

**TOWN OF HARVARD
PLANNING BOARD AGENDA
MONDAY, JANUARY 29, 2024 @ 7:00PM**

Pursuant to Chapter 2 of the Acts of 2023, An Act Making Appropriations for the Fiscal Year 2023 to Provide for Supplementing Certain Existing Appropriations and for Certain Other Activities and Projects, and signed into law on March 29, 2023, this meeting will be conducted via remote participation. Interested individuals can listen in and participate by phone and/or online by following the link and phone number below.

UpperTH ProWebinar is inviting you to a scheduled Zoom meeting.

Topic: Planning Board

Time: Jan 29, 2024 07:00 PM Eastern Time (US and Canada)

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Public Comment

Old Business: a) Ayer Road Vision update for UTILE

New Business:

Public Hearings:

Standard Business:

**NEXT SCHEDULED MEETINGS:
MONDAY, FEB. 5, 2024**

AS

The listing of matters are those reasonably anticipated by the Chair which may be discussed at the meeting. Not all items listed may in fact be discussed and other items not listed may be brought up for discussion to the extent permitted by law, also.

Harvard Ayer Road Vision Plan and Form-based Code Interim Report



January 11, 2024

utile

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Report Overview

The Consultant is working with the Town of Harvard to craft a vision plan and strategic development framework for the Ayer Road Corridor/C-District area, informed and shaped by community input, previous studies and market reports, and a thorough examination of corridor features and site-specific development scenarios.

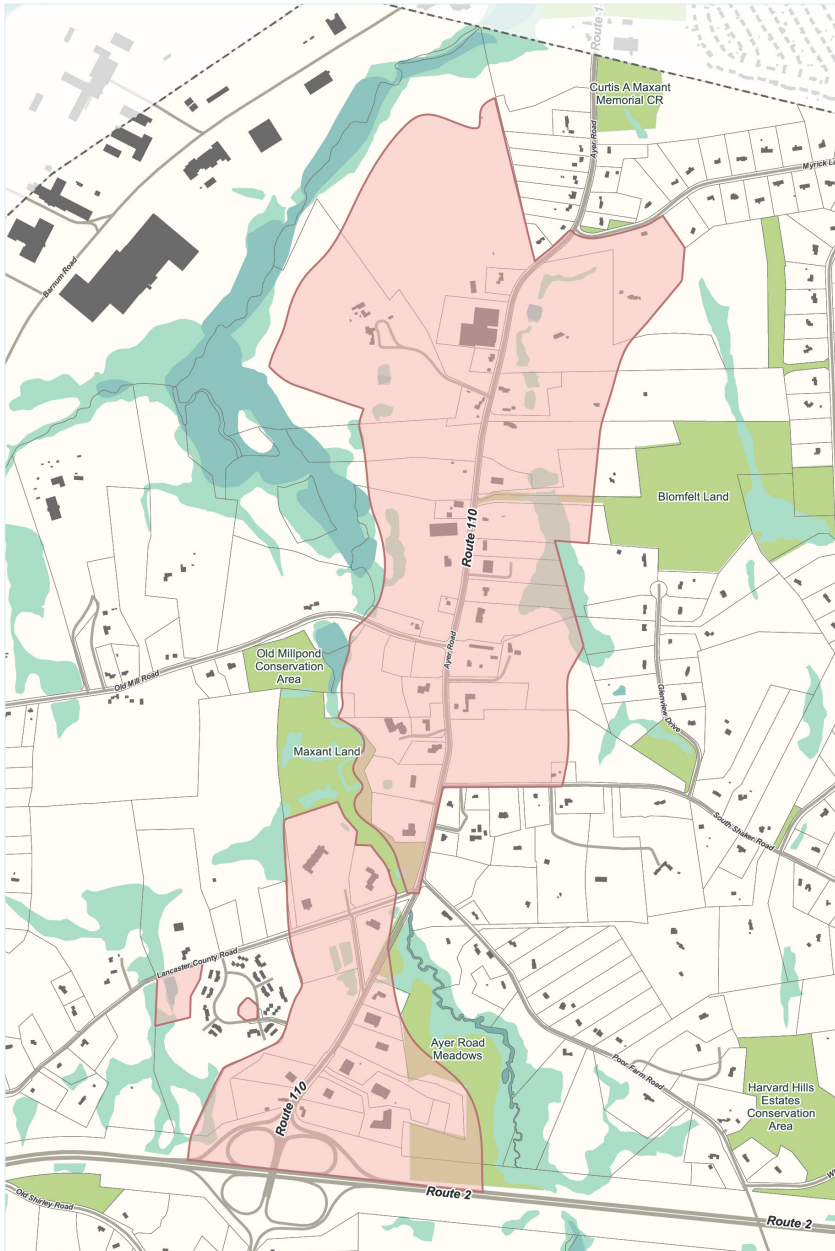
This interim report serves to consolidate the Consultant's current findings and community input collected thus far, and outlines a methodology for testing site-specific development strategies for the Ayer Road Corridor to be included in the final Vision Plan slated for completion in April 2024.

This report concludes with an outline of the approach and structure for crafting a subsequent form-based code and zoning framework for the C-district. The code is intended to assist the town in modifying current zoning to be denser with more specific and articulated design requirements, prioritizing mixed-use development and streamlining specialized zoning tools and processes to ensure future development schemes are consistent with the Town's self-image of a rural village.

Note:

- Approaches and criteria for studying site-specific development strategies in this report are based on **initial insights and assumptions** provided by economic development and site infrastructure subconsultants. These numbers and dimensional thresholds are expected to change and advance as the analysis of the sites and corridor progresses.
- The development scenarios outlined in this report represent initial test concepts and are presented in draft form. At this stage, their purpose is to **demonstrate a methodology for identifying development that is generally viable and appropriately scaled**, aligning with the Town's vision and the residents' preferences for a rural/village character.
- The scenarios will undergo further testing and iteration to incorporate considerations such as development costs, town impacts, and infrastructure needs. It's important to note that this interim report **does not present a specific conclusion** for the vision of the corridor at this stage.

Planning Background



- Guide a **public process** for the community to develop a clear direction for the Ayer Road Corridor including protection of open space, traffic solutions for enhanced safety, infrastructure considerations for water and sewer, and clear definition uses and scales of uses
- Create **development framework** that positions the C-District as an active corridor that can support commercial and residential development, amenities for the public, and natural resource preservation
- Envision **scenarios** as clusters of mixed-use sites accommodating retail, residential, and residential service businesses and enhanced public realm, walkways and open spaces, reflecting New England village character and history of Town of Harvard
- Assess **Town economic impacts**
- Establish **design standards and zoning recommendations** to enable and streamline process for desired development

2023 Market study and Fiscal Impact Analysis Takeaways

Use Types

- **Housing:** Condominiums and townhomes are appropriate products for study areas with unmet market potential. New rental construction has been a neglected market, comparable projects have leased at impressive paces. Single family homes are in excess supply.
- **Retail:** Retail and service space is limited and not commensurate with the needs of Harvard’s population. There is potential for both new community and neighborhood-oriented “necessity retail”, as well as visitor-oriented businesses that would align with an inn.
- **Hotel:** Potential for small inn, little competition in the submarket.
- **Office:** Office uses lack demand, opportunity for upgrades or redevelopment of obsolete older structures.

Density, Form & Fiscal Impacts

- Impediments to sustainable growth include lack of public water and sewer services as well as deficient zoning
- Three proposed development scenarios are designed along different levels of intensity Scenario 1 (lower intensity) assuming no public infrastructure improvements. Scenarios 2 & 3 (mid and higher intensity) assuming public infrastructure improvements
- Recommendations would not be to maximize the development of Harvard’s retail potential, but to encourage incremental development as part of small-scale mixed-use commercial and residential projects.
- For three scenarios contemplated, projected annual direct tax benefits to the town could range from \$100K – \$930K

Corridor Observations



188 Ayer Road



283/285 Ayer Road



325 Ayer Road



204 Ayer Road



294 Ayer Road



289 Ayer Road

The corridor features a mix of businesses including offices, warehouse storage, and auto repair shops. However, the prevalent development style here is marked by low intensive impervious surfaces and parking lots facing the corridor. Amidst the bustling traffic, the team observed signage for developments that lacked clear readability.

Parcel Inventory



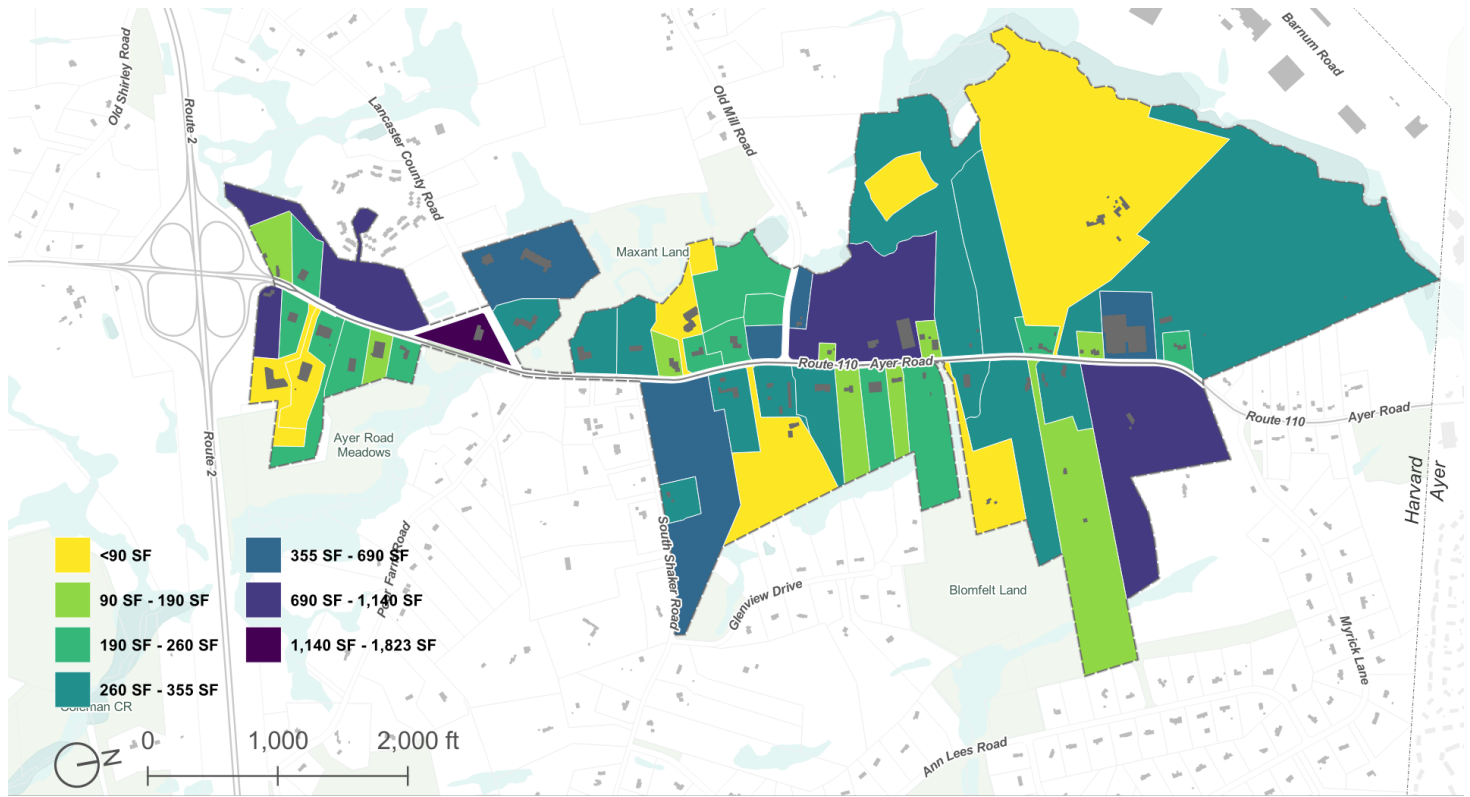
Existing commercial uses

Despite the corridor hosting a diverse array of commercial and retail uses, the Town’s restrictive zoning and insufficient connectivity among parcels have steered the attention of developers towards self-storage warehouses and industrial or automotive-related ventures. Any new development on the corridor would likely have to serve as destinations, incrementally evolving across the area over time.



Parcel sizes and existing uses

The corridor exhibits diverse parcel sizes, as illustrated in this diagram where circle size represents parcel area and color indicates current land use. The building footprints reveal the actual space utilized within these parcels. The team is working with a finite set of parcels, each unique in configuration, corridor frontage, and factors like wetland presence. There’s no standard or typical parcel; each one differs based on various aspects.



Parcel frontage considerations

Despite the size and depth of the parcels themselves, the lot frontage varies significantly. The length of lot frontage along the corridor will trigger different requirements for building placement and massing, parking and access location, and the public realm. There are only a handful of developable parcels that boast substantial frontage along the corridor, presenting promising opportunities for creating a more continuous and cohesive development landscape. However, for parcels with limited frontage, more creative solutions will be needed to strategize site layouts and maximize their potential for mixed-use development.

Vision Plan Process

Building upon the initial observations detailed in the previous page and the findings outlined in the 2023 Weitzman report, the consultant team has been working on crafting a comprehensive and strategic Vision Plan for the Ayer Road/C District. This plan aims to encompass a comprehensive review of land use, zoning, urban design, infrastructure, traffic, transportation, sustainability, and factors related to climate resilience that influence the corridor.

An essential initial phase of this undertaking has been to collect important stakeholder and community input concerning the desired character, scale, and type of development envisioned for the Ayer Road corridor. Below is an overview of the feedback gathered and generated from the community and stakeholders up to this point of the process:

Stakeholder Group Interviews Takeaways

Ayer Rd Opportunities	Ayer Rd Challenges
Potential for robust mixed-use development on the corridor featuring retail establishments such as restaurants and cafes, with a focus on farm-to-table concepts like Groton Gibbet Hill	Economic viability is a concern, particularly in terms of residential development needed to support desired commercial and retail endeavors.
Housing designed to cater to individuals who wish to age in place within the town, along with a commitment to providing affordable housing options	Water and sewer limitations pose significant obstacles, with shallow groundwater and stringent septic system rules impeding meaningful development and making compliance difficult
Enhancement of public realm, promoting walkability	The arduous and expensive well approval process dissuades potential investors
Tax revenue diversification by shifting the focus towards commercial development, as residential taxes currently form the town’s primary income source	School enrollment impact perceptions and town resident reluctance towards multifamily housing add another layer of complexity
Potential water and sewer connections from Devens and Ayer, aiming to bolster infrastructure and facilitate growth	Current zoning grants developers considerable freedom that sometimes results in undesired development character along the corridor
Implementation of new zoning regulations and a clear vision for the future, aiming for predictable built outcomes that align with the desired rural village character.	Town residents are hesitant to proceed with “as of right” development, preferring oversight via planning board involvement or special permits, although this stance may be less appealing to developers
Having visual representations and setting specific design standards prior to developers initiating projects, streamlining the process while ensuring the desired town character is maintained and enhanced	Challenges related to increasing traffic volume, wetland complications, and utility constraints, including overloaded electric lines predominantly above ground

Community Visioning Workshop Takeaways

Quick Live Poll 1:

What new commercial uses would you like to see on Ayer Rd?: (choose up to 3)

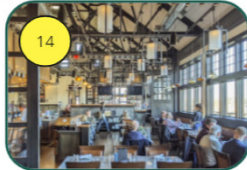
I'd like to see more opportunities for teens to work in Harvard businesses

Need park and walk in corridor. Allow pedestrians to get off Ayer road and reduce Ayer Road traffic

Bike trails and rentals would be nice



A. Retail shops



B. Restaurants / Farm-to-table



C. Convenience / Groceries



D. Boutique stores



E. Pharmacies / Clinics



F. Lodging / Inn



G. Vehicle repair / Landscape

2 H. Nothing

1 I. Others

Truck traffic on Ayer Road is a huge issue. Would like to be able to walk to senior center, but currently the only option is driving. Don't think taxes will ever go down. No need for new commercial use.

