



*Article 41 -
Residential Gross Floor Area
(a.k.a. Floor Area Ratio)*

ANNUAL TOWN MEETING
30 MARCH 2016





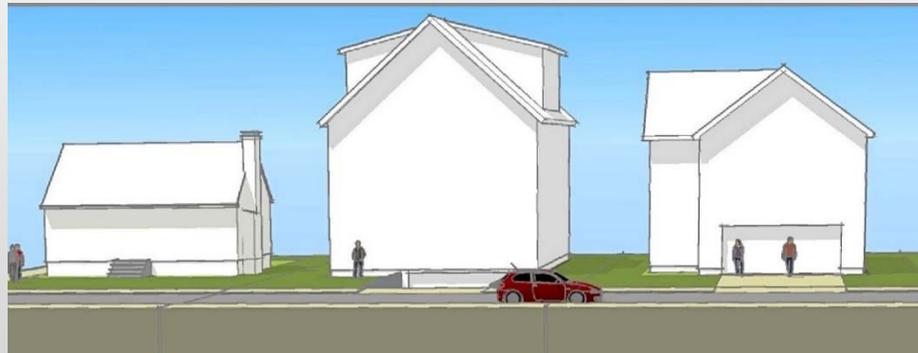
Article 41 - Residential Gross Floor Area

Purpose

Recalibrate our zoning controls to address current housing trends:

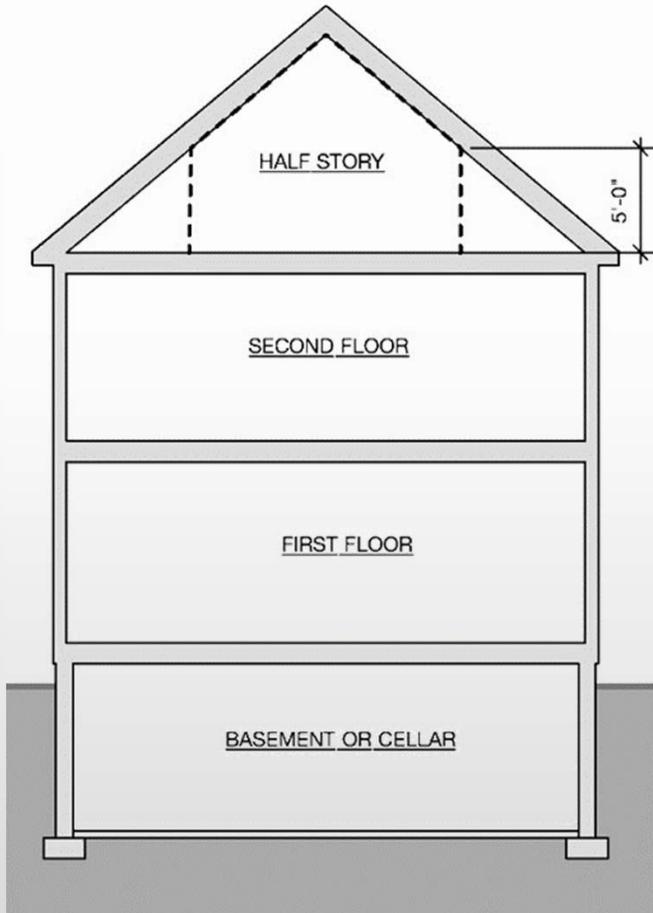
- New residential construction is often being built close to the maximum size allowable, as determined by setback and height limits.
- Abutters are impacted by these large scale houses when views are blocked, trees are removed, shadows are cast.
- Neighborhoods lose their distinct fabric with odd scales, the loss of trees and the addition of walls and fences.
- Meanwhile, the new construction replaces our more moderate-sized housing stock.

Gross Floor Area (GFA) is a zoning amendment which would establish a maximum square foot size, limiting house size in relation to the lot size. It would complement Lexington's other zoning dimensional controls.





Gross Floor Area Definition



- **Gross Floor Area (SF)** is the sum of the floor areas on all levels.
- **Gross floor area:**
 - The sum, in square feet, of the horizontal areas of all stories of a building or several buildings on the same lot measured from the exterior face of exterior walls, or from the center line of a party wall separating two buildings. Gross floor area shall also include garages, basements, cellars, porches and half stories, but shall exclude crawl spaces, attics, and decks. Where the text of this bylaw refers to floor area, the term shall mean gross floor area unless the term net floor area is used.
- **Gross Floor Area (SF) divided by Lot Size (SF) = Floor Area Ratio (FAR)**



Gross Floor Area Includes Basements





Gross Floor Area

Includes Half Stories (Finished Attics)





Gross Floor Area

Consensus Proposal

Lot Area (in square feet)	Max. Gross Floor Area (in square feet)
0 – 5,000	0.8 * Lot Area
5,000 – 7,500	4,000 + 0.55 * (Lot Area – 5,000)
7,500 – 10,000	5,375 + 0.23 * (Lot Area – 7,500)
10,000 – 15,000	5,950 + 0.20 * (Lot Area – 10,000)
15,000 – 30,000	6,950 + 0.16 * (Lot Area – 15,000)
More than 30,000	9,350 + 0.16 * (Lot Area – 30,000)



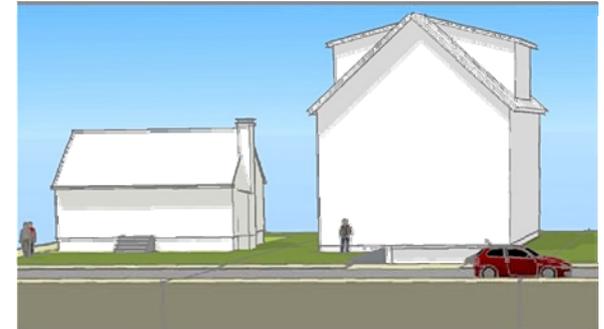
Gross Floor Area

5,000 SF Lot

Typical House & Max. Allowed

Range of what is possible with existing controls:

- Typical small house
2,200-2,500 GFA
- With setbacks & height limits, maximum allowed is about
6,500 GFA



HOUSE SIZE EXAMPLES:

GROSS FLOOR AREA:

TYPICAL SMALL CAPE W/ SIDE YARD PARKING

HYPOTHETICAL NEW HOUSE -- BUILT TO MAX. GFA WITHIN ALLOWED SETBACKS & CURRENT HEIGHT LIMIT

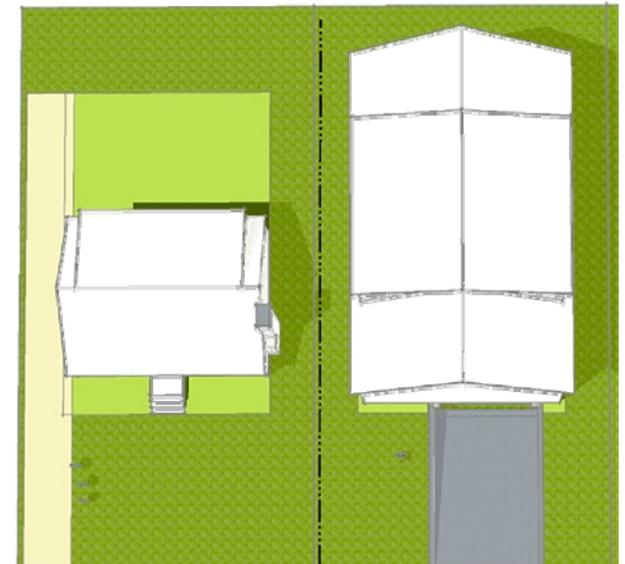
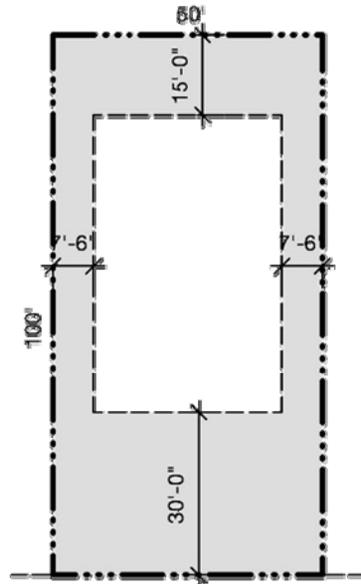
2,200 SQ. FT.

6,500 SQ. FT.

BASEMENT	800
1ST FL	800
2ND FL	600
FIN. ATTIC	0

BASMT. INCL GAR.	1,750
1ST FL	1,750
2ND FL	1,750
FIN. ATTIC	1,250

LOT PLAN EXAMPLE





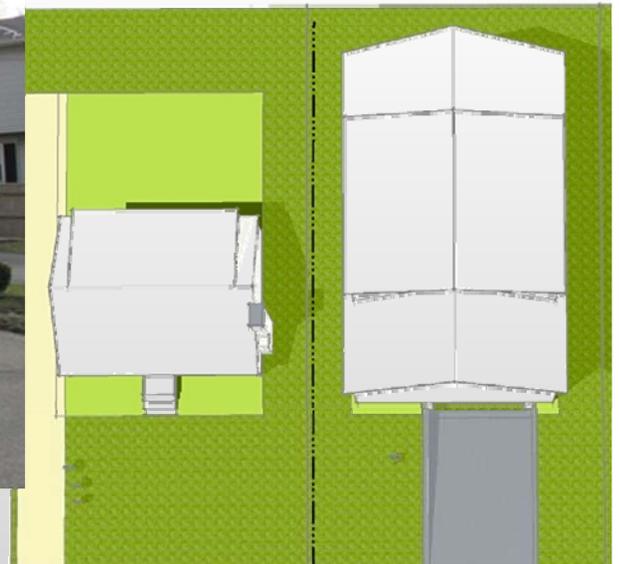
Gross Floor Area

5,000 SF Lot

Typical House & Max. Allowed

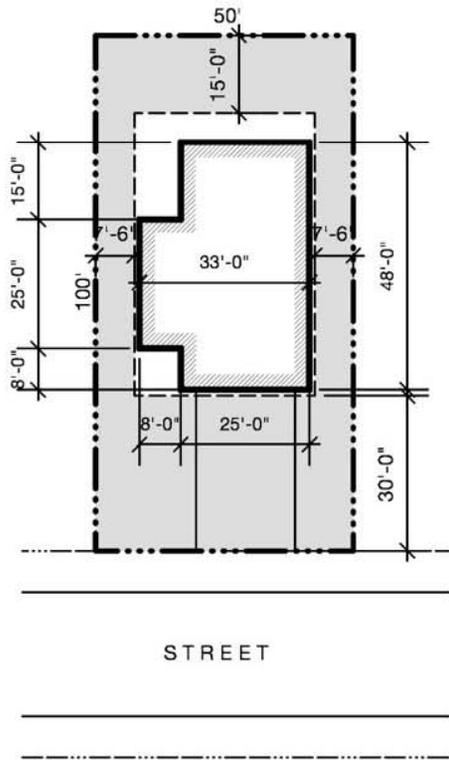
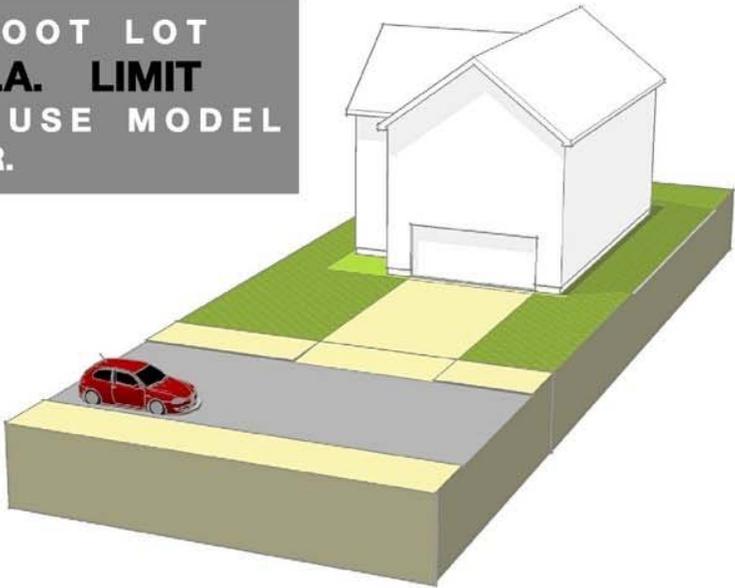


TYPICAL SMALL CAPE W/ SIDE YARD PARKING	HYPOTHETICAL NEW HOUSE -- BUILT TO MAX. GFA WITHIN ALLOWED SETBACKS & CURRENT HEIGHT LIMIT																
2,200 SQ. FT.	6,500 SQ. FT.																
<table border="1"> <tr><td>BASEMENT</td><td>800</td></tr> <tr><td>1ST FL</td><td>800</td></tr> <tr><td>2ND FL</td><td>600</td></tr> <tr><td>FIN. ATTIC</td><td>0</td></tr> </table>	BASEMENT	800	1ST FL	800	2ND FL	600	FIN. ATTIC	0	<table border="1"> <tr><td>BSMNT. INCL GAR.</td><td>1,750</td></tr> <tr><td>1ST FL</td><td>1,750</td></tr> <tr><td>2ND FL</td><td>1,750</td></tr> <tr><td>FIN. ATTIC</td><td>1,250</td></tr> </table>	BSMNT. INCL GAR.	1,750	1ST FL	1,750	2ND FL	1,750	FIN. ATTIC	1,250
BASEMENT	800																
1ST FL	800																
2ND FL	600																
FIN. ATTIC	0																
BSMNT. INCL GAR.	1,750																
1ST FL	1,750																
2ND FL	1,750																
FIN. ATTIC	1,250																





