Introduction to Form-Based Codes

March 15, 2012

CODE STUDIO

Tonight's Presentation

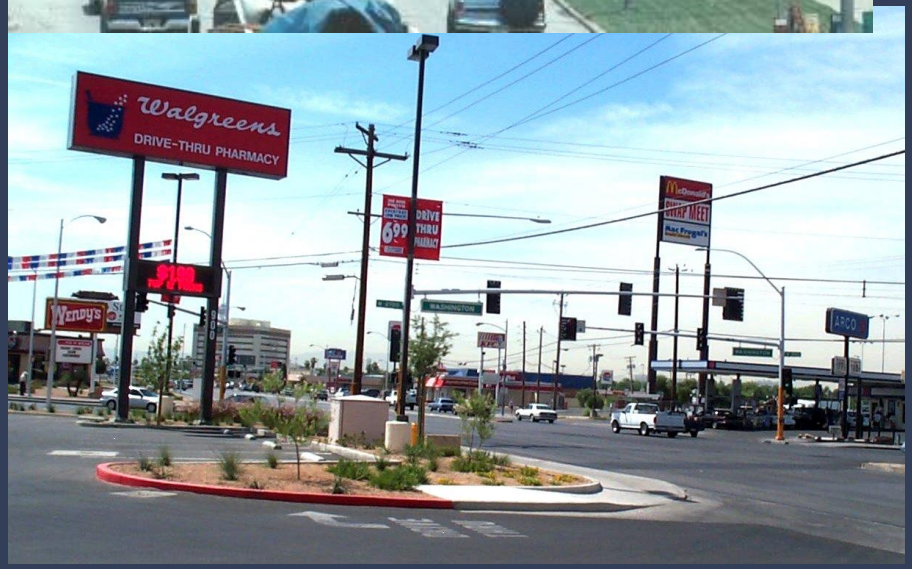
- Mechanisms for Improving Urban Form
- Ideal View of Planning + Coding
- Common Elements of Any Code Update
- Form-Based Codes
- Hybrid Approach

Lee D. Einsweiler

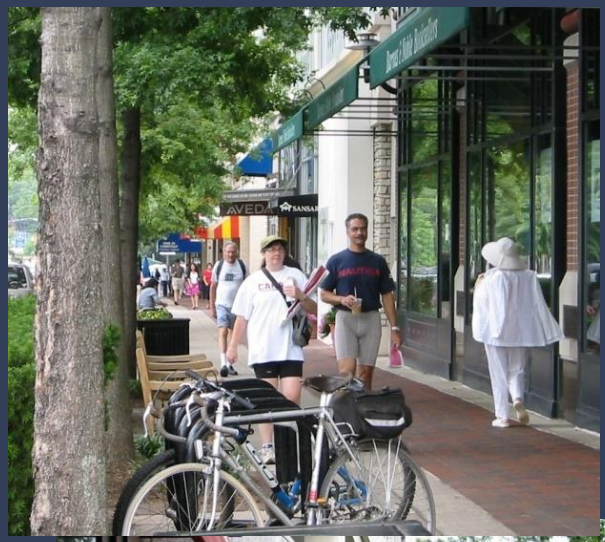
- Principal, Code Studio (Austin)
- 25+ Years Planning, Zoning Experience
- MCRP UNC-Chapel Hill
- Current Work: Montgomery County, MD (Zoning), Malta NY (Form-Based Code), Tuscaloosa AL (Recovery Area Zoning), Teton Valley Sustainability Plan (Model Code Toolkit)
- NC Experience: Charlotte (USDG), Durham (UDO), Garner (UDO), Concord (UDC revisions), Clayton (UDO)

MECHANISMS FOR IMPROVING URBAN FORM

Code Must Address Multiple Contexts



Auto-oriented, single-use



Pedestrian-oriented, mixed use

Conventional Zoning

- Use Controls
  - Separate Uses, Characterize Districts
- Dimensional Standards
  - Lot Area, Width, Height
- Design Standards
  - Parking Areas, Signs, Landscaping, Lighting

Conventional Zoning

- Why Did We Start Zoning?
- Market Failure
  - Lacked Protection of “Common Good”
- Separation of Uses
  - Eliminate the Tannery Next Door
- Light and Air (Bulk Standards)
  - Make Tenement Houses Healthier Places to Live

Appropriate Level

- Why Regulate?
  - Harness market forces to shared vision
  - Protect public interest
  - Protect private property owners

- How Much Regulation is Needed?
  - Just enough to get the plan's intended results!

Code Approaches

- USE REGULATION
  - Original Euclidean Codes
- PERFORMANCE
  - Impact mitigation
- FORM-BASED
  - Mixed use, place-making, public realm
- ARCHITECTURE
  - Design guidelines, pattern books

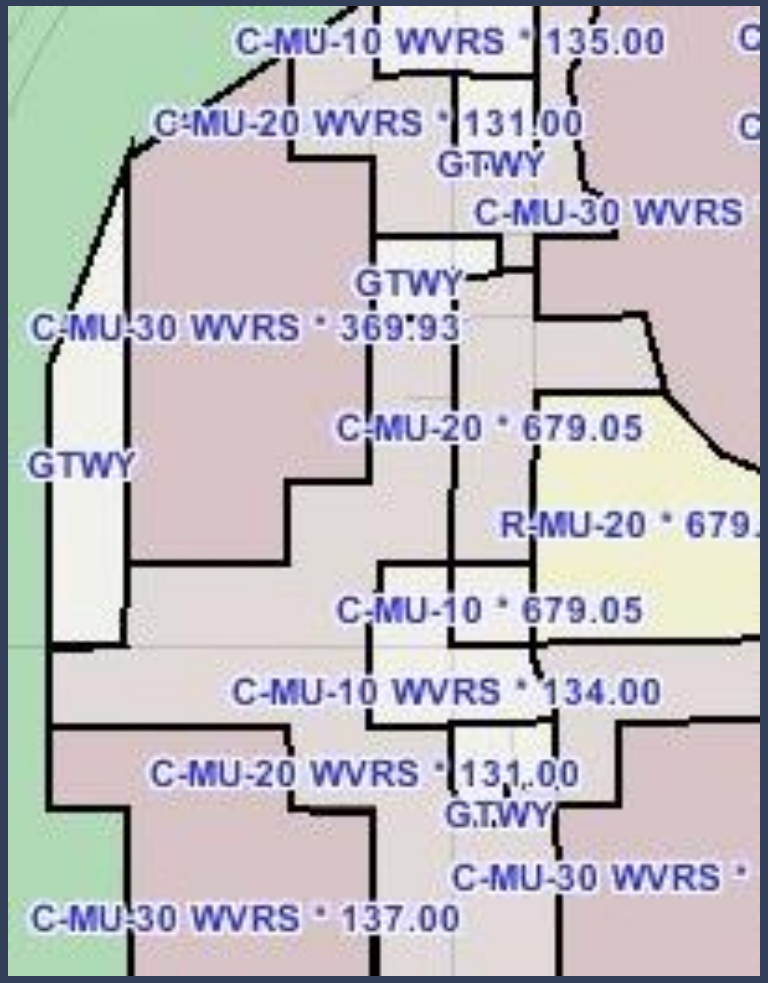
A Common Problem

- Reliance on One-Time, Negotiated Solutions
  - Planned development
  - “Conditional Use Districts” (CUD)
  - Variances (especially ones without “hardship”)

A Better Answer . . .

If you're not happy with the results of your Code . . .

REVISE THE CODE !



Customized Zoning

- Planned Development
  - Intended to be higher quality, innovative projects that don't fit existing districts
  - NOT intended for circumventing requirements or reducing quality of development
- Developer Gets What They Need
- Neighborhood and Community Have a Hand in Crafting the Solution

Customized Zoning

- *How Could This Possibly be Bad?*
  - Fairness and equity questions
  - Consistent treatment of applicants, situations
  - Difficulty in enforcement, tracking
  - Hard-won compromises not available for all
    - Street cross-sections
    - Parking reductions

The Problem

- Balancing neighborhood interest in protection of perceived character with the need for reinvestment, intensification

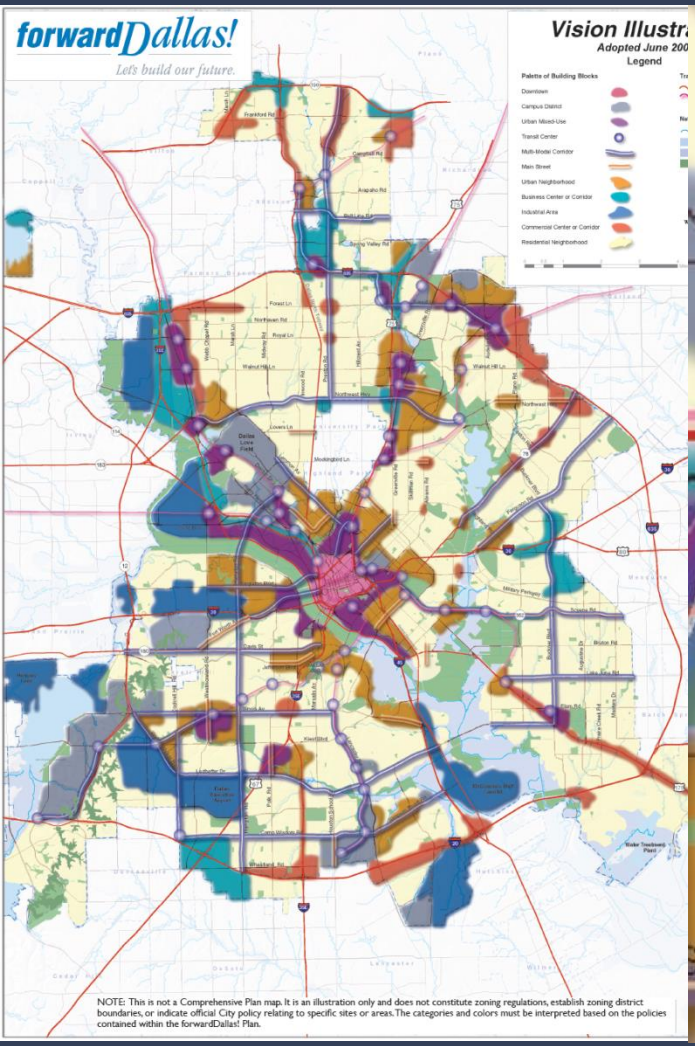
- Requires PLANNING including PUBLIC INVOLVEMENT to reach shared solutions

