

SMARTCODE

VERSION 9 AND MANUAL



T1



T2



T3



T4



T5



T6

SMARTCODE

VERSION 9 AND MANUAL

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INTRODUCTION

About the SmartCode and Manual

The SmartCode is a unified development ordinance that incorporates the sustainable transect-based planning principles of Smart Growth and New Urbanism. This volume, *SmartCode Version 9 and Manual*, has been assembled to assist those who are considering calibrating and adopting the SmartCode for a city, region, or project. It presents the entire SmartCode Version 9.2 with comprehensive annotations and other supporting materials, and is also applicable to Version 9.0.

The SmartCode, as presented in this volume, is a model ordinance. It is not persuasive and instructive like a guideline, nor is it intentionally general like a vision statement. It is meant to be law, precise and technical, administered by municipal planning departments and interpreted by elected representatives of local government. As a model code to be calibrated, the SmartCode should be customized to regional character by urban designers, planners, civil engineers, architects and landscape architects, ideally with the participation of the local citizens. The code must also be adjusted to comply with local law by land use attorneys.

Because the SmartCode envisions intentional outcomes based on known components of urban design, it has always been a more streamlined and efficient document than most conventional codes. Version 9 is even more streamlined than previously, based on the the advice of experts from nearly two years of using SmartCode v8.0 in the field. While the standards and overall sequence will be familiar to experienced users, the base code is now shorter and simpler. Certain sections that were integral now appear as optional Modules, while some Modules introduce new material, including Sustainability Tables and Natural Drainage Standards. They are available to supplement the base code during customization. Because they are numbered by their correct place in the base code, they are easy to insert.

This volume also includes an extended Appendix offering sample plans, step-by-step procedures, illustrations, historical commentary, checklists, and resources. One particularly useful section is a submittal document for a greenfield project.

The Annotations and Appendix support the SmartCode, but they are explanatory and advisory only. They are not legally binding and must not be included as part of the SmartCode itself when it becomes law.

The official text of the SmartCode itself appears in a **sans serif font like this**. The commentary appears in a **serif font like this**. **Green text** indicates items that should be considered for calibration.

Codes and the SmartCode

Consider the most-loved towns of North America. They were either carefully planned, or they evolved as compact, mixed use places because of their geography and the limits of the transportation and economics of their time. However, over the past sixty years, places have evolved in a completely different pattern. They have spread loosely along highways and haphazardly across the countryside, enabled by the widespread ownership of automobiles, by cheap petroleum and cheap land, and by generalized wealth.

Such patterns are enabled by zoning codes that separate dwellings from workplaces, shops, and schools. These codes include design standards that favor the automobile over the pedestrian, and are unable to resist the homogenizing effects of globalization.

These practices have produced banal housing subdivisions, business parks, strip shopping, big box stores, enormous parking lots, and sadly gutted downtowns. They have caused the proliferation of drive-by eateries and billboards. They have made walking or cycling dangerous or unpleasant. They have made children, the elderly, and the poor utterly dependent on those who can drive, even for ordinary daily needs. They have caused the simultaneous destruction of both towns and open space - the 20th century phenomenon known as sprawl.

The form of our built environment needs a 21st century correction. But in most places it is actually illegal to build in a traditional neighborhood pattern. The existing codes prevent it. In most places people do not have a choice between sprawl and traditional urbanism. Codes favor sprawl and isolated residential subdivisions. It is not a level playing field.

The SmartCode was created to deal with this problem at the point of decisive impact -- the intersection of law and design. It is a form-based code, meaning it envisions and encourages a certain physical outcome -- the form of the region, community, block, and/or building. Form-based codes are fundamentally different from conventional codes that are based primarily on use and statistics -- none of which envision or require any particular physical outcome.

The SmartCode is a tool that guides the form of the built environment in order to create and protect development patterns that are compact, walkable, and mixed use. These traditional neighborhood patterns tend to be stimulating, safe, and ecologically sustainable. The SmartCode requires a mix of uses within walking distance of dwellings, so residents aren't forced to drive everywhere. It supports a connected network to relieve traffic congestion. At the same time, it preserves open lands, as it operates at the scale of the region as well as the community.

INTRODUCTION

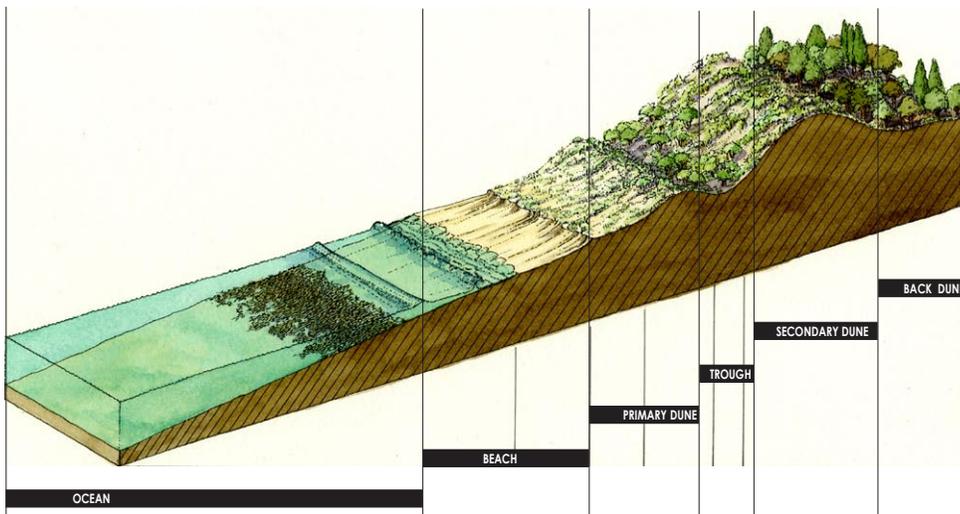
Transect-Based Planning

“A town is saved, not more by the righteous men in it than by the woods and swamps that surround it.” -- Henry David Thoreau

The SmartCode is a transect-based code. A transect of nature, first conceived by Alexander Von Humboldt at the close of the 18th century, is a geographical cross-section of a region intended to reveal a sequence of environments. Originally, it was used to analyze natural ecologies, showing varying characteristics through different zones such as shores, wetlands, plains, and uplands. Its purpose is to study the many elements that contribute to habitats where certain plants and animals thrive in symbiotic relationship to the minerals and microclimate.

Human beings also thrive in different places. There are those who could never live in an urban center; there are those who would wither in a rural hamlet. Humans need a system that preserves and creates meaningful choices in their habitats. Near the close of the 20th century, New Urbanist designers recognized that sprawl was eradicating the pre-war American transect of the built environment. They began to analyze it and extract its “genetic material” for propagation. In this way, they extended the natural transect to include the built environment, thus establishing the basis for the SmartCode.

The rural-to-urban Transect is divided into six Transect Zones for application on zoning maps. These six habitats vary by the level and intensity of their physical and social character, providing immersive contexts from rural to urban. SmartCode elements are coordinated by these T-zones at all scales of planning, from the region through the community scale and on down to the individual lot and building.



A TYPICAL NATURAL TRANSECT

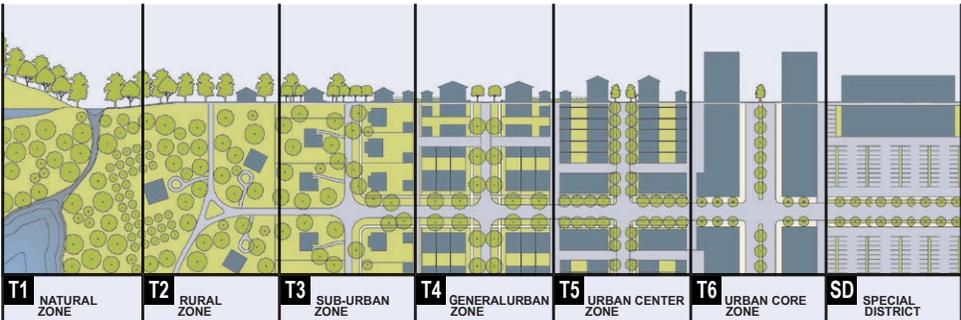
INTRODUCTION

One of the principles of Transect-based planning is that certain forms and elements belong in certain environments. For example, an apartment building belongs in a more urban setting, a ranch house in a more rural setting. Some types of thoroughfares are urban in character, and some are rural. A deep suburban setback destroys the spatial enclosure of an urban street; it is out of context. These distinctions and rules don't limit choices; they expand them. This is the antidote for the one-size-fits-all development of today.

The Transect is evident in two ways. Zones and communities exist as characteristic places on the Transect and they also evolve along the Transect over time. As places, the six Transect Zones display identifiable characteristics, based on normative American urban patterns. They also increase in complexity, density and intensity over a period of years, until a "climax condition" is reached. This is a growth process analogous to succession in natural environments.

The best urbanism requires the sequential influence of many participants. A code allows buildings to be designed and built by many hands over years, or even generations. The single designer or committee leads to a lack of robustness, similar to vulnerable monocultures in nature. A parametric and successional code like the SmartCode allows experience to feed back and become integrated -- the fourth dimension of time. Once adopted, it stays in place, allowing urbanism to evolve and mature without losing its necessary foundation of order.

It also ensures that a community will not have to scrutinize all proposed projects, because the intentions of the citizens will have already been determined in the process that leads to the code. The SmartCode is a comprehensive framework for that process.



A TYPICAL RURAL-URBAN TRANSECT, WITH TRANSECT ZONES

INTRODUCTION

Summary: What the SmartCode Does

- It utilizes a type of zoning category that ranges systematically from the wilderness to the urban core.
- It enables and qualifies Smart Growth community patterns that include Clustered Land Development (CLD), Traditional Neighborhood Development (TND), Regional Center Development (RCD), and Transit-Oriented Development (TOD).
- It integrates the scales of planning concern from the regional through the community scale, on down to the individual lot and, if desired, its architectural elements.
- It integrates the design process across professional disciplines.
- It integrates methods of environmental protection, open space conservation and water quality control.
- It integrates subdivision, public works and Transfer of Development Rights (TDR) standards.
- It provides a set of zoning categories common to new communities and to the infill of existing urbanized areas.
- It is compatible with architectural, environmental, signage, lighting, hazard mitigation, and visitability standards.
- It establishes parity of process for existing and new urban areas.
- It integrates protocols for the preparation and processing of plans.
- It encourages the efficiency of administrative approvals when appropriate, rather than decision by public hearing.
- It encourages specific outcomes through incentives, rather than through prohibitions.
- It specifies standards parametrically (by range) in order to minimize the need for variances.
- It generally increases the range of the options over those allowed by conventional zoning codes.

Outline of the SmartCode

| | ARTICLE 2 REGIONAL SCALE | ARTICLE 3 & ARTICLE 4 COMMUNITY SCALE PLANS | | ARTICLE 5 BUILDING SCALE |
|----------------------------------|---|---|--|------------------------------|
| | A. Sector Type | B. Community Type | C. Transect Zones | Standards |
| Open Lands | O1 Preserved Open Sector | None | T1 Natural Zone | |
| | O2 Reserved Open Sector | None | T2 Rural Zone | |
| New Development | G1 Restricted Growth Sector | CLD Clustered Land Development | T2 Rural Zone | |
| | | | T3 Sub-Urban Zone | |
| | | T4 General Urban Zone | | |
| | G2 Controlled Growth Sector | CLD Clustered Land Development | T2 Rural Zone | |
| | | | T3 Sub-Urban Zone | |
| | | T4 General Urban Zone | | |
| G3 Intended Growth Sector | TND Traditional Neighborhood Development | T3 Sub-Urban Zone | | |
| | | T4 General Urban Zone | | |
| | | T5 Urban Center Zone | | |
| G4 Infill Growth Sector | TND Traditional Neighborhood Development | T3 Sub-Urban Zone | | |
| | | T4 General Urban Zone | | |
| | RCD Regional Center Development | T5 Urban Center Zone | | |
| | | T4 General Urban Zone | | |
| Existing Development | G4 Infill Growth Sector | TND Traditional Neighborhood Development | T5 Urban Center Zone | |
| | | | RCD Regional Center Development | T4 General Urban Zone |
| Other | | | T5 Urban Center Zone | |
| | | RCD Regional Center Development | T6 Urban Core Zone | |
| | | | CB Civic Building | |
| | | | CS Civic Space | |
| | | SD Special District | SD Special District | |

INTRODUCTION

Structure of the SmartCode

Article 1 contains the general instructions pertaining to all other Articles.

Article 2 prescribes how Regional Plans designate the Open Sectors intended for open lands and the Growth Sectors intended for development and redevelopment. It also prescribes what Community types belong in each Sector.

Article 3 prescribes the requirements for New Communities, including the Transect Zones that make up each type.

Article 4 prescribes the Infill requirements for areas already urbanized.

Article 5 prescribes lot and building standards within each Transect Zone.

Article 6 contains diagrams and tables supporting the other Articles.

Article 7 contains terms and definitions supporting the other Articles.

The SmartCode is a unified planning ordinance that applies to three scales of land use. These three scales are in a nesting relationship as follows.

- A. Regional Sectors** contain designated Community Unit types (Article 2).
- B. Community Units** contain designated ratios of Transect Zones (Article 3 and Article 4).
- C. Transect Zones** contain the building elements appropriate to them (Article 5).

A. Regional Scale:

“Sector” is a neutral term for a geographic area. In the SmartCode, six Sectors establish the locations where certain patterns of development are allowed. This system addresses preservation and development at the regional scale. The Sectors are assigned as follows:

- **O-1 Preserved Open Sector** and **O-2 Reserved Open Sector** for protection of open lands
- **G-1 Restricted Growth Sector, G-2 Controlled Growth Sector, and G-3 Intended Growth Sector** for New Communities
- **G-4 Infill Growth Sector** for managed growth of existing urbanized areas.

B. Community Scale:

Each regional Sector (except the O-1 and O-2 Open Sectors) contains one or more of the three basic Community types (CLD, TND, RCD) as follows:

- **CLD - Clustered Land Development** (Hamlet, settlement, cluster) – permitted in Growth Sectors G1, G2
- **TND - Traditional Neighborhood Development** (Village, neighborhood) – permitted in Growth Sectors G2, G3, G4
- **RCD - Regional Center Development** (Regional Center, town center, downtown) – permitted in Growth Sectors G3, G4

C. Transect Zone Scale:

The Transect, as a framework, identifies a range of habitats from the most natural to the most urban. Its continuum, when subdivided, lends itself to the creation of zoning categories. These categories include standards that encourage diversity similar to that of organically evolved settlements. The standards overlap (they are parametric), reflecting the successional ecotones of natural and human communities. The Transect thereby integrates environmental and zoning methodologies, enabling environmentalists to assess the design of social habitats and urbanists to support the viability of natural ones.

- **T-1 Natural Zone** consists of lands approximating or reverting to a wilderness condition, including lands unsuitable for settlement due to topography, hydrology or vegetation.
- **T-2 Rural Zone** consists of sparsely settled lands in open or cultivated states. These include woodland, agricultural land, grassland, and irrigable desert. Typical buildings are farmhouses, agricultural buildings, cabins, and villas.
- **T-3 Sub-Urban Zone** consists of low density residential areas, adjacent to higher zones that some mixed use. Home occupations and outbuildings are allowed. Planting is naturalistic and setbacks are relatively deep. Blocks may be large and the roads irregular to accommodate natural conditions.
- **T-4 General Urban Zone** consists of a mixed use but primarily residential urban fabric. It may have a wide range of single, sideyard, and rowhouse building types. Setbacks and landscaping are variable. Streets with curbs and sidewalks define medium-sized blocks.
- **T-5 Urban Center Zone** consists of higher density mixed use buildings that accommodate retail, offices, rowhouses and apartments. It has a tight network of streets, with wide sidewalks, steady street tree planting and buildings set close to the sidewalks.
- **T-6 Urban Core Zone** consists of the highest density and height, with the greatest variety of uses, and civic buildings of regional importance. It may have larger blocks; streets have steady street tree planting and buildings are set close to wide sidewalks. Typically only large towns and cities have an Urban Core Zone.
- **Civic Zone** consists of Civic Buildings and/or Civic Spaces appropriate to their Transect Zones.
- **Special District** consists of areas that by their function, disposition, or configuration cannot, or should not, conform to one or more of the six normative Transect Zones.

INTRODUCTION

Adjusting the Structure of the SmartCode

To create SmartCodes for different purposes, certain Articles may be discarded and the code reassembled.

- All codes will require inclusion of **Article 1 General To All Plans**, **Article 6 Standards and Tables** and **Article 7 Definitions of Terms**.
- If a Regional Scale Plan has already been prepared, or if the code will be used entirely for infill situations, **Article 2 Regional Scale Plans** may be eliminated.
- If a Community Scale Plan has already been prepared, or if there is no prospect of greenfield development, **Article 3 New Community Scale Plans** may be adjusted or eliminated. (Note: Article 4 depends on Article 3 for larger Infill parcels.)
- If an Infill Community Plan already has been prepared or if there is no prospect of infill development, **Article 4 Infill Community Scale Plans** may be eliminated.
- If and when all plans have been prepared, **Article 5 Building Scale Plans** becomes the de facto code for builders and architects. This article may be used by developers as guidelines for their private property owners association.
- SmartCodes for municipalities should include some Thoroughfare standards and large-site provisions even if Article 3 and/or Article 4 are not used. Portions of Section 3.7 and Article 4 may be incorporated into Article 5 or a new Article created for **Thoroughfare Standards**.
- In **Article 6**, tables may be individually dropped or modified as necessary.
- In **Article 7**, definitions that do not apply should be deleted, and any necessary new ones added.
- **Modules** and their associated definitions may be added as needed.

Responsibilities for Implementation

The SmartCode requires the preparation of plans that allocate the sectors, lay out the communities, and show lot and building design.

- **Article 2. Regional Scale Plans** shall be prepared by or on behalf of the Municipal Planning Department.
- **Article 3. New Community Scale Plans** shall be prepared on behalf of the land owner, the developer, or the Municipal Planning Department.
- **Article 4. Infill Community Scale Plans** shall be prepared by or on behalf of the Municipal Planning Department.
- **Article 5. Building Scale Plans** shall be prepared on behalf of the builder or the property owner.
- The Planning Office may include a Development and Design Center (DDC). A DDC may be assigned to advise on the use of the SmartCode and to aid in the design of the Communities and buildings based on it. See Appendix XIII.

Calibrating the SmartCode

The SmartCode is a model code to be calibrated for local conditions. Calibration refers to the entire process of customization, which may include incorporating Modules; deleting or adding articles, sections, tables, and definitions; entering the metrics from a local Synoptic Survey; adjusting legal language, and activating other documents by reference, such as pattern books or existing ordinances. The Annotations and the Appendix of this volume contain extensive advice for the calibration process.

Conditions of Use

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SMART CODE ANNOTATED

Cities have to move to a new system. They should look at the streets they like and the public spaces they like and then write the rules to get more of what they like and less of what they don't. Conventional zoning doesn't do that. It just gives a use and a density and then you hope for the best.

Peter Katz

ARTICLE 1. GENERAL TO ALL PLANS

- 1.1 AUTHORITY
- 1.2 APPLICABILITY
- 1.3 INTENT
- 1.4 PROCESS
- 1.5 WARRANTS AND VARIANCES
- 1.6 SUCCESSION

ARTICLE 2. REGIONAL SCALE PLANS

- 2.1 INSTRUCTIONS
- 2.2 SEQUENCE OF SECTOR DETERMINATION
- 2.3 (O-1) PRESERVED OPEN SECTOR
- 2.4 (O-2) RESERVED OPEN SECTOR
- 2.5 (G-1) RESTRICTED GROWTH SECTOR
- 2.6 (G-2) CONTROLLED GROWTH SECTOR
- 2.7 (G-3) INTENDED GROWTH SECTOR
- 2.8 (G-4) INFILL GROWTH SECTOR
- 2.9 (SD) SPECIAL DISTRICTS

ARTICLE 3. NEW COMMUNITY SCALE PLANS

- 3.1 INSTRUCTIONS
- 3.2 SEQUENCE OF COMMUNITY DESIGN
- 3.3 COMMUNITY UNIT TYPES
- 3.4 TRANSECT ZONES
- 3.5 CIVIC ZONES
- 3.6 SPECIAL DISTRICTS
- 3.7 THOROUGHFARE STANDARDS
- 3.8 DENSITY CALCULATIONS
- 3.9 SPECIAL REQUIREMENTS

ARTICLE 4. INFILL COMMUNITY SCALE PLANS

- 4.1 INSTRUCTIONS
- 4.2 COMMUNITY UNIT TYPES
- 4.3 TRANSECT ZONES
- 4.4 CIVIC ZONES
- 4.5 SPECIAL DISTRICTS
- 4.6 PRE-EXISTING CONDITIONS
- 4.7 SPECIAL REQUIREMENTS

ARTICLE 5. BUILDING SCALE PLANS

- 5.1 INSTRUCTIONS
- 5.2 PRE-EXISTING CONDITIONS
- 5.3 SPECIAL REQUIREMENTS
- 5.4 CIVIC ZONES
- 5.5 SPECIFIC TO T1 NATURAL ZONE
- 5.6 BUILDING DISPOSITION
- 5.7 BUILDING CONFIGURATION
- 5.8 BUILDING FUNCTION
- 5.9 PARKING AND DENSITY CALCULATIONS
- 5.10 PARKING LOCATION STANDARDS
- 5.11 LANDSCAPE STANDARDS
- 5.12 SIGNAGE STANDARDS

ARTICLE 6. STANDARDS AND TABLES

- TABLE 1 TRANSECT ZONE DESCRIPTIONS
- TABLE 2 SECTOR/COMMUNITY ALLOCATION
- TABLE 3A VEHICULAR LANE DIMENSIONS
- TABLE 3B VEHICULAR LANE & PARKING ASSEMBLIES
- TABLE 4A PUBLIC FRONTAGES - GENERAL
- TABLE 4B PUBLIC FRONTAGES - SPECIFIC
- TABLE 4C THOROUGHFARE ASSEMBLIES
- TABLE 5 PUBLIC LIGHTING
- TABLE 6 PUBLIC PLANTING
- TABLE 7 PRIVATE FRONTAGES
- TABLE 8 BUILDING CONFIGURATION
- TABLE 9 BUILDING DISPOSITION
- TABLE 10 BUILDING FUNCTION & PARKING
- TABLE 11 PARKING CALCULATIONS
- TABLE 12 SPECIFIC FUNCTION & USE
- TABLE 13 CIVIC SPACE
- TABLE 14 SMARTCODE SUMMARY
- TABLE 15A FORM-BASED CODE GRAPHICS - T3
- TABLE 15B FORM-BASED CODE GRAPHICS - T4
- TABLE 15C FORM-BASED CODE GRAPHICS - T5
- TABLE 15D FORM-BASED CODE GRAPHICS - T6
- TABLE 16 SPECIAL DISTRICT STANDARDS
- TABLE 17 DEFINITIONS ILLUSTRATED

ARTICLE 7. DEFINITIONS OF TERMS

SMARTCODE

Municipality

Reading the Annotated SmartCode

The SmartCode v9.0 appears in its entirety on the right side of each spread and the annotations appear on the left. Article and Section headings are aligned across each spread. Subsections are not necessarily aligned and the notes for them may be on the next or previous page. Not all Sections of the SmartCode have notes.

The official text of the SmartCode itself appears in a **sans serif font like this**. The commentary appears in a **serif font like this**. The headings for the annotations are in **red**. Code text in **green** indicates items that should be considered for calibration.

The annotations on the left hand pages are explanatory and advisory only. They must not be used as part of a SmartCode to become municipal law. They are meant to assist planners, designers, attorneys, developers, and municipal officials with their local calibration of the SmartCode model template, and with the implementation process.

Several SmartCode modules appear before the Appendix and are also annotated. They list Article and Section numbers to indicate where they should be inserted if full integration is desired.

Words that are capitalized within the text are defined in Article 7 Definitions of Terms.

The introductory material and appendices summarize and clarify items useful when calibrating this model template. They may also be used as explanatory material during the public process of adoption. They are, like the annotations, advisory only. They are not normally part of an adopted SmartCode.

The best way to become familiar with the SmartCode is to read it through first (the right spreads only) and then read it through again using the annotations. Much of what you need to know is in the SmartCode itself, as it contains its own instructions.

SMARTCODE ANNOTATED

These annotations are advisory only. The SmartCode itself appears only on the right side of each spread.

1.1 AUTHORITY

This section establishes the legal basis for the SmartCode, as well as its relationship with a comprehensive, master, or general plan and any relevant state zoning and subdivision enabling statutes. The code is thereby synchronized with the existing governance by adjusting the language in green print.

It is important to research the statutes and case law regarding zoning and subdivision matters and to recite them as the basis of the code's statutory authority. In the absence of state zoning and subdivision enabling statutes, local governments do not have authority to regulate those matters. It may then be necessary to write local legislation enabling this SmartCode.

The SmartCode is a "unified code," and not just a zoning code. It is effectively an integrated multiplicity of codes for which multiple specific authorities may be necessary. For example, in some states, TDRs must be specifically authorized. In all this, it is important not to be overly conservative in melding authorities.

The constraints of enabling language need to be clearly understood. Localities in Dillon's Rule states have only the authority granted by the state. In other states, the locality can do anything not prohibited by law. In some states, compliance with comprehensive plans can be mandatory, but not in others. In some states, public referendum can trump the process, while in others only court challenge can change the outcome.

Because there is no such thing as a risk-free code, in trying to eliminate risk completely, an overly conservative attorney can gut the effectiveness of a SmartCode.

1.3 INTENT

This section establishes the intent and purpose of the SmartCode. A clearly written Intent section is important, as it may be used to resolve controversial issues that may not be fully spelled out in other sections of the code. This section serves as a reference for amendments and other such ongoing decisions. It is necessary for determining whether a deviation from the code requires a Warrant or a Variance (see Section 1.5). Intents are also used by courts in interpreting ordinances.

(continued)

ARTICLE 1

This Article may incorporate one or more SmartCode modules.

1.1.3 This section may be modified to reflect the language of the Comprehensive (General) Plan, if any.

1.2 APPLICABILITY

This section describes how the SmartCode is related to other existing codes and ordinances. It must be referenced in the Comprehensive (General) Plan, if any.

Because the SmartCode is a complete zoning and development code in and of itself, it could be adopted as the exclusive zoning and development code. It may also be adopted as a parallel code, with its use incentivized, so either the SmartCode or the conventional code may be chosen for a parcel large enough to qualify. A third possibility is a "floating zone" or "overlay zone" that could be attached to a particular parcel or parcels as the planning and mapping is done. (See Section 3.1.3 and Section 4.1.3.) If selected in any of the above scenarios, the SmartCode then replaces the existing codes and ordinances on the area planned and mapped according to the code, and its provisions become law. In any of these cases, modification of this Article should be considered carefully to assure that the intended relationship between any existing codes and ordinances and the SmartCode is clearly established.

Article 3, Article 4 and Article 5 are written such that they may be used for any of these scenarios without significant modification.

1.2.2 The effectiveness of this provision depends upon identifying the correct enabling legislation to establish precedence over other codes and ordinances.

1.2.4 Take note of this subsection about capitalized terms, as not all codes perform in this manner.

*Municipality***1.1 AUTHORITY**

- 1.1.1 The action of the *Municipality, State* in the adoption of this Code is authorized under the *Charter of the Municipality, Section X* and *Local and State Statutes, Section X*.
- 1.1.2 This Code was adopted as one of the instruments of implementation of the public purposes and objectives of the adopted *Municipal Comprehensive Plan*. This Code is declared to be in accord with the *Municipal Comprehensive Plan*, as required by the *Local Land Development Statutes*.
- 1.1.3 This Code was adopted to promote the health, safety and general welfare of the _____ of _____, *State* and its citizens, including protection of the environment, conservation of land, energy and natural resources, reduction in vehicular traffic congestion, more efficient use of public funds, health benefits of a pedestrian environment, historic preservation, education and recreation, reduction in sprawl development, and improvement of the built environment.
- 1.1.4 This Code was adopted and may be amended by vote of the *Planning Commission* and *Legislative Body*.

1.2 APPLICABILITY

- 1.2.1 Provisions of this Code are activated by “shall” when required; “should” when recommended; and “may” when optional.
- 1.2.2 The provisions of this Code, when in conflict, shall take precedence over those of other codes, ordinances, regulations and standards except the *Local Health and Safety Codes*.
- 1.2.3 The existing _____ of _____, *State Zoning Ordinances* and the _____ of _____, *State Subdivision Ordinances* (the “Existing Local Codes”) shall continue to be applicable to issues not covered by this Code except where the Existing Local Codes would be in conflict with Section 1.3 Intent.
- 1.2.4 Capitalized terms used throughout this Code may be defined in Article 7 Definitions of Terms. Article 7 contains regulatory language that is integral to this Code. Those terms not defined in Article 7 shall be accorded their commonly accepted meanings. In the event of conflicts between these definitions and those of the Existing Local Codes, those of this Code shall take precedence.
- 1.2.5 The metrics of Article 6 Standards and Tables are an integral part of this Code. However, the diagrams and illustrations that accompany them should be considered guidelines, with the exception of those on Table 15 Form-Based Code Graphics, which are also legally binding.
- 1.2.6 Where in conflict, numerical metrics shall take precedence over graphic metrics.

1.3 INTENT

The intent and purpose of this Code is to enable, encourage and qualify the implementation of the following policies:

1.3.1 THE REGION

- a. That the region *should* retain its natural infrastructure and visual character derived from topography, woodlands, farmlands, riparian corridors and coastlines.
- b. That growth strategies *should* encourage Infill and redevelopment in parity with New Communities.
- c. That development contiguous to urban areas *should* be structured in the pattern of Infill TND or Infill RCD and be integrated with the existing urban pattern.

SMARTCODE ANNOTATED

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(cont.1.3 Intent)

This section may also provide an agenda for topics to be discussed during the public process of implementing the SmartCode. Once these intentions have been determined, the particulars of the code will flow from them, and it may not be necessary to discuss them in detail.

The policies listed in this section are derived from the Charter of the New Urbanism, with modifications. They may be replaced with the provisions of a local vision plan if one exists. It may also be possible to use this section with only minor modifications, as the provisions of recent vision plans have usually coincided with these policies.

- d. That development non-contiguous to urban areas **should** be organized in the pattern of CLD, TND, or RCD.
- e. That Affordable Housing **should** be distributed throughout the region to match job opportunities and to avoid concentrations of poverty.
- f. That transportation Corridors **should** be planned and reserved in coordination with land use.
- g. That green corridors **should** be used to define and connect the urbanized areas.
- h. That the region **should** include a framework of transit, pedestrian, and bicycle systems that provide alternatives to the automobile.

1.3.2 THE COMMUNITY

- a. That neighborhoods and Regional Centers **should** be compact, pedestrian-oriented and Mixed Use.
- b. That neighborhoods and Regional Centers **should** be the preferred pattern of development and that Districts specializing in a single use should be the exception.
- c. That ordinary activities of daily living **should** occur within walking distance of most dwellings, allowing independence to those who do not drive.
- d. That interconnected networks of Thoroughfares **should** be designed to disperse traffic and reduce the length of automobile trips.
- e. That within neighborhoods, a range of housing types and price levels **should** be provided to accommodate diverse ages and incomes.
- f. That appropriate building Densities and land uses **should** be provided within walking distance of transit stops.
- g. That Civic, institutional, and Commercial activity **should** be embedded in downtowns, not isolated in remote single-use complexes.
- h. That schools **should** be sized and located to enable children to walk or bicycle to them.
- i. That a range of Open Space including Parks, Squares, and playgrounds **should** be distributed within neighborhoods and downtowns.

1.3.3 THE BLOCK AND THE BUILDING

- a. That buildings and landscaping **should** contribute to the physical definition of Thoroughfares as Civic places.
- b. That development **should** adequately accommodate automobiles while respecting the pedestrian and the spatial form of public areas.
- c. That the design of streets and buildings **should** reinforce safe environments, but not at the expense of accessibility.
- d. That architecture and landscape design **should** grow from local climate, topography, history, and building practice.
- e. That buildings **should** provide their inhabitants with a clear sense of geography and climate through energy efficient methods.
- f. That Civic Buildings and public gathering places **should** be provided as locations that reinforce community identity and support self-government.
- g. That Civic Buildings **should** be distinctive and appropriate to a role more important than the other buildings that constitute the fabric of the city.
- h. That the preservation and renewal of historic buildings **should** be facilitated, to affirm the continuity and evolution of society.
- i. That the harmonious and orderly evolution of urban areas **should** be secured through form-based codes.

1.4 PROCESS

1.4.1 The CRC simplifies and expedites permitting by providing the owner with a single interface. An ideal composition for the CRC is proposed here. It should be adjusted depending on local circumstances.

1.4.2 It is crucial that SmartCode projects are not subjected to a more onerous permitting process, (i.e., a higher level of public scrutiny), than conventional sprawl projects that are processed by right. This statement levels the playing field as it determines that a proposed SmartCode plan that meets the code criteria can also be adopted by right. If this will not be the case, then the statement should be removed.

These provisions and those of Section 1.5 smooth out the permitting of projects. They also free the planning board and the legislative body for higher purposes than the granting of minor Variances. It is not essential to the SmartCode that the permitting process be faster or equal to the conventional one. However, it is very attractive to developers that applications for projects that comply with the SmartCode might be approved in an administrative process rather than by full public hearing. But the legality of this arrangement is dependent on state law.

1.5 WARRANTS AND VARIANCES

The determination of whether a request requires a Warrant or a Variance is based on the Intent Section. The Warrant level spares elected officials the aggravation of discussing minor matters.

1.5.1 A Warrant should not be referred to as a Variance. True Variances are typically regulated by state law, which dictates who can grant them, under what circumstances, using what standards. These standards often include that there be a hardship that is not self-imposed and that the circumstance being changed is not commonly found.

1.5.2 Administrative requests (here “Warrants”) must be within delegated authority, typically with clear parameters of such authority. There is substantial precedent for such Warrants with the “opinions” of a Zoning Director.

1.5.5 The five items listed here are important ones that tend to be discarded by many developers wishing to execute only the superficial characteristics of Smart Growth. Variances granted against these standards tend to seriously subvert the desired outcome of compact, walkable and diverse communities. Developers unwilling to comply with these provisions should use the existing local code and not exercise the SmartCode option. To compromise on these issues will

(continued)

1.3.4 THE TRANSECT

- a. That Communities should provide meaningful choices in living arrangements as manifested by distinct physical environments.
- b. That the Transect Zone descriptions on Table 1 shall constitute the Intent of this Code with regard to the general character of each of these environments.

1.4 PROCESS

- 1.4.1 Municipality hereby creates a Consolidated Review Committee ("CRC") comprised of a member from each regulatory agency having jurisdiction over the permitting of a project, a representative of the Development and Design Center, and the town architect, to process administratively applications and plans for proposed projects.
- 1.4.2 The geographic locations of the Sectors and the standards for the Transect Zones shall be determined as set forth in Article 2, Article 3, Article 4, and Article 5 through a process of public consultation with approval by the Legislative Body. Once these determinations have been incorporated into this Code and its associated plans, then projects that require no Variances or Warrants, or only Warrants, shall be processed administratively without further recourse to public consultation.
- 1.4.3 An owner may appeal a decision of the CRC to the Board of Zoning Adjustment and may appeal a decision of the Board of Zoning Adjustment to the Legislative Body.
- 1.4.4 Should a violation of an approved Regulating Plan occur during construction, or should any construction, site work, or development be commenced without an approved Regulating Plan or Building Scale Plan, the Board of Zoning Adjustment has the right to require the owner to stop, remove, and/or mitigate the violation, or to secure a Variance to cover the violation.

1.5 WARRANTS AND VARIANCES

- 1.5.1 There shall be two types of deviation from the requirements of this Code: Warrants and Variances. Whether a deviation requires a Warrant or Variance shall be determined by the CRC.
- 1.5.2 A Warrant is a ruling that would permit a practice that is not consistent with a specific provision of this Code but is justified by the provisions of Section 1.3 Intent. The CRC shall have the authority to approve or disapprove administratively a request for a Warrant pursuant to regulations established by the CRC.
- 1.5.3 A Variance is any ruling on a deviation other than a Warrant. Variances shall be granted only in accordance with _____ Statutes, _____, as amended.
- 1.5.4 The request for a Warrant or Variance shall not subject the entire application to public hearing, but only that portion necessary to rule on the specific issue requiring the relief.
- 1.5.5 The following standards and requirements shall not be available for Warrants or Variances:
 - a. The maximum dimensions of traffic lanes. (See Table 3a.)
 - b. The required provision of Rear Alleys and Rear Lanes.
 - c. The minimum Base Residential Densities. (See Table 14b.)
 - d. The permission to build Accessory Buildings.
 - e. The minimum requirements for parking. (See Table 10.)

SMARTCODE ANNOTATED

1.6 SUCCESSION

1.6.1 This section requires that within a designated period after approval of a Regulating Plan, the Transect Zone assignments be systematically reconsidered. Instead of hundreds of “spot zonings,” which result in inconsistent standards for all properties, owners are asked to wait for a periodic, comprehensive zone-wide re-evaluation. Another time period (besides twenty years) is an option, should this section be included.

Alternate wording:

Twenty years after the approval of a Regulating Plan, each Transect Zone, except the T1 Natural Zones and T2 Rural Zones, shall be considered for rezoning to the successional (next higher) Transect Zone through public hearing by the [Legislative Body](#).

These annotations are advisory only. The SmartCode itself appears only on the right side of each spread.

(cont.1.5 Warrants and Variances)

ultimately subvert the intentions and good name of Smart Growth, and result in disappointing subdivisions with few of the benefits resulting from these provisions.

ARTICLE 1. SMARTCODE MODULES

These Modules are available in this volume, and in electronic form at www.SmartCodeCentral.com.

The desired Modules can be integrated into the base code text during calibration, or they may be adopted as addenda to the SmartCode and placed at the end of the document. The integrated method will result in a code that is easier to use. The Modules are numbered for insertion in the correct Articles.

1.6 SUCCESSION

- 1.6.1 Twenty years after the approval of a Regulating Plan, each Transect Zone, except the T1 Natural and T2 Rural Zones, shall be automatically rezoned to the successional (next higher) Transect Zone, unless denied in public hearing by the Legislative Body.

ARTICLE 1. SMARTCODE MODULES

- 1.7 FOR INCENTIVES
1.8 FOR AFFORDABLE HOUSING INCENTIVES
1.9 FOR HAZARD MITIGATION STANDARDS
1.10 FOR HAZARD MITIGATION STANDARDS

2.1 INSTRUCTIONS

This section introduces the requirements for Regional Plans, also referenced in some jurisdictions as Area, Sector or Comprehensive Plans. These propose a mapping system of two Open Sectors for the preservation of open space, and four Growth Sectors for various types of development. Article 2 also contains provisions for Special Districts for types of development that cannot conform to the standards of this code.

Regional planning that includes maps is especially important where municipalities contain greenfield lands. It would be less important if the entire scope of planning is clearly G-4 Infill Growth Sector. However, in the absence of a Regional Plan the SmartCode may be adopted to be available as a floating overlay zone, much like a conventional PUD or PD.

2.1.3 The SmartCode is organized primarily by scales of Community Unit types. This subsection provides a succinct outline of the relationship among Sectors, Communities, Transect Zones and buildings. This is illustrated in the “Outline of the Code” table in the Introduction of this volume.

2.3 (O-1) PRESERVED OPEN SECTOR

The Preserved Open Sector is one of two Open Sectors. (See Section 2.4.) There is no development permitted by right in either of them. This sector includes, and maps, areas that have already been protected.

2.2 SEQUENCE OF SECTOR DETERMINATION

For more on the protocol of assigning Growth Sectors, see Appendix II.

2.2.5 This provision allows a permit process under the jurisdiction’s existing zoning ordinance as a parallel option. If the SmartCode is adopted as the exclusive zoning ordinance, this section should be deleted.

2.2.6 When allocating the Special Districts, consider existing conditions that should not conform to normative Transect Zones, as well as projected designs that are justified in not conforming. College campuses, refineries, industrial areas, hospital complexes, airports, and some entertainment districts like the San Antonio Riverwalk, are examples of justified districts. Most single-use suburban zoning (housing subdivisions, office parks, apartment clusters, shopping centers and shopping malls) are unjustified districts. Such unjustified districts should be evaluated for Infill development so that they may gradually evolve into normative Transect Zones, if possible.

Special Districts may be addressed by this Code at both the regional scale and at the community scale or both. Generally, larger Special Districts, like airports, should be mapped at the regional scale.

2.2.7 Rather than increase the burden on government, and to incentivize its use, the TDR system should be carried out by private-sector realtors for market-rate fees.

(continued)

*Municipality***2.1 INSTRUCTIONS**

- 2.1.1 This Article governs the preparation of Regional Scale Plans (“Regional Plans”) that allocate Sectors. For lands within *Municipality* that have been mapped pursuant to this Article, Sections 2.5 et seq. prescribe the Community Unit types permitted in each Growth Sector. Articles 3 and 4 regulate the standards of those Community Unit types.
- 2.1.2 Regional Plans shall integrate the largest practical geographic area, overlapping property lines as necessary and municipal boundaries if possible.
- 2.1.3 Regional Sectors are defined in Article 2 and are comprised of Open Space and growth areas. Growth areas are intended for the development of Community Units, defined in Article 3 and Article 4, which in turn are comprised of Transect Zones, defined by the elements appropriate to them in Article 5 and Article 6.
- 2.1.4 Regional Plans shall be prepared by the *Planning Office* and/or consultants under its supervision. The process shall involve citizen participation and the approval of the *Legislative Body*.

2.2 SEQUENCE OF SECTOR DETERMINATION

- Determination of Sector designations shall be made in the following sequence:
- 2.2.1 The areas to be designated Preserved Open Sector (O-1) shall be mapped using the criteria listed in Section 2.3. The outline of this Sector is effectively the Rural Boundary Line, which is permanent.
- 2.2.2 The areas to be designated Reserved Open Sector (O-2) shall be mapped using the criteria listed under Section 2.4. The outline of this Sector is effectively the Urban Boundary Line which is to be adjusted by the ongoing permitting of New Community Plans or Infill Community Plans in accordance with this Code.
- 2.2.3 The areas to be designated Infill Growth Sectors (G-4) shall be mapped as described in Section 2.8. These areas may be redeveloped according to Article 4 of this Code.
- 2.2.4 All remaining areas shall be available for new development pursuant to New Community Plans submitted and approved in accordance with Article 3 of this Code. These areas shall be assigned to the Restricted Growth Sector, the Controlled Growth Sector, or the Intended Growth Sector using the criteria listed in this Article. Within these Sectors, the Community Unit types of CLD (Clustered Land Development), TND (Traditional Neighborhood Development), and RCD (Regional Center Development), shall be permitted to the extent set forth in Table 2.
- 2.2.5 *Within the four Growth Sectors, development according to the Existing Local Codes remains as an option.*
- 2.2.6 Those areas that cannot or should not conform to one of the Community Unit types shall be allocated to Special Districts. See Section 2.9.
- 2.2.7 *A system for the gradual Transfer of Development Rights (TDR) shall be established and administered for the purpose of transferring development rights from the Reserved Open Sector (O-2) to the Growth Sectors as set forth in Section 2.4.3.*

2.3 (O-1) PRESERVED OPEN SECTOR

- 2.3.1 The Preserved Open Sector shall consist of Open Space that is protected from development in perpetuity. The Preserved Open Sector includes areas under environmental protection by law or regulation, as well as land acquired for conservation through purchase, by easement, or by past Transfer of Development Rights.

(cont.2.3 Preserved Open Space)

Permanent protection of land has generally occurred through the variety of methods listed here. The municipality should consider what methods actually correspond to its situation and adjust the list accordingly.

2.3.3 This subsection should be clarified to focus on what is permitted to be built. Examples to consider are roadside rest areas, farmhouses, agricultural buildings, sand and gravel processing plants, or a country store.

2.4 (O-2) RESERVED OPEN SECTOR

Like the Preserve Sector, the Reserve Sector has no development envisioned, but in this case it is still possible as the land is not yet protected by any legally binding method. The O-2 Sector calls attention to land that is intrinsically valuable as open space, but is in jeopardy unless a TDR is enacted. The municipality should consider what sorts of areas should be included in this category and provide for them under paragraph 2.4.2.

2.4.3 The Transfer of Development Rights is an important tool to convert land from the O-2 Sector to the O-1 Sector in perpetuity. However, in many jurisdictions there is more capacity in the sending areas than growth pressures in the receiving areas for these development rights. In this case, the efficacy of this fundamental tool may be limited.

If TDRs are not used, it is usually necessary to recalibrate upward the Base Residential Density on Table 14b. The Density is set low in this model code to encourage the need for TDRs.

See the sample Regional Plan in Appendix III.

2.5 (G-1) RESTRICTED GROWTH SECTOR

The Restricted Sector is envisioned as rural, consisting of land that is not permanently protected, nor likely to be permanently protected, from development. New Community development here is disincentivized and minimized by the pattern of Clustered Land Development (CLD). See Table 2.

2.6 (G-2) CONTROLLED GROWTH SECTOR

2.6.2 In the Controlled Sector no lot or accumulation of lots may be developed except as one or more TNDs or CLDs—and these are By Right. This area could theoretically become a vast city of TNDs without any T-6 Zone, i.e., without enough density anywhere to support transit.

(continued)

- 2.3.2 The Preserved Open Sector shall consist of the aggregate of the following categories:
- a. surface waterbodies
 - b. protected wetlands
 - c. protected habitat
 - d. riparian Corridors
 - e. purchased Open Space
 - f. conservation easements
 - g. transportation Corridors
 - h. areas residual to Clustered Land Development (CLD)
- 2.3.3 Development and construction within the Preserved Open Sector and the specifications required to do so shall be determined on an individual project basis by public hearing of the Legislative Body.
- 2.4 (O-2) RESERVED OPEN SECTOR**
- 2.4.1 The Reserved Open Sector shall consist of Open Space that should be, but is not yet, protected from development.
- 2.4.2 The Reserved Open Sector shall consist of the aggregate of the following categories:
- a. flood plain, including Special Flood Hazard Areas
 - b. steep slopes
 - c. Open Space to be acquired
 - d. Corridors to be acquired
 - e. buffers to be acquired
 - f. legacy woodland
 - g. legacy farmland
 - h. legacy viewsheds
- 2.4.3 The Reserved Open Sector is a Transfer of Development Rights (TDR) sending area, for the gradual sale of rights for development in the Controlled Growth Sector and the Intended Growth Sector. An owner who has purchased such development rights may exceed the allocated Densities of New Communities as set forth in Section 3.8 and Table 14b. Areas from where development rights have been transferred shall be designated Preserved Open Sector. The Planning Office shall maintain a record of such transfers, updating the regional map accordingly.
- 2.4.4 (For HAZARD MITIGATION STANDARDS)
- 2.5 (G-1) RESTRICTED GROWTH SECTOR**
- 2.5.1 The Restricted Growth Sector shall be assigned to areas that have value as Open Space but nevertheless are subject to development, either because the zoning has already been granted or because there is no legally defensible reason, in the long term, to deny it.
- 2.5.2 Within the Restricted Growth Sector, Clustered Land Development (CLD) shall be permitted By Right.
- 2.6 (G-2) CONTROLLED GROWTH SECTOR**
- 2.6.1 The Controlled Growth Sector shall be assigned to those locations that can support Mixed Use by virtue of proximity to an existing or planned Thoroughfare.
- 2.6.2 Within the Controlled Growth Sector, CLD and Traditional Neighborhood Development (TND) shall be permitted By Right.
- 2.6.3 Any TND on an existing or projected rail or Bus Rapid Transit (BRT) network may

SMARTCODE ANNOTATED

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(cont.2.6 (G-2) Controlled Growth Sector)

Therefore planners, on the Regional Map, may want to limit the uninterrupted extent of Controlled Growth Sectors or, in the absence of such mapping, write a provision requiring an RCD or TOD (with their higher density) for every certain number of TNDs. See Sections 3.3.3 and 3.3.4.

2.8 (G-4) INFILL GROWTH SECTOR

2.8.1 The Infill Sector may consist of existing traditional urbanism and/or conventional suburban development. Both are subject to infill or redevelopment according to Article 4. Such areas may include car-dependent residential developments; greyfield sites such as former shopping malls, office parks, or military bases; industrial brownfield sites, and historic urban areas.

ARTICLE 2. SMARTCODE MODULES

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The desired Modules can be integrated into the base code text during calibration, or they may be adopted as addenda to the SmartCode and placed at the end of the document. The integrated method will result in a code that is easier to use. The Modules are numbered for insertion in the correct Articles.

2.9 (SD) SPECIAL DISTRICTS

Some areas or uses may be unable to conform to the requirements of any of the six Sectors. These should be assigned Special District designations on a Regional Plan, and each may be coded in detail on Table 16. Conditions would be determined in a public hearing, as would be done for a Planned Unit Development (PUD). If provisions are not written for them in Table 16, the Existing Local Codes shall pertain.

Note that the SmartCode covers Special Districts at both the Regional scale and the Community scale.

See the Annotations at 2.2.6 for more discussion.

be redesignated in whole or in part as TOD and permitted the higher Density represented by the Effective Parking allowance in Section 5.9.2d. The use of a TOD overlay requires approval by Variance.

2.7 (G-3) INTENDED GROWTH SECTOR

2.7.1 The Intended Growth Sector shall be assigned to those locations that can support substantial Mixed Use by virtue of proximity to an existing or planned regional Thoroughfare and/or transit.

2.7.2 Within the Intended Growth Sector, Communities in the pattern of Regional Center Developments (RCD), as well as TNDs, shall be permitted By Right, .

2.7.3 Any TND or RCD on an existing or projected rail or Bus Rapid Transit (BRT) network may be redesignated in whole or in part as TOD and permitted the higher Density represented by the Effective Parking allowance in Section 5.9.2d. The use of a TOD overlay requires approval by Variance.

2.8 (G-4) INFILL GROWTH SECTOR

2.8.1 The Infill Growth Sector shall be assigned to areas already developed, having the potential to be modified, confirmed or completed in the pattern of Infill TNDs or Infill RCDs.

2.9 (SD) SPECIAL DISTRICTS

2.9.1 Special District designations shall be assigned to areas that, by their intrinsic size, Function, or Configuration, cannot conform to the requirements of a CLD, a TND, or an RCD as set forth in Article 3.

2.9.2 Conditions of development for Special Districts shall be determined in public hearing of the [Legislative Body](#) and recorded on Table 16. Alternatively, the provisions of the [Existing Local Codes](#) shall remain applicable to Special Districts.

ARTICLE 2. SMARTCODE MODULES

2.4 FOR HAZARD MITIGATION STANDARDS

3.1 INSTRUCTIONS

This Article may incorporate one or more SmartCode modules.

3.1.1 In jurisdictions where the SmartCode has been adopted as a parallel code (mapped) or as a “floating zone” (unmapped) and its use is therefore elective, the owner of a parcel may either proceed under Article 3 or use the old zoning ordinance. If the SmartCode is elected, the provisions of this Article must not be diluted, “cherry-picked”, or combined with extraneous standards, as the result is likely to be a disappointing hybrid. Hybrids have appeared frequently over the past decade as a result of piecemeal application of Smart Growth principles. They offer none of the benefits of Smart Growth, and sometimes even sell poorly.

An Article 3 New Community Plan may also be used by an owner within the Infill Growth Sector when minimum acreage requirements are met.

3.1.3 The Community Planning Area may be assigned the name of the community type, e.g., TND Planning Area or RCD Planning Area, to signal that any future development located there must conform to the standards for that Community Unit type.

3.1.4 Although a number of Incentives are presented in Module 1.7 one of the greatest incentives not listed as such is the as-of-right permitting that is intrinsic to the SmartCode. If the New Community Plan is of a type that is permitted by right in the Sector where the subject property is located, and complies with the provisions of the SmartCode, the Plan is eligible for administrative approval by the Consolidated Review Committee. That process expedites and simplifies plan review, because the public hearing process will already have been completed when the SmartCode was adopted by the Legislative Body. However, the legality of this arrangement is dependent on state law.

3.2 SEQUENCE OF COMMUNITY DESIGN

3.2.1 If existing development abuts the greenfield site, and a pedestrian shed overlaps into it, the existing fabric should be assessed for its contribution to the elements of its Transect Zone or Community Unit requirements. For the sake of connectivity with adjacent areas, owners should be encouraged to work concurrently to achieve complementary zones and complete neighborhoods. For the structuring of New Communities with pedestrian sheds, see Appendix VI and Appendix XI.

3.1 INSTRUCTIONS

- 3.1.1 Within the Growth Sectors as shown on the Regional Scale Plan (“Regional Plan”), the provisions of Article 3 and this Code in general shall be available By Right, upon request by the owner.
- 3.1.2 New Community Plans may be prepared in the absence of a Regional Plan or Comprehensive Plan by approval of the **Legislative Body**. New Community Plans may contain more than one Community Unit and/or more than one Community Unit type.
- 3.1.3 Once the CRC or **Legislative Body** approves a New Community Plan, the parcel shall become a **Community Planning Area** and shall be marked as such on the Zoning Map of **Municipality**. Within the **Community Planning Area**, this Code shall be the exclusive and mandatory zoning regulation, and its provisions shall be applied in their entirety.
- 3.1.4 **New Community Plans submitted in accordance with the provisions of this Code, for the appropriate Sector of a Regional Plan and requiring no Variances, shall be approved administratively by the CRC.**
- 3.1.5 New Community Plans may be prepared by an owner or by the Planning Office.
- 3.1.6 New Community Plans shall include a Regulating Plan consisting of one or more maps showing the following for each Community Unit in the plan area, in compliance with the standards described in this Article:
- a. Transect Zones
 - b. Civic Zones
 - c. Thoroughfare network
 - d. Special Districts, if any
 - e. Special Requirements, if any
 - f. numbers of Warrants or Variances, if any.
- 3.1.7 New Community Plans shall include one set of preliminary site plans for each Transect Zone, as provided by Table 15 and Section 5.1.3a.

3.2 SEQUENCE OF COMMUNITY DESIGN

- 3.2.1 The site shall be structured using one or several Pedestrian Sheds, which should be located according to existing conditions, such as traffic intersections, adjacent developments, and natural features. The site or any Community Unit within it may be smaller or larger than its Pedestrian Shed.
- 3.2.2 The Pedestrian Sheds may be adjusted to include land falling between or outside them, but the extent of each shall not exceed the acreage limit specified in Section 3.3 for the applicable Community Unit type. An Adjusted Pedestrian Shed becomes the boundary of a Community Unit.
- 3.2.3 Areas of Transect Zones (Section 3.4) shall be allocated within the boundaries of each Community Unit as appropriate to its type. See Section 3.3 and Table 14a.
- 3.2.4 Civic Zones shall be assigned according to Section 3.5.
- 3.2.5 Special Districts, if any, shall be assigned according to Section 3.6.
- 3.2.6 The Thoroughfare network shall be laid out according to Section 3.7.
- 3.2.7 Density shall be calculated according to Section 3.8.
- 3.2.8 Remnants of the site outside the Adjusted Pedestrian Shed(s) shall be assigned to Transect Zones or Civic Space by Warrant or Special District by Variance.