Blanchard Road residents: nascent sporting development trend happening on east side of corridor - seems to be nice use of land. Unrealistic to think large lodging facility will have demand.

bowling alley was extremely successful for decades before changing hands.

Possibility to cross Ayer Road - cross over to Lancaster County Road? A: some crossing but no traffic lights. Blinky lights

No parking for the trail.

Question about the new water line serving town center.

PFAS issues along the corridor that will need to be kept in mind.

Main St in Groton has good examples of retail oriented developments. Would like a grocery store - something bigger than Alltown.

possible Trader Joe's-sized grocery store in our district?

Open space uses

Quick Live Poll 2:

Select your preferred character and scale for commercial use: (choose up to 3)

Clustered retail - thought into electrifying these clusters? EV charging stations?

Any examples of restaurants on the corridor that failed? Would be good to understand why

group in Town that looks at sustainability/ electrification



A. Small ground-floor convenience retail in mixed-use developments



B. Clustered retail in mixed-use developments



C. Shopping centers



D. Standalone boutique retail/restaurants



E. Standalone chain retail/restaurants

0 F. No change in character / nothing

0

increased commercial activities provide job opportunities

Dunkin seems to be doing well, but wonder about sit-down restaurants

several attempts to have food businesses prior to Thai restaurant. One of them was a bakery that didn't survive.

commercial feasibility of destination restaurants? would like to see these restaurants but lots of traffic not stopping in between.

The appropriate question ought to be the most efficient way to get from Route 2 to Ayer.

Quick Live Poll 3:

If there is new housing on the corridor, my preference would be: (choose up to 2)



A. Townhouse cluster / family-size units (3+ bedrooms)



B. Multi-family / compact units (1-2 bedrooms)



C. 2-4 unit buildings / clusters



D. Single-family detached homes

no mixed-use option? type of uses to encourage in mixed-use would be different than stand alone.

redevelopment and intensifying of uses is not sprawl.

Old Mill/110 development? could change the character of the corridor

difference in septic requirements between resi only and mixed use.

already in the area, and successful. Maintained beautifully. Athletic fields built north and east came after, surrounding it

sprawl = unplanned, disorganized uses, ways of developing

athletic field east of development came later. later developments surrounded this project after it was built.

List of previous studies and reports including Planning Board Market Study showing leakage. In addition to EDAT and Economic Development Committee reports.

E. None of the above

Overall, there is community support for mixed-use development including residential and commercial development, leaning towards provision of convenience retail such as grocery stores and destination retail such as restaurants and places for families to visit. Residents expressed a desire for enhanced walkability in future developments that prioritize sustainability, incorporating future

infrastructure improvements, and plans for electrification/EV charging. Safety planning along the Ayer Corridor emerges as a prominent concern, especially concerning potential future developments necessitating street crossings. Attendees of the community workshop generally advocate for extending water and sewer infrastructure to accommodate new and vibrant uses along the corridor.

See appendix for larger versions of community takeaways

Development Precedent Study

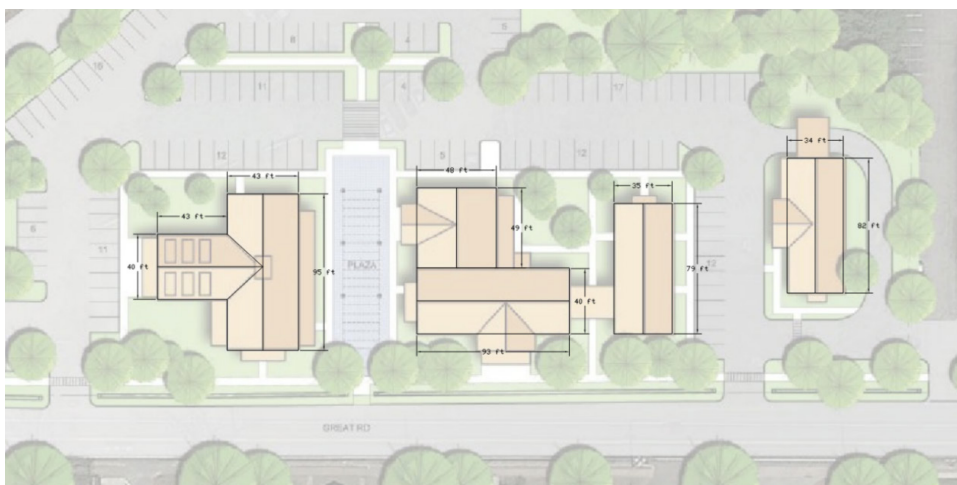
In addition to engaging the community in interviews and workshops to determine desired development types and scales, the Consultant team conducted research and analysis of relevant development precedents in comparable communities, both realized and conceptual. These were then presented and discussed during the community visioning workshop to identify suitable developments for the corridor.

It's important to emphasize that none of these precedents is an exact match for the unique opportunities and challenges presented by the Ayer Road Corridor/ C-district. However, the Consultant team believes that each group of examples provides valuable references for the project, whether in terms of character, scale, or the integration of various uses.

Precedent: Cluster Projects (unbuilt)



The initial category of precedents gathered consists of proposed cluster projects within the state that are currently in the development pipeline and have not been constructed yet. Two examples from Littleton are particularly noteworthy, both of which were proposed after Utile's involvement in crafting the Form-Based Code for the Village Common District.



The first project, the Northern Bank Town Common, has received approval and features a commercial mixed-use program (including retail, restaurants, and offices) along the street with parking situated at the rear. Another project at 550 King St, the former IBM headquarters site, also adopts a similar combination of uses along the street and proposes residential units at the back.

Northern Bank Town Common, Littleton, MA
Commercial (37,880 sf total with retail, restaurant, office programs)
Precedent for character various uses.



While acknowledging the substantial size of these projects, which may not be suitable for the Ayer Road corridor in terms of scale, our focus is on examining the character of development, the architectural style of individual buildings, and how the public realm supports retail uses. Notably, as we consider potential developments and their interaction with the new Ayer Road multimodal path, we draw insights from these projects.



Additionally, the Windrose Place Plan in Lenox, which may be more closely aligned with the scale appropriate for the corridor, combines commercial mixed-use and residential programs. This plan envisions the renovation of an existing historic building and the construction of three new buildings, including two multi-family structures and one mixed-use commercial building.

550 King Street, Littleton, MA
 Residential (780 units)
 Commercial/Retail (70,000 sf)
 Office (20,000 sf)



Windrose Place Plan, Lenox, MA
 Commercial Mixed-use (5,760 sf)
 Residential (26 units, 53 parking spaces)
 Precedent for character / combination of uses

Precedent: Cluster Projects (built)



VillageWorks, West Acton, MA

Mixed-use Retail / Restaurant / Brewery / Office / Event Space (35,000 sf)
Precedent for character / scale



Summer St development, Manchester-by-the-Sea, MA

Retail (5,000 sf)
Residential (39 units; 40B Development)
Precedent for character / combination of uses / scale



Village Commons, South Hadley, MA

Retail / Restaurant / Office (70+ tenancies, 190,000 sf total)
Residential (19 units)
Precedent for character

Additionally, the Consultant examined several completed cluster projects for insights. VillageWorks West Acton, a two-story mixed-use commercial program with parking situated to the side, provides a favorable pedestrian experience and can serve as a precedent for character and scale considerations.

Another example is the Summer St development in Manchester by the Sea, featuring retail at the front and a variety of housing types, including townhouses and detached single-family homes, around and at the back.

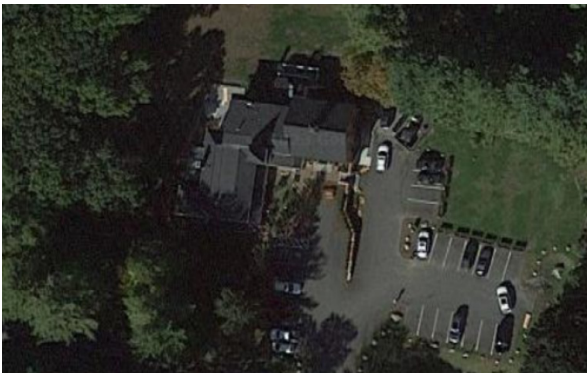
Lastly, the Village Commons in South Hadley, an older cluster development from the 80s, accommodates 70 tenants with a mix of retail, restaurant, and office spaces, along with some residential units. These built projects offer valuable perspectives for understanding design, functionality, and the integration of diverse uses within a clustered development framework.

Precedent: Lodging/Food & Beverage



Groton Inn, Groton, MA
Boutique hotel (60 keys)
Restaurant within same cluster
Precedent for character / combination of uses

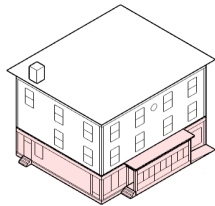
Gibbet Hill Grill, Groton, MA
Farm-to-table restaurant
Event spaces hosting 200+ people
Precedent for character



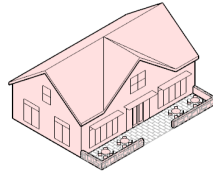
The final category comprises projects referenced either by residents in interviews or identified in the Phase 1 market study, specifically focusing on use-specific considerations, particularly lodging and food and beverage (F&B) precedents. This exploration is especially relevant as we contemplate the potential for a small inn, as highlighted in the 2023 Weitzman market study. Two notable developments in Groton serve as initial examples. The Groton Inn, a boutique hotel forming part of a cluster, features an appealing restaurant at the rear. Additionally, Gibbet Hill Grill, known for its farm-to-table restaurant and event spaces, contributes to the area's character, serving as a destination that attracts visitors from out of town.

Nan's Kitchen and Market, Stow, MA
Takeout restaurant & market
Historic farmhouse building, formerly an inn
Precedent for character / combination of uses

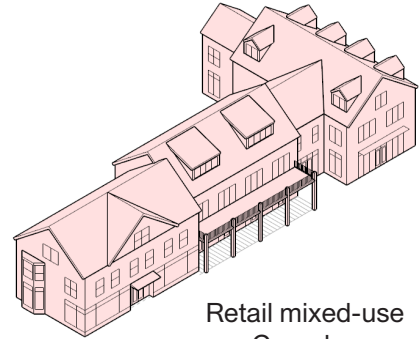
Scenario Assumptions and Methodology



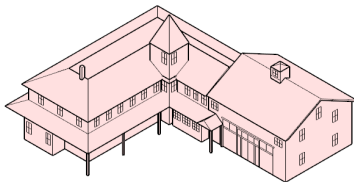
Convenience retail



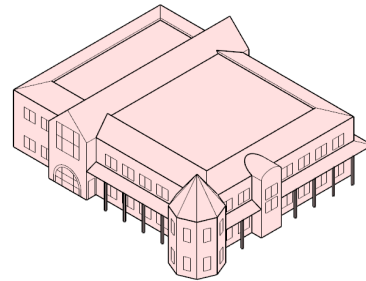
Restaurant



Retail mixed-use
Complex



Lodging



Commercial Office

Figure 01: Based on the 2023 Market Report and preliminary observations, the consultant team identified a subset of commercial and mixed-use types that are more likely to locate in the Ayer corridor and are also contextually appropriate for future redevelopment in the area. Note: While these development prototypes represent market-backed type of uses and begin to illustrate architectural scale and expression, their exact sizing and feasibility requires further analysis.

The Vision Plan delves deeper in establishing a framework for desired type and scale of development for the Ayer Road Corridor by examining and visualizing conceptual test-fit scenarios on representative sites. The consultant team begins this process with insights from the 2023 Weitzman market analysis report and community feedback, envisioning what an ideal commercial/mixed-use development could look like and what market-feasible uses it contains. These scenarios are crafted through the perspective of a future form-based code, aiming to identify dimensional thresholds that govern massing approaches, parking locations, and layouts.

Development Sites and Use Assumptions

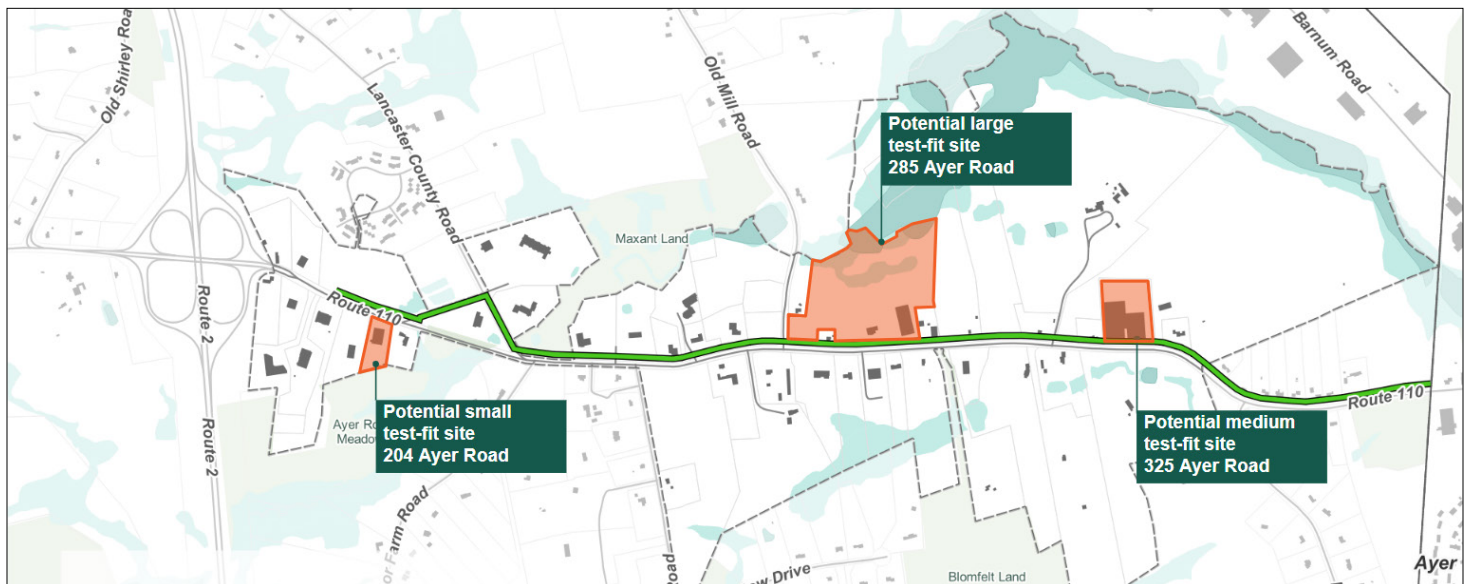
Preliminary concept scenarios are illustrated in the following pages. The scenarios factor in high level assumptions about market suitable uses (see land use matrix on next page) as well as considerations regarding water and sewer utilities improvements.

- **Scenario 1** assumes that neither water nor sewer utilities will be extended through the corridor and each parcel will remain reliant on wells and septic systems.
- **Scenario 2** assumes that a water main will be extended down Ayer Road and a sewer main would not be extended. This would remove the reliance on wells, but the septic systems would remain.
- **Scenario 3** assumes that both a sewer main and water main will be extended down Ayer Road, relieving the reliance on septic and wells, while simultaneously reducing the constraints on commercial development.

Each scenario explores different degrees of retail/mixed-use typologies (Figure 01) and is evaluated on three representative sites (small,

medium, large) with varying conditions along the corridor. In collaboration with the Town staff, the consultant has identified these representative sites as most suitable for assessing commercial and mixed-use redevelopment possibilities. The selection of these sites considers factors such as parcel size, property ownership, current building and parking configurations, the condition of existing buildings on the property, and prevailing uses.

In the next stage of the process, the scenarios will be further developed with urban design granularity and tested by economic consultants and real estate experts, Landwise Advisors, for general viability and Town economic impacts. Additionally, site infrastructure consultants, Nitsch Engineering, will analyze development thresholds made possible by various increments of infrastructure improvements and their impact on the scale of potential development—providing critical feedback to advance and iterate the scenarios to an optimum point as we move forward for consideration by key stakeholder groups.



Selected sites aim to encompass diverse conditions along Ayer Road and serve as test-beds for developing building prototypes and site scenario visions as outlined in the following pages.