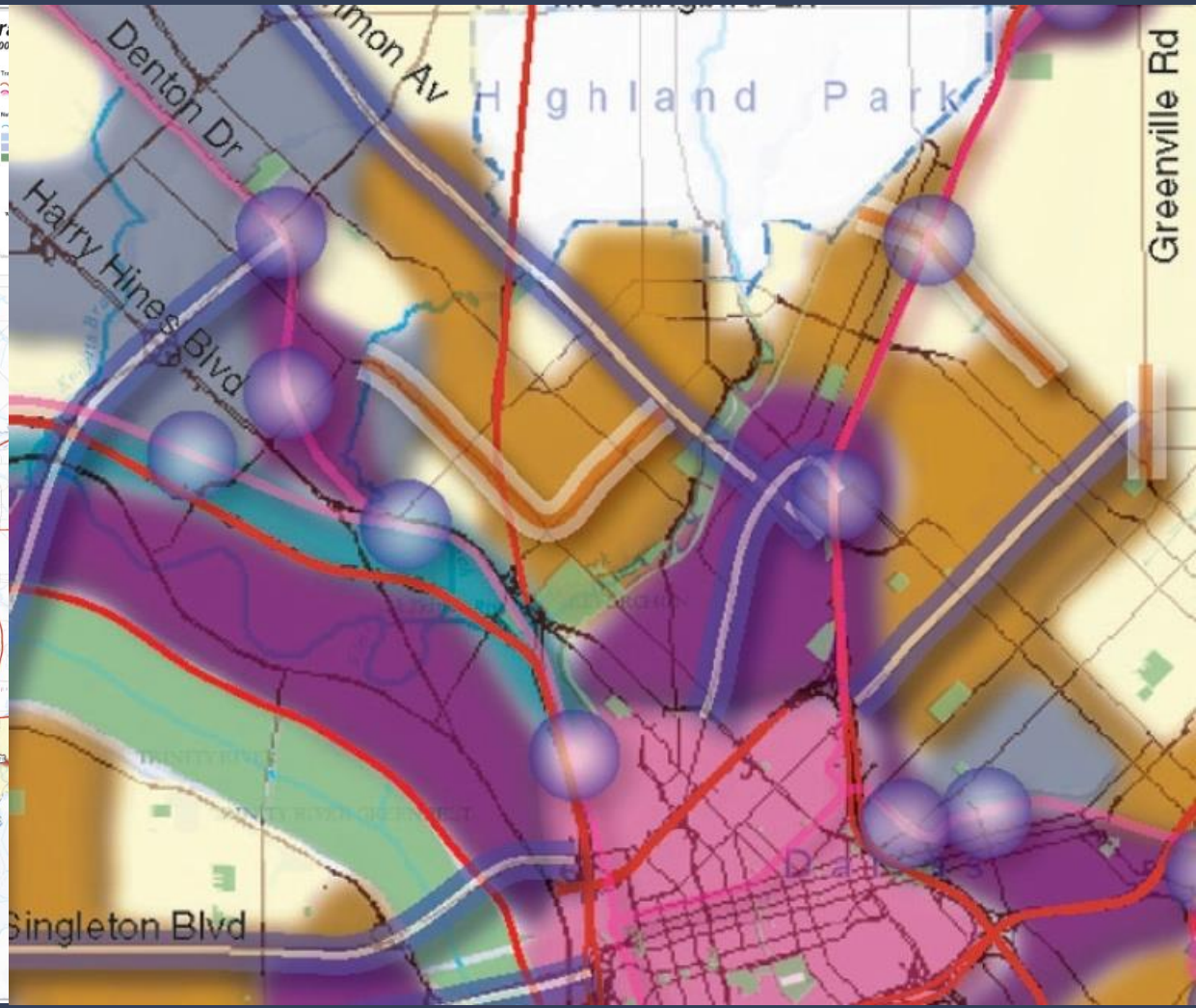
IDEAL VIEW OF PLANNING + CODING

Ideal View: Plan Implementation

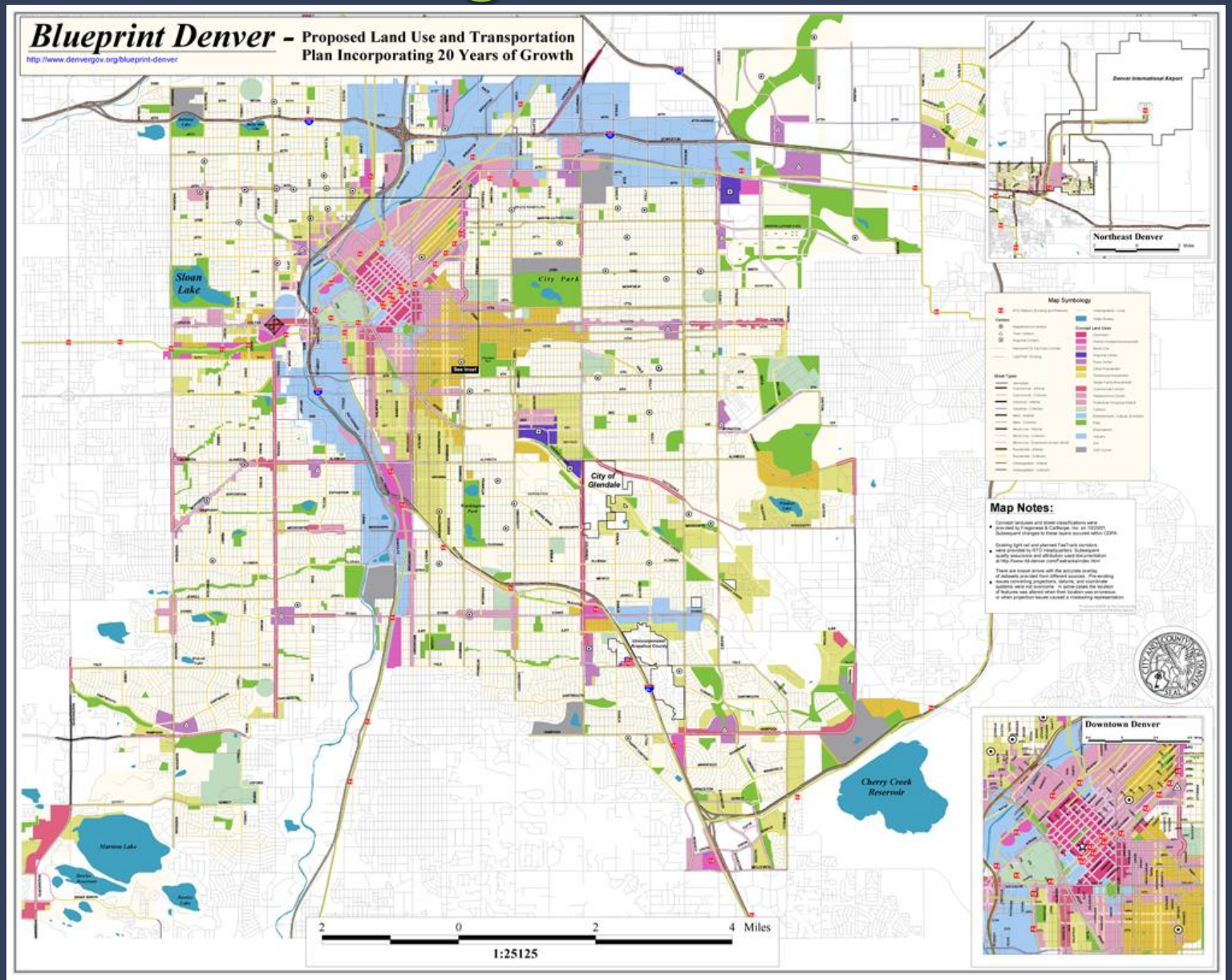
- Plan
  - Overall comprehensive or functional plans
  - Detailed plans for neighborhood or area
- Code
  - Apply “tools” from the “toolkit” to implement the plan; or
  - Develop new tools
- Permitting
  - Ensure the development community builds to the community vision