3.3 COMMUNITY UNIT TYPES

This section sets out the various specific requirements for the three basic types of Community Units permitted by right in the four Growth Sectors. These requirements include the sizes for each Community Unit and the appropriate pedestrian shed types. See Article 2 and Table 2 in the SmartCode, and “Outline of the Code” in the Introduction.

3.3.2 TRADITIONAL NEIGHBORHOOD DEVELOPMENT (TND)

3.3.2d TND may vary in size. If the site is larger than a Standard Pedestrian Shed, one TND may be adjoined by another; or a CLD (if in the G-2 Sector) or an RCD (if in the G-3 Sector). The region’s topography, thoroughfare connectivity, and market could all influence the selection of the Community Unit types for a large site.

3.3.3 REGIONAL CENTER DEVELOPMENT (RCD)

3.3.3d RCD may vary greatly in size. This provision gives the planner leeway to structure any site up to 640 acres as either one large RCD or as a smaller RCD adjoined by one or more TNDs. Even though the entire parcel would be within the Long Pedestrian Shed of the transit stop, the market would dictate whether TND, with its lower density and T-3 housing types, would be more suitable to fill out the parcel than the higher density T-zones of the RCD pattern.

3.4 TRANSECT ZONES

The same basic Transect Zones are used for both New and Infill Communities. The Planning Office or the designer retained by the owner should determine the placement of these zones, based on mapped pedestrian sheds. See Table 1 for the Transect Zones available for inclusion in a Community Plan, and the Appendix for procedures for
(continued)

3.3 COMMUNITY UNIT TYPES**3.3.1 CLUSTERED LAND DEVELOPMENT (CLD)**

- a. A Clustered Land Development (CLD) shall be permitted within the G-1 Restricted Growth Sector and the G-2 Controlled Growth Sector.
- b. A CLD shall be structured by one Standard Pedestrian Shed and shall consist of no fewer than 30 acres and no more than 80 acres.
- c. A CLD shall include Transect Zones as allocated on Table 2 and Table 14a. A minimum of 50% of the Community Unit shall be permanently allocated to a T1 Natural Zone and/or T2 Rural Zone.

3.3.2 TRADITIONAL NEIGHBORHOOD DEVELOPMENT (TND)

- a. A Traditional Neighborhood Development (TND) shall be permitted within the G-2 Controlled Growth Sector, the G-3 Intended Growth Sector, and the G-4 Infill Growth Sector.
- b. A TND within the G-2 Controlled Growth Sector and the G-3 Intended Growth Sector shall be structured by one Standard or Linear Pedestrian Shed and shall be no fewer than 80 acres and no more than 160 acres. See Article 4 for Infill TND acreage requirements in the G-4 Infill Growth Sector.
- c. A TND shall include Transect Zones as allocated on Table 2 and Table 14a.
- d. Larger sites shall be designed and developed as multiple Communities, each subject to the individual Transect Zone requirements for its type as allocated on Table 2 and Table 14a. The simultaneous planning of adjacent parcels is encouraged.
- e. In the T-4 General Urban Zone, a minimum Residential mix of three Building Disposition types (none less than 20%) shall be required, selected from Table 9.

3.3.3 REGIONAL CENTER DEVELOPMENT (RCD)

- a. A Regional Center Development (RCD) shall be permitted within the G-3 Intended Growth Sector and the G-4 Infill Growth Sector.
- b. An RCD within the G-3 Intended Growth Sector shall be structured by one Long Pedestrian Shed or Linear Pedestrian Shed and shall consist of no fewer than 80 acres and no more than 640 acres. See Article 4 for Infill RCD acreage requirements in the G-4 Infill Growth Sector.
- c. An RCD shall include Transect Zones as allocated on Table 2 and Table 14a.
- d. For larger sites, an RCD may be adjoined without buffer by one or more TNDs, each subject to the individual Transect Zone requirements for TND as allocated on Table 2 and Table 14a. The simultaneous planning of adjacent parcels is encouraged.

3.3.4 TRANSIT ORIENTED DEVELOPMENT (TOD)

- a. Any TND or RCD on an existing or projected rail or Bus Rapid Transit (BRT) network may be redesignated in whole or in part as TOD and permitted the higher Density represented by the Effective Parking allowance in Section 5.9.2d.
- b. The use of a TOD overlay requires approval by Variance.

3.4 TRANSECT ZONES

3.4.1 Transect Zones shall be assigned and mapped on each New Community Plan according to the percentages allocated on Tables 2 and 14a.

3.4.2 A Transect Zone may include any of the elements indicated for its T-zone number throughout this Code, in accordance with Intent described in Table 1 and the metric standards summarized in Table 14.

(cont.3.4 Transect Zones)

local calibration of these T-zones. In general, their metrics and typological character should come from analysis of the “DNA” of local urbanism, though sometimes new communities are created based on metrics and typologies from other places.

3.5 CIVIC ZONES

Civic requirements proactively support the creation of a public realm, both buildings and public space. Table 13 codes the Civic Space. However, but the design of civic buildings is not coded, but rather negotiated with the Planning Office. The difference between Civic Space and a T-1 Natural Zone is that the former may be designed subject to community standards, while the latter is used to identify natural places that are not designed, such as forest residual to developed areas, or a beach. For example, Central Park in New York is a large Civic Space (a park) within T-5/T-6, which was designed. Designing “natural” areas within urbanism in this way enables communities to guide the usable character of their parks, no less than their greens, plazas, squares, playing fields, and playgrounds.

3.5.3c This provision allows flexibility between Civic Space and T-1 Natural or T-2 Rural Transect Zones. It is more likely that a community can maintain control of the character and extent of parks if they are subject to the design guidelines in Table 13, but it is also possible to decide to underdesign natural areas.

3.5.4b Typically the area of a school site will be set by state standards. Variance from the standards is sometimes up to a School Board, not the Legislative Body. Depending on the pupils’ ages, playing fields may be required to be adjacent to the school.

3.5.4d The code limits Civic Building sites to a percentage of each pedestrian shed to ensure a diversity of uses within each shed, to maintain walkability, and to better distribute Civic Building sites throughout the entire Community Plan.

3.5.4f Civic Buildings, such as a town hall, church, courthouse, post office, public library, meeting hall, school, or community center, need not be subject to the building design standards of Article 5, nor of the Architectural Module if included in the calibration. If the surrounding background fabric of urbanism creates orderly and harmonious streetscapes, the Civic Buildings may, and perhaps should, stand out in contrast.

3.5 CIVIC ZONES**3.5.1 GENERAL**

- a. Civic Zones dedicated for public use shall be required for each Community Unit and designated on the New Community Plan as Civic Space (CS) and Civic Building (CB).
- b. Civic Space Zones are public sites permanently dedicated to Open Space.
- c. Civic Building Zones are sites dedicated for buildings generally operated by not-for-profit organizations dedicated to culture, education, religion, government, transit and municipal parking, or for a use approved by the **Legislative Body**.
- d. A Civic Zone may be permitted by Warrant if it does not occupy more than 20% of a Pedestrian Shed, otherwise it is subject to the creation of a Special District. See Section 3.6.
- e. Parking for Civic Zones shall be determined by Warrant. Civic parking lots may remain unpaved if graded, compacted and landscaped.

3.5.2 CIVIC ZONES SPECIFIC TO T1 & T2 ZONES

- a. Civic Buildings and Civic Spaces within T1 Natural and T2 Rural Zones shall be permitted only by Variance.

3.5.3 CIVIC SPACE (CS) SPECIFIC TO T3-T6 ZONES

- a. Each Pedestrian Shed shall assign at least 5% of its Urbanized area to Civic Space.
- b. Civic Spaces shall be designed as generally described in Table 13, approved by Warrant, and distributed throughout Transect Zones as described in Table 14e.
- c. Those portions of the T1 Natural Zone that occur within a development parcel shall be part of the Civic Space allocation and **should** conform to the Civic Space types specified in Table 13a or 13b.
- d. Each Pedestrian Shed shall contain at least one Main Civic Space. The Main Civic Space shall be within 800 feet of the geographic center of each Pedestrian Shed, unless topographic conditions, pre-existing Thoroughfare alignments or other circumstances prevent such location. A Main Civic Space shall conform to one of the types specified in Table 13b, 13c, or 13d.
- e. Within 800 feet of every Lot in Residential use, a Civic Space designed and equipped as a playground shall be provided. A playground shall conform to Table 13e.
- f. Each Civic Space shall have a minimum of 50% of its perimeter enfronting a Thoroughfare, except for playgrounds.
- g. Civic Spaces may be permitted within Special Districts by Warrant.
- h. Parks may be permitted in Transect Zones T4, T5 and T6 by Warrant.

3.5.4 CIVIC BUILDINGS (CB) SPECIFIC TO T3-T6 ZONES

- a. The owner shall covenant to construct a Meeting Hall or a Third Place in proximity to the Main Civic Space of each Pedestrian Shed. Its corresponding Public Frontage shall be equipped with a shelter and bench for a transit stop.
- b. **One Civic Building Lot shall be reserved for an elementary school. Its area shall be one (1) acre for each increment of 100 dwelling units provided by the Community Plan, with a minimum of three (3) acres. The school site may be within any Transect Zone. Any playing fields should be outside the Pedestrian Shed.**
- c. One Civic Building Lot suitable for a childcare building shall be reserved within each Pedestrian Shed. The owner or a homeowners' association or other community council may organize, fund and construct an appropriate building as the need arises.

3.6 SPECIAL DISTRICTS

Some areas or structures cannot or should not conform to the normal requirements of any of Transect Zones. These must be assigned Special District designations, and may be negotiated and individually coded on Table 16. Note that the SmartCode covers Special Districts at both the Regional Scale and the Community Scale. Conditions for larger sites would be determined by negotiation or in public hearing, as would be done for a conventional Planned Unit Development (PUD).

See Annotations at 2.2.6 for more discussion.

3.7 THOROUGHFARE STANDARDS

Thoroughfares constitute the major part of the public realm of urbanism. The establishment of a pedestrian-friendly public realm by the joint design of Vehicular Lanes and Public Frontages is one of the highest priorities of New Urbanism, Smart Growth and the SmartCode itself.

This section provides general standards and standards specific to each Transect Zone. Pedestrian concerns increase in priority progressively in the more urban Transect Zones (T3-T6).

Some or all of Section 3.7 may be used in a Building Scale or Infill Scale calibration without using any of the rest of Article 3. It is usually wise to include at least the Public Frontages section, as even in a built-out neighborhood there is still a possibility of streetscape improvements.

See also the notes for Table 3A et seq. and Module 4C.

3.7.1 In each Transect Zone there may be several thoroughfare types allowed depending on the character and function of the buildings. Designations such as Residential Street and Commercial Street may change along a single thoroughfare as its character changes. In the more urban T-zones, curbs are required to protect the pedestrian and channel stormwater. Other than that, Table 14 does not specify that any one thoroughfare type is “required,” because there is a choice of types. The specific desired or existing Thoroughfare Assemblies (Table 4C) are marked by their key on the Regulating Plan.

3.7.1d Note that in many states the fire chief may assert independent authority over street width and turning radii under a state authorized fire code. It is advisable to work closely with fire chiefs before and during the public process to show that narrower streets can be safer streets, and that street networks are better than the dendritic system of cul-de-sacs and collectors for the timely movement of

(continued)

- d. Civic Building sites shall not occupy more than 20% of the area of each Pedestrian Shed.
- e. Civic Building sites should be located within or adjacent to a Civic Space, or at the axial termination of a significant Thoroughfare.
- f. Civic Buildings shall not be subject to the standards of Article 5. The particulars of their design shall be determined by Warrant.
- g. Civic Buildings may be permitted within Special Districts by Warrant.

3.6 SPECIAL DISTRICTS

- 3.6.1 Special District designations shall be assigned to areas that, by their intrinsic size, Function, or Configuration, cannot conform to the requirements of any Transect Zone or combination of zones. Conditions of development for Special Districts shall be determined in public hearing of the [Legislative Body](#) and recorded on Table 16.

3.7 THOROUGHFARE STANDARDS

3.7.1 GENERAL

- a. Thoroughfares are intended for use by vehicular and pedestrian traffic and to provide access to Lots and Open Spaces.
- b. Thoroughfares shall generally consist of vehicular lanes and Public Frontages.
- c. Thoroughfares shall be designed in context with the urban form and desired design speed of the Transect Zones through which they pass. The Public Frontages of Thoroughfares that pass from one Transect Zone to another shall be adjusted accordingly or, alternatively, the Transect Zone may follow the alignment of the Thoroughfare to the depth of one Lot, retaining a single Public Frontage throughout its trajectory.
- d. Within the most rural Zones (T1 and T2) pedestrian comfort shall be a secondary consideration of the Thoroughfare. Design conflict between vehicular and pedestrian generally shall be decided in favor of the vehicle. Within the more urban Transect Zones (T3 through T6) pedestrian comfort shall be a primary consideration of the Thoroughfare. Design conflict between vehicular and pedestrian movement generally shall be decided in favor of the pedestrian.
- e. The Thoroughfare network shall be designed to define Blocks not exceeding the size prescribed in Table 14c. The perimeter shall be measured as the sum of Lot Frontage Lines. Block perimeter at the edge of the development parcel shall be subject to approval by Warrant.
- f. All Thoroughfares shall terminate at other Thoroughfares, forming a network. Internal Thoroughfares shall connect wherever possible to those on adjacent sites. Cul-de-sacs shall be subject to approval by Warrant to accommodate specific site conditions only.
- g. Each Lot shall Enfront a vehicular Thoroughfare, except that 20% of the Lots within each Transect Zone may Enfront a Passage.
- h. [Thoroughfares along a designated B-Grid may be exempted by Warrant from one or more of the specified Public Frontage or Private Frontage requirements. See Table 7.](#)
- i. Standards for Paths and Bicycle Trails shall be approved by Warrant.
- j. The standards for Thoroughfares within Special Districts shall be determined by Variance.

These annotations are advisory only. The SmartCode itself appears only on the right side of each spread.

(cont.3.7 Thoroughfare Standards)

emergency vehicles.

3.7.1f The SmartCode encourages networks and discourages cul-de-sacs for two reasons, (1) to slow dangerous traffic and (2) to create multiple routes for moving through a neighborhood, which dramatically reduces traffic congestion and improves emergency access. The thoroughfare design of conventional suburban development, with its dendritic system of cul-de-sacs, collectors, and arterials, increases congestion as cars converge onto the very few collectors and arterials that connect.

3.7.2 VEHICULAR LANES

3.7.2b Consult with local bicycle advocates about cycling thoroughfares, especially Bicycle Lanes. The model SmartCode does not allow Bicycle Lanes in T5 or T6, just Bicycle Routes, preferably with sharrows marking them. Advocates may want to change this, but the reasoning behind the prohibition is that cyclists are usually safer riding along with traffic than close to parked cars where doors may suddenly open. Some cyclists dislike bike lanes in any zone because debris piles up in lanes where cars are not permitted to travel, i.e., the cars actually perform a sweeping function by blowing debris off to the side. Also, bicycle lanes may widen the overall width of the thoroughfare, increasing traffic speed.

3.7.3 PUBLIC FRONTAGES

The range of Public Frontages enabled by the SmartCode is greater than those allowed in conventional codes. Most Conventional Suburban Design allows only for the 25 foot front yard and the parking lot. This variety contributes to a more precise control of urban design and its intended pedestrian performance.

If a calibration does not include all these Transect Zones, this section may be simplified by deleting the zones that do not pertain to the community being coded. If that is done, renumbering is necessary.

There is a Natural Drainage Standards Module available, which may plug into either the Public Frontages section, or the Environmental Standards Module, if used.

3.7.3e The tree exception has been added to v9.0 because so many viable urban thoroughfares have no trees. The French Quarter of New Orleans has no street trees, though it does have gallery frontages to shade the pedestrian, and public squares with trees. On very narrow streets, which are desirable, trees can be a problem, blocking sidewalks and shop windows.

3.8 DENSITY CALCULATIONS

This section operates by referencing Table 14a and Table 14b (Summary Table), and Table 10 and Table 11 (Building Function and Parking Calculations). The code requires a minimum amount of dwelling units to be exchanged for other Functions (Lodging, Office, or Retail). The exchange is subject to approval as a Warrant, and cannot exceed in any event 50% of the total number of dwelling units permitted for the applicable Transect Zone. The density

(continued)

3.7.2 VEHICULAR LANES

- a. Thoroughfares may include vehicular lanes in a variety of widths for parked and for moving vehicles, including bicycles. The standards for vehicular lanes shall be as shown in Table 3A.
- b. A bicycle network consisting of Bicycle Trails, Bicycle Routes and Bicycle Lanes should be provided throughout as defined in Article 7 Definitions of Terms and allocated as specified in Table 14d. Bicycle Routes should be marked with Sharrows. The community bicycle network shall be connected to existing or proposed regional networks wherever possible.

3.7.3 PUBLIC FRONTAGES**a. GENERAL TO ALL ZONES T1, T2, T3, T4, T5, T6**

- i. The Public Frontage contributes to the character of the Transect Zone, and includes the types of Sidewalk, Curb, planter, bicycle facility, and street trees.
- ii. Public Frontages shall be designed as shown in Table 4A and Table 4B and allocated within Transect Zones as specified in Table 14d.
- iii. Within the Public Frontages, the prescribed types of Public Planting and Public Lighting shall be as shown in Table 4A, Table 4B, Table 5 and Table 6. The spacing may be adjusted by Warrant to accommodate specific site conditions.

b. SPECIFIC TO ZONES T1, T2, T3

- i. The Public Frontage shall include trees of various species, naturalistically clustered, as well as understory.
- ii. The introduced landscape shall consist primarily of native species requiring minimal irrigation, fertilization and maintenance. Lawn shall be permitted only by Warrant.

c. SPECIFIC TO ZONE T4, T5, T6

- i. The introduced landscape shall consist primarily of durable species tolerant of soil compaction.

d. SPECIFIC TO ZONE T4

- i. The Public Frontage shall include trees planted in a regularly-spaced Allee pattern of single or alternated species with shade canopies of a height that, at maturity, clears at least one Story.

e. SPECIFIC TO ZONES T5, T6

- i. The Public Frontage shall include trees planted in a regularly-spaced Allee pattern of single species with shade canopies of a height that, at maturity, clears at least one Story. At Retail Frontages, the spacing of the trees may be irregular, to avoid visually obscuring the shopfronts.
- ii. Streets with a Right-of-Way width of 40 feet or less shall be exempt from the tree requirement.

3.8 DENSITY CALCULATIONS

3.8.1 All areas of the New Community Plan site that are not part of the O-1 Preserved Sector shall be considered cumulatively the Net Site Area. The Net Site Area shall be allocated to the various Transect Zones according to the parameters specified in Table 14a.

3.8.2 Density shall be expressed in terms of housing units per acre as specified for the area of each Transect Zone by Table 14b. For purposes of Density calculation, the Transect Zones include the Thoroughfares but not land assigned to Civic Zones. **Ten percent (10%) shall be in the Affordable Housing range.**

(cont.3.8 Density Calculations)

calculations, which are inherently complex, operate at the community scale, while a further determination of local density occurs at the building scale. These calculations allow adjustment according to the site and market conditions. The sequence of calculations is as follows:

1. In the process of preparing the Community Plan, allocate an area of land to each Transect Zone as permitted by Table 14a. The table shows a range of ratios for each Community Unit type that, once the plan is complete, become fixed allocations appearing on the permitting documents, both graphically on the plan and also listed as the number of acres of each Transect Zone. See the several pages of the New Community Plan Submittal in Appendix VI for an example.
2. Using the acreage of these Transect Zones, including the Thoroughfares but not the Civic Zones, calculate from Table 14b the Base Residential density. Note that the “By Right” density is much lower than the “By TDR” density. This encourages the Transfer of Development Rights from lands that should remain open, in order to achieve the higher allowable density. If TDR is not available, the base densities should usually be calibrated to be higher than those appearing in this template. Many calibrators simply use the TDR densities as the Base Density. Be careful not to inadvertently downzone By Right density when translating from conventional zoning to this SmartCode, as this may be the cause of an otherwise avoidable political backlash.
3. Establish the requisite degree of mixed use by translating a ratio of the overall Base Residential Density to “Other Functions” as specified on Table 14b and Section 3.8.5. These densities become part of the permit, appearing as fixed numbers and allocated by Transect Zones on the Community Plan.
4. When the lots and buildings are subsequently being designed according to Article 5, the localized density is determined. See Section 5.9 Density and Parking Calculations.

3.9 SPECIAL REQUIREMENTS

These are tools of greater refinement. They must appear in specific locations on Regulating Plans. These are recommended but not essential to the operation of the SmartCode; they are not usually controversial and should not be difficult to include.

Examples of mapped Special Requirements are on the sixth map of Appendix VI (New Community Plan Submittal) and the second map of Appendix VII (Infill Regulating Plan).

3.9.1a In T-5 and T-6 zones, especially, the concept of the A-B Grid is important. In cities, all the thoroughfares cannot be excellent, because there have to be some frontages dedicated to accommodating vehicles like parking garage entrances, drive throughs and loading docks. If designers attempt to make all the thoroughfares excellent, they will fail as the result will inevitably be a uniformly mediocre public realm, as good pedestrian-friendly frontages will be interrupted by vehicle-oriented frontages. Therefore it is advisable to code the most important thoroughfares for excellence by designating them A-Grid, and designate some B-Grid to accommodate the non-contributing frontages.

The general principle is that, once a pedestrian enters the A-Grid, the experience should not be undermined at any time by the B-Grid. Therefore, at intersections an A street always trumps a B street, as corners should be strongly defined. A surface parking lot on a corner, for example, will disintegrate the urban spatial definition of an A street.

However, in greenfield design, the rear alleys and rear lanes of larger blocks should be used as much as possible to absorb negative B-Grid activity. There is no regulation of private frontages in alleys and lanes, because there are no pedestrian-oriented trajectories intended.

- 3.8.3 The Base Density of the Community Unit may be increased by the Transfer of Development Rights (TDR) up to the amount specified for each Zone by Table 14b. Fifteen percent (15%) of the increase in housing units by TDR shall be in the Affordable Housing range.
- 3.8.4 Within the percentage range shown on Table 14b for Other Functions, the housing units specified on Table 14b shall be exchanged at the following rates:
- For Lodging: 2 bedrooms for each unit of Net Site Area Density.
 - For Office or Retail: 1000 square feet for each unit of Net Site Area Density.
 - The number of units exchanged shall be subject to approval by Warrant.
- 3.8.5 The housing and other Functions for each Transect Zone shall be subject to further adjustment at the building scale as limited by Table 10, Table 11 and Section 5.9.

3.9 SPECIAL REQUIREMENTS

- 3.9.1 A New Community Plan may designate any of the following Special Requirements:
- A differentiation of the Thoroughfares as A-Grid and B-Grid. Buildings along the A-Grid shall be held to the highest standard of this Code in support of pedestrian activity. Buildings along the B-Grid may be more readily considered for Warrants allowing automobile-oriented standards. The Frontages assigned to the B-Grid shall not exceed 30% of the total length of Frontages within a Pedestrian Shed.
 - Designations for Mandatory and/or Recommended Retail Frontage requiring or advising that a building provide a Shopfront at Sidewalk level along the entire length of its Private Frontage. The Shopfront shall be no less than 70% glazed in clear glass and shaded by an awning overlapping the Sidewalk as generally illustrated in Table 7 and specified in Article 5. The first floor shall be confined to Retail use through the depth of the second Layer. (Table 17d)
 - Designations for Mandatory and/or Recommended Gallery Frontage, requiring or advising that a building provide a permanent cover over the Sidewalk, either cantilevered or supported by columns. The Gallery Frontage designation may be combined with a Retail Frontage designation..
 - Designations for Mandatory and/or Recommended Arcade Frontage, requiring or advising that a building overlap the Sidewalk such that the first floor Facade is a colonnade. The Arcade Frontage designation may be combined with a Retail Frontage designation.
 - A designation for Coordinated Frontage, requiring that the Public Frontage (Table 4A) and Private Frontage (Table 7) be coordinated as a single, coherent landscape and paving design.
 - Designations for Mandatory and/or Recommended Terminated Vista locations, requiring or advising that the building be provided with architectural articulation of a type and character that responds visually to the location, as approved by the CRC.
 - A designation for Cross Block Passages, requiring that a minimum 8-foot-wide pedestrian access be reserved between buildings.
 - A designation for Buildings of Value, requiring that such buildings and structures may be altered or demolished only in accordance with [Municipal Preservation Standards and Protocols](#).

ARTICLE 3. SMARTCODE MODULES

These Modules are available in the Appendix of this volume or in editable form at www.SmartCodeCentral.com. The Natural Drainage and Hazard Mitigation Modules have some Article 3 provisions and some that should be placed in other Articles. Modules can be integrated into the base Articles during calibration, or they may be adopted as addenda to the SmartCode and placed at the end of the document. They are numbered to be easily inserted into the appropriate Articles.

The Natural Drainage Standards may be incorporated into the Environmental Module for Article 3, or, if the Environmental Module is not used, then into the Public Frontage Standards that are already in the base SmartCode. Alternatively, they may be added to the base Code as an addendum. The numbers provided here are for incorporation into the Public Frontage Standards. Note that there is “should” language in green type which may be changed to the mandatory “shall.” If any of these sections is included, some Natural Drainage definitions must be added to Article 7.

3.7.3c This provision becomes letter c. The calibrator must re-letter the rest of the subsection if inserting it there.

ARTICLE 3. SMARTCODE MODULES

3.5.2 b. FOR HAZARD MITIGATION STANDARDS

3.7 FOR ENVIRONMENTAL STANDARDS

3.7.3 a. FOR NATURAL DRAINAGE STANDARDS

3.7.3 c. FOR NATURAL DRAINAGE STANDARDS

ARTICLE 4

Redevelopment, or Infill, of existing communities is an important component of planning policy. The character of many existing communities already reflects the Intent of the SmartCode, but may need protection or strengthening. Centralized infrastructure is already in place in existing communities. Public services do not have to be extended to more distant places, land is conserved, and neglected urban areas are reinvigorated.

See the Appendix of this Manual for more on Infill Plans.

4.2 COMMUNITY UNIT TYPES

These Infill Community Unit types correspond with those of the New Community Unit types of Article 3. Though the allocations of Transect Zones are left open on Table 2 pending analysis of existing conditions, the SmartCode's standards for T-zones are applicable to both types of development. This differs from the common practice, where suburban codes are at odds with traditional Infill conditions and cause a gradual suburbanization of the city.

4.1 INSTRUCTIONS

4.1.1 Infill Regulating Plans may be prepared by the Planning Office before or after the adoption of the SmartCode. Either way, the plan and code must go through the public process. If a municipality has adopted a Regulating Plan (T-zone map) for all or part of its jurisdiction along with the SmartCode, it becomes the exclusive and mandatory code for that area. Therefore a building and site plan that follows the Regulating Plan and Article 5 should be approved by the CRC without further need for the public process. See the notes for 4.1.4 and 3.1.4.

Without an existing Regulating plan, but with an approved SmartCode, there is a "floating zone" option (Section 4.1.6) whereby an owner may elect to use the SmartCode. The owner's site may be any size over 30 acres, but the owner and the Planning Office must together plan the entire pedestrian shed along with the site. A Regulating Plan at this scale ensures that the site will complement the surrounding urbanism, as well as contribute to its repair and completion. Any owner-initiated Regulating Plan approved in a public process is added to the map with any previously adopted plan areas, to become part of the municipal Regulating Plan.

There have been cases where the owner pays the cost in whole or in part for the preparation of the Regulating Plan even if the work is done by the Planning Office. It is to the owner's advantage that the future of the surrounding area is predictable; future residents in the market for traditional urbanism will usually expect a predictable outcome at the scale of the neighborhood.

A process whereby the Regulating Plan plan is prepared by the Planning Office concurrently with the adoption of the SmartCode is superior, but that possibility depends upon the political circumstance of the municipality, the resources available, and the urgency of the growth pressures.

4.1.3 This section may be eliminated if the SmartCode is adopted along with a completed Regulating Plan for the entire jurisdiction. However, if future annexation is possible, it should be retained.

4.1.4 This provision allows owners of any size parcel to develop under the SmartCode and an adopted Infill Regulating Plan. However, the municipality cannot allow small sites to develop under the SmartCode if on the same block there are buildings subject to the previous zoning code. That would constitute spot zoning resulting in hodge-podge development. But with a SmartCode Regulating Plan in place, the old code may no longer be used. In such a case, the Regulating Plan would already assign the projected

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4.1 INSTRUCTIONS

- 4.1.1 Within the G-4 Infill Growth Sector of the Regional Plan (Article 2), or other areas designated as Infill, the Planning Office shall prepare, or have prepared on its behalf, Infill Regulating Plans to guide further development. Infill Regulating Plans shall be prepared in a process of public consultation subject to approval by the **Legislative Body**.
- 4.1.2 Infill Regulating Plans shall regulate, at minimum, an area the size of the Pedestrian Shed commensurate with its Community Unit type as listed in Section 4.2. The **Planning Office** shall determine a Community Unit type based on existing conditions and intended evolution in the plan area.
- 4.1.3 Infill Regulating Plans shall consist of one or more maps showing the following:
- The outline(s) of the Pedestrian Shed(s) and the boundaries of the Community Unit(s)
 - Transect Zones and any Civic Zones within each Pedestrian Shed, assigned according to an analysis of existing conditions and future needs
 - a Thoroughfare network, existing or planned (Table 3A, Table 3B, Table 4A, Table 4B, and Table 4C)
 - any Special Districts (Section 4.5)
 - any Special Requirements (Section 4.7)
 - a record of any Warrants or Variances.
- 4.1.4 Within any area subject to an approved Infill Regulating Plan, this Code becomes the exclusive and mandatory regulation. Property owners within the plan area may submit Building Scale Plans under Article 5 in accordance with the provisions of this Code. **Building Scale Plans requiring no Variances shall be approved administratively by the CRC.**
- 4.1.5 The owner of a parcel, or abutting parcels, consisting of **10** acres or more of contiguous lots within an area subject to an Infill Regulating Plan may apply to prepare a Special Area Plan. In consultation with the Planning Office, a Special Area Plan may assign new Transect Zones, Civic Zones, Thoroughfares, Special Districts and/or Special Requirements as provided in this Code, with appropriate transitions to abutting areas. Special Area Plans may be approved by Warrant.
- 4.1.6 The owner of a parcel, or abutting parcels, consisting of **30** acres or more of contiguous lots, whether inside or outside an area already subject to an Infill Regulating Plan, may initiate the preparation of a New Community Plan. New Community Plans for the G-4 Sector, or other areas designated as Infill by the Planning Office, shall regulate, at minimum, an area the size of the Pedestrian Shed commensurate with its Community Unit type as listed in Section 4.2, even if it overlaps adjacent parcels. Both the site and plan area **should** connect and blend with surrounding urbanism.

4.2 COMMUNITY UNIT TYPES

- 4.2.1 Infill Regulating Plans shall encompass one or more of the following Community Unit types. The allocation percentages of Table 14a do not apply.
- 4.2.2 **INFILL TND (TRADITIONAL NEIGHBORHOOD DEVELOPMENT)**
- An Infill TND **should** be assigned to neighborhood areas that are predominantly residential with one or more Mixed Use Corridors or centers. An Infill TND shall be mapped as at least one complete Standard Pedestrian Shed, which may be adjusted as a Network Pedestrian Shed, oriented around one or more existing or planned Common Destinations.

SMARTCODE ANNOTATED

(cont.4.2 Community Types)

While the patterns of the Transect Zones of New Communities tend to be relatively orderly, the assignment of Transect Zones to historic communities is more complex, sometimes resulting in a mosaic plan pattern.

A Network Pedestrian Shed may be used to adjust the regular sheds, particularly where topography is extreme, but it is not usually necessary. See Table 17g.

4.3 TRANSECT ZONES

The same Transect Zones can be used for both New and Infill Communities.

The Planning Office should determine the placement of these Zones, for approval by the Legislative Body. The first decision to be made in assigning a Transect Zone to an existing area is whether to simply protect the area as it is, or evolve it to the next successional Transect Zone. See Table 1, which may be modified to reflect local character or specify local place names.

The SmartCode must be locally calibrated for the parameters of each T-zone, and the existing urban structure understood so that it can be supported or corrected by the Regulating Plan. This is based on the environmental methodology of the Synoptic Survey, the Dissect and the Quadrat, equally useful to identify existing urban structure. See Appendix X for steps. The first six steps gather material for Table 14 metrics. Also see Eliot Allen's TransectMap index at www.crit.com.

4.4 CIVIC ZONES

The standards for Civic Zones for Infill are less detailed than those for Article 3 New Community Scale Plans, as there is more to be prescribed in greenfield development. Calibrators should check Article 3 for provisions they may want to add.

4.5 SPECIAL DISTRICTS

Some areas or structures cannot or should not conform to the normal requirements of any of Transect Zones. These must be assigned Special District designations, and may be coded on Table 16. If provisions are not written for them in the SmartCode, the Existing Local Codes would pertain.

(continued)

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(cont.4.1 Instructions)

standards even if existing conditions are not the desired future urbanism. Thus every site would be a part of the evolution of the projected neighborhood patterns.

Alternatively, the Planning Office may determine that an area is not suitable for evolution, so may assign it Special District and retain its old zoning, or may write new Special District provisions using Table 16.

It may seem that many sites are too large to allow owners to submit Building Scale Plans only, but keep in mind that the detailed Regulating Plan is already in place. Unless they apply for a Special Area Plan under Section 4.1.5 or a New Community Plan under Section 4.1.6, owners must follow the plan in place.

In some jurisdictions it will be politically impossible to allow administrative design review without public input, even if a project does not require any variances, so the text in green in this provision may need to be modified. In California, for example, it is common that the public insists on being involved with a project's Design Review (issues of architectural materials and style).

4.1.5 The purpose of a Special Area Plan is to allow parcels larger than ten acres to be better planned with provisions different from the Infill Regulating Plan, and to encourage the assembly of these larger parcels. In these cases the Intent of the code must be the standard for municipal approval.

4.1.6 This provision allows the use of Article 3 to design communities in either mapped or unmapped areas. Such New Community Plans are subject to the public process and be approved by vote of the Legislative Body. An owner-initiated Regulating Plan must include the area of a complete pedestrian shed, even if it is larger than the owned site. Within this larger area the SmartCode becomes the exclusive and mandatory zoning code. Thereafter, any property owner within that Regulating Plan area may proceed to develop under the SmartCode by right. Obviously the adoption of such a plan will require convening the landowners in a joint planning process. While this requirement may be a disincentive for some developers, it will weed out those who are not interested in contextual long-range planning. As suggested in the note for 4.1.1, property owners who are committed to this type of planning will benefit from the fact that the neighboring property would also be regulated by a SmartCode.

- b. The edges of an Infill TND should blend into adjacent neighborhoods and/or a downtown without buffers.

4.2.3 INFILL RCD (REGIONAL CENTER DEVELOPMENT)

- a. An Infill RCD **should** be assigned to downtown areas that include significant Office and Retail uses as well as government and other Civic institutions of regional importance. An Infill RCD shall be mapped as at least one complete Long or Linear Pedestrian Shed, which may be adjusted as a Network Pedestrian Shed, oriented around an important Mixed Use Corridor or center.
- b. The edges of an Infill RCD should blend into adjacent neighborhoods without buffers.

4.2.4 INFILL TOD (TRANSIT ORIENTED DEVELOPMENT)

- a. Any Infill TND or Infill RCD on an existing or projected rail or Bus Rapid Transit (BRT) network may be redesignated in whole or in part as TOD and permitted the higher Density represented by the Effective Parking allowance in Section 5.9.2d.
- b. The use of a TOD overlay shall be approved by Variance.

4.3 TRANSECT ZONES

- 4.3.1 Transect Zone standards for Infill Regulating Plans should be calibrated by means of a survey of exemplary existing and intended conditions, as identified in a process of public consultation and subject to the approval of the **Legislative Body**. Metrics shall be recorded on Table 14 and Table 15.

- 4.3.2 A Transect Zone shall include elements indicated by Article 3, Article 5, and Article 6.

4.4 CIVIC ZONES

4.4.1 GENERAL

- a. Infill Plans should designate Civic Space Zones (CS) and Civic Building Zones (CB).
- b. A Civic Zone may be permitted by Warrant if it does not occupy more than 20% of a Pedestrian Shed, otherwise it is subject to the creation of a Special District. See Section 4.5.
- c. Parking provisions for Civic Zones shall be determined by Warrant.

4.4.2 CIVIC SPACE ZONES (CS)

- a. Civic Spaces shall be generally designed as described in Table 13, their type determined by the surrounding or adjacent Transect Zone in a process of public consultation subject to the approval of the **Legislative Body**.

4.4.3 CIVIC BUILDING ZONES (CB)

- a. Civic Buildings shall be permitted by Variance in any Transect Zone or by Warrant on Civic Zones reserved in the Infill Regulating Plan.
- b. Civic Buildings shall not be subject to the Requirements of Article 5. The particulars of their design shall be determined by Warrant.

4.5 SPECIAL DISTRICTS

- 4.5.1 Areas that, by their intrinsic size, Function, or Configuration, cannot conform to the requirements of any Transect Zone or combination of zones shall be designated as Special Districts by the Planning Office in the process of preparing an Infill Plan. Conditions of development for Special Districts shall be determined in public hearing of the Legislative Body and recorded on Table 16.

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(cont.4.5 Special Districts)

Note that the SmartCode covers Special Districts at both the Regional Scale and the Community Scale. Conditions must be determined in a public hearing, as would be done for a Planned Unit Development (PUD).

See Annotations at 2.2.6 for more discussion.

4.7 SPECIAL REQUIREMENTS

These are tools of greater refinement. They must appear in specific locations on Regulating Plans. See the Appendix for an example. These are recommended but not essential to an Infill plan; however, they are not usually controversial, so should not be difficult to include.

A sample Infill Regulating Plan for Sarasota is provided in Appendix VII. The Special Requirements are shown on the second map.

4.7.1a. In T-5 and T-6 zones especially the concept of the A-B Grid is important. All the thoroughfares cannot be excellent, because there have to be some car- and truck-oriented frontages like parking garage entrances and loading docks. If designers attempt to make all the thoroughfares excellent, the result will be a mediocre public realm, as good pedestrian-friendly frontages will be interrupted by vehicle-oriented frontages. Therefore it is advisable to strengthen the good blocks by designating them A-Grid, and allow what are already B streets to accommodate the vehicles.

The general principle is that, once a pedestrian enters the A-Grid, the experience should not be undermined by the B-Grid. Therefore, at intersections an A street always trumps a B street, as corners should be strongly defined. A surface parking lot on a corner causes disintegration of

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4.6 PRE-EXISTING CONDITIONS

4.6.2 This Code makes an important concession regarding existing buildings to encourage their preservation and continued use rather than abandonment, demolition and replacement. This section may have to address separate sources of authority. Be sure to consult the ADA and NPDES as well as NEPA and the federal Historic Resources Laws (106). Some states have enacted statutes to facilitate the upgrade of buildings without expensive compliance but most have not, so this sort of provision may be difficult to implement. The New Jersey Rehabilitation Subcode is an excellent model.

4.6.3 and 4.6.5. The Secretary of the Interior's Standards for Rehabilitation read "New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment." The National Park Service website states: "Not recommended: Duplicating the exact form, material, style, and detailing of the historic building in the new addition so that the new work appears to be part of the historic building." Therefore it may be necessary to interpret any "architectural harmony" language in an adopted ordinance while considering "differentiation" of the addition from the historic property, per the Interior standards. Check for this if the Architectural Standards Module or another set of architectural regulations are adopted along with the calibrated SmartCode, and check whether a locally-determined Building of Value should be regulated in a similar manner to the Interior standards.

The modifications subject to this provision may include the materials, window proportions, color range, mass/void ratio, and roof type and pitch.

4.6 PRE-EXISTING CONDITIONS

- 4.6.1 Existing buildings and appurtenances that do not conform to the provisions of this Code may continue in the same use and form until a Substantial Modification occurs or is requested, at which time the Consolidated Review Committee (CRC) shall determine the provisions of this Section that shall apply.
- 4.6.2 Existing buildings that have at any time received a certificate of occupancy shall not require upgrade to the current Building Code and when renovated may meet the standards of the code under which they were originally permitted.
- 4.6.3 The modification of existing buildings is permitted By Right if such changes result in greater conformance with the specifications of this Code.
- 4.6.4 Where buildings exist on adjacent Lots, the CRC may require that a proposed building match one or the other of the adjacent Setbacks and heights rather than the provisions of this Code.
- 4.6.5 Any addition to or modification of a Building of Value that has been designated as such by the Local Preservation Organization or to a building actually or potentially eligible for inclusion on a state, local or national historic register, shall be subject to approval by the Local Preservation Organization.
- 4.6.6 The restoration or rehabilitation of an existing building shall not require the provision of (a) parking in addition to that existing or (b) on-site stormwater retention/detention in addition to that existing. Existing parking requirements that exceed those for this Code may be reduced as provided by Tables 10 and 11.

4.7 SPECIAL REQUIREMENTS

- 4.7.1 An Infill Community Plan may designate any of the following Special Requirements:
- a. A differentiation of the Thoroughfares as A-Grid and B-Grid. Buildings along the A-Grid shall be held to the highest standard of this Code in support of pedestrian activity. Buildings along the B-Grid may be more readily considered for Warrants allowing automobile-oriented standards. The Frontages assigned to the B-Grid shall not exceed 30% of the total length of Frontages within a Pedestrian Shed.
 - b. Designations for Mandatory and/or Recommended Retail Frontage requiring or advising that a building provide a Shopfront at Sidewalk level along the entire length of its Private Frontage. The Shopfront shall be no less than 70% glazed in clear glass and shaded by an awning overlapping the Sidewalk as generally illustrated in Table 7 and specified in Article 5. The first floor shall be confined to Retail use through the depth of the second Layer. (Table 17d.)
 - c. Designations for Mandatory and/or Recommended Gallery Frontage, requiring or advising that a building provide a permanent cover over the Sidewalk, either cantilevered or supported by columns. The Gallery Frontage designation may be combined with a Retail Frontage designation.
 - d. Designations for Mandatory and/or Recommended Arcade Frontage, requiring or advising that a building overlap the Sidewalk such that the first floor Facade is a colonnade. The Arcade Frontage designation may be combined with a Retail Frontage designation.
 - e. A designation for Coordinated Frontage, requiring that the Public Frontage (Table 4A) and Private Frontage (Table 7) be coordinated as a single, coherent landscape and paving design.

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(cont.4.7 Special Requirements)

urban spatial definition and hurts the A street.

The allocation of A and B Grids is determined by an analysis of the urban conditions. This requires a Synoptic Survey (Appendix X) of the existing frontages. Frontages may be graded into three categories: Excellent, Acceptable, and Regrettable. An extrapolation of the mapping of these frontages determines the A-Grid (primary grid) and the B-Grid (secondary grid) for the Regulating Plan, as shown in Appendix VII.

However, existing rear alleys and rear lanes should be used as much as possible to absorb vehicle activity. There is no regulation of private frontages at all in alleys and lanes, because there are no frontages. In some urbanized areas, it may be advisable to plan for new alleys through existing blocks, if politically possible.

- f. Designations for Mandatory and/or Recommended Terminated Vista locations, requiring or advising that the building be provided with architectural articulation of a type and character that responds visually to the location, as approved by the CRC.
- g. A designation for Cross Block Passages, requiring that a minimum 8-foot-wide pedestrian access be reserved between buildings.
- h. A designation for Buildings of Value, requiring that such buildings and structures may be altered or demolished only in accordance with [Municipal Preservation Standards and Protocols](#).

ARTICLE 5

This Article may incorporate one or more SmartCode modules.

Article 5 has been consolidated especially for SmartCode v9.0, eliminating the redundancies in v8.0 caused by repeating the provisions for each T-zone. It is therefore substantially shorter and easier to edit and calibrate. It is organized by regulatory category first and by Transect Zone second. Calibrators and designers should prefer this arrangement, as it shows the subtle differences among the zones at a glance.

They may also want to use one or more of the four Form-Based Code Graphics that comprise Table 15A, Table 15C, and Table 15D. They contain the same metrics as Table 14, but are supported by graphics, and provide one page for each urban T-zone. When calibrating Article 5, T-zones that are not applicable (if any) should be deleted, the lettering for the subsections should be adjusted, and the non-applicable Table 15 pages should be deleted from the code.

It is important to ascertain that the calibrated metrics of Table 14 match the metrics and graphics of Table 15, although altering the graphics for minor adjustments may not be necessary as the numerical metrics trump the graphic.

5.1 INSTRUCTIONS

5.1.3 Submissions under Article 5 are separated into two stages, preliminary site & building approval (subsection 5.1.3a) and final approval (subsection 5.1.3b). This entire subsection should be removed if the existing permitting process is to remain intact, and 5.1.4 changed to 5.1.3. If any SmartCode modules are incorporated into Article 5, they should be listed under 5.1.3b. A list of the Article 5 Modules accompanying this volume appears here in green text.

5.2 PRE-EXISTING CONDITIONS

5.2.2 The Code makes an important concession regarding existing buildings to encourage their preservation and continued use rather than abandonment, demolition and replacement. This section may have to address separate sources of authority. Be sure to consult the ADA and NPDES as well as NEPA and the federal Historic Resources Laws (106). Some states have enacted statutes to facilitate the upgrade of buildings without expensive compliance but most have not, so this sort of provision may be difficult to implement. The New Jersey Rehabilitation Subcode is an excellent model.

5.2.3 and 5.25 The Secretary of the Interior's Standards for Rehabilitation read "New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment." The National Park Service website states: "Not recommended: Duplicating the exact form, material, style, and detailing of the historic building in

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5.1 INSTRUCTIONS

- 5.1.1 Lots and buildings located within a New Community Plan or Infill Community Plan governed by this Code and previously approved by the [Legislative Body](#) shall be subject to the requirements of this Article.
- 5.1.2 Owners and developers may have the design plans required under this Article prepared on their behalf. Such plans require administrative approval [by the CRC](#).
- 5.1.3 Building and site plans submitted under this Article shall show the following, in compliance with the standards described in this Article:
- a. For preliminary site and building approval:
 - Building Disposition
 - Building Configuration
 - Building Function
 - Parking Location Standards
 - b. For final approval, in addition to the above:
 - Landscape Standards
 - Signage Standards
 - Special Requirements, if any
 - [Hazard Mitigation Standards](#)
 - [Natural Drainage Standards](#)
 - [Architectural Standards](#)
 - [Lighting Standards](#)
 - [Sound Standards](#)
 - [Visitability Standards](#)
- 5.1.4 Special Districts that do not have provisions within this Code shall be governed by the standards of the pre-existing zoning.

5.2 PRE-EXISTING CONDITIONS

- 5.2.1 Existing buildings and appurtenances that do not conform to the provisions of this Code may continue in use as they are until a Substantial Modification is requested, at which time the CRC shall determine the provisions of this section that shall apply.
- 5.2.2 [Existing buildings that have at any time received a certificate of occupancy shall not require upgrade to the current Building Code and when renovated may meet the standards of the code under which they were originally permitted.](#)
- 5.2.3 The modification of existing buildings is permitted By Right if such changes result in greater conformance with the specifications of this Code.
- 5.2.4 Where buildings exist on adjacent Lots, the [CRC](#) may require that a proposed building match one or the other of the adjacent Setbacks and heights rather than the provisions of this Code.
- 5.2.5 Any addition to or modification of a Building of Value that has been designated as such by the [Local Preservation Organization](#), or to a building actually or potentially eligible for inclusion on a state, local or national historic register, shall be subject to approval by the [Local Preservation Organization](#).
- 5.2.6 The restoration or rehabilitation of an existing building shall not require the provision of (a) parking in addition to that existing nor (b) on-site stormwater retention/detention in addition to that existing. Existing parking requirements that exceed those for this Code may be reduced as provided by Table 10 and Table 11.

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5.3 SPECIAL REQUIREMENTS

This section is similar to the provisions of Section 3.9 of Article 3 New Community Plans and Section 4.7 of Article 4 Infill Community Plans. (However, the annotations are different.) They are entered for the third time here for situations when only Article 5 is being consulted. Calibrators should be sure that changes to one of these sections are done to all.

If the calibrated and adopted SmartCode will not include Article 3 or Article 4 and the only possible Regulating Plan has been done (e.g., for a private development), the list here should include only those designations that actually appear on the plan, and the 5.3.1 introduction should say “The **project or municipality name** Regulating Plan designates the following Special Requirements:” or similar wording.

Site and Building designs would respond to the Special Requirements on the Community Scale Regulating Plans that were previously created under Article 3 or Article 4. A sample Infill Regulating Plan is provided in Appendix VII (Sarasota), as well as a sample New Community Plan Submittal in Appendix VI (Hampstead). Both include the mapped Special Requirements.

5.3.1f The Special Requirement for Terminated Vistas alerts the building designer that they have a special site. Responsively designed Terminated Vistas are useful for orientation as visual landmarks. Well-designed civic buildings make excellent terminations to such vistas as the location adds to their relative importance. It is generally good practice to specifically design certain architectural elements at the point of reception of a terminated vista. The CRC should be vigilant for such designs.

(cont.5.2 Pre-Existing Conditions)

the new addition so that the new work appears to be part of the historic building.” Therefore it may be necessary to interpret any “architectural harmony” language in an adopted ordinance while considering “differentiation” of the addition from the historic property, per the Interior standards. Check for this if the Architectural Standards Module or another set of architectural regulations are adopted along with the calibrated SmartCode, and check whether a locally-determined Building of Value should be regulated in a similar manner to the Interior standards.

The modifications subject to this provision may include the materials, window proportions, color range, mass/void ratio, and roof type and pitch.

5.4 CIVIC ZONES

Section 3.5 provides the procedures for allocating Civic Zones. Section 5.4 provides only the Building Scale regulations.

5.3 SPECIAL REQUIREMENTS

- 5.3.1 To the extent that a Regulating Plan for either a New Community Plan or an Infill Community Plan designates any of the following Special Requirements, standards shall be applied as follows:
- a. Buildings along the A-Grid shall be held to the highest standard of this Code in support of pedestrian activity. Buildings along the B-Grid may be more readily considered for Warrants allowing automobile-oriented standards.
 - b. a Mandatory or Recommended Retail Frontage designation requires or advises that a building provide a Shopfront at Sidewalk level along the entire length of its Private Frontage. The Shopfront shall be no less than 70% glazed in clear glass and shaded by an awning overlapping the Sidewalk as generally illustrated in Table 7. The first floor shall be confined to Retail use through the depth of the second Layer. (Table 17d.)
 - c. a Mandatory or Recommended Gallery Frontage designation requires or advises that a building provide a permanent cover over the Sidewalk, either cantilevered or supported by columns (as generally illustrated in Table 7). A Gallery Frontage may be combined with a Retail Frontage.
 - d. a Mandatory or Recommended Arcade Frontage designation requires or advises that a building overlap the Sidewalk such that the first floor Facade is a colonnade (as generally illustrated in Table 7 and Table 8). The Arcade Frontage may be combined with a Retail Frontage.
 - e. a Coordinated Frontage designation requires that the Public Frontage (Table 4A) and Private Frontage (Table 7) be coordinated as a single, coherent landscape and paving design.
 - f. a Mandatory or Recommended Terminated Vista designation requires or advises that the building be provided with architectural articulation of a type and character that responds visually to its axial location, as approved by the CRC.
 - g. a Cross Block Passage designation requires that a minimum 8-foot-wide pedestrian access be reserved between buildings.
 - h. a Building of Value designation requires that the building or structure may be altered or demolished only in accordance with Municipal Preservation Standards and Protocols.

5.4 CIVIC ZONES**5.4.1 GENERAL**

- a. Civic Zones are designated on Community Plans as Civic Space (CS) or Civic Building (CB).
- b. Parking provisions for Civic Zones shall be determined by Warrant.

5.4.2 CIVIC SPACES (CS)

- a. Civic Spaces shall be generally designed as described in Table 13.

5.4.3 CIVIC BUILDINGS (CB)

- a. Civic Buildings shall not be subject to the requirements of this Article. The particulars of their design shall be determined by Warrant.

5.5 SPECIFIC TO T1 NATURAL ZONE

- 5.5.1 Buildings in the T1 Natural Zone are permitted only by Variance. Permission to build in T1 and the standards for Article 5 shall be determined concurrently as Variances, in public hearing of the [Legislative Body](#).

5.6 BUILDING DISPOSITION

5.6.2g Note that setbacks (Table 14g and Table 14h) are provided as ranges. They thus act as build-to lines, but with a degree of flexibility. In general, they become shallower as the Transect Zones become more urban. A zero lot line streetwall is often desirable in the most urban conditions, because it strongly defines the street space. However, the model code specifies a 6-foot minimum front setback in T4 so that private frontage can accommodate stoops, porches, private planters and gardens, sidewalk signs, outdoor seating, cafe tables, and other Encroachments.

Some authors of this Manual also recommend at least a 4-foot setback in T5 and T6 for the same reason. The effect of a build-to streetwall can still exist if the setback is disguised as part of the sidewalk, though it does effectively widen the total “street space,” which may weaken spatial definition. This allows Encroachments otherwise requiring a Warrant or Variance. Alternatively, include text allowing Encroachments for the aforementioned appurtenances on sidewalks, provided a minimum 5-foot clear path is maintained for pedestrians. This is generally preferable to the setback as it does not increase overall ROW width, and it addresses the desirable cafe tables and everything else in one line. Also, the common sidewalk is installed, maintained, and cleaned by the same hand.

The side setbacks in T4, T5, and T6 are zero minimum to allow rowhouses and townhouses. If attached housing is not permitted in T4 in the local calibration, this should be changed on Table 14 and Table 15B.

5.7 BUILDING CONFIGURATION

5.7.1b Since parking is one of the controllers of density, the extra on-street parking gained by the corner lot would allow the creation of a duplex with the second unit’s principal frontage facing the other way, if permitted on Table 12, Specific Function & Use.

5.7.1c This provision ensures that walls along frontage lines will not be blank, and also encourages “eyes on the street.” Without this provision, sideyard buildings in particular may be designed without windows along the frontage.

