## Appendix B

## Code Modeling - Prototypes

## Better Housing by Design

AN UPDATE TO PORTLAND'S MULTI-DWELLING ZONING CODE

The purpose of these prototypes was to model draft multi-dwelling zoning code development standards to illustrate and assess potential built outcomes and to consider how the various regulations work in relationship to each other. Project staff used the prototypes to assess if the draft base and bonus floor area ratios (FAR) for the multi-dwelling zones are achievable, given the other development parameters, such as maximum building height, site coverage, and required setbacks.

## Notes on the Code Modeling Prototypes and Parameters

- Zone names: uses current zones. The current R3 and R2 zones are proposed to be combined into the new RM1 zone (the proposed standards for this new zone correspond to those shown for the R2 zone code modeling prototypes).
- Prototype site locations: based on common inner neighborhood and eastern neighborhood site configurations.
- Development standards: modeled on basic development standards in the Proposed Draft. See table - shading indicates standards that are the same as current regulations. Not shown on the table are standards for the Deeper Housing Affordability Bonus (modeled for prototypes 2, 4, 8 and 10), which provide 10 feet of additional height and an additional 10\% building coverage for qualifying projects.

| Development Standards | R3 | R2 | R1 | RH |
| :--- | :--- | :--- | :--- | :--- |
| New Proposed Zone | RM1 | RM1 | RM2 | RM3/RM4 |
| Base FAR | .75 to 1 | 1 to 1 | 1.5 to 1 | 2 to $1 / 4$ to 1 |
| Bonus FAR | 1.125 to 1 | 1.5 to 1 | 2.25 to 1 | 3 to $1 / 6$ to 1 |
| Max. Height | $35^{\prime}$ | $35^{\prime}$ | $45^{\prime}$ | $65^{\prime} / 75^{\prime}$ |
| Max. Building Coverage | $45 \%$ | $50 \%$ | $60 \%$ | $85 \%$ |
| Min. Front Setback | $10^{\prime}$ | $10^{\prime}$ | $10^{\prime}$ | $10^{\prime} / 0^{\prime}$ |
| Side/Rear Setback | $5^{\prime}$ | $5^{\prime}$ | $5^{\prime}$ | $5^{\prime}$ |
| Outdoor Space / Unit | 48 sq. ft. | 48 sq. ft. | 48 sq. ft. | $36 / 48$ sq. ft. |
| Landscaping | $35 \%$ | $30 \%$ | $20 \%$ | $15 \%$ |

- Eastern Portland rear setback: Eastern Portland prototypes used a rear setback equivalent to $25 \%$ of site depth.
- Step down height: R1 inner neighborhood prototypes were modeled assuming rear of site abuts single-dwelling zoning, with height limited to 35 feet for a 25 -foot distance from rear property line.
- Outdoor space: all prototypes show outdoor space as common area (regulations also allow private outdoor spaces such as balconies). Large prototype sites modeled the draft requirement for outdoor common area equal to 10 percent of site area.
- FAR modeling and numbers of units: prototypes illustrate maximum base and bonus FARs, but this is not intended to indicate the likelihood or economic feasibility of this scale. Except for the townhouse variants, modeling assumed approximately 1,000 square feet per unit (gross - including shared hallways/stairways).
- Parking: assumes site locations close to frequent transit, where no parking is required for projects with up to 30 units.
- RH (4 to 1 FAR) prototypes: prototypes 10 and 11 did not model the 10 -foot side/rear setbacks proposed in the Discussion Draft for buildings taller than 55 feet.


## Code Modeling Outcomes

The code modeling showed that the draft development parameters can accommodate the proposed base and bonus FARs, although the bonus FARs almost entirely fill the potential building envelope defined by the building height, coverage and setback parameters. The modeling also showed that requirements for outdoor common areas and Eastern Portland deep rear setbacks would not prevent the maximum FARs from being achieved.

Additional Information: See Appendix C for a summary of an analysis of the economic feasibility of the proposed base and bonus FARs, based on these prototypes.











GROUND FLOOR PLAN

SITE
Dimensions: $100^{\prime} \times 100^{\prime}$
Area: $10,000 \mathrm{SF}$


| LEGEND |  |
| :---: | :---: |
|  | Required Outdoor Area |
|  | Required Landscape Area |
|  | Remaining Site Area |
|  | Street |
|  | Driveway/Parking |
|  | Driveway/Parking Under BIdg |
| $\triangle 117$ | Maximum Additional Site Coverage |
| Maximum Height \& Setbacks Envelope |  |

FAR. 15. 1
Building Floor Area: 15,000 SF
Height: $30^{\prime}$

Building Coverage: 5,000 SF
Landscaping: 2,000 SF
Required Outdoor Space: 720 SF (shown as part of common area)

Common Area: 720 SF
Provided Parking Stalls: 0

## Number of Units: 15

Average Unit Area: 863 SF
Building Efficiency: 86\%

Note: Prototype shows the building height stepdown required adjacent to single-dwelling zoning which limits building height to 35 feet within a 25 foot distance of abutting lots with single-dwelling zoning.