Land Use Matrix Summary

Land Use	Market Strength	Site Suitability	Economic/Tax Impact	Low Level of Competition	Low Level of Traffic Impact	TOTAL
Residential	***	***	**	***	***	14
Medical Office	**	**	***	**	**	11
Industrial / Light Manufacturing	***	**	**	*	*	9
Office	*	**	***	*	**	9
Retail/ Restaurant	*	**	***	**	*	9

* = Low Score ** = Medium Score *** = High Score

- **Market Strength:** Landwise judgment of how healthy the market is for the given use in the Boston Metro and along the corridor
- **Site Suitability:** How appropriate the use is for a typical site located along the corridor factoring in zoning, market requirements, visibility, site needs
- **Economic/Tax Impact:** The ability for the use to create jobs and generate a net positive fiscal impact
- **Low Level of Competition:** The level of competition in the local market/submarket for the specific use
- **Traffic Impact:** The amount/type of traffic that will be generated from the target use

Development Scale and Dimensional Thresholds

The objective of the site-specific scenarios is to explore and translate spatial demands for new mixed-use development into desired architectural expressions and character preferred by the Community. The Consultant is approaching this through the lens of a future form-based code, identifying dimensional thresholds that govern massing approaches, parking placement and layouts. The scenarios will begin to:

- Visualize varied **densities, massings and ratios of mixed use** to solicit feedback
- Consider how **parking and landscape arrangements** achieve better pedestrian conditions for enhanced walkability and safety
- Consider **frontage and access** of new development, both in terms of enhancing

aesthetics along the corridor and how this ties functionally with traffic and vehicle circulation on the corridor

- Consider how frontage, building massing, and other design requirements **apply both along public streets as well as internal circulation routes** (drives, paths, parking lots, etc.)
- Evaluate what standards are necessary to achieve **desired aesthetic outcomes with signage** along the corridor
- Take into account the **design of thoughtful buffers** from existing agricultural and protection areas, and consider any **environmental impacts** on adjacent parcels



Example: Littleton Form-based Code Aspirational Vision, Image by Utile

Water and Sewer Utilities Assumptions

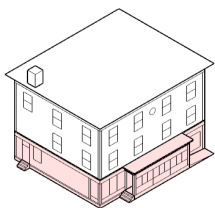
Nitsch Engineering reviewed relevant documents, data sources, and previous planning reports related to the C District provided by the Client and Town, including a review of the recently completed Market Study and Fiscal Impact Analysis report, the Ayer Road TIP Project, and the 2016 Harvard Master Plan and C District Commercial Design Guidelines. The information below provides a general overview on the prototypical/soft sites selected by the Consultant and Town staff to serve as test-beds for developing the building prototypes and scenario visions in regard to water and sewer utilities. It is the consultant team’s understanding that there is general Town support for municipal water in the C-District. Having water would help the Harvard Fire Department with safety and fire suppression.

Nitsch Engineering determined the design flows required for each building prototype, considering initial assumptions regarding square footages. Trench lengths and septic field sizes were then

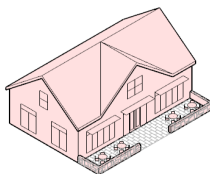
developed for each building prototype based on the design flows and soil characteristics. Please refer to the Appendix for information on Hydrologic soil groups. The chosen sites predominantly featured either A or C soils. Table 1 below provides details on the design flows and system sizing for each building type in both A and C soils.

All calculated design flows utilized Title V standards. Convenience retail assumes three one-bedroom units on top of the commercial retail use on the bottom floor. The Retail Mixed-Use Complex assumes 10 one-bedroom units with 10,000 sf of retail space. The Restaurant assumes 150 seats and the Lodging use assumes 20 one-bedroom units. Both the Restaurant and Lodging uses will need pressure dosing systems as their design flows exceed 2,000 GPD. With the guiding commercial uses, Nitsch established 3 development scenarios regarding the water and sewer utilities on Ayer Road.

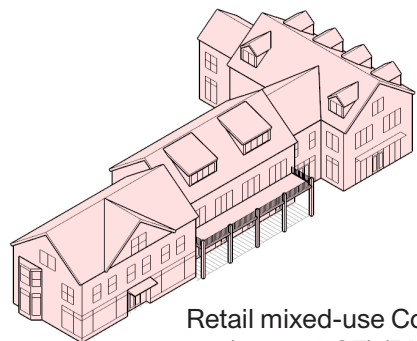
Commercial use size assumptions:



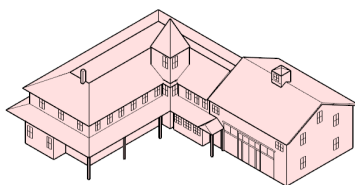
Convenience retail
(~2,500 SF) (CR)



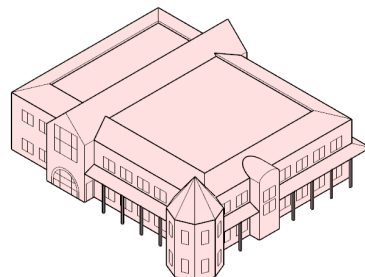
Restaurant
(~3,000 SF) (R)



Retail mixed-use Complex
(~15,000 SF) (RMU)



Lodging
(~7,500 SF) (L)



Commercial Office
(~15,000 SF) (CO)

Table 1: Commercial Use Septic Design Flows and Systems Sizing

Commercial Use Type	Septic Flow (GPD)	Design Area (sf) – A Soils	Design Area (sf) – C Soils
Convenience Retail (CR)	455	3,750	6,600
Retail Mixed-Use Complex (RMU)	1,600	10,260	18,900
Commercial Office (CO)	1,125	7,380	13,870
Restaurant (R)	5,250	26,620	49,500
Lodging (L)	2,200	12,540	23,100

Scenario 1: No Water & Sewer Utilities

In Scenario 1, with public wells to serve commercial uses or residential uses that serve greater than 25 people, all of the parcels, except 320 Ayer Road would be constrained by an Interim Wellhead Protection Area (IWPA). IWPA’s protect recharge areas for groundwater sources in an interim condition until an Approved Wellhead Protection Area (Zone II) can be established through a hydrogeologic study. The minimum radius of an IWPA is 400 feet, and the radius increases proportionally with the pumping rate in Gallons Per Minute (GPM). All IWPA’s and Zone II’s are subject to Nitrogen Sensitive Area (NSA) requirements (310 CMR 15.215) The presence of a NSA reduces the design septic flows allowed on the site. Nitsch calculated the allowable

maximum GPD effluent flow for each parcel under this condition. The flow restrictions and septic system sizing restricted certain uses to the prototypical/soft sites. See Table 2 below for the results

With the well and septic restrictions, the 204 Ayer Road property does not have room to support any of the proposed commercial uses. However, the current septic system could be investigated further and retrofitted to accommodate flows for a new use. In this scenario, the Restaurant use is restricted to the 285 and 320 Ayer Road properties because of their large size to accommodate the larger septic system necessary for restaurants.

Table 2: Scenario 1: Commercial Uses by Site

Address	Parcel Area (AC)	MAX. GAL/DAY EFFLUENT	Convenience Retail	Retail Mixed-Use Complex	Commercial Office	Restaurant	Lodging
184 Ayer Rd	2.27	1088	✓				
185 Ayer Rd	2.7	1294	✓		✓		
187 Ayer Rd	2.2	1054	✓				
204 Ayer Rd *	1.6	767					
256 Ayer Rd	3.54	1696	✓	✓	✓		
288 Ayer Rd	8.37	4011	✓	✓	✓		✓
285 Ayer Rd *	19	9104	✓	✓	✓	✓	✓
320 Ayer Rd	23	-	✓	✓	✓	✓	✓
325 Ayer Rd *	4.74	2271	✓	✓	✓		✓

* Representative Test Fit Sites

Scenario 2: Water from Town of Harvard Main, On-site waste disposal system

In Scenario 2, the reliance on public wells is removed, as well as their Interim Wellhead Protection Areas and subsequent restrictions on septic system loading. This allows for more commercial uses on the sites that were restricted in Scenario 1. See Table 3 below for the results

of the Scenario 2 analysis. See also Appendix for a depiction of the septic system sizing for the Scenario 2 analysis. **Where in Scenario 1, 204 Ayer Road had no development options under the proposed programs, it now has room for all but the restaurant use.** 184 Ayer Road added a couple more viable uses and the sites opened availability for lodging and restaurant uses.

Table 3: Scenario 2: Commercial Uses by Site

Address	Parcel Area (AC)	MAX. GAL/DAY EFFLUENT	Convenience Retail	Retail Mixed-Use Complex	Commercial Office	Restaurant	Lodging
184 Ayer Rd	2.27	1088	✓	✓	✓		✓
185 Ayer Rd	2.7	1294	✓		✓		
187 Ayer Rd	2.2	1054	✓				
204 Ayer Rd *	1.6	767	✓	✓	✓		✓
256 Ayer Rd	3.54	1696	✓	✓	✓		✓
288 Ayer Rd	8.37	4011	✓	✓	✓	✓	✓
285 Ayer Rd *	19	9104	✓	✓	✓	✓	✓

Scenario 3: Water and Sewer from Town of Harvard

Scenario 3 removes restrictions on wells and septic system sizing altogether. This scenario proposes that both water and sewer mains be expanded down the Ayer Road corridor. This removes on-site water sourcing and on-site waste disposal as a development constraint and therefore, water and septic system sizing requirements are not a constraint on redevelopment.system necessary for restaurants.

This planning level analysis includes the five building prototypes and their programs as previously defined. Further analysis would be necessary to determine more building configurations that could fit on the sites given different program parameters. Scenario 2, compared with Scenario 1, increases development potential of most study parcels and increases developable area by reducing the requirement of sourcing a well on-site.

Preliminary Site Concepts



Small test-fit site: 204 Ayer Road, 1.28 acres



Medium test-fit site: 325 Ayer Road, 4.78 acres



Large test-fit site: 285 Ayer Road, 9.62 acres

Test-fit assumptions

Program Assumptions

- Residential unit size: 1,000 gsf / unit
- Residential parking: 1.6 spaces / unit
- Commercial parking:
 - 1 space / 250 gsf retail
 - 1 space / 333 gsf office

Septic system constraints

- Leaching field sizing based on program and use, as recommended by Nitsch Engineering
- No septic systems within 100' of Water Protection Overlay District

Water-related constraints

- No non-water-supply-related uses on DEP Wellhead Protection Areas
- 100' setback from wetlands

Site configuration assumptions

- Surface parking
- Horizontal mixed-use more likely than vertical mixed-use

Parcel dimensional assumptions

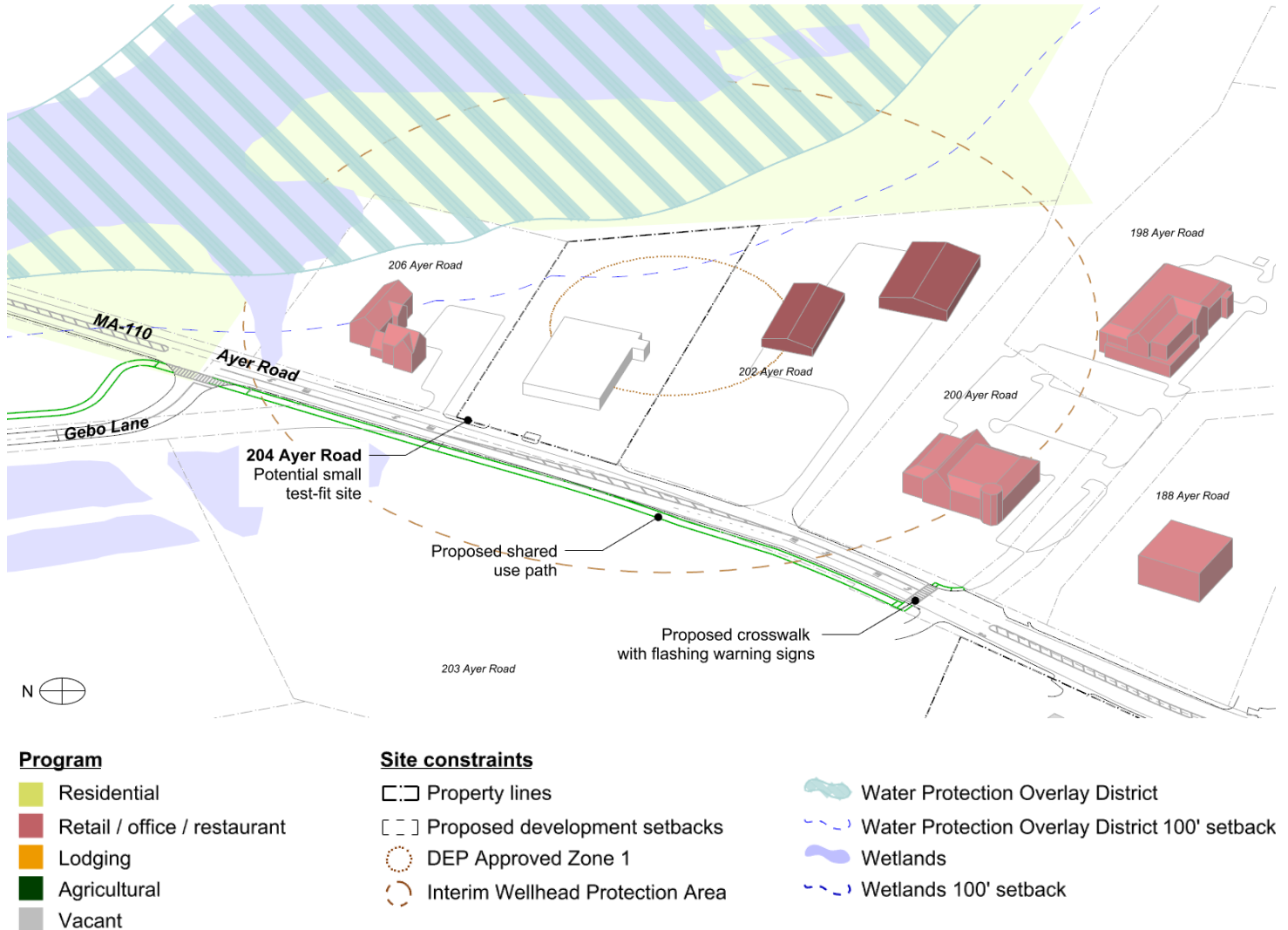
Maximum height:	2.5 stories / 35'
Maximum impervious surface:	50%
Front & rear setbacks:	20'
Side setbacks:	20'

Note:

- These parameters will evolve as we iteratively generate scenarios

Small test-fit site: 204 Ayer Road

Parcel acreage: 1.28 ac, Existing uses: vacant



The site of a former bowling alley, 204 Ayer Road was selected as the small prototypical parcel on which three mixed-use development scenarios regarding water and sewer utilities were explored. The degree of these infrastructural upgrades has an outsized impact on the development potential for a smaller parcel like 204 Ayer Road, since the reliance on public wells and on-site septic systems will shape how the mix of uses fit and determine whether any commercial uses are viable at all.

Scenario 1: No Water & Sewer Utilities

Assuming the parcel will remain reliant on wells and septic systems, the site does not have any room to support commercial uses due to the prohibition of non-water-supply-related uses within DEP Zone I areas and the required septic system sizing for commercial uses.

