

R1-B Building Coverage Analysis

Purpose of the R1-B building coverage analysis was to determine if the R1-B Building Area Ratio should be adjusted from 25% to 30%. Analysis was conducted with the use of the most current Rice County Parcel and building data.

Total Parcels in Northfield: 28,187

Number of Parcels classified as Zoning District R1-B: 1301

Number of Parcels remaining after outliers were removed and are classified as Zoning District R1-B: 1229

Number of Parcels remaining after outliers were removed, parcels with garages were removed, and are classified as Zoning District R1-B: 158

Study 1

Analysis was conducted with the total number of parcels classified as R1-B Zoning District (1301 Parcels)

Building coverage percentage = total building square footage / lot square footage x100

Total R1-B parcels statistics:

Average Lot Area: 11938.785 ft²

Average Building Coverage: 2090.743 ft²

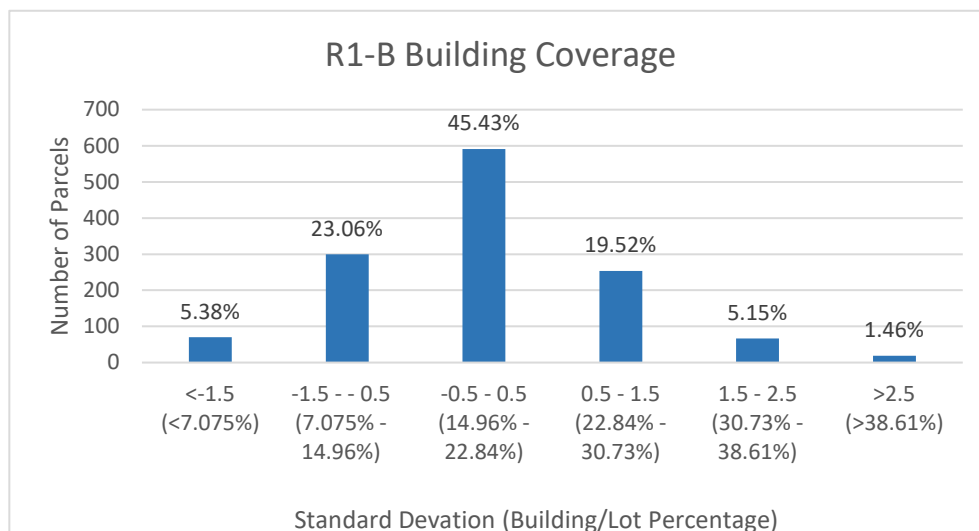
Average Building Coverage/Lot Area: 18.9%

