

Introduction



As part of the Rye Master Plan Development

A build-out analysis is a planning tool that identifies areas having development potential and projects future development of those areas based on a set of conditions (e.g., lot size regulations, environmental constraints) and assumptions (e.g., building footprint dimensions).



This models "full build-out" which represents a theoretical time when all available land suitable development has been developed to the maximum conditions allowed.



Introduction



The Rye Build-out Analysis

- Baseline Analysis Completed in October of 2023
- The alternative scenarios 2024

THE GOAL: The results of the build-out analysis can be used for planning purposes to help <u>guide</u> future development activities in the community, <u>anticipate</u> future demands on infrastructure, as well as <u>identify</u> areas that might be best-suited for conservation or development.



Alternative Scenarios



Objective

development exclusions may affect projected buildings and buildable area. To understand how <u>hypothetical</u> changes to the Town of Rye's zoning ordinances or

Multi-faceted



Use alternative zoning regulations **and** additional natural resource protections.



Alternative Scenarios - Development Constraints



TABLE 7. Alternative scenario development constraints and zoning changes compared to the baseline analysis.

Development Constraint Description	Baseline Analysis Conditions	Alternative Scenario #1	Alternative Scenario #2
Conserved Land	No development	No development	No development
Road	No development	No development	No development
Hydric Soils	No development	No development	No development
Public Recreation, Public Recreation and Conservation, and Conservation Districts.	No development	No development	No development
Tidal marshes, bays, estuaries, rivers, river tributaries and creeks, natural perennial streams, vernal pools,	100-foot setback	200-foot setback	200-foot setback
ponds one acre in size or larger, and specifically Eel Pond, Burke's Pond, Brown's Pond, and East Rye Pond			
Wetlands within the Berrys Brook watershed	100-foot setback	200-foot setback	200-foot setback
Wetlands in Bailey's Brook, Seavey Creek, Witches Creek, and Parsons Creek	100-foot setback	200-foot setback	200-foot setback
Other wetlands not non-bordering, isolated wetlands	75-foot setback	150-foot setback	150-foot setback
Isolated, non-bordering wetlands	25-foot setback	50-foot setback	50-foot setback
Areas inundated under both 1 and 4 feet of sea level rise		No development	No development
FEMA flood hazard areas for 1% and 0.2% events (100-year and 500-year storms)	,	No development	No development
Isles of Shoals	,	No development	No development
Route 1 District	Existing lot sizes by zone (Table 3)	10 units/acre for all zones in this district	30 units/acre for all zones in this district
Town Center District	Existing lot sizes by zone (Table 3)	4 units/acre for all zones in this district	6 units/acre for all zones in this district

Alternative Scenarios – Development Constraints



TABLE 7. Alternative scenario development constraints and zoning changes compared to the baseline analysis.

	(,
Development Constraint Description	Baseline Analysis Conditions	Alternative Scenario #1	Alternative Scenario #2
Conserved Land	No development	No development	No development
Road	No development	No development	No development
Hydric Soils	No development	No development	No development
Public Recreation, Public Recreation and Conservation, and Conservation Districts.	No development	No development	No development
Tidal marshes, bays, estuaries, rivers, river tributaries and creeks, natural perennial streams, vernal pools, ponds one acre in size or larger, and specifically Eel Pond, Burke's Pond, Brown's Pond, and East Rye Pond	100-foot setback	200-foot setback	200-foot setback
Wetlands within the Berrys Brook watershed	100-foot setback	200-foot setback	200-foot setback
Wetlands in Bailey's Brook, Seavey Creek, Witches Creek, and Parsons Creek	100-foot setback	200-foot setback	200-foot setback
Other wetlands not non-bordering, isolated wetlands	75-foot setback	150-foot setback	150-foot setback
Isolated, non-bordering wetlands	25-foot setback	50-foot setback	50-foot setback
Areas inundated under both 1 and 4 feet of sea level rise		No development	No development
FEMA flood hazard areas for 1% and 0.2% events (100-year and 500-year storms)	,	No development	No development
Isles of Shoals		No development	No development
Route 1 District	Existing lot sizes by zone (Table 3)	10 units/acre for all zones in this district	30 units/acre for all zones in this district
Town Center District	Existing lot sizes by zone (Table 3)	4 units/acre for all zones in this district	6 units/acre for all zones in this district

Alternative Scenarios - Development Constraints



TABLE 7. Alternative scenario development constraints and zoning changes compared to the baseline analysis.