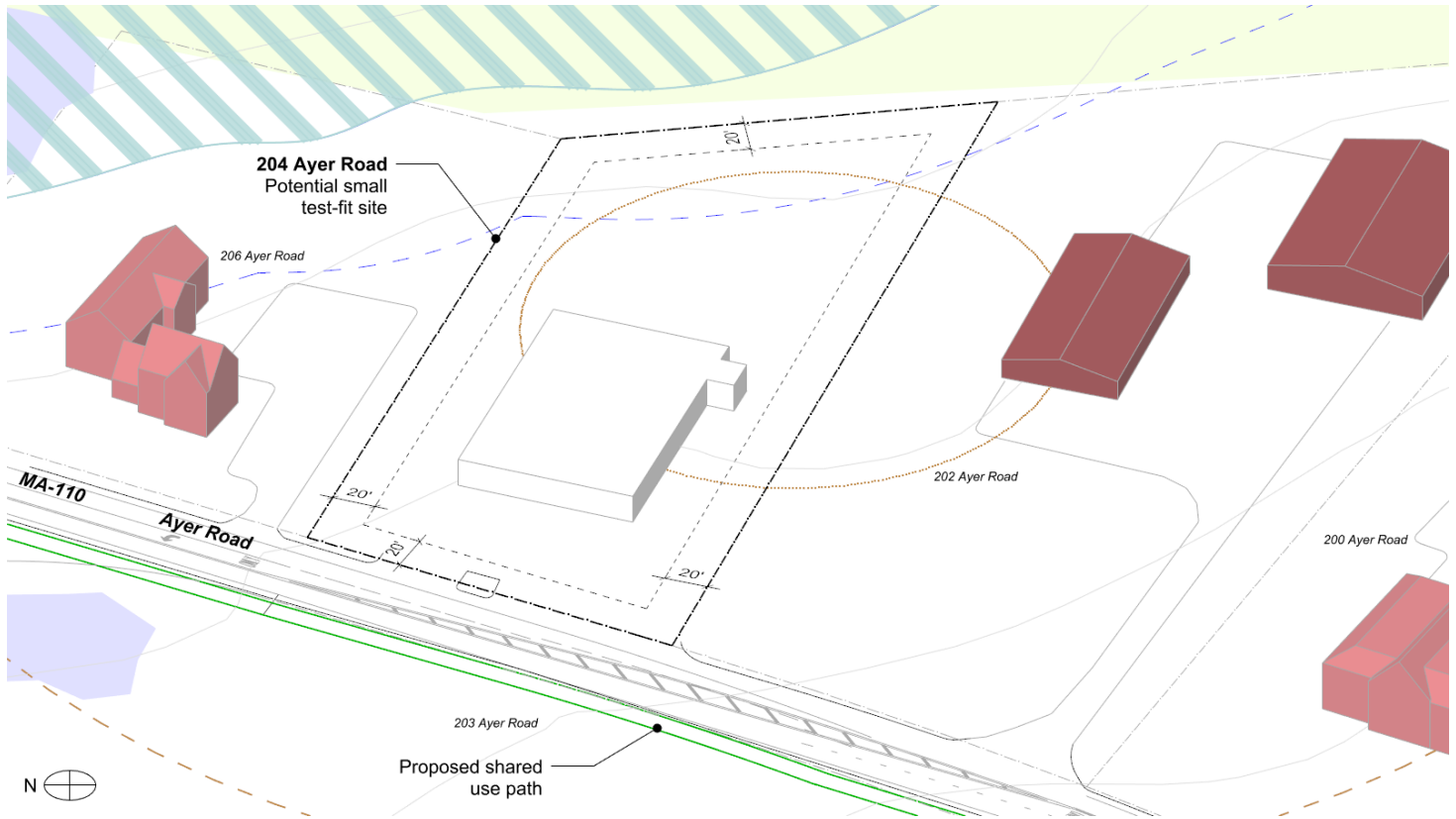
Scenario 2: Water from Town of Harvard Main, On-site waste disposal system
With access to a water main, the parcel can potentially support small standalone convenience

retail and multi-family residential developments with a shared parking area. The size of the leaching field to support these uses implies that the various uses will be proximate to one another.

Scenario 3: Water and Sewer from Town of Harvard

The relieved reliance on septic systems and wells frees up additional developable parcel area and thus enables a more effective separation of uses and a higher density of developments.

Scenario 1: No Water & Sewer Utilities



Commercial use not viable due to physical site constraints imposed by DEP Zone I and septic system sizing assumptions.

Scenario 2: Water from Town of Harvard Main, On-site waste disposal system



Program

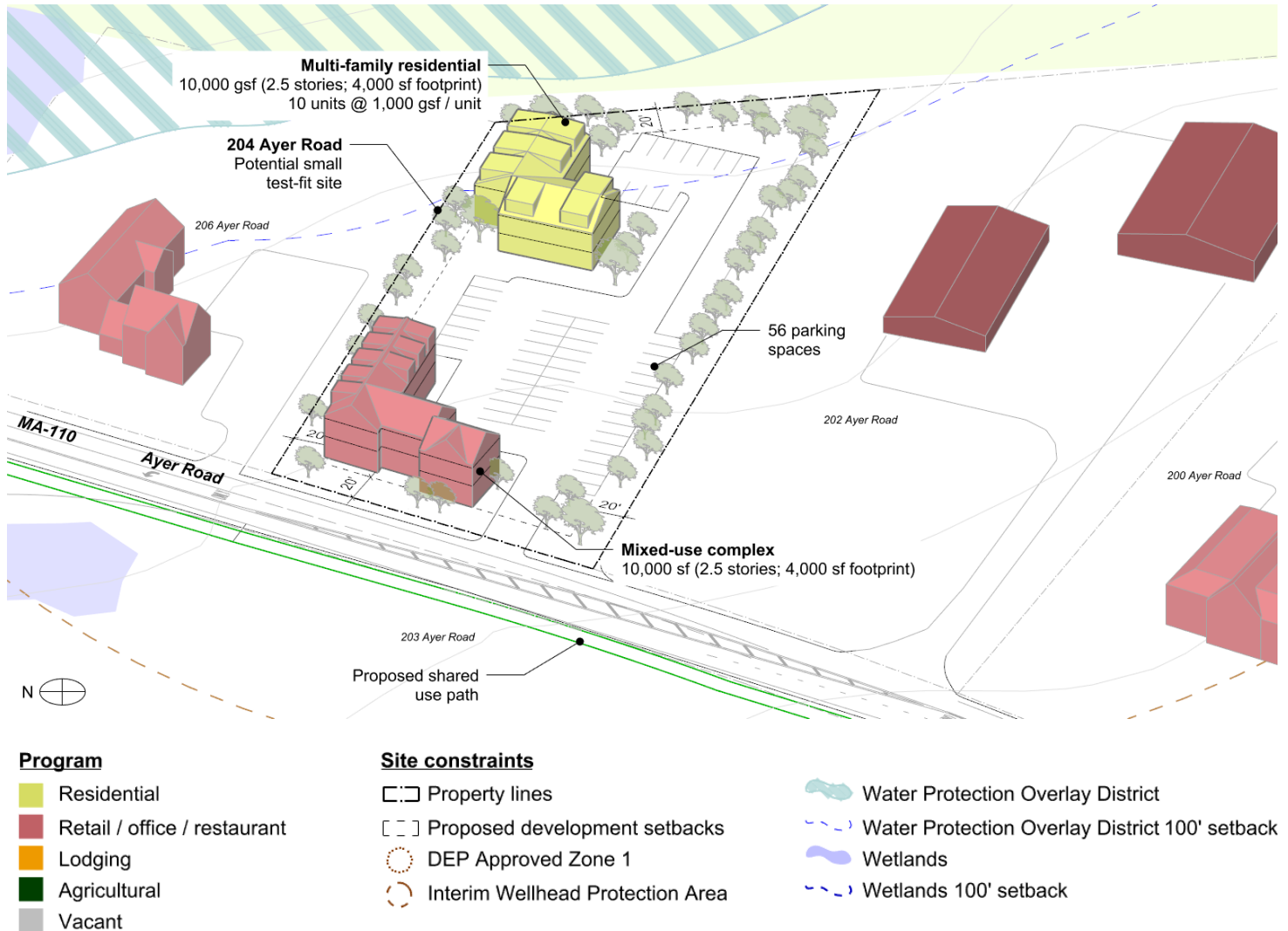
- Residential
- Retail / office / restaurant
- Lodging
- Agricultural
- Vacant

Site constraints

- Property lines
- Proposed development setbacks
- DEP Approved Zone 1
- Interim Wellhead Protection Area
- Water Protection Overlay District
- Water Protection Overlay District 100' setback
- Wetlands
- Wetlands 100' setback

Program	Area	%	Units / AC
Residential	6,000 gsf	55%	4.7
Commercial	5,000 gsf	45%	N/A
Total	11,000 gsf		

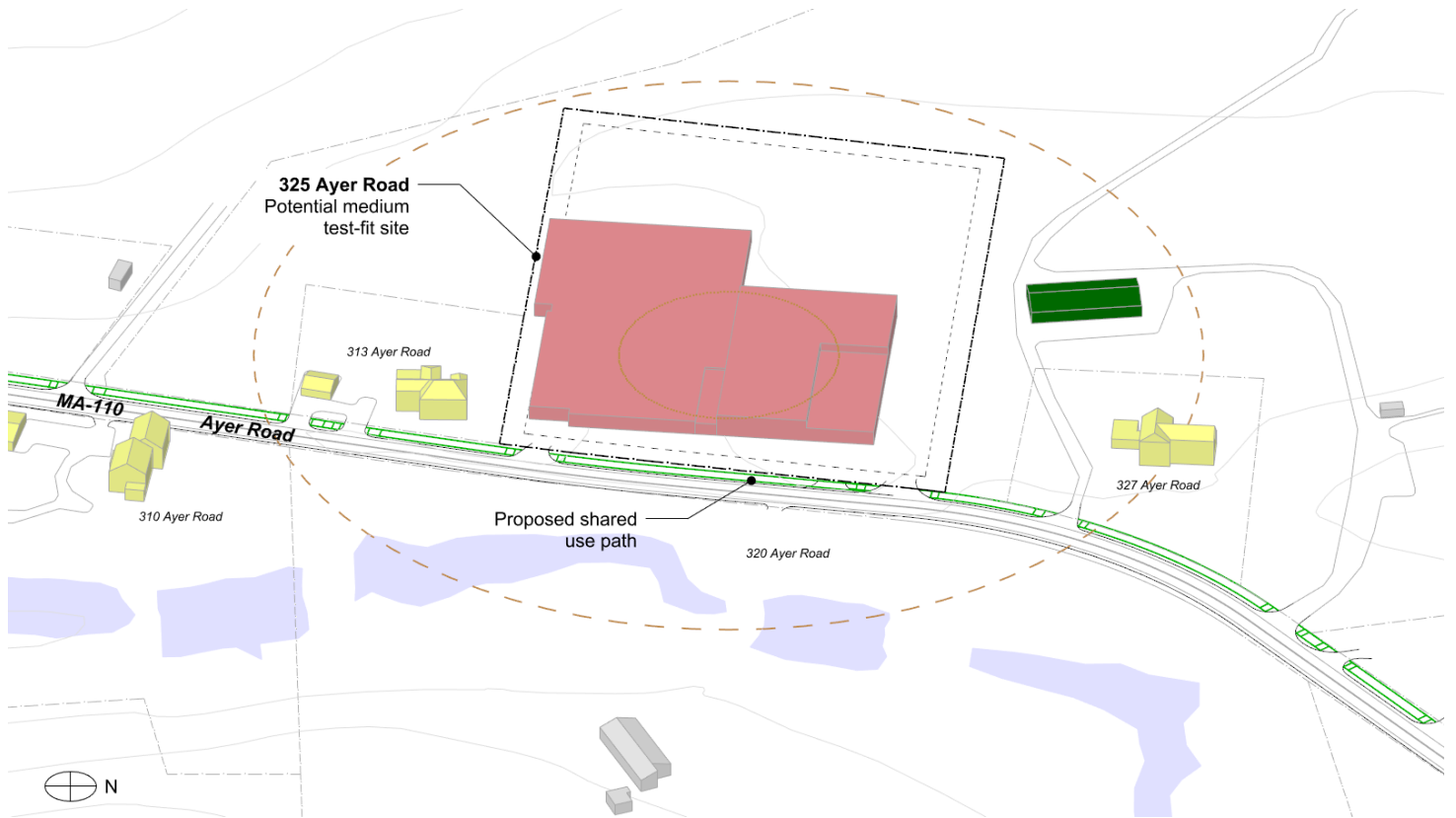
Scenario 3: Water and Sewer from Town of Harvard



Program	Area	%	Units / AC
Residential	10,000 gsf	50%	7.8
Commercial	10,000 gsf	50%	N/A
Total	20,000 gsf		

Medium test-fit site: 325 Ayer Road

Parcel acreage: 4.78 ac, Existing uses: warehousing / retail / services / offices



Program

- Residential
- Retail / office / restaurant
- Lodging
- Agricultural
- Vacant

Site constraints

- Property lines
- Proposed development setbacks
- DEP Approved Zone 1
- Interim Wellhead Protection Area
- Water Protection Overlay District
- Water Protection Overlay District 100' setback
- Wetlands
- Wetlands 100' setback

Currently home to a mixed-use complex, 325 Ayer Road is the medium prototypical parcel on which three development scenarios regarding water and sewer utilities were explored. The parcel is almost four times the size of 204 Ayer Road and can accommodate a mix of commercial and residential uses. Keeping the program relatively similar across all scenarios, these test-fits demonstrate how the degree of infrastructural upgrades will shape densities and site configurations on a medium-sized site.

Scenario 1: No Water & Sewer Utilities

Without access to water or sewer mains, the parcel can still support standalone commercial and residential uses. Medical offices and pharmacies are among potential synergistic uses appropriate for the front of the site. The DEP Zone I area protecting groundwater access significantly limits the use of the middle of site for any uses including parking. While several parking spaces can fit near the commercial complexes, the larger parking area in the back will be shared between both commercial and residential uses. The need for a leaching field will further limit the total developable area and thus the development density.

Scenario 2: Water from Town of Harvard Main, On-site waste disposal system

The removed reliance on public wells and use restrictions on DEP Zone I enables a higher density and better separation between commercial and residential uses and parking areas, but the need for a leaching field will still limit the total developable area.

Scenario 3: Water and Sewer from Town of Harvard

The relieved reliance on septic and wells frees up additional developable parcel area and thus enables a higher density of developments.

Scenario 1: No Water & Sewer Utilities



Program	Area	%	Units / AC
Residential	16,000 gsf	50%	3.3
Commercial	16,000 gsf	40%	N/A
Total	32,000 gsf		

Scenario 2: Water from Town of Harvard Main, On-site waste disposal system



Program

- Residential
- Retail / office / restaurant
- Lodging
- Agricultural
- Vacant

Site constraints

- Property lines
- Proposed development setbacks
- DEP Approved Zone 1
- Interim Wellhead Protection Area
- Water Protection Overlay District
- Water Protection Overlay District 100' setback
- Wetlands
- Wetlands 100' setback

Program	Area	%	Units / AC
Residential	32,000 gsf	67%	6.7
Commercial	16,000 gsf	33%	N/A
Total	48,000 gsf		

Scenario 3: Water and Sewer from Town of Harvard



Program

- Residential
- Retail / office / restaurant
- Lodging
- Agricultural
- Vacant

Site constraints

- Property lines
- Proposed development setbacks
- DEP Approved Zone 1
- Interim Wellhead Protection Area
- Water Protection Overlay District
- Water Protection Overlay District 100' setback
- Wetlands
- Wetlands 100' setback

Program	Area	%	Units / AC
Residential	60,000 gsf	79%	12.6
Commercial	16,000 gsf	54%	N/A
Total	76,000 gsf		

Large test-fit site: 285 Ayer Road

Parcel acreage: 9.62 ac, Existing uses: F&B / retail / recreation / services



Program

- Residential
- Retail / office / restaurant
- Lodging
- Agricultural
- Vacant

Site constraints

- Property lines
- Proposed development setbacks
- DEP Approved Zone 1
- Interim Wellhead Protection Area
- Water Protection Overlay District
- Water Protection Overlay District 100' setback
- Wetlands
- Wetlands 100' setback

285 Ayer Road is the largest prototypical parcel on which three development scenarios regarding water and sewer utilities were explored. Given the parcel’s significant visibility and size, these scenarios explore different program ratios and visions for the site, in addition to demonstrating how the degree of infrastructural upgrades will shape densities and site configurations.

Scenario 1: No Water & Sewer Utilities

The reliance on public wells limits the maximum possible frontage due to the location of the DEP Zone I area. Furthermore, the need for an on-

site septic system limits the use of the full site. The modest mixed-use scenario situates two convenience retail or restaurant developments along the parcel’s Ayer Road frontage, and multi-family residential uses and parking in the back.