Planning at 30,000 Feet





Planning at 20,000 Feet

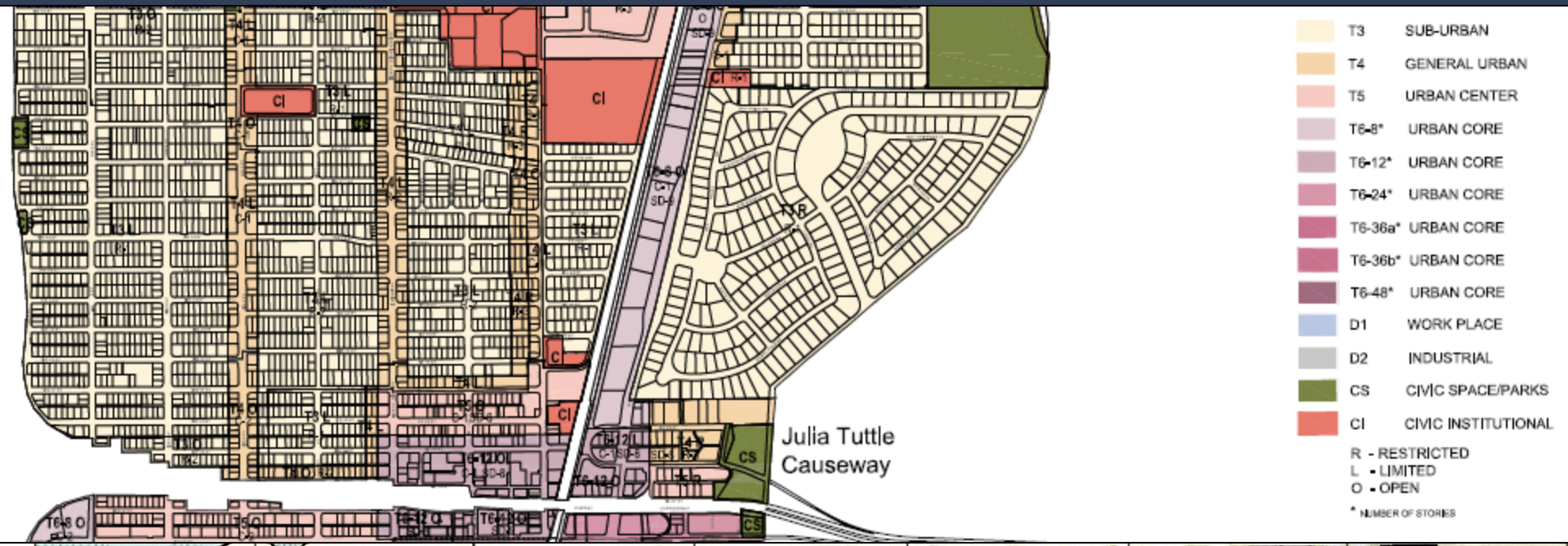


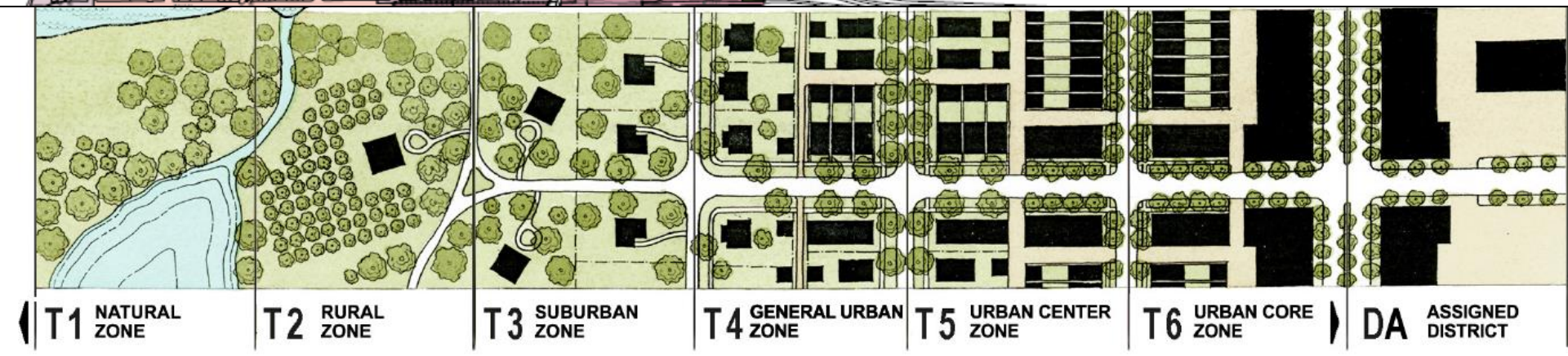
Planning at 10,000 Feet

Theory versus Reality

- Plans Often Cover Too Large an Area
- Plans (and even Codes) Often Do Not Include Meaningful, Productive Public Involvement
- Professionals Often Given the Wrong “Problem” to Solve
- Simple Planning Concepts Often Get Complex When Forced to Deal With:
  - State and federal legislation
  - Property rights

Theory versus Reality





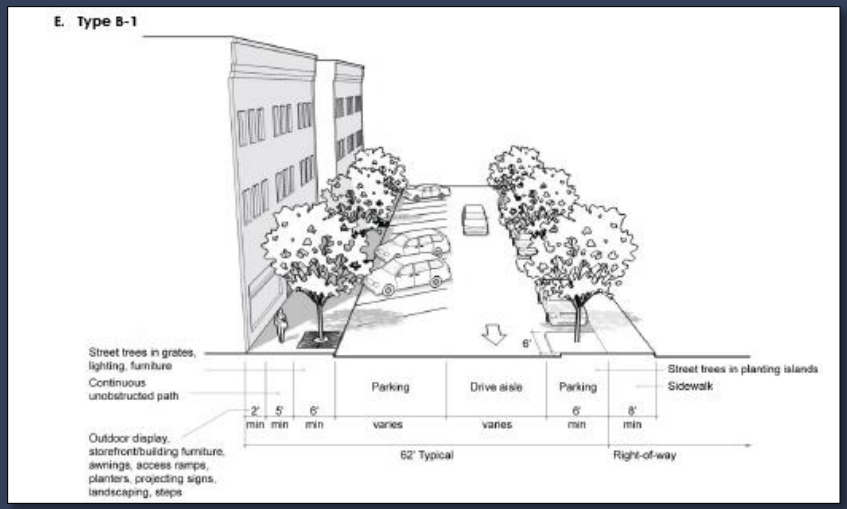
Timing/Extent of Involvement

- Neighbors ?
  - Up front during planning process
  - Code/Plan adoption or amendment
  - NOT individual site plan decisions
- Policy-makers ?
  - Confirmation of planning vision/results
  - Adoption and amendment of plan/code
- Technical Staff ?
  - Support for planning, decision-making process
  - Permit (site plan) review, approval

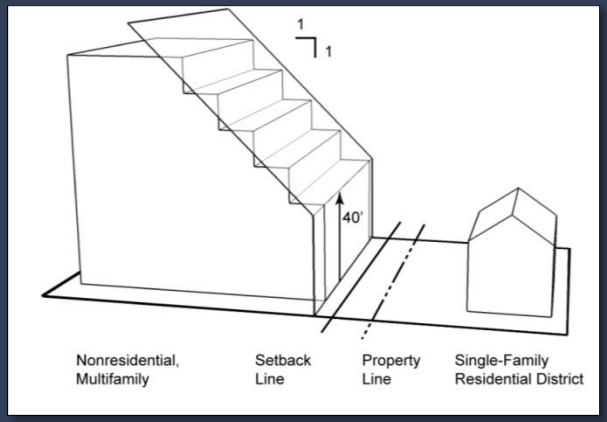
COMMON ELEMENTS OF ANY CODE UPDATE

Easy to Use and Understand

- Readable: Use Plain English
- Use Special Phrases Only when Necessary
- Use Language Consistently
- Tables, Graphics, Flowcharts



		RESIDENTIAL						NONRESIDENTIAL							PLANNED					OVER -LAY	
KEY: "P" = Permitted "L" = Limited "M" = Major Special Use Permit "m" = Minor Special Use Permit "‡" = Development Plan Required Blank cell = not allowed																					
USE CATEGORY	SPECIFIC USE	RR	RS	RS-M	RU	RU-M	RC	CN	OI	CG	CBD	SRP	IL	I	PDR	UC	CC	IP	MU	DDO *	NOTES:
Retail Sales and Service	All retail sales and service, except as listed below							P		L	P		P			L	‡		‡	P	5.3.4B
	Antique shop	L						P		P	P		P				‡		‡	P	5.3.4C
	Art, music, dance, photographic studio or gallery							P	P	P	P		P				‡	‡	‡	P	
	Convenience store with gasoline sales							L		L	L		L				‡L		‡L	L	5.3.4F
	Drive-through facilities							L		L			L				‡L		‡L		5.3.4I
	Veterinary clinic, animal hospital, kennel	L						L	L	L	L		L	L			‡L	‡L	‡L	L	5.3.4U
Self-Service Storage	All self-service storage									L			L	L				‡L	‡L		5.3.4R
Vehicle Sales and Service	Car wash									L			L	L			‡L	‡L			5.3.4E
	Manufactured home sales									L			L	L				‡L			5.3.4N
	Vehicle sales, leasing or rental									L			L	L			‡L	‡L		L	5.3.4R
	Vehicle service												L	L				‡L			5.3.4T
	Vehicle service, limited							L/m		L			L	L			‡L	‡L	‡L		5.3.4T



Legally Sound

- Code Should Respect and Respond to Legal Limitations and Challenges
  - Uses With Special Federal or State Protections
  - Procedural Requirements of Law, Streamlined Where Appropriate

Improved Clarity, Predictability

Old Standards
Hard to Understand

New Standards
Must Be Clear,
Predictable

Coding for Sustainability

- Conserving Water
  - Improve Stormwater Management: Catch, filter and recharge the ground water as close to the source of run-off as possible
  - Allow water conserving elements (rain barrels, bioswales, rain gardens, green roofs)
- Promoting local food production
  - Remove barriers to community gardens, farmer's markets/accessory food sales

FORM-BASED CODES

Why Use a Form-Based Code?

- Create a New “Place”
  - Envisioned form codified
- Protect an Existing Place
  - Undo suburbanization of a traditional place
  - Protect the character of “places to be”

A Personal Opinion . . .