Development Constraint Description	Baseline Analysis Conditions	Alternative	Alternative
Conserved Land	No development	No development	No development
Road	No development	No development	No development
Hydric Soils	No development	No development	No development
Public Recreation, Public Recreation and Conservation, and Conservation Districts.	No development	No development	No development
Tidal marshes, bays, estuaries, rivers, river tributaries and creeks, natural perennial streams, vernal pools, ponds one acre in size or larger, and specifically Eel Pond, Burke's Pond, Brown's Pond, and East Rye Pond	100-foot setback	200-foot setback	200-foot setback
Wetlands within the Berrys Brook watershed	100-foot setback	200-foot setback	200-foot setback
Wetlands in Bailey's Brook, Seavey Creek, Witches Creek, and Parsons Creek	100-foot setback	200-foot setback	200-foot setback
Other wetlands not non-bordering, isolated wetlands	75-foot setback	150-foot setback	150-foot setback
Areas inundated under both 1 and 4 feet of sea level	r	No development	No development
FEMA flood hazard areas for 1% and 0.2% events (100-year and 500-year storms)	,	No development	No development
Isles of Shoals	t	No development	No development
Route 1 District	Existing lot sizes by zone (Table 3)	10 units/acre for all zones in this district	30 units/acre for all zones in this district
Town Center District	Existing lot sizes by zone (Table 3)	4 units/acre for all zones in this district	6 units/acre for all zones in this district

Alternative Scenarios - Development Constraints 🕞





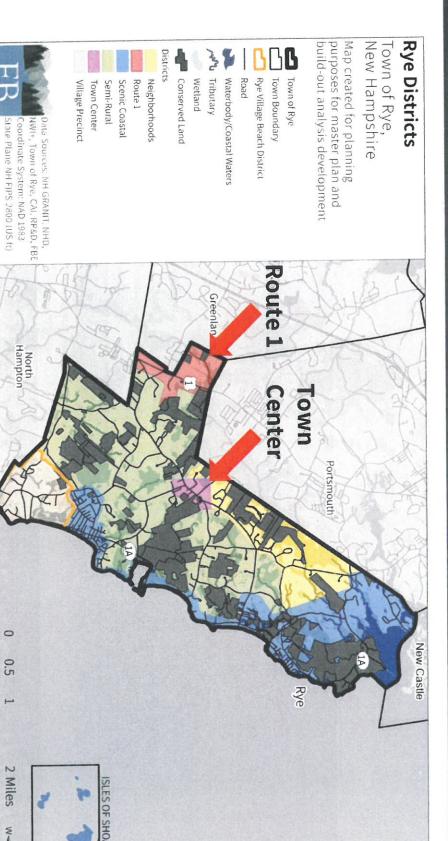
Alternative Scenarios – Development Constraints

TABLE 7. Alternative scenario development constraints and zoning changes compared to the baseline analysis.

Town Center District	Isles of Shoals	FEMA flood hazard areas for 1% and 0.2% events (100-year and 500-year storms)	Areas inundated under both 1 and 4 feet of sea level rise	Isolated, non-bordering wetlands	Other wetlands not non-bordering, isolated wetlands	Wetlands in Bailey's Brook, Seavey Creek, Witches Creek, and Parsons Creek	Wetlands within the Berrys Brook watershed	Tidal marshes, bays, estuaries, rivers, river tributaries and creeks, natural perennial streams, vernal pools, ponds one acre in size or larger, and specifically Eel Pond, Burke's Pond, Brown's Pond, and East Rye Pond	Public Recreation, Public Recreation and Conservation, and Conservation Districts.	Hydric Soils	Road	Conserved Land	Development Constraint Description
Existing lot sizes by zone (Table 3) Existing lot sizes by zone (Table 3)	ī	£	¥	25-foot setback	75-foot setback	100-foot setback	100-foot setback	100-foot setback	No development	No development	No development	No development	Baseline Analysis Conditions
10 units/acre for all zones in this district 4 units/acre for all zones in this district	No development	No development	No development	50-foot setback	150-foot setback	200-foot setback	200-foot setback	200-foot setback	No development	No development	No development	No development	Alternative Scenario #1
30 units/acre for all zones in this district 6 units/acre for all zones in this district	No development	No development	No development	50-foot setback	150-foot setback	200-foot setback	200-foot setback	200-foot setback	No development	No development	No development	No development	Alternative Scenario #2