Scenario 2: Water from Town of Harvard Main, On-site waste disposal system

Access to the Town’s water main will enable a longer commercial frontage due to the removed restrictions on DEP Zone I, but the need for a leaching field will still limit the use of the full site. This “baseline” scenario depicts a mostly

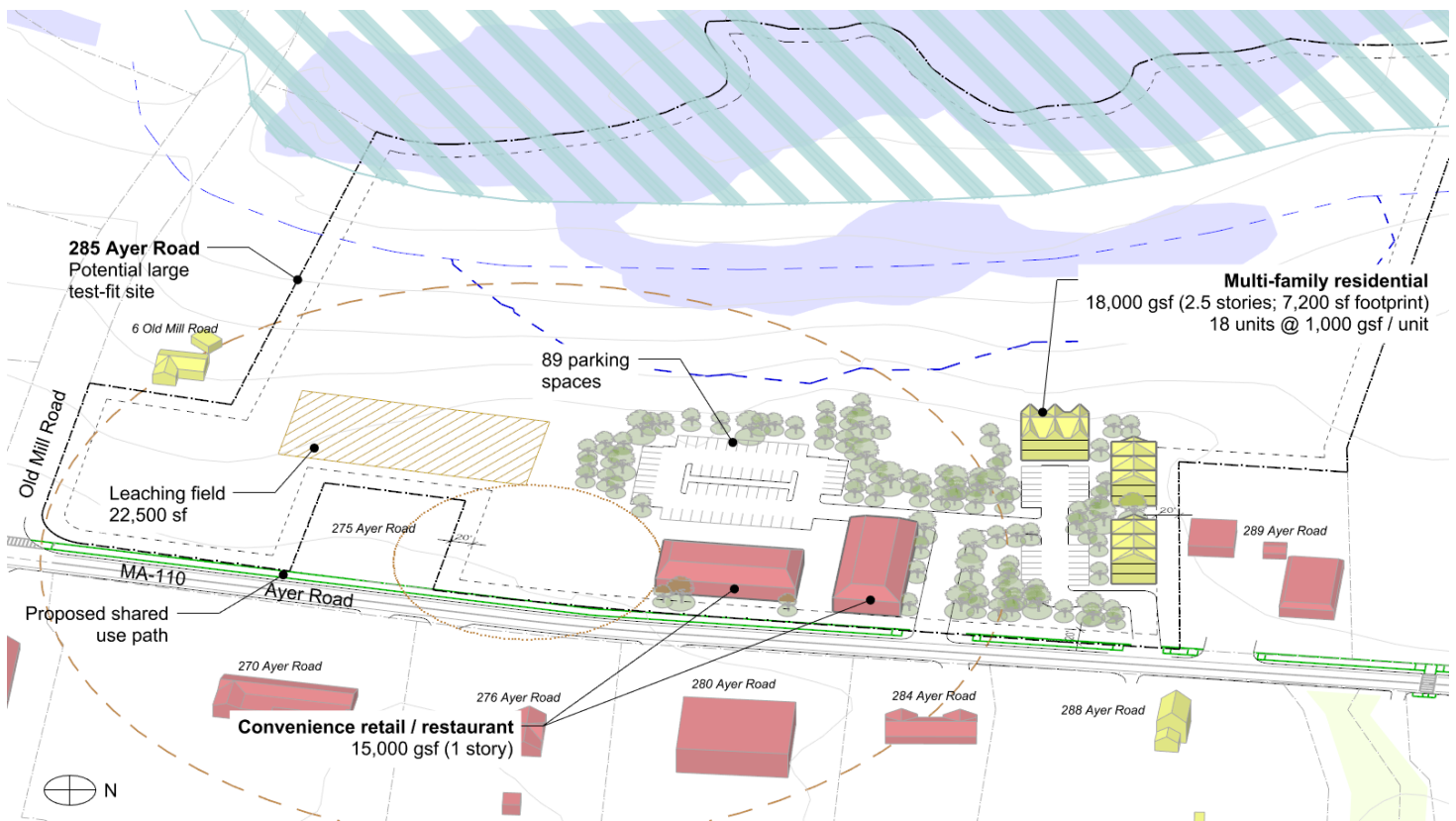
residential mixed-use development. The only retail space is at the ground level of a vertically integrated development with residential uses above. Townhome-style residential buildings line Ayer Road, while larger apartment buildings and parking are situated in the back.

the Ayer Road frontage. This scenario envisions the large parcel as a destination with a mix of commercial uses lining Ayer Road, including restaurants, retail complexes, offices, and a small inn. The front-lot building setbacks and interconnected building wings help shape a vibrant pedestrian public realm. Multi-family residential uses and parking are situated in the back.

Scenario 3: Water and Sewer from Town of Harvard

Access to municipal water and sewer enables the contiguous development of the full site and

Scenario 1: No Water & Sewer Utilities



Program	Area	%	Units / AC
Residential	18,000 gsf	55%	1.9
Commercial	15,000 gsf	45%	N/A
Lodging	0 gsf	0%	N/A
Total	33,000 gsf		

Scenario 2: Water from Town of Harvard Main, On-site waste disposal system



Program

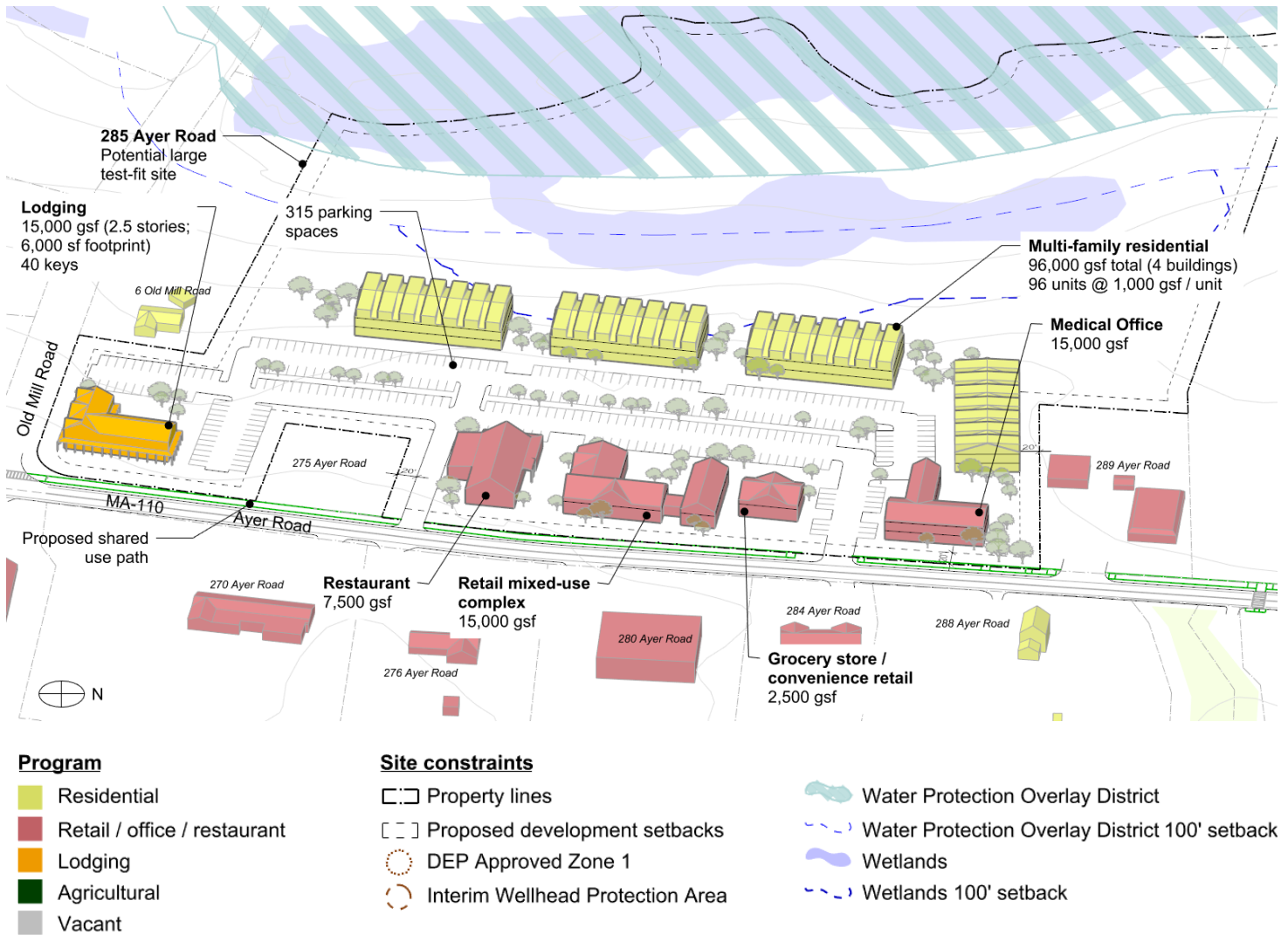
- Residential
- Retail / office / restaurant
- Lodging
- Agricultural
- Vacant

Site constraints

- Property lines
- Proposed development setbacks
- DEP Approved Zone 1
- Interim Wellhead Protection Area
- Water Protection Overlay District
- Water Protection Overlay District 100' setback
- Wetlands
- Wetlands 100' setback

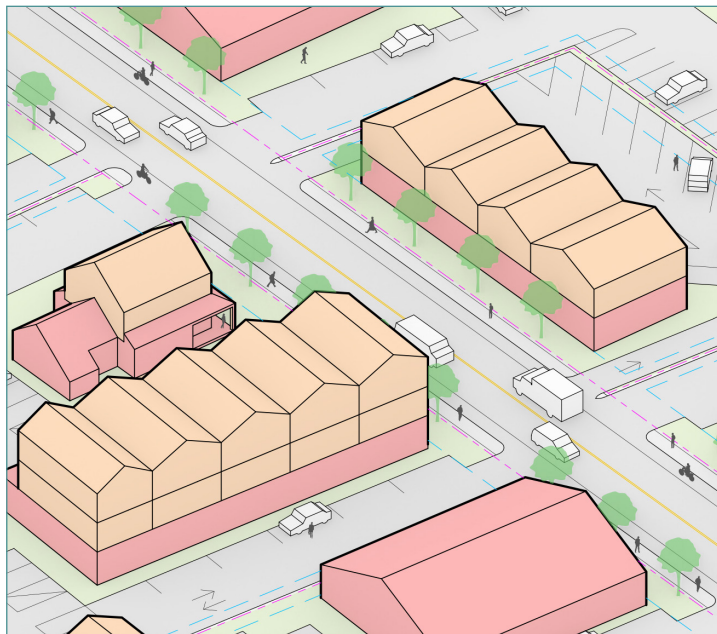
Program	Area	%	Units / AC
Residential	110,000 gsf	96%	11.4
Commercial	5,000 gsf	4%	N/A
Lodging	0 gsf	0%	N/A
Total	115,000 gsf		

Scenario 3: Water and Sewer from Town of Harvard



Program	Area	%	Units / AC
Residential	96,000 gsf	64%	10.0
Commercial	40,000 gsf	26%	N/A
Lodging	15,000 gsf	10%	N/A
Total	151,000 gsf		

Next Steps for Scenario Development and Vision Plan

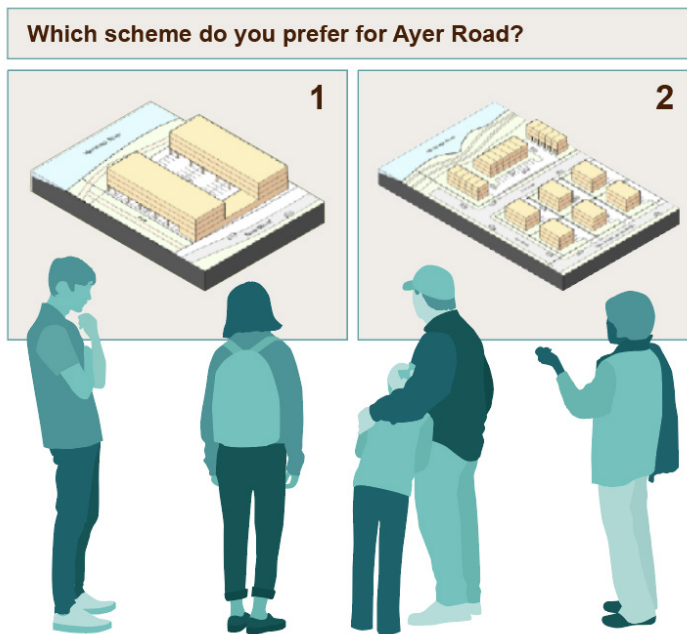


(Sample Image): The scenarios will be refined to fine tune the mix of uses, and scale and character of development.

Refinement of test-fit scenarios

The next steps for scenario development will be highly iterative—the consultant team will refine the preliminary scenarios, working closely with economic consultants to test feasibility and fine-tune an appropriate mix of uses. A set of draft market inputs for testing development are summarized in the next pages. The consultant team will continue to analyze development thresholds made possible by various increments of infrastructure improvements and their impact on the scale of potential development. Finally, as part of the scenario refinement, the team will incorporate the Town and Community’s feedback on and consideration of:

- character and aesthetics of development
- preferred commercial uses
- parking and landscape arrangements to achieve better pedestrian conditions
- alignment with ongoing financial feasibility testing



Refinement of scenarios will be an iterative process, incorporating important feedback from the Town, key stakeholder groups and the community-at-large.

- increased definition of potential zoning parameters (form based and other), etc.
- larger transportation circulation and traffic impacts
- Town economic impacts

Feedback loop with the Town and Community

The refined scenarios will be shared with the Town and larger community in upcoming meetings and workshops to further discuss options and collect necessary feedback. As the consultant team looks ahead to phase 3, it is important to continue a transparent and efficient feedback loop in which the possibilities the community envision for the corridor are consistently informed by the zoning tools and funding mechanisms that can ultimately implement them. While planning should not occur through coding, having coding at the table during these planning discussions will ease the transition to this third phase and helps lay the foundations of community support for the approach.

Next Steps: Market inputs for testing development

Landwise has assembled a set of market inputs for testing development on underutilized parcels along the Ayer Road corridor in Harvard Massachusetts. The development inputs come from a variety of sources including research of comparable projects in analogous towns, market data, publicly available development pro formas and Landwise accumulated knowledge of development economics in Metro Boston.

Residential Development

In addition, to the inputs on the right, Landwise assumed that all residential developments will consist of 25% inclusionary, affordable units targeting an average of 80% Area Median Income.

Early models reveal that residential development can be feasible along the Ayer Road corridor but with a few important caveats:

- **Surface Parking:** Based on comparable properties it appears that surface parking is the predominant parking solution for developments in similar locations. The surface parking format, while less expensive (and free to residents) is more land consumptive and generally limits building heights to 3-4 stories.
- **Horizontal Mixed-Use:** Based on the assumptions above and analysis of comparable locations it doesn't appear that vertically integrated projects are financially feasible. It is more likely that any commercial uses (retail, restaurant, daycare, etc) would be developed in stand alone retail buildings on outparcels adjacent to the residential development.
- **Limited Potential for Funding Infrastructure or High-End Amenities:** Because rental rates appear to be capped somewhere in the high \$2.00's per square foot range, it means the projects have limited profitability and so construction budgets would need to be managed very tightly, leaving little room for the introduction of high end amenities or funding of expensive off-site infrastructure.

Below is a set of draft development inputs used to create the initial pro formas:

Cost	Range
Hard (\$/SF)	\$225 - \$250
Soft (%/Hard)	15% - 20%
Operating (\$/unit)	\$9,000 - \$12,000
Total Development (\$/SF)	\$280 - \$315
Land (\$/Land Foot)	\$15 - \$20
Parking (\$/space)	\$5,000 (surface)

Market inputs for testing development cont.

Stand-Alone Commercial

Landwise has also tested the option of developing stand-alone commercial on the Harvard Ayer Road test sites. This could include uses such as retail, daycare facilities or medical office. Based on the available data it appears that the low-density, low-cost stand-alone commercial use could potentially be feasible on its own for a small site or as an outparcel site as part of a larger residential project. Some of the key assumptions for the retail analysis are shown below. Our assumption is that such a development would likely only occur as a build-to-suit for a particular tenant or as a deal with a substantial portion of the retail space pre-leased.