- You Don’t Need a Full-Blown Form-Based Code for the Entire Community

. . . but . . . you may want improved form everywhere -- even residential districts


STYLIN
685-8144
UrbanAdvantage


STYLIN
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Urban Advantage


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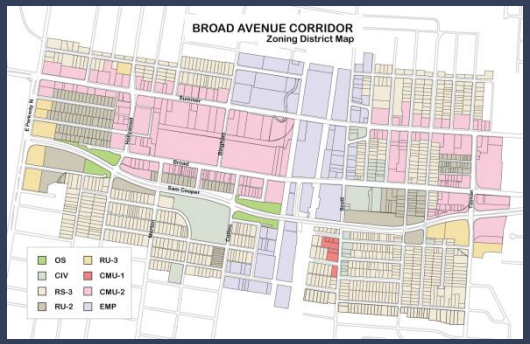
Placemaking Conflicts/Barriers

- Zoning and Subdivision
  - Public Realm Improvements
- Planning and Public Works
  - The “Silo” Effect
- Short Term and Long Term
  - Phasing, Changing Uses Over Time, Intensification of Existing Development

Code Structure: Balancing Elements

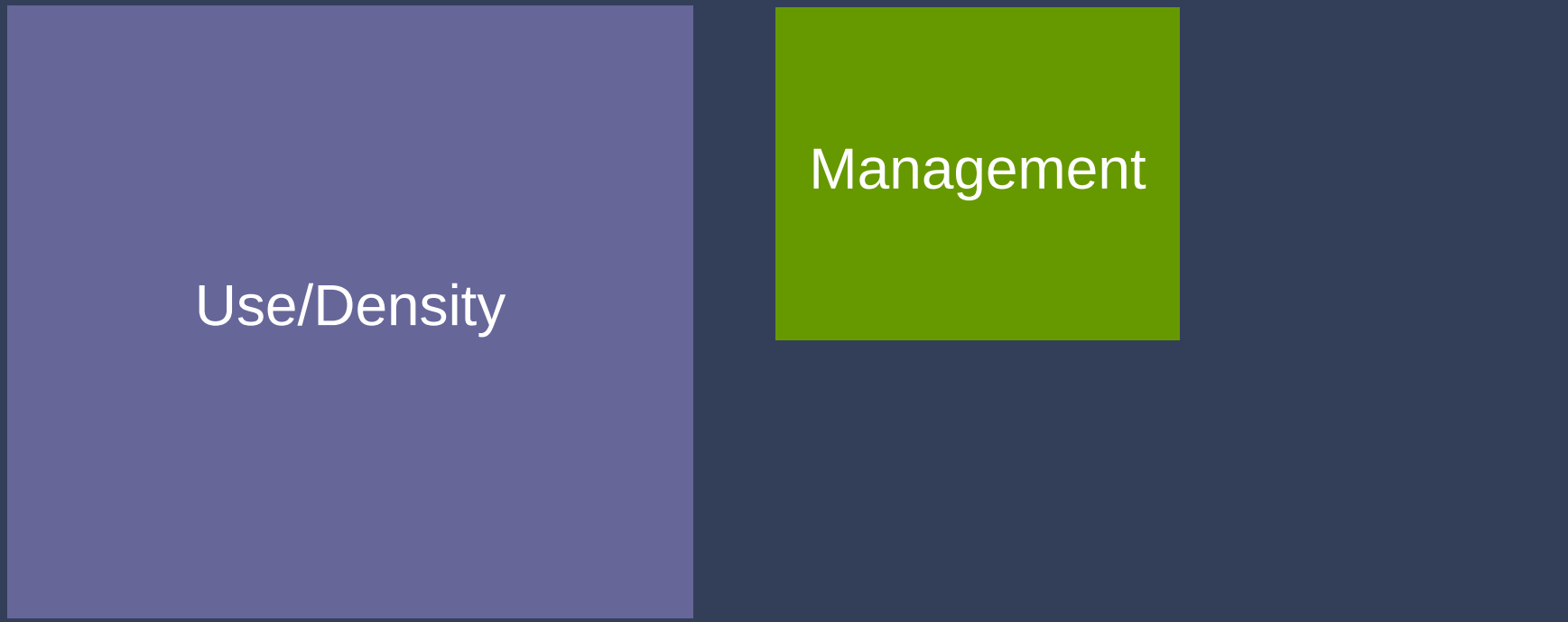
Form

Use/Density



Management

Typical Approach



Red on Zoning Map

Also Red on a Zoning Map

Form-Based Approach

Elements: Height

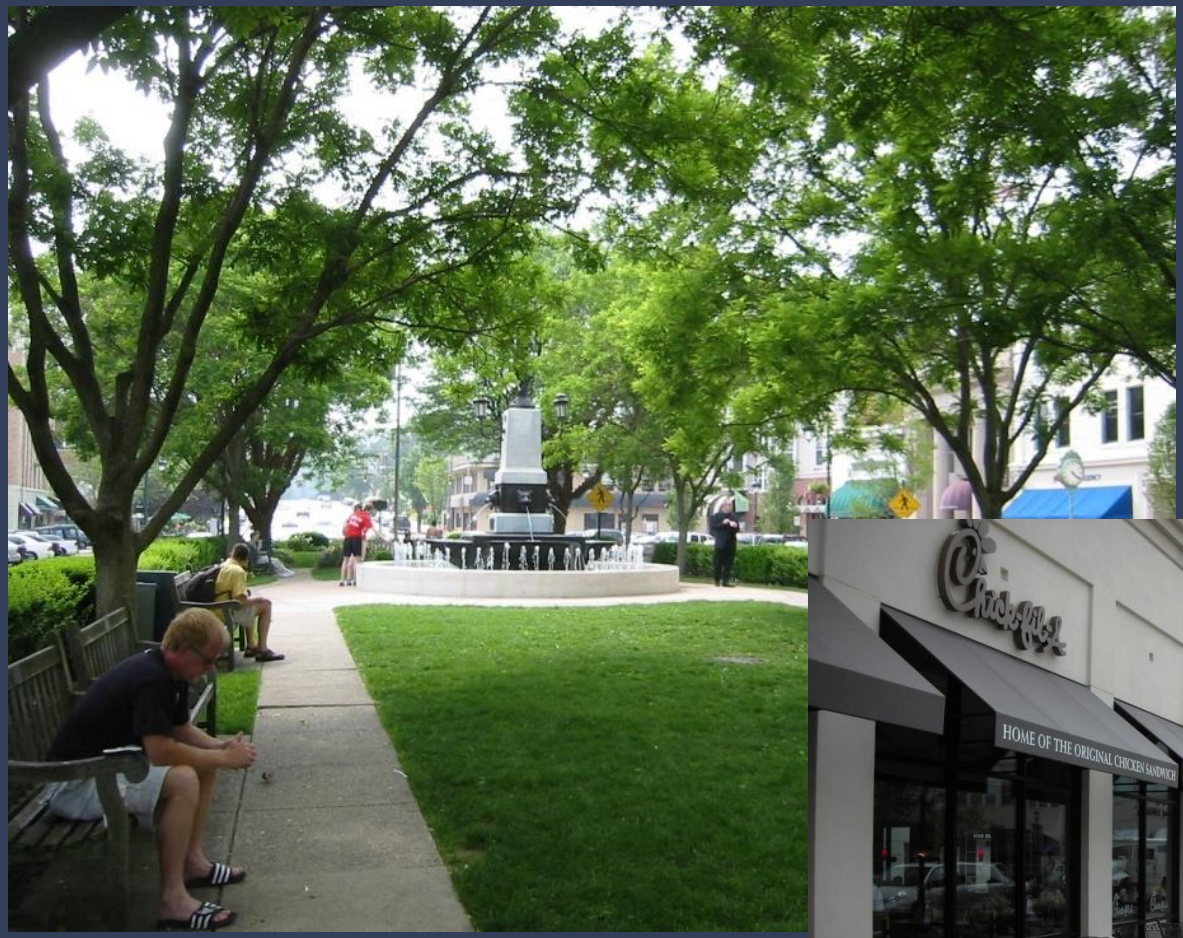
Elements: Building Placement

Elements: Windows & Doors

Elements: Use

Elements: Street Space

Elements: Public Space



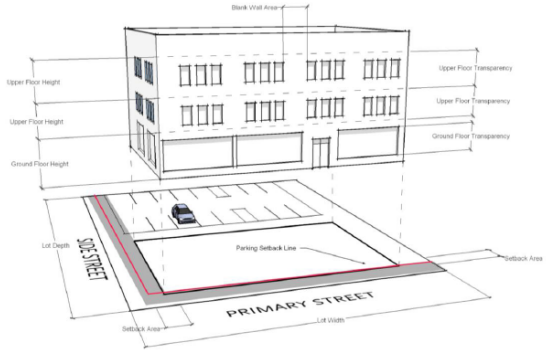
Coding Great Streets

Streets Historically Ignored

Streets Must Become Part of Equation

= Clear, Predictable Results

SHOPFRONT



PLACEMENT

SETBACK AREA
2ft min. (7 ft. if ground floor use is a restaurant with outdoor seating) to 15 ft. behind ROW line.

REQUIRED BUILDING FRONTAGE
1. Primary street (sites 100 ft. or more in width). The building façade must be located within the setback area for a minimum of 80% of the site width.
2. Primary street (sites less than 100 ft. in width). The building façade must be located within the setback area for a minimum of 70% of the site width. For sites under 100 ft. in width, the required building frontage may be reduced to accommodate no more than a single 20-ft. access drive for a rear parking area.
3. Side street. The building façade must be located within the setback area for a minimum of 40% of the site depth.

PARKING SETBACK
1. Primary street setback. Min 30 ft. behind ROW line.
2. Side street setback. Min 10 ft. behind ROW line.
3. Parking shall be located behind the parking setback line. No parking is permitted between the street and the building. This requirement shall not restrict on-street parking

ELEMENTS

TRANSPARENCY (WINDOWS & DOORS)
1. Ground floor. Primary Street 50% min, Side Street 30% min. Ground floor transparency is measured between 2 and 12 ft. above the adjacent sidewalk.
2. Upper floor. Min 20% (floor to floor).
3. A minimum of 60% of the window pane surface area shall allow views into the ground floor for a depth of at least 8 ft. Windows shall not be made opaque by window treatments (excepting operable sunscreen devices within the conditioned space).

BUILDING ENTRANCE
1. A functioning entrance, operable during normal business hours, is required facing the primary street. An angled entrance may be provided at either corner of the building along the primary street to meet this requirement.
2. A building located on two primary streets shall have either one entrance per frontage or provide one angled entrance at the corner of the building at the intersection. Buildings located on corner lots shall meet all applicable intersection sight distance requirements. Additional entrances off another street, pedestrian area or internal parking area are permitted.
3. A minimum of 50% of the required entrance shall be transparent.
4. Recessed entrances shall not exceed 3 ft. in depth and one floor in height.

BLANK WALL AREA
Blank lengths of wall exceeding 25 linear ft. are prohibited on all primary and side street building façades.