5.7.1d Building height should always be expressed in stories. If the height limit is in feet an owner may try to squeeze in extra stories by making the ceilings lower. This maneuver would affect both density and design. Where there is good reason to keep a strict metric limit on height, such as preserving a viewshed or keeping the roofline below the local tree canopy, it is advisable to regulate both stories and feet, but it is essential to keep the story number low enough that each story won’t be shorter than ten feet. Example: “Height limit is 35 feet and no more than three Stories.” If that limit were expressed only in

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5.6 BUILDING DISPOSITION**5.6.1 SPECIFIC TO ZONE T2**

- a. Building Disposition shall be determined by Warrant.

5.6.2 SPECIFIC TO ZONES T3, T4, T5, T6

- a. Newly platted Lots shall be dimensioned according to Table 14f and Table 15.
- b. Building Disposition types shall be as shown in Table 9 and Table 14i.
- c. Buildings shall be disposed in relation to the boundaries of their Lots according to Table 14g, Table 14h, and Table 15.
- d. One Principal Building at the Frontage, and one Outbuilding to the rear of the Principal Building, may be built on each Lot as shown in Table 17c.
- e. Lot coverage by building shall not exceed that recorded in Table 14f and Table 15.
- f. Facades shall be built parallel to a rectilinear Principal Frontage Line or to the tangent of a curved Principal Frontage Line, and along a minimum percentage of the Frontage width at the Setback, as specified as Frontage Buildout on Table 14g and Table 15.
- g. Setbacks for Principal Buildings shall be as shown in Table 14g and Table 15. In the case of an Infill Lot, Setbacks shall match one of the existing adjacent Setbacks. Setbacks may otherwise be adjusted by Warrant.
- h. Rear Setbacks for Outbuildings shall be a minimum of 12 feet measured from the centerline of the Rear Alley or Rear Lane easement. In the absence of Rear Alley or Rear Lane, the rear Setback shall be as shown in Table 14h and Table 15.
- i. To accommodate slopes over ten percent, relief from front Setback requirements is available by Warrant.

5.6.3 SPECIFIC TO ZONE T6

- a. The Principal Entrance shall be on a Frontage Line.

5.7 BUILDING CONFIGURATION**5.7.1 GENERAL TO ZONES T2, T3, T4, T5, T6**

- a. The Private Frontage of buildings shall conform to and be allocated in accordance with Table 7 and Table 14j.
- b. Buildings on corner Lots shall have two Private Frontages as shown in Table 17. Prescriptions for the second and third Layers pertain only to the Principal Frontage. Prescriptions for the first Layer pertain to both Frontages.
- c. All Facades shall be glazed with clear glass no less than 30% of the first Story.
- d. Building heights, Stepbacks, and Extension Lines shall conform to Table 8 and Table 14j.
- e. Stories may not exceed 14 feet in height from finished floor to finished ceiling, except for a first floor Commercial Function, which shall be a minimum of 11 feet with a maximum of 25 feet. A single floor level exceeding 14 feet, or 25 feet at ground level, shall be counted as two (2) stories. Mezzanines extending beyond 33% of the floor area shall be counted as an additional Story.
- f. In a Parking Structure or garage, each above-ground level counts as a single Story regardless of its relationship to habitable Stories.
- g. Height limits do not apply to Attics or raised basements, masts, belfries, clock towers, chimney flues, water tanks, or elevator bulkheads. Attics shall not exceed 14 feet in height.

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(cont.5.7 Building Configuration)

feet, an owner could squeeze in four badly-proportioned stories.

5.7.1e The stated limit of 14 feet for a story prevents the subsequent insertion of a loft, which could double the buildable area.

5.7.2 The maximum size of 440 square feet for the accessory unit reflects the fact that a two-car garage at the ground level is typically 20 X 22 ft. While outbuildings should not be too big, they are more adaptable if a garage can fit underneath the unit.

5.7.5 Deep awnings, covering a large proportion of sidewalk, are generally recommended for shelter and for enabling shoppers to see into store windows without reflections.

5.9 PARKING AND DENSITY CALCULATIONS

Parking is one of the most serious issues affecting urbanism, and not only because of its (usually) anti-urban form. Parking is a determinant of localized density (and vice versa). See the notes for Table 11.

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- 5.7.2 **SPECIFIC TO ZONES T2, T3, T4, T5**
a. The habitable area of an Accessory Unit within a Principal Building or an Out-building shall not exceed 440 square feet, excluding the parking area.
- 5.7.3 **SPECIFIC TO ZONE T3**
a. No portion of the Private Frontage may Encroach the Sidewalk.
b. Open porches may Encroach the first Layer 50% of its depth. (Table 17d)
c. Balconies and bay windows may Encroach the first Layer 25% of its depth except that balconies on porch roofs may Encroach as does the porch.
- 5.7.4 **SPECIFIC TO ZONE T4**
a. Balconies, open porches and bay windows may Encroach the first Layer 50% of its depth. (Table 17d)
- 5.7.5 **SPECIFIC TO ZONES T5, T6**
a. Awnings, Arcades, and Galleries may Encroach the Sidewalk to within 2 feet of the Curb but must clear the Sidewalk vertically by at least 8 feet.
b. Maximum Encroachment heights (Extension Lines) for Arcades shall be as shown on Table 8.
c. Stoops, Lightwells, balconies, bay windows, and terraces may Encroach the first Layer 100% of its depth. (Table 17d)
d. Loading docks and service areas shall be permitted on Frontages only by Warrant.
e. In the absence of a building Facade along any part of a Frontage Line, a Streetscreen shall be built co-planar with the Facade.
f. Streetscreens **should** be between 3.5 and 8 feet in height. The Streetscreen may be replaced by a hedge or fence by Warrant. Streetscreens shall have openings no larger than necessary to allow automobile and pedestrian access.
g. A first level Residential or Lodging Function shall be raised a minimum of 2 feet from average Sidewalk grade.
- 5.8 BUILDING FUNCTION**
- 5.8.1 **GENERAL TO ZONES T2, T3, T4, T5, T6**
a. Buildings in each Transect Zone shall conform to the Functions on Table 10, Table 12 and Table 14l. Functions that do not conform shall require approval by Warrant or Variance as specified on Table 12.
- 5.8.2 **SPECIFIC TO ZONES T2, T3**
a. Accessory Functions of **Restricted Lodging** or Restricted Office shall be permitted within an Accessory Building. See Table 10.
- 5.8.3 **SPECIFIC TO ZONES T4, T5**
a. Accessory Functions of **Limited Lodging** or Limited Office shall be permitted within an Accessory Building. See Table 10.
- 5.8.4 **SPECIFIC TO ZONES T5, T6**
a. First Story Commercial Functions shall be permitted.
b. Manufacturing Functions within the first Story may be permitted by Variance.
- 5.9 PARKING AND DENSITY CALCULATIONS**
- 5.9.1 **SPECIFIC TO ZONES T2, T3**
a. Buildable Density on a Lot shall be determined by the actual parking provided within the Lot as applied to the Functions permitted in Table 10 and Table 11.
- 5.9.2 **SPECIFIC TO ZONES T4, T5, T6**
a. Buildable Density on a Lot shall be determined by the sum of the actual parking

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(cont.5.9 Parking and Density Calculations)

Some Central Business Districts eliminate all parking requirements and let the market dictate parking provisions. If there is community support for this, calibrators may add such a provision to Table 10. A Transect-based approach is to exempt (for example) small-scale retail in T5 and T6. However, if that is done for all the retail, the code should specify *maximum* parking requirements, to prevent more onerous requirements from being instituted. Because the SmartCode requires users to determine site density based on Building Function & Parking, elimination of this part of the calculation would necessitate adjustments to Table 10, Table 11 and this Article. In general, however, the practice of constraining parking requirements below market-determined norms may create problems and should be carefully considered.

5.9.2d This provision is important to the support of transit in areas approved for a TOD overlay. The additional density that transit may need is not mandated, as the market will govern the outcome, but it is permitted by virtue of this parking allowance. See Section 2.6.3, 3.3.4, and Section 4.2.4.

calculated as that provided (1) within the Lot (2) along the parking lane corresponding to the Lot Frontage, and (3) by purchase or lease from a Civic Parking Reserve within the Pedestrian Shed, if available.

- b. The actual parking may be adjusted upward according to the Shared Parking Factor of Table 11 to determine the Effective Parking. The Shared Parking Factor is available for any two Functions within any pair of adjacent Blocks.
- c. Based on the Effective Parking available, the Density of the projected Function may be determined according to Table 10.
- d. Within the overlay area of a Transit Oriented Development (TOD) the Effective Parking may be further adjusted upward by 30%.
- e. The total Density within each Transect Zone shall not exceed that specified by an approved Regulating Plan based on Article 3 or Article 4.
- f. Accessory Units do not count toward Density calculations.
- g. Liner Buildings less than 30 feet deep and no more than two Stories shall be exempt from parking requirements.

5.10 PARKING LOCATION STANDARDS

5.10.1 GENERAL TO ZONES T2, T3, T4, T5, T6

- a. Parking shall be accessed by Rear Alleys or Rear Lanes, when such are available on the Regulating Plan.
- b. Open parking areas shall be masked from the Frontage by a Building or Streetscreen.
- c. For buildings on B-Grids, open parking areas may be allowed unmasked on the Frontage by Warrant, except for corner lots at intersections with the A-Grid.

5.10.2 SPECIFIC TO ZONES T2, T3

- a. Open parking areas shall be located at the second and third Lot Layers, except that Driveways, drop-offs and unpaved parking areas may be located at the first Lot Layer. (Table 17d)
- b. Garages shall be located at the third Layer except that side- or rear-entry types may be allowed in the first or second Layer by Warrant.

5.10.3 SPECIFIC TO ZONES T3, T4

- a. Driveways at Frontages shall be no wider than 10 feet in the first Layer. (Table 3B.f)

5.10.4 SPECIFIC TO ZONE T4

- a. All parking areas and garages shall be located at the second or third Layer. (Table 17d)

5.10.5 SPECIFIC TO ZONES T5, T6

- a. All parking lots, garages, and Parking Structures shall be located at the second or third Layer. (Table 17d)
- b. Vehicular entrances to parking lots, garages, and Parking Structures shall be no wider than 24 feet at the Frontage. (Table 3B.f)
- c. Pedestrian exits from all parking lots, garages, and Parking Structures shall be directly to a Frontage Line (i.e., not directly into a building) except underground levels which may be exited by pedestrians directly into a building.
- d. Parking Structures on the A-Grid shall have Liner Buildings lining the first and second Stories.
- e. A minimum of one bicycle rack place shall be provided within the Public or Private Frontage for every ten vehicular parking spaces.

5.11 LANDSCAPE STANDARDS

5.11.4b Note the requirement that in T4, trees in the private frontage are required to match trees in the public frontage (see Table 4 Public Frontages). While this may seem like an unnecessary effort to control private choice, consider that trees in the private frontage are actually a major part of the viewshed of the public frontage, and contribute to the shade of the public realm. Many trees in older neighborhoods that contribute to their distinctive character are actually growing on the private frontage. The requirement for matching species is based on a vision modeled after the practice of Nolen and Olmstead. The intended effect is that houses in the more rural T-zones should sit amidst woodland.

5.11.3d While it may seem odd that lawn is permitted by right in T4 but not in T3 where lawns have reigned in the past, the rationale is that a lawn is not a natural type of planting, and is not considered environmentally sustainable in large areas. (It requires fertilizers that run off into streams or the aquifer.) Therefore it is allowed in the more urban (less natural) Transect Zone where lots are smaller and yards more intensely used, which is where lawn outperforms other species. The CRC may want to institute conditions for lawns in T3, e.g., that the area be limited, and/or that organic fertilizer be specified. Note that even organic fertilizer runoff may not be benign; it may encourage algae growth in waterways if misapplied.

5.12 SIGNAGE STANDARDS

This apparently simple Signage section includes all that is necessary for most urban situations. For special functions, such as theatres, the Warrant procedure is the indicated avenue for exceptional needs. If the design area includes Special Districts that are highway-oriented, conventional large signage and billboard standards may be adopted. These are not provided by this SmartCode, but may be secured from conventional sources.

5.11 LANDSCAPE STANDARDS**5.11.1 GENERAL TO ZONES T2, T3, T4, T5, T6**

a. Impermeable surface shall be confined to the ratio of Lot coverage specified in Table 14f.

5.11.2 SPECIFIC TO ZONES T2, T3, T4

a. The first Layer may not be paved, with the exception of Driveways as specified in Section 5.10.2 and Section 5.10.3. (Table 17d)

5.11.3 SPECIFIC TO ZONE T3

a. A minimum of two trees shall be planted within the first Layer for each 30 feet of Frontage Line or portion thereof. (Table 17d)

b. Trees may be of single or multiple species as shown on Table 6.

c. Trees shall be naturalistically clustered.

d. Lawn shall be permitted by Warrant.

5.11.4 SPECIFIC TO ZONE T4

a. A minimum of one tree shall be planted within the first Layer for each 30 feet of Frontage Line or portion thereof. (Table 17d)

b. Trees shall be a single species to match the species of Street Trees on the Public Frontage, or as shown on Table 6.

c. Lawn shall be permitted By Right.

5.11.5 SPECIFIC TO ZONES T5, T6

a. Trees shall not be required in the first Layer.

b. The first Layer may be paved to match the pavement of the Public Frontage.

5.12 SIGNAGE STANDARDS**5.12.1 GENERAL TO ZONES T2, T3, T4, T5, T6**

a. There shall be no signage permitted additional to that specified in this section.

b. The address number, no more than 6 inches measured vertically, shall be attached to the building in proximity to the Principal Entrance or at a mailbox.

5.12.2 SPECIFIC TO ZONES T2, T3

a. Signage shall not be illuminated.

5.12.3 SPECIFIC TO ZONES T4, T5, T6

a. Signage shall be externally illuminated, except that signage within the Shopfront glazing may be neon lit.

5.12.4 SPECIFIC TO ZONES T2, T3, T4

a. One blade sign for each business may be permanently installed perpendicular to the Facade within the first Layer. Such a sign shall not exceed a total of 4 square feet and shall clear 8 feet above the Sidewalk.

5.12.5 SPECIFIC TO ZONES T5, T6

a. Blade signs, not to exceed 6 square ft. for each separate business entrance, may be attached to and **should** be perpendicular to the Facade, and shall clear 8 feet above the Sidewalk.

b. A single external permanent sign band may be applied to the Facade of each building, providing that such sign not exceed 3 feet in height by any length.

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ARTICLE 5. SMARTCODE MODULES

These Modules are available in the Appendix of this volume or at www.SmartCodeCentral.com in editable form. The Natural Drainage and Hazard Mitigation Modules have some Article 5 provisions and some that should be placed in other Articles. The Architectural, Lighting, Sound, and Visitability Modules are for Article 5 only. For additional Modules visit www.SmartCodeCentral.com. Modules can be integrated into the base Articles during calibration, or they may be adopted as addenda to the SmartCode and placed at the end of the document. They are numbered to fit or reference the correct Articles.

ARTICLE 5. SMARTCODE MODULES

- 5.7.3d FOR HAZARD MITIGATION STANDARDS
- 5.7.6 FOR HAZARD MITIGATION STANDARDS
- 5.13 FOR NATURAL DRAINAGE STANDARDS
- 5.14 FOR ARCHITECTURAL STANDARDS
- 5.15 FOR LIGHTING STANDARDS
- 5.16 FOR SOUND STANDARDS
- 5.17 FOR VISITABILITY STANDARDS
- 5.18 FOR HAZARD MITIGATION STANDARDS
- 5.19 FOR HAZARD MITIGATION STANDARDS

SMARTCODE ANNOTATED

These annotations are advisory only. The SmartCode itself appears only on the right side of each spread.

ARTICLE 6. STANDARDS AND TABLES

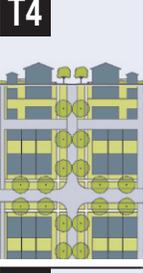
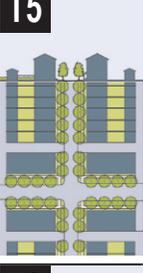
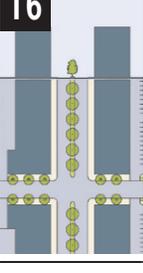
The metrics of the following tables are an integral part of the SmartCode. Like the preceding text pages, they are legally binding. However, the diagrams and illustrations that accompany them should be considered guidelines, with the exception of the diagrams associated with the form-based code (Table 15), which are also legally binding.

During calibration, individual tables may be removed if not needed, and individual metrics may be adjusted for local character and custom. New tables may be added and the sequence renumbered. Table 14 is a summary of provisions from other tables, plus it includes metrics that are not specified elsewhere. Metrics that are changed on Table 14 during calibration must also be adjusted on the Table 15 Form-Based Code Graphics pages.

TABLE 1: TRANSECT ZONE DESCRIPTIONS

The following are general descriptions of the character of each Transect Zone. They may be interpreted as constituents of the Intent of this Code. See Section 1.3.

TABLE 1: Transect Zone Descriptions. This table provides descriptions of the character of each T-zone.

| | | |
|--|---|--|
|  <p>T1</p> | <p>T-1 NATURAL T-1 Natural Zone consists of lands approximating or reverting to a wilderness condition, including lands unsuitable for settlement due to topography, hydrology or vegetation.</p> | <p>General Character: Natural landscape with some agricultural use Building Placement: Not applicable Frontage Types: Not applicable Typical Building Height: Not applicable Type of Civic Space: Parks, Greenways</p> |
|  <p>T2</p> | <p>T-2 RURAL T-2 Rural Zone consists of sparsely settled lands in open or cultivated states. These include woodland, agricultural land, grassland, and irrigable desert. Typical buildings are farmhouses, agricultural buildings, cabins, and villas.</p> | <p>General Character: Primarily agricultural with woodland & wetland and scattered buildings Building Placement: Variable Setbacks Frontage Types: Not applicable Typical Building Height: 1- to 2-Story Type of Civic Space: Parks, Greenways</p> |
|  <p>T3</p> | <p>T-3 SUB-URBAN T-3 Sub-Urban Zone consists of low density residential areas, adjacent to higher zones that some mixed use. Home occupations and outbuildings are allowed. Planting is naturalistic and setbacks are relatively deep. Blocks may be large and the roads irregular to accommodate natural conditions.</p> | <p>General Character: Lawns, and landscaped yards surrounding detached single-family houses; pedestrians occasionally Building Placement: Large and variable front and side yard Setbacks Frontage Types: Porches, fences, naturalistic tree planting Typical Building Height: 1- to 2-Story with some 3-Story Type of Civic Space: Parks, Greenways</p> |
|  <p>T4</p> | <p>T-4 GENERAL URBAN T-4 General Urban Zone consists of a mixed use but primarily residential urban fabric. It may have a wide range of building types: single, sideyard, and rowhouses. Setbacks and landscaping are variable. Streets with curbs and sidewalks define medium-sized blocks.</p> | <p>General Character: Mix of Houses, Townhouses & small Apartment buildings, with scattered Commercial activity; balance between landscape and buildings; presence of pedestrians Building Placement: Shallow to medium front and side yard Setbacks Frontage Types: Porches, fences, Dooryards Typical Building Height: 2- to 3-Story with a few taller Mixed Use buildings Type of Civic Space: Squares, Greens</p> |
|  <p>T5</p> | <p>T-5 URBAN CENTER T-5 Urban Center Zone consists of higher density mixed use building that accommodate retail, offices, rowhouses and apartments. It has a tight network of streets, with wide sidewalks, steady street tree planting and buildings set close to the sidewalks.</p> | <p>General Character: Shops mixed with Townhouses, larger Apartment houses, Offices, workplace, and Civic buildings; predominantly attached buildings; trees within the public right-of-way; substantial pedestrian activity Building Placement: Shallow Setbacks or none; buildings oriented to street defining a street wall Frontage Types: Stoops, Shopfronts, Galleries Typical Building Height: 3- to 5-Story with some variation Type of Civic Space: Parks, Plazas and Squares, median landscaping</p> |
|  <p>T6</p> | <p>T-6 URBAN CORE T-6 Urban Core Zone consists of the highest density and height, with the greatest variety of uses, and civic buildings of regional importance. It may have larger blocks; streets have steady street tree planting and buildings are set close to wide sidewalks. Typically only large towns and cities have an Urban Core Zone.</p> | <p>General Character: Medium to high-Density Mixed Use buildings, entertainment, Civic and cultural uses. Attached buildings forming a continuous street wall; trees within the public right-of-way; highest pedestrian and transit activity Building Placement: Shallow Setbacks or none; buildings oriented to street, defining a street wall Frontage Types: Stoops, Dooryards, Forecourts, Shopfronts, Galleries, and Arcades Typical Building Height: 4-plus Story with a few shorter buildings Type of Civic Space: Parks, Plazas and Squares; median landscaping</p> |

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TABLE 2: SECTOR/COMMUNITY ALLOCATION

Table 2 defines the geography, including both natural and infrastructural elements, that determine the areas suitable for one or several of the three typical Community Unit types that are specified by this code. This table also allocates the proportions of Transect Zones within each Adjusted Pedestrian Shed for its Community Unit type.

The Community Unit types for Infill (G-4 Sector) do not have allocation percentages because existing conditions are the main determinant for the mapped T-zones.

See also “Outline of the Code” in the Introduction.

TABLE 2: Sector/Community Allocation. Table 2 defines the geography, including both natural and infrastructure elements, determining areas that are or are not suitable for development. Specific Community Types of various intensities are allowable in specific Sectors. This table also allocates the proportions of Transect Zones within each Community Type.

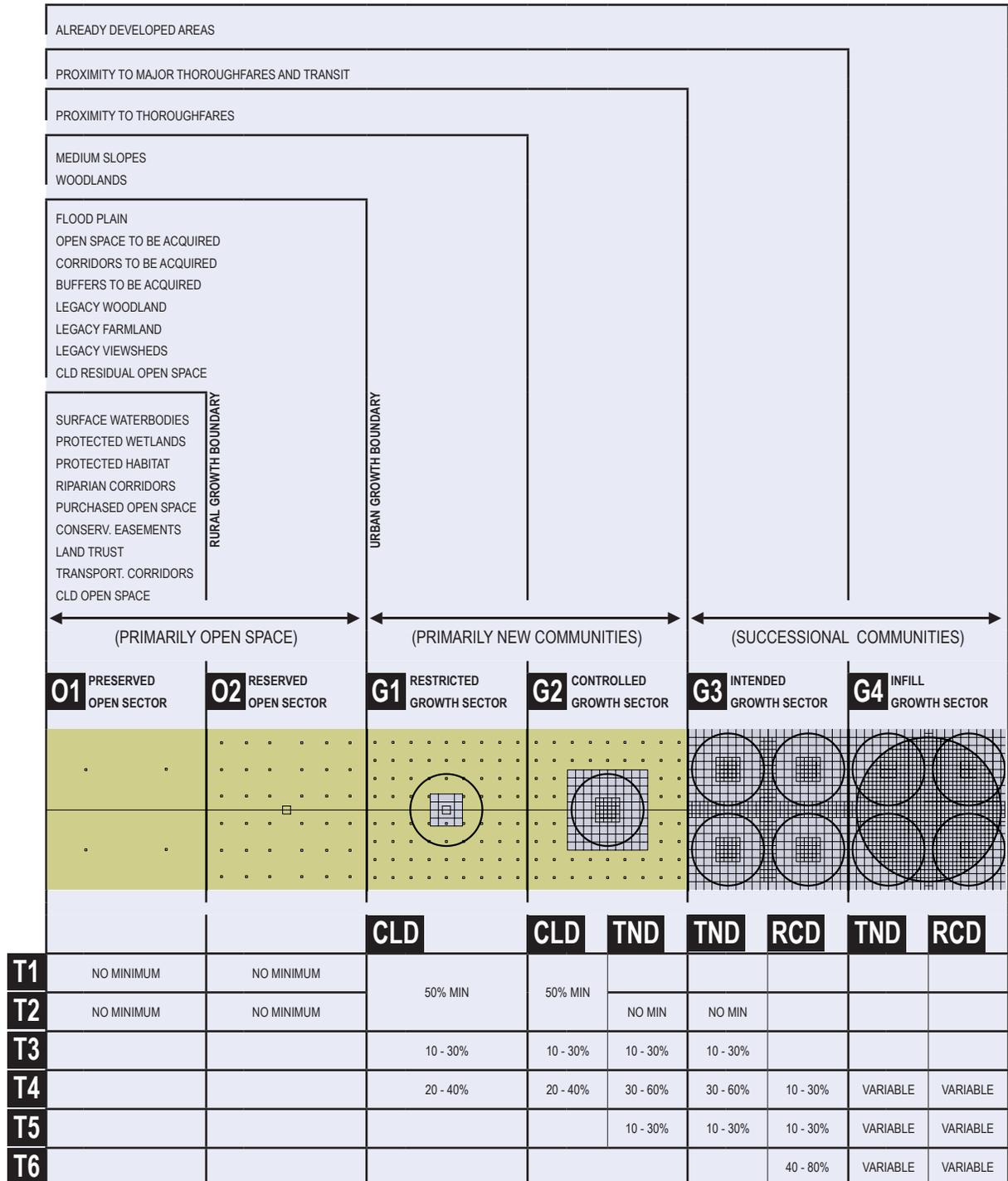


TABLE 3A: VEHICULAR LANE DIMENSIONS

This table assigns lanes available to each Transect Zone based on lane width, which is the principal determinant of traffic speed. It informs the assembly of each thoroughfare starting with its fundamental component: the lane. For pre-assembled thoroughfares such as those found in typical public works manuals, see Table 3B. If Table 3B is used, Table 3A may be eliminated. Alternatively, if Table 4C Thoroughfare Assemblies are used and no others contemplated, both Table 3A and Table 3B may be eliminated, and possibly Table 4B. One Public Frontage Table should be retained for future streetscape improvements.

There are a number of additional civil engineering and public works standards to consider; some are included in this code (or its Modules) and some are not. These include storm drainage, utility design, lighting, grading, and transit.

While the safety of the pedestrian should generally trump other design concerns, this becomes essential at the more urban end of the Transect, where there are more pedestrians and where automobiles are just one of many forms of transportation. The design of thoroughfares requires an understanding of many such variables along the Transect. It is important to know the community's intent toward driver and pedestrian behavior in the localized environment. This will affect, for example, the actual width of yield streets, the reduction of vehicular speed recommendations, lane widths, parking configuration, design of sidewalks, and more. These patterns will vary from region to region, so the SmartCode must be locally calibrated for them, just as in other parts of the code.

Usually, an existing public works manual must be re-edited to accommodate a greater range of pedestrian-supportive standards. In the meantime, the *Traditional Neighborhood Development Design Guidelines* (ITE, 1999) should be considered or referenced in support of this code.

TABLE 3A: Vehicular Lane Dimensions. This table assigns lane widths to Transect Zones. The Design ADT (Average Daily Traffic) is the determinant for each of these sections. The most typical assemblies are shown in Table 3B. Specific requirements for truck and transit bus routes and truck loading shall be decided by Warrant.

| DESIGN SPEED | TRAVEL LANE WIDTH | T1 | T2 | T3 | T4 | T5 | T6 |
|--------------|-------------------|----|----|----|----|----|----|
| Below 20 mph | 8 feet | ■ | ■ | ■ | □ | | |
| 20-25 mph | 9 feet | ■ | ■ | ■ | ■ | □ | □ |
| 25-35 mph | 10 feet | ■ | ■ | ■ | ■ | ■ | ■ |
| 25-35 mph | 11 feet | ■ | ■ | | | ■ | ■ |
| Above 35 mph | 12 feet | ■ | ■ | | | ■ | ■ |

- BY RIGHT
- BY WARRANT

| DESIGN SPEED | PARKING LANE WIDTH | T1 | T2 | T3 | T4 | T5 | T6 |
|--------------|--------------------|----|----|----|----|----|----|
| 20-25 mph | (Angle) 18 feet | | | | | ■ | ■ |
| 20-25 mph | (Parallel) 7 feet | | | | ■ | | |
| 25-35 mph | (Parallel) 8 feet | | | ■ | ■ | ■ | ■ |
| Above 35 mph | (Parallel) 9 feet | | | | | ■ | ■ |

| DESIGN SPEED | EFFECTIVE TURNING RADIUS | T1 | T2 | T3 | T4 | T5 | T6 |
|--------------|--------------------------|----|----|----|----|----|----|
| Below 20 mph | 5-10 feet | | | ■ | ■ | ■ | ■ |
| 20-25 mph | 10-15 feet | ■ | ■ | ■ | ■ | ■ | ■ |
| 25-35 mph | 15-20 feet | ■ | ■ | ■ | ■ | ■ | ■ |
| Above 35 mph | 20-30 feet | ■ | ■ | | | □ | □ |

(See Table 17b)

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TABLE 3B: VEHICULAR LANE & PARKING ASSEMBLIES

This table shows lane widths, parking provisions, and curb radii based on the projected design speeds for the various Transect Zones. See Table 17 for more on curb radii.

Average Daily Traffic (ADT) is a standard used by the Institute of Transportation Engineers (ITE) manual, so Table 3B includes it for calculation and comparison, but for transect-based planning, the priority determinant should be design speed, as that is what affects pedestrian viability. Thoroughfares in the SmartCode are designed for speeds appropriate for the Transect Zone through which they pass.

On-street parking is important not only for the convenience of drivers, but to help buffer the pedestrians on the sidewalk from the travel lanes. Municipalities should try to maximize this resource.

There are several one-way thoroughfares included here. These should be used sparingly, especially where blocks are long, as these are less connective than two-way streets. If traffic is generally low, consider two-way yield thoroughfares instead. Specifying a one-way and later making it two-way upon observation of use is a process that some skeptical municipalities may allow.

e. Overwide main streets can be narrowed and traffic-calming accomplished easily by changing parallel parking to diagonal parking. Back-in diagonal parking, which is safer for children (open car doors block them from going out into the street) and safer for everyone while pulling out into traffic, may be allowed. (See Pottstown, PA.)

f. The Parking Access diagrams support the driveway provisions in Section 5.10 Parking Location Standards.

TABLE 3B: Vehicular Lane/Parking Assemblies. The projected design speeds determine the dimensions of the vehicular lanes and Turning Radii assembled for Thoroughfares.

| | ONE WAY MOVEMENT | | | TWO WAY MOVEMENT | | |
|--------------------------------|------------------|--------------|------------|------------------|------------------|----|
| a. NO PARKING | T1 | T2 | T3 | T1 | T2 | T3 |
| | T1 | T2 | T3 | T1 | T2 | T1 |
| | | | | | | |
| Design ADT | 300 VPD | 600 VPD | 2,500 VPD | 22,000 VPD | 36,000 VPD | |
| Pedestrian Crossing | 3 Seconds | 5 Seconds | 5 Seconds | 9 Seconds | 13 Seconds | |
| Design Speed | 20 - 30 MPH | Below 20 MPH | 20-25 MPH | | 35 MPH and above | |
| b. YIELD PARKING | T3 | T4 | | T3 | T4 | |
| | | | | | | |
| | | | | | | |
| Design ADT | 1,000 VPD | | | 1,000 VPD | | |
| Pedestrian Crossing | 5 Seconds | | | 7 Seconds | | |
| Design Speed | | | | | | |
| c. PARKING ONE SIDE PARALLEL | T3 | T4 | T3 | T4 | T5 | T4 |
| | T3 | T4 | T5 | T6 | T5 | T6 |
| | | | | | | |
| Design ADT | 5,000 VPD | 18,000 VPD | 16,000 VPD | 15,000 VPD | 32,000 VPD | |
| Pedestrian Crossing | 5 Seconds | 8 Seconds | 8 Seconds | 11 Seconds | 13 Seconds | |
| Design Speed | 20-30 MPH | | 25-30 MPH | | | |
| d. PARKING BOTH SIDES PARALLEL | T4 | T4 | T5 | T6 | T5 | T6 |
| | T4 | T5 | T6 | T5 | T6 | T6 |
| | | | | | | |
| Design ADT | 8,000 VPD | 20,000 VPD | 15,000 VPD | 22,000 VPD | 32,000 VPD | |
| Pedestrian Crossing | 7 Seconds | 10 Seconds | 10 Seconds | 13 Seconds | 15 Seconds | |
| Design Speed | Below 20 MPH | 25-30 MPH | 25-30 MPH | 25-30 MPH | 35 MPH and above | |
| e. PARKING BOTH SIDES DIAGONAL | T5 | T6 | T5 | T6 | T5 | T6 |
| | T5 | T6 | T6 | T6 | T6 | T6 |
| | | | | | | |
| Design ADT | 18,000 VPD | 20,000 VPD | 15,000 VPD | 22,000 VPD | 31,000 VPD | |
| Pedestrian Crossing | 15 Seconds | 17 Seconds | 17 Seconds | 20 Seconds | 23 Seconds | |
| Design Speed | Below 20 MPH | 20-25 MPH | 20-25 MPH | 25-30 MPH | 25-30 MPH | |
| f. PARKING ACCESS | | | T3 | T4 | T5 | T6 |
| | | | | | | |
| | | | | | | |
| Design ADT | | | | | | |
| Pedestrian Crossing | | | 3 Seconds | 6 Seconds | | |
| Design Speed | | | | | | |

TABLE 4A: PUBLIC FRONTAGES - GENERAL

The Public Frontage is the area between the private lot line and the edge of the vehicular lanes. It usually includes walkways, plantings, and lighting. In rare cases, certain elements of the building facades may overlap the Public Frontage as shown in Table 7 Private Frontages. Dimensions for Public Frontages are given in Table 4B (Public Frontages - Specific). Table 4A or Table 4B may be eliminated at calibration.

The Public Frontage and the Vehicular Lanes in conjunction form the Thoroughfare right-of-way. (See Section 3.7.) The thoroughfare should be assembled holistically within the range of types permitted by each T-zone.

The Public Frontage also contributes to the immersive character of the public space. For example, a Road ceases to be rural if it loses its swales and is lined with curbs, while a Street in urban areas has functional drainage only if has raised curbs, and without curbs would be unsafe for pedestrians on the sidewalk. The pattern of tree planting also supports the character of the Transect Zone.

TABLE 4A: Public Frontages - General. The Public Frontage is the area between the private Lot line and the edge of the vehicular lanes. Dimensions are given in Table 4B.

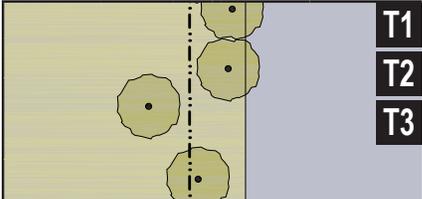
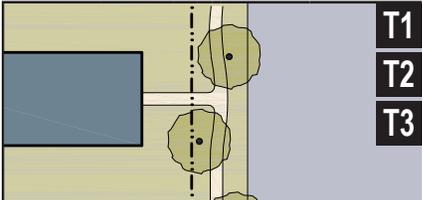
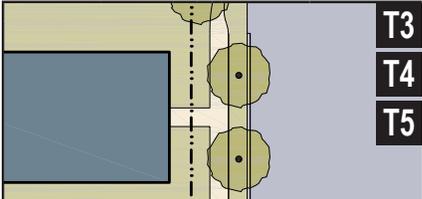
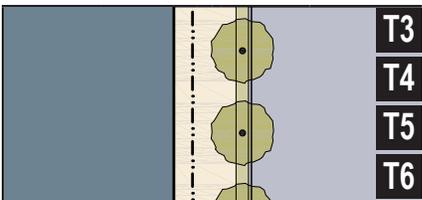
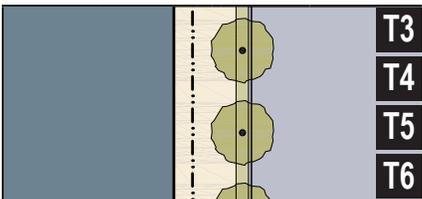
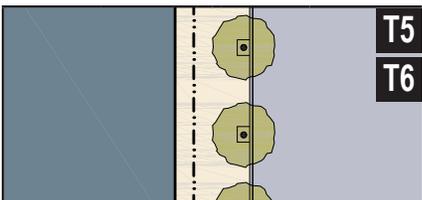
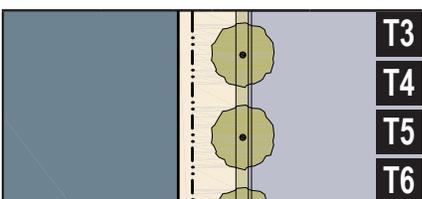
| PLAN | |
|--|---|
| LOT | R.O.W. |
| PRIVATE FRONTAGE | PUBLIC FRONTAGE |
| <p>a. (HW) For Highway: This Frontage has open Swales drained by percolation, Bicycle Trails and no parking. The landscaping consists of the natural condition or multiple species arrayed in naturalistic clusters. Buildings are buffered by distance or berms.</p> |  |
| <p>b. (RD) For Road: This Frontage has open Swales drained by percolation and a walking Path or Bicycle Trail along one or both sides and Yield parking. The landscaping consists of multiple species arrayed in naturalistic clusters.</p> |  |
| <p>c. (ST) For Street: This Frontage has raised Curbs drained by inlets and Sidewalks separated from the vehicular lanes by individual or continuous Planters, with parking on one or both sides. The landscaping consists of street trees of a single or alternating species aligned in a regularly spaced Allee, with the exception that Streets with a right-of-way (R.O.W.) width of 40 feet or less are exempt from tree requirements.</p> |  |
| <p>d. (DR) For Drive: This Frontage has raised Curbs drained by inlets and a wide Sidewalk or paved Path along one side, related to a Greenway or waterfront. It is separated from the vehicular lanes by individual or continuous Planters. The landscaping consists of street trees of a single or alternating species aligned in a regularly spaced Allee.</p> |  |
| <p>e. (AV) For Avenue: This Frontage has raised Curbs drained by inlets and wide Sidewalks separated from the vehicular lanes by a narrow continuous Planter with parking on both sides. The landscaping consists of a single tree species aligned in a regularly spaced Allee.</p> |  |
| <p>f. (CS) (AV) For Commercial Street or Avenue: This Frontage has raised Curbs drained by inlets and very wide Sidewalks along both sides separated from the vehicular lanes by separate tree wells with grates and parking on both sides. The landscaping consists of a single tree species aligned with regular spacing where possible, but clears the storefront entrances.</p> |  |
| <p>g. (BV) For Boulevard: This Frontage has Slip Roads on both sides. It consists of raised Curbs drained by inlets and Sidewalks along both sides, separated from the vehicular lanes by Planters. The landscaping consists of double rows of a single tree species aligned in a regularly spaced Allee.</p> |  |

TABLE 4B: PUBLIC FRONTAGES - SPECIFIC.

This table assembles precise technical prescriptions and dimensions for the Public Frontage elements - curbs, walkways and planters – relative to Transect Zones. The top section of the table assembles all of the elements below it. Locally appropriate planting species may be specified here and/or on Table 6.

b. The dimension of the curb radius is important. In the more urban T-zones, where there are more pedestrians, the effective turning radius (see Table 17b) should be smaller to slow the speed of vehicle tracking and shorten the pedestrian crossing distance. Note that the code prescribes the physical curb radius only. This number already takes into account the presence or absence of parked cars on that thoroughfare type, thus predicting the effective turning radius.

d. In T5 and T6, where there is substantial street-level retail, the code allows some discretion in the location of street trees so that shopfronts and important architecture are not blocked, as they would be by regular spacing. The terminology “opportunistic” on this table reflects that. Also see Section 3.7.3e, for an exemption to planting for very narrow streets.

Table 4B: Public Frontages - Specific. This table assembles prescriptions and dimensions for the Public Frontage elements - Curbs, walkways and Planters – relative to specific Thoroughfare types within Transect Zones. Table 4B-a assembles all of the elements for the various street types. Locally appropriate planting species should be filled in to the calibrated Code.

| TRANSECT ZONE Public Frontage Type | R U R A L | | | | | | T R A N S E C T I O N | | | | | | U R B A N | |
|--|--|--------------|--|---------|--|---------|---|---------|--|---------|---|---------|-----------|--|
| | T1 T2 T3 | T1 T2 T3 | T3 T4 | T4 T5 | T5 T6 | T5 T6 | T1 T2 T3 | T3 T4 | T4 T5 | T5 T6 | T5 T6 | T5 T6 | T5 T6 | |
| | HW & RD | | RD & ST | | ST-DR-AV | | ST-DR-AV-BV | | CS-DR-AV-BV | | CS-DR-AV-BV | | | |
| a. Assembly: The principal variables are the type and dimension of Curbs, walkways, Planters and landscape. | | | | | | | | | | | | | | |
| Total Width | 16-24 feet | | 12-24 feet | | 12-18 feet | | 12-18 feet | | 18-24 feet | | 18-30 feet | | | |
| b. Curb: The detailing of the edge of the vehicular pavement, incorporating drainage. | | | | | | | | | | | | | | |
| Type Radius | Open Swale 10-30 feet | | Open Swale 10-30 feet | | Raised Curb 5-20 feet | | Raised Curb 5-20 feet | | Raised Curb 5-20 feet | | Raised Curb 5-20 feet | | | |
| c. Walkway: The pavement dedicated exclusively to pedestrian activity. | | | | | | | | | | | | | | |
| Type Width | Path Optional n/a | | Path 4-8 feet | | Sidewalk 4-8 feet | | Sidewalk 4-8 feet | | Sidewalk 12-20 feet | | Sidewalk 12-30 feet | | | |
| d. Planter: The layer which accommodates street trees and other landscape. | | | | | | | | | | | | | | |
| Arrangement Species Planter Type Planter Width | Clustering Multiple Continuous Swale 8 feet-16 feet | | Clustering Multiple Continuous Swale 8 feet-16 feet | | Regular Alternating Continuous Planter 8 feet-12 feet | | Regular Single Continuous Planter 8 feet-12 feet | | Regular Single Continuous Planter 4 feet-6 feet | | Opportunistic Single Tree Well 4 feet-6 feet | | | |
| e. Landscape: The recommended plant species. (See Table 6) | | | | | | | | | | | | | | |
| f. Lighting: The recommended Public Lighting. (See Table 5) | | | | | | | | | | | | | | |

These annotations are advisory only. The SmartCode itself appears only on the right side of each spread.

TABLE 4C: THOROUGHFARE ASSEMBLIES

Thoroughfares are assembled from the Vehicular Lane elements that appear in Table 3A and Table 3B and the Public Frontages of Table 4A and Table 4B. These may be added to the base SmartCode for the local calibration, and others may be created as necessary using the same template. They replicate closely the thoroughfare standards of municipal public works manuals, and may be incorporated into them, although it is the intention of the SmartCode to cover all the visual design aspects of a typical public works manual.

If Thoroughfare Assemblies are used, one or more of the Vehicular Lane or Public Frontage Tables may be removed. Calibrators should take care that provisions listed on the Table 4C Assemblies do not conflict with provisions on the remaining Vehicular Lane or Public Frontage Tables, or with Section 3.7. It is usually helpful to leave Table 4A, and possibly Table 4B, in the calibrated code because there are always opportunities for streetscape improvements in the future.

The thoroughfares here are drawn to scale with the supporting information below them. The identification key gives the thoroughfare type followed by the right-of-way width, followed by the pavement width, and in some instances followed by specialized transportation capability.

The Transportation Provision designation may include bicycle facilities such as Bicycle Trail, Bicycle Lane, or Bicycle Route. Usually a Bicycle Route should be marked by a Sharrow. In some calibrations Bicycle Track may be indicated. A Track is an urban version of a Trail, physically separated (and sometimes grade-separated) from the Vehicular Lanes, on or above the sidewalk or behind buildings. These Thoroughfare Assemblies often pertain to several T-zones, so the bicycle facility may need further T-zone definition.

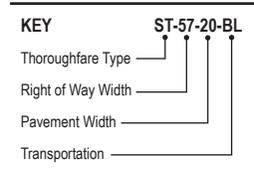
Because walkability is so important to good urbanism, it should be noted here that any paths or trails intended for runners and long-distance walkers should not be paved with concrete. Asphalt has less impact on the joints and feet.

TABLE 4C. SMARTCODE MODULE

The Table 4C Module presents twenty-two typical assemblies for convenience. They are organized first by type, then by ROW width, then by Vehicular Lanes overall width.

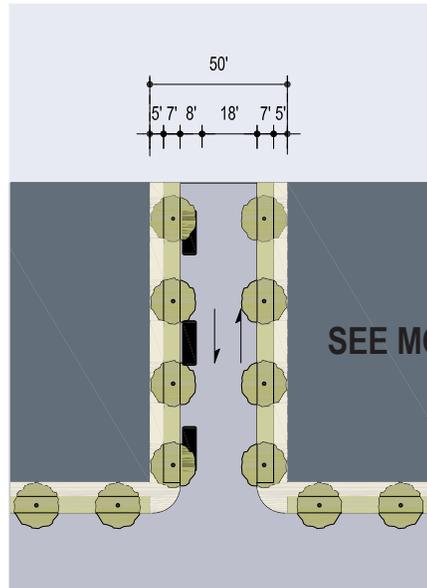
The Module is available in the Appendix of this volume or at www.SmartCodeCentral.com in editable form.

TABLE 4C: Thoroughfare Assemblies. These Thoroughfares are assembled from the elements that appear in Tables 3A and 3B and incorporate the Public Frontages of Table 4A. The key gives the Thoroughfare type followed by the right-of-way width, followed by the pavement width, and in some instances followed by specialized transportation capability.



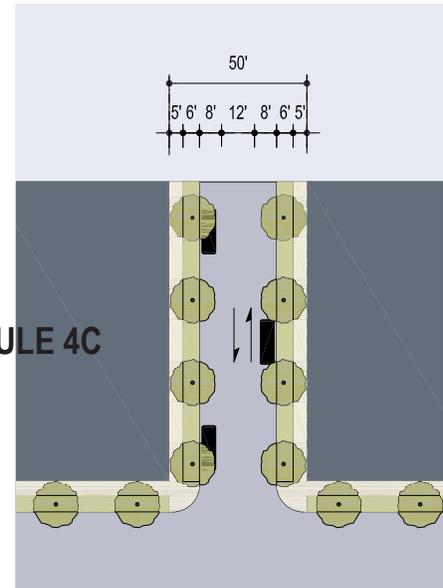
THOROUGHFARE TYPES

| | |
|--------------------|----|
| Highway: | HW |
| Boulevard: | BV |
| Avenue: | AV |
| Commercial Street: | CS |
| Drive: | DR |
| Street: | ST |
| Road: | RD |
| Rear Alley: | RA |
| Rear Lane: | RL |
| Bicycle Trail: | BT |
| Bicycle Lane: | BL |
| Bicycle Route: | BR |
| Path: | PT |
| Passage: | PS |
| Transit Route: | TR |



ST-50-26

| | |
|--------------------------|---------------------------|
| Thoroughfare Type | Street |
| Transect Zone Assignment | T4, T5, T6 |
| Right-of-Way Width | 50 feet |
| Pavement Width | 26 feet |
| Movement | Slow Movement |
| Design Speed | 20 MPH |
| Pedestrian Crossing Time | 7.4 seconds |
| Traffic Lanes | 2 lanes |
| Parking Lanes | One side @ 8 feet marked |
| Curb Radius | 10 feet |
| Walkway Type | 5 foot Sidewalk |
| Planter Type | 7 foot continuous Planter |
| Curb Type | Curb |
| Landscape Type | Trees at 30' o.c. Avg. |
| Transportation Provision | BR |



ST-50-28

| | |
|--------------------------|------------------------------|
| Thoroughfare Type | Street |
| Transect Zone Assignment | T4, T5, T6 |
| Right-of-Way Width | 50 feet |
| Pavement Width | 28 feet |
| Movement | Yield Movement |
| Design Speed | 20 MPH |
| Pedestrian Crossing Time | 7.6 seconds |
| Traffic Lanes | 2 lanes |
| Parking Lanes | Both sides @ 8 feet unmarked |
| Curb Radius | 10 feet |
| Walkway Type | 5 foot Sidewalk |
| Planter Type | 6 foot continuous Planter |
| Curb Type | Curb |
| Landscape Type | Trees at 30' o.c. Avg. |
| Transportation Provision | BR |

TABLE 5: PUBLIC LIGHTING

Lighting and the fixture vary in performance and character. The code allocates these according to Transect Zone. Lighting type and color can be adjusted according to the Transect, along with brightness as listed in the Lighting Module. (See the Appendix of this volume or visit www.SmartCodeCentral.com for SmartCode modules.)

There are many issues to consider when lighting the public realm: the color, the color of the shadows cast, the contrast (hardness/softness of light and shadow), the reflectance of the area being illuminated, cost, maintenance, etc. Metal halide lamps are recommended by many experts for street lighting, but can be expensive.

Color is controversial. Some designers argue that a yellowish light is preferable for night, since it's closer to firelight; while others push for a daylight-like "full spectrum." Halogen, which is whiter than incandescent but burns very hot, is usually considered the most flattering for evenings. However, since lighting technology is always changing, be sure to consult the latest research.

Attention to transect-based Dark Sky provisions and energy efficiency must be among the considerations. The International Dark-Sky Association advises using full cutoff (fully shielded) luminaires in all zones. Look for manufacturers supplying IDA-Approved fixtures.

The table shows five general fixture types, commonly available. A set of streetlights corresponding to these types would be approved by the utility company and listed on this page.

The fixtures should be provided, stocked and maintained by the utility company or property owner's association.

TABLE 6: PUBLIC PLANTING

Street trees vary in their form and also in their suitability for urban use. This table shows six common types of tree shapes and their appropriateness within the Transect Zones. The shape of the canopy must integrate with the degree of setback along the Transect. Calibrations would select a variety of species appropriate for the bioregion. The tree's performance regarding root pressure tolerance, urban soil types and other criteria are considered during this selection. If possible, for mixed use areas especially, select a type with a high canopy that, at maturity, does not block the windows of buildings below two stories, or the retail facades in T-5 and T-6. Ideally, mature trees should provide a continuous shade canopy. In the event of overhead powerlines, the species selected should have a crown that at maturity remains below the lines.

TABLE 6: Public Planting. This table shows six common types of street tree shapes and their appropriateness within the Transect Zones. The local planning office selects species appropriate for the bioregion.

| | T1 | T2 | T3 | T4 | T5 | T6 | SD | Specific Lighting |
|---|----|----|----|----|----|----|----|---|
| Pole  | ■ | ■ | ■ | ■ | ■ | ■ | | <hr/> |
| Oval  | ■ | ■ | ■ | ■ | ■ | ■ | | <hr/> |
| Ball  | ■ | ■ | ■ | ■ | ■ | ■ | | <hr/> |
| Pyramid  | ■ | ■ | ■ | ■ | | | | <hr/> |
| Umbrella  | ■ | ■ | ■ | ■ | | | | <hr/> |
| Vase  | ■ | ■ | ■ | ■ | | | | <hr/> |

TABLE 7: PRIVATE FRONTAGES

The Private Frontage is the layer between the building and the frontage lot lines. The way this area is designed is important because it is one of the principal urban components (along with the Thoroughfares) that affect the pedestrian. Certain frontage types encourage social interaction between the private and public realms as well as “eyes on the street.” Among them are shopfronts, porches and stoops. Certain others, such as blank walls and parking lots, do not. They do not appear as allowable frontages in this code because of their demonstrated anti-pedestrian performance.

The relationship between this table and Table 4A and Table 4B (Public Frontages) is diagrammed in Table 17 (Definitions Illustrated - Thoroughfares).

TABLE 7: Private Frontages. The Private Frontage is the area between the building Facades and the Lot lines.

| | SECTION | PLAN |
|--|---|---|
| | LOT PRIVATE FRONTAGE R.O.W. PUBLIC FRONTAGE | LOT PRIVATE FRONTAGE R.O.W. PUBLIC FRONTAGE |
| <p>a. Common Yard: a planted Frontage wherein the Facade is set back substantially from the Frontage Line. The front yard created remains unfenced and is visually continuous with adjacent yards, supporting a common landscape. The deep Setback provides a buffer from the higher speed Thoroughfares.</p> | | T2 T3 |
| <p>b. Porch & Fence: a planted Frontage wherein the Facade is set back from the Frontage Line with an attached porch permitted to Encroach. A fence at the Frontage Line maintains street spatial definition. Porches shall be no less than 8 feet deep.</p> | | T3 T4 |
| <p>c. Terrace or Lightwell: a Frontage wherein the Facade is set back from the Frontage line by an elevated terrace or a sunken Lightwell. This type buffers Residential use from urban Sidewalks and removes the private yard from public Encroachment. Terraces are suitable for conversion to outdoor cafes. Syn: Dooryard.</p> | | T4 T5 |
| <p>d. Forecourt: a Frontage wherein a portion of the Facade is close to the Frontage Line and the central portion is set back. The Forecourt created is suitable for vehicular drop-offs. This type should be allocated in conjunction with other Frontage types. Large trees within the Forecourts may overhang the Sidewalks.</p> | | T4 T5 T6 |
| <p>e. Stoop: a Frontage wherein the Facade is aligned close to the Frontage Line with the first Story elevated from the Sidewalk sufficiently to secure privacy for the windows. The entrance is usually an exterior stair and landing. This type is recommended for ground-floor Residential use.</p> | | T4 T5 T6 |
| <p>f. Shopfront: a Frontage wherein the Facade is aligned close to the Frontage Line with the building entrance at Sidewalk grade. This type is conventional for Retail use. It has a substantial glazing on the Sidewalk level and an awning that should overlap the Sidewalk to within 2 feet of the Curb. Syn: Retail Frontage.</p> | | T4 T5 T6 |
| <p>g. Gallery: a Frontage wherein the Facade is aligned close to the Frontage line with an attached cantilevered shed or a lightweight colonnade overlapping the Sidewalk. This type is conventional for Retail use. The Gallery shall be no less than 10 feet wide and should overlap the Sidewalk to within 2 feet of the Curb.</p> | | T4 T5 T6 |
| <p>h. Arcade: a colonnade supporting habitable space that overlaps the Sidewalk, while the Facade at Sidewalk level remains at or behind the Frontage Line. This type is conventional for Retail use. The Arcade shall be no less than 12 feet wide and should overlap the Sidewalk to within 2 feet of the Curb. See Table 8.</p> | | T5 T6 |

TABLE 8: BUILDING CONFIGURATION

This table shows the configurations for different building heights for each Transect Zone. It must be modified to show the calibrated heights for local conditions.

Building height should always be expressed in numbers of stories. If the height limit is in feet, an owner will usually try to squeeze in extra stories by making the ceilings lower. This lowers the quality of the building.