FAR	0.25
Commercial Efficiency	85%
Commercial Parking Ratio	4.0
Parking Costs (Surface)	\$5,000
Ground Floor Rent/SF NNN	\$25.00
Land Cost (per land foot)	\$16.00
Hard Costs (excludes fit out)	\$140.00
Tenant Fit Out Cost	\$50.00
Soft Cost/Site	20%
Total Cost GSF (Parking and Building)	\$302.00
Cap Rate	6.00%

Form-based Zoning Framework

The next phase of this process involves crafting and implementing a series of zoning tools to support the envisioned development desired by the Harvard community and stakeholders along the corridor.

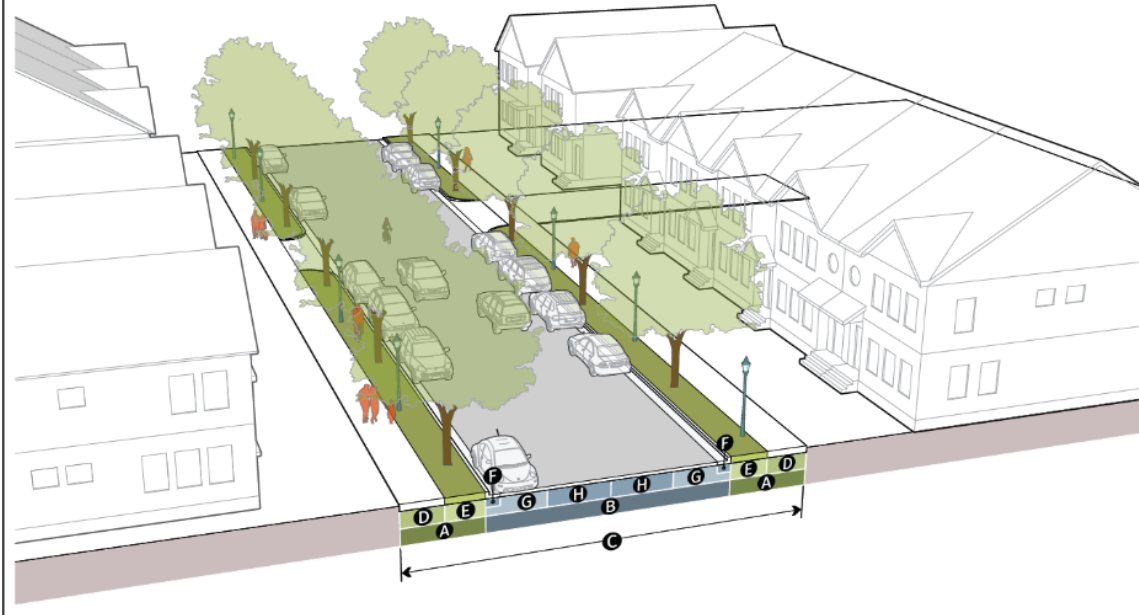
The new form-based code will include the following main components:

- **Approach.** The overall approach to the form-based code will require consideration of a variety of regulatory elements in order to establish context-sensitive guidelines. These elements may vary across mapped subdistricts, or may vary in response to specific conditions of a site or project. For instance, the length of lot frontage along a public street may trigger different requirements for building placement and massing, parking and access location, and the public realm on narrow, deep parcels vs. broader, shallower parcels. Potential thresholds for context-sensitive standards may include lot frontage, lot area, the ratio of frontage to area, land use (whether a site is predominantly commercial or residential), and specific location along the corridor. The code will be highly-illustrated and rely on visual and graphic standards in addition to text.
- **Building Form Standards.** Standards to control building form, which may consist of building types, building height, and transparency. Additional site standards such as landscaping, stormwater, vehicular and pedestrian access, access across neighboring sites, parking, and sign controls may also be developed. Standards will be based on the precedents identified during the planning process, with appropriate design for the region's climate and any specific local issues (such as electric transformers). Standards will vary for buildings fronting along Ayer Road, buildings fronting along private drives or parking, and buildings fronting along open space or trails. Any standards related to the level of development intensity should be responsive to the availability of water, sewer, and stormwater infrastructure.
- **Architectural Style/Design Guidelines.** Design guidelines and/or architectural element standards will help to ensure new development meets the desired “look and feel” of the corridor. These regulatory elements will also be helpful in addressing the impacts of certain types of development, such as drive-throughs, fuel stations, or other uses which may otherwise detract from the character of the area.
- **Public Realm Standards.** Public realm standards that provide for key design attributes for safe, multi-modal streets, including vehicles, cyclists, and pedestrians, will be prepared. These standards include sidewalks, parking lanes, street trees, lighting, and green stormwater techniques, among others. These standards will address how new developments provide access to existing or future multimodal infrastructure, such as paths or trails.
- **Development Approval Process.** The proposed operation of the development review and approval process, including how nonconformities are dealt with under the new provisions.
- **Regulating Plan.** A map demonstrating the new Form-Based Code districts.

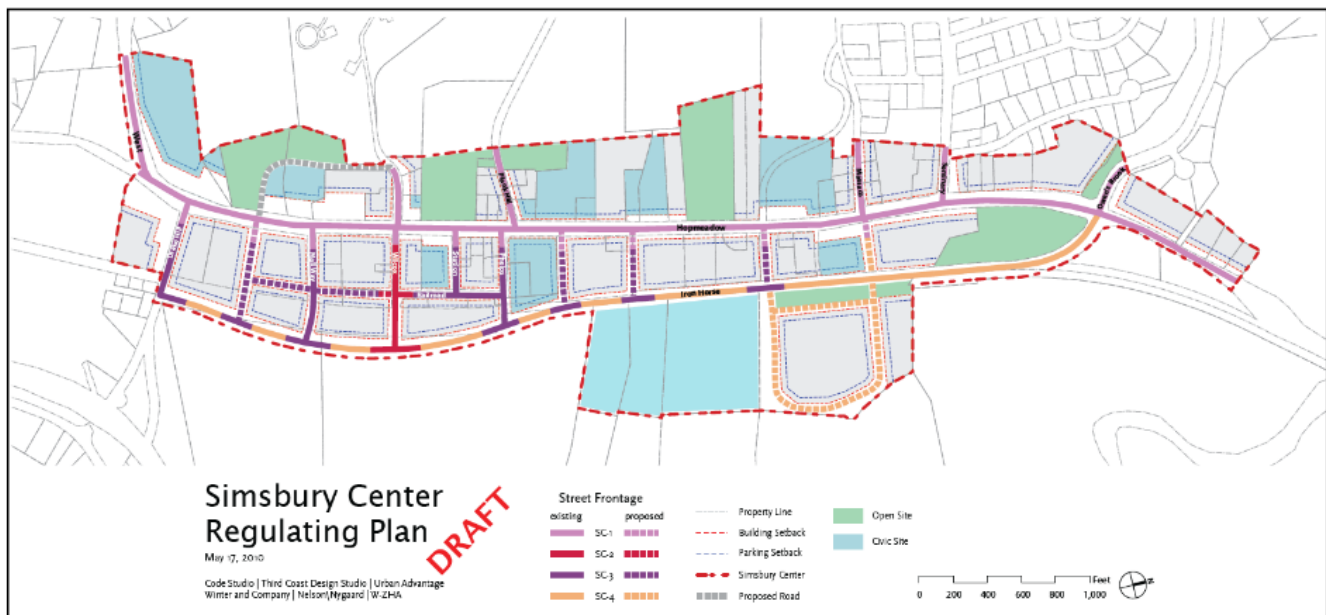
Example deliverables for Phase 3

c. Spine Street

A Spine Street serves as the internal “spine” of development within the project, and connects the front to the back, creating a safe, walkable street connected to all the areas of the development.



Mansfield, CT, public realm standards—Code Studio




Simsbury, CT regulating plan —Code Studio


Appendix

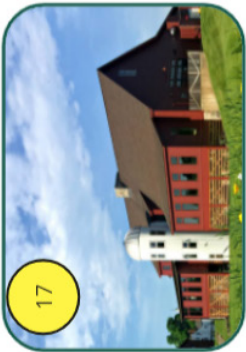
Community Visioning Workshop Takeaways


Quick Live Poll 2:


Select your preferred character and scale for commercial use: (choose up to 3)


15  A. Small ground-floor convenience retail in mixed-use developments

16  B. Clustered retail in mixed-use developments

17  D. Standalone boutique retail/restaurants

0  C. Shopping centers

2  E. Standalone chain retail/restaurants

0  F. No change in character / nothing

Increased retail - thought into electrifying these clusters? EV charging stations?

Any examples of restaurants on the corridor that failed? Would be good to understand why

group in Town that looks at sustainability/ electrification

increased commercial activities provide job opportunities

Dunkin seems to be doing well, but wonder about sit-down restaurants

several attempts to have food businesses prior to Thai restaurant. One of them was a bakery that didn't survive.

commercial feasibility of destination restaurants? would like to see these restaurants but lots of traffic not stopping in between.

The appropriate question ought to be the most efficient way to get from Route 2 to Ayer.

Quick Live Poll 1:

What new commercial uses would you like to see on Ayer Rd?: (choose up to 3)

I'd like to see more opportunities for teens to work in Harvard businesses

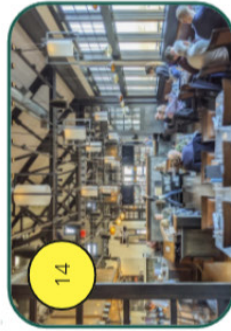
Need park and walk in corridor. Allow pedestrians to get off Ayer road and reduce Ayer Road traffic

Bike trails and rentals would be nice



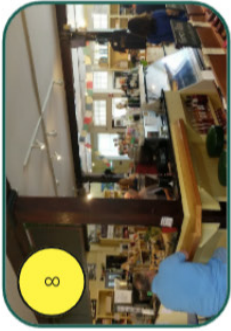
3

A. Retail shops



14

B. Restaurants / Farm-to-table



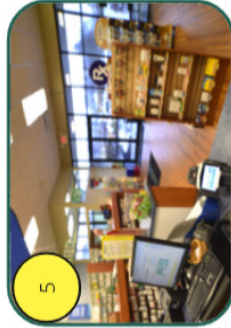
8

C. Convenience / Groceries



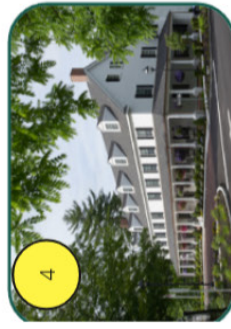
3

D. Boutique stores



5

E. Pharmacies / Clinics



4

F. Lodging / Inn



1

G. Vehicle repair / Landscape



2

H. Nothing



1

I. Others

Possibility to cross Ayer Road - cross over to Lancaster County Road? A: some crossing but no traffic lights. Blinky lights

No parking for the trail.

Question about the new water line serving town center.

PFAS issues along the corridor that will need to be kept in mind.

Main St in Groton has good examples of retail oriented developments. Would like a grocery store - something bigger than Alltown.

possible Trader Joe's-sized grocery store in our district?

Open space uses

Truck traffic on Ayer Road is a huge issue. Would like to be able to walk to senior center, but currently the only option is driving. Don't think taxes will ever go down. No need for new commercial use.

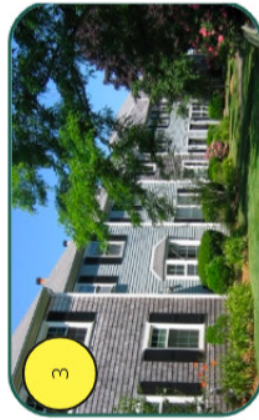
Blanchard Road residents: nascent sporting development trend happening on east side of corridor - seems to be nice use of land. Unrealistic to think large lodging facility will have demand.

bowling alley was extremely successful for decades before changing hands.

Quick Live Poll 3:

If there is new housing on the corridor, my preference would be:

(choose up to 2)



A. Townhouse cluster / family-size units (3+ bedrooms)

already in the area, and successful. Maintained beautifully. Athletic fields built north and east came after, surrounding it



B. Multi-family / compact units (1-2 bedrooms)

redevelopment and intensifying of uses is not sprawl.

no mixed-use option? type of uses to encourage in mixed-use would be different than stand alone.

difference in septic requirements between resi only and mixed use.

Old Mill/110 development? could change the character of the corridor

E. None of the above



C. 2-4 unit buildings / clusters

sprawl = unplanned, disorganized uses, ways of developing

athletic field east of development came later. later developments surrounded this project after it was built.



D. Single-family detached homes

List of previous studies and reports including Planning Board Market Study showing leakage. In addition to EDAT and Economic Development Committee reports.

An aerial photograph of a rural landscape, likely in the Harvard area. The image shows a road corridor running through a wooded area, with several buildings and structures visible in the upper left quadrant. The overall scene is dark and somewhat desaturated, with a greenish-grey tint.

Harvard Ayer Road Corridor Vision Plan and Form Based Code

Test-fit Scenarios
December 21st, 2023

Content

- Soft site selection
- Test-fit assumptions
 - Program mix assumptions
 - Dimensional assumptions
- Development test-fit scenarios
 - No infrastructural improvement
 - Water supply
 - Water + sewer
- Next steps

Soft site selection










Initial program mix assumptions

Community Workshop Feedback

Quick Live Poll 1:

What new commercial uses would you like to see on Ayer Rd?: (choose up to 3)

<p>I'd like to see more opportunities for teens to work in Harvard businesses</p>	 <p>3</p> <p>A. Retail shops</p>	 <p>14</p> <p>B. Restaurants / Farm-to-table</p>	 <p>8</p> <p>C. Convenience / Groceries</p>	 <p>3</p> <p>D. Boutique stores</p>	<p>Truck traffic on Ayer Road is a huge issue. Would like to be able to walk to senior center, but currently the only option is driving. Don't think taxes will ever go down. No need for new commercial use.</p>
<p>Need park and walk in corridor. Allow pedestrians to get off Ayer road and reduce Ayer Road traffic</p>	 <p>5</p> <p>E. Pharmacies / Clinics</p>	 <p>4</p> <p>F. Lodging / Inn</p>	 <p>1</p> <p>G. Vehicle repair / Landscape</p>	<p>2 H: Nothing</p>	<p>Blanchard Road residents: nascent sporting development trend happening on east side of corridor - seems to be nice use of land. Unrealistic to think large lodging facility will have demand.</p>
<p>Bike trails and rentals would be nice</p>	<p>Possibility to cross Ayer Road - cross over to Lancaster County Road? A: some crossing but no traffic lights. Blinky lights</p>	<p>No parking for the trail.</p>	<p>Question about the new water line serving town center.</p>	<p>PFAS issues along the corridor that will need to be kept in mind.</p>	<p>bowling alley was extremely successful for decades before changing hands.</p>
				<p>1 I: Others</p>	<p>possible Trader Joe's-sized grocery store in our district?</p>
					<p>Open space uses</p>
					<p>Main St in Groton has good examples of retail oriented developments. Would like a grocery store - something bigger than Alltown.</p>