HEIGHT

GROUND FLOOR ELEVATION
For ground floor residential uses, the ground floor finished elevation shall be a minimum of 18 inches above the adjacent sidewalk. There is no minimum for ground floor nonresidential uses.

FLOOR HEIGHT
1. Ground floors shall have a floor to floor height of at least 14 ft.
2. Each upper floor shall have a floor to floor height of at least 9 ft.

Conventional Code Components

- Zoning Ordinance
  - Dimensional standards, use restrictions, parking, landscaping, signs
- Zoning Map
- Subdivision Ordinance
  - Lot/block layout, street standards
- Thoroughfare Plan
  - Street standards
- Technical Manuals
  - Stormwater, water, wastewater, etc.
  - Building Code, Fire Code, “Green Building” Code

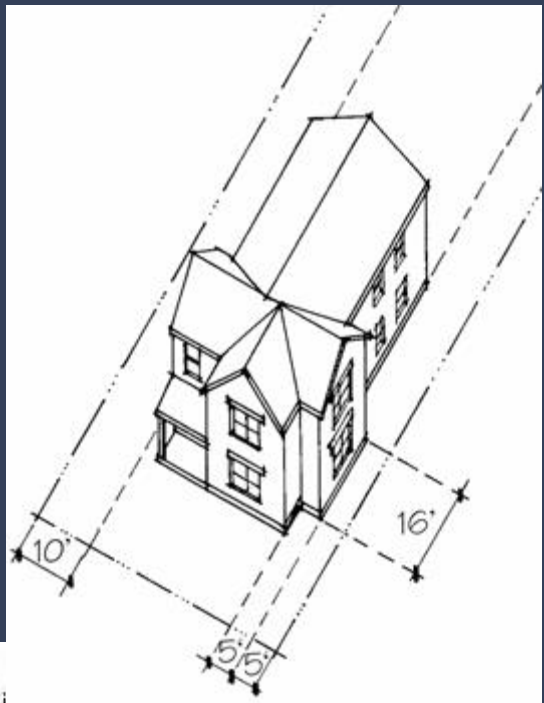
Form-Based Code Components

- Form-Based Code:
  - Form Standards
  - Urban Space Standards
  - Streets
  - Regulating Plan
  - Architectural Standards (sometimes)
  - Development Review Procedures

- Technical Manuals
  - Stormwater, water, wastewater, etc.
  - Building Code, Fire Code, “Green Building” Code

Establishing Form

- Starts With Current Regulations
- Model What is Allowed
- Refine Models to Set Appropriate Form



Form versus Incentives

Zoning District	Max. Base Height	Max. Public Benefit Height
DC1	15	18
DC2	15	30
DC3	25	42

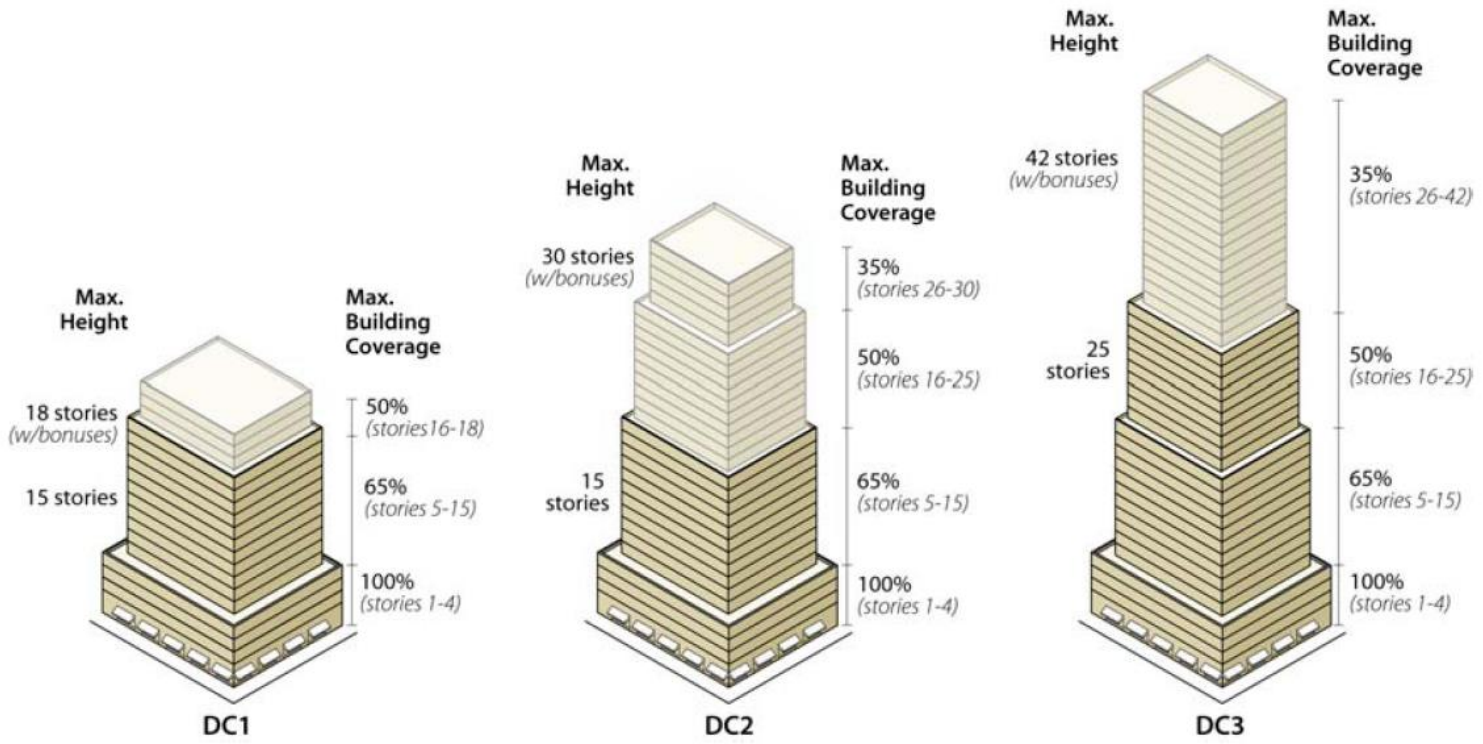


Figure 4.2

THE CHARRETTE MODEL

Common Model for Plan/Code

- Charrette Process
  - Multi-Day, Intensive Design Workshop
  - Open to the Public, Transparent
  - Concepts from the Community, Rendered Through Professional “Filter” of Feasibility, Practicality

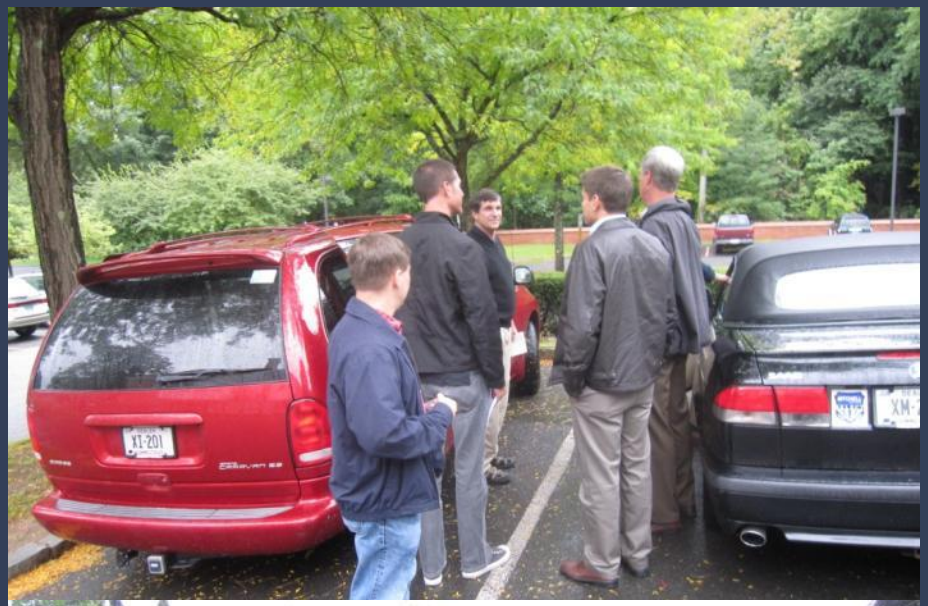
- Results:
  - Illustrative Master Plan
  - Code Linked to Master Plan

Charrette Week

Time	FRIDAY September 11	SATURDAY September 12	SUNDAY September 13	MONDAY September 14	TUESDAY September 15	WEDNESDAY September 16
8:00 am	Team Arrival	★ 8:30 am - 12:30 pm Hands-on Design Session	Open Design Studio	Open Design Studio/ Technical Meetings	Open Design Studio/ Technical Meetings	Open Design Studio
9:00 am						
10:00 am						
11:00 am						
12:00 pm			Lunch	Lunch	Lunch	Lunch
1:00 pm	Lunch	Lunch	Open Design Studio	Open Design Studio/ Technical Meetings	Open Design Studio/ Technical Meetings	Open Design Studio
2:00 pm	Studio Setup	Brainstorming/ Conceptual Designs				
3:00 pm	Team Tour					
4:00 pm						
5:00 pm				Open House Prep.		
6:00 pm	Finalize Saturday Presentation		Dinner/Progress Review	★ 6:00 pm - 8:00 pm Drop-in Open House	Dinner/Progress Review	Presentation Prep.
7:00 pm			Open Design Studio		Open Design Studio	★ 6:00 pm - 8:00 pm Closing Presentation
8:00 pm	Dinner/Free Time	Dinner/Free Time		Dinner/Progress Review		
9:00 pm				Open Design Studio		
10:00 pm						Dinner

All public events and the open design studio will be at the Simsbury Public Library, 725 Hopmeadow Street.