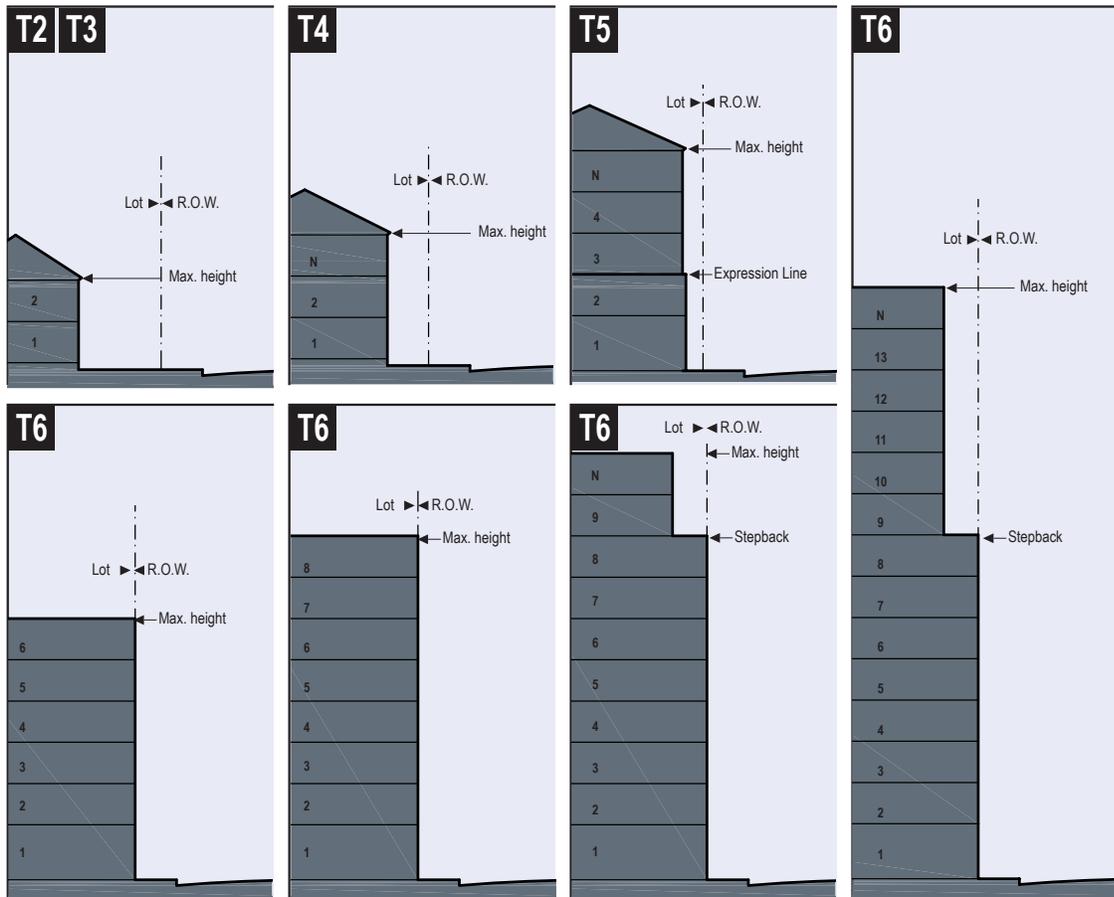
Where there is good reason to keep a strict metric limit on height, such as preserving a viewshed or keeping the roofline below the local tree canopy, it is advisable to regulate both stories and feet, but it is essential to keep the story number low enough that each story won't be lower than ten feet clear. Example: "Height limit is 35 feet and no more than three Stories." If that limit were expressed only in feet, an owner could squeeze in four badly-proportioned stories.

Conversely, the stated maximum limit of 14 feet clear for a story prevents the subsequent (illegal) insertion of a loft, which could double the buildable area.

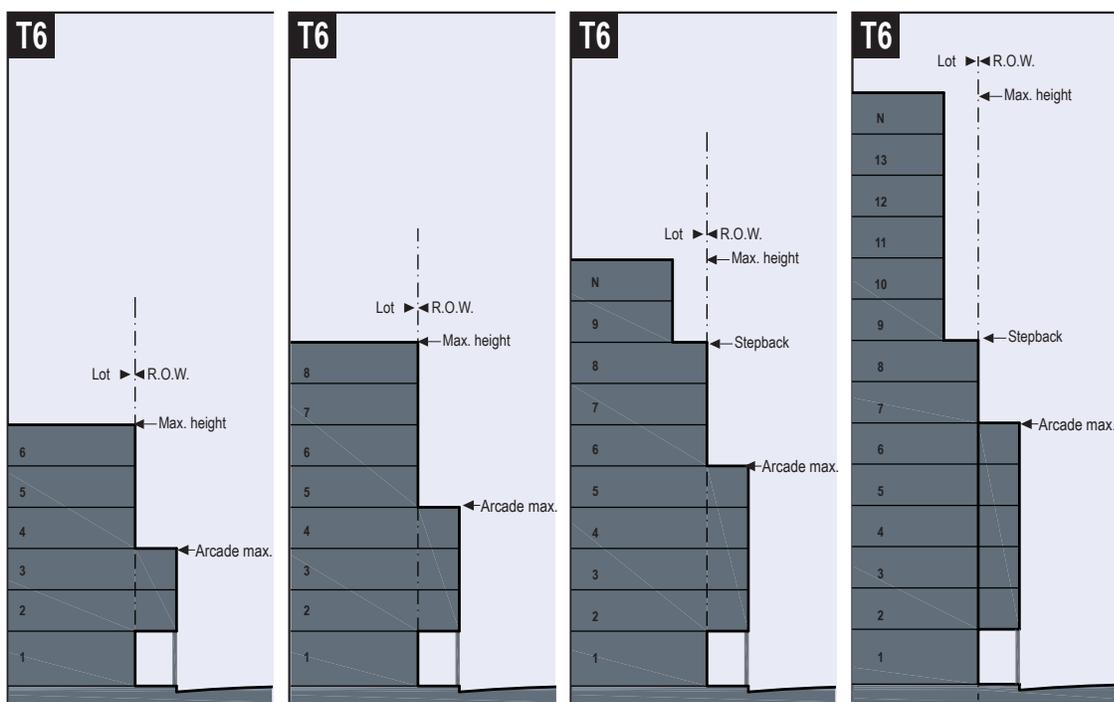
Recess lines for stepbacks on higher buildings help mitigate the "canyon" effect of tall buildings, and help to create graceful transitions between existing lower buildings and higher ones in the years of successional transition.

The ratio of thoroughfare width to facade height is important for creating spatial enclosure and the sense of the "outdoor room." If the height-to-width ratio is too wide, the public realm becomes less defined. When a building has been stepped back, the measure is taken to the recess line to determine the viability of such proportions.

TABLE 8: Building Configuration. This table shows the Configurations for different building heights for each Transect Zone. It must be modified to show actual calibrated heights for local conditions. Recess Lines and Expression Lines shall occur on higher buildings as shown. N = maximum height as specified in Table 14k.



Stepbacks/Arcade Heights. The diagrams below show Arcade Frontages. Diagrams above apply to all other Frontages.



These annotations are advisory only. The SmartCode itself appears only on the right side of each spread.

TABLE 9: BUILDING DISPOSITION

This table approximates the location of the building relative to the boundaries of each individual lot. Each of these very general types is intrinsically more or less urban, depending on the extent that it completes the frontage. More precise typological footprints are provided in Appendix XII.

Specialized Buildings eligible for dispensation from these typologies may include hospitals, factories, airports, refineries, schools, colleges, and stadiums, as well as civic buildings.

TABLE 9: Building Disposition. This table approximates the location of the structure relative to the boundaries of each individual Lot, establishing suitable basic building types for each Transect Zone.

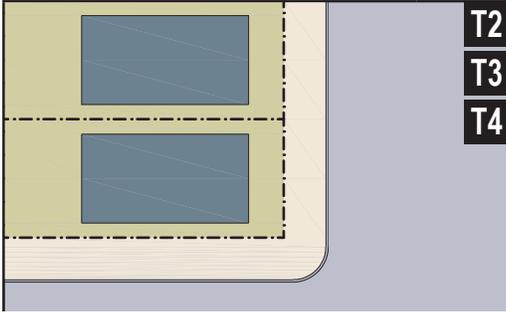
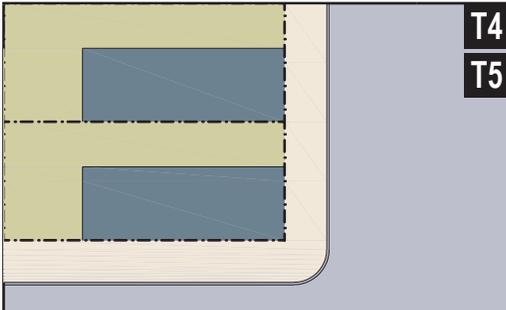
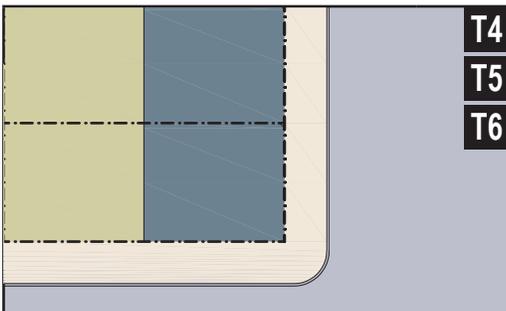
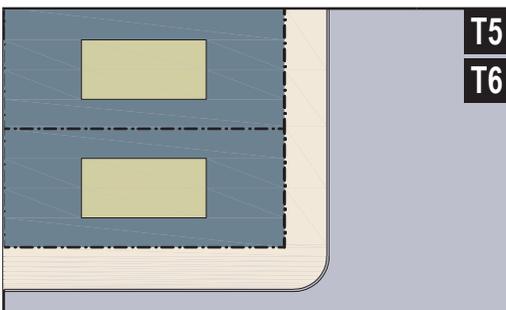
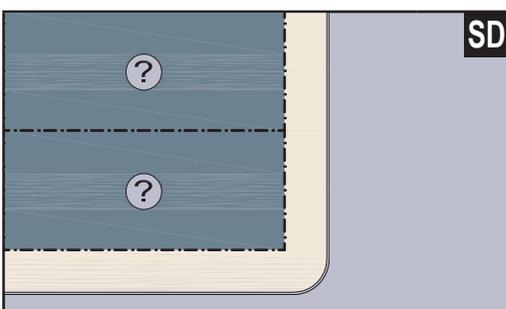
| | |
|---|---|
| <p>a. Edgeyard: Specific Types - single family House, cottage, villa, estate house, urban villa. A building that occupies the center of its Lot with Setbacks on all sides. This is the least urban of types as the front yard sets it back from the Frontage, while the side yards weaken the spatial definition of the public Thoroughfare space. The front yard is intended to be visually continuous with the yards of adjacent buildings. The rear yard can be secured for privacy by fences and a well-placed Backbuilding and/or Outbuilding.</p> |  <p>T2 T3 T4</p> |
| <p>b. Sideyard: Specific Types - Charleston single house, double house, zero lot line house, twin. A building that occupies one side of the Lot with the Setback to the other side. A shallow Frontage Setback defines a more urban condition. If the adjacent building is similar with a blank side wall, the yard can be quite private. This type permits systematic climatic orientation in response to the sun or the breeze. If a Sideyard House abuts a neighboring Sideyard House, the type is known as a twin or double House. Energy costs, and sometimes noise, are reduced by sharing a party wall in this Disposition.</p> |  <p>T4 T5</p> |
| <p>c. Rearyard: Specific Types - Townhouse, Rowhouse, Live-Work unit, loft building, Apartment House, Mixed Use Block, Flex Building, perimeter Block. A building that occupies the full Frontage, leaving the rear of the Lot as the sole yard. This is a very urban type as the continuous Facade steadily defines the public Thoroughfare. The rear Elevations may be articulated for functional purposes. In its Residential form, this type is the Rowhouse. For its Commercial form, the rear yard can accommodate substantial parking.</p> |  <p>T4 T5 T6</p> |
| <p>d. Courtyard: Specific Types - patio House. A building that occupies the boundaries of its Lot while internally defining one or more private patios. This is the most urban of types, as it is able to shield the private realm from all sides while strongly defining the public Thoroughfare. Because of its ability to accommodate incompatible activities, masking them from all sides, it is recommended for workshops, Lodging and schools. The high security provided by the continuous enclosure is useful for crime-prone areas.</p> |  <p>T5 T6</p> |
| <p>e. Specialized: A building that is not subject to categorization. Buildings dedicated to manufacturing and transportation are often distorted by the trajectories of machinery. Civic buildings, which may express the aspirations of institutions, may be included.</p> |  <p>SD</p> |

TABLE 10: BUILDING FUNCTION - GENERAL

This table categorizes the range of uses to which a building may be dedicated within each Transect Zone. These functional classifications are parametric, not categorical as in conventional use zoning. Residential, Lodging, Office and Retail occur to varying degrees in all inhabited Transect Zones (T2-T6) in the declension of Restricted, Limited, and Open. For greater precision describing the Functions, Table 12 may be used in addition to Table 10.

This table is useful for calibration, as it enables the creation of subzones such as T4-Open or T-5 Limited. This allows the formal (typological) characteristics of a building to be regulated relatively independently of its use. This approximates the messy and flexible mixed use observable in historical urbanism, and enables the protective coding of such existing conditions.

For example, a T4-O Zone would permit Open Functions on rural village main streets that have an otherwise T4 character, perhaps with a loose variety of low-rise housing types including cottages, and variable setbacks. Alternatively, such a typologically loose main street could be coded T5 with the allowable building dispositions changed on Table 9.

The descriptions on this table may be altered if necessary.

The provision for T5 and T6 that retail spaces under 1500 square feet are exempt from parking requirements is included as it encourages the kind of smaller independent shops that contribute to urban vitality. It also helps keep existing small-lot Main Street downtowns legal for rebuilding without the need for conjoining lots. And it maintains commercial sidewalks free of curb cuts for off-street parking.

TABLE 11: PARKING CALCULATION

The Required Parking table summarizes the parking requirements of Table 10 for each site or, conversely, the amount of building allowed on each site given the parking available. Use the Shared Parking Factor in the event of mixed use (defined as multiple functions within the same building through superimposition or adjacency, or in multiple buildings by adjacency, or at a proximity determined by Warrant). The actual parking required is calculated by adding the total number of spaces required by each separate function and dividing the total by the appropriate factor from the Shared Parking Factor matrix.

The calculations work as follows:

1. The required parking for each category of function appears on Table 10. These requirements also apply to the subcategories of Table 12. For those functions that are not covered, the parking is calculated by Warrant.
2. Table 11a (Required Parking) summarizes the parking requirements of Table 10, which determines the amount of parking required for each site or, conversely, the amount of buildings allowed on each site given the parking available.
3. In the event of mixed use, the actual parking required is calculated by adding the total number of spaces required by each separate function and dividing the total by the appropriate factor from Table 11b (Shared Parking Factor).

An example of this calculation: The Residential Function requires 10 spaces while the office portion requires 12 spaces. Independently they would require 22 spaces, but when divided by the sharing factor of 1.4, they would require only 16 spaces. A second way to calculate: If there are 22 spaces available for Residential and Office, multiplying this by the factor 1.4 gives the equivalent of 30 spaces. Thus buildings are allowed corresponding to 30 parking spaces.

When three functions share parking, use the lowest factor so that enough parking is assured.

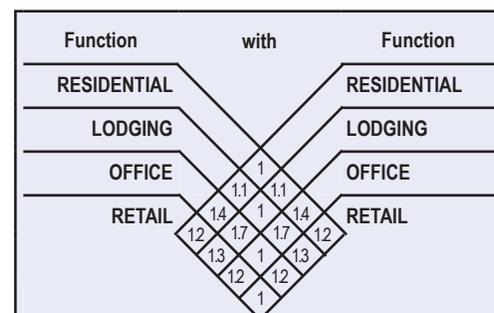
TABLE 10: Building Function. This table categorizes Building Functions within Transect Zones. Parking requirements are correlated to functional intensity. For Specific Function and Use permitted By Right or by Warrant, see Table 12.

| | T2 T3 | T4 | T5 T6 |
|-----------------------|--|--|---|
| a. RESIDENTIAL | Restricted Residential: The number of dwellings on each Lot is restricted to one within a Principal Building and one within an Accessory Building, with 2.0 parking places for each. Both dwellings shall be under single ownership. The habitable area of the Accessory Unit shall not exceed 440 sf, excluding the parking area. | Limited Residential: The number of dwellings on each Lot is limited by the requirement of 1.5 parking places for each dwelling, a ratio which may be reduced according to the shared parking standards (See Table 11). | Open Residential: The number of dwellings on each Lot is limited by the requirement of 1.0 parking places for each dwelling, a ratio which may be reduced according to the shared parking standards (See Table 11). |
| b. LODGING | Restricted Lodging: The number of bedrooms available on each Lot for lodging is limited by the requirement of 1.0 assigned parking place for each bedroom, up to five, in addition to the parking requirement for the dwelling. The Lodging must be owner occupied. Food service may be provided in the a.m. The maximum length of stay shall not exceed ten days. | Limited Lodging: The number of bedrooms available on each Lot for lodging is limited by the requirement of 1.0 assigned parking places for each bedroom, up to twelve, in addition to the parking requirement for the dwelling. The Lodging must be owner occupied. Food service may be provided in the a.m. The maximum length of stay shall not exceed ten days. | Open Lodging: The number of bedrooms available on each Lot for lodging is limited by the requirement of 1.0 assigned parking places for each bedroom. Food service may be provided at all times. The area allocated for food service shall be calculated and provided with parking according to Retail Function. |
| c. OFFICE | Restricted Office: The building area available for office use on each Lot is restricted to the first Story of the Principal or the Accessory Building and by the requirement of 3.0 assigned parking places per 1000 square feet of net office space in addition to the parking requirement for each dwelling. | Limited Office: The building area available for office use on each Lot is limited to the first Story of the principal building and/or to the Accessory building, and by the requirement of 3.0 assigned parking places per 1000 square feet of net office space in addition to the parking requirement for each dwelling. | Open Office: The building area available for office use on each Lot is limited by the requirement of 2.0 assigned parking places per 1000 square feet of net office space. |
| d. RETAIL | Restricted Retail: The building area available for Retail use is restricted to one Block corner location at the first Story for each 300 dwelling units and by the requirement of 4.0 assigned parking places per 1000 square feet of net Retail space in addition to the parking requirement of each dwelling. The specific use shall be further limited to neighborhood store, or food service seating no more than 20. | Limited Retail: The building area available for Retail use is limited to the first Story of buildings at corner locations, not more than one per Block, and by the requirement of 4.0 assigned parking places per 1000 square feet of net Retail space in addition to the parking requirement of each dwelling. The specific use shall be further limited to neighborhood store, or food service seating no more than 40. | Open Retail: The building area available for Retail use is limited by the requirement of 3.0 assigned parking places per 1000 square feet of net Retail space. Retail spaces under 1500 square feet are exempt from parking requirements. |
| e. CIVIC | See Table 12 | See Table 12 | See Table 12 |
| f. OTHER | See Table 12 | See Table 12 | See Table 12 |

TABLE 11: Parking Calculations. The Shared Parking Factor for two Functions, when divided into the sum of the two amounts as listed on the Required Parking table below, produces the Effective Parking needed for each site involved in sharing. Conversely, if the Sharing Factor is used as a multiplier, it indicates the amount of building allowed on each site given the parking available.

| | REQUIRED PARKING (See Table 10) | | |
|--------------------|---------------------------------|--------------------|--------------------|
| | T2 T3 | T4 | T5 T6 |
| RESIDENTIAL | 2.0 / dwelling | 1.5 / dwelling | 1.0 / dwelling |
| LODGING | 1.0 / bedroom | 1.0 / bedroom | 1.0 / bedroom |
| OFFICE | 3.0 / 1000 sq. ft. | 3.0 / 1000 sq. ft. | 2.0 / 1000 sq. ft. |
| RETAIL | 4.0 / 1000 sq. ft. | 4.0 / 1000 sq. ft. | 3.0 / 1000 sq. ft. |
| CIVIC | To be determined by Warrant | | |
| OTHER | To be determined by Warrant | | |

SHARED PARKING FACTOR



SMARTCODE ANNOTATED

These annotations are advisory only. The SmartCode itself appears only on the right side of each spread.

TABLE 12: SPECIFIC FUNCTION & USE

This table increases the precision of the Building Function categories of Table 10. Table 12 should be customized for local character and requirements. Some of these terms, and terms that might be added during calibration, may need Definitions in Article 7.

SMARTCODE

TABLE 12. SPECIFIC FUNCTION & USE

Municipality

TABLE 12: Specific Function & Use. This table expands the categories of Table 10 to delegate specific Functions and uses within Transect Zones. Table 12 should be customized for local character and requirements.

| a. RESIDENTIAL | T1 | T2 | T3 | T4 | T5 | T6 | SD |
|---------------------------------|----|----|----|----|----|----|----|
| Mixed Use Block | | | | | ■ | ■ | |
| Flex Building | | | | ■ | ■ | ■ | |
| Apartment Building | | | | ■ | ■ | ■ | |
| Live/Work Unit | | | ■ | ■ | ■ | ■ | □ |
| Row House | | | | ■ | ■ | | |
| Duplex House | | | | ■ | ■ | | |
| Courtyard House | | | | ■ | ■ | | |
| Sidyard House | | | ■ | ■ | ■ | | |
| Cottage | | | ■ | ■ | | | |
| House | | ■ | ■ | ■ | | | |
| Villa | | ■ | | | | | |
| Accessory Unit | | ■ | ■ | ■ | ■ | | |
| b. LODGING | | | | | | | |
| Hotel (no room limit) | | | | | ■ | ■ | □ |
| Inn (up to 12 rooms) | | □ | | ■ | ■ | ■ | |
| Bed & Breakfast (up to 5 rooms) | | □ | ■ | ■ | ■ | ■ | |
| S.R.O. hostel | | | □ | □ | □ | □ | □ |
| School Dormitory | | | | ■ | ■ | ■ | ■ |
| c. office | | | | | | | |
| Office Building | | | | ■ | ■ | ■ | □ |
| Live-Work Unit | | | ■ | ■ | ■ | ■ | □ |
| d. RETAIL | | | | | | | |
| Open-Market Building | | ■ | ■ | ■ | ■ | ■ | ■ |
| Retail Building | | | | ■ | ■ | ■ | □ |
| Display Gallery | | | | ■ | ■ | ■ | □ |
| Restaurant | | | | ■ | ■ | ■ | □ |
| Kiosk | | | | ■ | ■ | ■ | □ |
| Push Cart | | | | | □ | □ | □ |
| Liquor Selling Establishment | | | | | □ | □ | □ |
| Adult Entertainment | | | | | | □ | □ |
| e. CIVIC | | | | | | | |
| Bus Shelter | | | ■ | ■ | ■ | ■ | ■ |
| Convention Center | | | | | | □ | ■ |
| Conference Center | | | | | □ | ■ | ■ |
| Exhibition Center | | | | | | □ | ■ |
| Fountain or Public Art | | ■ | ■ | ■ | ■ | ■ | ■ |
| Library | | | | ■ | ■ | ■ | ■ |
| Live Theater | | | | | ■ | ■ | ■ |
| Movie Theater | | | | | ■ | ■ | ■ |
| Museum | | | | | □ | ■ | ■ |
| Outdoor Auditorium | | □ | ■ | | ■ | ■ | ■ |
| Parking Structure | | | | | ■ | ■ | ■ |
| Passenger Terminal | | | | | □ | □ | ■ |
| Playground | | ■ | ■ | ■ | ■ | ■ | ■ |
| Sports Stadium | | | | | | □ | ■ |
| Surface Parking Lot | | | | □ | □ | □ | ■ |
| Religious Assembly | | ■ | ■ | ■ | ■ | ■ | ■ |

| f. OTHER: AGRICULTURE | T1 | T2 | T3 | T4 | T5 | T6 | SD |
|--------------------------------|----|----|----|----|----|----|----|
| Grain Storage | ■ | ■ | | | | | □ |
| Livestock Pen | □ | □ | | | | | □ |
| Greenhouse | ■ | ■ | □ | | | | □ |
| Stable | ■ | ■ | □ | | | | □ |
| Kennel | ■ | ■ | □ | □ | □ | □ | □ |
| f. OTHER: AUTOMOTIVE | | | | | | | |
| Gasoline | | □ | | | □ | □ | ■ |
| Automobile Service | | | | | | | ■ |
| Truck Maintenance | | | | | | | ■ |
| Drive -Through Facility | | | | | □ | □ | ■ |
| Rest Stop | ■ | ■ | | | | | □ |
| Roadside Stand | ■ | ■ | | | | | □ |
| Billboard | | | | | | □ | □ |
| Shopping Center | | | | | | | □ |
| Shopping Mall | | | | | | | □ |
| f. OTHER: CIVIL SUPPORT | | | | | | | |
| Fire Station | | | ■ | ■ | ■ | ■ | ■ |
| Police Station | | | | ■ | ■ | ■ | ■ |
| Cemetery | | ■ | □ | □ | | | ■ |
| Funeral Home | | | | ■ | ■ | ■ | ■ |
| Hospital | | | | | □ | □ | ■ |
| Medical Clinic | | | | □ | ■ | ■ | ■ |
| f. OTHER: EDUCATION | | | | | | | |
| College | | | | | □ | □ | ■ |
| High School | | | | □ | □ | □ | ■ |
| Trade School | | | | | □ | □ | ■ |
| Elementary School | | | □ | ■ | ■ | ■ | ■ |
| Other- Childcare Center | | ■ | ■ | ■ | ■ | ■ | □ |
| f. OTHER: INDUSTRIAL | | | | | | | |
| Heavy Industrial Facility | | | | | | | ■ |
| Light Industrial Facility | | | | | | □ | ■ |
| Truck Depot | | | | | | | ■ |
| Laboratory Facility | | | | | | □ | ■ |
| Water Supply Facility | | | | | | | ■ |
| Sewer and Waste Facility | | | | | | | ■ |
| Electric Substation | □ | □ | □ | □ | □ | □ | ■ |
| Wireless Transmitter | □ | □ | | | | | ■ |
| Cremation Facility | | | | | | | ■ |
| Warehouse | | | | | | □ | ■ |
| Produce Storage | | | | | | | ■ |
| Mini-Storage | | | | | | | ■ |

■ BY RIGHT
□ BY WARRANT

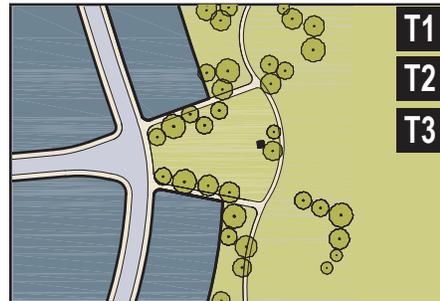
TABLE 13: CIVIC SPACE

The intended types of civic space are diagrammed and described in this Table. The diagrams are only illustrative; specific designs would be prepared in accordance to the verbal descriptions on this table.

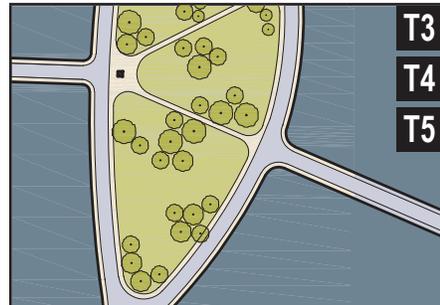
Designers of civic space should make a conceptual distinction between bounded (shaped) space and what Steve Peterson calls “anti-space.” The most urban types of civic space - squares and plazas - are bounded space, perceptually enclosed by the surrounding frontages, the height of the buildings, and/or the trees. The ideal is to create an outdoor room. In zones T4, T5, and T6, attention to bounded space is essential so that the continuous urbanity of blocks and thoroughfares is not dissipated or severed by haphazard anti-spatial outdoor areas.

Parks and greens, on the other hand, may approach “anti-space” as they are often too large or too formless (or both) to have the characteristics of an urban volumetric void. Parks may appear in any Transect Zone, but in the more urban zones T4, T5, and T6 they require approval by Warrant. The form of these larger spaces may be linear or open. Nevertheless, it is desirable, even with parks and greens, that the edges of these spaces be completely or partially bounded, like the squares. Civic spaces may also be hybrids, such as a square at the edge of a park, and they may contain specific urban components including paths, streets, parking lots, and buildings. Note that parks that are large “natural” areas in proximity of urbanism, if not specifically designed for public use, should be classified as permanent T1 or T2 zones, as they are really undeveloped remnants of woodlands, wetlands, farmlands, waterbodies, or steep slopes.

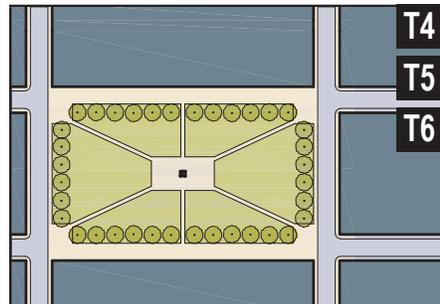
a. Park: A natural preserve available for unstructured recreation. A park may be independent of surrounding building Frontages. Its landscape shall consist of Paths and trails, meadows, waterbodies, woodland and open shelters, all naturalistically disposed. Parks may be lineal, following the trajectories of natural corridors. The minimum size shall be 8 acres. Larger parks may be approved by Warrant as Special Districts in all zones.



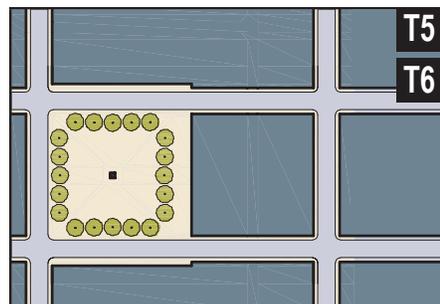
b. Green: An Open Space, available for unstructured recreation. A Green may be spatially defined by landscaping rather than building Frontages. Its landscape shall consist of lawn and trees, naturalistically disposed. The minimum size shall be 1/2 acre and the maximum shall be 8 acres.



c. Square: An Open Space available for unstructured recreation and Civic purposes. A Square is spatially defined by building Frontages. Its landscape shall consist of paths, lawns and trees, formally disposed. Squares shall be located at the intersection of important Thoroughfares. The minimum size shall be 1/2 acre and the maximum shall be 5 acres.



d. Plaza: An Open Space available for Civic purposes and Commercial activities. A Plaza shall be spatially defined by building Frontages. Its landscape shall consist primarily of pavement. Trees are optional. Plazas *should* be located at the intersection of important streets. The minimum size shall be 1/2 acre and the maximum shall be 2 acres.



e. Playground: An Open Space designed and equipped for the recreation of children. A playground *should* be fenced and may include an open shelter. Playgrounds shall be interspersed within Residential areas and may be placed within a Block. Playgrounds may be included within parks and greens. There shall be no minimum or maximum size.

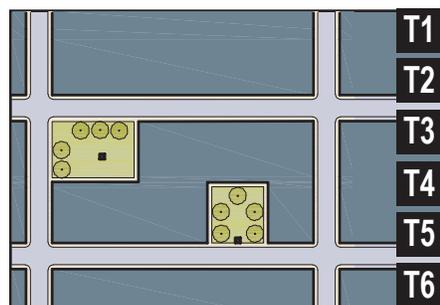


TABLE 14: SMARTCODE SUMMARY

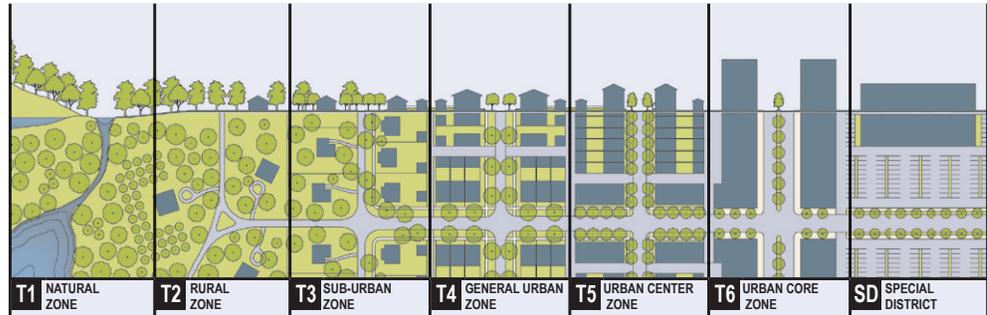
This table is a summary of all the statistics and other metrics that appear throughout the SmartCode, including those that appear on other tables. Table 14 may be considered a checklist, both by developers for design and by regulators for permit processing. Virtually all of the metrics may be reconsidered for local calibration. If they are not, what would result is a very high quality but generic American urbanism. Calibration to local or regional conditions is done using the Transect-Dissect-Quadrat method (See Calibrating Metrics - Synoptic Survey, Appendix X.) For practical and political purposes, many of the metrics may be transferred from the pre-existing code, but only if they reflect the intent of the SmartCode (see Section 1.3 Intent).

In the event that the Regional and Community Plans have already been prepared, and only the lots and buildings are to be designed, the upper part of this Table (14a through 14e) may be eliminated. These are the equivalent of a subdivision ordinance. This would occur when Article 2, Article 3, and Article 4 are eliminated.

14a These percentages are the allocation ranges for Transect Zones, per pedestrian shed for the applicable Community Unit type. They refer to greenfield plans (Article 3 New Community Plans) only. The allocations in Infill Plans (Article 4) will depend on an analysis of existing conditions (Transect-Dissect-Quadrat method) and the community's intentions for its future. These also appear on Table 2 and must be changed in both places.

14b The Base Residential Density line is set artificially low (for a TND) to incentivize Transfer of Development Rights (see Article 2). If the TDR system is eliminated from the code, the TDR densities listed here may provide guidance regarding the Base Residential Densities, and the lower range of numbers deleted.

Note: All requirements in this Table are subject to calibration for local context.



| | T1 NATURAL ZONE | T2 RURAL ZONE | T3 SUB-URBAN ZONE | T4 GENERAL URBAN ZONE | T5 URBAN CENTER ZONE | T6 URBAN CORE ZONE | SD SPECIAL DISTRICT |
|---|-----------------|---------------------------|---------------------------|---------------------------|---------------------------|------------------------|--|
| a. ALLOCATION OF ZONES per Pedestrian Shed (applicable to Article 3 only) (see Table 16) | | | | | | | |
| CLD requires | no minimum | 50% min | 10 - 30% | 20 - 40% | not permitted | not permitted | |
| TND requires | no minimum | no minimum | 10 - 30% | 30 - 60% | 10 - 30% | not permitted | |
| RCD requires | no minimum | no minimum | not permitted | 10 - 30% | 10 - 30% | 40 - 80% | |
| b. BASE RESIDENTIAL DENSITY (see Section 3.4) | | | | | | | |
| By Right | not applicable | 1 unit / 20 ac avg. | 2 units / ac. gross | 4 units / ac. gross | 6 units / ac. gross | 12 units / ac. gross | |
| By TDR | by Variance | by Variance | 6 units / ac. gross | 12 units / ac. gross | 24 units / ac. gross | 96 units / ac. gross | |
| Other Functions | by Variance | by Variance | 10 - 20% | 20 - 30% | 30 - 50% | 50 - 70% | |
| c. BLOCK SIZE | | | | | | | |
| Block Perimeter | no maximum | no maximum | 3000 ft. max | 2400 ft. max | 2000 ft. max | 2000 ft. max | * (see Table 16) |
| d. THOROUGHFARES (see Table 3 and Table 4) | | | | | | | |
| HW | permitted | permitted | permitted | not permitted | not permitted | not permitted | * 3000 ft. max with parking structures |
| BV | not permitted | not permitted | permitted | permitted | permitted | permitted | |
| AV | not permitted | not permitted | permitted | permitted | permitted | permitted | |
| CS | not permitted | not permitted | not permitted | not permitted | permitted | permitted | |
| DR | not permitted | not permitted | permitted | permitted | permitted | permitted | |
| ST | not permitted | not permitted | permitted | permitted | permitted | not permitted | |
| RD | permitted | permitted | permitted | not permitted | not permitted | not permitted | |
| Rear Lane | permitted | permitted | permitted | permitted | not permitted | not permitted | |
| Rear Alley | not permitted | not permitted | permitted | required | required | required | |
| Path | permitted | permitted | permitted | permitted | not permitted | not permitted | |
| Passage | not permitted | not permitted | permitted | permitted | permitted | permitted | |
| Bicycle Trail | permitted | permitted | permitted | not permitted * | not permitted | not permitted | |
| Bicycle Lane | permitted | permitted | permitted | permitted | not permitted | not permitted | |
| Bicycle Route | permitted | permitted | permitted | permitted | permitted | permitted | |
| e. CIVIC SPACES (see Table 13) | | | | | | | |
| Park | permitted | permitted | permitted | by Warrant | by Warrant | by Warrant | * permitted within Open Spaces |
| Green | not permitted | not permitted | permitted | permitted | permitted | not permitted | |
| Square | not permitted | not permitted | not permitted | permitted | permitted | permitted | |
| Plaza | not permitted | not permitted | not permitted | not permitted | permitted | permitted | |
| Playground | permitted | permitted | permitted | permitted | permitted | permitted | |
| f. LOT OCCUPATION | | | | | | | |
| Lot Width | not applicable | by Warrant | 72 ft. min 120 ft. max | 18 ft. min 96 ft. max | 18 ft. min 180 ft. max | 18 ft. min 700 ft. max | |
| Lot Coverage | not applicable | by Warrant | 60% max | 70% max | 80% max | 90% max | |
| g. SETBACKS - PRINCIPAL BUILDING (see Table 15) | | | | | | | |
| (g.1) Front Setback (Principal) | not applicable | 48 ft. min | 24 ft. min | 6 ft. min 18 ft. max | 2 ft. min 12 ft. max | 2 ft. min 12 ft. max | |
| (g.2) Front Setback (Secondary) | not applicable | 48 ft. min | 12 ft. min | 6 ft. min 18 ft. max | 2 ft. min 12 ft. max | 2 ft. min 12 ft. max | |
| (g.3) Side Setback | not applicable | 96 ft. min | 12 ft. min | 0 ft. min | 0 ft. min 24 ft. max | 0 ft. min 24 ft. max | |
| (g.4) Rear Setback | not applicable | 96 ft. min | 12 ft. min | 3 ft. min * | 3 ft. min * | 0 ft. min | |
| Frontage Buildout | not applicable | not applicable | 40% min | 60% min | 80% min | 80% min | |
| h. SETBACKS - OUTBUILDING (see Table 15) | | | | | | | |
| (h.1) Front Setback | not applicable | 20 ft. min + bldg setback | 20 ft. min + bldg setback | 20 ft. min + bldg setback | 40 ft. max from rear prop | not applicable | |
| (h.2) Side Setback | not applicable | 3 ft. or 6 ft. | 3 ft. or 6 ft. | 0 ft. min or 3 ft. | 0 ft. min | not applicable | |
| (h.3) Rear Setback | not applicable | 3 ft. min | 3 ft. min | 3 ft. | 3 ft. max | not applicable | |
| i. BUILDING DISPOSITION (see Table 9) | | | | | | | |
| Edgeyard | permitted | permitted | permitted | permitted | not permitted | not permitted | |
| Sideyard | not permitted | not permitted | not permitted | permitted | permitted | not permitted | |
| Rearyard | not permitted | not permitted | not permitted | permitted | permitted | permitted | |
| Courtyard | not permitted | not permitted | not permitted | not permitted | permitted | permitted | |
| j. PRIVATE FRONTAGES (see Table 7) | | | | | | | |
| Common Yard | not applicable | permitted | permitted | not permitted | not permitted | not permitted | |
| Porch & Fence | not applicable | not permitted | permitted | permitted | not permitted | not permitted | |
| Terrace or Dooryard | not applicable | not permitted | not permitted | permitted | permitted | not permitted | |
| Forecourt | not applicable | not permitted | not permitted | permitted | permitted | permitted | |
| Stoop | not applicable | not permitted | not permitted | permitted | permitted | permitted | |
| Shopfront & Awning | not applicable | not permitted | not permitted | permitted | permitted | permitted | |
| Gallery | not applicable | not permitted | not permitted | permitted | permitted | permitted | |
| Arcade | not applicable | not permitted | not permitted | not permitted | permitted | permitted | |
| k. BUILDING CONFIGURATION (see Table 8) | | | | | | | |
| Principal Building | not applicable | 2 Stories max | 2 Stories max | 3 Stories max, 2 min | 5 Stories max, 2 min | 8 Stories max, 2 min | |
| Outbuilding | not applicable | 2 Stories max | 2 Stories max | 2 Stories max | 2 Stories max | not applicable | |
| l. BUILDING FUNCTION (see Table 10 & Table 12) | | | | | | | |
| Residential | not applicable | restricted use | restricted use | limited use | open use | open use | |
| Lodging | not applicable | restricted use | restricted use | limited use | open use | open use | |
| Office | not applicable | restricted use | restricted use | limited use | open use | open use | |
| Retail | not applicable | restricted use | restricted use | limited use | open use | open use | |

ARTICLE 5
ARTICLE 2, 3, 4

DISPOSITION

CONFIGURATION

FUNCTION

TABLE 15A. FORM-BASED CODE GRAPHICS - T3

The following plate is a graphic form-based code for buildings. A form-based code is one that envisions and encourages a certain physical outcome. The SmartCode does this at the scales of the region, community, block, and/or building.

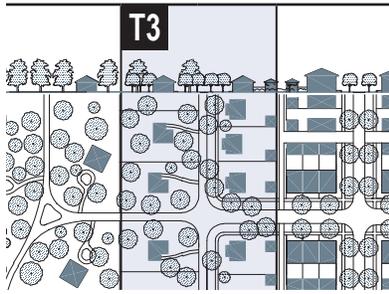
Only at the building scale is it possible to provide a graphic form-based code that will withstand legal challenge. The other illustrations throughout this code and in the appendices of the Manual should therefore be considered guidelines only. (See Section 1.2.5)

This code makes visually explicit the metrics of Summary Table 14. Note that these metrics are broken out into separate Transect Zones so that a builder may use the simple one-page table relevant to his lot(s).

Metrics and other provisions that are changed during calibration must be changed on both Table 14 and Table 15.

Where in conflict, numerical metrics shall take precedence over graphic metrics. (See Section 1.2.6.)

The annotations for Table 15B, Table 15C, and Table 15D are identical to this one.



(see Table 1)

I. BUILDING FUNCTION (see Table 10 & Table 12)

| | |
|-------------|----------------|
| Residential | restricted use |
| Lodging | restricted use |
| Office | restricted use |
| Retail | restricted use |

k. BUILDING CONFIGURATION (see Table 8)

| | |
|--------------------|----------------|
| Principal Building | 2 stories max. |
| Outbuilding | 2 stories max. |

f. LOT OCCUPATION (see Table 14f)

| | |
|--------------|------------------------|
| Lot Width | 72 ft. min 120 ft. max |
| Lot Coverage | 60% max |

i. BUILDING DISPOSITION (see Table 9)

| | |
|-----------|---------------|
| Edgeyard | permitted |
| Sideyard | not permitted |
| Rearyard | not permitted |
| Courtyard | not permitted |

g. SETBACKS - PRINCIPAL BUILDING (see Table 14g)

| | |
|-------------------------------|--------------------|
| (g.1) Front Setback Principal | 24 ft. min |
| (g.2) Front Setback Secondary | 12 ft. min. |
| (g.3) Side Setback | 12 ft. min. |
| (g.4) Rear Setback | 12 ft. min. |
| Frontage Buildout | 40% min at setback |

h. SETBACKS - OUTBUILDING (see Table 14h)

| | |
|---------------------|----------------------------|
| (h.1) Front Setback | 20 ft. min. + bldg setback |
| (h.2) Side Setback | 3 ft. or 6 ft at corner |
| (h.3) Rear Setback | 3 ft. min |

j. PRIVATE FRONTAGES (see Table 7)

| | |
|--------------------|---------------|
| Common Lawn | permitted |
| Porch & Fence | permitted |
| Terrace or L.C. | not permitted |
| Forecourt | not permitted |
| Stoop | not permitted |
| Shopfront & Awning | not permitted |
| Gallery | not permitted |
| Arcade | not permitted |

Refer to Summary Table 14

PARKING PROVISIONS

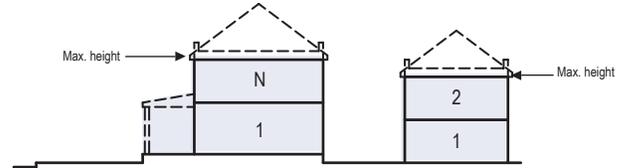
See Table 10 & Table 11

*or 15 ft. from center line of alley

"N" stands for any Stories above those shown, up to the maximum. Refer to metrics for exact minimums and maximums

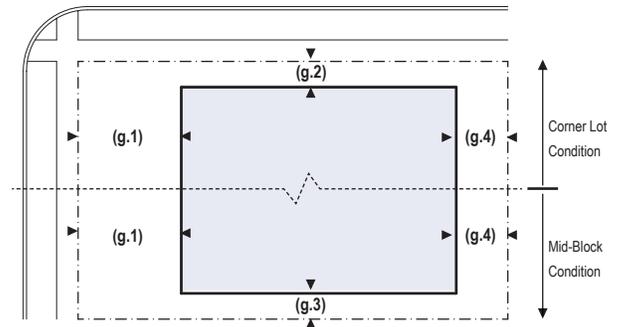
BUILDING CONFIGURATION

1. Building height shall be measured in number of Stories, excluding Attics and raised basements.
2. Stories may not exceed 14 feet in height from finished floor to finished ceiling, except for a first floor Commercial function which must be a minimum of 11 ft with a maximum of 25 feet.
3. Height shall be measured to the eave or roof deck as specified on Table 8.



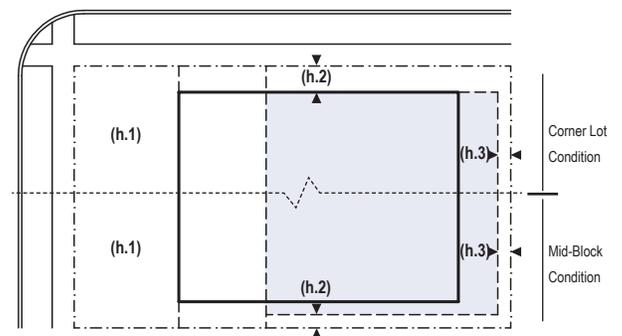
SETBACKS - PRINCIPAL BLDG

1. The Facades and Elevations of Principal Buildings shall be distanced from the Lot lines as shown.
2. Facades shall be built along the Principal Frontage to the minimum specified width in the table.



SETBACKS - OUTBUILDING

1. The Elevation of the Outbuilding shall be distanced from the Lot lines as shown.



PARKING PLACEMENT

1. Uncovered parking spaces may be provided within the second and third Layer as shown in the diagram (see Table 17d).
2. Covered parking shall be provided within the third Layer as shown in the diagram (see Table 17d). Side- or rear-entry garages may be allowed in the first or second Layer by Warrant.
3. Trash containers shall be stored within the third Layer.

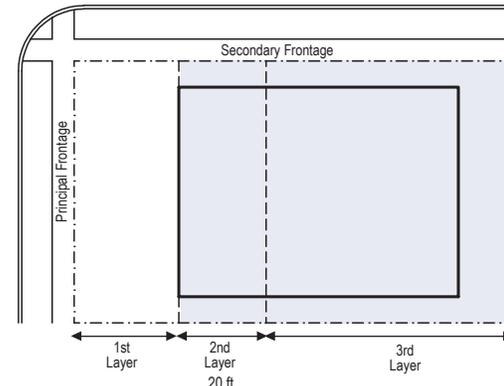


TABLE 15B. FORM-BASED CODE GRAPHICS - T4

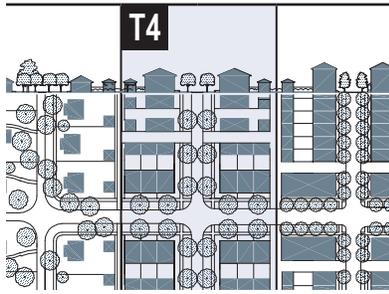
The following plate is a graphic form-based code for buildings. A form-based code is one that envisions and encourages a certain physical outcome. The SmartCode does this at the scales of the region, community, block, and/or building.

Only at the building scale is it possible to provide a graphic form-based code that will withstand legal challenge. The other illustrations throughout this code and in the appendices of the Manual should therefore be considered guidelines only. (See Section 1.2.5)

This code makes visually explicit the metrics of Summary Table 14. Note that these metrics are broken out into separate Transect Zones so that a builder may use the simple one-page table relevant to his lot(s).

Metrics and other provisions that are changed during calibration must be changed on both Table 14 and Table 15.

Where in conflict, numerical metrics shall take precedence over graphic metrics. (See Section 1.2.6.)



(see Table 1)

I. BUILDING FUNCTION (see Table 10 & Table 12)

| | |
|-------------|-------------|
| Residential | limited use |
| Lodging | limited use |
| Office | limited use |
| Retail | limited use |

k. BUILDING CONFIGURATION (see Table 8)

| | |
|--------------------|----------------------|
| Principal Building | 3 stories max, 2 min |
| Outbuilding | 2 stories max. |

f. LOT OCCUPATION (see Table 14f)

| | |
|--------------|---------------------|
| Lot Width | 18 ft min 96 ft max |
| Lot Coverage | 70% max |

i. BUILDING DISPOSITION (see Table 9)

| | |
|-----------|---------------|
| Edgeyard | permitted |
| Sidyard | permitted |
| Rearyard | permitted |
| Courtyard | not permitted |

g. SETBACKS - PRINCIPAL BUILDING (see Table 14g)

| | |
|-------------------------------|------------------------|
| (g.1) Front Setback Principal | 6 ft. min. 18 ft. max. |
| (g.2) Front Setback Secondary | 6 ft. min. 18 ft. max |
| (g.3) Side Setback | 0 ft. min. |
| (g.4) Rear Setback | 3 ft. min.* |
| Frontage Buildout | 60% min at setback |

h. SETBACKS - OUTBUILDING (see Table 14h)

| | |
|---------------------|------------------------------|
| (h.1) Front Setback | 20 ft. min. + bldg. setback |
| (h.2) Side Setback | 0 ft. min. or 3 ft at corner |
| (h.3) Rear Setback | 3 ft. min |

j. PRIVATE FRONTAGES (see Table 7)

| | |
|--------------------|---------------|
| Common Lawn | not permitted |
| Porch & Fence | permitted |
| Terrace or L.C. | permitted |
| Forecourt | permitted |
| Stoop | permitted |
| Shopfront & Awning | permitted |
| Gallery | permitted |
| Arcade | not permitted |

Refer to Summary Table 14

PARKING PROVISIONS

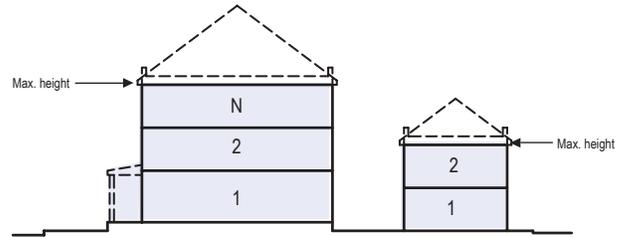
See Table 10 & Table 11

*or 15 ft. from center line of alley

"N" stands for any Stories above those shown, up to the maximum. Refer to metrics for exact minimums and maximums

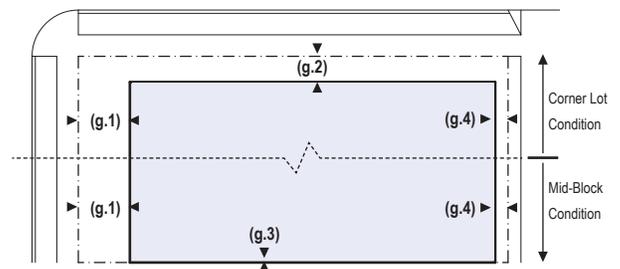
BUILDING CONFIGURATION

1. Building height shall be measured in number of Stories, excluding Attics and raised basements.
2. Stories may not exceed 14 feet in height from finished floor to finished ceiling, except for a first floor Commercial function which must be a minimum of 11 ft with a maximum of 25 ft.
3. Height shall be measured to the eave or roof deck as specified on Table 8.



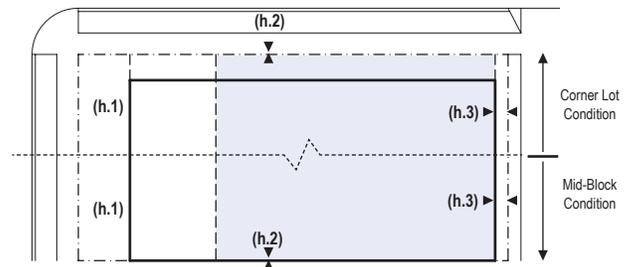
SETBACKS - PRINCIPAL BLDG

1. The Facades and Elevations of Principal Buildings shall be distanced from the Lot lines as shown.
2. Facades shall be built along the Principal Frontage to the minimum specified width in the table.



SETBACKS - OUTBUILDING

1. The Elevations of the Outbuilding shall be distanced from the Lot lines as shown.



PARKING PLACEMENT

1. Uncovered parking spaces may be provided within the third Layer as shown in the diagram (see Table 17d).
2. Covered parking shall be provided within the third Layer as shown in the diagram (see Table 17d).
3. Trash containers shall be stored within the third Layer.

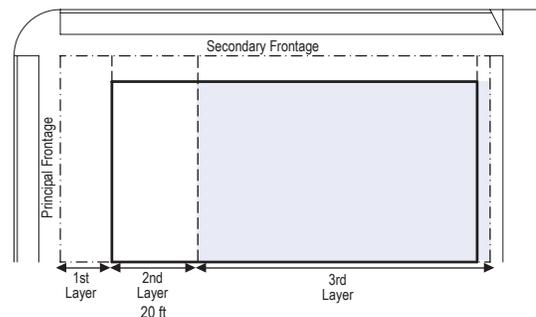


TABLE 15C. FORM-BASED CODE GRAPHICS - T5

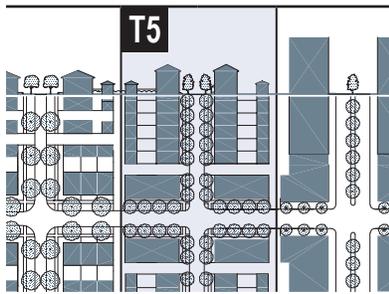
The following plate is a graphic form-based code for buildings. A form-based code is one that envisions and encourages a certain physical outcome. The SmartCode does this at the scales of the region, community, block, and/or building.

Only at the building scale is it possible to provide a graphic form-based code that will withstand legal challenge. The other illustrations throughout this code and in the appendices of the Manual should therefore be considered guidelines only. (See Section 1.2.5)

This code makes visually explicit the metrics of Summary Table 14. Note that these metrics are broken out into separate Transect Zones so that a builder may use the simple one-page table relevant to his lot(s).

Metrics and other provisions that are changed during calibration must be changed on both Table 14 and Table 15.

Where in conflict, numerical metrics shall take precedence over graphic metrics. (See Section 1.2.6.)