Test-fit assumptions

Program / Site Assumptions

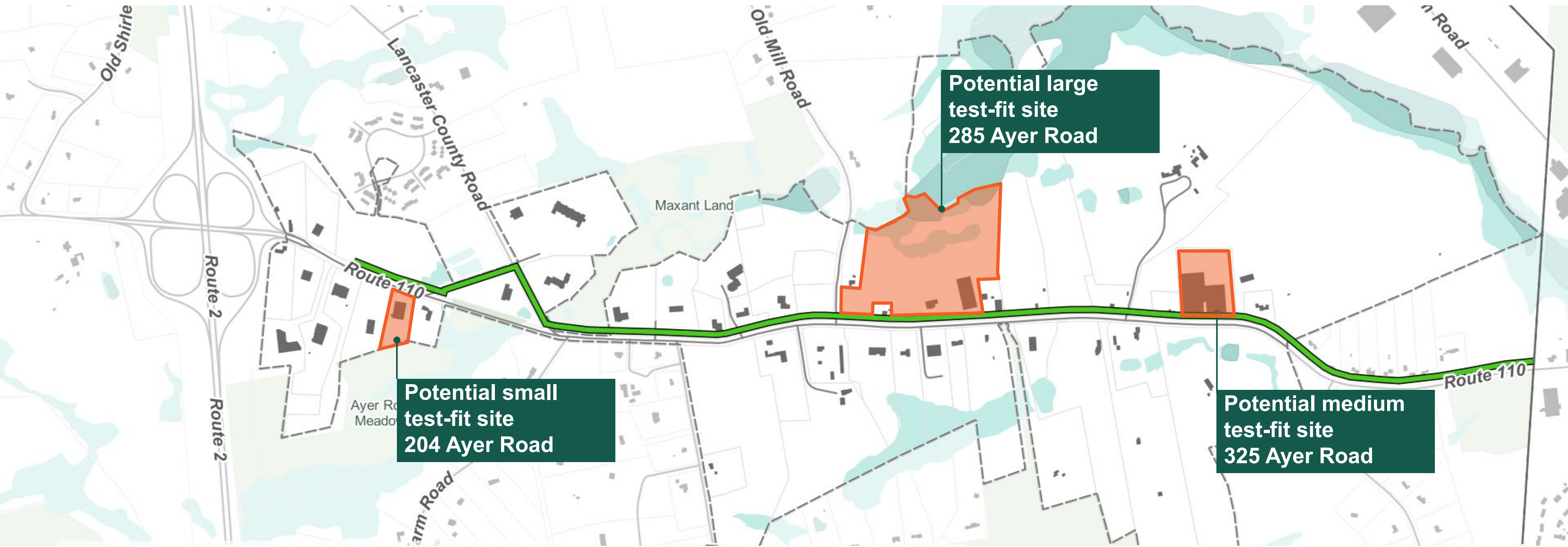
- Residential unit size: 1,000 gsf / unit
- Residential parking: 1.6 spaces per unit
- Commercial parking: 1 space / 250 gsf retail
1 space / 333 gsf office
- Septic system constraints:
 - Leaching field sizing as recommended by Nitsch Engineering
 - No septic systems within 100' of Water Protection Overlay District
- Water-related constraints:
 - No non-water-supply-related uses on DEP Wellhead Protection Areas
 - 100' setback from wetlands
- Site configuration assumptions:
 - Surface parking
 - Horizontal mixed-use more likely than vertical

Preliminary Dimensional Assumptions

- Max height: 2.5 stories / 35 ft
- Min open space (excl.parking): 50%
- Setbacks:
 - Front & rear: 20'
 - Sides: 20'

These parameters will evolve as we iteratively generate scenarios

Soft site selection



Small test-fit site: 204 Ayer Road

Parcel information



204 Ayer Road

Parcel acreage: 1.28 ac

Existing uses: Vacant

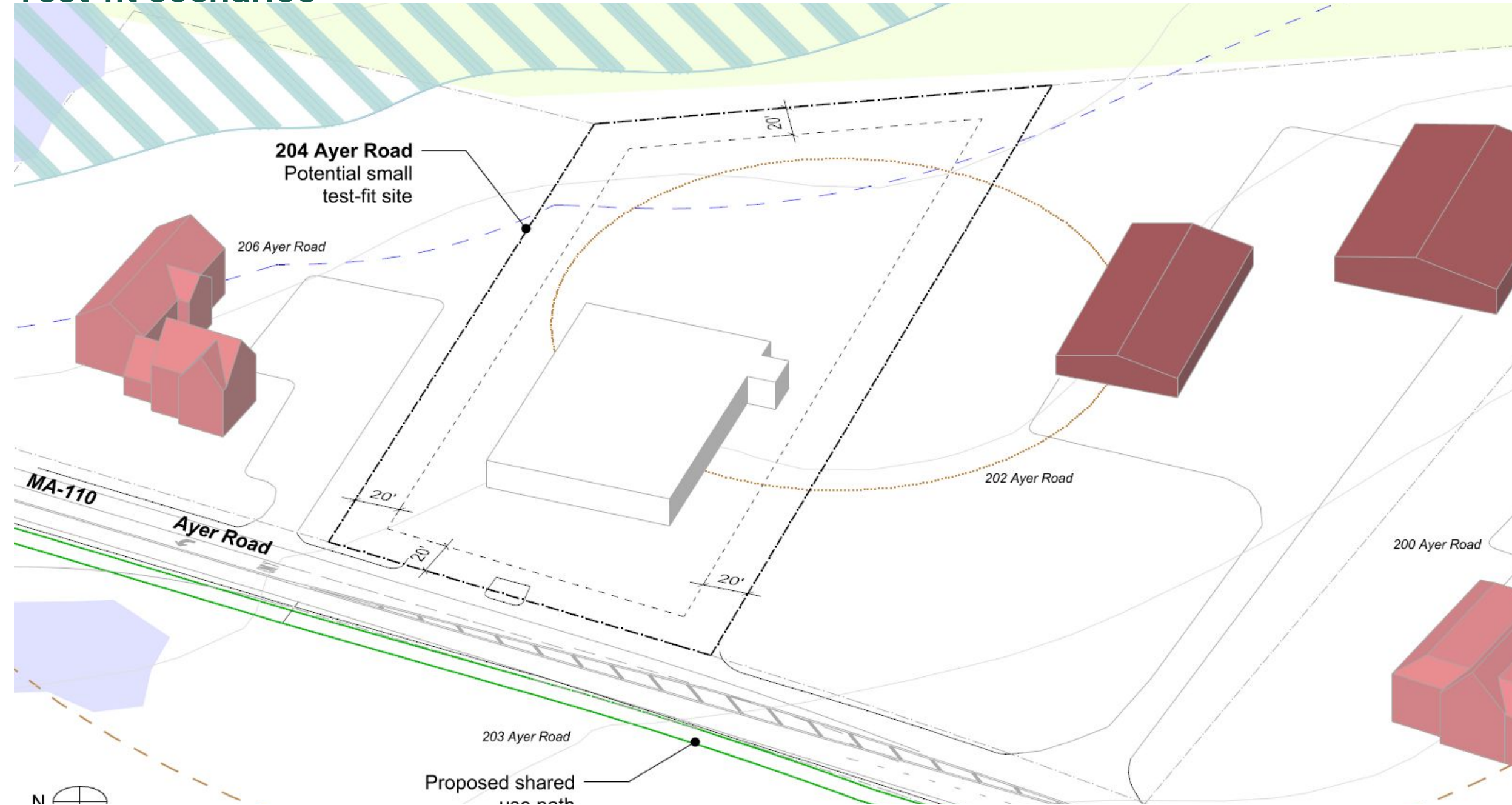
- Program**
- Residential
 - Retail / office / restaurant
 - Lodging
 - Agricultural
 - Vacant

- Site constraints**
- Property lines
 - Proposed development setbacks
 - DEP Approved Zone 1
 - Interim Wellhead Protection Area

- Water Protection Overlay District
- Water Protection Overlay District 100' setback
- Wetlands
- Wetlands 100' setback

Small test-fit site: 204 Ayer Road

Test-fit scenarios



Scenario 1: No Water & Sewer Utilities

- Commercial use not viable due to physical site constraints imposed by DEP Zone I and septic system sizing assumptions.

Program

- Residential
- Retail / office / restaurant
- Lodging
- Agricultural
- Vacant

Site constraints

- Property lines
- Proposed development setbacks
- DEP Approved Zone 1
- Interim Wellhead Protection Area

- Water Protection Overlay District
- Water Protection Overlay District 100' setback
- Wetlands
- Wetlands 100' setback

Small test-fit site: 204 Ayer Road

Test-fit scenarios



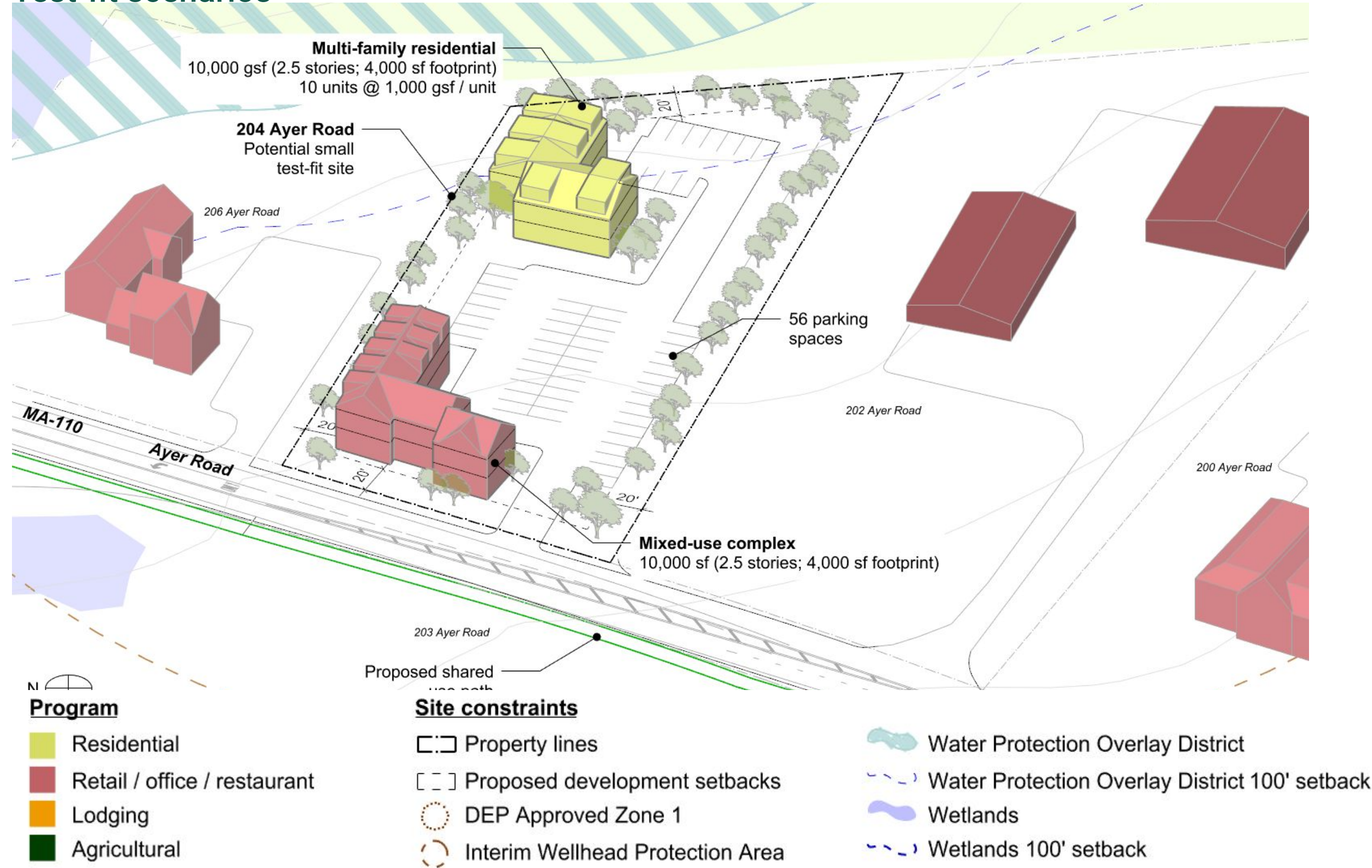
Scenario 2: Water from Town of Harvard Main, On-site waste disposal system

- Small standalone convenience retail and multi-family residential developments with shared parking area
- Leaching field size limits site configuration and separation of uses

Program	Area	%	Units/Acre
Residential	6,000 gsf	55%	4.7
Commercial	5,000 gsf	45%	N/A
Total	11,000 gsf		

Small test-fit site: 204 Ayer Road

Test-fit scenarios



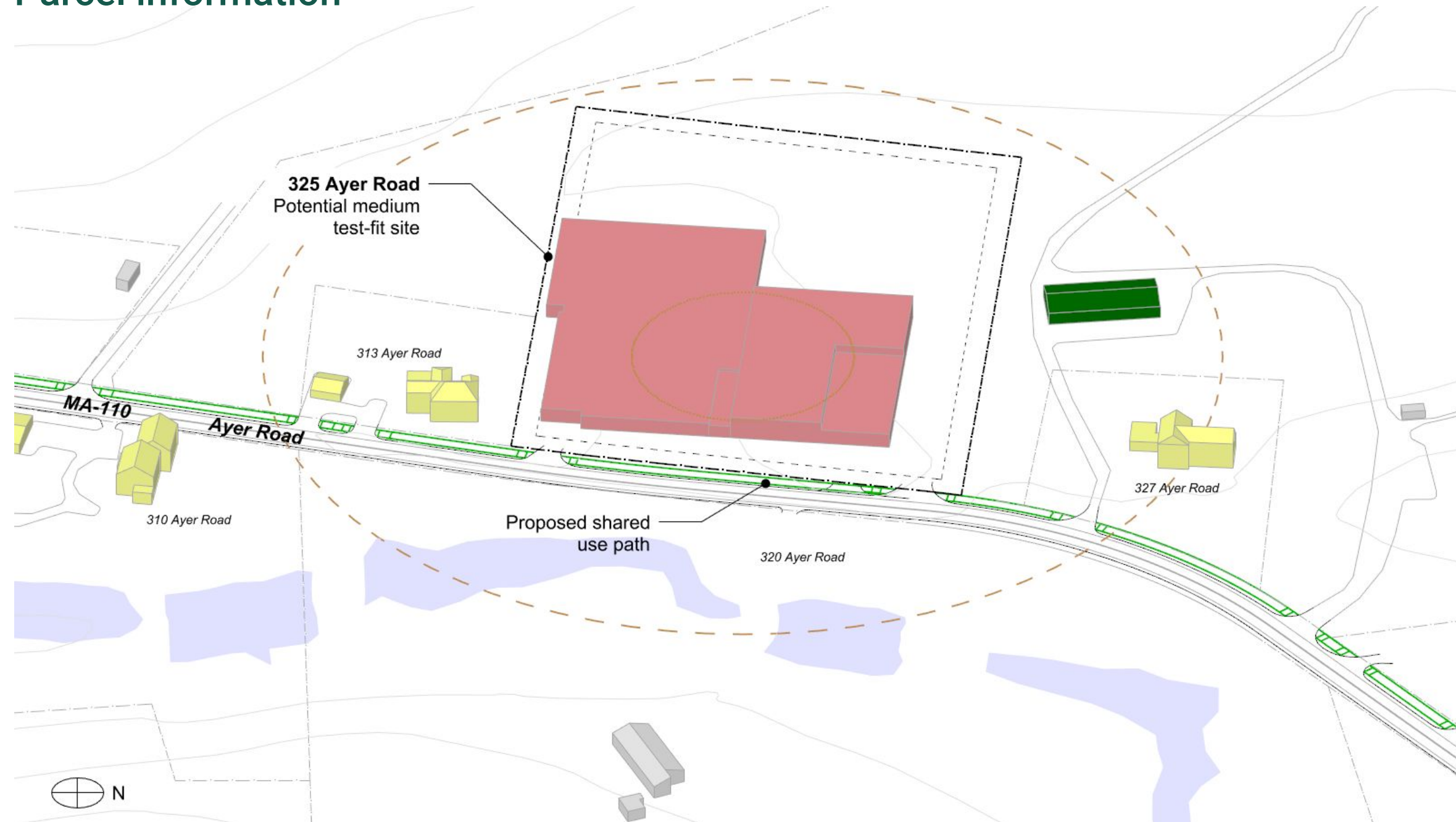
Scenario 3: Water and Sewer from Town of Harvard

- Removed septic system sizing restrictions enable better separation of uses and higher density enabled by additional developable parcel area

Program	Area	%	Units/Acre
Residential	10,000 gsf	50%	7.8
Commercial	10,000 gsf	50%	N/A
Total	20,000 gsf		

Medium test-fit site: 325 Ayer Road

Parcel information



Program

- Residential
- Retail / office / restaurant
- Lodging
- Agricultural
- Vacant

Site constraints

- Property lines
- Proposed development setbacks
- DEP Approved Zone 1
- Interim Wellhead Protection Area

- Water Protection Overlay District
- Water Protection Overlay District 100' setback
- Wetlands
- Wetlands 100' setback