Alternative Scenarios - Districts



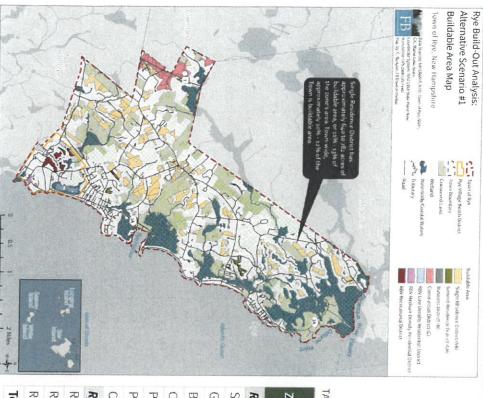


May by: C. Bunyon,

2 Miles

Alternative Scenario #1 Buildable Area





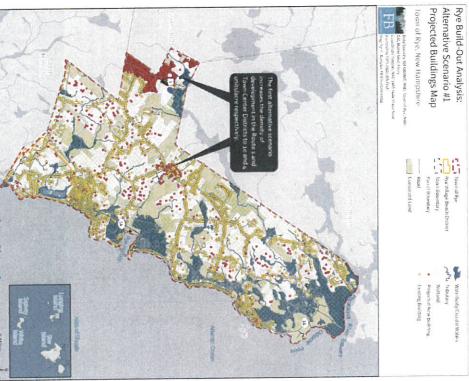
- The expanded development constraints
- Moderate density increase in the Town Center and Route 1 Districts

TABLE 8. The amount of buildable land within the first alternative scenario within the Town of Rye, NH, based on the first alternative scenario.

Zone	Total Area (Acres)	Scenario #1 Buildable Area (Acres)	Scenario #1 Percent Buildable Area
Rye			
Single Residence District (SR)	5,929	640 - 782	110% - 130%
General Residence District (GR)	457	32 - 40	70% - 90%
Business District (B)	48	2	30% - 40%
Commercial District (C)	276	115-141	420% - 510%
Public Recreation District (PREC)	78	0	00%
Public Recreation and Conservation District (PRAC)	368	0	0%
Conservation District (CON)	701	0	00%
Rye Beach Village District			C
RBV Low Density Residential District	282	17-21	6% - 7%
RBV Medium Density Residential District	184	8-9	40% - 50%
RBV Recreational District	84	32 - 40	39% - 47%
Total	8,406	846 - 1,035	10% - 12%

Alternative Scenario #1 Projected Buildings





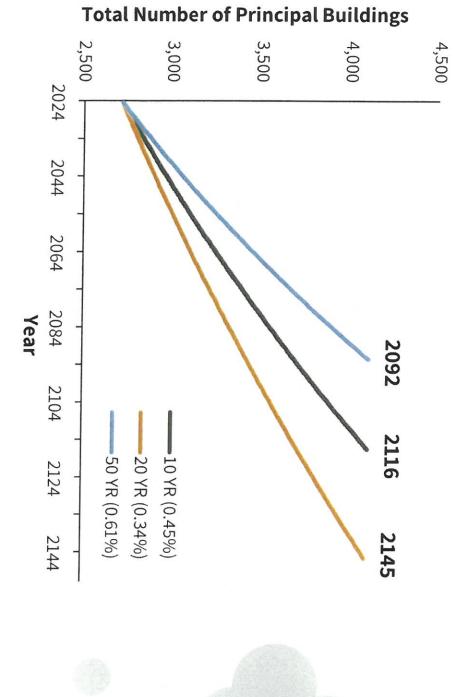
Greater densities lead to more projected buildings

TABLE 9. Projected increase in buildings by zone in Rye under the first alternative scenario build-out analysis.