Site Analysis & Documentation

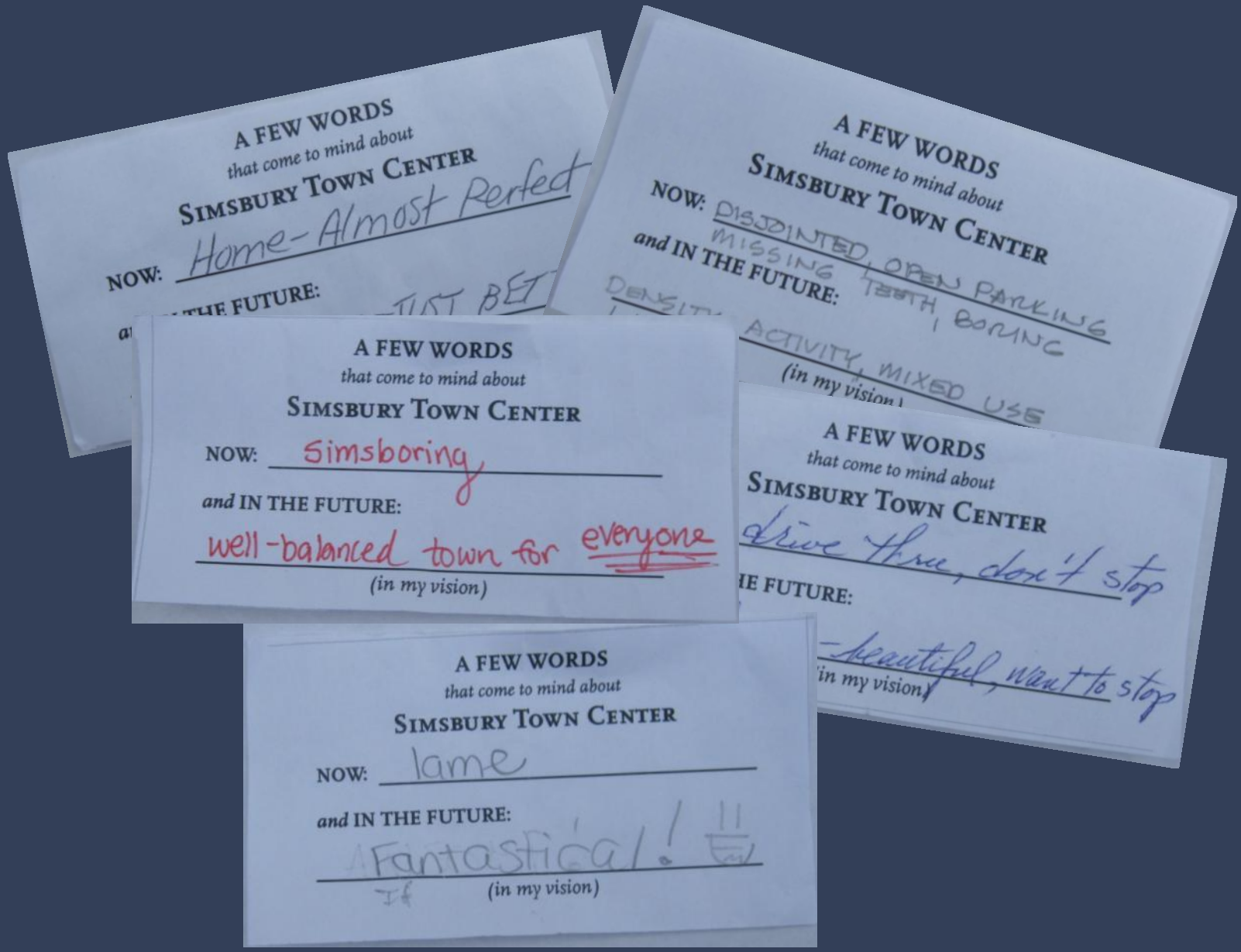


Hands-on Session

Hands-on Session

Hands-on Session

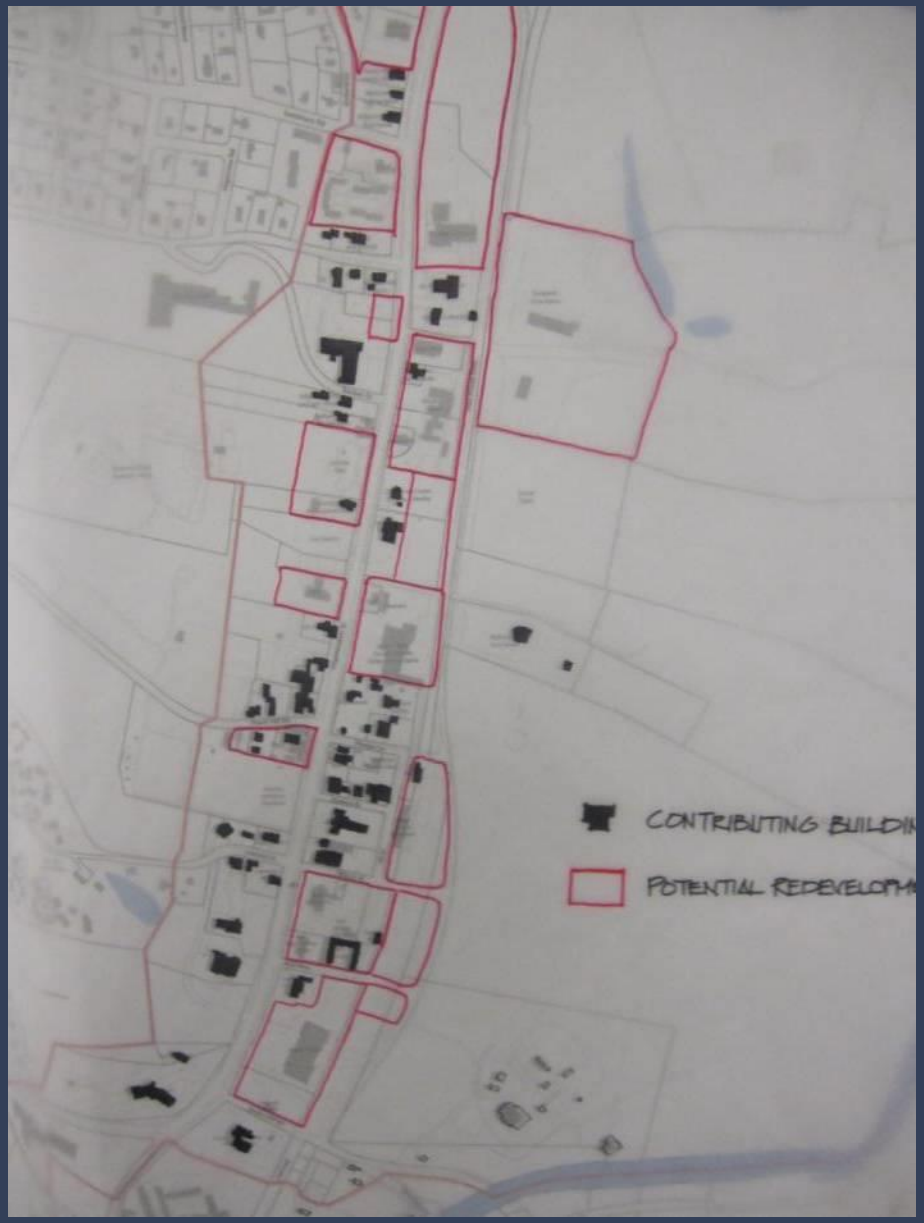
Some Things We Heard!



Brainstorming

Designing in Public

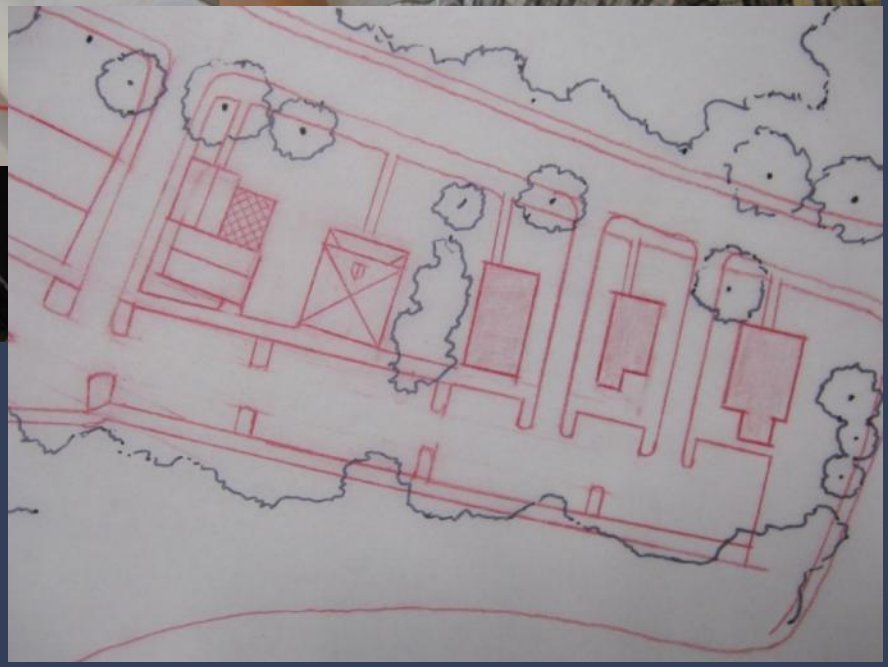
Initial Concepts



Initial Concepts

Monday Night Open House

Refinement



Final Production

Illustrative Master Plan

Wilcox Street

Wilcox Street

Wilcox Street

Urban Advantage

Wilcox Street

Wilcox Street

Wilcox Street

Urban Advantage

The Raleigh Approach

A 21st Century Unified Development Ordinance

Raleigh's Approach

- A Hybrid Code
  - Zoning With Form Standards
  - Overlays for Enhanced Form Control
  - Regulates Street and Blocks in Unified Ordinance
- True Form-Based Code Requires a Place-Specific Master Plan
  - Raleigh is not creating a city-wide form-based code