325 Ayer Road

Parcel acreage: 4.78 ac

Existing uses: Warehousing / Retail /
Services / Offices

Medium test-fit site: 325 Ayer Road

Test-fit scenarios



Scenario 1: No Water & Sewer Utilities

- DEP Zone I area limits use of middle of site for parking
- Standalone mixed-use commercial and multi-family residential developments with several parking spaces near the front and a larger shared parking area in the back

Program	Area	%	Units/Acre
Residential	16,000 gsf	50%	3.3
Commercial	16,000 gsf	40%	N/A
Total	32,000 gsf		

Program

- Residential
- Retail / office / restaurant
- Lodging
- Agricultural
- Vacant

Site constraints

- Property lines
- Proposed development setbacks
- DEP Approved Zone 1
- Interim Wellhead Protection Area

- Water Protection Overlay District
- Water Protection Overlay District 100' setback
- Wetlands
- Wetlands 100' setback

Medium test-fit site: 325 Ayer Road

Test-fit scenarios



Scenario 2: Water from Town of Harvard Main, On-site waste disposal system

- Removed reliance on public wells and use restrictions on DEP Zone I enables higher density and better separation of uses

Program	Area	%	Units/Acre
Residential	32,000 gsf	67%	6.7
Commercial	16,000 gsf	33%	N/A
Total	48,000 gsf		

Program

- Residential
- Retail / office / restaurant
- Lodging
- Agricultural
- Vacant

Site constraints

- Property lines
- Proposed development setbacks
- DEP Approved Zone 1
- Interim Wellhead Protection Area

- Water Protection Overlay District
- Water Protection Overlay District 100' setback
- Wetlands
- Wetlands 100' setback

Medium test-fit site: 325 Ayer Road

Test-fit scenarios



Scenario 3: Water and Sewer from Town of Harvard

- Removed restrictions on septic system sizing enables higher density

Program	Area	%	Units/Acre
Residential	60,000 gsf	79%	12.6
Commercial	16,000 gsf	21%	N/A
Total	76,000 gsf		

Program

- Residential
- Retail / office / restaurant
- Lodging
- Agricultural
- Vacant

Site constraints

- Property lines
- Proposed development setbacks
- DEP Approved Zone 1
- Interim Wellhead Protection Area
- Water Protection Overlay District
- Water Protection Overlay District 100' setback
- Wetlands
- Wetlands 100' setback

Large test-fit site: 285 Ayer Road

Parcel information



285 Ayer Road

Parcel acreage: 9.62 ac

Existing uses: F&B / retail / recreation / services

Program

- Residential
- Retail / office / restaurant
- Lodging
- Agricultural
- Vacant

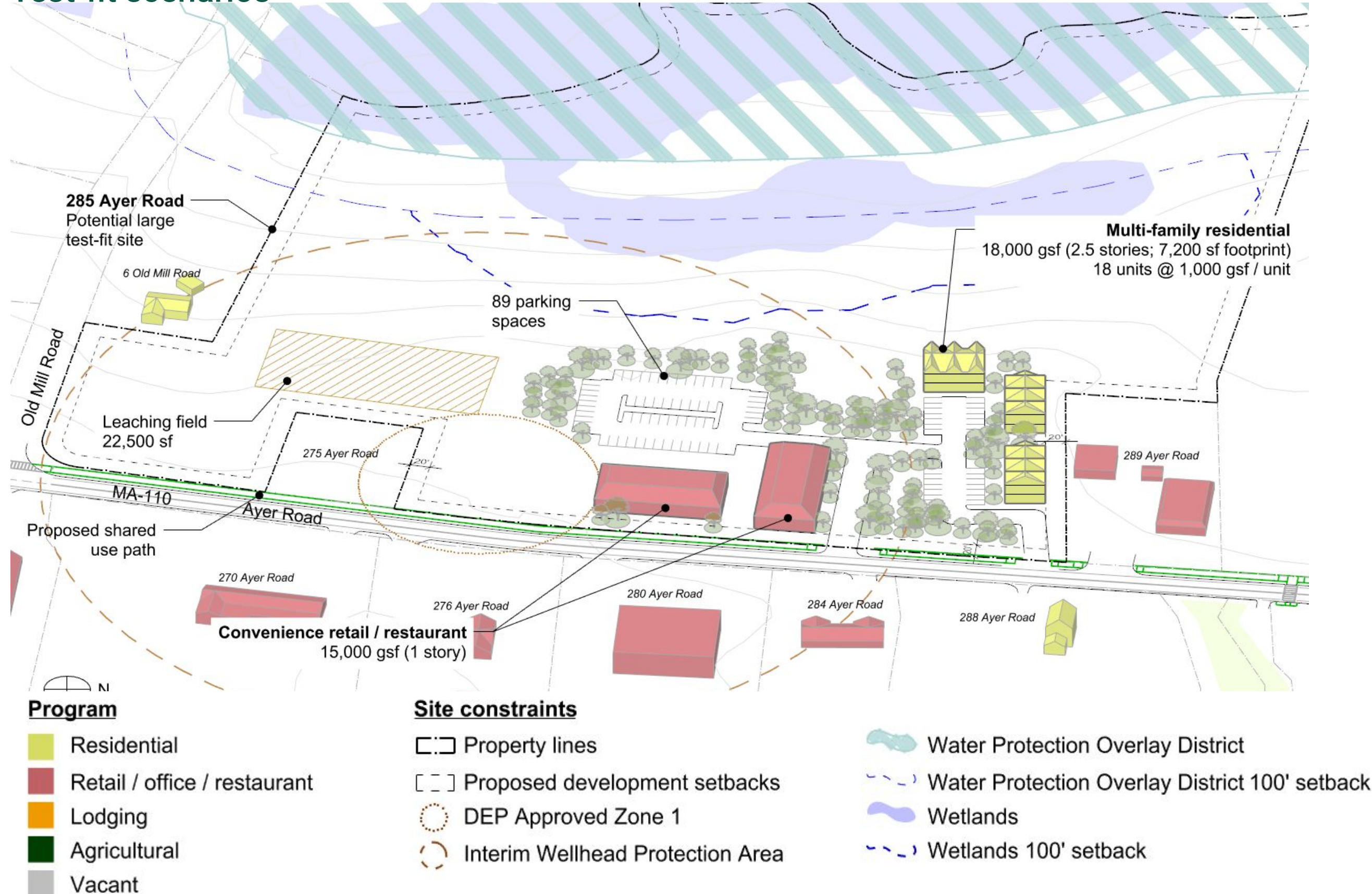
Site constraints

- Property lines
- Proposed development setbacks
- DEP Approved Zone 1
- Interim Wellhead Protection Area

- Water Protection Overlay District
- Water Protection Overlay District 100' setback
- Wetlands
- Wetlands 100' setback

Large test-fit site: 285 Ayer Road

Test-fit scenarios



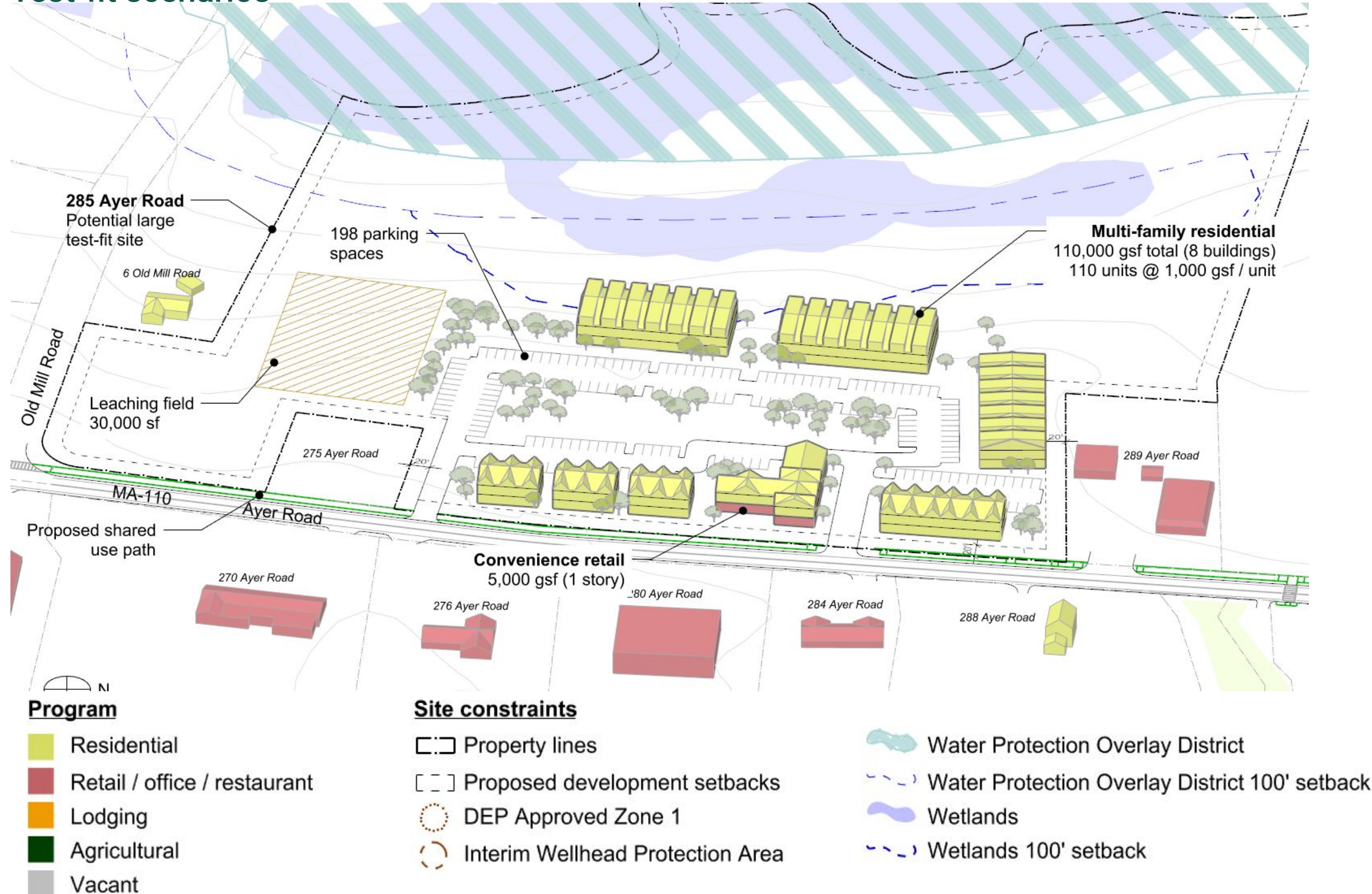
Scenario 1: No Water & Sewer Utilities

- DEP Zone I area and septic system sizing limit frontage and use of full site
- Reliance on public wells limits density
- Convenience retail or restaurant as front-lot developments; multi-family residential and parking in the back

Program	Area	%	Units/Acre
Residential	18,000 sf	55%	1.9
Commercial	15,000 sf	45%	N/A
Lodging	0 sf	0	N/A
Total	33,000 sf		

Large test-fit site: 285 Ayer Road

Test-fit scenarios



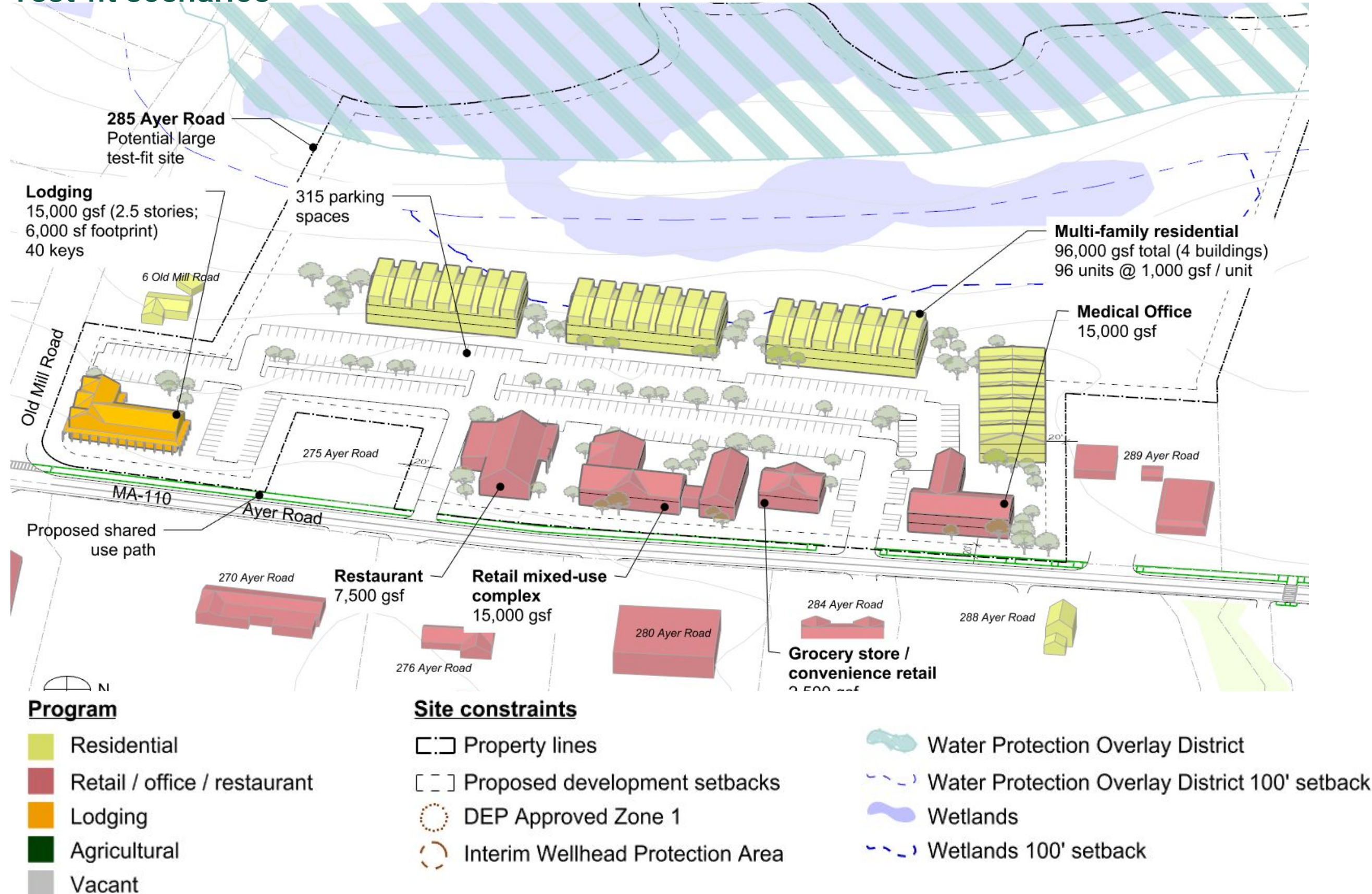
Scenario 2: Water from Town of Harvard Main, On-site waste disposal system

- Septic system sizing limits use of full site due to parcel geometry
- This scenario explores minimum retail as a test
- Ground floor retail as part of vertically integrated development near parking entry
- Townhomes lining Ayer Road; apartments and parking in the back

Program	Area	%	Units/Acre
Residential	110,000 sf	96%	11.4
Commercial	5,000 sf	4%	N/A
Lodging	0 sf	0%	N/A
Total	115,000 sf		

Large test-fit site: 285 Ayer Road

Test-fit scenarios



Scenario 3: Water and Sewer from Town of Harvard

- Use of full site enabled by removed restrictions on water and sewer
- Opportunity to establish site as destination with a mix of commercial uses lining Ayer Road, including restaurants, retail complex, grocery stores, offices, and a small inn
- Front-lot building setbacks and interconnected building wings shaping pedestrian public realm

Program	Area	%	Units/Acre
Residential	96,000 sf	64%	10.0
Commercial	40,000 sf	26%	N/A
Lodging	15,000 sf	10%	N/A
Total	151,000 sf		

Next steps

- Refinement of test-fits
 - Incorporate feedback on character / aesthetics / preferred commercial uses
 - Ensure alignment with ongoing financial feasibility testing
 - Increased definition of potential zoning parameters