		Scenario #1	Scenario #1	
Zone	Buildings	No. Projected New buildings	Total No. Buildings	Increase
Rye				
Single Residence District (SR)	1,466	363 - 443	1,829 - 1,909	25% - 30%
General Residence District (GR)	836	41 - 50	877 - 886	5% - 6%
Business District (B)	74	ω	77	4%
Commercial District (C)	144	707 - 865	851 - 1,009	491% - 600%
Public Recreation District (PREC)	13	0	13	0%
Public Recreation and Conservation District (PRAC)	1	0	1	0%
Conservation District (CON)	4	0	4	0%
Rye Beach Village District				
RBV Low Density Residential District	63	6-8	69 - 71	10% - 12%
RBV Medium Density Residential District	117	6-8	123 - 125	5% - 7%
RBV Recreational District	4	1	IJ	23% - 28%
Total	2,722	1,127 - 1,377	3,849 - 4,099	41% - 51%
	Rye Single Residence District (SR) General Residence District (GR) Business District (B) Commercial District (C) Public Recreation District (PREC) Public Recreation and Conservation District (CON) Rye Beach Village District RBV Low Density Residential District RBV Medium Density Residential District RBV Recreational District	e Residence District (SR) ral Residence District (GR) less District (B) mercial District (C) c Recreation District (PREC) c Recreation District (CON) ervation District (CON) Reach Village District -ow Density Residential District Medium Density Residential District Recreational District	Residence District (SR) 1,466 ral Residence District (GR) Rescreation District (C) c Recreation District (PREC) crevation District (CON) Reach Village District Ow Density Residential District Medium Density Residential District 4 Recreational District 4 2,722	e Residence District (SR) 1,466 363 - 443 1,829 - 1,909 ral Residence District (GR) 74 3 77 ress District (B) 144 707 - 865 851 - 1,009 recreation District (PREC) 13 0 13 c Recreation District (CON) 4 0 1 seach Village District 63 6-8 69-71 cow Density Residential District 63 6-8 123-125 Recreational District 4 1 5 Recreational District 4 1 5

Alternative Scenario #1 Timescope Analysis



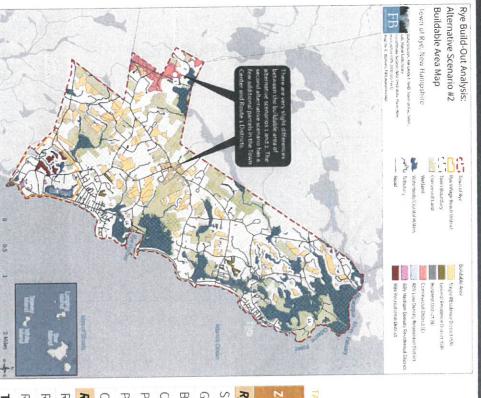


"How long will it take to reach the full build-out number of buildings?"



Alternative Scenario #2 Buildable Area





- The expanded development constraints
- **Greater** density of development in the Town Center and Route 1 Districts

ABLE 10. The amount of buildable land within the second alternative scenario within the Town of Rye, NH.

Zone	Total Area (Acres)	Scenario #2 Buildable Area (Acres)	Scenario #2 Percent Buildable Area
Rye			
Single Residence District (SR)	5,929	644 - 787	11% - 13%
General Residence District (GR)	457	32 - 40	7% - 9%
Business District (B)	48	2	3% - 4%
Commercial District (C)	276	118 - 144	43% - 52%
Public Recreation District (PREC)	78	0	0%
Public Recreation and Conservation District (PRAC)	368	0	0%
Conservation District (CON)	701	0	0%
Rye Beach Village District			
RBV Low Density Residential District	282	17 - 21	6% - 7%
RBV Medium Density Residential District	184	8-9	4% - 5%
RBV Recreational District	84	32 - 40	39% - 47%
Total	8,406	853 - 1,042	10% - 12%