(see Table 1)

I. BUILDING FUNCTION (see Table 10 & Table 12)

| | |
|-------------|----------|
| Residential | open use |
| Lodging | open use |
| Office | open use |
| Retail | open use |

k. BUILDING CONFIGURATION (see Table 8)

| | |
|--------------------|-----------------------|
| Principal Building | 5 stories max. 2 min. |
| Outbuilding | 2 stories max. |

f. LOT OCCUPATION (see Table 14f)

| | |
|--------------|----------------------|
| Lot Width | 18 ft min 180 ft max |
| Lot Coverage | 80% max |

i. BUILDING DISPOSITION (see Table 9)

| | |
|-----------|---------------|
| Edgeyard | not permitted |
| Sideyard | permitted |
| Rearyard | permitted |
| Courtyard | permitted |

g. SETBACKS - PRINCIPAL BUILDING (see Table 14g)

| | |
|-------------------------------|------------------------|
| (g.1) Front Setback Principal | 2 ft. min. 12 ft. max. |
| (g.2) Front Setback Secondary | 2 ft. min. 12 ft. max. |
| (g.3) Side Setback | 0 ft. min. 24 ft. max. |
| (g.4) Rear Setback | 3 ft. min.* |
| Frontage Buildout | 80% min at setback |

h. SETBACKS - OUTBUILDING (see Table 14h)

| | |
|---------------------|------------------------------|
| (h.1) Front Setback | 40 ft. max. from rear prop. |
| (h.2) Side Setback | 0 ft. min. or 2 ft at corner |
| (h.3) Rear Setback | 3 ft. max. |

j. PRIVATE FRONTAGES (see Table 7)

| | |
|--------------------|---------------|
| Common Lawn | not permitted |
| Porch & Fence | not permitted |
| Terrace or L.C. | permitted |
| Forecourt | permitted |
| Stoop | permitted |
| Shopfront & Awning | permitted |
| Gallery | permitted |
| Arcade | permitted |

Refer to Summary Table 14

PARKING PROVISIONS

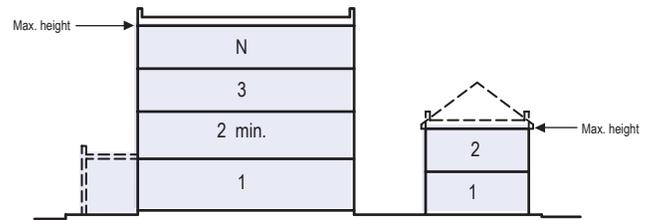
See Table 10 & Table 11

*or 15 ft. from center line of alley

"N" stands for any Stories above those shown, up to the maximum. Refer to metrics for exact minimums and maximums

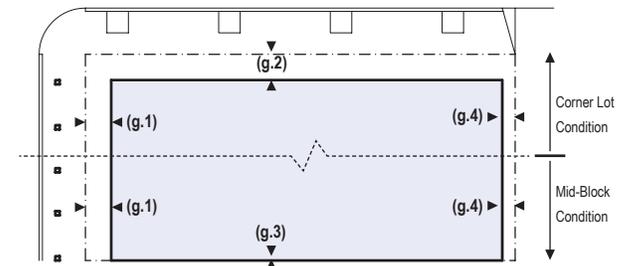
BUILDING CONFIGURATION

1. Building height shall be measured in number of Stories, excluding Attics and raised basements.
2. Stories may not exceed 14 feet in height from finished floor to finished ceiling, except for a first floor Commercial function which must be a minimum of 11 ft with a maximum of 25 ft.
3. Height shall be measured to the eave or roof deck as specified on Table 8.
4. Expression Lines shall be as shown on Table 8.



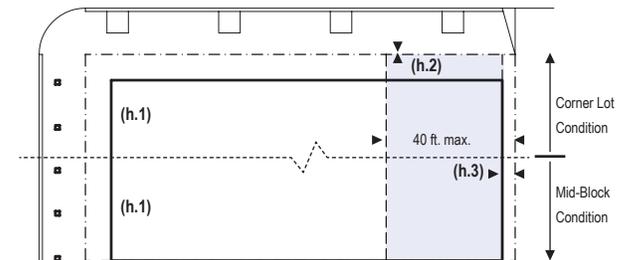
SETBACKS - PRINCIPAL BLDG

1. The Facades and Elevations of Principal Buildings shall be distanced from the Lot lines as shown.
2. Facades shall be built along the Principal Frontage to the minimum specified width in the table.



SETBACKS - OUTBUILDING

1. The Elevations of the Outbuilding shall be distanced from the Lot lines as shown.



PARKING PLACEMENT

1. Uncovered parking spaces may be provided within the third Layer as shown in the diagram (see Table 17d).
2. Covered parking shall be provided within the third Layer as shown in the diagram (see Table 17d).
3. Trash containers shall be stored within the third Layer.

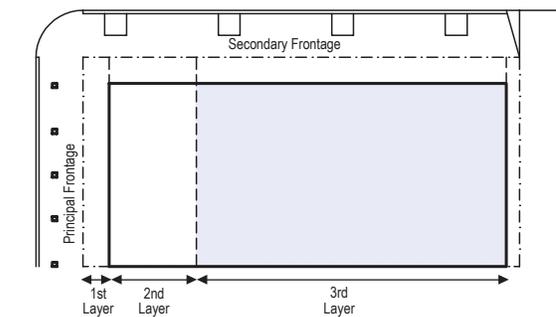


TABLE 15D. FORM-BASED CODE GRAPHICS - T6

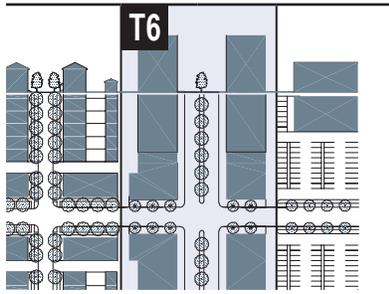
The following plate is a graphic form-based code for buildings. A form-based code is one that envisions and encourages a certain physical outcome. The SmartCode does this at the scales of the region, community, block, and/or building.

Only at the building scale is it possible to provide a graphic form-based code that will withstand legal challenge. The other illustrations throughout this code and in the appendices of the Manual should therefore be considered guidelines only. (See Section 1.2.5)

This code makes visually explicit the metrics of Summary Table 14. Note that these metrics are broken out into separate Transect Zones so that a builder may use the simple one-page table relevant to his lot(s).

Metrics and other provisions that are changed during calibration must be changed on both Table 14 and Table 15.

Where in conflict, numerical metrics shall take precedence over graphic metrics. (See Section 1.2.6.)



(see Table 1)

I. BUILDING FUNCTION (see Table 10 & Table 12)

| | |
|-------------|----------|
| Residential | open use |
| Lodging | open use |
| Office | open use |
| Retail | open use |

k. BUILDING CONFIGURATION (see Table 8)

| | |
|--------------------|-----------------------|
| Principal Building | 8 stories max. 2 min. |
| Outbuilding | N/A |

f. LOT OCCUPATION (see Table 14f)

| | |
|--------------|------------------------|
| Lot Width | 18 ft. min 700 ft. max |
| Lot Coverage | 90% max |

i. BUILDING DISPOSITION (see Table 9)

| | |
|-----------|---------------|
| Edgeyard | not permitted |
| Sideyard | not permitted |
| Rearyard | permitted |
| Courtyard | permitted |

g. SETBACKS - PRINCIPAL BUILDING (see Table 14g)

| | |
|-------------------------------|------------------------|
| (g.1) Front Setback Principal | 2 ft. min. 12 ft. max. |
| (g.2) Front Setback Secondary | 2 ft. min. 12 ft. max. |
| (g.3) Side Setback | 0 ft. min. 24 ft. max. |
| (g.4) Rear Setback | 0 ft. min. |
| Frontage Buildout | 80% min. at setback |

h. SETBACKS - OUTBUILDING (see Table 14h)

| | |
|---------------|-----|
| Front Setback | N/A |
| Side Setback | N/A |
| Rear Setback | N/A |

j. PRIVATE FRONTAGES (see Table 7)

| | |
|--------------------|---------------|
| Common Lawn | not permitted |
| Porch & Fence | not permitted |
| Terrace or L.C. | not permitted |
| Forecourt | permitted |
| Stoop | permitted |
| Shopfront & Awning | permitted |
| Gallery | permitted |
| Arcade | permitted |

Refer to Summary Table 14

PARKING PROVISIONS

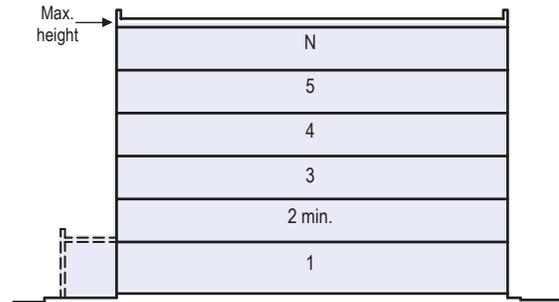
See Table 10 & Table 11

*or 15 ft. from center line of alley

"N" stands for any Stories above those shown, up to the maximum. Refer to metrics for exact minimums and maximums

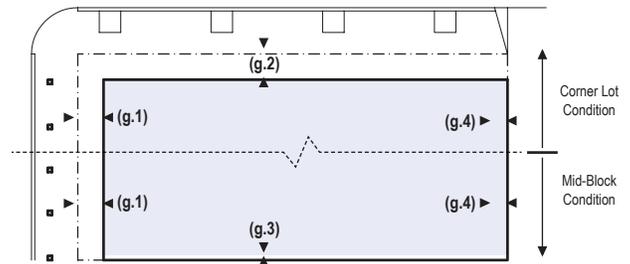
BUILDING CONFIGURATION

1. Building height shall be measured in number of Stories, excluding Attics and raised basements.
2. Stories may not exceed 14 feet in height from finished floor to finished ceiling, except for a first floor Commercial Function which must be a minimum of 11 ft with a maximum of 25 ft.
3. Height shall be measured to the eave or roof deck as specified on Table 8.
4. Stepbacks, Recess Lines, and Extension Lines shall be as shown on Table 8.



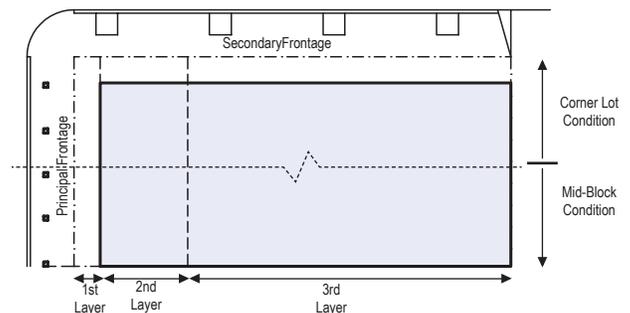
SETBACKS - PRINCIPAL BLDG

1. The Facades and Elevations of Principal Buildings shall be distanced from the Lot lines as shown.
2. Facades shall be built along the Principal Frontage to the minimum specified width in the table.



PARKING PLACEMENT

1. Uncovered parking spaces may be provided within the third Layer as shown in the diagram (see Table 17d).
2. Covered parking shall be provided within the third Layer as shown in the diagram (see Table 17d).
3. Trash containers shall be stored within the third Layer.



These annotations are advisory only. The SmartCode itself appears only on the right side of each spread.

TABLE 16: SPECIAL DISTRICT STANDARDS

Special Districts are those areas that are justified in not complying with this code. See the notes for Section 2.2.6 for examples of Special Districts. A Special District may also be an area that is unjustified in form – a strip shopping center or housing subdivision, for example - but that has nevertheless received permission to be developed.

The metrics for each column of this table (SD1, SD2, etc.) are to be filled out with the details of each Special District as it is permitted. As Special Districts are unique developments that do not comply with the standards of Table 14, this table is the permanent record for each of them.

Municipality

The metrics for each column of this table (SD1, SD2, etc.) are to be filled in for each Special District as they currently exist, or as they are permitted. More pages can be added. Special Districts that do not have provisions within this Code shall be governed by the standards of the pre-existing zoning.

| | SD1 | SD2 | SD3 | SD4 | SD5 | SD6 | SD7 | |
|---|-----|-----|-----|-----|-----|-----|-----|--|
| a. ALLOCATION OF ZONES | | | | | | | | |
| CLD | X | | | | | | | |
| TND | X | | | | | | | |
| TOD | X | | | | | | | |
| b. BASE RESIDENTIAL DENSITY | | | | | | | | |
| By Right | X | | | | | | | |
| By TDR | X | | | | | | | |
| Other Functions | X | | | | | | | |
| c. BLOCK SIZE | | | | | | | | |
| Block Perimeter | X | | | | | | | |
| d. THOROUGHFARES | | | | | | | | |
| HW | X | | | | | | | |
| BV | X | | | | | | | |
| AV | X | | | | | | | |
| CS | X | | | | | | | |
| DR | X | | | | | | | |
| ST | X | | | | | | | |
| RD | X | | | | | | | |
| Rear Lane | X | | | | | | | |
| Rear Alley | X | | | | | | | |
| Path | X | | | | | | | |
| Passage | X | | | | | | | |
| Bicycle Trail | X | | | | | | | |
| Bicycle Lane | X | | | | | | | |
| Bicycle Route | X | | | | | | | |
| e. CIVIC SPACES | | | | | | | | |
| Park | X | | | | | | | |
| Green | X | | | | | | | |
| Square | X | | | | | | | |
| Plaza | X | | | | | | | |
| Playground | X | | | | | | | |
| f. LOT OCCUPATION | | | | | | | | |
| Lot Width | X | | | | | | | |
| Lot Coverage | X | | | | | | | |
| g. SETBACKS - PRINCIPAL BUILDING | | | | | | | | |
| Front Setback | X | | | | | | | |
| Side Setback | X | | | | | | | |
| Rear Setback | X | | | | | | | |
| h. BUILDING Disposition | | | | | | | | |
| Edgeyard | X | | | | | | | |
| Sideyard | X | | | | | | | |
| Rearyard | X | | | | | | | |
| i. PRIVATE FRONTAGES | | | | | | | | |
| Common Yard | X | | | | | | | |
| Porch & Fence | X | | | | | | | |
| Terrace, Dooryard | X | | | | | | | |
| Forecourt | X | | | | | | | |
| Stoop | X | | | | | | | |
| Shopfront | X | | | | | | | |
| Gallery | X | | | | | | | |
| Arcade | X | | | | | | | |
| Parking Lot | X | | | | | | | |
| j. BUILDING CONFIGURATION | | | | | | | | |
| Principal Building | X | | | | | | | |
| Outbuilding | X | | | | | | | |
| k. BUILDING FUNCTION | | | | | | | | |
| Residential | X | | | | | | | |
| Lodging | X | | | | | | | |
| Office | X | | | | | | | |
| Retail | X | | | | | | | |

DISPOSITION

CONFIGURATION

FUNCTION

SMARTCODE ANNOTATED

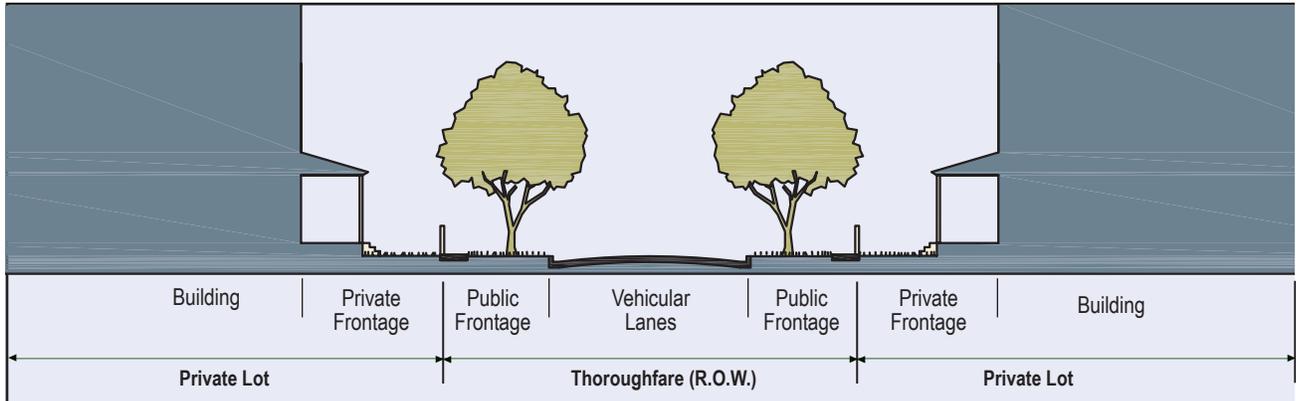
These annotations are advisory only. The SmartCode itself appears only on the right side of each spread.

TABLE 17: DEFINITIONS ILLUSTRATED

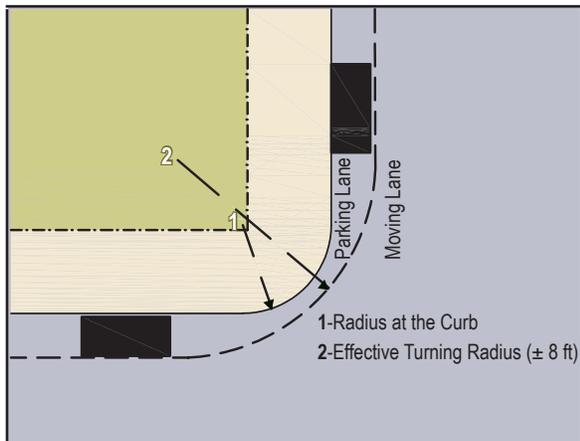
This table provides a number of diagrams to support and clarify the Definitions in Article 7.

Municipality

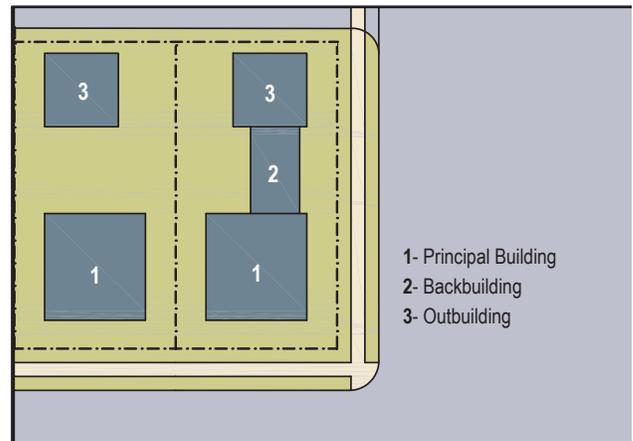
a. THOROUGHFARE & FRONTAGES



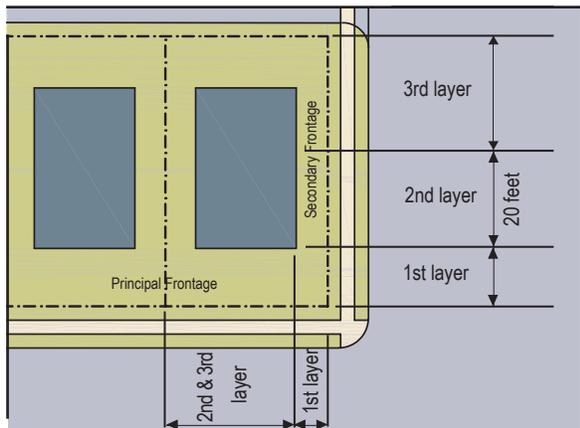
b. TURNING RADIUS



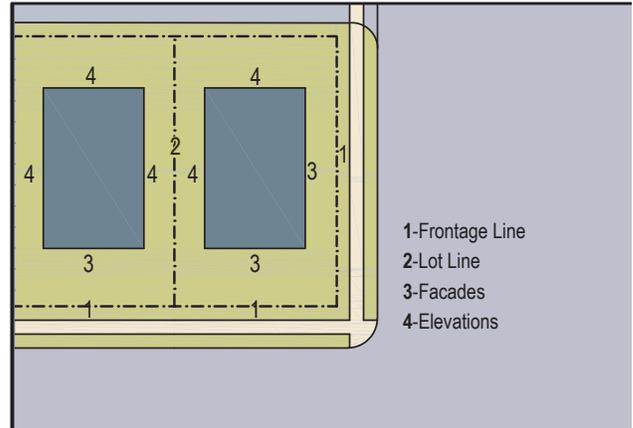
c. BUILDING DISPOSITION



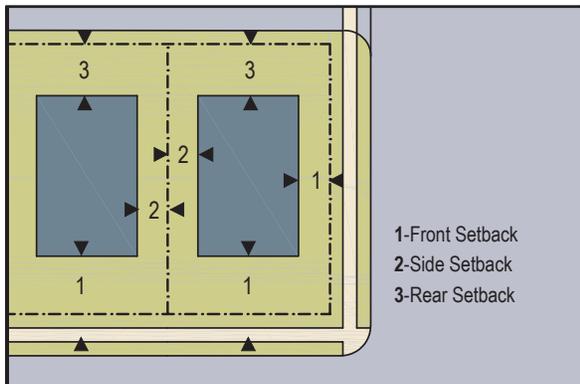
d. LOT LAYERS



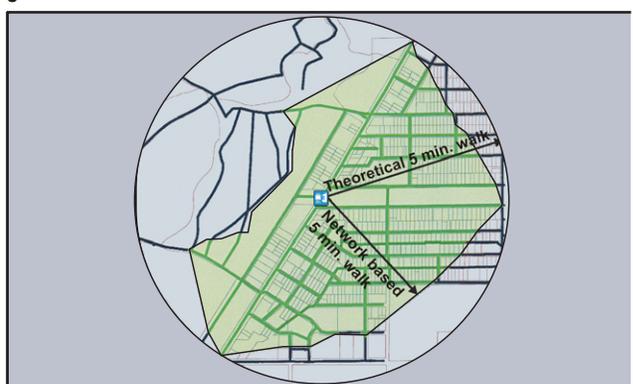
e. FRONTAGE & LOT LINES



f. SETBACK DESIGNATIONS



g. NETWORK-BASED PEDESTRIAN SHED



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ARTICLE 7: DEFINITIONS OF TERMS

Delete any definitions for terms that no longer appear in the calibrated code, and add definitions for new terms as needed. Unlike some codes, these definitions have a legal and operational function no less than that of the SmartCode text. Their modification must therefore be done with care. Any language that is actually a code provision, not a definition, should be incorporated into the code text, not here. If SmartCode Modules are added to the base code, add the definitions, if any, that are included with the Modules.

DEFINITIONS

This Article provides definitions for terms in this Code that are technical in nature or that otherwise may not reflect a common usage of the term. If a term is not defined in this Article, then the CRC shall determine the correct definition. Items in italics refer to *Articles*, *Sections*, or *Tables* in the SmartCode.

A-Grid: cumulatively, those Thoroughfares that by virtue of their pre-existing pedestrian-supportive qualities, or their future importance to pedestrian connectivity, are held to the highest standards prescribed by this Code. See B-Grid. (Syn: primary grid.)

Accessory Building: an Outbuilding with an Accessory Unit.

Accessory Unit: an Apartment not greater than 440 square feet sharing ownership and utility connections with a Principal Building; it may or may not be within an Outbuilding. See *Table 10 and Table 17*. (Syn: ancillary unit)

Adjusted Pedestrian Shed: a Pedestrian Shed that has been adjusted according to Section 3.2, creating the regulatory boundary of a Community Unit.

Affordable Housing: dwellings consisting of rental or for-sale units that have a rent (including utilities) or mortgage payment typically no more than 30% of the income of families earning no more than 80% of median incomes by family size for the county. (Alt. definition: rental or for-sale dwellings that are economically within the means of the starting salary of a local elementary school teacher.)

Allee: a regularly spaced and aligned row of trees usually planted along a Thoroughfare or Path.

Apartment: a Residential unit sharing a building and a Lot with other units and/or uses; may be for rent, or for sale as a condominium.

Arcade: a Private Frontage conventional for Retail use wherein the Facade is a colonnade supporting habitable space that overlaps the Sidewalk, while the Facade at Sidewalk level remains at the Frontage Line.

Attic: the interior part of a building contained within a pitched roof structure.

Avenue (AV): a Thoroughfare of high vehicular capacity and low to moderate speed, acting as a short distance connector between urban centers, and usually equipped with a landscaped median.

B-Grid: cumulatively, those Thoroughfares that by virtue of their use, location, or absence of pre-existing pedestrian-supportive qualities, may meet a standard lower than that of the A-Grid. See **A-Grid**. (Syn: secondary grid.)

BRT: see **Bus Rapid Transit**.

Backbuilding: a single-Story structure connecting a Principal Building to an Outbuilding. See *Table 17*.

Base Density: the number of dwelling units per acre before adjustment for other Functions and/or TDR. See **Density**.

Bed and Breakfast: an owner-occupied Lodging type offering 1 to 5 bedrooms, permitted to serve breakfast in the mornings to guests.

Bicycle Lane (BL): a dedicated lane for cycling within a moderate-speed vehicular Thoroughfare, demarcated by striping.

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Bicycle Route (BR): a Thoroughfare suitable for the shared use of bicycles and automobiles moving at low speeds.

Bicycle Trail (BT): a bicycle way running independently of a vehicular Thoroughfare.

Block: the aggregate of private Lots, Passages, Rear Alleys and Rear Lanes, circumscribed by Thoroughfares.

Block Face: the aggregate of all the building Facades on one side of a Block.

Boulevard (BV): a Thoroughfare designed for high vehicular capacity and moderate speed, traversing an Urbanized area. Boulevards are usually equipped with Slip Roads buffering Sidewalks and buildings.

Brownfield: an area previously used primarily as an industrial site.

Bus Rapid Transit: a rubber tire system with its own right-of-way or dedicated lane along at least 70% of its route, providing transit service that is faster than a regular bus.

By Right: characterizing a proposal or component of a proposal for a Community Plan or Building Scale Plan (*Article 3, Article 4, or Article 5*) that complies with the SmartCode and is permitted and processed administratively, without public hearing. See **Warrant** and **Variance**.

CLD or Clustered Land Development: a Community Unit type structured by a Standard Pedestrian Shed oriented toward a Common Destination such as a general store, Meeting Hall, schoolhouse, or church. CLD takes the form of a small settlement standing free in the countryside. See *Table 2 and Table 14a*. (Syn: Hamlet, Conservation Land Development, cluster)

CRC: Consolidated Review Committee.

Civic: the term defining not-for-profit organizations dedicated to arts, culture, education, recreation, government, transit, and municipal parking.

Civic Building: a building operated by not-for-profit organizations dedicated to arts, culture, education, recreation, government, transit, and municipal parking, or for use approved by the legislative body.

Civic Parking Reserve: Parking Structure or parking lot within a quarter-mile of the site that it serves. See *Section 5.9.2*.

Civic Space: an outdoor area dedicated for public use. Civic Space types are defined by the combination of certain physical constants including the relationships among their intended use, their size, their landscaping and their Enfronting buildings. See *Table 13*.

Civic Zone: designation for public sites dedicated for Civic Buildings and Civic Space.

Commercial: the term collectively defining workplace, Office, Retail, and Lodging Functions.

Common Destination: An area of focused community activity, usually defining the approximate center of a Pedestrian Shed. It may include without limitation one or more of the following: a Civic Space, a Civic Building, a Commercial center, or a transit station, and may act as the social center of a neighborhood.

Common Yard: a planted Private Frontage wherein the Facade is set back from the Frontage line. It is visually continuous with adjacent yards. See *Table 7*.

Community Unit: a regulatory category defining the physical form, Density, and extent of a settlement. The three Community Unit types addressed in this Code are

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CLD, TND, and RCD. Variants of TND and RCD for Infill (*Article 4*) are called Infill TND and Infill RCD. The TOD Community Unit type may be created by an overlay on TND or RCD.

Configuration: the form of a building, based on its massing, Private Frontage, and height.

Consolidated Review Committee (CRC): Usually part of the Planning Office, a CRC is comprised of a representative from each of the various regulatory agencies that have jurisdiction over the permitting of a project, as well as a representative of the Development and Design Center. *See Section 1.4.3.*

Corridor: a lineal geographic system incorporating transportation and/or Greenway trajectories. A transportation Corridor may be a lineal Transect Zone.

Cottage: an Edgeyard building type. A single-family dwelling, on a regular Lot, often shared with an Accessory Building in the back yard.

Courtyard Building: a building that occupies the boundaries of its Lot while internally defining one or more private patios. *See Table 9.*

Curb: the edge of the vehicular pavement that may be raised or flush to a Swale. It usually incorporates the drainage system. *See Table 4A and Table 4B.*

DDC: Development and Design Center.

Density: the number of dwelling units within a standard measure of land area.

Design Speed: is the velocity at which a Thoroughfare tends to be driven without the constraints of signage or enforcement. There are four ranges of speed: Very Low: (below 20 MPH); Low: (20-25 MPH); Moderate: (25-35 MPH); High: (above 35 MPH). Lane width is determined by desired Design Speed. *See Table 3A.*

Developable Areas: lands other than those in the O-1 Preserved Open Sector.

Development and Design Center (DDC): A component of the Planning Office assigned to advise on the use of this Code and to aid in the design of the Communities and buildings based on it.

Disposition: the placement of a building on its Lot. *See Table 9 and Table 17.*

Dooryard: a Private Frontage type with a shallow Setback and front garden or patio, usually with a low wall at the Frontage Line. *See Table 7.* (Variant: **Lightwell**, light court.)

Drive: a Thoroughfare along the boundary between an Urbanized and a natural condition, usually along a waterfront, Park, or promontory. One side has the urban character of a Thoroughfare, with Sidewalk and building, while the other has the qualities of a Road or parkway, with naturalistic planting and rural details.

Driveway: a vehicular lane within a Lot, often leading to a garage. *See Section 5.10 and Table 3B-f.*

Edgeyard Building: a building that occupies the center of its Lot with Setbacks on all sides. *See Table 9.*

Effective Parking: the amount of parking required for Mixed Use after adjustment by the Shared Parking Factor. *See Table 11.*

Effective Turning Radius: the measurement of the inside Turning Radius taking parked cars into account. *See Table 17.*

Elevation: an exterior wall of a building not along a Frontage Line. *See Table 17.*
See: **Facade.**

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Encroach: to break the plane of a vertical or horizontal regulatory limit with a structural element, so that it extends into a Setback, into the Public Frontage, or above a height limit.

Encroachment: any structural element that breaks the plane of a vertical or horizontal regulatory limit, extending into a Setback, into the Public Frontage, or above a height limit.

Enfront: to place an element along a Frontage, as in “porches Enfront the street.”

Estate House: an Edgeward building type. A single-family dwelling on a very large Lot of rural character, often shared by one or more Accessory Buildings. (Syn: country house, villa)

Expression Line: a line prescribed at a certain level of a building for the major part of the width of a Facade, expressed by a variation in material or by a limited projection such as a molding or balcony. See *Table 8*. (Syn: transition line.)

Extension Line: a line prescribed at a certain level of a building for the major part of the width of a Facade, regulating the maximum height for an Encroachment by an Arcade Frontage. See *Table 8*.

Facade: the exterior wall of a building that is set along a Frontage Line. See **Elevation**.

Forecourt: a Private Frontage wherein a portion of the Facade is close to the Frontage Line and the central portion is set back. See *Table 7*.

Frontage: the area between a building Facade and the vehicular lanes, inclusive of its built and planted components. Frontage is divided into **Private Frontage** and **Public Frontage**. See *Table 4A and Table 7*.

Frontage Line: a Lot line bordering a Public Frontage. Facades facing Frontage Lines define the public realm and are therefore more regulated than the Elevations facing other Lot Lines. See *Table 17*.

Function: the use or uses accommodated by a building and its Lot, categorized as *Restricted*, *Limited*, or *Open*, according to the intensity of the use. See *Table 10 and Table 12*.

Gallery: a Private Frontage conventional for Retail use wherein the Facade is aligned close to the Frontage Line with an attached cantilevered shed or lightweight colonnade overlapping the Sidewalk. See *Table 7*.

GIS (Geographic Information System): a computerized program in widespread municipal use that organizes data on maps. The protocol for preparing a *Regional Plan* should be based on GIS information. See *Section 2.1*.

Green: a Civic Space type for unstructured recreation, spatially defined by landscaping rather than building Frontages. See *Table 13*.

Greenfield: an area that consists of open or wooded land or farmland that has not been previously developed.

Greenway: an Open Space Corridor in largely natural conditions which may include trails for bicycles and pedestrians.

Greyfield: an area previously used primarily as a parking lot. Shopping centers and shopping malls are typical Greyfield sites. (Variant: Grayfield.)

Growth Sector: one of four Sectors where development is permitted By Right in the SmartCode, three for New Communities and one for Infill. See *Article 2*.

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Hamlet: See **CLD**. (Syn: cluster, settlement.)

Highway: a rural and suburban Thoroughfare of high vehicular speed and capacity. This type is allocated to the more rural Transect Zones (T-1, T-2, and T-3).

Home Occupation: non-Retail Commercial enterprises. The work quarters should be invisible from the Frontage, located either within the house or in an Outbuilding. Permitted activities are defined by the Restricted Office category. See *Table 10*.

House: an Edgeward building type, usually a single-family dwelling on a large Lot, often shared with an Accessory Building in the back yard. (Syn: single.)

Infill: *noun* - new development on land that had been previously developed, including most Greyfield and Brownfield sites and cleared land within Urbanized areas. *verb*- to develop such areas.

Infill RCD: a Community Unit type within an Urbanized, Greyfield, or Brownfield area based on a Long or Linear Pedestrian Shed and consisting of T-4, T-5, and/or T-6 Zones. An Infill RCD is permitted By Right in the G-4 Infill Growth Sector and is regulated by Article 4. See *Section 4.2.3*. (Var: downtown.)

Infill TND: a Community Unit type within an Urbanized, Greyfield, or Brownfield area based on a Standard Pedestrian Shed and consisting of T-3, T-4, and/or T-5 Zones. An Infill TND is permitted By Right in the G-4 Infill Growth Sector and is regulated by Article 4. See *Section 4.2.2*. (Var: neighborhood.)

Inn: a Lodging type, **owner-occupied**, offering **6 to 12 bedrooms**, permitted to serve breakfast in the mornings to guests. See *Table 10*.

Layer: a range of depth of a Lot within which certain elements are permitted. See *Table 17*.

Lightwell: A Private Frontage type that is a below-grade entrance or recess designed to allow light into basements. See *Table 7*. (Syn: light court.)

Linear Pedestrian Shed: A Pedestrian Shed that is elongated along an important Mixed Use Corridor such as a main street. A Linear Pedestrian Shed extends approximately 1/4 mile from each side of the Corridor for the length of its Mixed Use portion. The resulting area is shaped like a lozenge. It may be used to structure a TND, RCD, Infill TND, or Infill RCD. (Syn: elongated pedestrian shed.)

Liner Building: a building specifically designed to mask a parking lot or a Parking Structure from a Frontage.

Live-Work: a Mixed Use unit consisting of a Commercial and Residential Function. The Commercial Function may be anywhere in the unit. It is intended to be occupied by a business operator who lives in the same structure that contains the Commercial activity or industry. See **Work-Live**. (Syn.: flexhouse.)

Lodging: premises available for daily and weekly renting of bedrooms. See *Table 10 and Table 12*.

Long Pedestrian Shed: a Pedestrian Shed that is an average 1/2 mile radius or 2640 feet, used when a transit stop (bus or rail) is present or proposed as the Common Destination. A Long Pedestrian Shed represents approximately a ten-minute walk at a leisurely pace. It is applied to structure an RCD Community Unit type. See **Pedestrian Shed**.

Lot: a parcel of land accommodating a building or buildings of unified design. The size of a Lot is controlled by its width in order to determine the grain (i.e., fine grain or coarse grain) of the urban fabric.

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Lot Line: the boundary that legally and geometrically demarcates a Lot.

Lot Width: the length of the Principal Frontage Line of a Lot.

Main Civic Space: the primary outdoor gathering place for a community. The Main Civic Space is often, but not always, associated with an important Civic Building.

Manufacturing: premises available for the creation, assemblage and/or repair of artifacts, using table-mounted electrical machinery or artisanal equipment, and including their Retail sale.

Meeting Hall: a building available for gatherings, including conferences, that accommodates at least one room equivalent to a minimum of 10 square feet per projected dwelling unit within the Pedestrian Shed in which it is located.

Mixed Use: multiple Functions within the same building through superimposition or adjacency, or in multiple buildings by adjacency, or at a proximity determined by Warrant.

Net Site Area: all developable land within a site including Thoroughfares but excluding land allocated as Civic Zones.

Network Pedestrian Shed: a Pedestrian Shed adjusted for average walk times along Thoroughfares. This type may be used to structure Infill Community Plans. See *Table 17*.

Office: premises available for the transaction of general business but excluding Retail, artisanal and Manufacturing uses. See *Table 10*.

Open Space: land intended to remain undeveloped; it may be for Civic Space.

Outbuilding: an Accessory Building, usually located toward the rear of the same Lot as a Principal Building, and sometimes connected to the Principal Building by a Backbuilding. See *Table 17*.

Park: a Civic Space type that is a natural preserve available for unstructured recreation. See *Table 13*.

Parking Structure: a building containing one or more Stories of parking above grade.

Passage (PS): a pedestrian connector, open or roofed, that passes between buildings to provide shortcuts through long Blocks and connect rear parking areas to Frontages.

Path (PT): a pedestrian way traversing a Park or rural area, with landscape matching the contiguous Open Space, ideally connecting directly with the urban Sidewalk network.

Pedestrian Shed: An area that is centered on a Common Destination. Its size is related to average walking distances for the applicable Community Unit type. Pedestrian Sheds are applied to structure Communities. See **Standard, Long, Linear** or **Network Pedestrian Shed**. (Syn: walkshed, walkable catchment.)

Planter: the element of the Public Frontage which accommodates street trees, whether continuous or individual.

Plaza: a Civic Space type designed for Civic purposes and Commercial activities in the more urban Transect Zones, generally paved and spatially defined by building Frontages.

Principal Building: the main building on a Lot, usually located toward the Frontage. See *Table 17*.

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Principal Entrance: the main point of access for pedestrians into a building.

Principal Frontage: On corner Lots, the Private Frontage designated to bear the address and Principal Entrance to the building, and the measure of minimum Lot width. Prescriptions for the parking Layers pertain only to the Principal Frontage. Prescriptions for the first Layer pertain to both Frontages of a corner Lot. See **Frontage**.

Private Frontage: the privately held Layer between the Frontage Line and the Principal Building Facade. See *Table 7 and Table 17*.

Public Frontage: the area between the Curb of the vehicular lanes and the Frontage Line. See *Table 4A and Table 4B*.

RCD: see **Regional Center Development**.

Rear Alley (RA): a vehicular way located to the rear of Lots providing access to service areas, parking, and Outbuildings and containing utility easements. Rear Alleys should be paved from building face to building face, with drainage by inverted crown at the center or with roll Curbs at the edges.

Rear Lane (RL): a vehicular way located to the rear of Lots providing access to service areas, parking, and Outbuildings and containing utility easements. Rear Lanes may be paved lightly to Driveway standards. The streetscape consists of gravel or landscaped edges, has no raised Curb, and is drained by percolation.

Rearyard Building: a building that occupies the full Frontage Line, leaving the rear of the Lot as the sole yard. See *Table 9*. (Var: Rowhouse, Townhouse, Apartment House)

Recess Line: a line prescribed for the full width of a Facade, above which there is a Stepback of a minimum distance, such that the height to this line (not the overall building height) effectively defines the enclosure of the Enfronting public space. Var: Extension Line. See *Table 8*.

Regional Center: Regional Center Development or RCD.

Regional Center Development (RCD): a Community Unit type structured by a Long Pedestrian Shed or Linear Pedestrian Shed, which may be adjoined without buffers by one or several Standard Pedestrian Sheds, each with the individual Transect Zone requirements of a TND. RCD takes the form of a high-Density Mixed Use center connected to other centers by transit. See **Infill RCD**, *Table 2 and Table 14a*. (Var: town center, downtown. Syn: **Regional Center**)

Regulating Plan: a Zoning Map or set of maps that shows the Transect Zones, Civic Zones, Special Districts if any, and Special Requirements if any, of areas subject to, or potentially subject to, regulation by the SmartCode.

Residential: characterizing premises available for long-term human dwelling.

Retail: characterizing premises available for the sale of merchandise and food service. See *Table 10 and Table 12*.

Retail Frontage: Frontage designated on a Regulating Plan that requires or recommends the provision of a Shopfront, encouraging the ground level to be available for Retail use. See **Special Requirements**.

Road (RD): a local, rural and suburban Thoroughfare of low-to-moderate vehicular speed and capacity. This type is allocated to the more rural Transect Zones (T1-T3). See *Table 3A*.

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Rowhouse: a single-family dwelling that shares a party wall with another of the same type and occupies the full Frontage Line. See **Rearyard Building**. (Syn: **Townhouse**)

Rural Boundary Line: the extent of potential urban growth as determined by existing geographical determinants. The Rural Boundary Line is permanent.

Sector: a neutral term for a geographic area. In the SmartCode there are six specific Sectors for regional planning that establish the legal boundaries for Open Space and development.

Secondary Frontage: on corner Lots, the Private Frontage that is not the Principal Frontage. As it affects the public realm, its First Layer is regulated. See *Table 17*.

Setback: the area of a Lot measured from the Lot line to a building Facade or Elevation that is maintained clear of permanent structures, with the exception of Encroachments listed in *Section 5.7*. See *Table 14g*. (Var: build-to-line.)

Shared Parking Factor: an accounting for parking spaces that are available to more than one Function. See *Table 11*.

Shopfront: a Private Frontage conventional for Retail use, with substantial glazing and an awning, wherein the Facade is aligned close to the Frontage Line with the building entrance at Sidewalk grade. See *Table 7*.

Sidewalk: the paved section of the Public Frontage dedicated exclusively to pedestrian activity.

Sideyard Building: a building that occupies one side of the Lot with a Setback on the other side. This type can be a Single or Twin depending on whether it abuts the neighboring house. See *Table 9*.

Slip Road: an outer vehicular lane or lanes of a Thoroughfare, designed for slow speeds while inner lanes carry higher speed traffic, and separated from them by a planted median. (Syn: access lane, service lane)

Specialized Building: a building that is not subject to Residential, Commercial, or Lodging classification. See *Table 9*.

Special District (SD): an area that, by its intrinsic Function, Disposition, or Configuration, cannot or should not conform to one or more of the normative Community Unit types or Transect Zones specified by the SmartCode. Special Districts may be mapped and regulated at the regional scale or the community scale.

Special Flood Hazard Area: a designation by the Federal Emergency Management Agency (FEMA) that may include the V (Velocity) Zones and Coastal A Zones where building construction is forbidden, restricted, or contingent upon raising to the Base Flood Elevation.

Special Requirements: provisions of Section 3.9, Section 4.7, and Section 5.3 of this Code and/or the associated designations on a Regulating Plan or other map for those provisions.

Square: a Civic Space type designed for unstructured recreation and Civic purposes, spatially defined by building Frontages and consisting of Paths, lawns and trees, formally disposed. See *Table 13*.

Standard Pedestrian Shed: a Pedestrian Shed that is an average 1/4 mile radius or 1320 feet, about the distance of a five-minute walk at a leisurely pace. See Pedestrian Shed.

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Stepback: a building Setback of a specified distance that occurs at a prescribed number of Stories above the ground. See *Table 8*.

Stoop: a Private Frontage wherein the Facade is aligned close to the Frontage Line with the first Story elevated from the Sidewalk for privacy, with an exterior stair and landing at the entrance. See *Table 7*.

Story: a habitable level within a building, excluding an Attic or raised basement. See *Table 8*.

Street (ST): a local urban Thoroughfare of low speed and capacity. See *Table 3B* and *Table 4B*.

Streetscreen: a freestanding wall built along the Frontage Line, or coplanar with the Facade. It may mask a parking lot from the Thoroughfare, provide privacy to a side yard, and/or strengthen the spatial definition of the public realm. (Syn: streetwall.) See *Section 5.7.5f*.

Substantial Modification: alteration to a building that is valued at more than 50% of the replacement cost of the entire building, if new.

Swale: a low or slightly depressed natural area for drainage.

T-zone: Transect Zone.

TDR: Transfer of Development Rights, a method of relocating existing zoning rights from areas to be preserved as Open Space to areas to be more densely urbanized.

TDR Receiving Area: an area intended for development that may be made more dense by the purchase of development rights from TDR Sending Areas.

TDR Sending Area: an area previously zoned for development within a designated Reserved Open Sector (O-2), from which development rights may be transferred to a Growth Sector.

Terminated Vista: a location at the axial conclusion of a Thoroughfare. A building located at a Terminated Vista designated on a Regulating Plan is required or recommended to be designed in response to the axis.

Thoroughfare: a way for use by vehicular and pedestrian traffic and to provide access to Lots and Open Spaces, consisting of Vehicular Lanes and the Public Frontage. See *Table 3A*, *Table 3B* and *Table 17a*.

TND: Traditional Neighborhood Development, a Community Unit type structured by a Standard Pedestrian Shed oriented toward a Common Destination consisting of a Mixed Use center or Corridor, and in the form of a medium-sized settlement near a transportation route. See *Table 2* and *Table 14a*. (Syn: village. Variant: **Infill TND**, neighborhood.)

TOD: Transit Oriented Development. TOD is created by an overlay on all or part of a TND or RCD, or by designation on a Regional Plan, permitting increased Density to support rail or Bus Rapid Transit (BRT) as set forth in *Section 5.9.2d*.

Townhouse: See **Rearyard Building**. (Syn: **Rowhouse**)

Transect: a cross-section of the environment showing a range of different habitats. The rural-urban Transect of the human environment used in the SmartCode template is divided into six Transect Zones. These zones describe the physical form and character of a place, according to the Density and intensity of its land use and Urbanism.

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Transect Zone (T-zone): One of several areas on a Zoning Map regulated by the SmartCode. Transect Zones are administratively similar to the land use zones in conventional codes, except that in addition to the usual building use, Density, height, and Setback requirements, other elements of the intended habitat are integrated, including those of the private Lot and building and Public Frontage. See *Table 1*.

Turning Radius: the curved edge of a Thoroughfare at an intersection, measured at the inside edge of the vehicular tracking. The smaller the Turning Radius, the smaller the pedestrian crossing distance and the more slowly the vehicle is forced to make the turn. See *Table 3B and Table 17*.

Urban Boundary Line: the extent of potential urban growth as determined by the projected demographic needs of a region. The Urban Boundary Line may be adjusted from time to time.

Urbanism: collective term for the condition of a compact, Mixed Use settlement, including the physical form of its development and its environmental, functional, economic, and sociocultural aspects.

Urbanized: generally, developed. Specific to the SmartCode, developed at T-3 (Sub-Urban) Density or higher.

Variance: a ruling that would permit a practice that is not consistent with either a specific provision or the Intent of this Code (*Section 1.3*). Variances are usually granted by the Board of Appeals in a public hearing. See *Section 1.5*.

Warrant: a ruling that would permit a practice that is not consistent with a specific provision of this Code, but that is justified by its Intent (*Section 1.3*). Warrants are usually granted administratively by the CRC. See *Section 1.5*.

Work-Live: a Mixed Use unit consisting of a Commercial and Residential Function. It typically has a substantial Commercial component that may accommodate employees and walk-in trade. The unit is intended to function predominantly as work space with incidental Residential accommodations that meet basic habitability requirements. See Live-Work. (Syn: Live-With.)

Yield: characterizing a Thoroughfare that has two-way traffic but only one effective travel lane because of parked cars, necessitating slow movement and driver negotiation. Also, characterizing parking on such a Thoroughfare.

Zoning Map: the official map or maps that are part of the zoning ordinance and delineate the boundaries of individual zones and districts. See **Regulating Plan**.

SMART CODE MODULES

*Architectural codes must give buildings a sense of place,
of climate, of history, and of limits.*

Doug Kelbaugh

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1.7 INCENTIVES

If the SmartCode is adopted as a parallel code (i.e., mapped and available as an option by right, with the old code also available), or as a floating zone (unmapped, a code without a regulating plan), it is advisable to incentivize its use. Each of these provisions should be discussed and accepted dependent on local circumstances, for they may not prove to be true incentives, nor politically feasible.

1.7.1 The phrase “to the extent authorized by state law” should be superfluous in a properly calibrated code. It should be possible to determine whether the municipality can legally grant an incentive. Subsections (a) through (h) are types of incentives that have been used in various jurisdictions, but the calibrator should not avoid research and wordsmithing, while being aggressive and creative.

1.7.1a Whether a public hearing is required or optional is typically a matter of state law. For the SmartCode, the ideal process concludes that the required hearings were, in effect, complied with in the process of the adoption of the code by the Legislative Body. Therefore if a plan follows the code without need of Warrants or Variances, it has been effectively approved under the authority of the code-approval hearings. These conditions must therefore be verified by an attorney.

Many state codes have mandatory time periods in which applications must be heard. Care must be taken not to delay non-SmartCode projects past those deadlines.

1.7.1 g & h Tax relief is specific to local authority.

1.8 AFFORDABLE HOUSING INCENTIVES

See also the notes for 1.7.1a, g & h above. Other incentives may be added particular to the local situation. For example, if there are oversized lots in an area where the community supports adding affordable housing, a subdivision incentive may be possible, whereby a property owner can create a substandard lot if it is dedicated to a deed-restricted affordable unit.

Municipalities may want to specify a percentage of affordable housing after which the incentives would apply.

It is important to design affordable units so that there is no discernable outward difference between them and nearby market rate units.

ARTICLE 1. GENERAL TO ALL PLANS**1.7 INCENTIVES**

- 1.7.1 To encourage the use of this Code, the **Legislative Body** grants the following incentives, to the extent authorized by state law:
- a. Applications under this Code **shall** be processed administratively by the CRC rather than through public hearing.
 - b. Applications under this Code **shall** be processed with priority over those under the existing conventional zoning code, including those with earlier filing dates.
 - c. The municipality **shall** waive or reduce review fees.
 - d. The municipality **may** increase Density by the **subsidized** Transfer of Development Rights.
 - e. The municipality **shall** waive the traffic impact report.
 - f. The municipality **shall** construct and maintain those internal Thoroughfares that through-connect to adjacent sites.
 - g. The municipality **shall** maintain property taxes at the level prior to the approval, until such time as a certificate of occupancy has been issued for each building.
 - h. The municipality **shall** provide tax relief to first-time buyers of dwellings and newly created businesses within Zones T4, T5 and T6.

1.8 AFFORDABLE HOUSING INCENTIVES

- 1.8.1 To encourage the provision of Affordable Housing, the **Legislative Body** grants the following incentives:
- a. Applications containing Affordable Housing that meets this Code shall be processed administratively by the CRC. Others shall be processed by Variance.
 - b. Applications containing Affordable Housing shall be processed with priority over others, including those with earlier filing dates, providing that other applications are not pushed past their deadlines.
 - c. Highest priority for processing and for approval shall be given to applications involving partnership with a community land trust or other non-profit organization responsible for ensuring the long-term retention of the Affordable Housing.
 - d. The municipality shall waive or reduce review fees for applications containing Affordable Housing.
 - e. The municipality may increase Density for projects containing Affordable Housing.
 - f. The municipality may waive or reduce parking requirements for Affordable Housing units located within a quarter mile of a transit stop.
 - g. The municipality shall provide a property tax exemption for Affordable Housing units meeting established criteria.

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HAZARD MITIGATION STANDARDS

Including the specific term “hazard mitigation” in the code may help municipalities qualify for Federal and State funding for planning.

Sections may require renumbering if previous Modules are not included.

ARTICLE 1. GENERAL TO ALL PLANS**HAZARD MITIGATION STANDARDS****1.9 SPECIAL TREE PROVISIONS**

1.9.1 Each plan submitted under this Code shall include a site plan showing and describing in detail by species and size all existing trees, including any trees proposed to be removed, and all proposed new trees, shrubs and other landscape components. Compliance of the plan with the existing tree ordinance shall be subject to the approval of the [Planning Commission](#).

1.10 PRE-EXISTING AND POST-EMERGENCY CONDITIONS

1.10.1 If a building, structure, or other improvement has been or is damaged or destroyed by any event commencing or following [\[disaster date\]](#) and resulting in the declaration of an emergency or disaster applicable to the City, by the Governor of the State or President of the United States, the owner of record on the date of the event may repair or rebuild such building, structure or other improvement on the same building site and with the same building footprint by right. To qualify, the building, structure, or other improvement must have lawfully existed prior to the declaration and neither the lot, use, building, improvement, structure nor condition may be added to or altered in any way, except to remedy the effects of such damage or destruction, and/or to conform more closely with the provisions of this Code.

ARTICLE 2. REGIONAL SCALE PLANS**HAZARD MITIGATION STANDARDS****2.4 (O-2) RESERVED OPEN SECTOR**

2.4.4 Lands in any Special Flood Hazard Area that are designated to be set aside for the purpose of hazard mitigation [shall](#) become permanent Civic Space By Right regardless of size, subject to the Special District provisions herein, and shall count toward the required Civic Space allotment for Pedestrian Sheds including them. Areas too small to be coded as Special District shall conform to the Civic Space standards of Table 13 for one or more of any adjacent habitable Transect Zone(s).

ARTICLE 3. NEW COMMUNITY SCALE PLANS**HAZARD MITIGATION STANDARDS****3.5 CIVIC ZONES**

3.5.2 b. Lands in any Special Flood Hazard Area that are designated to be set aside for the purpose of hazard mitigation [shall](#) become permanent Civic Space regardless of size, subject to the Special District provision herein, shall be designated Civic Space Hazard Mitigation on the Community Plan, and shall count toward the required Civic Space allotment for Pedestrian Sheds including them. Areas too small to be coded as Special District shall conform to the Civic Space standards of Table 13 for one or more of any adjacent habitable Transect Zone(s).

ARTICLE 4. INFILL COMMUNITY SCALE PLANS**HAZARD MITIGATION STANDARDS****4.4 CIVIC ZONES**

4.4.2 b. Lands in any Special Flood Hazard Area that are designated to be set aside for the purpose of hazard mitigation [shall](#) become permanent Civic Space regardless of size, subject to the Special District provision herein, shall be designated

**ARTICLE 5. BUILDING SCALE PLANS
HAZARD MITIGATION STANDARDS**

5.7 FEMA Flood Insurance Rate Maps (FIRMs) and Advisory Base Flood Elevation (ABFE) maps affect and overlay the configuration of buildings, particularly regarding their elevation above sea level or ground level. These elevation requirements may be directly incorporated into the code and Regulating Plan, or alternatively may be permitted to be overlaid by reference to the FEMA standards, as is done in this provision.

Civic Space Hazard Mitigation on the Regulating Plan, and shall count toward the required Civic Space allotment for Pedestrian Sheds including them. Areas too small to be coded as Special District shall conform to the Civic Space standards of Table 13 for one or more of any adjacent habitable Transect Zone(s).