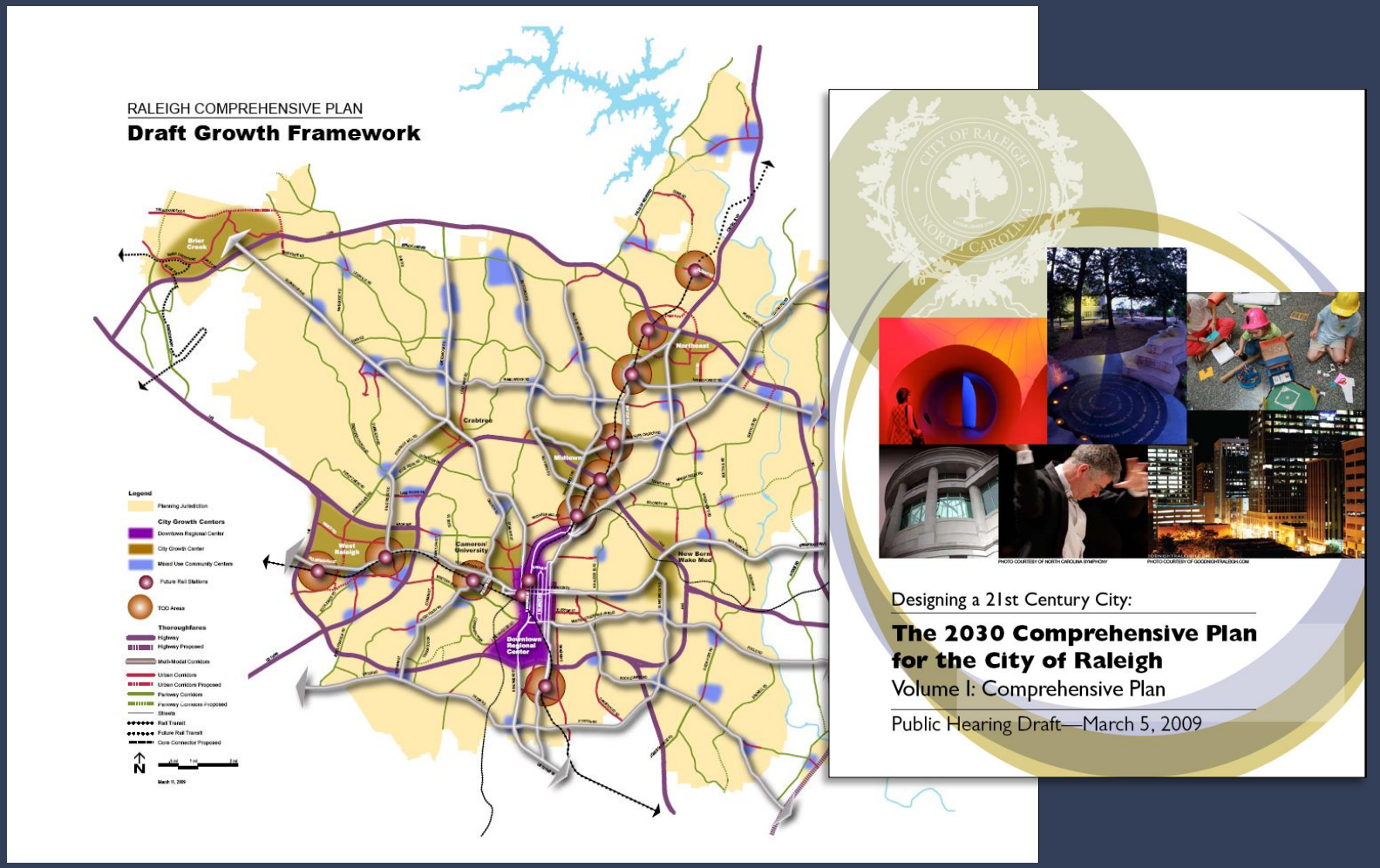
UDO Project Objectives

- Update & Consolidate Zoning/Subdivision/Site Plan Regulations (UDO)
- Reformat/Reorganize into a More User-Friendly Format
- Where Appropriate, Focus on Form & Character Rather than Use & Density
- Foster Quality, Sustainable Development

Project Objectives

- Remove Barriers to Infill and Redevelopment
- Increase Predictability for Citizens, Developers, Staff
- Streamline Development Review
- Broadcast, Make it Easy to Do the Right Thing
- Ensure Consistency with Community Vision
- Build on Plan Momentum

Raleigh's Comprehensive Plan



4-Step Process – Education is Key

1: Analyze

- Review Existing Code/Plan Material
- Interviews
- Citywide Listening Sessions
- Critique Existing Code Material

2: Approach

- Determine Drafting Approach
- Citywide Open Houses
- Elected/Appointed Officials

3: Drafting

- Incorporate Input & Feedback
- Reformat/ Reorganize
- Prepare Unified Ordinance
- Open Houses

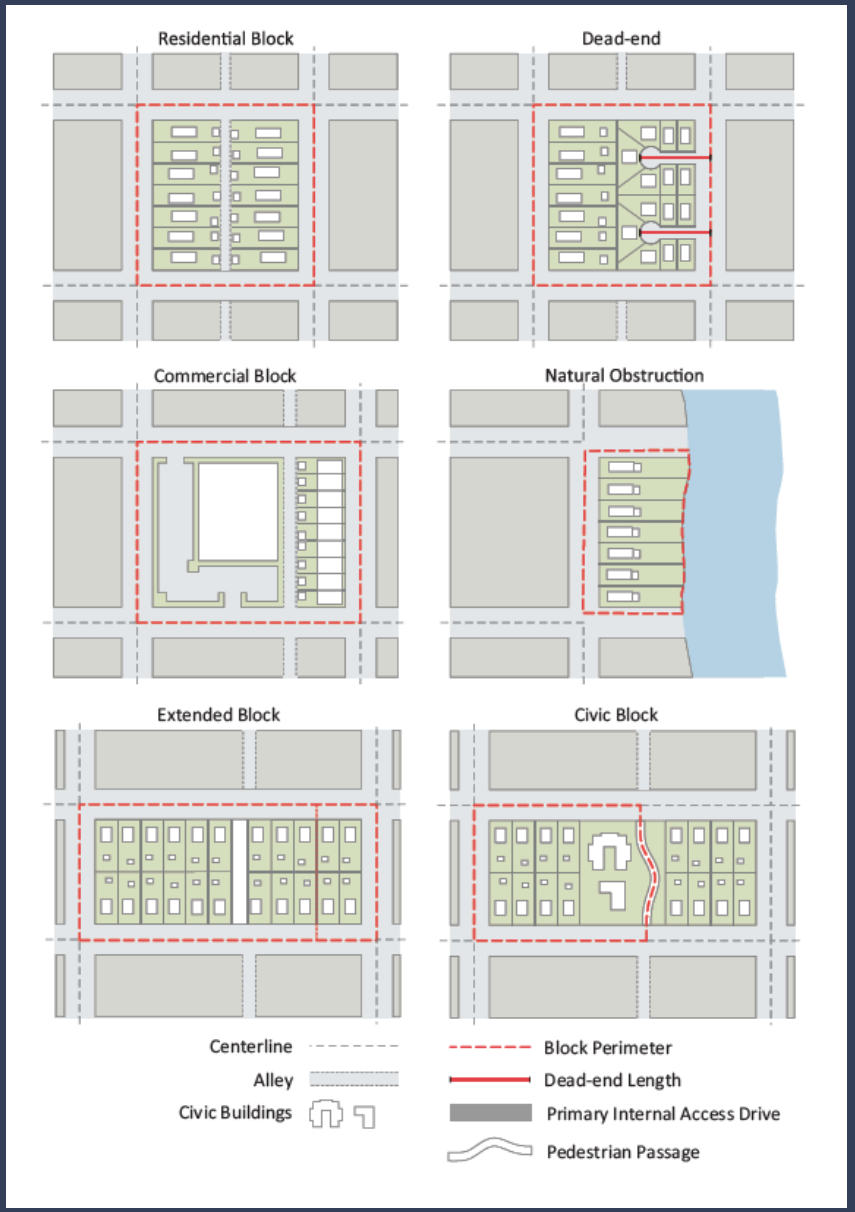
4: Adoption

- Revised Unified Ordinance
- Formal Adoption Hearings
- Final Unified Ordinance

Form Elements: Blocks

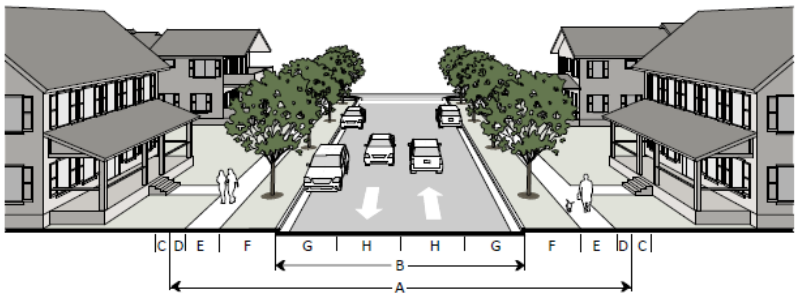
Article 8.3. Blocks, Lots, Access

	Block Perimeter (max)	Block Length (max)	Dead-End Street (max)
R-1, R-2, R-4: By Average Lot Size on Block			
40,000+ sf	6,000'	2,640'	750'
20,000 - 39,999 sf	3,330'	1,320'	600'
10,000 - 19,999 sf	3,000'	1,100'	400'
6,000 - 9,999 sf	2,400'	880'	300'
up to 5,999 sf	2,000'	660'	200'
R-6, R-10: By District			
R-6	2,400'	880'	300'
R-10	2,000'	660'	200'
Mixed Use Districts			
DX-	1,760'	440'	Not allowed
RX-, NX-, CX-	2,000'	660'	300'
OP-, OX-, IX-	2,400'	880'	400'
Special Districts			
CM, AP	n/a	n/a	Not allowed
IH	4,000'	1,320'	400'
R-MP	2,000'	660'	Not allowed
CMP, PD	4,000' or based on master plan	1,320' or based on master plan	400' or based on master plan