Alternative Scenario #2 Projected Buildings





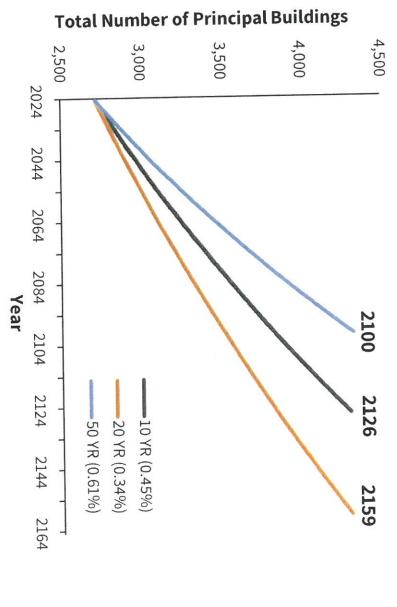
Town Center ~	Route 1	· (0, III
~1-1.5 units/ac 4 units/ac	~1-1.5 units/ac 10 units/ac	Scenario Scenario
4 units/ac	10 units/ac	Alternative Scenario #1
6 units/ac	30 units/ac	Alternative Scenario #2

TABLE 11. Projected increase in buildings by zone in Rye under the second alternative scenario build-out analysis.

o , mention different analysis,	are second artendative	scenario build-out ar	ialysis.	
Zone	No. Existing Buildings	Scenario #2 No. Projected New huildings	Scenario #2 Total No.	Percent Increase
Rye			Samonna	
Single Residence District (SR)				
Single residence planter (DK)	1,466	435 - 531	1,901 - 1,997	30% - 36%
General Residence District (GR)	836	41 - 50	877 - 886	50% 60%
Business District (B)	74	3	000	370-070
Commercial District (C)		U	11	4%
	144	801 - 979	945 - 1,123	556% - 680%
I dolle Recleation District (PREC)	13	0	J.	00%
Public Recreation and Conservation District (PRAC)		0	- !·	0%0
Conservation District (CON)		c	j —	0%
conservation district (coll)	4	0	4	0%
Rye Beach Village District				
RBV Low Density Residential District	63	5, 20	69-71	1107 1407
RBV Medium Density Residential District	117	D (1170 - 14%
DBV Document District	11/	6-8	123 - 125	5% - 7%
TOTAL	4	1	U	23% - 28%
iorai	2,722	1,292 - 1,580 4,014 - 4,302	4,014 - 4,302	47% - 58%

Alternative Scenario #2 Timescope Analysis





scenario Full build-out projects for the Town of Rye for the second alternative

"How long will it take to reach the full build-out number of buildings?"

Comparison – Buildable Area



10% - 12%	855 - 1,042	TO/0 - TZ/0	2,000				
20/0 4//0	050 1000	10% 17%	846 - 1 035	12% - 14%	968 - 1184	8406	TOTAL
39% - 47%	32 - 40	39% - 47%	32 - 40	46% - 56%	38 - 47	84	Total
4% - 5%	8-9	4% - 5%	8-9	6% - /%	11 - 13	T04	RBV District - Regrestional
6% - 7%	1/-21	070 - 170	T7 - /T	500	1 1 1 1	10/	RBV District - Medium
0/0	1	707 702	17_71	6% - 7%	17 - 21	282	Tye beach village (RBV) DISTRICT - LOW
0%	0	0%	0	0%	0	TO/	Byo Booch Villago (BBV) Division
0%	0	0%	0	0%		701	Conservation District (CON)
0%	0	0/0		200	>	368	Public Recreation and Conservation District (PRAC)
75/0-5/2/		00/	0	0%	0	78	rubile Recreation District (PREC)
13% 57%	118 - 144	42% - 51%	115 - 141	34% - 42%	94 - 115	2/6	Diship Doppost: - Diship (a)
3% - 4%	2	3% - 4%	2	5% - 6%	2-3	040	Commercial District (C)
7% - 9%	32 - 40	170 - 370	77		J J	10	Business District (B)
17.0 - T.7.0		70/ 00/	37 - 10	10% - 12%	45 - 55	457	deliel di Nesidelice District (GR)
11%_12%	644 - 787	11% - 13%	640 - 782	13% - 16%	056 - T9/	6760	General Posidona District (Cr.)
(percent)		(percent)		(percent)	164 656	5000	Single Residence District (SR)
Area	Area (Acres)	Area	Area (Acres)	Area	Si ca (Scies)	(Acres)	
Buildable	Buildable	Buildable	Buildable	Buildable	Area (Acros)	Area	Zone
Percent		Percent		Percent	Distribution	Total	
Alternative Scenario #2	Alternative	Alternative Scenario #1	Alternative	Baseline Analysis	Baseline		