ARTICLE 5. BUILDING SCALE PLANS HAZARD MITIGATION STANDARDS

5.7 BUILDING CONFIGURATION

5.7.3 SPECIFIC TO T3

- d. All specified Building Heights may be increased by the difference between the actual lot elevation and the base elevations required by applicable FEMA standards, provided that any first level space shall be designed for use as
- (i) parking or storage space set into the structure into the second and deeper Layers, concealed from view of all streets or
 - (ii) an open market, a loggia or porch or combination thereof, or other open-air area for recreation, relaxation or gathering, to the extent permitted by applicable FEMA requirements, or other use permitted by the Planning Commission.

5.7.5 SPECIFIC TO T4, T5, T6

- g. All specified Building Heights may be increased by the difference between the actual lot elevation and the base elevations required by applicable FEMA standards, provided that any first level space shall be designed for use as
- (i) parking or storage space set into the structure into the second and deeper Layers, concealed from view of all streets,
 - (ii) an open market, a loggia or porch or combination thereof, or other open-air area for recreation, relaxation or gathering, or
 - (iii) enclosed Commercial or Retail space, to the extent permitted by applicable FEMA requirements, or other use permitted by the Planning Commission.

5.19 COMPLIANCE WITH BUILDING CODE AND FEMA REQUIREMENTS

- 5.19.1 Each structure or other improvement installed, constructed or built in the City shall comply with the [Municipality] Building Code and applicable FEMA requirements, as the same may be amended and in effect at the time of installation, construction or building.

5.20 SPECIAL EMERGENCY PROVISIONS

- 5.20.1 Notwithstanding anything to the contrary contained in this Article 5 or the Existing Local Codes, following any declaration of emergency or disaster by the Governor of the State or the President of the United States of America that is applicable to [Municipality], the following shall pertain:
- a. The owner of any lot whose residence is destroyed or rendered uninhabitable by the event causing the emergency may place a travel trailer on such lot for a period not to exceed **two (2)** years from the date of the event, provided that an application for a building permit is being made to the building official within one year of the time that the structure was destroyed.
 - b. Any structure pre-approved by the Planning Commission for interim housing following an emergency may be placed on such lot pending completion of the permanent structure on the lot. In addition, travel trailers may be located for no

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ARTICLE 7. DEFINITIONS OF TERMS HAZARD MITIGATION STANDARDS

These terms should not be added to Article 7 unless they actually appear in the calibrated code.

longer than two (2) years on any other location designated by the [Legislative Body] for such purposes.

ARTICLE 7. DEFINITIONS OF TERMS HAZARD MITIGATION STANDARDS

Advisory Base Flood Elevation (ABFE): the Base Flood Elevation on a FEMA Flood Insurance Rate Map that has not yet been adopted.

Base Flood Elevation (BFE): the height at or above which the lowest structural member of a building must be raised, according to an adopted FEMA Flood Insurance Rate Map.

Civic Space Hazard Mitigation: Lands in any Special Flood Hazard Area that are designated to be set aside for the purpose of hazard mitigation.

FEMA: Federal Emergency Management Agency.

Special Flood Hazard Area: a designation by the Federal Emergency Management Agency (FEMA) that may include the V (Velocity) Zones and Coastal A Zones where building construction is forbidden, restricted, or contingent upon raising to the Base Flood Elevation. (BFE)

3.7 ENVIRONMENTAL STANDARDS

This section should be inserted in the base code after 3.6 and subsequent sections renumbered. If Article 2 is not included in the calibration, this section must be modified to delete the references to it. The list of natural conditions should then be provided here.

These Environmental Standards consist of stream, wetlands, and stormwater provisions applicable to New Community Plans. In the rural Transect Zones, they are compatible with the EPA Model Ordinance. Nevertheless, calibrators must research the extent to which these requirements are enforceable, particularly where they conflict or overlap. This is likely in the more urban T-zones. Where there are conflicts with other adopted ordinances, the more restrictive provision usually applies. (“Restrictive” is an ambiguous term and its appearance in codes sometimes creates unintended consequences.) Some of these standards should be resisted, as excessive buffer requirements in urban areas can undermine the connectivity of thoroughfares (and hence diminish potential density). Walkability is also affected as more traffic is channeled to the few collectors and arterials.

In many respects, the SmartCode environmental requirements represent a significant increase in precision over existing environmental regulations, because they consider the context of the Transect instead of using a single standard for all conditions. However, until this approach is recognized on a State and Federal level, the extent to which this section should be included must be advocated locally.

3.7.1b The online document “EPA Model Ordinances to Protect Local Resources” is useful. A note says: “The width of the stream buffer varies from 20 feet to 200 feet [each side] in ordinances throughout the United States (Heraty, 1993). The width chosen by a jurisdiction will depend on the sensitivity and characteristics of the resource being protected and political realities in the community.” Buffers should account for slope, soil type, quality of protected feature and nature of surrounding land uses. As a rule of thumb, 25 feet is the usual requirement for an urban embankment, 50 feet is the ecological minimum, 100 feet protects from erosion, and 150 feet allows some wildlife habitat and migration.

3.7.1b, 3.7.2b, 3.7.4b, 3.7.5b, 3.7.6b, 3.7.7b

These sections focus on stream buffers. Communities creating coastal buffers may incorporate additional requirements. For an example of a coastal buffer ordinance, see Rhode Island’s.

ARTICLE 3. NEW COMMUNITY SCALE PLANS**3.7 ENVIRONMENTAL STANDARDS****3.7.1 GENERAL**

- a. Transect Zones manifest a range of natural and urban conditions. In case of conflict, the natural environment shall have priority in the more rural zones (T1-T3) and the built environment shall have priority in the more urban zones (T4-T6).
- b. There shall be three classes of Streams: Class I Perennial, Class II Intermittent, and Class III Ephemeral, each generating a Stream Buffer subject to a standard for crossing and protection of its riparian condition as specified below for each Transect Zone.
- c. There shall be three classes of Wetlands: Class I Connected, Class II Isolated, and Class III Xeric, each subject to a standard of restoration, retention, and mitigation as specified below for each Transect Zone.

3.7.2 SPECIFIC TO ZONES T1, T2

- a. Within T1 Zones and T2 Zones, the encroachment and modification of natural conditions listed in Sections 2.3.2 and 2.4.2 shall be limited according to applicable local, state and federal law.
- b. The Stream Buffers for Class I and Class II Streams shall be 200 feet in width each side, and for Class III Streams shall be 100 feet in width each side. Stream Buffers shall be maintained free of structures or other modifications to the natural landscape, including agriculture. Thoroughfare crossings shall be permitted by Variance only.
- c. Class I, Class II, and Class III Wetlands shall be retained (and restored if in degraded condition). Additional Buffers shall be maintained at 100 feet for Class I and II. Wetland Buffers shall be maintained free of structures or other modifications to the natural landscape, including agriculture. Thoroughfare crossings shall be permitted only by Variance.

3.7.3 SPECIFIC TO ZONES T1, T2, T3

- a. Stormwater management on Thoroughfares shall be primarily through retention and percolation, channeled by curbside Swales.

3.7.4 SPECIFIC TO ZONE T3

- a. Within T3 Zones, the continuity of the urbanized areas shall be subject to the precedence of the natural environmental conditions listed in Sections 2.3.2 and 2.4.2. The alteration of such conditions shall be limited according to local, state and federal law.
- b. The Stream Buffers for Class I and Class II Streams shall be 100 feet in width each side. Stream Buffers shall be maintained free of structures, except that Thoroughfare crossings may be permitted by Warrant. Class III Streams may be modified by Warrant.
- c. Class I, Class II, and Class III Wetlands shall be retained (and restored if in degraded condition). Additional Buffers shall be maintained at 50 feet for Class II and Class III Wetlands. Buffers shall be free of structures or other modifications to the natural landscape. Thoroughfare crossings shall be permitted only by Variance.

3.7.5 SPECIFIC TO ZONE T4

- a. Within T4 Zones, the continuity of the urbanized areas shall take precedence over the natural environmental conditions listed in Sections 2.3.2 and 2.4.2. The alteration of such conditions shall be mitigated off-site, and the determination for

3.7.2 From the EPA: “Communities should carefully consider whether to exempt agricultural operations from the buffer ordinance because buffer regulations may take land out of production and impose a financial burden on family farms. Many communities exempt agricultural operations if they have an approved NRCS conservation plan. In some regions, agricultural buffers may be funded through the Conservation Reserve Program (CRP). For further information, consult the Conservation Technology Information Center (CTIC) at www.ctic.purdue.edu.”

3.7.5-8 Federal and State law may not allow these provisions or may require different mitigation ratios. Compliance with State and Federal storm water requirements may require on-site retention. As of this writing, the EPA Model Ordinance does not recognize the Transect; provisions apply everywhere equally, based on the class of the watercourse or wetland, regardless of the context being rural or urban. The consequences to connective urbanism are potentially drastic. It may be difficult to allow for higher densities through adequate urban thoroughfare connectivity unless there is a diversity of appropriate standards, as in this Module. A municipality may overcome these limitations by working with State and Federal agencies to create regional mitigation banks or by exempting certain urban areas.

ARTICLE 7 DEFINITIONS OF TERMS ENVIRONMENTAL STANDARDS

These definitions are from the online document “EPA Model Ordinances to Protect Local Resources.” Their annotation warns: “Defining the term “stream” is perhaps the most contentious issue in the definition of stream buffers. This term determines the origin and the length of the stream buffer. Although some jurisdictions restrict the buffer to perennial or “blue line” streams, others include both perennial and intermittent streams in the stream buffer program. Some communities do not rely on USGS maps and instead prepare local maps of all stream systems that require a buffer.”

modification and mitigation shall be made by Warrant.

- b. The Stream Buffers for Class I and Class II Streams shall be 50 feet in width each side. Stream Buffers and Streams of all classes may be crossed by Thoroughfares as required by the Thoroughfare network.
- c. Class I and Class II Wetlands shall be retained and maintained free of structures or other modifications to the natural landscape [and restored if in degraded condition]. Thoroughfare crossings may be permitted by Warrant.

3.7.6 SPECIFIC TO ZONE T5

- a. Within T5 Zones, the continuity of the urbanized areas shall take precedence over the natural environmental conditions listed in Sections 2.3.2 and 2.4.2. The alteration of such conditions should be mitigated off-site, and the determination for modification and mitigation shall be made by Warrant.
- b. The Stream Buffers for Class I and Class II Streams shall be 25 feet in width each side, with the exception that Stream Buffers and Streams of all classes may be embanked and crossed by Thoroughfares as required by the Thoroughfare network.
- c. Class I and Class II Wetlands may be modified if mitigated off-site at a two to one ratio. Class III Wetlands may be modified, not requiring off-site mitigation. Thoroughfare crossings shall be permitted By Right.

3.7.7 SPECIFIC TO ZONE T6

- a. Within T6 Zones, the continuity of the urbanized areas shall take precedence over the natural environmental conditions listed in Sections 2.3.2 and 2.4.2. The alteration of such conditions shall not require off-site mitigation, and the determination for alteration of such conditions shall be made by Warrant.
- b. The Stream Buffers for Class I and Class II Streams shall be [25] feet in width each side with the exception that Stream Buffers and Streams of all classes may be embanked and crossed or enclosed by Thoroughfares as required by the Thoroughfare network.
- c. Class I, Class II and Class III Wetlands may be modified, not requiring off-site mitigation. Thoroughfare crossings shall be permitted By Right.

3.7.8 SPECIFIC TO ZONES T4, T5, T6

- a. Stormwater management on Thoroughfares and Lots shall be primarily through underground storm drainage channeled by raised curbs, and there shall be no retention or detention required on the individual Lot.

ARTICLE 7. DEFINITIONS OF TERMS

ENVIRONMENTAL STANDARDS

Buffer: A vegetated area, including trees, shrubs, and herbaceous vegetation, that exists or is established to protect a stream system, lake, reservoir, or coastal estuarine area. Alteration of this natural area is strictly limited.

Streams: Perennial and intermittent watercourses identified through site inspection and US Geological Survey (USGS) maps. Perennial streams are those depicted on a USGS map with a solid blue line. Intermittent streams are those depicted on a USGS map with a dotted blue line.

These annotations are advisory only. The SmartCode itself appears only on the right side of each spread.

NATURAL DRAINAGE STANDARDS

The Natural Drainage Standards may be incorporated into the Environmental Module for Article 3, or, if the Environmental Module is not used, then into the Public Frontage Standards that are already in the base SmartCode. Alternatively, they may be added to the base Code as an addendum. The numbers provided here are for incorporation into the Public Frontage Standards. Note that there is “should” language in green type which may be changed to the mandatory “shall.” If any of these sections is included, some Natural Drainage definitions must be added to Article 7.

If a more comprehensive drainage program is desired, the basic Natural Drainage provisions here may be supplemented with the Light Imprint initiative, which coordinates over sixty tools and resources for environmental, infrastructural, and cost efficiency concerns. The data is organized in the Light Imprint Storm Drainage Matrix that appears later in this Module section. Because it is transect-based, all or part of Light Imprint may be adopted with a SmartCode, or provided as an auxiliary set of guidelines for developers.

Information on implementation is available at www.lightimprint.org.

3.7.3c This provision becomes letter c. The calibrator must reletter the rest of the subsection if inserting it there.

5.13.1a If this provision is included, make sure it does not conflict with any requirements for sloped (pitched) roofs in the same T-zone. If sloped roofs are required in the code, it is possible to incentivize green roofs by allowing flat roofs only if they are green roofs. Some green roofs are possible on roofs with gentle pitch.

ARTICLE 7. DEFINITIONS OF TERMS NATURAL DRAINAGE STANDARDS

These terms should not be added to Article 7 unless they actually appear in the calibrated code.

ARTICLE 3. NEW COMMUNITY SCALE PLANS**NATURAL DRAINAGE STANDARDS****3.7.3 a. GENERAL TO ALL ZONES T1, T2, T3, T4, T5, T6**

- iv. Trees **should** be planted below the grade of the sidewalk and the street in structural cells with sufficient root space.
- v. Rain Gardens and Bioswales **should** be installed to infiltrate runoff from parking lots, Thoroughfares, Plazas and other impervious surfaces.
- vi. Where vegetative solutions are not feasible, porous concrete or porous asphalt **should** be specified for Sidewalks, parking lots, and Plazas to infiltrate stormwater.

3.7.3 c. SPECIFIC TO ZONES T3, T4

- i. Native plant perennial landscapes **should** replace turf grass where possible and be very diverse. They **should** be placed lower than walkways, not mounded up.

ARTICLE 5. BUILDING SCALE PLANS**5.13 NATURAL DRAINAGE STANDARDS****5.13.1 GENERAL TO ZONES T3, T4, T5, T6**

- a. Buildings **should** be equipped with roofs of shallow 4-inch soils and drought-tolerant plants. Buildings approved for Intensive Green Roofs may hold soils deeper than 4" and larger plants and trees.
- b. Balconies **should** be equipped with planter boxes designed to capture runoff from the balcony.
- c. Green walls, if provided, **shall** be restricted to non-invasive species.
- d. Cisterns **may** be used to capture and recirculate stormwater from buildings.

5.13.2 SPECIFIC TO ZONE T3

- a. The landscape installed shall consist primarily of native species requiring minimal irrigation, fertilization, and maintenance

5.13.3 SPECIFIC TO ZONES T3, T4

- a. Native plant perennial landscapes **should** replace turf grass wherever possible and be highly diverse. These **should** be placed lower than walkways, not mounded up.

5.13.4 SPECIFIC TO ZONES T4, T5, T6

- a. The landscape installed shall consist primarily of durable species tolerant of soil compaction.
- b. Planter boxes **should** be bottomless, flow-through boxes with native plants, placed next to buildings and designed to capture building runoff. They may be placed in courtyards or adjacent sidewalks with runoff sent to them via French drains or hidden pipes.

ARTICLE 7. DEFINITIONS OF TERMS - NATURAL DRAINAGE STANDARDS

Bioswale: an extended Rain Garden that sometimes runs the length of the block.

Green Roof: see Definitions for Sustainability Module.

Intensive Green Roof: see Definitions for Sustainability Module.

Rain Garden: sunken garden using native plants and sometimes trees.

5.14 ARCHITECTURAL STANDARDS

This optional Module contains basic Architectural Standards for Buildings. These provisions contribute to a visually harmonious urban fabric, easing the public's acceptance of mixed functions in adjacency, and in some instances, supporting the superior environmental performance of traditional building technique. More complete and more detailed Modules, in the form of more elaborate standards or full pattern books, may be used instead. Such Modules are available from New Urbanist suppliers listed on www.SmartCodeCentral.com.

Some municipalities may decide not to regulate architectural matters. However, many of these standards, besides their aesthetic effects, also have health and public safety purposes, such as crime prevention by increasing "eyes on the street," that may be cited as support for their implementation.

5.14.1c This assures a minimum of visual harmony. "Vertical" may be replaced by "horizontal" where modernist architecture is desired.

5.14.1.f & g These provisions should be removed where modernist architecture is desired. Even codes that promote sloped roofs should allow flat roofs when permanently dedicated to roof gardens or green roofs. Such roof gardens, if they are to be used, should be easily accessible from a room on the roof.

5.14.1g Other materials may be added to this list as the community wishes. For example, eighty percent of the new housing in the Northeast has vinyl siding. But its use is controversial. While it initially contributes to housing affordability, some vinyl has not proved durable. According to the Vinyl Siding Institute, the latest premium products are more colorfast and durable than they have been in the past, with warranties against fading and yellowing. Still, the authors of this Manual recommend cementitious siding

5.17 VISITABILITY STANDARDS

Visitability is a more stringent set of standards than ADA Accessibility, which is applicable only to commercial buildings and apartment houses over three units, exempting houses, rowhouses and other fee-simple dwellings. Visitability requires that the wheelchair-bound be able to enter the first floor of every building and use the bathroom. Visitability standards specifically permit the "level entrance" to be located at the rear of the dwelling where the alley-accessed parking is set.

5.17.1b and c. These are the only provisions written for the SmartCode that regulate aspects of the interior of the building that do not physically affect the public realm.

5.15 LIGHTING STANDARDS

Lighting type and color can be adjusted according to the Transect. Fixtures and other specifications should be listed on Table 5, while performance-based standards may be listed in the code text, as the foot-candle levels are in this Module. See annotations for Table 5 in the base code.

5.16 SOUND STANDARDS

This sound ordinance is designed to protect reasonable urban sound levels rather than to preclude noise. Fully enforceable sound ordinances must typically address where the measurement is taken, how background sound is calculated, and which part of the spectrum is being measured.

5.14 ARCHITECTURAL STANDARDS**5.14.1 GENERAL TO ZONES T3, T4, T5, T6**

- a. Building wall materials may be combined on each Facade only horizontally, with the heavier below the lighter.
- b. Streetscreens should be constructed of a material matching the adjacent building Facade.
- c. All openings, including porches, Galleries, Arcades and windows, with the exception of Shopfronts, shall be square or vertical in proportion.
- d. Openings above the first Story shall not exceed 50% of the total building wall area, with each Facade being calculated independently.
- e. Doors and windows that operate as sliders are prohibited along Frontages.
- f. Pitched roofs, if provided, shall be symmetrically sloped no less than 5:12, except that roofs for porches and attached sheds may be no less than 2:12.
- g. The exterior finish material on all Facades shall be limited to brick, wood siding, cementitious siding and/or stucco.
- h. Flat roofs shall be enclosed by parapets a minimum of 42 inches high, or as required to conceal mechanical equipment to the satisfaction of the CRC.
- i. Balconies and porches shall be made of painted wood.
- j. Fences at the first Lot Layer shall be painted. Fences at other Layers may be of wood board or chain link.

5.15 LIGHTING STANDARDS**5.15.1 GENERAL TO ALL ZONES T1, T2, T3, T4, T5, T6**

- a. Streetlights shall be of a general type illustrated in Table 5.

5.15.2 SPECIFIC TO ZONE T1

- a. No lighting level measured at the building Frontage Line shall exceed 0.5 fc.

5.15.3 SPECIFIC TO ZONES T2, T3, T4

- a. No lighting level measured at the building Frontage Line shall exceed 1.0 fc.

5.15.4 SPECIFIC TO ZONE T5

- a. No lighting level measured at the building Frontage Line shall exceed 2.0 fc.

5.15.5 SPECIFIC TO ZONE T6

- a. No lighting level measured at the building Frontage Line shall exceed 5.0 fc.

5.16 SOUND STANDARDS**5.16.1 SPECIFIC TO ZONES T1, T2, T3, T4**

- a. Sound levels measured at the building Frontage Line shall not exceed 65 decibels from sunrise to midnight and 55 decibels from midnight to sunrise.

5.16.2 SPECIFIC TO ZONES T5, T6

- a. Sound levels measured at the building Frontage Line shall not exceed 70 decibels from sunrise to midnight and 60 decibels from midnight to sunrise.

5.17 VISITABILITY STANDARDS**5.17.1 GENERAL TO T3, T4, T5, T6**

- a. There shall be provided one zero-step entrance to each building from an accessible path at the front, side, or rear of each building.
- b. All first floor interior doors (including bathrooms) shall provide 32 inches of clear passage.
- c. There shall be a half or full bath provided on the first Story of each building.

SMARTCODE ANNOTATED

These annotations are advisory only. The SmartCode itself appears only on the right side of each spread.

SUSTAINABILITY TABLES

All the Sustainability Tables need further calibration with By Right and Warrant bullets, as local politics require. Spaces left blank would mean that a Variance (public process) would be required for the device or facility. These tables currently show which Transect Zones are appropriate in terms of habitat character and design, but do not take into account political realities, which are always local.

The Sustainability Tables are not numbered because they may be appropriate in various places in Article 6, preferably before the SmartCode Summary Table 14. As always, the insertion of new tables will require renumbering of subsequent tables and a Find/Replace of those numbers throughout the code text.

SUSTAINABILITY - WIND POWER

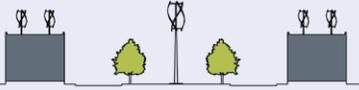
This table prescribes opportunities for the placement of types of wind-powered devices within the Transect. Wind turbines must be placed where there is wind. The best locations in general include shorelines and the edges of open plains. In the urban Transect Zones, T3-4-5-6, this usually means they must be placed quite high above the buildings. Care should be taken installing wind turbines near inhabited areas, as they tend to generate a steady white noise that is disturbing to some.

The horizontal axis wind turbine is suited for the more rural T-zones because it generally requires a large (20 foot) radius for the rotating blades. In addition, the head must rotate in order to receive wind from any direction.

The vertical axis wind turbine is suited for the more urban T-zones because it is significantly smaller than the horizontal axis type, sometimes only 4-5 feet in diameter, and less noisy. These are designed to operate with non-directional wind current, which makes them easier to accommodate, and more attractive in urban areas when in proximity to buildings. For further information see www.quietrevolution.com.

The Definitions for the Sustainability Module (this table and the three subsequent tables) are together on the page following them. If any part of this Module is used, the appropriate definitions should be added to Article 7 during calibration.

Sustainability - Wind Power. This table prescribes opportunities for the placement of types of wind-powered devices within the Transect.

| | T1 | T2 | T3 | T4 | T5 | T6 | SD | Specifics |
|---|----|----|----|----|----|----|----|---|
| <p>Wind Farm</p>  | ▪ | ▪ | | | | | ▪ | <hr/> |
| <p>Horizontal Axis</p>  | ▪ | ▪ | ▪ | | | | ▪ | <hr/> |
| <p>Vertical Axis</p>  | | | ▪ | ▪ | ▪ | ▪ | ▪ | <hr/> |
| <p>Public Furniture</p>  | | | ▪ | ▪ | ▪ | ▪ | ▪ | <hr/> |

These annotations are advisory only. The SmartCode itself appears only on the right side of each spread.

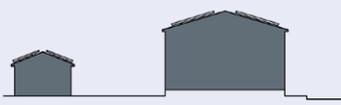
SUSTAINABILITY - SOLAR ENERGY

This table shows opportunities for the placement of types of solar-powered devices within the Transect. Solar access should be protected in the T2 and T3 zones; this may be more difficult in T4-T6 density.

At the community scale, solar orientation should be considered when planning a hamlet or village, so that each lot receives optimum exposure. If this is not feasible, the code may require a percentage of lots, especially in the T3 zone, to be oriented for solar energy.

Solar farms should be permitted by Warrant in T2 zones and by Variance in T1.

Sustainability - Solar Energy. This table shows opportunities for the placement of types of solar-powered devices within the Transect.

| | T1 | T2 | T3 | T4 | T5 | T6 | SD | Specifics |
|--|----|----|----|----|----|----|----|---|
| <p>Solar Farm</p>  | ■ | ■ | | | | | ■ | <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> |
| <p>Roof Mounted Solar Panels</p>  | | ■ | ■ | ■ | ■ | ■ | ■ | <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> |
| <p>Public Furniture</p>  | | | ■ | ■ | ■ | ■ | ■ | <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> |

Note: A solar dish/engine system also utilizes collectors tracking the sun on two axes, but it concentrates the energy at the focal point of a separate dish.

SUSTAINABILITY - FOOD PRODUCTION

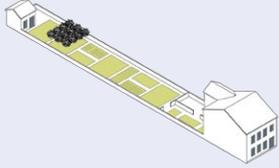
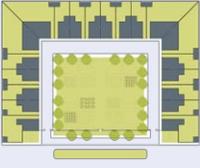
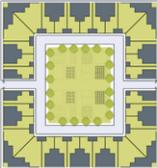
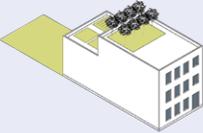
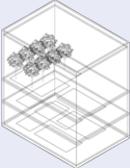
This table shows ways of incorporating types of local food production along the Transect. Cities are increasingly allowing urban agriculture and the raising of animals for household use, to encourage lower-cost food supplies and reduction in the energy consumption for food transport. This code may be modified to require developers of infill projects to purchase vacant lots and make them available as community gardens for nearby residents.

A community garden, or allotment garden, provides a locus of recreation and sociability greater than that of the private yard, being one of the so-called third places. They are also welcome by apartment-dwellers who may enjoy gardening. Allotment gardens can be large enough to hold habitable shacks as affordable surrogates for rural weekend cottages. Allotment plots are not sold, but let under municipal or private administration.

Green roofs are also opportunities for food production, even as they mitigate carbon emissions and reduce storm water runoff. They may be incentivized by giving developers bonuses for installing them.

As tree preservation and planting regulations are introduced, fruit trees may be included and designated for local food production.

Sustainability - Food Production. This table shows ways of incorporating types of food production along the Transect.

| | T1 | T2 | T3 | T4 | T5 | T6 | SD | Specific |
|---|----|----|----|----|----|----|----|---|
| Farm  | | ▪ | | | | | ▪ | <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> |
| Agricultural Plots  | | ▪ | ▪ | | | | ▪ | <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> |
| Vegetable Garden  | | ▪ | ▪ | ▪ | | | | <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> |
| Urban Farm  | | | ▪ | ▪ | ▪ | | | <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> |
| Community Garden  | | | ▪ | ▪ | ▪ | ▪ | | <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> |
| Green Roof - Extensive - Semi Intensive - Intensive  | | ▪ | ▪ | ▪ | ▪ | ▪ | ▪ | <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> |
| Vertical Farm  | | | | | ▪ | ▪ | ▪ | <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> |

**SUSTAINABILITY -
COMPOSTING AND RECYCLING**

This table may be locally calibrated and incorporated into Table 12 Specific Function and Use. Some of these facilities may be marked on a Regulating Plan as "Required" for certain locations, or a provision may be added to Article 3 that a T-zone or portion of a T-zone shall have one or more such facilities within it, the precise location to be approved by Warrant or Variance.

The goal is to manage resources such that they are reused and recycled without waste, so that waste does not have to be "managed" and so that economically viable resources are recaptured or created from the waste stream. Planning the location of facilities according to the Transect helps ensure that some are located close to the homes and businesses they serve, and others that may be obtrusive in urban T-zones are located in T2 or Special Districts as appropriate.

Sustainability goals may be added to the Intent section of the SmartCode. Here is an example to indicate goals associated with the Composting and Recycling Table.

1.3.1 The Region

i. That development should not contribute to waste and pollution and therefore should be designed for reuse, recycling, and composting.

1.3.2. The Community

j. That Civic, institutional, and Commercial activities contribute to the economic and environmental well-being of the entire community.

k. That resource recovery parks should be planned and reserved in coordination with the Transect.

l. That reuse, recycling and composting operations are accessible and convenient and considered an integral part of the local economy.

Municipality

| | T1 | T2 | T3 | T4 | T5 | T6 | SD |
|---------------------------------|--------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| On-Site Organics Processing | | ▪ | | | | | ▪ |
| Self-Drop Collection Systems | | ▪ | | | | | |
| Optional/Competitive Collection | | ▪ | ▪ | | | | |
| Mandatory Curbside Collection | | | | ▪ | ▪ | ▪ | ▪ |
| Centralized Composting Systems | | | | | | | ▪ |
| Smaller Regional Composting | | ▪ | ▪ | | | | |
| On-Site Processing | | ▪ | ▪ | | | | ▪ |
| Re-Use Centers | | ▪ | ▪ | ▪ | ▪ | ▪ | ▪ |
| Recycling Processing Centers | | ▪ | ▪ | ▪ | ▪ | ▪ | ▪ |
| Once-Used Materials Storage | | ▪ | ▪ | | | | ▪ |
| Transfer Stations | | ▪ | ▪ | ▪ | ▪ | ▪ | ▪ |
| Disposal Facilities | Prohibited Across The Transect | | | | | | |

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LIGHT IMPRINT STORM DRAINAGE MATRIX

This glossary contains the terms for the first three tables in this section but not for the last two. Light Imprint definitions are available at www.lightimprint.com. They may need to be revised for code purposes.

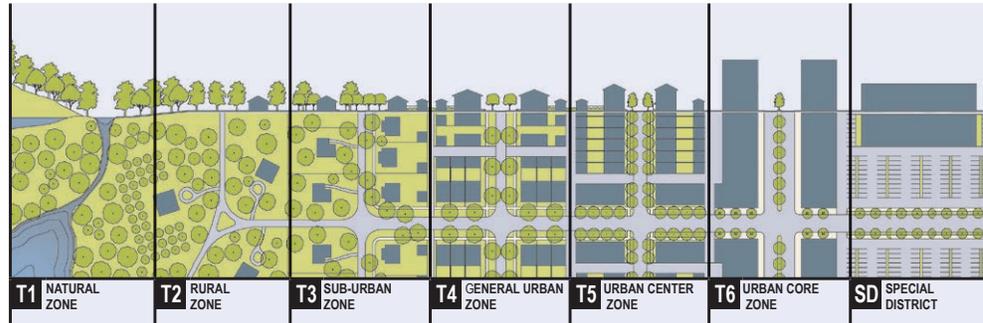
This table summarizes a comprehensive strategy that can supplement the basic Natural Drainage Standards in this volume. The Light Imprint initiative coordinates over sixty tools and resources for environmental, infrastructural, and cost efficiency concerns. Because it is transect-based, all or part of Light Imprint may be adopted with a SmartCode, or provided as an auxiliary set of guidelines for developers. Definitions will be necessary for some terms on this table. Full descriptions of all the tools, along with a comprehensive introduction and set of case studies, are located in the full Light Imprint Handbook. Information is available at www.lightimprint.org.

SMARTCODE MODULE

LIGHT IMPRINT STORM DRAINAGE MATRIX

Municipality

Note: All requirements in this Table are subject to calibration for local context.



| | T1 | T2 | T3 | T4 | T5 | T6 | SD | Maint. | Cost |
|---|----|----|----|----|----|----|----|--------|--------|
| a. PAVING | | | | | | | | | |
| Compacted Earth | ■ | ■ | ■ | | | | | L | \$ |
| Wood Planks | ■ | | | | | | | H | \$\$\$ |
| Plastic Mesh/Geomat | | ■ | | ■ | | | | L | \$ |
| Crushed Stone/Shell | | ■ | | ■ | | | | M | \$ |
| Cast/Pressed Concrete Paver Block | | | | ■ | | ■ | | L | \$\$ |
| Grassed Cellular Plastic | | | ■ | | ■ | | | M | \$\$\$ |
| Grassed Cellular Concrete | | | ■ | | ■ | ■ | | M | \$\$\$ |
| Pervious Asphalt | | | | ■ | | ■ | | L | \$\$ |
| Asphalt | | | ■ | ■ | ■ | ■ | | L | \$ |
| Concrete | | | ■ | ■ | ■ | ■ | | L | \$\$ |
| Pervious Concrete | | | | ■ | ■ | ■ | | L | \$\$ |
| Stamped Asphalt | | | ■ | ■ | ■ | ■ | | L | \$\$\$ |
| Stamped Concrete | | | ■ | ■ | ■ | ■ | | L | \$\$\$ |
| Pea Gravel | | | | ■ | ■ | ■ | | M | \$ |
| Stone/Masonry Paving Blocks | | | | ■ | ■ | ■ | | L | \$\$\$ |
| Wood Paving Blocks on Concrete | | | | | ■ | ■ | | L | \$\$\$ |
| Asphalt Paving Blocks | | | | | ■ | ■ | | M | \$\$ |
| b. CHANNELING | | | | | | | | | |
| Natural Creek | ■ | ■ | | | | | | L | \$ |
| Terracing | ■ | ■ | ■ | | | | | M | \$\$ |
| Vegetative Swale | ■ | ■ | ■ | | | | | L | \$ |
| Drainage Ditch | ■ | ■ | | | | | | L | \$ |
| Stone/Rip Rap Channels | | ■ | ■ | ■ | | | | L | \$\$ |
| Vegetative/Stone Swale | | ■ | ■ | | ■ | | | L | \$ |
| Grassed Cellular Plastic | | | ■ | | ■ | | | M | \$\$\$ |
| Grassed Cellular Concrete | | | ■ | | ■ | | | M | \$\$\$ |
| Soakaway Trench | | | ■ | ■ | ■ | | | M | \$\$\$ |
| Slope Avenue | | | ■ | ■ | ■ | | | M | \$\$\$ |
| French Drain | | | ■ | ■ | ■ | | | M | \$ |
| Shallow Channel Footpath/Rainwater Conveyor | | | ■ | ■ | ■ | | | L | \$ |
| Concrete Pipe | | | ■ | ■ | ■ | ■ | | L | \$\$ |
| Gutter | | | ■ | ■ | ■ | ■ | | L | \$\$ |
| Planting Strip Trench | | | ■ | ■ | ■ | ■ | | L | \$ |
| Masonry Trough | | | ■ | ■ | ■ | ■ | | L | \$\$ |
| Canal | | | | ■ | ■ | ■ | | H | \$\$\$ |
| Sculpted Watercourse, i.e. cascades | | | | ■ | ■ | ■ | | M | \$\$\$ |
| Concrete Trough | | | | ■ | ■ | ■ | | L | \$\$ |
| Archimedean Screw | | | | ■ | ■ | ■ | | L | \$\$\$ |
| c. STORAGE | | | | | | | | | |
| Irrigation Pond | | ■ | ■ | | | | | L | \$ |
| Retention Basin with Sloping Bank | | ■ | ■ | | | | | L | \$\$ |
| Retention Basin with Fence | | ■ | ■ | ■ | | | | L | \$\$ |
| Retention Hollow | | | ■ | ■ | | | | M | \$ |
| Detention Pond | | | ■ | ■ | | | | L | \$ |
| Vegetative Purification Bed | | | ■ | ■ | ■ | | | M | \$\$ |
| Flowing Park | | | ■ | ■ | ■ | | | M | \$\$ |
| Retention Pond | | | ■ | ■ | ■ | | | M | \$\$ |
| Landscaped Tree Well | | | | ■ | ■ | | | L | \$\$ |
| Pool/Fountain | | | | ■ | ■ | ■ | | H | \$\$\$ |
| Underground Vault/Pipe/Cistern-Corrugated Metal | | | | ■ | ■ | ■ | | L | \$\$ |
| Underground Vault/Pipe/Cistern-Pre-cast Concrete | | | | ■ | ■ | ■ | | L | \$\$ |
| Underground Vault/Pipe/Cistern-Cast in place Concrete | | | | ■ | ■ | ■ | | L | \$\$ |
| Grated Tree Well | | | | ■ | ■ | ■ | | L | \$\$ |
| Underground Vault/Pipe/Cistern-Plastic | | | | ■ | ■ | ■ | | L | \$\$\$ |
| Paved Basin | | | | | ■ | ■ | | M | \$\$\$ |
| d. FILTRATION | | | | | | | | | |
| Wetland/Swamp | ■ | ■ | | | | | | L | \$ |
| Filtration Ponds | ■ | ■ | | | | | | L | \$\$ |
| Shallow Marsh | ■ | ■ | ■ | | | | | M | \$ |
| Surface Landscape | ■ | ■ | ■ | | | | | L | \$ |
| Natural Vegetation | ■ | ■ | ■ | ■ | | | | L | \$ |
| Constructed Wetland | | ■ | ■ | | | | | M | \$ |
| Bio-Retention Swale | | ■ | ■ | | | | | M | \$\$ |
| Purification Biotope | | ■ | ■ | ■ | | | | H | \$\$ |
| Green Finger | | ■ | ■ | ■ | ■ | | | L | \$\$\$ |
| Roof Garden | | ■ | ■ | ■ | ■ | ■ | | M | \$\$\$ |
| Rain Garden | | ■ | ■ | ■ | ■ | ■ | | M | \$\$ |
| Detention Pond | | | ■ | ■ | ■ | ■ | | L | \$ |
| Grassed Cellular Plastic | | | ■ | ■ | ■ | ■ | | M | \$\$\$ |
| Grassed Cellular Concrete | | | ■ | ■ | ■ | ■ | | M | \$\$\$ |
| Waterscapes | | | ■ | ■ | ■ | ■ | | H | \$\$\$ |

*NOTE - Maintenance is denoted as L=Low, M=Medium and H=High.

DEFINITIONS OF TERMS - SUSTAINABILITY TABLES

Green Roof: The Green Roof definitions are also useful for the Natural Drainage Standards Module, if that is used instead of or in addition to one or more Sustainability Tables.

Vertical Farm: According to www.verticalfarm.com, the concept of Vertical Farming (sometimes known as indoor farming) is that "...a wide variety of produce is harvested in quantity enough to sustain even the largest of cities without significantly relying on resources outside the city limits."

ARTICLE 7. DEFINITIONS OF TERMS - SUSTAINABILITY TABLES

Extensive Green Roof: a building roof with a planting medium six inches in depth or less, designed to be virtually self-sustaining and requiring a minimum of maintenance. Such roofs are intended to function as an ecological protection layer. They are planted with low-lying species designed to provide maximum cover achieving water retention, erosion resistance, and transpiration of moisture.

Green Roof: a building roof partially or completely covered with vegetation and soil, or a growing medium, over a waterproofing membrane. Green roofs may be categorized as Extensive, Semi-Intensive, or Intensive, depending on the depth of the planting medium and the amount of maintenance required. (Syn: eco-roof, living roof, greenroof)

Horizontal Axis Wind Turbine: a Wind Turbine with its rotor on the horizontal axis, similar to an airplane propeller.

Intensive Green Roof: a building roof with a planting medium between 8 inches and 4 feet. It can sustain elaborate plantings that include shrubs and trees. Intensive Green Roofs are heavy and usually installed over concrete roof decks. They require considerable maintenance. In addition to their role in carbon mitigation, they are used for recreation or aesthetics, being park or garden-like.

Semi-Intensive Green Roof: a building roof with specifications between the Extensive and Intensive Green Roof systems. This type requires more maintenance, has higher costs, and weighs more than the Extensive Green Roof.

Solar Farm: a facility where solar powered devices, either photovoltaic (PV) or turbine systems, are clustered. It should be large enough to generate at least one megawatt.

Solar Roof: a building roof that supports an array of solar panels, including solar shingles.

Sustainability: The basis upon which an organism or a community can manage its own continuing viability, meeting the needs of the present without compromising the ability of future generations to meet their own needs.

Urban Farm: agricultural land dedicated to food production to be locally consumed (by locavores).

Vertical Axis Wind Turbine: a Wind Turbine with its rotor on the vertical axis. Blades are usually helical and the device is usually more compact than the Horizontal Axis Wind Turbine. It does not have to rotate to face the prevailing wind.

Vertical Farm: agricultural production in buildings without yards, usually high and mid-rise buildings.

Wind Turbine: a rotary device for converting wind energy into mechanical or electrical energy.

TABLE 4C: THOROUGHFARE ASSEMBLIES

Thoroughfares are assembled from the Vehicular Lane elements that appear in Table 3A and Table 3B and the Public Frontages of Table 4A and Table 4B. Twenty-two typical assemblies are presented here for convenience. These may be added to the base SmartCode for the local calibration, and others may be created as necessary using the same template. They replicate closely the thoroughfare standards of municipal public works manuals.

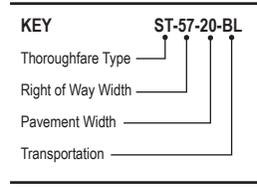
If Thoroughfare Assemblies are used, one or more of the Vehicular Lane or Public Frontage Tables may be removed. Calibrators should take care that provisions listed on the Table 4C Assemblies do not conflict with provisions on the remaining Vehicular Lane or Public Frontage Tables, or with Section 3.7.

The thoroughfares here are drawn to scale with the supporting information below them. The identification key gives the thoroughfare type followed by the right-of-way width, followed by the pavement width, and in some instances followed by specialized transportation capability. They are organized in the Module first by type, then by ROW width, then by Vehicular Lanes overall width.

If a regulating plan uses two thoroughfares with the same name, e.g., if the calibration has two street sections called ST-50-26 with different parking arrangements, they should be given different names to avoid confusion. If one of them is a yield street it could be called ST-50-26-Y.

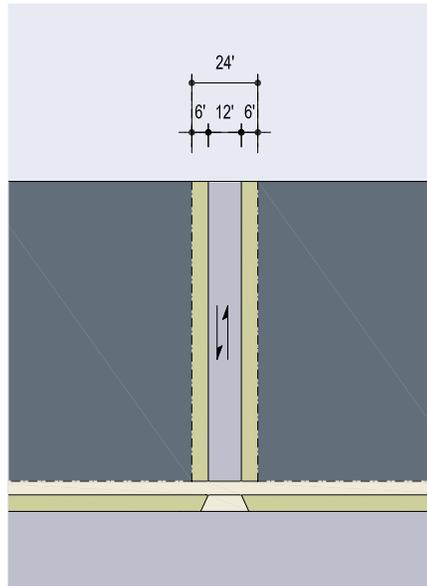
There are several one-way streets included in this Module. They should be used rarely, especially if blocks are long, as they are less connective than two-way streets. If low traffic volumes are expected, consider using the two-way yield movement instead. Specifying a one-way thoroughfare and later allowing it to become two-way with verified usage is a method for securing more appropriately narrow thoroughfares than some jurisdictions will allow initially.

Because walkability is so important to good urbanism, any paths or trails intended for runners and long-distance walkers should not be paved with concrete. Asphalt has less impact on the joints and feet.



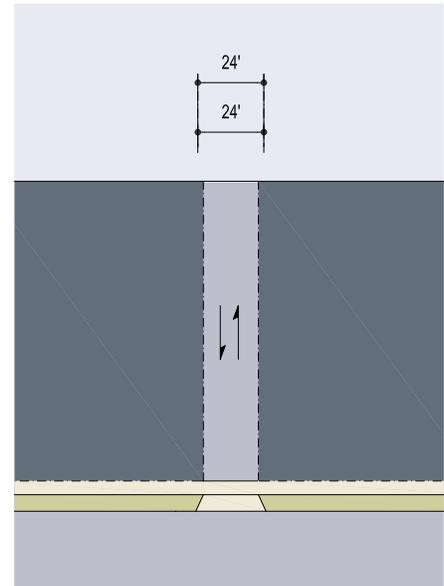
THOROUGHFARE TYPES

| | |
|--------------------|----|
| Highway: | HW |
| Boulevard: | BV |
| Avenue: | AV |
| Commercial Street: | CS |
| Drive: | DR |
| Street: | ST |
| Road: | RD |
| Rear Alley: | RA |
| Rear Lane: | RL |
| Bicycle Trail: | BT |
| Bicycle Lane: | BL |
| Bicycle Route: | BR |
| Path: | PT |
| Passage: | PS |
| Transit Route: | TR |



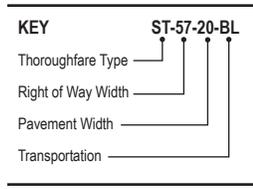
RL-24-12

| | |
|--------------------------|----------------|
| Thoroughfare Type | Rear Lane |
| Transect Zone Assignment | T3 |
| Right-of-Way Width | 24 feet |
| Pavement Width | 12 feet |
| Movement | Yield Movement |
| Design Speed | 10 MPH |
| Pedestrian Crossing Time | 3.5 seconds |
| Traffic Lanes | n/a |
| Parking Lanes | None |
| Curb Radius | Taper |
| Walkway Type | None |
| Planter Type | None |
| Curb Type | Inverted Crown |
| Landscape Type | None |
| Transportation Provision | None |



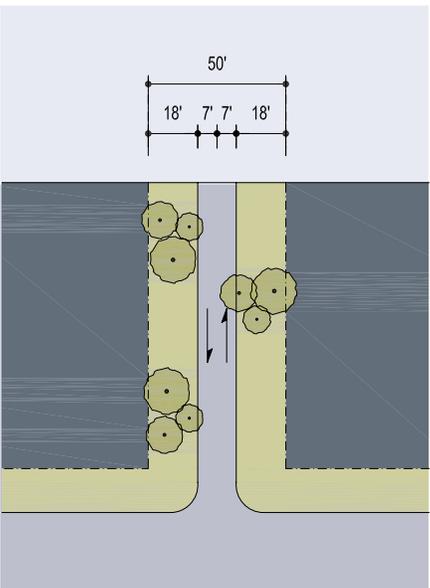
RA-24-24

| | |
|--------------------------|----------------|
| Thoroughfare Type | Rear Alley |
| Transect Zone Assignment | T4, T5, T6 |
| Right-of-Way Width | 24 feet |
| Pavement Width | 24 feet |
| Movement | Slow Movement |
| Design Speed | 10 MPH |
| Pedestrian Crossing Time | 7 seconds |
| Traffic Lanes | n/a |
| Parking Lanes | None |
| Curb Radius | Taper |
| Walkway Type | None |
| Planter Type | None |
| Curb Type | Inverted Crown |
| Landscape Type | None |
| Transportation Provision | None |



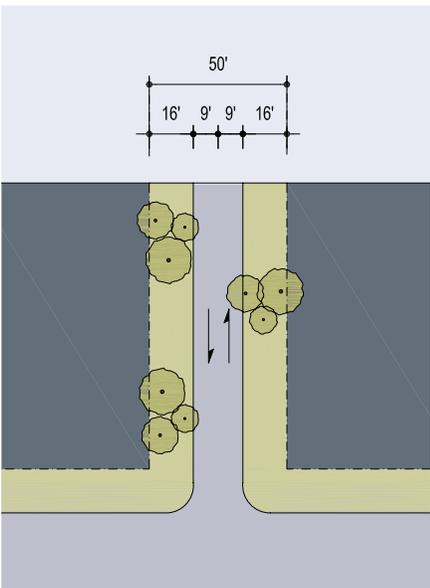
THOROUGHFARE TYPES

| | |
|--------------------|----|
| Highway: | HW |
| Boulevard: | BV |
| Avenue: | AV |
| Commercial Street: | CS |
| Drive: | DR |
| Street: | ST |
| Road: | RD |
| Rear Alley: | RA |
| Rear Lane: | RL |
| Bicycle Trail: | BT |
| Bicycle Lane: | BL |
| Bicycle Route: | BR |
| Path: | PT |
| Passage: | PS |
| Transit Route: | TR |



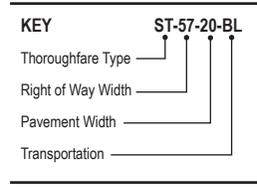
RD-50-14

| | |
|--------------------------|------------------|
| Thoroughfare Type | Road |
| Transect Zone Assignment | T1, T2, T3 |
| Right-of-Way Width | 50 feet |
| Pavement Width | 14 feet |
| Movement | Yield Movement |
| Design Speed | 15 MPH |
| Pedestrian Crossing Time | 4 seconds |
| Traffic Lanes | 2 lanes |
| Parking Lanes | None |
| Curb Radius | 25 feet |
| Walkway Type | Path optional |
| Planter Type | Continuous Swale |
| Curb Type | Swale |
| Landscape Type | Trees clustered |
| Transportation Provision | BT |



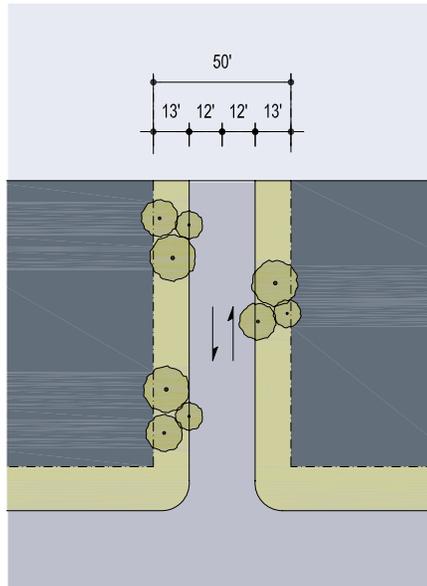
RD-50-18

| | |
|--------------------------|------------------|
| Thoroughfare Type | Road |
| Transect Zone Assignment | T1, T2, T3 |
| Right-of-Way Width | 50 feet |
| Pavement Width | 18 feet |
| Movement | Slow Movement |
| Design Speed | 15 MPH |
| Pedestrian Crossing Time | 5.1 seconds |
| Traffic Lanes | 2 lanes |
| Parking Lanes | None |
| Curb Radius | 25 feet |
| Walkway Type | Path optional |
| Planter Type | Continuous Swale |
| Curb Type | Swale |
| Landscape Type | Trees clustered |
| Transportation Provision | BT |



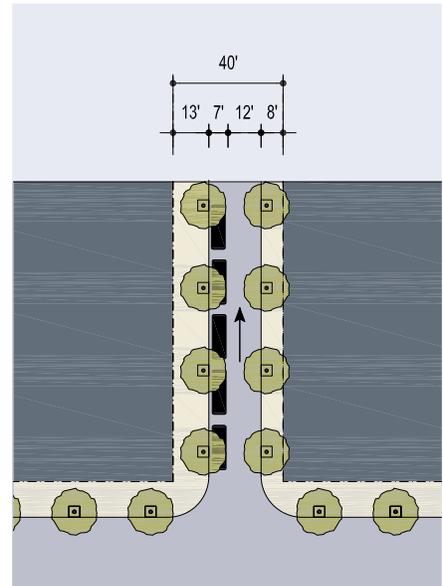
THOROUGHFARE TYPES

| | |
|--------------------|----|
| Highway: | HW |
| Boulevard: | BV |
| Avenue: | AV |
| Commercial Street: | CS |
| Drive: | DR |
| Street: | ST |
| Road: | RD |
| Rear Alley: | RA |
| Rear Lane: | RL |
| Bicycle Trail: | BT |
| Bicycle Lane: | BL |
| Bicycle Route: | BR |
| Path: | PT |
| Passage: | PS |
| Transit Route: | TR |



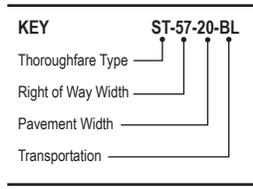
RD-50-24

| | |
|--------------------------|------------------|
| Thoroughfare Type | Road |
| Transect Zone Assignment | T1, T2, T3 |
| Right-of-Way Width | 50 feet |
| Pavement Width | 24 feet |
| Movement | Slow Movement |
| Design Speed | 20 MPH |
| Pedestrian Crossing Time | 6.8 seconds |
| Traffic Lanes | 2 lanes |
| Parking Lanes | None |
| Curb Radius | 25 feet |
| Walkway Type | Path optional |
| Planter Type | Continuous Swale |
| Curb Type | Swale |
| Landscape Type | Trees clustered |
| Transportation Provision | BT |



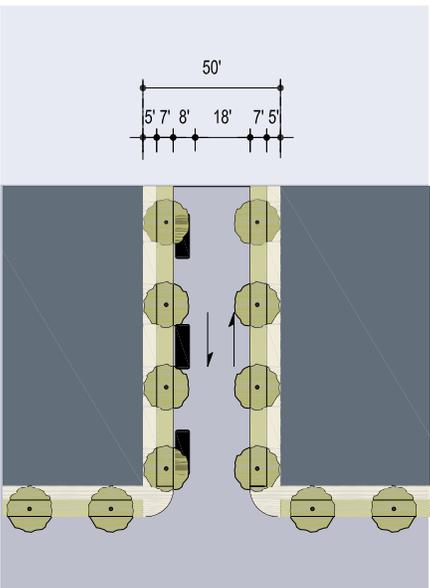
ST-40-19

| | |
|--------------------------|--------------------------|
| Thoroughfare Type | Street |
| Transect Zone Assignment | T5, T6 |
| Right-of-Way Width | 40 feet |
| Pavement Width | 19 feet |
| Movement | Slow Movement |
| Design Speed | 20 MPH |
| Pedestrian Crossing Time | 5.4 seconds |
| Traffic Lanes | 1 lane |
| Parking Lanes | One side @ 7 feet marked |
| Curb Radius | 15 feet |
| Walkway Type | 13/8 foot Sidewalk |
| Planter Type | 4x4" tree well |
| Curb Type | Curb |
| Landscape Type | Trees at 30' o.c. Avg. |
| Transportation Provision | |



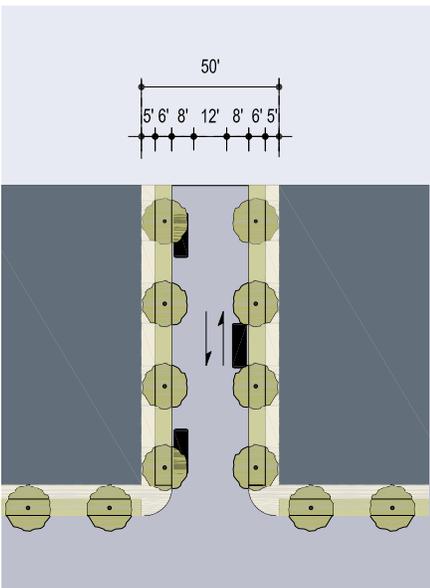
THOROUGHFARE TYPES

| | |
|--------------------|----|
| Highway: | HW |
| Boulevard: | BV |
| Avenue: | AV |
| Commercial Street: | CS |
| Drive: | DR |
| Street: | ST |
| Road: | RD |
| Rear Alley: | RA |
| Rear Lane: | RL |
| Bicycle Trail: | BT |
| Bicycle Lane: | BL |
| Bicycle Route: | BR |
| Path: | PT |
| Passage: | PS |
| Transit Route: | TR |