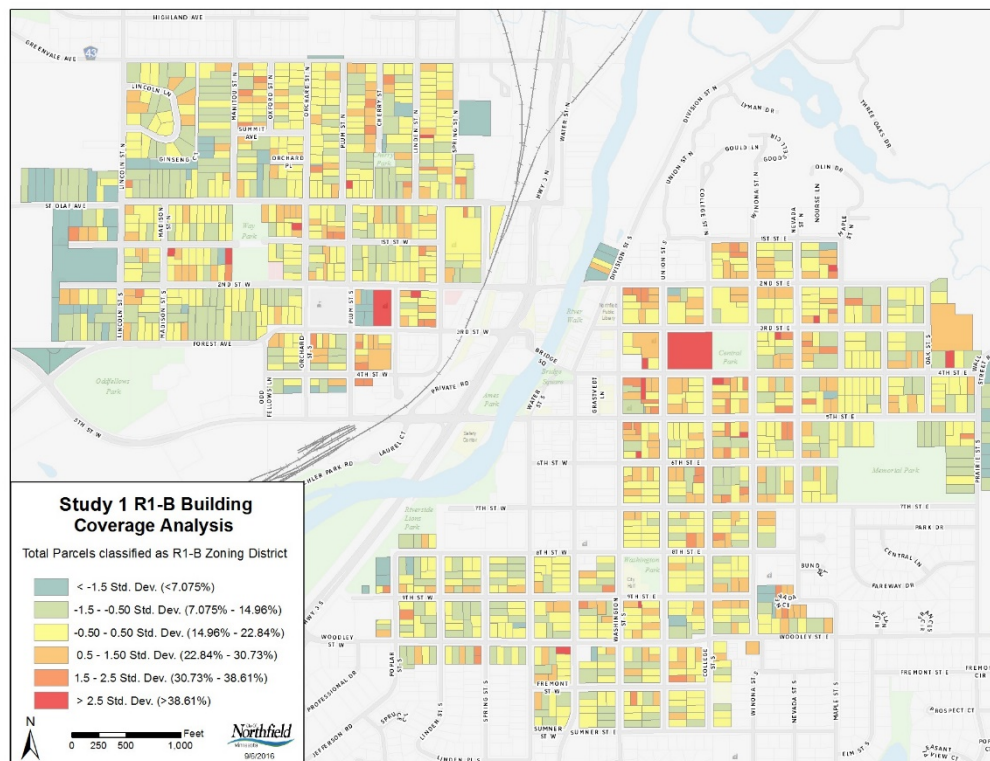
Standard Deviation: 7.88

Number of Parcels with over 30% Building Coverage: 97 (7.46%)

Number of Parcels with over 25% Building Coverage: 250 (19.22%)

Standard Deviation	Building/Lot size %	Number of Records	% of total
<-1.5 (<7.075%)	0- 7.075	70	5.380476556
-1.5 - -0.5 (7.075% -14.96%)	7.075- 14.96	300	23.05918524
-0.5 - 0.5 (14.96% - 22.84%)	14.96-22.84	591	45.42659493
0.5 - 1.5 (22.84% -30.73%)	22.84-30.73	254	19.5234435
1.5 - 2.5 (30.73% -38.61%)	30.73-38.61	67	5.149884704
>2.5 (>38.61%)	>38.61	19	1.460415065





Study 2

Outliers were removed from of parcel data. Calculations were made on remaining parcels (1229). Examples of outliers includes: irregular, large, or small parcels not indicative of the residential district classification description, church properties, college properties, or municipal properties.

Residential District Description found within Northfield, Minnesota Code of Ordinance, Part II- Northfield Code, Chapter 34- Land Development Code, Article 2- Zoning Districts and Use Regulations, Section 2.3- Base Zoning Districts, 2.3.1 Residential District (R1) reads:

“District generally includes the established neighborhoods, surrounding downtown Northfield that are characterized by traditional urban development qualities such as a grid pattern street network, sidewalks and a range of single-family, two-family, and some multi-family dwellings on smaller lots. The purpose of the R1-B district is to continue to support single-family, two-family, and three-family attached and detached dwellings within the existing character of the city’s older neighborhoods.”

Building coverage percentage = total building square footage / lot square footage x100

Outliers Removed R1-B parcels statistics:

Average Lot Area: 10991.86 ft²

Average Building Coverage: 1973.38 ft²

Average Building Coverage/Lot Area: 19.38%

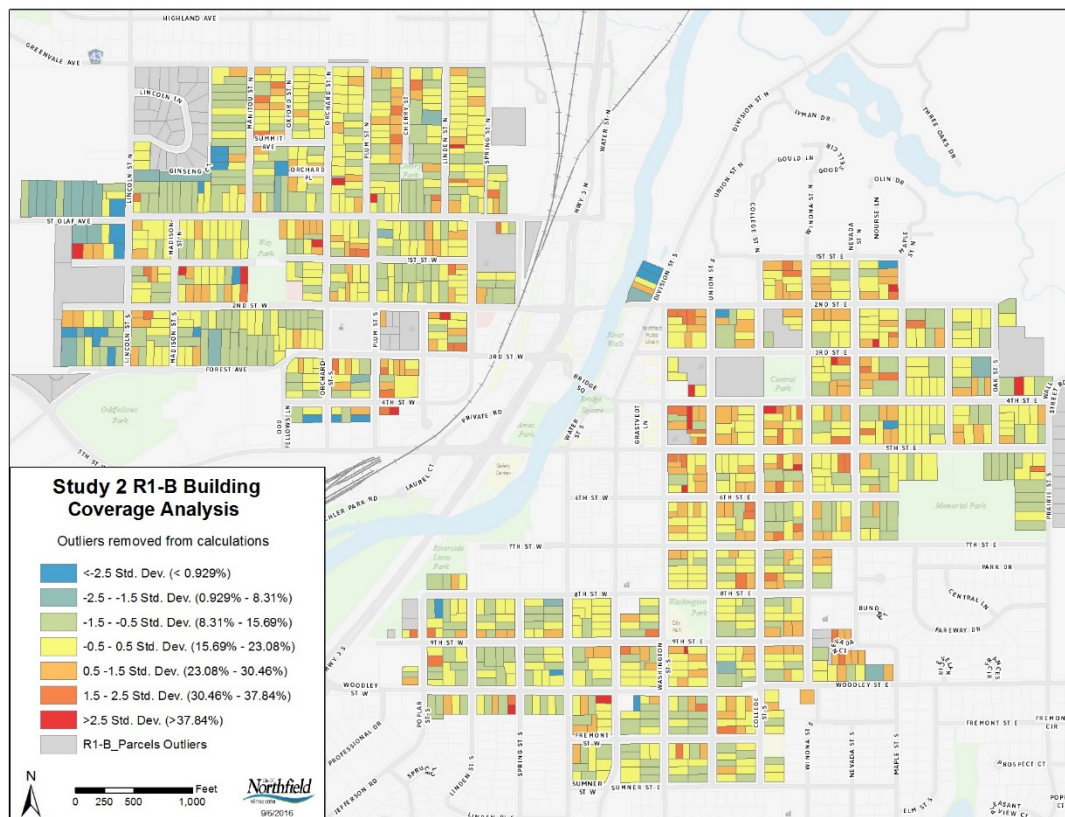
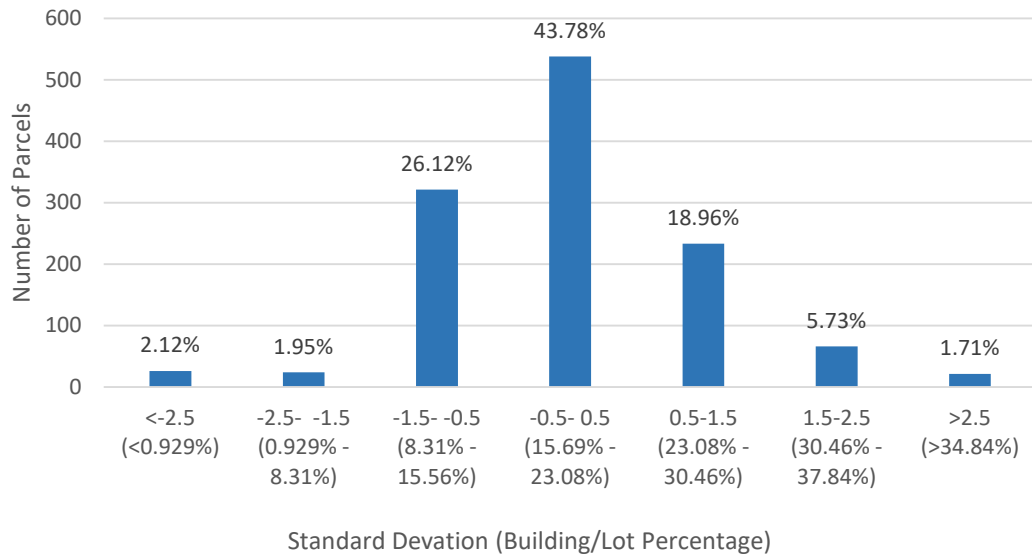
Standard Deviation: 7.38

Number of Parcels with over 30% Building Coverage: 95 (7.73%)

Number of Parcels with over 25% Building Coverage: 244 (19.85%)

Standard Deviation	Building/Lot size %	Number Records	% of total
<-2.5 (<0.929%)	< 0.929	26	2.11554109
-2.5- -1.5 (0.929% - 8.31%)	.929-8.31	24	1.95280716
-1.5- -0.5 (8.31% - 15.56%)	8.31-15.69	321	26.11879577
-0.5- 0.5 (15.69% - 23.08%)	15.69-23.08	538	43.77542718
0.5-1.5 (23.08% - 30.46%)	23.08-30.46	233	18.95850285
1.5-2.5 (30.46% - 37.84%)	30.46-37.84	66	5.370219691
>2.5 (>34.84%)	>37.84	21	1.708706265

