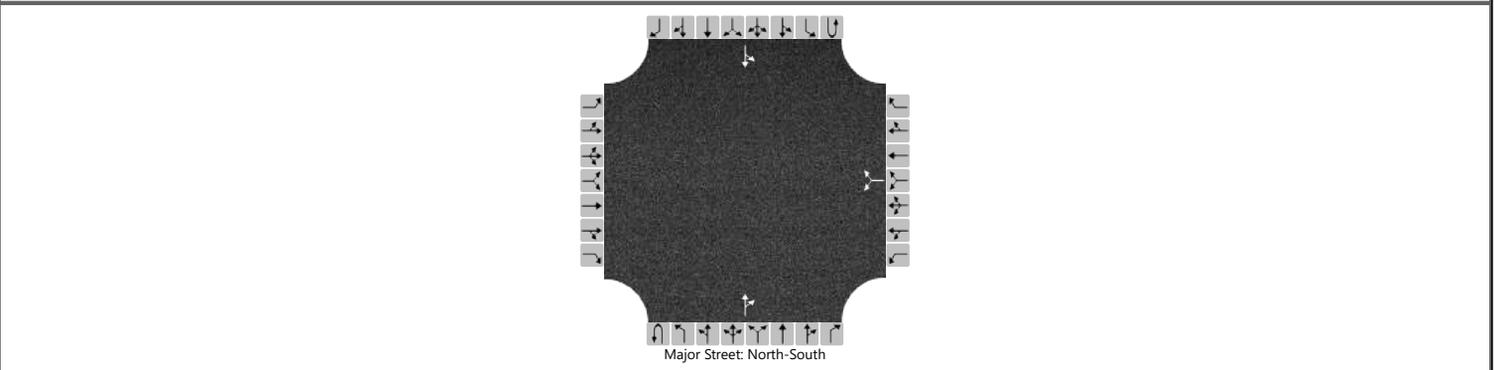
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						14								3		
Capacity, c (veh/h)						1028								1594		
v/c Ratio						0.01								0.00		
95% Queue Length, Q ₉₅ (veh)						0.0								0.0		
Control Delay (s/veh)						8.5								7.3		
Level of Service (LOS)						A								A		
Approach Delay (s/veh)					8.5								1.8			
Approach LOS					A											

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	wjs	Intersection	Page Road at Site Drive
Agency/Co.	Kimley-Horn	Jurisdiction	Lincoln
Date Performed	5/19/2025	East/West Street	Site Drive
Analysis Year	2032	North/South Street	Page Road
Time Analyzed	PM Peak Hour	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Prop 109 Page Road Residential		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	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		0	1	0		0	1	0		0	1	0
Configuration							LR					TR		LT		
Volume (veh/h)						2		8			16	4		10	11	
Percent Heavy Vehicles (%)						0		0						0		
Proportion Time Blocked																
Percent Grade (%)					0											
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2						4.1		
Critical Headway (sec)						6.40		6.20						4.10		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.50		3.30						2.20		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						11								11		
Capacity, c (veh/h)						1040								1607		
v/c Ratio						0.01								0.01		
95% Queue Length, Q ₉₅ (veh)						0.0								0.0		
Control Delay (s/veh)						8.5								7.3		
Level of Service (LOS)						A								A		
Approach Delay (s/veh)					8.5								3.5			
Approach LOS					A											