**5,000 SQUARE FOOT LOT
PROPOSED G.F.A. LIMIT
4,000 SQ.FT.(GFA) HOUSE MODEL
0.80 F.A.R.**



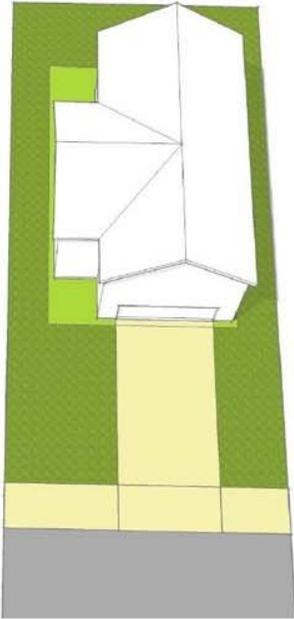
- 2-1/2 - STORY HOUSE WITH :**
- **FULL BASEMENT**
 - **PARTIALLY FINISHED ATTIC**
 - **2-CAR GARAGE AT GRADE**
 - **STRUCTURE IS 32' HIGH**

GROSS FLOOR AREA BREAKDOWN

FINISHED ATTIC	350
2ND FLOOR	1,400
1ST FLOOR & PORCH	850
GARAGE	550
BASEMENT	850

SITE COVERAGE AREA 1,400 --28%

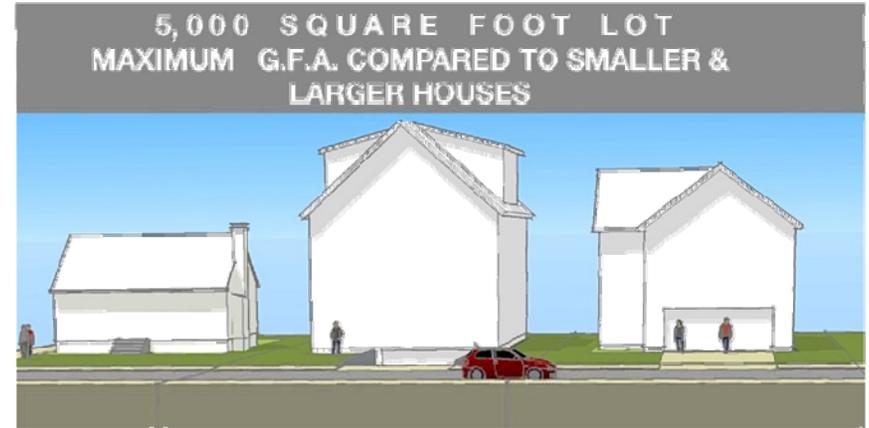
AREA INSIDE SETBACKS 1,925





Gross Floor Area

5,000 SF Lot Comparisons

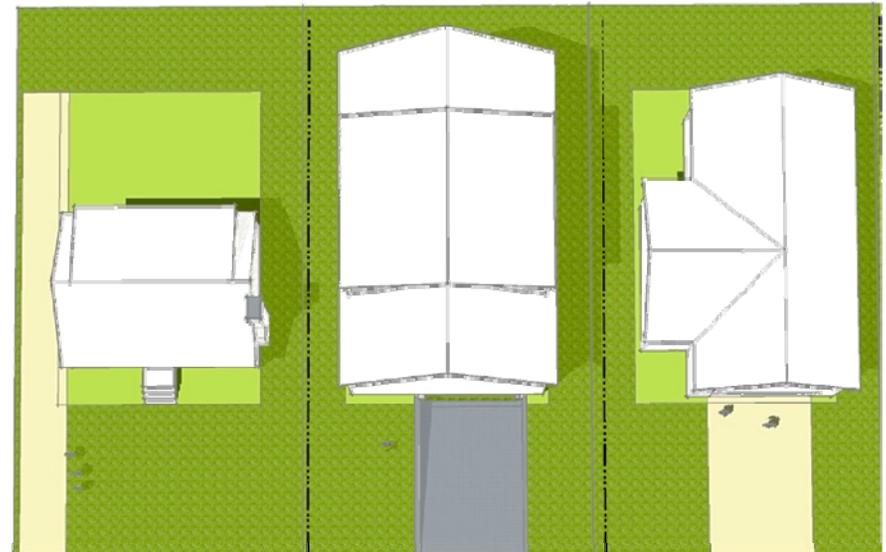
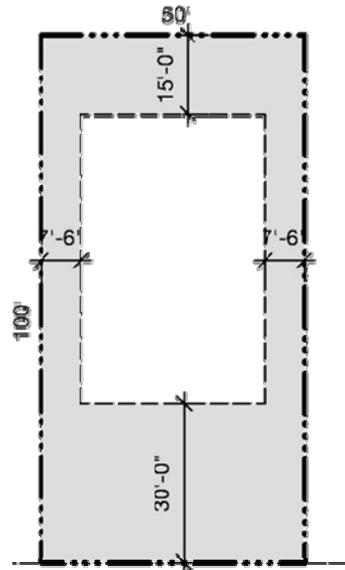


HOUSE SIZE EXAMPLES:

GROSS FLOOR AREA:

HOUSE SIZE EXAMPLES:	TYPICAL SMALL CAPE W/ SIDE YARD PARKING	HYPOTHETICAL NEW HOUSE -- BUILT TO MAX. GFA WITHIN ALLOWED SETBACKS & CURRENT HEIGHT LIMIT	HYPOTHETICAL NEW HOUSE -- BUILT TO MAXIMUM G.F.A. PER CONSENSUS PROPOSAL
GROSS FLOOR AREA:	2,200 SQ. FT.	6,600 SQ. FT.	4,000 SQ. FT.
	BASEMENT 800 1ST FL 800 2ND FL 600 FIN. ATTIC 0	BSMNT. INCL GAR. 1,750 1ST FL 1,750 2ND FL 1,750 FIN. ATTIC 1,250	BASEMENT 850 1ST FL INCL. GAR. 1,400 2ND FL 1,400 FIN. ATTIC 350