Comparison – Buildable Area



		Baseline Analysis	Analysis	Alternative Scenario #1	cenario #1	Alternative Scenario #2	cenario #2
			Percent		Percent		Percent
	lotal	Buildable	Buildable	Buildable	Buildable	Buildable	Buildable
Zone	Area	Area (Acres)	Area	Area (Acres)	Area	Area (Acres)	Area
	(Acres)		(percent)		(percent)		(percent)
Single Residence District (SR)	5929	761 - 930	13% - 16%	640 - 782	11% - 13%	644 - 787	11% - 13%
General Residence District (GR)	457	45 - 55	10% - 12%	32 - 40	7% - 9%	32 - 40	7% - 9%
Business District (B)	48	2-3	5% - 6%	2	3% - 4%	2	3% - 4%
Commercial District (C)	276	94 - 115	34% - 42%	115 - 141	42% - 51%	118 - 144	43% - 52%
Public Recreation District (PREC)	78	0	0%	0	0%	0	0%
Public Recreation and Conservation District (PRAC)	368	0	0%	0	0%	0	0%
Conservation District (CON)	701	0	0%	0	0%	0	0%
Rve Beach Village (RBV) District - Low	282	17 - 21	6% - 7%	17 - 21	6% - 7%	17 - 21	6% - 7%
RBV District - Medium	184	11 - 13	6% - 7%	8-9	4% - 5%	8-9	4% - 5%
RBV District - Recreational	84	38 - 47	46% - 56%	32 - 40	39% - 47%	32 - 40	39% - 47%
Total	8406	968 - 1184	12% - 14%	846 - 1,035	10% - 12%	853 - 1,042	10% - 12%

Comparison - Projected Buildings



8	8
1	9
ı	5
ı	C
Į	
ı	=
ı	1
ı	10
ı	P
ı	=
ı	01
ı	=
ŀ	<
ı	S
ı	2
ı	
ı	

			Baseline Analysis	IS	Alte	Alternative Scenario #1	2 #1	4		
	No.	No.			No	a section	O HT	Aiter	Alternative Scenario #2	10 #2
Zone	Existing	Projected	Total No.	Percent	No.	Total No.	Percent	No.	Total No	
	D. III		Buildings	Increase	Projected	Ruildings		Projected	Total No.	Percent
Single Residence District (CD)	Shiming	Buildings			Buildings	bunun 63	Increase	Buildings	Buildings	Increase
פיייסיים ייבוימב הוארובר (אוי)	1,466	285 - 349	1,751 - 1,815	19% - 24%	363 - 443	1 879 - 1 ana	250/ 200/			
General Residence District (GR)	258	V3 C3	000 000		1000	EDE'T - C70'T	23% - 30%	435 - 531	1,901 - 1,997	30% - 36%
Business District (D)	000	22 - 04	006 - 888	6% - 8%	41 - 50	877 - 886	5% - 6%	41 - 50	877 896	E0/ C0/
ממיוורים סומנו ורר (מ)	74	4	77 - 78	5%	υ.	77	40/		000	3/0-0/0
Commercial District (C)	144	89 85	200 212	7000			4/0	u	//	4%
Public Recreation District (DDEC)		00	717 - 007	35% - 4/%	707 - 865	851 - 1,009	491% - 600%	801 - 979	945 - 1.123	556% - 680%
Dishlip Dopporting (1994)	13	C	13	0%	0	13	0%	0	_	000
- abile Necleation and Conservation District (PRAC)	1	0	⊢	0%	0	1	00/		-	0/0
Conservation District (CON)	4	0	2	00/			0%	c	Р	0%
Rye Beach Village (RBV) District - Low	63		1 1	070	0	4	0%	0	4	0%
RRV District Modium		0-0	1/-60	TU% - 12%	6-8	69 - 71	11% - 14%	8-9	69 - 71	11% - 1/0%
	/TT	9-11	126 - 128	8% - 9%	6-8	123 - 125	5% - 7%	0 0	400	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
RBV District - Recreational	4	2	2	700/			270 770	0	172 - 172	5% - /%
Total	2	7	0	20%		5	23% - 28%	Ь	5	73% - 78%
	2,122	414 - 506	414 - 506 3,136 - 3,228 15% - 19%	15% - 19%	1,127 - 1,377 3,849 - 4,099 41% - 51% 1.292 - 1.580 4.014 - 4.302	3,849 - 4,099	41% - 51%	1.292 - 1 580	4 014 - 4 302	