R1-B Building Coverage



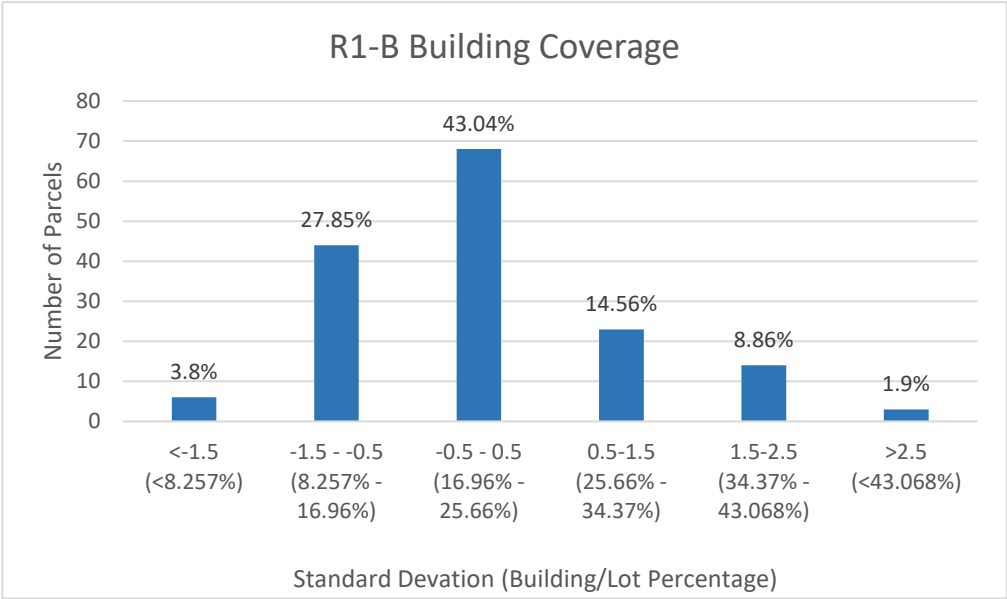
Study 3

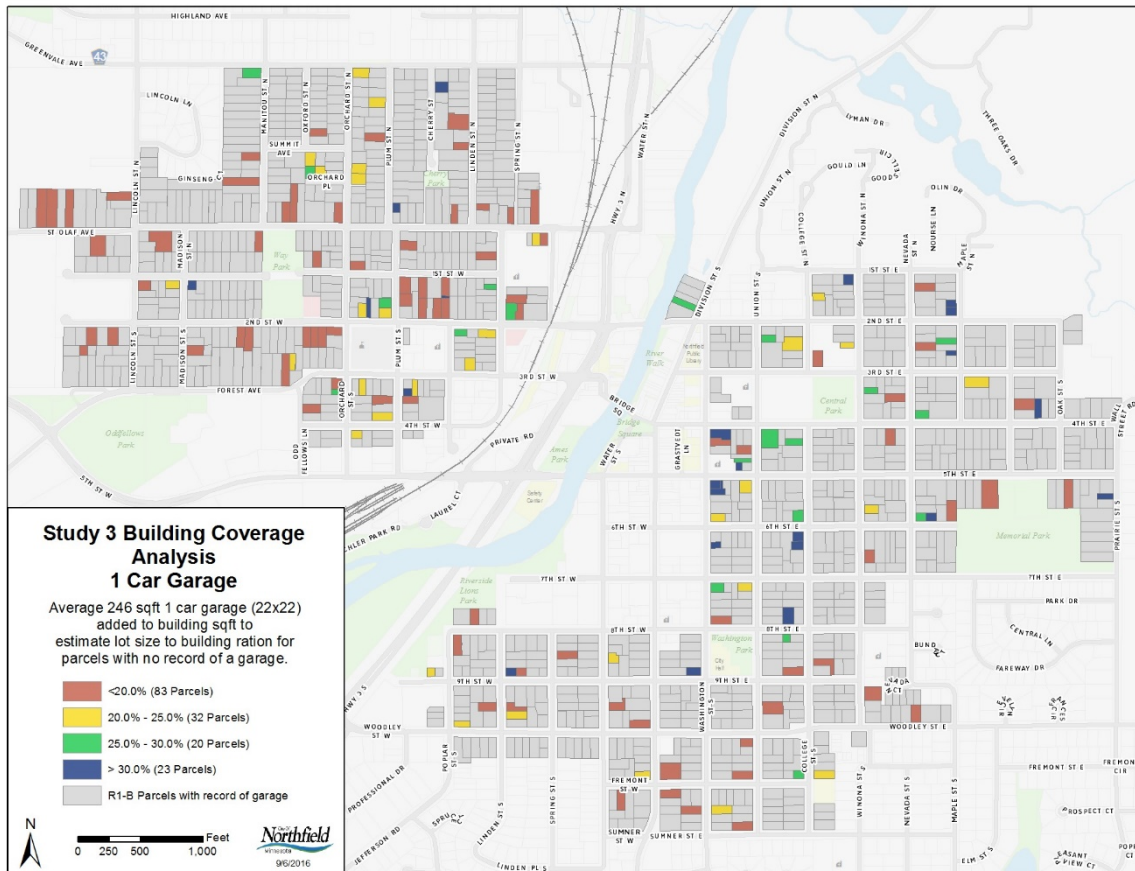
Took data from study 2 and further removed any parcels with a record of an attached or detached garage.
Calculations were made by adding the square footage of an average 1 car garage (Size: 12ft x 22ft =246ft²) to the existing building square footage for 158 parcels.