LOT PLAN EXAMPLE





Gross Floor Area

7,500 SF Lot

Typical House & Max. Allowed

Range of what is possible with existing controls:

- Typical small colonial:

2,900 GFA

- With setbacks & height limits, maximum allowed is about

9,000 GFA

HOUSE SIZE EXAMPLES:

GROSS FLOOR AREA:



TYPICAL SMALL COLONIAL W/ DETACHED GARAGE

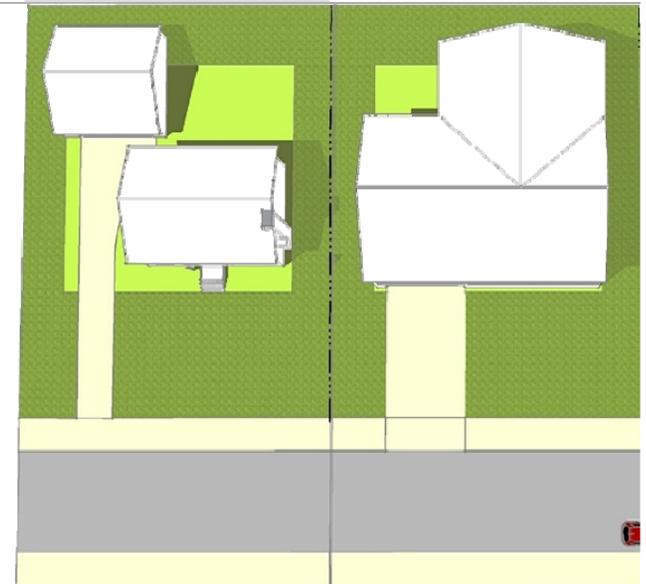
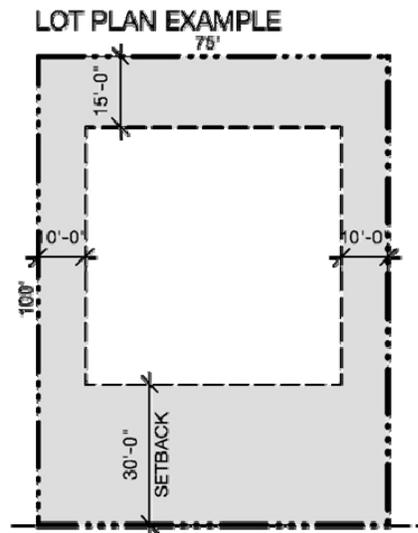
HYPOTHETICAL NEW HOUSE BUILT TO MAX. BUILD-OUT W/ FULL BASEMENT & FINISHED ATTIC

2,900 SQ. FT.

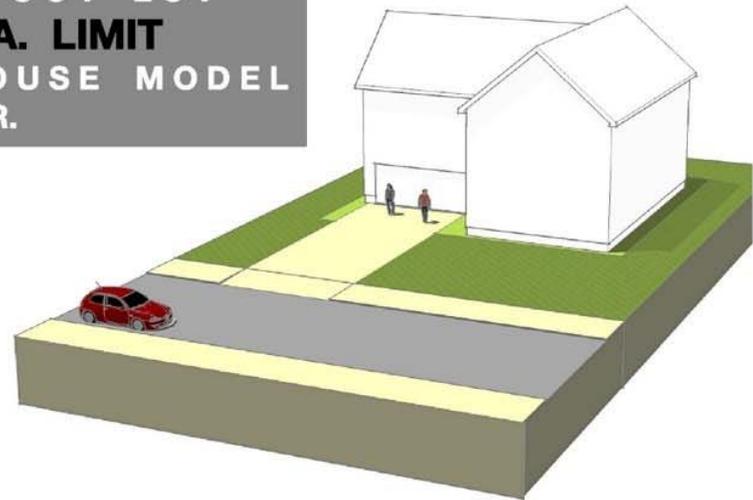
9,000 SQ. FT.

BASEMENT	800
1ST FL I	800
2ND FL	800
FINISHED ATTIC	0
DETACHED GAR.	500

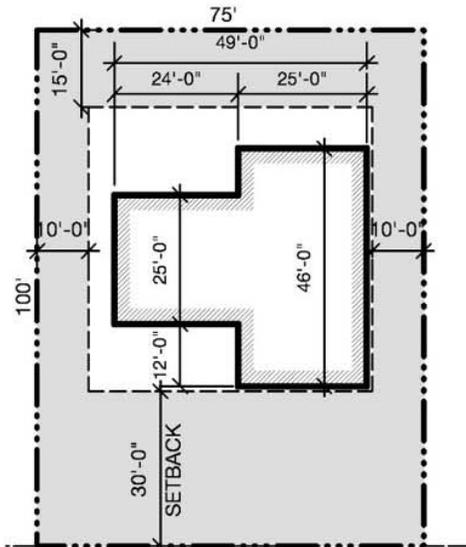
BASEMENT	1,920
1ST FL INCL. GAR.	2,520
2ND FL	2,520
FINISHED ATTIC	2,000



**7,500 SQUARE FOOT LOT
 PROPOSED G.F.A. LIMIT
 5,375 SQ.FT.(GFA) HOUSE MODEL
 0.72 F.A.R.**

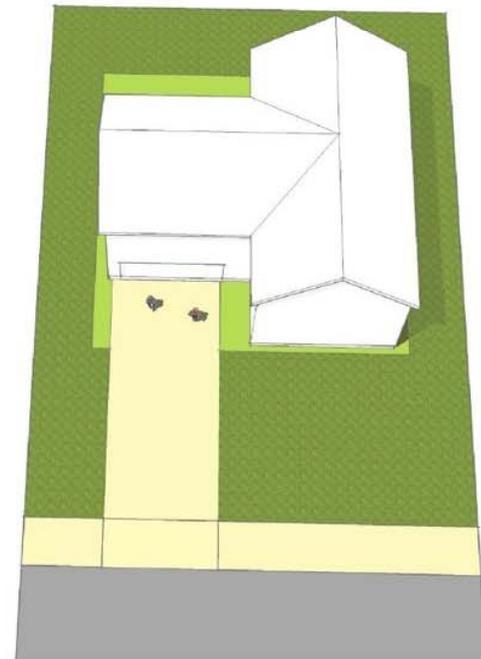


- 2-1/2 - STORY HOUSE WITH :**
- **FULL BASEMENT**
 - **PARTIALLY FINISHED ATTIC**
 - **2-CAR GARAGE AT GRADE**
 - **STRUCTURE IS 33' HIGH**



GROSS FLOOR AREA BREAKDOWN

FINISHED ATTIC	725
2ND FLOOR	1,750
1ST FLOOR & PORCH	1,150
GARAGE	600
BASEMENT	1,150
SITE COVERAGE AREA	1,750 --23%
AREA INSIDE SETBACKS	3,025