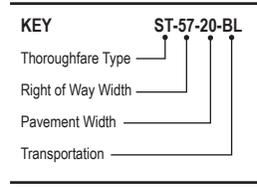
ST-50-26

| | |
|--------------------------|---------------------------|
| Thoroughfare Type | Street |
| Transect Zone Assignment | T4, T5, T6 |
| Right-of-Way Width | 50 feet |
| Pavement Width | 26 feet |
| Movement | Free Movement |
| Design Speed | 20 MPH |
| Pedestrian Crossing Time | 7.4 seconds |
| Traffic Lanes | 2 lanes |
| Parking Lanes | One side @ 8 feet marked |
| Curb Radius | 10 feet |
| Walkway Type | 5 foot Sidewalk |
| Planter Type | 7 foot continuous Planter |
| Curb Type | Curb |
| Landscape Type | Trees at 30' o.c. Avg. |
| Transportation Provision | |



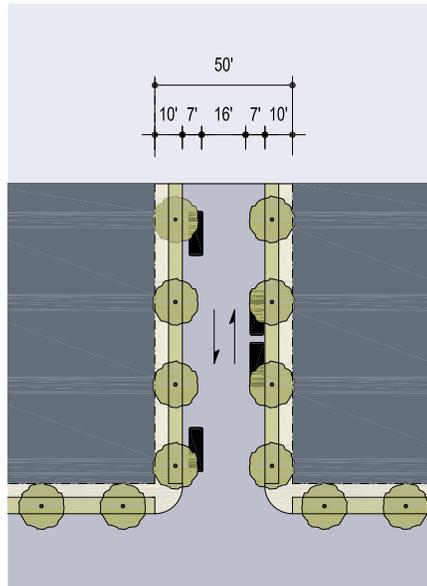
ST-50-28

| | |
|--------------------------|------------------------------|
| Thoroughfare Type | Street |
| Transect Zone Assignment | T4, T5, T6 |
| Right-of-Way Width | 50 feet |
| Pavement Width | 28 feet |
| Movement | Yield Movement |
| Design Speed | 20 MPH |
| Pedestrian Crossing Time | 7.6 seconds |
| Traffic Lanes | 2 lane |
| Parking Lanes | Both sides @ 8 feet unmarked |
| Curb Radius | 10 feet |
| Walkway Type | 5 foot Sidewalk |
| Planter Type | 6 foot continuous Planter |
| Curb Type | Curb |
| Landscape Type | Trees at 30' o.c. Avg. |
| Transportation Provision | |



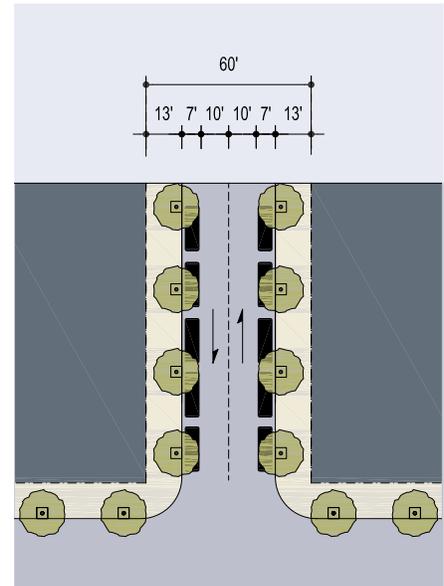
THOROUGHFARE TYPES

| | |
|--------------------|----|
| Highway: | HW |
| Boulevard: | BV |
| Avenue: | AV |
| Commercial Street: | CS |
| Drive: | DR |
| Street: | ST |
| Road: | RD |
| Rear Alley: | RA |
| Rear Lane: | RL |
| Bicycle Trail: | BT |
| Bicycle Lane: | BL |
| Bicycle Route: | BR |
| Path: | PT |
| Passage: | PS |
| Transit Route: | TR |



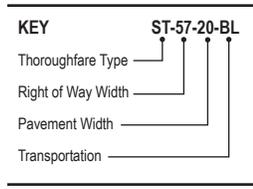
ST-50-30

| | |
|--------------------------|------------------------------|
| Thoroughfare Type | Street |
| Transect Zone Assignment | T3, T4 |
| Right-of-Way Width | 50 feet |
| Pavement Width | 30 feet |
| Movement | Slow Movement |
| Design Speed | 20 MPH |
| Pedestrian Crossing Time | 8.5 seconds |
| Traffic Lanes | 2 lanes |
| Parking Lanes | Both sides @ 7 feet unmarked |
| Curb Radius | 10 feet |
| Walkway Type | 5 foot Sidewalk |
| Planter Type | 5 foot continuous Planter |
| Curb Type | Curb |
| Landscape Type | Trees at 30' o.c. Avg. |
| Transportation Provision | |



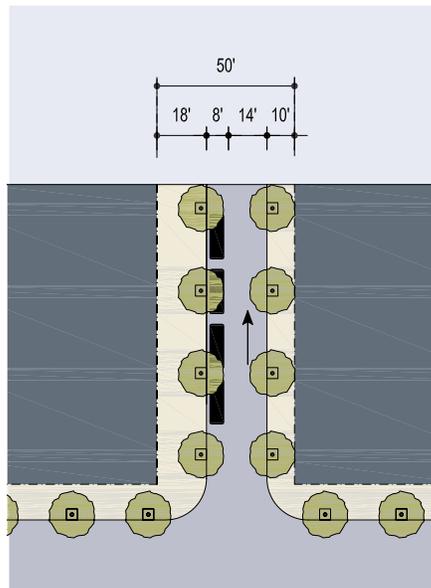
ST-60-34

| | |
|--------------------------|----------------------------|
| Thoroughfare Type | Street |
| Transect Zone Assignment | T3, T4, T5 |
| Right-of-Way Width | 60 feet |
| Pavement Width | 34 feet |
| Movement | Slow Movement |
| Design Speed | 20 MPH |
| Pedestrian Crossing Time | 9.7 seconds |
| Traffic Lanes | 2 lanes |
| Parking Lanes | Both Sides @ 7 feet marked |
| Curb Radius | 15 feet |
| Walkway Type | 6 foot Sidewalk |
| Planter Type | 7 foot continuous Planter |
| Curb Type | Curb |
| Landscape Type | Trees at 30' o.c. Avg. |
| Transportation Provision | BR |



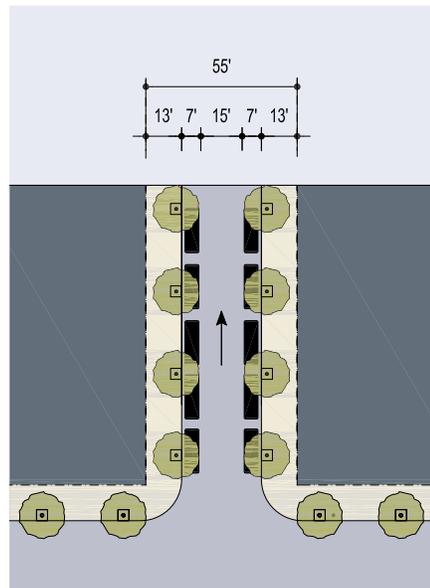
THOROUGHFARE TYPES

| | |
|--------------------|----|
| Highway: | HW |
| Boulevard: | BV |
| Avenue: | AV |
| Commercial Street: | CS |
| Drive: | DR |
| Street: | ST |
| Road: | RD |
| Rear Alley: | RA |
| Rear Lane: | RL |
| Bicycle Trail: | BT |
| Bicycle Lane: | BL |
| Bicycle Route: | BR |
| Path: | PT |
| Passage: | PS |
| Transit Route: | TR |



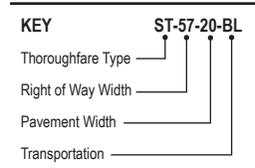
CS-50-22

| | |
|--------------------------|--------------------------|
| Thoroughfare Type | Commercial Street |
| Transect Zone Assignment | T5, T6 |
| Right-of-Way Width | 50 feet |
| Pavement Width | 22 feet |
| Movement | Slow Movement |
| Design Speed | 20 MPH |
| Pedestrian Crossing Time | 6.2 seconds |
| Traffic Lanes | 1 lane |
| Parking Lanes | One side @ 8 feet marked |
| Curb Radius | 15 feet |
| Walkway Type | 18/10 foot Sidewalk |
| Planter Type | 4x4" tree well |
| Curb Type | Curb |
| Landscape Type | Trees at 30' o.c. Avg. |
| Transportation Provision | |



CS-55-29

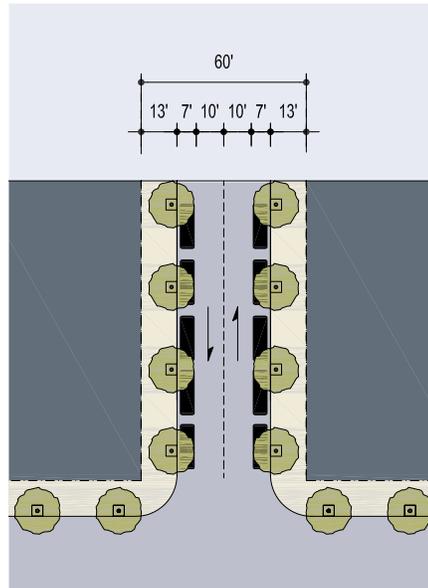
| | |
|--------------------------|----------------------------|
| Thoroughfare Type | Commercial Street |
| Transect Zone Assignment | T5, T6 |
| Right-of-Way Width | 55 feet |
| Pavement Width | 29 feet |
| Movement | Slow Movement |
| Design Speed | 20 MPH |
| Pedestrian Crossing Time | 8.2 seconds |
| Traffic Lanes | 1 lane |
| Parking Lanes | Both sides @ 7 feet marked |
| Curb Radius | 15 feet |
| Walkway Type | 13 foot Sidewalk |
| Planter Type | 4x4" tree well |
| Curb Type | Curb |
| Landscape Type | Trees at 30' o.c. Avg. |
| Transportation Provision | |



THOROUGHFARE TYPES

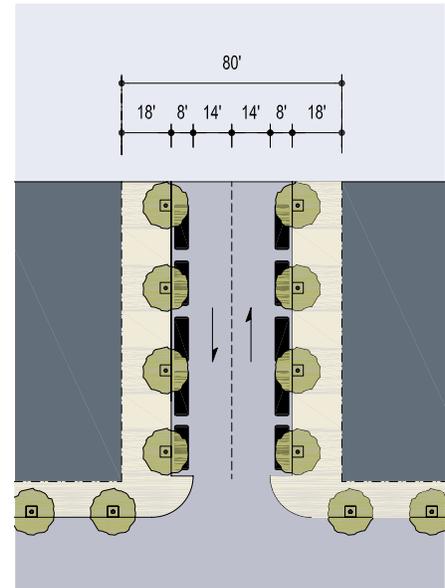
| | |
|--------------------|----|
| Highway: | HW |
| Boulevard: | BV |
| Avenue: | AV |
| Commercial Street: | CS |
| Drive: | DR |
| Street: | ST |
| Road: | RD |
| Rear Alley: | RA |
| Rear Lane: | RL |
| Bicycle Trail: | BT |
| Bicycle Lane: | BL |
| Bicycle Route: | BR |
| Path: | PT |
| Passage: | PS |
| Transit Route: | TR |

| |
|--------------------------|
| Thoroughfare Type |
| Transect Zone Assignment |
| Right-of-Way Width |
| Pavement Width |
| Movement |
| Design Speed |
| Pedestrian Crossing Time |
| Traffic Lanes |
| Parking Lanes |
| Curb Radius |
| Walkway Type |
| Planter Type |
| Curb Type |
| Landscape Type |
| Transportation Provision |



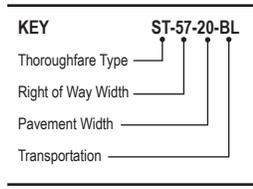
CS-60-34

| |
|----------------------------|
| Commercial Street |
| T5, T6 |
| 60 feet |
| 34 feet |
| Slow Movement |
| 20 MPH |
| 9.7 seconds |
| 2 lanes |
| Both sides @ 7 feet marked |
| 10 feet |
| 13 foot Sidewalk |
| 4x4" tree well |
| Curb |
| Trees at 30' o.c. Avg. |



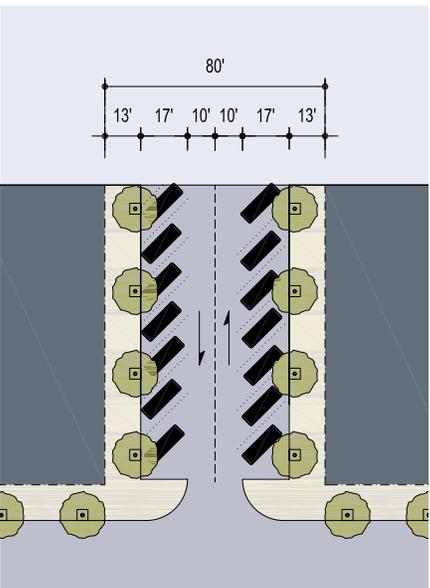
CS-80-44

| |
|----------------------------|
| Commercial Street |
| T5, T6 |
| 80 feet |
| 44 feet |
| Free Movement |
| 25 MPH |
| 8 seconds at corners |
| 2 lanes |
| Both sides @ 8 feet marked |
| 10 feet |
| 18 foot Sidewalk |
| 4x4" tree well |
| Curb |
| Trees at 30' o.c. Avg. |

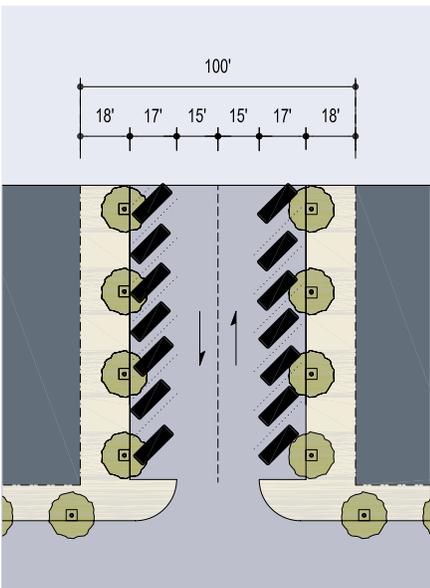


THOROUGHFARE TYPES

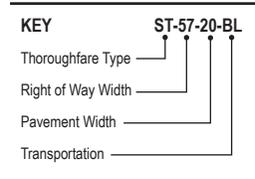
| | |
|--------------------|----|
| Highway: | HW |
| Boulevard: | BV |
| Avenue: | AV |
| Commercial Street: | CS |
| Drive: | DR |
| Street: | ST |
| Road: | RD |
| Rear Alley: | RA |
| Rear Lane: | RL |
| Bicycle Trail: | BT |
| Bicycle Lane: | BL |
| Bicycle Route: | BR |
| Path: | PT |
| Passage: | PS |
| Transit Route: | TR |



| | |
|--------------------------|------------------------------------|
| CS-80-54 | |
| Thoroughfare Type | Commercial Street |
| Transect Zone Assignment | T5, T6 |
| Right-of-Way Width | 80 feet |
| Pavement Width | 54 feet |
| Movement | Slow Movement |
| Design Speed | 25 MPH |
| Pedestrian Crossing Time | 5.7 seconds at corners |
| Traffic Lanes | 2 lanes |
| Parking Lanes | Both sides angled @ 17 feet marked |
| Curb Radius | 10 feet |
| Walkway Type | 13 foot Sidewalk |
| Planter Type | 4X4' tree well |
| Curb Type | Curb |
| Landscape Type | Trees at 30' o.c. Avg. |
| Transportation Provision | |

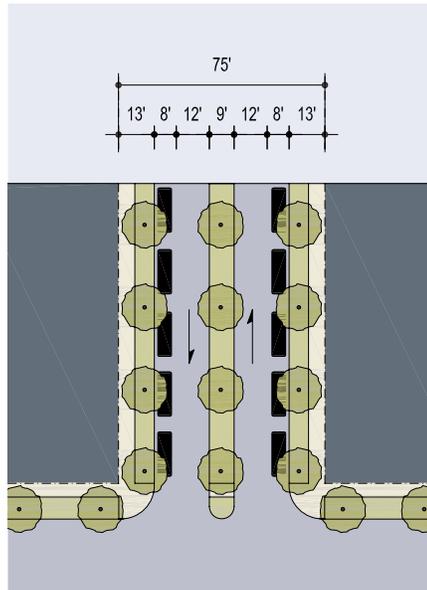


| | |
|--------------------------|------------------------------------|
| CS-100-64 | |
| Thoroughfare Type | Commercial Street |
| Transect Zone Assignment | T5, T6 |
| Right-of-Way Width | 100 feet |
| Pavement Width | 64 feet |
| Movement | Slow Movement |
| Design Speed | 25 MPH |
| Pedestrian Crossing Time | 8.5 seconds at corners |
| Traffic Lanes | 2 lanes |
| Parking Lanes | Both sides angled @ 17 feet marked |
| Curb Radius | 10 feet |
| Walkway Type | 18 foot Sidewalk |
| Planter Type | 4X4' tree well |
| Curb Type | Curb |
| Landscape Type | Trees at 30' o.c. Avg. |
| Transportation Provision | |

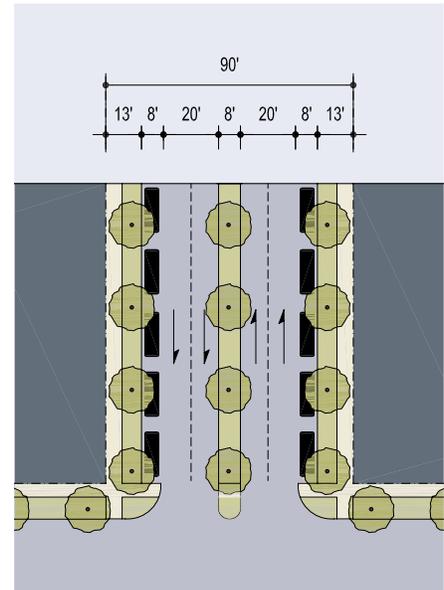


THOROUGHFARE TYPES

| | |
|--------------------|----|
| Highway: | HW |
| Boulevard: | BV |
| Avenue: | AV |
| Commercial Street: | CS |
| Drive: | DR |
| Street: | ST |
| Road: | RD |
| Rear Alley: | RA |
| Rear Lane: | RL |
| Bicycle Trail: | BT |
| Bicycle Lane: | BL |
| Bicycle Route: | BR |
| Path: | PT |
| Passage: | PS |
| Transit Route: | TR |



AV-75-40

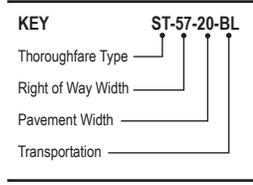


AV-90-56

| |
|--------------------------|
| Thoroughfare Type |
| Transect Zone Assignment |
| Right-of-Way Width |
| Pavement Width |
| Movement |
| Design Speed |
| Pedestrian Crossing Time |
| Traffic Lanes |
| Parking Lanes |
| Curb Radius |
| Walkway Type |
| Planter Type |
| Curb Type |
| Landscape Type |
| Transportation Provision |

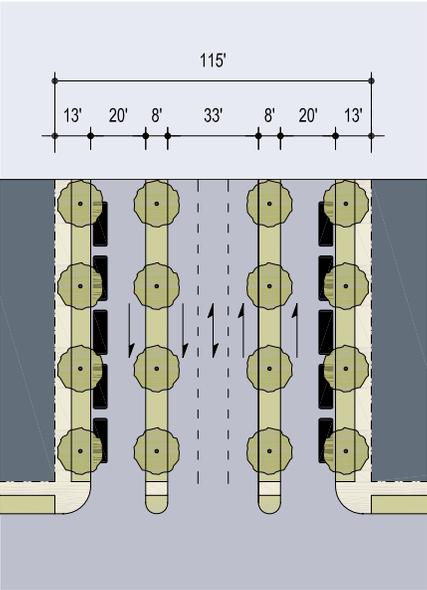
| |
|----------------------------|
| Avenue |
| T3, T4, T5 |
| 75 feet |
| 40 feet total |
| Slow Movement |
| 25 MPH |
| 5.7 seconds - 5.7 seconds |
| 2 lanes |
| Both sides @ 8 feet marked |
| 10 feet |
| 6 foot Sidewalk |
| 7 foot continuous Planter |
| Curb or Swale |
| Trees at 30' o.c. Avg. |
| BR, TR |

| |
|--------------------------------------|
| Avenue |
| T3, T4, T5 |
| 90 feet |
| 56 feet total |
| Slow Movement |
| 25 MPH |
| 5.7 seconds - 5.7 seconds at corners |
| 4 lanes |
| Both sides @ 8 feet marked |
| 10 feet |
| 6 foot Sidewalk |
| 7 foot continuous Planter |
| Curb or Swale |
| Trees at 30' o.c. Avg. |
| BR, TR |

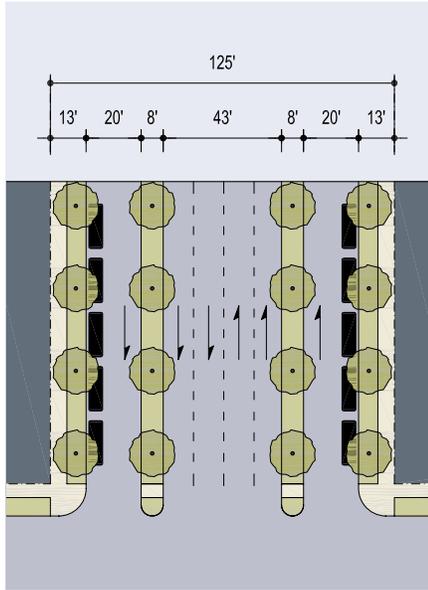


THOROUGHFARE TYPES

| | |
|--------------------|----|
| Highway: | HW |
| Boulevard: | BV |
| Avenue: | AV |
| Commercial Street: | CS |
| Drive: | DR |
| Street: | ST |
| Road: | RD |
| Rear Alley: | RA |
| Rear Lane: | RL |
| Bicycle Trail: | BT |
| Bicycle Lane: | BL |
| Bicycle Route: | BR |
| Path: | PT |
| Passage: | PS |
| Transit Route: | TR |



| BV-115-33 | |
|--------------------------|--|
| Thoroughfare Type | Boulevard |
| Transect Zone Assignment | T5, T6 |
| Right-of-Way Width | 115 feet |
| Pavement Width | 20 feet - 33 feet - 20 feet |
| Movement | Free Movement (inner lanes) |
| Design Speed | 35 MPH |
| Pedestrian Crossing Time | 5.7 seconds - 9.4 seconds - 5.7 seconds |
| Traffic Lanes | 3 lanes, one turning lane & two one-way slip roads |
| Parking Lanes | 8 feet |
| Curb Radius | 10 feet |
| Walkway Type | 6 foot Sidewalk |
| Planter Type | 7 foot continuous Planter |
| Curb Type | Curb |
| Landscape Type | Trees at 30' o.c. Avg. |
| Transportation Provision | BR, TR |



| BV-125-43 | |
|--------------------------|--|
| Thoroughfare Type | Boulevard |
| Transect Zone Assignment | T5, T6 |
| Right-of-Way Width | 125 feet |
| Pavement Width | 20 feet - 43 feet - 20 feet |
| Movement | Free Movement (inner lanes) |
| Design Speed | 35 MPH |
| Pedestrian Crossing Time | 5.7 seconds - 12.2 seconds - 5.7 seconds |
| Traffic Lanes | 4 lanes & two one-way slip roads |
| Parking Lanes | 8 feet |
| Curb Radius | 10 feet |
| Walkway Type | 6 foot Sidewalk |
| Planter Type | 7 foot continuous Planter |
| Curb Type | Curb |
| Landscape Type | Trees at 30' o.c. Avg. |
| Transportation Provision | BR, TR |

APPENDIX

City planning is:

- An aid to the people in the street to visualize their city properly planned*
- A practical, sensible way of providing a place for everything with everything in its place*
- An instrument for uniting citizens to work for the city's future*
- An efficient means of avoiding duplication and waste in public improvements.*

adapted from John Nolen, 1926

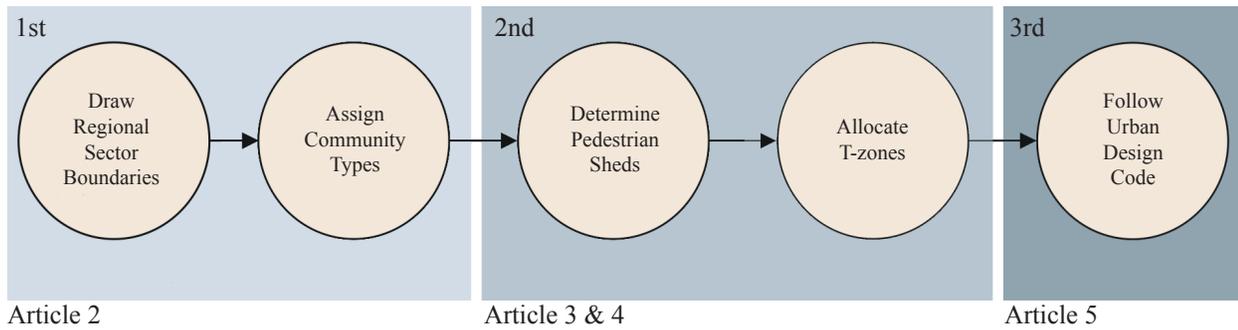
Appendix

- Appendix I Terms and Synonyms
- Appendix II SectorMap
- Appendix III Regional Plans
- Appendix IV Transect Intensities
- Appendix V Transect Colors
- Appendix VI New Community Plan Submittal
- Appendix VII Infill Regulating Plan
- Appendix VIII Infill Transformation
- Appendix IX Zoning Translation
- Appendix X Calibrating Metrics - Synoptic Survey
- Appendix XI Designing a Greenfield Site
- Appendix XII Building Types - Specific
- Appendix XIII Development and Design Center
- Appendix XIV Sample Ordinance
- Appendix XV Codes - Historical Perspective
- Appendix XVI Calibration and Legal Issues
- Appendix XVII Essentials of Local Calibration
- Appendix XVIII Calibration Checklist
- Appendix XIX New Community Evaluation
- Appendix XX Resources

Terms and Synonyms: The SmartCode does not integrate all terms used by other Smart Growth publications, which are otherwise fully compatible. A list of synonyms for commonly used terms is provided here. They may be exchanged as necessary.

| | SMARTCODE TERMS | SYNONYMS |
|------------------------|---|---|
| PLAN TYPES | Regional Plan..... | General Plan / Sector Plan |
| | Community Plan | Specific Plan / Local Plan |
| | Building Plan | Detailed Plan / Site & Building Plan |
| SECTOR TYPES | O1 Preserved Open Sector | Open Space Conservancy / Green Infrastructure |
| | O2 Reserved Open Sector | Urban Expansion Area |
| | G1 Restricted Growth Sector | Tier 1 |
| | G2 Controlled Growth Sector | Tier 2 |
| | G3 Intended Growth Sector | Tier 3 |
| | G4 Infill Growth Sector | Urban Redevelopment Area / Urban Infill Area |
| | SD Special District..... | District by Assignment |
| COMMUNITY TYPES | CLD Clustered Land Development..... | Hamlet / Conservation Land Development |
| | TND Traditional Neighborhood Development | Village / Neighborhood |
| | RCD Regional Center Development..... | Town / Town Center / Downtown |
| | TOD Transit-Oriented Development | Transit-Ready Development |
| TRANSECT ZONES | T1 Natural Zone..... | Green Infrastructure |
| | T2 Rural Zone..... | Exurban Zone |
| | T3 Sub-Urban Zone | Neighborhood Edge Zone / Edge-of-Town Zone |
| | T4 General Urban Zone | Neighborhood General Zone / Midtown Zone |
| | T5 Urban Center Zone | Town or Village Center Zone/ Midtown Zone |
| | T6 Urban Core Zone..... | City Center Zone, Downtown Zone |
| CIVIC ZONES | CS Civic Space..... | Public Space Zone |
| | CB Civic Building | Public Building Zone |

Calibrating Sectors

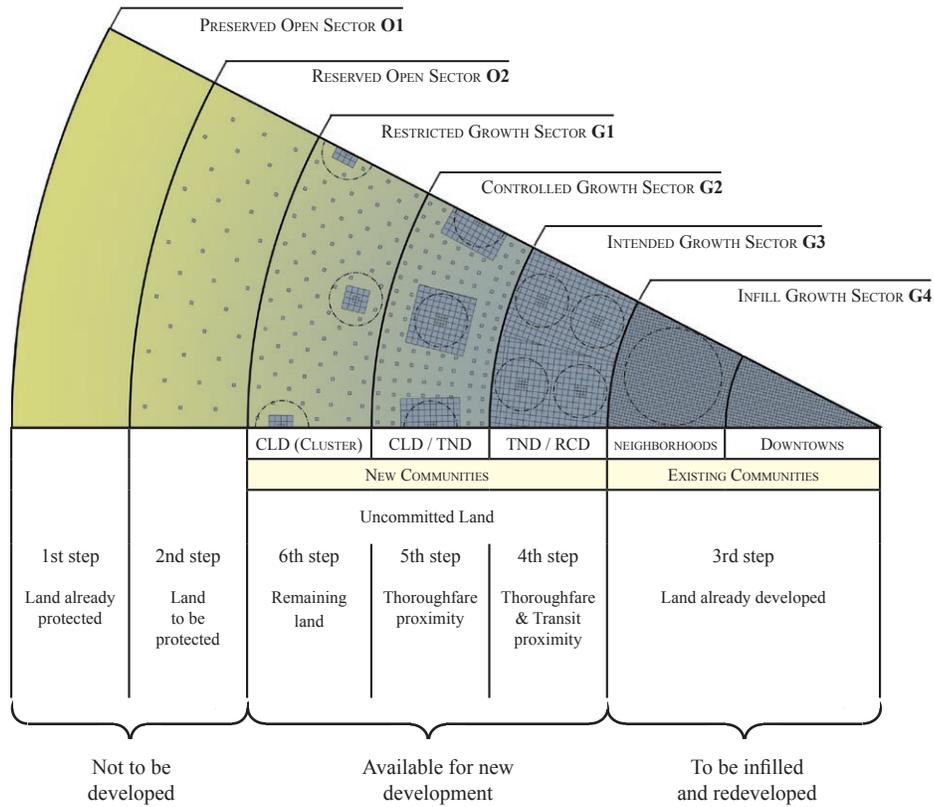


Mapping at the regional Sector scale as described in Article 2 requires a series of steps delineating natural and urban conditions. The objective is to convert geographic information into a set of boundaries. The areas within each of the boundaries is designated to prohibit, allow or encourage one of the Community types. This is a first step, to be followed by the sequence of determining Pedestrian Sheds and assigning T-zones as prescribed in Articles 3 and 4.

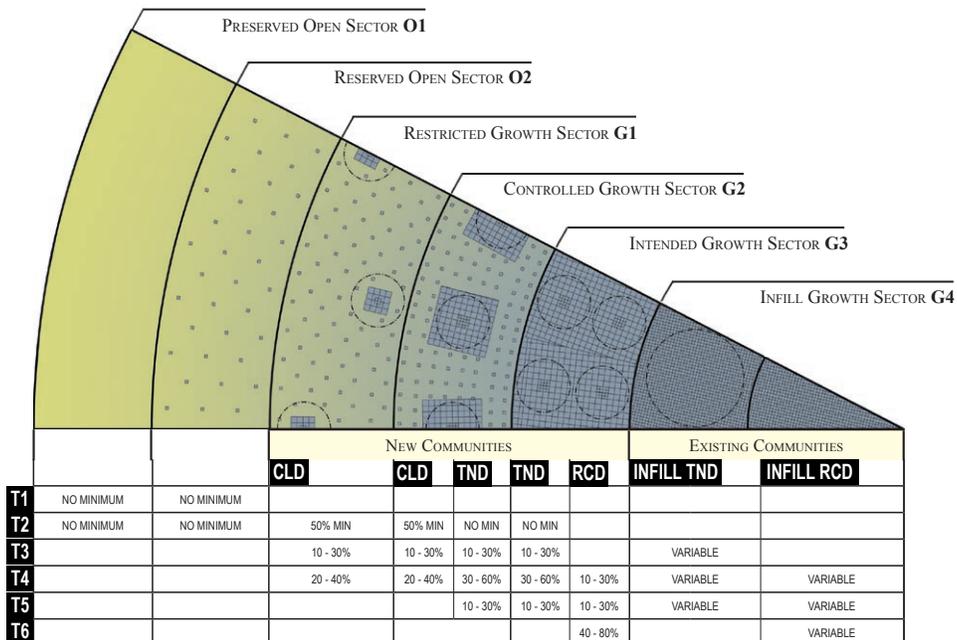
It is a common mistake to attempt to use T-zones at the regional scale. The Transect used in the SmartCode operates at the finely-grained community scale. That is why the term SectorMap is used instead of Regulating Plan for purposes of regional planning. While it is possible to assign T2 and T1 to cover many square miles, usually mapping vast areas with Sectors is more useful. For example, the Sector designation O-2 operates well as a mechanism for the Transfer of Development Rights and does not depend on any T-zones having been calibrated or mapped in the sending area. (See Appendix III). Likewise, in farmland, G-1 and G-2 may be mapped to accommodate Hamlets (CLD) that include a T2 zone once a specific Hamlet is being planned. At that stage, the characteristics of the T2 would be more precisely calibrated, just as higher T-zones would be.

A version of the SectorMap method known as Transect Map is available in PDF format at no cost from Criterion Planners at www.crit.com.

Determining Sectors (Article 2)



Determining Community Types (Articles 3 and 4)



REGIONAL PLANS

(This example is taken from north Hillsborough County, Florida.)

Step 1

Identify lands where development should not occur. Land where development is already not permitted is assigned to O-1 Preserved Open Sector. Land that should be protected, but is not yet, is assigned to O-2 Reserved Open Sector.

Step 2

Identify lands where development should occur. First, assign G-4 Infill Growth Sector to land already urbanized. Second, assign G-3 Intended Growth Sector to high capacity intersections and transit proximity. Third, assign G-2 Controlled Growth Sector to areas adjacent to medium capacity thoroughfares. Last, assign G-1 Restricted Growth Sector to all land remaining on the Sector map. The TDR option may be utilized in this Sector, depending on state enabling legislation.

Step 3

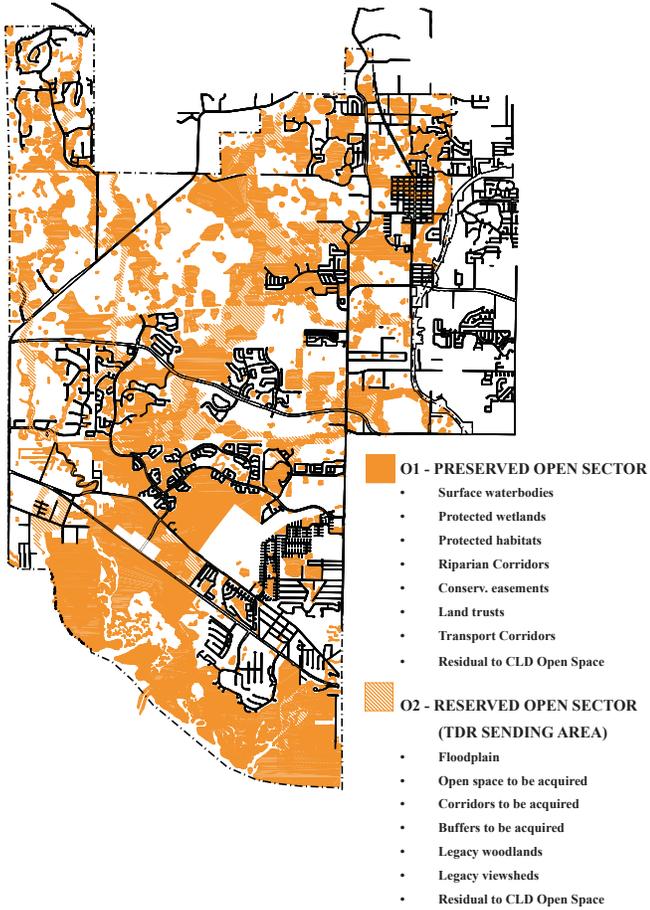
Prioritize G-3 Intended Growth Sectors for development and designate Transfer of Development Rights receiving areas. The O-2 Reserved Open Sectors are designated sending areas. Once their development rights are transferred, these areas join the O-1 Preserved Open Sector. Land in O-2 that has not had its rights transferred may be designated as G-1 Restricted Growth Sector.

Step 4 - Conclusion

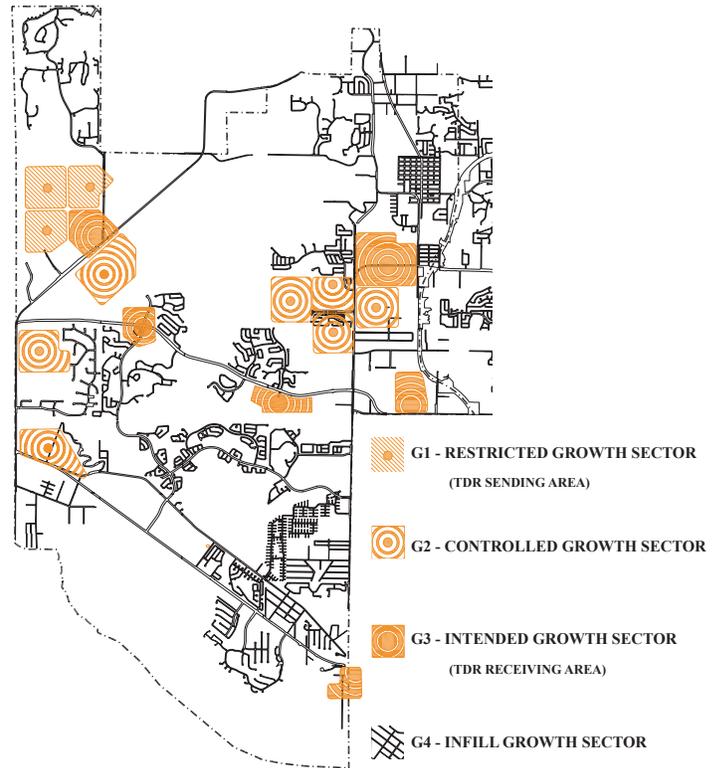
The O-2 Reserves have become O-1 Preserves; the Reserves remaining with untransferred rights have been designated G-1 and may be developed as CLD, and the new TND and RCD Communities are in the G-2 and G-3 Growth Sectors.

Note: The G-4 (Infill Growth) Sector is assigned to Infill and Redevelopment as specified in Article 4. It may be developed as TND or RCD. The following are specified in Article 3: The G-1 Restricted Growth Sector may be developed as CLD; the G-2 Controlled Growth Sector may be developed as CLD or TND, and the G-3 Intended Growth Sector may be developed as TND or RCD.

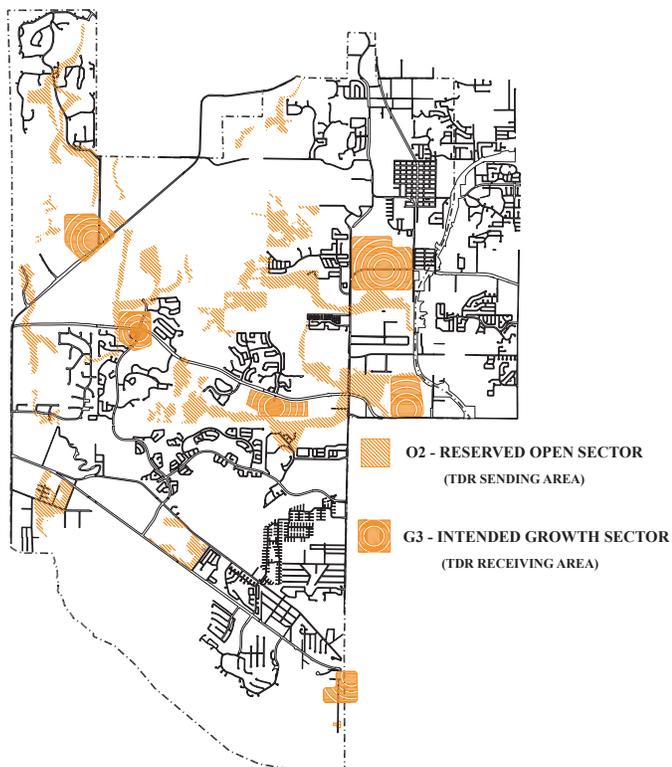
Step 1



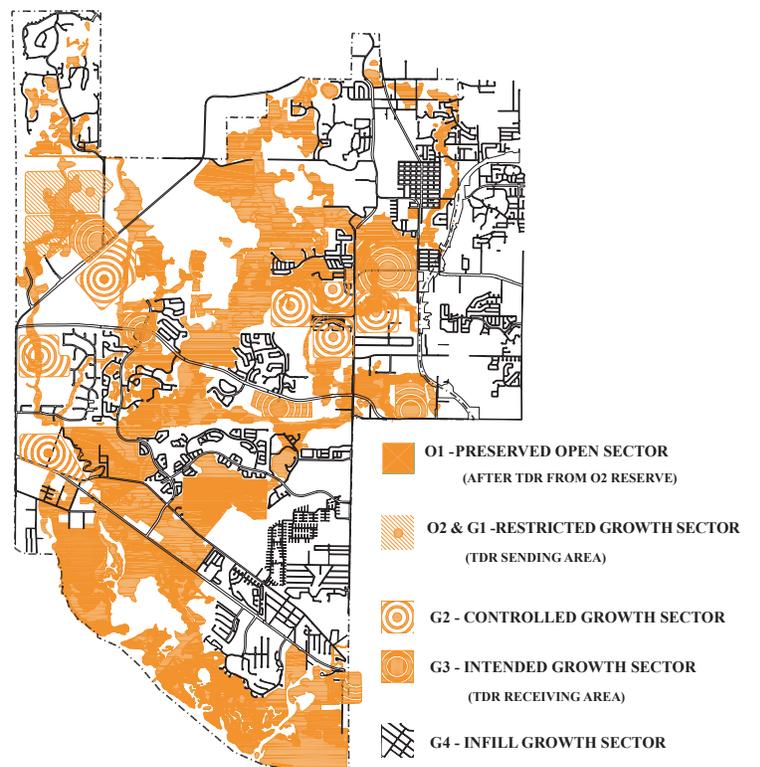
Step 2



Step 3

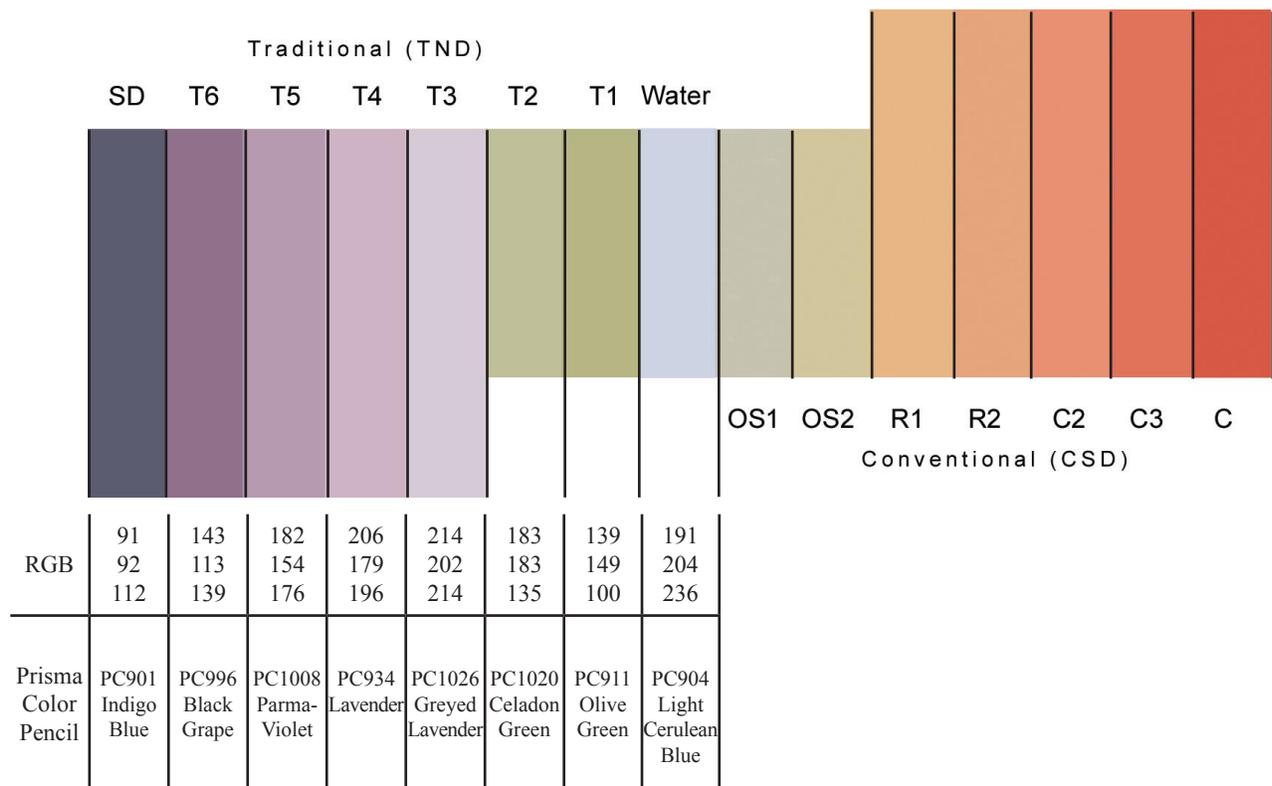


Step 4 - Conclusion



TRANSECT COLORS

Conventional Suburban Development (CSD) employs zoning categories consisting of single functions. Although there may be a score of them, they can be reduced to a few commercial or residential meta-categories that vary in density. These are conventionally represented by colors in the red-orange-yellow range. Because the CSD already built will persist physically and continue to appear on zoning maps, its color range cannot be employed for the Transect-based zoning categories without causing confusion. Instead, there is a purple color range derived from pre-WWII practice when intensities of mixed use were assumed. This is more akin to Transect-based zoning. Both systems, when appearing on the same map, can share the same green tones to designate the variety of Open Space.



Note: When printing, the RGB settings recommended above may need to be calibrated to correctly match the PrismaColor pencils.

NEW COMMUNITY PLAN SUBMITTAL

This Appendix includes seven pages from the 17-page plan submittal for Hampstead, a 416-acre greenfield project within the city limits of Montgomery, Alabama. The pages indicate to the Consolidated Review Committee (CRC) how the plan meets the requirements of the SmartCode under which it will be permitted. (The terminology and numbers referenced in the submittal are based on an earlier, and calibrated, version of the SmartCode, but the procedure is typical.)

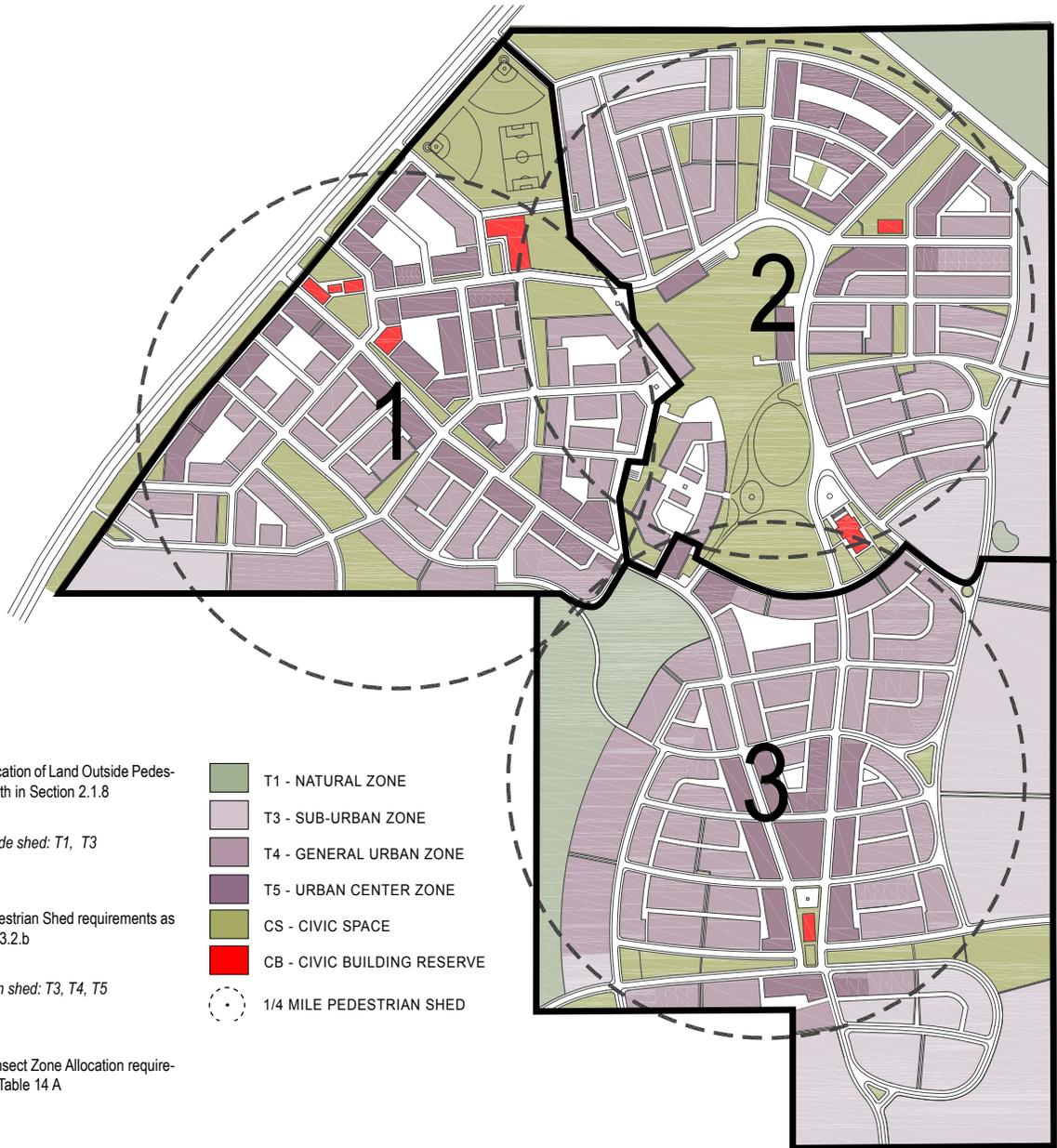
The first map shows the outlines of the Standard Pedestrian Sheds to create the approximate boundaries of the three TNDs that fit into the site. Each of these will become a Community Unit as described in Section 3.2 and Section 3.3. The shed positions were determined after the design team walked the greenfield site and decided on good locations for Common Destinations, i.e., centers. (See Appendix XI for a description of this process.) Next, the design team planned the TNDs and assigned Transect Zones, guided by the percentage ranges prescribed on Table 14A.

The second map shows Maximum Block Size with Variance Requests, the third specifies the Thoroughfare types; the fourth shows the planned location of a Main Civic Space for each shed; the fifth shows small “playsheds” to locate the playgrounds for the development, and the sixth shows Special Requirements such as Terminated Vistas and Retail Frontage.

The last map follows the procedure prescribed in Section 3.2 Sequence of Community Design. It shows both the original Standard Pedestrian Sheds and the Adjusted Pedestrian Sheds that create the regulatory boundaries for the TNDs, which are called “Neighborhoods” on the submittal page. In this example, a heavy black line indicates these boundaries. Throughout the planning process, designers should consider topography and thoroughfares to determine logical neighborhood edges. Here, because the site allowed three sheds to fit very closely, the entire site is accounted for in determining the TNDs. This would not always be the case; depending on the site size and configuration, there may be remnants outside the Community Units. Such remnants are assigned zones according to Section 3.2, but these would not count toward the Transect Zone allocation for the Community Unit. On this page, the final accounting of the allocation has been recorded on the accompanying chart.

The example shows the TND boundary going along the edge of a circular Pedestrian Shed, but it need not follow the edge. In some cases it may be necessary, because of topography or thoroughfares, to draw a Community Unit boundary line through the overlap of the two sheds.

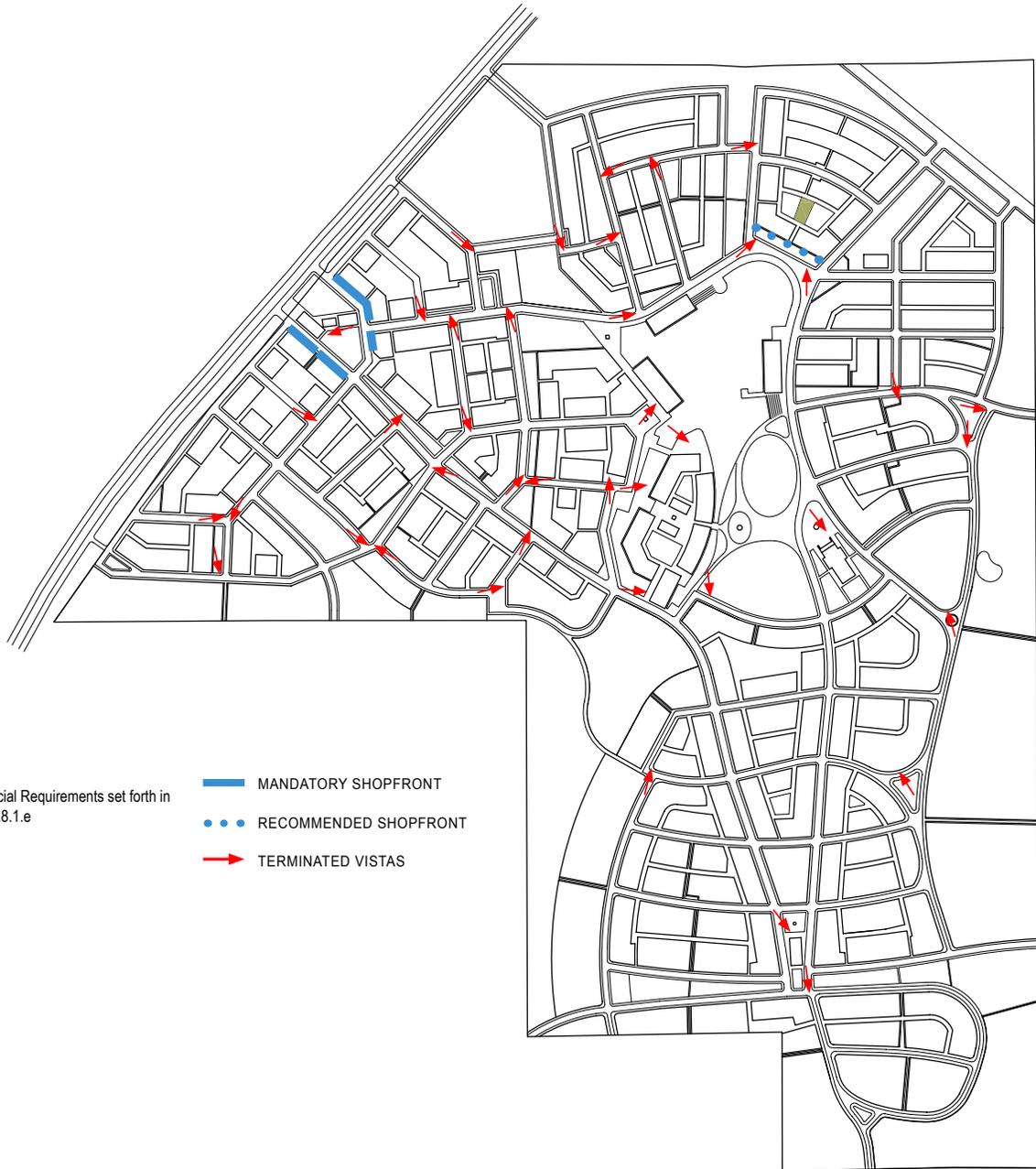
(Code: Section 3.1 Instructions; Section 3.2 Sequence of Community Design; Section 3.3 Community Unit Types; Section 3.4 Transect Zones ; Table 2 and Table 14a for allocation of Transect Zones per Pedestrian Shed by Community Unit type. Manual: Appendix XI Designing a Greenfield Site.)