Building coverage percentage = total building square footage + 246ft² / lot square footage x100

Outliers Removed R1-B parcels statistics:
Average Lot Area: 9820.123 ft²
Average Building Coverage: 1860.88 ft²
Average Building Coverage/Lot Area: 21.31%
Standard Deviation: 8.7
Number of Parcels with over 30% Building Coverage: 23 (14.56%)
Number of Parcels with over 25% Building Coverage: 43 (27.22%)

Standard Deviation	Building/Lot size %	Number Records	% of total
<-1.5 (<8.257%)	< 8.257	6	3.797468354
-1.5 - -0.5 (8.257% - 16.96%)	8.257-16.96	44	27.84810127
-0.5 - 0.5 (16.96% - 25.66%)	16.96-25.66	68	43.03797468
0.5-1.5 (25.66% - 34.37%)	25.66-34.37	23	14.55696203
1.5-2.5 (34.37% - 43.068%)	34.37-43.068	14	8.860759494
>2.5 (<43.068%)	> 43.068	3	1.898734177





Study 4

Took data from study 2 and further removed any parcels with a record of an attached or detached garage.

Calculations were made by adding the square footage of an average 1 car garage (Size: 20ft x 20ft =400ft²) to the existing building square footage for 158 parcels.

$$\text{Building coverage percentage} = \frac{\text{total building square footage} + 400\text{ft}^2}{\text{lot square footage}} \times 100$$

Outliers Removed R1-B parcels statistics:

Average Lot Area: 9820.123 ft²

Average Building Coverage: 2014.88 ft²

Average Building Coverage/Lot Area: 23.24%

Standard Deviation: 9.39

Number of Parcels with over 30% Building Coverage: 29 (18.35%)

Number of Parcels with over 25% Building Coverage: 59 (37.34%)

Standard Deviation	Building/Lot size %	Number Records	% of total
<-1.5 (<9.15%)	< 9.15	5	3.164556962
-1.5 - -0.5 (9.15% - 18.55%)	9.15-18.55	43	27.21518987
-0.5 - 0.5 (18.55% - 27.95%)	18.55-27.95	47	29.74683544
0.5-1.5 (27.94% - 37.34%)	27.94-37.34	70	44.30379747
1.5-2.5 (37.34% - 46.73%)	37.34-46.73	21	13.29113924
>2.5 (>46.73%)	>46.73	15	9.493670886