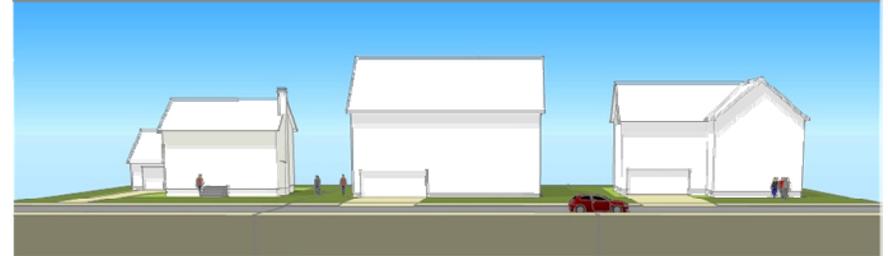
Gross Floor Area

7,500 SF Lot Comparisons

HOUSE SIZE EXAMPLES:

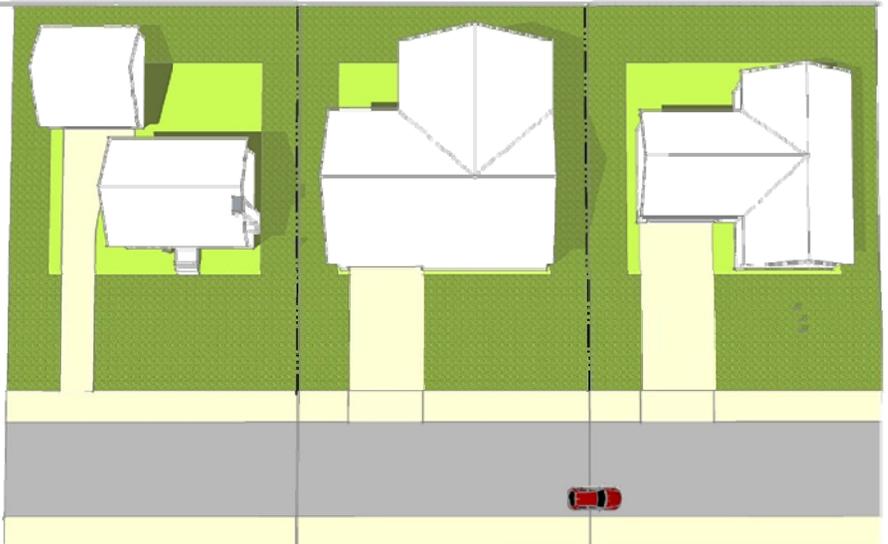
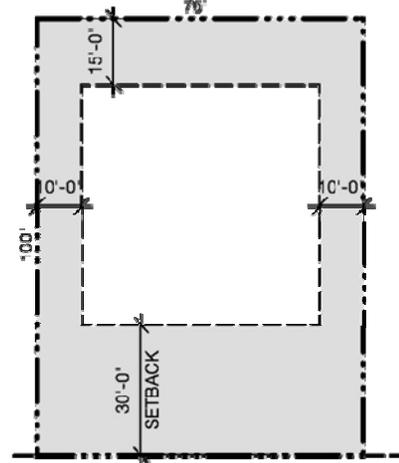
GROSS FLOOR AREA:

7,500 SQUARE FOOT LOT MAXIMUM G.F.A. COMPARED TO LARGER & SMALLER HOUSES



HOUSE SIZE EXAMPLES:	TYPICAL SMALL COLONIAL W/ DETACHED GARAGE	HYPOTHETICAL NEW HOUSE BUILT TO MAX. BUILD-OUT W/ FULL BASEMENT & FINISHED ATTIC	HYPOTHETICAL NEW HOUSE -- BUILT TO MAXIMUM G.F.A. ALLOWED PER CONSENSUS PROPOSAL
GROSS FLOOR AREA:	2,900 SQ. FT.	9,000 SQ. FT.	5,375 SQ. FT.
	BASEMENT 800 1ST FL I 800 2ND FL 800 FINISHED ATTIC 0 DETACHED GAR. 500	BASEMENT 1,820 1ST FL INCL GAR. 2,520 2ND FL 2,520 FINISHED ATTIC 2,000	BASEMENT 1,150 1ST FL INCL. GAR. 1,750 2ND FL 1,750 FINISHED ATTIC 725

LOT PLAN EXAMPLE





Gross Floor Area

10,000 SF Lot

Typical House & Max. Allowed

Range of what is possible with existing controls:

- Typical small colonial with garage

2,900 GFA

- With setbacks & height limits, maximum allowed is about

15,000 GFA



HOUSE SIZE EXAMPLES:

GROSS FLOOR AREA:

TYPICAL SMALL COLONIAL W/ DETACHED GARAGE

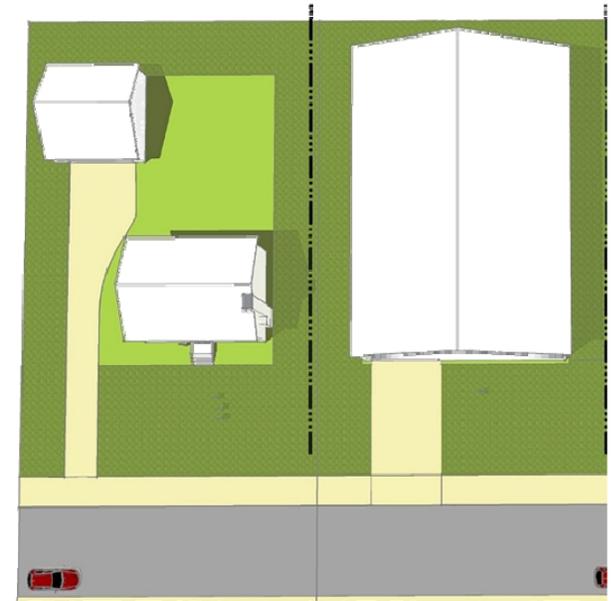
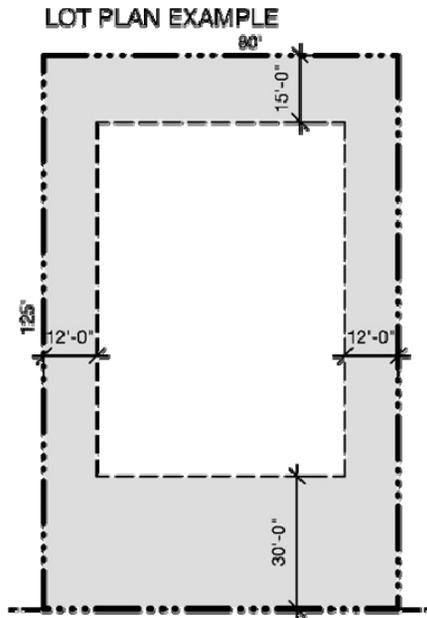
HYPOTHETICAL NEW HOUSE BUILT TO MAX. BUILD-OUT W/ FULL BASEMENT & FINISHED ATTIC

2,900 SQ. FT.