GROUND FLOOR PLAN


| LEGEND |  |
| :---: | :---: |
|  | Required Outdoor Area |
|  | Required Landscape Area |
|  | Remaining Site Area |
|  | Street |
|  | Driveway/Parking |
|  | Driveway/Parking Under Bldg |
| $011117$ | Maximum Additional Site Coverage |
|  |  <br> Setbacks Envelope |



GROUND FLOOR PLAN


| LEGEND |  |
| :---: | :---: |
|  | Required Outdoor Area |
|  | Required Landscape Area |
|  | Remaining Site Area |
|  | Street |
|  | Driveway/Parking |
|  | Driveway/Parking Under Bldg |
| M117 | Maximum Additional Site Coverage |
|  |  |

## FAR: 3 : 1

Building Floor Area: 30,000 SF
Height: 50'

Building Coverage: 6,100 SF
Landscaping: 2,000 SF
Required Outdoor Space: 1,440 SF (shown as part of common area)

Common Area: 1,440 SF
Provided Parking Stalls: 0

## Number of Units: 30

Average Unit Area: 826 SF
Building Efficiency: 85\%

Note: Prototype shows the building height stepdown required adjacent to single-dwelling zoning which limits building height to 35 feet within a 25 foot distance of abutting lots with single-dwelling zoning.


PROTOTYPE 5 \| R1 ZONE - BASE FAR \| INNER NEIGHBORHOOD


PROTOTYPE 5 \| R1 ZONE - BONUS FAR \| INNER NEIGHBORHOOD











GROUND FLOOR PLAN


RH ZONE STANDARDS
Max FAR: 4 : 1
Allowable Building Floor Area: 40,000 SF

## Max Height: 65'

Minimum Front Setback: $0^{\prime}$ Minimum Side Setback: 5' Minimum Rear Setback: 5

Max Building Coverage: 85\% (8,500 SF)
Required Landscaping: 15\% of site area
Required Outdoor Space: 36 SF / unit

Required Common Area: 0\%
Required Parking Stalls: 8

FAR: 4 : 1
Building Floor Area: 40,000 SF
Height: 50'

Building Coverage: 8,000 SF
Landscaping: 1,500 SF
Required Outdoor Space: 1,296 SF (shown as part of common area)

Common Area: 1,296 SF
Provided Parking Stalls: 8

## Number of Units: 36

Average Unit Area: 873 SF
Building Efficiency: 79\%

Note: The 36 units in this prototype would trigger mandatory inclusionary housing requirements and allowances for additional FAR


GROUND FLOOR PLAN


RH ZONE STANDARDS

Max FAR: 6 : 1 (With Bonus) Allowable Building Floor Area: 60,000 SF

## Max Height: 75'

Minimum Front Setback: $0^{\prime}$ Minimum Side Setback: 5, Minimum Rear Setback: 5

Max Building Coverage: 85\% (8,500 SF) Required Landscaping: 15\% of site area Required Outdoor Space: 36 SF / unit

Required Common Area: 0\%
Required Parking Stalls: 0

## FAR: 5.99 : 1

Building Floor Area: 59,850 SF
Height: 70'

Building Coverage: $8,500 \mathrm{SF}$
Landscaping: 1,500 SF
Required Outdoor Space: 1,404 SF (shown as part of common area)

Common Area: 1,404 SF
Provided Parking Stalls: 9
Number of Units: 39
Average Unit Area: 1,284 SF Building Efficiency: 84\%


GROUND FLOOR PLAN



Max FAR: $7: 1$ (With Deeper Affordability Bonus) Allowable Building Floor Area: 60,000 SF

## Max Height: 85

Minimum Front Setback: $0^{\prime}$
Minimum Side Setback: 5, Minimum Rear Setback: 5

Max Building Coverage: $85 \%$ ( $8,500 \mathrm{SF}$ ) Required Landscaping: 15\% of site area Required Outdoor Space: 36 SF / unit

Required Common Area: 0\%
Required Parking Stalls: 0

## FAR: 6.84 : 1

Building Floor Area: 68,400 SF
Height: $80^{\prime}$

Building Coverage: 8,500 SF
Landscaping: 1,500 SF
Required Outdoor Space: 1,728 SF (shown as part of common area)

Common Area: 1,728 SF
Provided Parking Stalls: 0

## Number of Units: 48

Average Unit Area: 1,288 SF Building Efficiency: 90\%