Comparison – Projected Buildings



		5 2	Baseline Analysis	S	Alter	Alternative Scenario #1	#1	Alteri	Alternative Scenario #2) #2
Zone	No. Existing	No. Projected Buildings	Total No. Buildings	Percent Increase	No. Projected Buildings	Total No. Buildings	Percent Increase	No. Projected Buildings	Total No. Buildings	Percent Increase
	0	205 200	1 751 1 015	100/ 7/0/	262 442	1 829 - 1 909	25% - 30%	435 - 531	1.901 - 1.997	30% - 36%
Single Residence District (SR)	1,466	285 - 349	1,751 - 1,815	19% - 24%	363 - 443	T,829 - 1,909	25% - 30%		T,207 - T,22/	50/ 50/
General Residence District (GR)	836	52 - 64	888 - 900	6% - 8%	41 - 50	877 - 886	5% - 6%	41 - 50	8//-886	5% - 6%
Business District (B)	74	4	77 - 78	5%	ω	77	4%	ω	77	4%
Commercial District (C)	144	56 - 68	200 - 212	39% - 47%	707 - 865	851 - 1,009	491% - 600%	801 - 979	945 - 1,123 556% - 680%	556% - 680%
Collinicidal District (C)	12	0	13	0%	0	13	0%	0	13	0%
Public Recreation District (Fixec)	١ د		۷	Nº0	0	_	0%	0	Ľ	0%
Public Recreation and Conservation District (PRAC)	_	0		0,0				,		200/
Conservation District (CON)	4	0	4	0%	0	4	0%	0	4	0%
Rya Reach Village (RRV) District - low	63	6 - 8	69 - 71	10% - 12%	6-8	69 - 71	11% - 14%	6-8	69 - /1	11% - 14%
BBV District Madium	117	9 - 11	126 - 128	8% - 9%	6-8	123 - 125	5% - 7%	6-8	123 - 125	5% - 7%
DDA District Mediani				E00/	د	л	73% - 78%		5	23% - 28%
RBV District - Recreational	4	2	6	50%	1	0	23% - 20%	1 500	4014 4303	7007 F076
Total	2,722	414 - 506	414 - 506 3,136 - 3,228 15% - 19%	15% - 19%	1,127 - 1,377 3,849 - 4,099	3,849 - 4,099	41% - 51%	1,292 - 1,360	41% - 51% 1,292 - 1,380 4,014 - 4,302 41% - 38%	4//0-30/0

In Conclusion



Due to extensive environmental development constraints (particularly wetlands), conserved land, and existing buildings, the Town of Rye has moderately low buildable area for future development compared to other New Hampshire communities.



Recommendations



General Recommendations for Master Planning process

- Continue to consider projected development hotspots and buildable areas
- Which areas of Rye could meet affordable housing needs?
- Which areas projected to growth are at increased risk from effects of climate change?



Recommendations



General Recommendations for Master Planning process

- alterations Reflect on development constraint and density
- Continue to consider natural resource protection
- Learn how town services would be impacted
- Can sewer and drinking water resources support expansions to service area while protecting natural resources and water quality?



Next Steps



- Gather feedback → 2-week review period
- 2. Incorporate edits and finalize the report.





Methods



Population growth rate –US census

TABLE 1. US Census Bureau population for Rye from 1970-2020. Data from www.census.gov.

•			Popu	Population		
IOWII	1970	1980	1990	2000	2010	2020
Town of Rye	4,083	4,508	4,612	5,182	5,298	5,543
New Hampshire (for reference)	737,681	920,610	1,109,252	1,235,786	1,316,470	1,377,529

TABLE 2. Compound annual growth rates for Rye over 10- year, 20-year, and 50-year spans.

	c	Compound Annual Growth Rate	te
lowii	50 Year (1970-2020)	20 Year (2000-2020)	10 Year (2010-2020)
Town of Rye	0.61%	0.34%	0.45%
New Hampshire (for reference)	1.26%	0.54%	0.45%