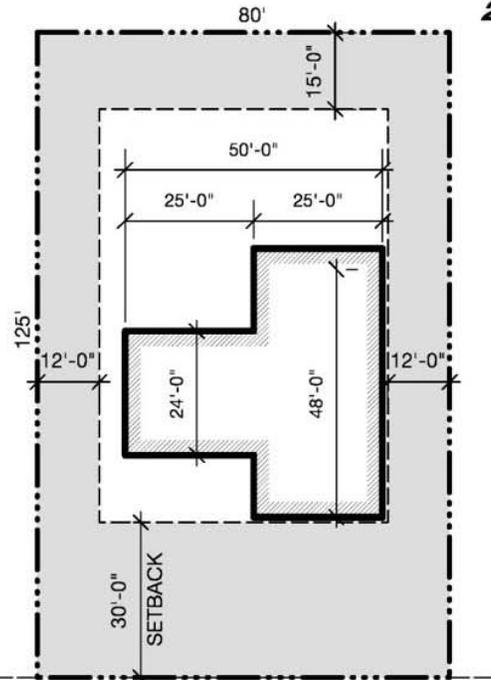
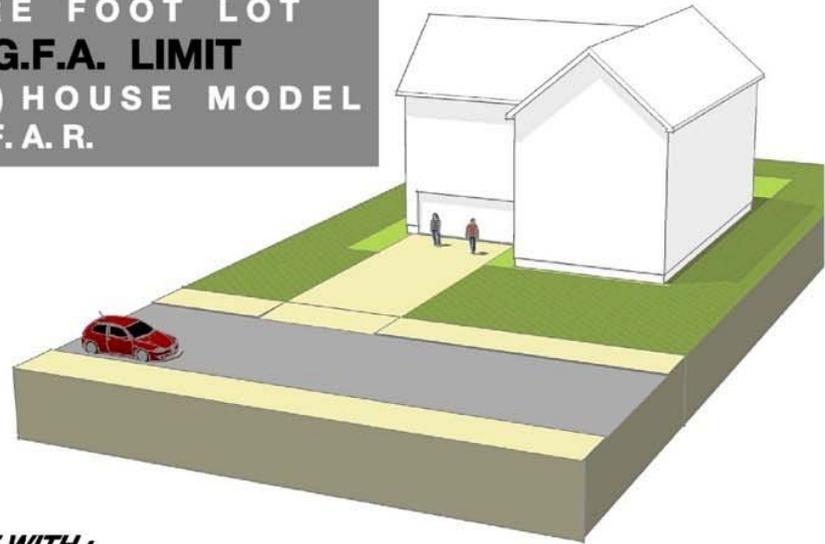
15,000 SQ. FT.

BASEMENT	800
1ST FL I	800
2ND FL	800
FIN. ATTIC	0
DETACHED GAR.	500

BASEMENT	3,600
1ST FL INCL. GAR.	4,200
2ND FL	4,200
FIN. ATTIC	3,000



**10,000 SQUARE FOOT LOT
PROPOSED G.F.A. LIMIT
5,950 SQ. FT. (GFA) HOUSE MODEL
0.60 F.A.R.**

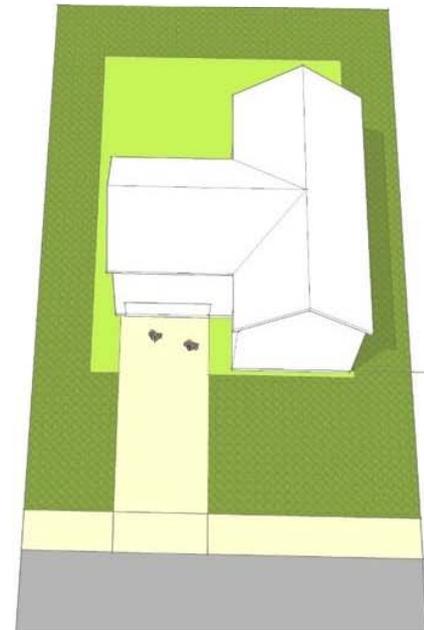


2-1/2 - STORY HOUSE WITH :

- FULL BASEMENT
- PARTIALLY FINISHED ATTIC
- 2-CAR GARAGE AT GRADE
- STRUCTURE IS 36' HIGH

GROSS FLOOR AREA BREAKDOWN

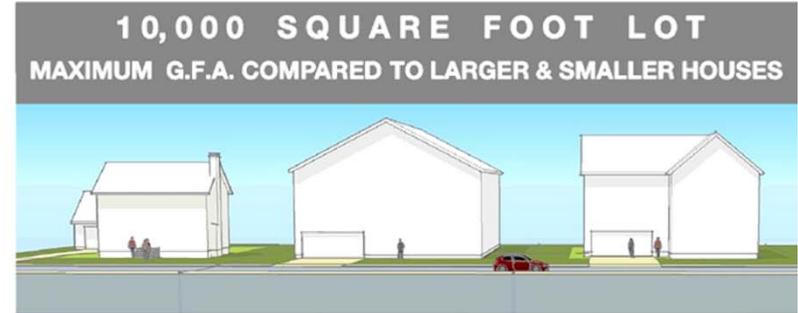
FINISHED ATTIC	850
2ND FLOOR	1,900
1ST FLOOR & PORCH	1,300
GARAGE	600
BASEMENT	1,300
SITE COVERAGE AREA	1,900 --19%
AREA INSIDE SETBACKS	4,480





Gross Floor Area

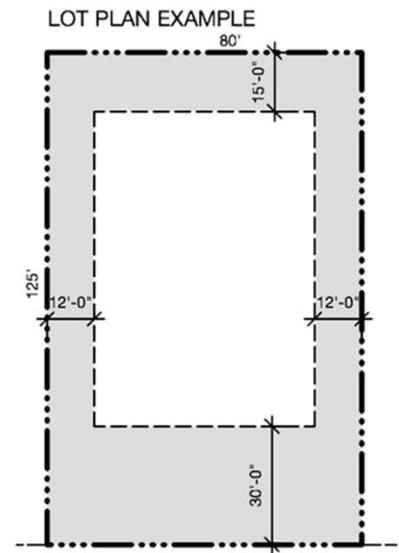
10,000 SF Lot Comparisons



HOUSE SIZE EXAMPLES:

GROSS FLOOR AREA:

HOUSE SIZE EXAMPLES:	TYPICAL SMALL COLONIAL W/ DETACHED GARAGE	HYPOTHETICAL NEW HOUSE BUILT TO MAX. BUILD-OUT W/ FULL BASEMENT & FINISHED ATTIC	HYPOTHETICAL NEW HOUSE -- BUILT TO MAXIMUM G.F.A. ALLOWED PER CONSENSUS PROPOSAL
GROSS FLOOR AREA:	2,900 SQ. FT.	15,000 SQ. FT.	5,950 SQ. FT.
	BASEMENT 800 1ST FL I 800 2ND FL 800 FIN. ATTIC 0 DETACHED GAR. 500	BASEMENT 3,600 1ST FL INCL. GAR. 4,200 2ND FL 4,200 FIN. ATTIC 3,000	BASEMENT 1,200 1ST FL INCL. GAR. 1,800 2ND FL 1,800 FIN. ATTIC 400





Gross Floor Area

Example

Lot Area (in square feet)	Max. Gross Floor Area (in square feet)
0 – 5,000	0.8 * Lot Area
5,000 – 7,500	4,000 + 0.55 * (Lot Area - 5,000)
7,500 – 10,000	5,375 + 0.23 * (Lot Area - 7,500)
10,000 – 15,000	5,950 + 0.2 * (Lot Area - 10,000)
15,000 – 30,000	6,950 + 0.16 * (Lot Area - 15,000)
More than 30,000	9.350 + 0.16 * (Lot Area - 30,000)

- The Owner's lot is **20,592 SF**
- The corresponding Lot Area from the Table is 15,000 – 30,000.
- Therefore $6,950 + 0.16 \times (20,592 - 15,000) =$ **7,844 GFA** is allowed.



Gross Floor Area **7,843 GFA House**





Gross Floor Area

Special Permit Relief

Zoning Board of Appeals (ZBA) would determine:

1. The project met the criteria for granting of **all Special Permits** (found in Section 9.4.2 of the Zoning Bylaw),
2. Extra square foot size may be granted **consistent with the intent** and purpose of the Bylaw,
3. The project met **site-specific conditions**, including that:
 - The project design addresses specific neighborhood and Town concerns;
 - The proposed structure is compatible with the scale of the neighborhood;
 - The massing of the project does not adversely impact the solar access of adjoining lots;
 - Noise generated by fixed plant equipment such as, but not limited to, air conditioners, pumps, fans, and furnaces does not adversely impact adjoining lots.



Gross Floor Area

Percent Compliance by Decade Built & Lot Area (SF)

Lot Area (SF)	<1900	1900	1910	1920	1930	1940	1950	1960	1970	1980	1990	2000	2010	Grand Total
<10000	90%	90%	98%	98%	100%	97%	97%	100%	100%	93%	75%	32%	19%	92%
10000	89%	92%	96%	96%	99%	98%	99%	100%	97%	100%	83%	46%	38%	89%
15000	84%	90%	96%	93%	100%	99%	99%	99%	99%	98%	79%	53%	38%	91%
20000	100%	86%	88%	96%	100%	100%	98%	99%	100%	90%	83%	66%	48%	93%
25000	100%	80%	91%	100%	100%	100%	100%	100%	98%	95%	91%	55%	63%	94%
30000	96%	90%	100%	100%	100%	100%	99%	99%	100%	94%	88%	57%	75%	94%
35000	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	88%	72%	78%	96%
>40000	97%	100%	100%	100%	100%	100%	100%	100%	100%	100%	98%	92%	93%	98%
Grand Total	92%	91%	96%	97%	99%	98%	99%	100%	99%	96%	85%	54%	47%	92%



Gross Floor Area

Peer Towns

LOT SIZE (SQ. FT.)	MAXIMUM ALLOWED GROSS FLOOR AREA*						SITE PLAN REVIEW THRESHOLD*		
	LEXINGTON PROPOSED	NEWTON SR1	NEWTON SR2	NEWTON SR3	CONCORD PROPOSED	CONCORD ADJUSTED	CHELMSFORD	LINCOLN	WESTON
5,000	4,000	2,300	2,300	2,400	2,400	3,192	4,000	4,000	3,500
7,500	5,375	3,101	3,161	3,514	3,000	3,990	4,000	4,000	3,500
10,000	5,950	3,300	3,800	4,100	3,600	4,788	4,000	4,000	3,500
15,000	6,950	4,650	4,950	5,700	4,800	6,384	4,000	4,000	3,500
20,000	7,950	5,600	6,600	7,600	6,000	7,980	4,000	4,000	3,500

Please note that GFA definitions vary from town to town.

- For instance, Newton GFA excludes about 2/3 of basement area and one detached accessory building. Estimated multiplier to make the GFA equivalent to Lexington is 1.15.
- Proposed Concord GFA excludes basement and accessory buildings with no foundation. Estimated multiplier is 1.33 (see Concord Adjusted, above).



Fiscal & Financial Impacts Case Study

Hand-curated datasets were created to support this study:

1. ~200 property dataset characterizing all teardowns / new construction from 2013-2015
 - Used for building statistical models of market dynamics for teardown/redevelopment
2. ~550 property dataset of all non-new-construction homes sold to end-users from 2013-2015
 - Used to characterize market dynamics around end-user sales
3. “Case study” dataset of 58 newly constructed homes built in 2013
 - Used to focus on a “year-in-the-life” to understand the specific impacts of the proposals
 - All properties were closely analyzed and vetted by working group members

All datasets have Assessor, MLS, and public record data that is correlated for joint analysis.