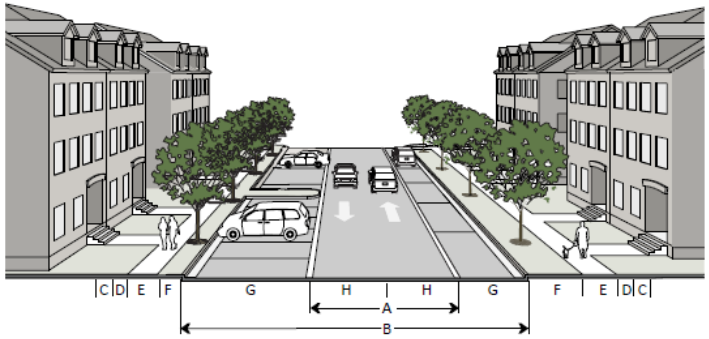
Form Elements: Streets

C. Neighborhood Street



Width		
A	Right-of-way width	64'
B	Back-of-curb to back-of-curb	36'
Streetscape		
C	Utility placement, easement (min)	5'
D	Maintenance strip (min)	2'
E	Sidewalk (min)	6'
F	Planting area (min)	6'
Travelway		
G	Parallel parking lane	8.5'
H	Travel lane	9.5'
General		
	Walkway type	Sidewalk
	Planting type	Tree lawn
	Tree spacing	40' o.c. avg
	Parking type	Parallel

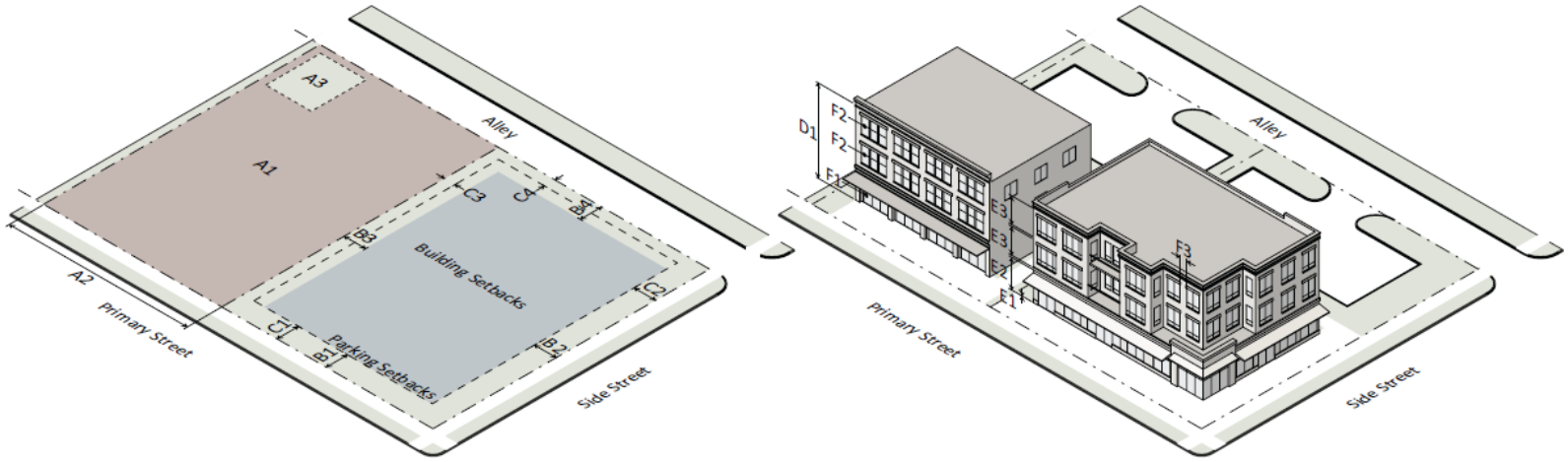
D. Multifamily Street



Width		
A	Right-of-way width	21'
B	Back-of-curb to back-of-curb	48'
Streetscape		
C	Utility placement, easement (min)	5'
D	Maintenance strip, easement (min)	2'
E	Sidewalk, easement (min)	6'
F	Planting area (min)	6'
Travelway		
G	Parking lane	
	Parallel (either side)	8.5'
	Head-in (one side only)	18.5'
H	Travel lane	10.5'
General		
	Walkway type	Sidewalk
	Planting type	Tree lawn
	Tree spacing	40' o.c. avg
	Parking type	Parallel, Head-in one side

Form Elements: Building Types

Sec. 3.2.6. Mixed Use Building



		OP-, OX- NX-, CX-, IX-	DX-
A. Lot Dimensions			
A1	Area (min)	n/a	n/a
A1	Area (max)	10 acres (NX- only)	n/a
A2	Width (min)	n/a	n/a
A3	Outdoor amenity area (min)	5%	5%
B. Building/Structure Setbacks			
B1	From primary street (min)	5'	3'
B2	From side street (min)	5'	3'
B3	From side lot line (min)	0' or 6'	0' or 6'
B4	From rear lot line (min)	0' or 6'	0' or 6'
B4	From alley (min)	5'	5'
C. Parking Setbacks			
C1	From primary street (min)	10'	10'
C2	From side street (min)	10'	10'
C3	From side lot line (min)	0' or 3'	0' or 3'
C4	From rear lot line (min)	0' or 3'	0' or 3'
C4	From alley (min)	5'	5'

		OP-, OX- NX-, CX-, IX-	DX-
D. Height			
D1	Principal building (max)	Set by district	Set by district
D2	Accessory structure (max)	25'	25'
E. Floor Heights			
E1	Ground floor elevation (min)	0'	0'
E2	Ground story height, floor to ceiling (min)	13'	15'
E3	Upper story height, floor to ceiling (min)	9'	9'
F. Transparency			
F1	Ground story (min)	60%	70%
F2	Upper story (min)	20%	20%
F3	Blank wall area (max)	20'	20'
G. Allowed Building Elements			
	Balcony		
	Gallery, awning		

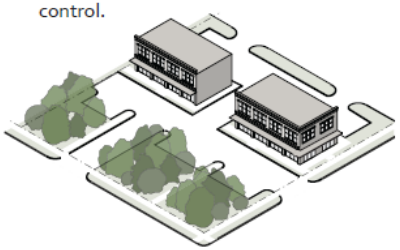
See Sec. 1.5.11 for specific building element requirements.

Form Elements: Overlay Frontages

Article 3.4. Frontage Requirements

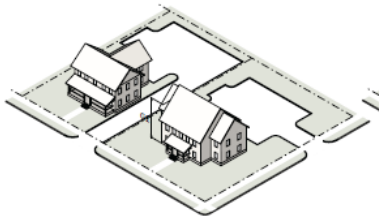
Sec. 3.4.1. Purpose and Intent

Frontages link a desired development pattern with specific form requirements that mandate the type of development desired along the street edge. Frontages place additional limitations beyond the base dimensional standards. Where there is a conflict between the base dimensional standards and the frontage requirements, the frontage requirements control.



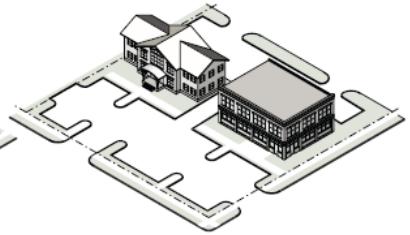
A. Parkway (-PK)

The -PK Frontage is intended to provide a heavily landscaped buffer between the roadway and adjacent development to ensure a continuous green corridor along the street edge.



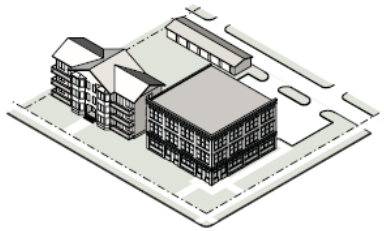
B. Detached (-DE)

The -DE Frontage is intended for areas adjacent to roadways transitioning from residential to commercial. Accommodates neighborhood-scaled, low intensity commercial uses while maintaining the residential character of the street.



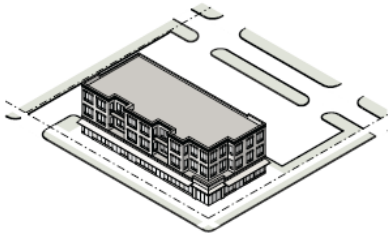
C. Parking Limited (-PL)

The -PL Frontage is intended for areas where access to buildings by automobile is desired but where some level of walkability is maintained. Permits a maximum of two bays of on-site parking with a single drive aisle between the building and the street.



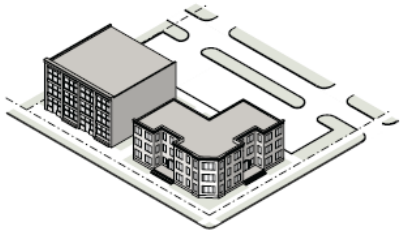
D. Green (-GR)

The -GR Frontage is intended for areas where it is desirable to locate buildings close to the street, but where parking between the building and street is not permitted. Requires a landscaped area between the building and the street.



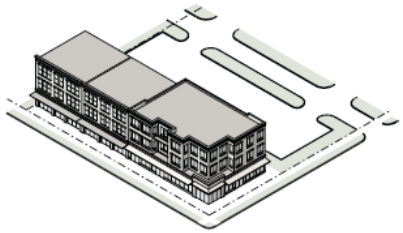
E. Urban Limited (-UL)

The -UL Frontage is intended for areas where parking between the building and street is not allowed. Buildings abut the street and sidewalk but to balance the needs of both the pedestrian and automobile greater spacing is allowed along the street wall.



F. Urban General (-UG)

The -UG Frontage is also intended for areas where parking between the building and street is not allowed. Buildings abut the street and sidewalk but the -UG frontage has a higher street wall requirement than the -UL frontage.



G. Shopfront (-SH)

The -SH Frontage is for intended for areas where the highest level of walkability is desired. The -SH Frontage is intended to create a "main street" type of environment, therefore, mixed use buildings are the primary building type allowed.

Questions ?

Lee D. Einsweiler
C O D E S T U D I O

lee@code-studio.com

www.code-studio.com