Fiscal & Financial Impacts Case Study

Analysis of 58 redevelopment projects in 2013

- Most recent year for which complete data is available
- Private and Balance Housing Development properties were removed from data set
- Statistical models were built from 3-years of market and assessor data

To project a developer's maximum price for a lot, 3 statistical models were used for the "developer ratio:"

1. Historic Model

- Based on the actual amounts developers paid in 2013-2015
- 33%-38% of the eventual selling price of the redeveloped house

2. Current Model

- Based on developer input and examination of recent sales
- 40% of the eventual selling price

3. Future Model

- Based on an extrapolation of the trend (>8%) from the Historic and Current models
- 45% of the eventual selling price



Case Study Projections

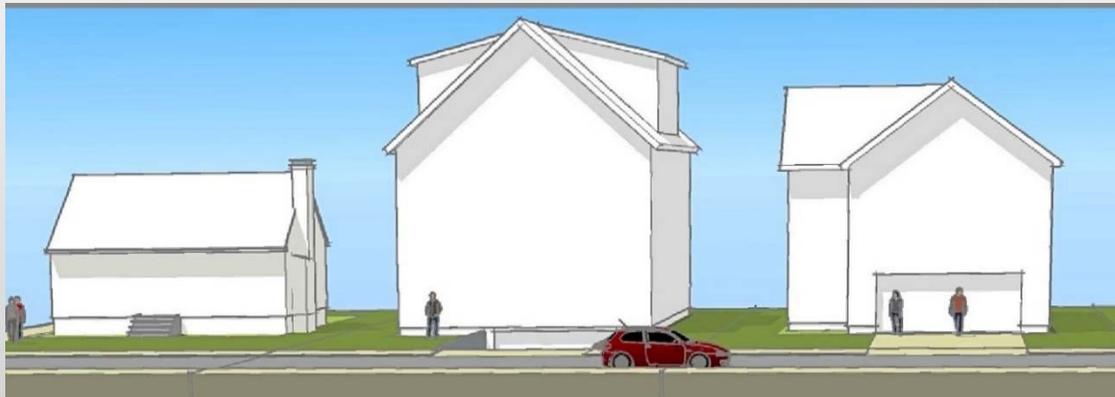
- **Gross Floor Area limits applied to the 2013 case study of 58 redeveloped properties**
- **Projected outcomes use FY2016 Tax Rates**
- ***Tax Revenue:**
 - Actual FY2016 Annual Tax Revenue on 58 properties is \$1.28M.
 - FY2016 tax rate on FY2011/12 assessment value was used for properties not torn down. These properties would have been reassessed in FY2015, but that increased value cannot be projected retroactively.
 - Does not project improvements to properties by homeowners.

		Historic Developer Margin	Current Developer Margin	Future Developer Margin
Redeveloped	Same or Higher Price	31 (53%)	48 (83%)	56 (97%)
	Lower Price	1 (2%)	3 (5%)	0 (0%)
Sold to End-User	Same or Higher Price	13 (22%)	5 (9%)	2 (3%)
	Lower Price	13 (22%)	2 (3%)	0 (0%)
Decrease in Annual Tax Revenue*		\$424K (33%)	\$200K (16%)	\$135K (11%)
Decrease in Developer Offer (for Properties with Lost Value)		\$48K median \$3K-\$138K range 14 properties (24%)	\$89K median \$56K-\$109K range 5 properties (8%)	No properties with projected decrease



Gross Floor Area Goals

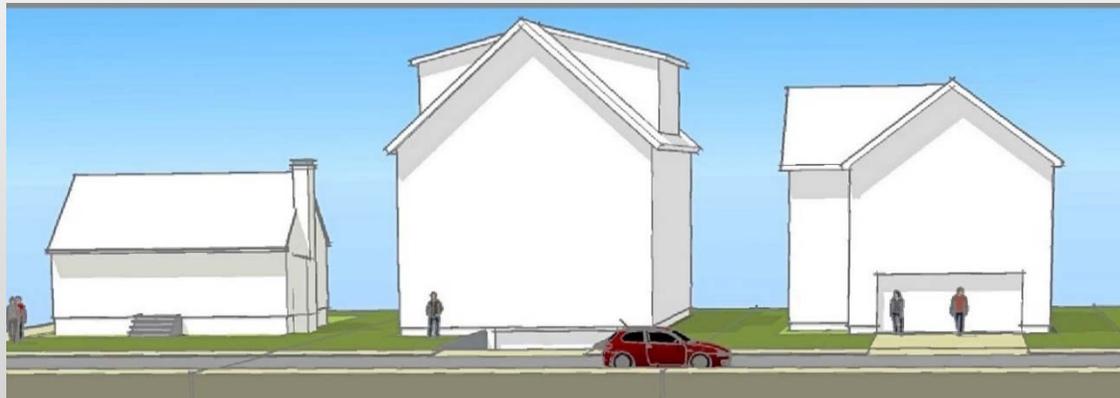
- Better predict the house size that may be built on a given lot;
- Reduce the impacts of redevelopment on neighborhood character;
- Reduce the negative impacts on abutters—like shadows, loss of views, and loss of privacy—to improve, rather than diminish, the quality of residents’ lives;
- Slow the reduction of the Town’s moderate-sized housing stock;
- Slow the reduction of open space on lots; and
- Recalibrate our zoning so that Lexington’s new housing better reflects the Town’s housing policy goals and “The Lexington We Want.”





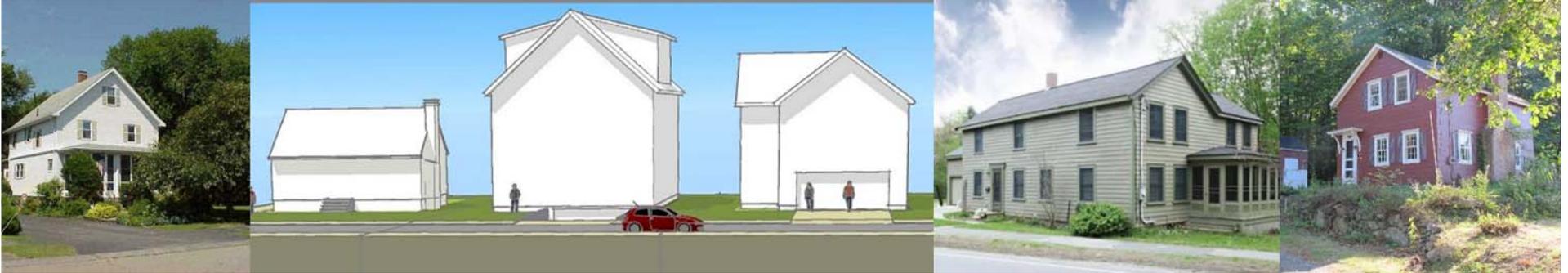
Gross Floor Area Summary

- **Article 41 judiciously limits gross floor area and includes a provision for exceptional cases.**
- **The proposed limits represent a carefully crafted consensus proposal to better balance the competing interests expressed by community stakeholders.**
- **92% of Lexington houses are currently under the proposed GFA limits.**
- **Our peer communities have implemented new zoning to address the adverse impacts of residential redevelopment.**
- **Our distinctive neighborhoods would continue to evolve, but at a predictable scale.**





Thank you



- **Town Staff**
- **Planning Department**
- **Planning Board**
- **Residential Policy Committee**
- **RPC Participants and Working Group Members**
- **Listening Session, Workshop and Public Hearing Participants**
- **Town Meeting Members Association**