- T1 - NATURAL ZONE
- T3 - SUB-URBAN ZONE
- T4 - GENERAL URBAN ZONE
- T5 - URBAN CENTER ZONE
- CS - CIVIC SPACE
- CB - CIVIC BUILDING RESERVE
- 1/4 MILE PEDESTRIAN SHED

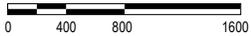
| | T1 NATURAL ZONE | | T3 SUB-URBAN ZONE | | T4 GENERAL URBAN | | T5 URBAN CENTER | | CIVIC | | TOTAL | |
|--------------|-----------------|-------|-------------------|-------|------------------|-------|-----------------|-------|-------|-------|--------|--------|
| 1 | - | 0.0% | 11.54 | 10.6% | 36.35 | 33.3% | 30.16 | 27.6% | 31.09 | 28.5% | 109.14 | 100.0% |
| 2 | 18.32 | 12.3% | 19.57 | 13.1% | 46.85 | 31.5% | 17.06 | 11.5% | 47.09 | 31.6% | 148.89 | 100.0% |
| 3 | 19.14 | 12.2% | 45.81 | 29.1% | 65.35 | 41.5% | 16.25 | 10.3% | 10.77 | 6.8% | 157.32 | 100.0% |
| TOTAL | 37.46 | 9.0% | 76.92 | 18.5% | 148.55 | 35.8% | 63.47 | 15.3% | 88.95 | 21.4% | 415.35 | 100.0% |





Compliance with Special Requirements set forth in Section 2.8.1.b and 2.8.1.e

-  MANDATORY SHOPFRONT
-  RECOMMENDED SHOPFRONT
-  TERMINATED VISTAS





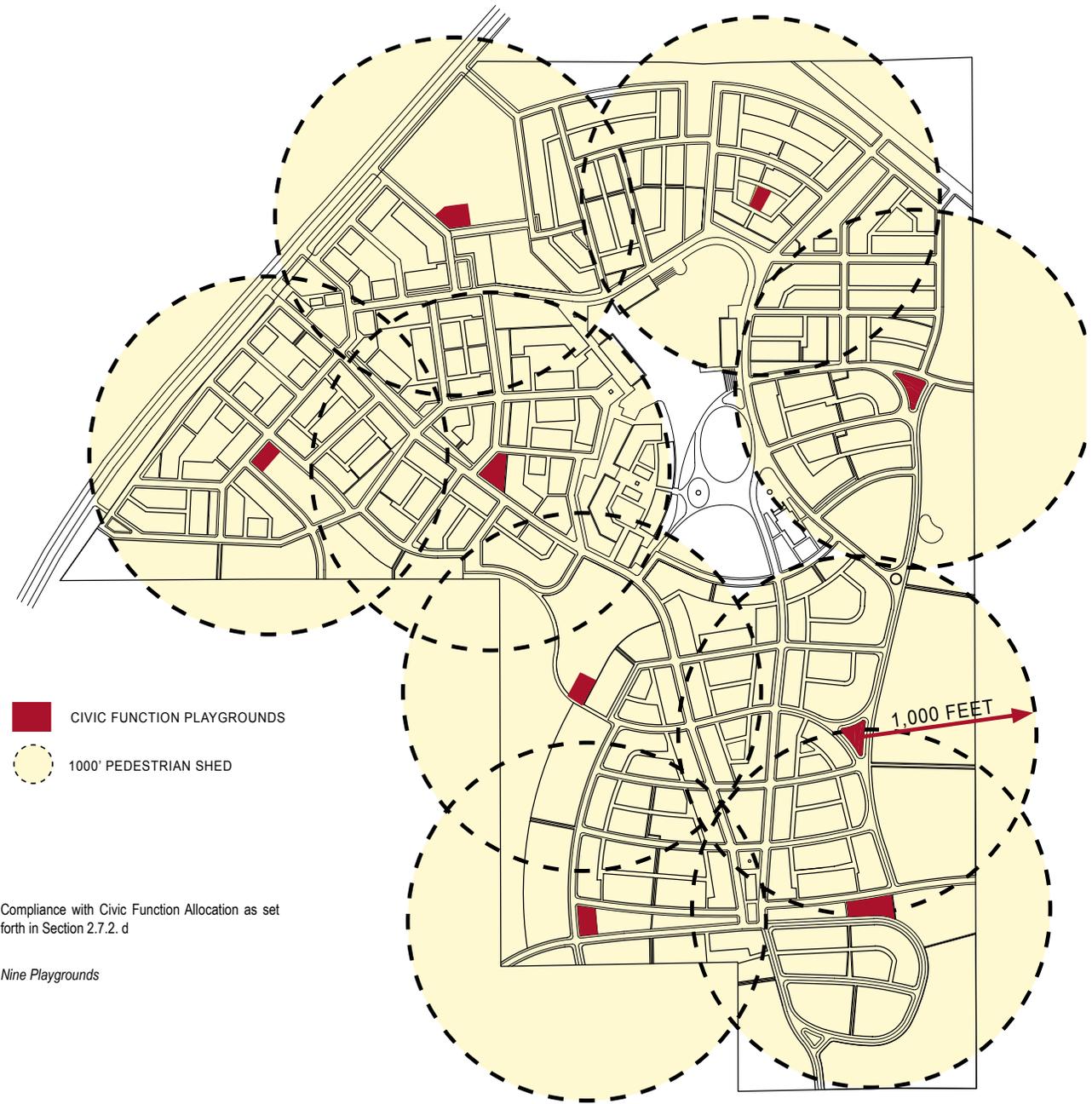
 CIVIC FUNCTION MAIN SPACE

 1/4 MILE PEDESTRIAN SHED

Compliance with Civic Function Allocation as set forth in Section 2.7.2. a and 2.7.2. c

- 1. Square: 2.68 Acres
- 2. Green: 9.42 Acres
- 3. Plaza: 1.08 Acres

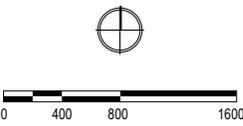


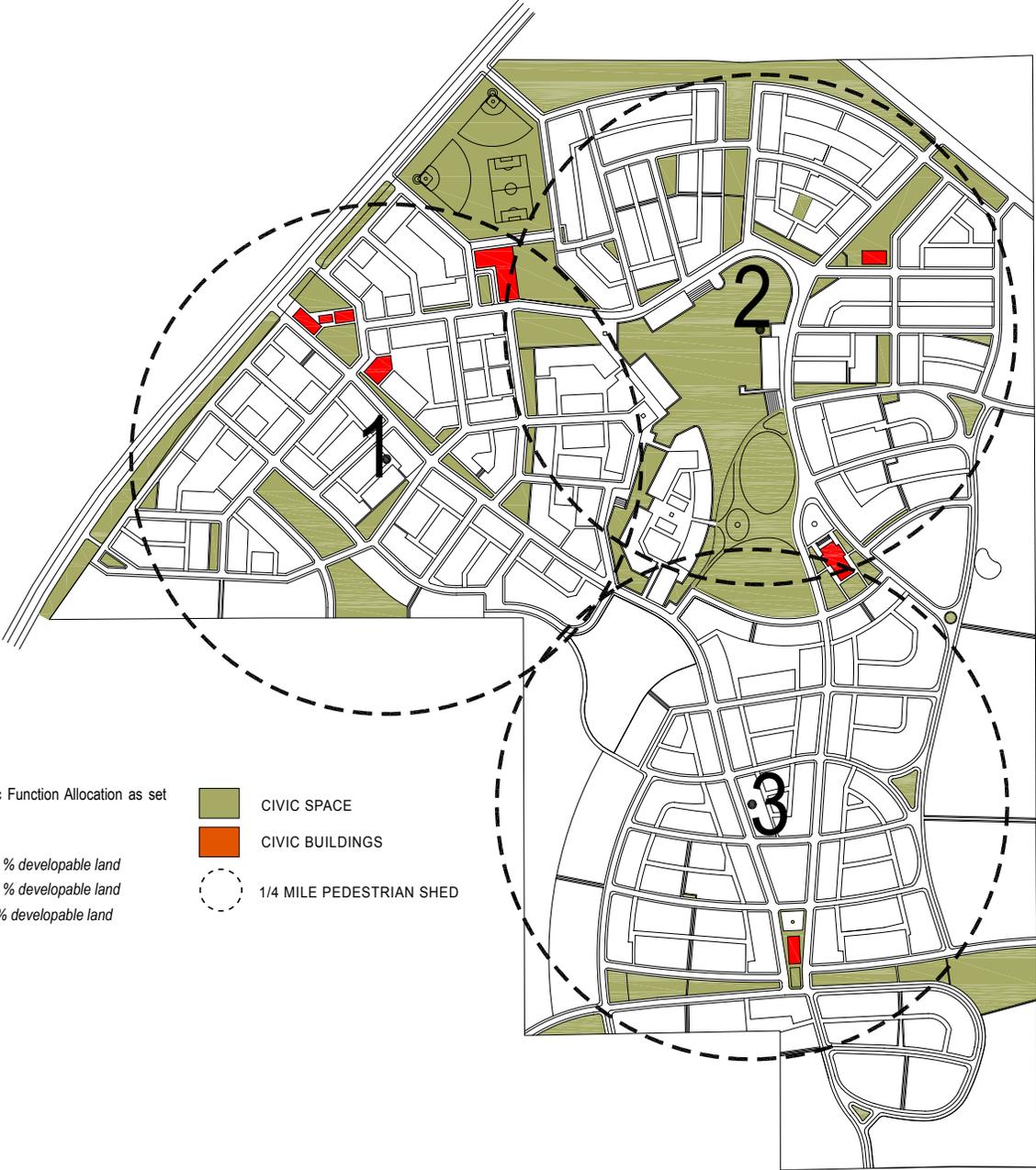


-  CIVIC FUNCTION PLAYGROUNDS
-  1000' PEDESTRIAN SHED

Compliance with Civic Function Allocation as set forth in Section 2.7.2. d

Nine Playgrounds





Compliance with Civic Function Allocation as set forth in Section 2.7.2.a

Neighborhood 1: 28.5% developable land
 Neighborhood 2: 31.6% developable land
 Neighborhood 3: 6.8% developable land

- CIVIC SPACE
- CIVIC BUILDINGS
- 1/4 MILE PEDESTRIAN SHED





Compliance with Thoroughfare Termination and Cul-de-sac Limitation as set forth in 2.6.2. c

Lots Fronting a Cul-de-sac: None

Compliance with Required % of Lots Enfronting Thoroughfares as set forth in Section 2.6.2. d

Lots Fronting a Vehicular Thoroughfare: 100%

- VEHICULAR THOROUGHFARES
- REAR ALLEY
- REAR LANE
- PEDESTRIAN PATHS
- PEDESTRIAN PASSAGES



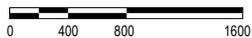


Compliance with Maximum Block Size requirements as set forth in Table 14 C

Variance request

1. Block size exceeding by 32.16 lineal feet for interior parking while maintaining attached green
2. Block size exceeding by 221.02 lineal feet. T5 designation is anchoring an important termination.
3. Block size exceeding by 236.99 lineal feet. Block is outside of Pedestrian Shed.

| | |
|--|-----------------------------|
| | T1 - NO MAXIMUM |
| | T3 - 3,000 feet max |
| | T4 -2,400 feet max |
| | T5 -2,000 feet max |
| | CS - CIVIC SPACE |
| | CB - CIVIC BUILDING RESERVE |



INFILL REGULATING PLAN

(This example is taken from downtown Sarasota, Florida.)

A Regulating Plan for Infill usually requires two maps. The first shows the assignment of Transect Zones and the second shows the Special Requirements and Civic Zones. In some Regulating Plans, Civic Zones may appear on the first map, and it is even possible to include everything on one map if Special Requirements are minimal.

As you can see from this Downtown plan, the T-6 area (which consists of existing high-rises) is along the curved waterfront. The T-5 Urban Center Zone is normally a main street area, but Sarasota has a corridor including four or five streets running in parallel from the highway to the waterfront. Although examination of existing conditions does not yield evidence of fully developed main streets, this code has less to do with existing conditions than with intended outcome. The city agrees that T-5 character is necessary for this corridor.

The T-4 General Urban Zone appears along the edges of four neighborhoods, all of which have a T-3 Zone within. Unlike villages, which are usually concentric from highest to lowest from the center to the edge, urban neighborhoods are usually the reverse, with the higher zoning along the larger thoroughfares at the edges of the neighborhood. In this plan there is neither T-2 nor T-1 in existence, but had it been an overall city plan rather than a Downtown, some evidence of these would have been encountered. Note that the existing Special Districts and the intended ones are assigned. In this case, the District at the top of the drawing consists of a civic center in a campus-like setting. The Warrants and Variances would be mapped into this Regulating Plan as they occur.

The second map, Special Requirements, shows the Civic Reservation parking garage sites. New Urbanist town planning considers the provision of parking as infrastructure, with strategic locations (generally on the B Grid of streets) to be reserved. In the case of an existing Downtown, the Civic Building Reserves and the Civic Space Reserves would merely record the existing situation, although in this case there was a reservation made for a larger town hall.

Note also the importance of the A and B Grids. The A Grid is made up of those Thoroughfares that by virtue of their importance or better condition must follow the provisions of the code, with less likelihood of variances. The idea is to weave together a continuous pedestrian experience, while acknowledging that approximately a third of the frontage must be sacrificed to intrinsically pedestrian-hostile

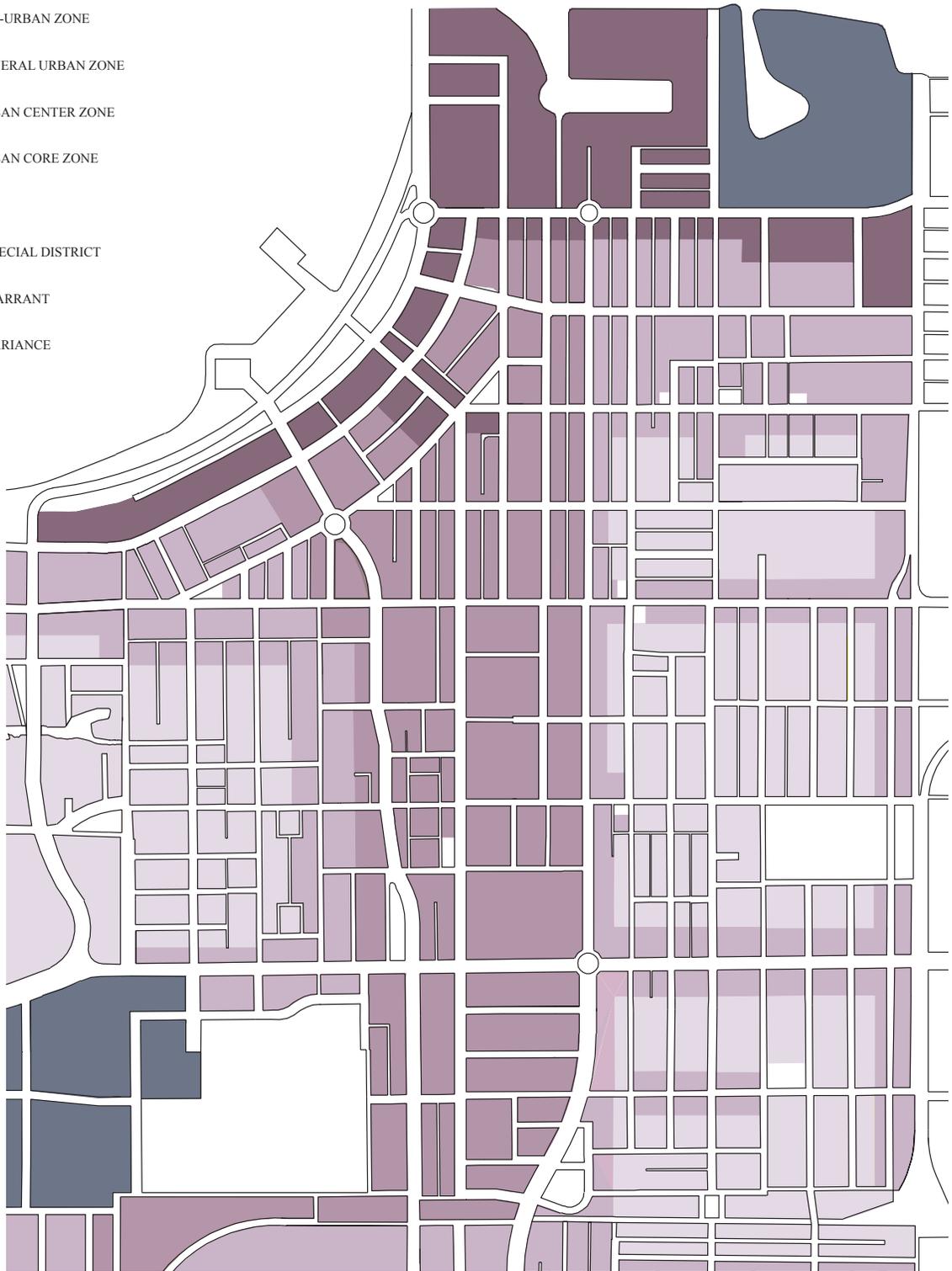
Infill Regulating Plan - First Map
Transect-based Zoning

TRANSECT ZONES

-  T1 - NATURAL ZONE
-  T2 - RURAL ZONE
-  T3 - SUB-URBAN ZONE
-  T4 - GENERAL URBAN ZONE
-  T5 - URBAN CENTER ZONE
-  T6 - URBAN CORE ZONE

OTHER ZONES

-  SD - SPECIAL DISTRICT
-  W - WARRANT
-  V - VARIANCE



frontages (i.e., not the ones prescribed in the SmartCode). The negative frontages usually involve unlined parking garages, drive-throughs, blank walls, curb cuts and the like. In addition, the plan assigns some blocks with Mandatory and Recommended Retail Frontage. Retail will only work properly if it is continuous, so certain frontages require the types described in Table 7 Private Frontages, as well as control of the Building Function at the first floor level. The determination of Retail Frontage is made in support of the more promising existing mixed use conditions.

The Recommended Gallery Frontage is unusual, but in this case Sarasota has a tradition for this type which is, in any case, warranted by the climate.

The Recommended Terminated Vista provision identifies locations where the CRC should require an architect to create visual interest and the spatial enclosure of the public street.

Infill Regulating Plan - Second Map
Special Requirements

CIVIC RESERVATIONS

-  CP - CIVIC PARKING RESERVE
-  CB - CIVIC BUILDING RESERVE
-  CS - CIVIC SPACE RESERVE

REQUIREMENTS

-  PRIMARY GRID
-  SECONDARY GRID
-  REQUIRED RETAIL FRONTAGE
-  RECOMMENDED RETAIL FRONTAGE
-  RECOMMENDED GALLERY FRONTAGE
-  RECOMMENDED TERMINATED VISTA



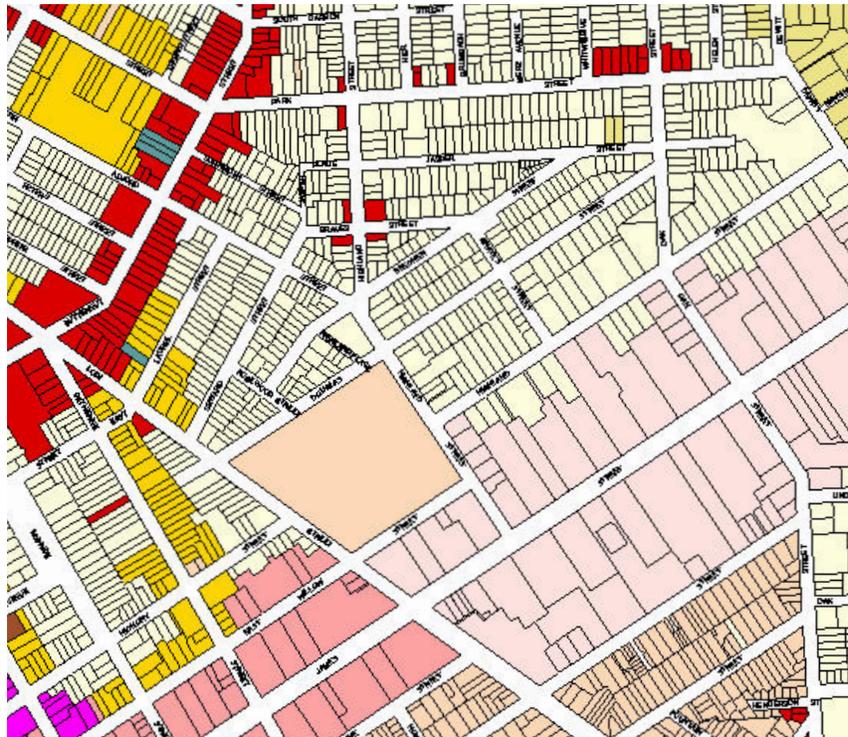
INFILL TRANSFORMATION

(This example is taken from Syracuse, New York.)

The first plan shows the existing zoning categories that are based entirely on use, with only the loosest relationship to building type. The second plan is based on a more integrated observation of urban elements. It reflects the community's vision of what this neighborhood should become, not only what it is now.

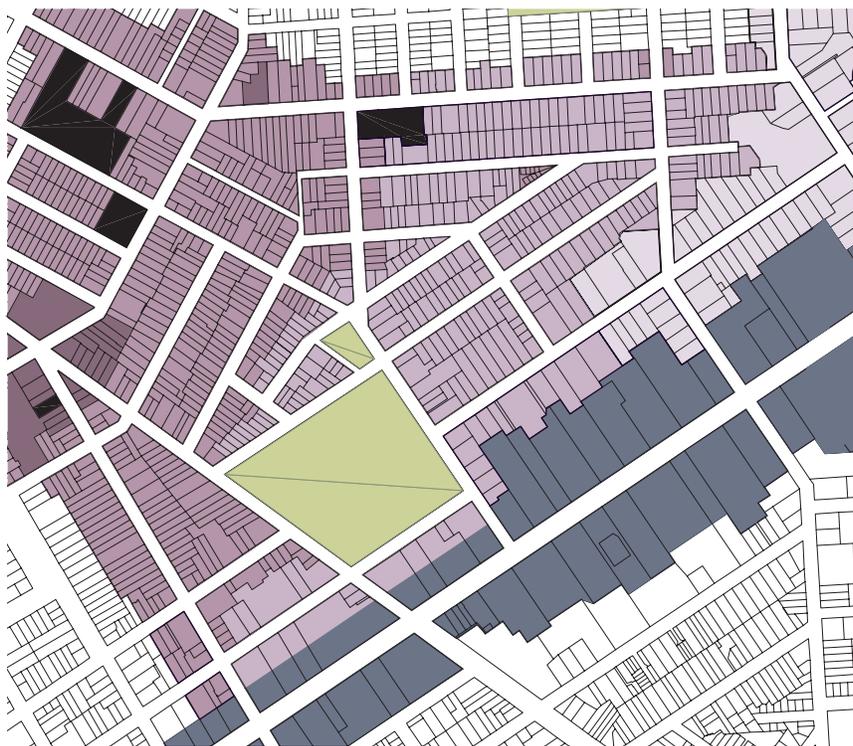
The Transect-based zoning categories are the same for Infill Community Plans as for New Community Plans. The SmartCode cannot be blended with existing codes, as zoning categories for Conventional Suburban Development (CSD) are ill-fitted for, and destructive to, existing urbanism.

**Infill Transformation
Existing Zoning Map to Transect-based Regulating Plan**



ZONING CLASSES

- RA - RESIDENTIAL DISTRICT, CLASS A
- RA-1 - RESIDENTIAL DISTRICT, CLASS A-1
- RA-2 - RESIDENTIAL DISTRICT, CLASS A-2
- RAA - RESIDENTIAL DISTRICT, CLASS AA
- RB - RESIDENTIAL DISTRICT, CLASS B
- RB-1 - RESIDENTIAL DISTRICT, CLASS B-1
- RB-1T - RESIDENTIAL DISTRICT, CLASS B-1 TRANSITIONAL
- RS - RESIDENTIAL SERVICE DISTRICT
- OA - OFFICE DISTRICT, CLASS A
- OB - OFFICE DISTRICT, CLASS B
- BA - LOCAL BUSINESS DISTRICT
- PID - PLANNED INSTITUTIONAL DISTRICT
- SPECIAL - MULTIPLE CLASS



TRANSECT ZONES

- T3 - SUB-URBAN ZONE
- T4 - GENERAL URBAN ZONE
- T5 - URBAN CENTER ZONE
- T6 - URBAN CORE ZONE

OTHER ZONES

- SD - SPECIAL DISTRICT
- W - WARRANT
- V - VARIANCE
- CS - CIVIC SPACE

ZONING TRANSLATION

(This example is taken from Miami, Florida.)

In the transition to the SmartCode, it is usual that a translation or a correspondence be created between the standards of the existing and future code. This is both politically and technically necessary in order to assure stakeholders that it is fair, i.e., that there is no downzoning (reduction in density or permitted functions). Most existing codes have a great number of categories that have grown over time and that are virtually identical to each other. One of the political selling points of the SmartCode is that it simplifies such things.

It is also advisable to create a Transect-based map of existing conditions, similar to the bottom one in Appendix VIII only without accounting for future evolution. Property owners may then see the T-zone they currently inhabit, so it can be compared the final Regulating Plan. If, instead, the existing conventional zoning map is compared to the final Regulating Plan, it will look as if everyone's zoning has changed drastically.

| EXISTING | | SD-2 CENTRAL COMMERCIAL DISTRICT | | SD-3 MAJOR STREET OVERLAY DISTRICT | | SD-13 BRITTA AVENUE GATEWAY DISTRICT | | PROPOSED | |
|--|--------------------------------|----------------------------------|-----------------------------------|---|---------------------------|---|--|---|-------------------------|
| R-3 MULTIFAMILY MEDIUM-DENSITY RESIDENTIAL | | O Office | | R-1 Single Family Residential R-2 Two Family Residential | | R-1 Single Family Residential R-2 Two Family Residential R-3 Multifamily Medium-Density Residential | | T-5 URBAN CENTER | |
| LOT | | | | | | | | | |
| Area | 5,000 sq. ft., 50 ft min front | 5,000 sq. ft., 50 ft min front | 20,000 sq. ft., 100 ft. min front | 5,000 sq. ft., 50 ft. min front | 5,000 sq. ft., 100 ft min | 5,000 sq. ft., 100 ft min | 5,000 sq. ft., max unconstructed coverage 200 ft | 5,000 sq. ft., min, max unconstructed coverage 200 ft | 40% max |
| Lot Coverage | 40% max | 40% max | 40% max | 40% max | 40% max | 40% max | 40% max | 40% max | 40% max |
| FAR | 0.12 max | 0.38 max / 1.2 max mixed used | 1.2 max | 0.08 max | 1.0 max | 1.0 max | 1.0 max | 1.0 max | 1.0 max |
| SETBACK | | | | | | | | | |
| Front | 20 ft, min | 5 ft, min | 10 ft, min | 20 ft, min | 10 ft, min | 10 ft, min | 5 ft, min, 15 ft, min corner | 5 ft, min, 15 ft, min corner | 0 ft, min |
| Side | 10 ft, min | 0 ft, min | 10 ft, min | 5 ft, min | 10 ft, min | 10 ft, min | 10 ft, min | 0 ft, min | 10 ft, min |
| Rear | 10 ft, min | 10 ft, min | 10 ft, min | 20 ft, min | 20 ft, min | 10 ft, min | 10 ft, min | 10 ft, min | 10 ft, min |
| BUILDING TYPE | | | | | | | | | |
| Edgecraft | | | | | | | | | prohibited |
| Skylight | | | | | | | | | permitted |
| Plasycraft | | | | | | | | | permitted |
| Courtyard | | | | | | | | | permitted |
| FRONTAGE TYPE | | | | | | | | | |
| Corner | | | | | | | | | prohibited |
| Corner 1/2 | | | | | | | | | prohibited |
| Point of Access | | | | | | | | | prohibited |
| Corner | | | | | | | | | prohibited |
| Forecourt | | | | | | | | | prohibited |
| Shop | | | | | | | | | permitted (by plan) |
| Shopfront | | | | | | | | | permitted |
| Gallery | | | | | | | | | permitted |
| Arcade | | | | | | | | | permitted |
| HEIGHT | | | | | | | | | |
| Principal Building | 50 ft, max | 50 ft. | 70 ft max | 20 ft max | 40 ft max | 50 ft max | 50 ft max | 5 stories or 60 ft, max | 5 stories or 60 ft, max |
| Outbuilding | | | | | | | | 2 stories max | 2 stories max |
| BUILDING FUNCTION | | | | | | | | | |
| Residential | 55 units / item | permitted | permitted | permitted | permitted | permitted | permitted | open use | open use |
| Lodging | | permitted | permitted | permitted | permitted | permitted | permitted | open use | open use |
| Office | | permitted | permitted | permitted | permitted | permitted | permitted | open use | open use |
| Retail | | permitted | permitted | permitted | permitted | permitted | permitted | open use | open use |
| Manufacturing | | permitted | permitted | permitted | permitted | permitted | permitted | prohibited | prohibited |
| Meeting | | permitted | permitted | permitted | permitted | permitted | permitted | open use | open use |

CALIBRATING METRICS - SYNOPTIC SURVEY

The SmartCode is a model code to be calibrated, or customized, to regional character and local needs by urban designers, architects, landscape architects, planners, and civil engineers. It must also be adjusted to comply with state and local law by planners, city attorneys, and land-use attorneys. Portions of text that should be considered for alteration appear in green. In addition, every standard appearing in Table 14 is subject to alteration.

If the metrics in Table 14 are not modified, they represent a generalized North American traditional practice; the resulting urbanism will be compact, diverse, and walkable - supportive of Smart Growth and of the Charter of the New Urbanism. However, metrics are only part of the local picture. The SmartCode is a template for a community to design its own vision.

The calibration method depends upon the site. Infill depends upon analysis of existing conditions, while greenfield design is a more synthetic process, also taking into account topography, regional networks, and the market. Both kinds of development require the code to be adjusted. This involves the execution of a Synoptic Survey.

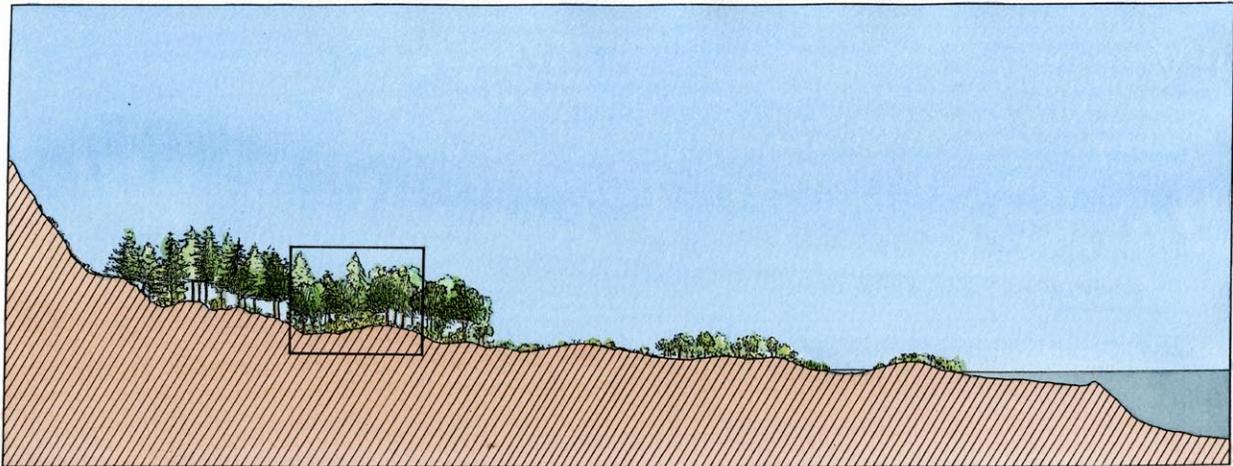
The Synoptic Survey

The Synoptic Survey is typically used for environmental analysis to determine the characteristics of a given site by discovering the habitats (or “communities”) that it contains. The intention is to determine the values of each habitat in order to recommend the degree of protection and type of restoration it might require. Each functioning habitat is a symbiotic community of micro-climate, minerals, humidity, flora and fauna.

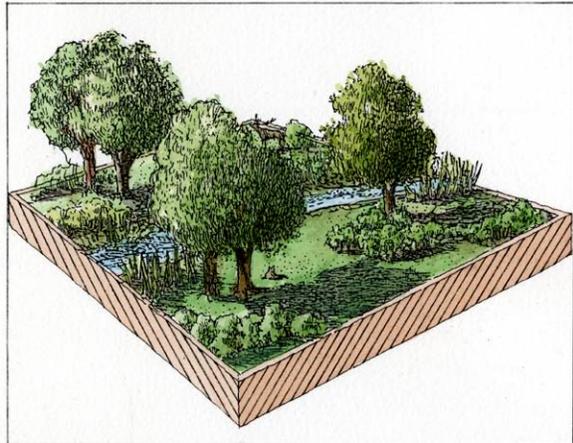
In environmental analysis, the Synoptic Survey is a systematic visual inspection that identifies typical habitats: a wetland here, an oak hammock there, a rocky outcrop elsewhere. The most representative locales are then analyzed in depth by means of the Dissect and the Quadrat. The Dissect is a simultaneous analysis of the conditions above and below ground and involves borings to determine soil condition, water table, archeology etc. The Quadrat involves taking a normative area (say 100 X 100 feet) where the component elements of flora and fauna are itemized and counted.

The concepts and methods that are used to analyze natural habitats -- the Synoptic Survey, the Transect, the Dissect and the Quadrat - can be extended into urbanized areas.

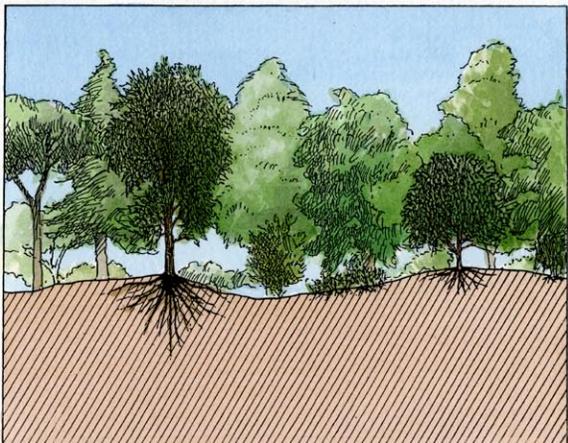
Natural Quadrat and Dissect Diagram



NATURAL TRANSECT



NATURAL QUADRAT



NATURAL DISSECT

Step One: Perform a Synoptic Survey

Organize a visual inspection of the best existing urban areas with the intention of extracting the Transect data necessary to write the code. By means of Visual Preference Surveys and the examination of aerial photographs, identify locations that could be representative of the Transect Zones of the code to be written. Inspect these potential locations to assess their value and confirm the selections by visiting them with local representatives.

Step Two: Analyze the Transect Zone components via the Urban Dissect and Quadrat

The Urban Dissect involves taking cross sections across the public and the private realm. Photograph, draw, and measure the disposition and dimensions of the elements within the public right-of-way as well as private lots. Vehicular lanes, curbing, planter/planting, and the walkway are studied simultaneously with the setbacks, building frontage type, building heights, and location of parking.

The Urban Quadrat involves taking, at the same location as the Dissect, the average measures of about four acres of lots. From visual inspection and using available mapping, determine the collective ratios of paved and planted areas, lot coverage by building, number of on and off-street parking spaces, areas dedicated to commercial use and/or the number of dwellings (usually by counting mailboxes or doorbells, as buildings that were once single family may contain multiple dwellings).

Step Three: Calibrate the Code

Using a set of standardized templates similar to the one pictured at the end of Appendix X, one for each Transect Zone or sub-zone, enter this data. This record becomes the basis for the standards of the SmartCode. After verification that the results are politically acceptable as outcomes of the proposed code, input the data into Table 14.

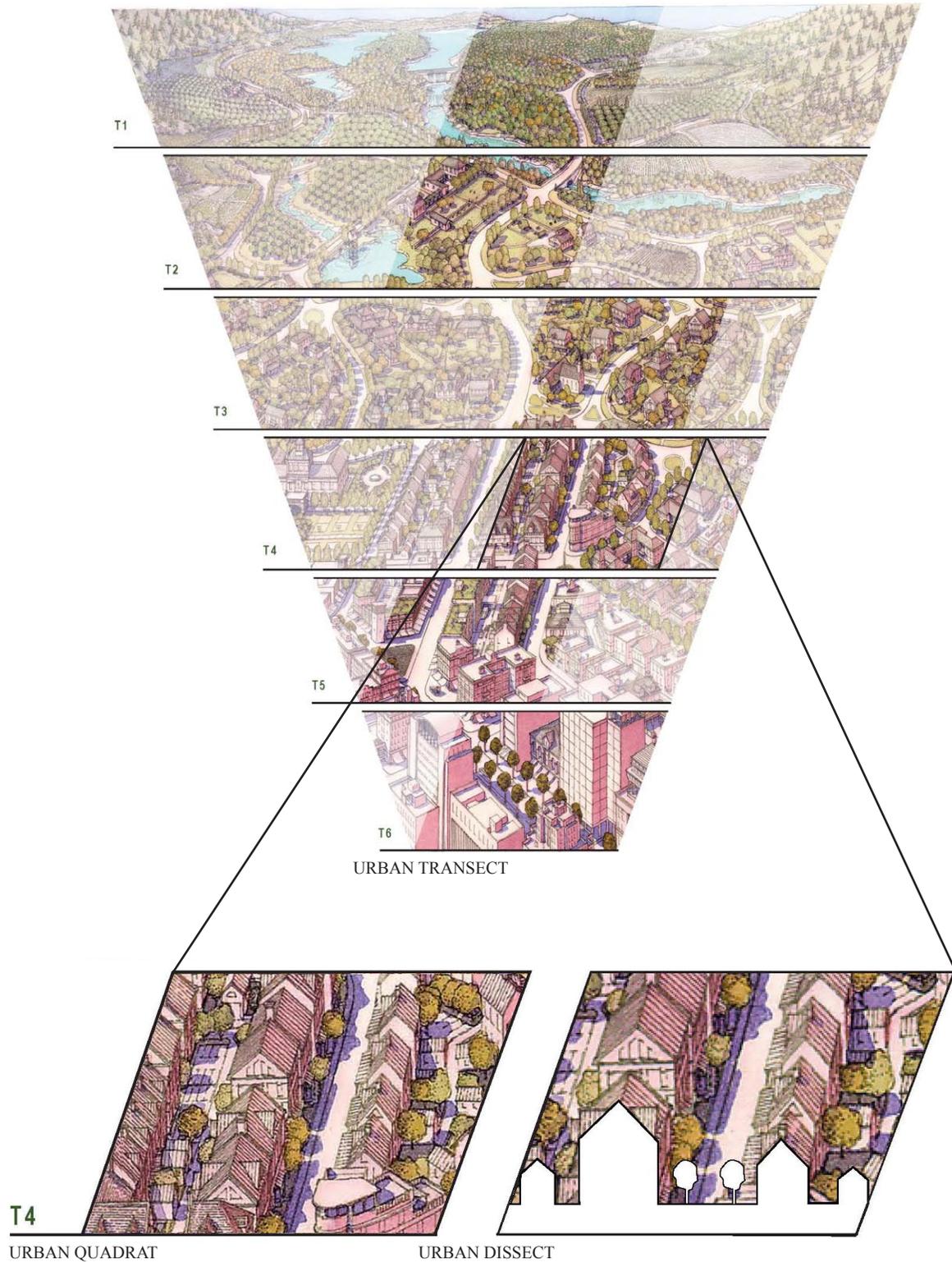
Step Four: Replace current zoning categories

Analyze the existing zoning code and organize the categories under those of the most similar Transect Zones. Replace the zoning with the closest available Transect Zone, taking care that inadvertent downzoning is avoided. This will usually result in a significant reduction in the number of zones.

Step Five: Prepare a basic Regulating Plan

Prepare a Regulating Plan (map) that translates the existing zoning map into the Transect categories, based on Step Four. Even if the existing zoning remains as an option, it is advisable to map a translation to existing Transect Zones, which gives citizens a basis from which to judge any changes that the finished Regulating Plan will represent. Otherwise, everything looks like a drastic change because everyone is getting a new zoning category.

Urban Quadrat and Dissect Diagram



Step Six: Add a neighborhood structure to the Regulating Plan

With citizen participation, select and assign important pedestrian destinations: transit stops, schools, retail shops, Civic Buildings or Civic Spaces. Delineate Pedestrian Sheds around each destination. Group the sheds into a composite shed (if necessary) and translate that to a Network Pedestrian Shed to determine neighborhood or Downtown boundaries.

Step Seven: Calibrate the Transect Zones

Through analysis of existing conditions and with citizen participation, identify those zones where the urbanism needs to be preserved as it is, or intensified. Calibrate the T-zones accordingly, either to discourage demolition and reconstruction, or to induce it by designating a higher T- Zone than that yielded by the analysis.

(Code: see Section 1.3 Intent to help guide local calibration; 1.2 Applicability and 1.4 Process to coordinate with local regulations.)

Step Eight: Adjust the Regulating Plan

Adjust the new zoning map at the fine grain, to reflect the appropriate Transect Zones. Evaluate the zoned areas at the block scale to fine-tune their boundaries. In general, “like should face like” across thoroughfares, to create an immersive environment and spatial definition in the public realm. Therefore, T-zone transitions should usually occur in the middle of blocks, i.e., along rear lot lines.

Step Nine: Incorporate the Special Requirements into the Regulating Plan.

This usually requires a second map.

(Code: see Section 4.7 Special Requirements.)

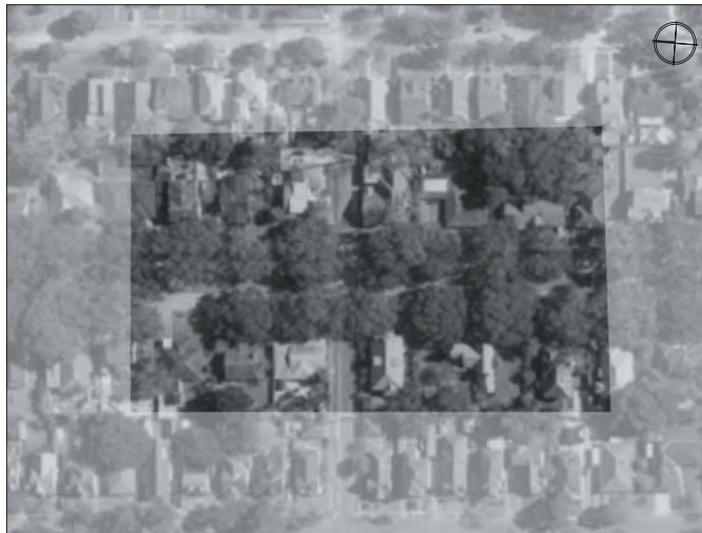
GENTILLY TERRACE

ANALYSIS FOR TRANSECT ZONE T3 - SUB-URBAN

QUADRAT

DISSECT

1. ST. ROCH AVENUE @ LOMBARD STREET



| | |
|------------------------------|-------------|
| Average Block Dimension | 250' x 600' |
| Average Units per Acre | 6.8 units |
| Average Lot Size | 50' x 115' |
| Average Lot Coverage | 36% |
| Average Parked Cars per Acre | 13.7 cars |
| Average Trees per Acre | 4 trees |

2. PUBLIC FRONTAGE



| | |
|----------------------|------------------|
| Public Frontage Type | Avenue |
| Spatial Width | 186' |
| Posted Design Speed | TBD MPH |
| R.O.W. Width | 100' |
| Moving Lanes | 1 @ 10' Two ways |
| Parking Lanes | 8' both sides |
| Pavement Width | 36' |
| Curb Type | Raised |
| Curb Radius | 10' |
| Median | 22' |
| Sidewalk | 12' |
| Planter Type | Continuous |
| Planter Width | 4' |
| Planting Pattern | Allée 60' o.c. |
| Tree Type | Live Oak |
| Bike Way Type | N/A |
| Bike Way Width | N/A |

3. PRIVATE FRONTAGE



| | |
|------------------------------|-----------------------------|
| Private Frontage Type | Common Lawn / Porch & Fence |
| Principal building height | 2 stories max. |
| Outbuilding height | 1 Story |
| First floor above grade | 36' min. avg |
| Watermark Level | TBD |
| Building disposition | Edgeyard |
| Lot Size | 72' x 120' |
| Lot coverage | 40% |
| Frontage Buildout at Setback | 20% of lot width min. |
| Front Setback | 48' min. |
| Side Setback | TBD min. |
| Rear Setback | TBD min. |
| Outbuilding Setback | TBD min. |
| Front Encroachment | 10' max. |
| Side Encroachment | 2' max. |
| Ground Level Function | Residential |
| Upper Level Function | Residential |

DESIGNING A GREENFIELD SITE

Greenfield sites are similar enough that they may be designed according to a standard protocol, as follows. See Appendix XIX for a New Community Evaluation form.

Step One: Map the existing evidence on the land.

Assimilate the traces of the site into the plan. Traces include paths, roads, ponds, woods, slopes, streams, and wetlands. Design the parks and squares around ponds and wooded areas or specimen trees as much as possible, so that mature trees grace the public spaces of the community from the outset. Further define natural boundaries by excluding arterials, utility easements, slopes exceeding 25%, and preserved lands.

(Code: see Section 2.3 and Section 2.4 for Regional Plans, Section 3.2.1 for New Community Scale Plans, and the Environmental Module.)

Step Two: Identify the type of Community Unit to be designed.

A greenfield site may be developed under a New Community Plan as one of three Community types:

Clustered Land Development (CLD), also known as a **Hamlet**, appropriate for a location on a simple thoroughfare, therefore destined to have a weak commercial component.

Traditional Neighborhood Development (TND), also known as a **Village**, suitable for crossroad locations. A Village is the design equivalent of a complete urban neighborhood, albeit standing free in the landscape.

Regional Center Development (RCD), also known as a **Regional Center, town, or town center**, which should be planned around a regional transportation nexus considered capable of sustaining the equivalent of a shopping mall. A Regional Center supports substantial commercial development, including both retail and office, as well as residential and civic functions. RCD should be adaptable to light rail or Bus Rapid Transit (BRT). These transit options need not be present before the project is complete, because transit may follow development as well as lead it.

(Code: see Section 2.2.4 for Regional Plans and 3.2 and 3.3 for New Community Plans.)

Step Three: Locate the mixed use center on the thoroughfare or intersection with the most traffic.

There are two schools of thought about locating mixed use centers (town squares and main streets). One option is simply to locate the commercial center on the thoroughfare or intersection with the most traffic, even if it is not at the geometric center

of the site, because without traffic the retail elements may wither. (One exception is a location of such compelling interest - a beach, the base of a ski run, or a spectacular public viewshed - that traffic would be drawn to it as a destination.) The other option is commonly exercised when the location with the most traffic is a large arterial thoroughfare which may undermine the social performance of the place. In that case it may be advisable to insert the mixed use center some distance into the neighborhood.

Step Four: Roughly structure the site into Pedestrian Sheds.

Pedestrian Sheds determine neighborhood size, with their types dependent on the Community Unit types. Thus neighborhood size is determined by walkability, not by density, which is a function of the regional location and the market. Density may be as low as three units to the acre for a rural Hamlet and as high as 80 units to the acre for a Regional Center. All are structured on the neighborhood pattern of Pedestrian Sheds.

Each Pedestrian Shed is equivalent to a five-minute walk from edge to center. The Pedestrian Shed is conventionally drawn as a circle scaled to a quarter mile radius, representing the average distance that most people would walk rather than drive to a destination. It is more accurately drawn as an irregular shape reflecting actual walk times. For infill, the sheds can be measured by walking the actual thoroughfares, though this is rarely done; for greenfield design, walk times must be estimated based on the plan and the topography.

Orient one of these sheds on the previously determined mixed use center. Arrange any additional Pedestrian Sheds to cover the remainder of the development site without substantial overlap. The more the catchments of the sheds overlap, the more they tend to compete with each other and dilute each other's viability as mixed use centers, unless a composite shed is planned with centers whose functions complement each other instead of competing.

Step Five: Precisely adjust the location of the Pedestrian Sheds.

The centers of the Pedestrian Sheds should meaningfully coincide with traces on the land.

A cluster of specimen trees may become a central green, and a rise or ford may provide another. Hedgerows may provide trees for avenues, and country stone walls should remain alongside new roads. Existing country paths and lanes embody the geographic experience of animals and persons; they should influence the trajectories of new thoroughfares wherever possible. A certain easy beauty will result from assimilating such traces of the land.

This process requires a skillful designer's eye as well as a "lucky site." Several designers should work on these proposals independently, because a single eye is less likely to find the key unlocking the character of a site that supports strong neighborhood structure.

Where traces are not determinants, introduce a public space or special intersection as the center of each Pedestrian Shed.

(Code: See Section 3.2 Sequence of Community Design, Section 3.5 Civic Zones, and Section 3.7 Thoroughfare Standards.)

Step Six: Connect the neighborhood centers with larger thoroughfares.

At this point, the natural traces have been assimilated into urbanism, the main mixed use center has been determined, and the neighborhood structure has been outlined by Pedestrian Sheds. Now, connect these neighborhood centers to each other with larger thoroughfares, known as main streets or avenues. These should be direct, but not necessarily straight. Most thoroughfares should deflect in response to the land's traces or to slow traffic.

Next, fill in the area between these main thoroughfares with secondary routes, known as streets and roads, in a network pattern. These in-between areas need not be geometrically coherent throughout the entire Community Unit, but may be localized.

Networks must be adjusted to create a block pattern that is smaller and more permeable when close to a center, and progressively larger elsewhere. Then subdivide the block pattern into lots that also become larger relative to the buildings that occupy them, so the ratio of nature to building becomes progressively more rural towards the edges of the Community Unit. This is the beginning of a transect.

(Code: See Section 3.7 Thoroughfare Standards.)

Step Seven: Detail the other urban elements so they all support Transect Zones.

The Transect used in the SmartCode analyzes and coordinates the built environment. It works by coordinating the typical elements of traditional urbanism; those that are rural in character support each other, and those that are urban support each other. The Transect creates a diversity of natural and human habitats, providing choice according to the needs and preferences of residents. Hamlets (CLD) and Villages (TND) display Transect Zones evolving from rural edges to urban centers. Regional Centers (RCD) may invert the sequence, with the more urban areas on major thoroughfares along the edges of neighborhoods. This gradient, when rationalized and subdivided, becomes the basis of SmartCode zoning. Customize Article 5 and Table 7, Table 8, Table 9, and Table 15 to create the block and building scale details for the Community Unit. An analysis of regional typological and architectural character should guide any customization of the SmartCode elements.

The framework of thoroughfares and open space creates the image and structure of the town. The engineering and the detailing of these elements, including paving, landscaping, lighting and furnishing, must be determined by the planner according to their Transect location - even if built over time.

(Code: see Article 6 Table 1. Manual: see Outline of the Code.)

Step Eight: Reserve the Civic Sites.

Civic institutions are necessary to the well-being of a community, yet are often difficult to provide. The market generally encourages private residential and commercial buildings, but not civic buildings, which accommodate educational, governmental, recreational, religious, or cultural institutions. A New Community Plan provides for them by reserving civic sites at each neighborhood center for local institutions. For each TND, there should be places reserved for, at minimum, an elementary school, childcare facility and Meeting Hall. For an RCD, the plan should also designate sites for regional institutions such as secondary schools, government agencies, religious and cultural buildings. If such Civic Zones are preserved in perpetuity by the Regulating Plan, the residents themselves will, over time, bring the civic buildings into being. Covenants are necessary to ensure this.

(Code: see Intent Section 1.3.2 The Community and 1.3.3 The Block and the Building, and Sections 3.5 and 5.4 Civic Zones.)

Step Nine: Provide Covenants and Establish Local Governance

A community requires local governance for which a set of covenants must be written. They should be enacted by contract as a condition of the purchase of a lot or a building. In typical Home Owners Association (HOA) documents, such covenants are usually conceived to protect the prerogatives of the development agency, assigning all power to itself. Consequently, the community remains hobbled by its system of governance, unable to adjust organically to society, culture and the economy as they evolve. Instead, these covenants should provide for an elected executive with considerable influence (a role initially played by the developer), balanced by a small deliberative body and an appellate forum. This Community Association must have the capacity to levy charges that provide for the ongoing maintenance of the public realm (e.g. Civic Space, Civic Buildings, Thoroughfares). A portion of the charges should also be allocated in trust for civic improvements, allowing the community over time to decide how to best to invest them on the reserved civic lots. These covenants must also make reference to the code that guides the ongoing construction of the community.

Step Ten: Establish a Community Association

At some point during the buildout of the community -- after the general direction has been set, but while meaningful adjustments are still possible -- the original planners and developers should withdraw in favor of the Community Association, which should include a Town Architect’s office staffed by those who live in the community. For it is only by participating in the daily life as citizens that municipal administrators have standing in the community they govern. Those who must move on have undergone an apprenticeship in community building, the lessons of which may be applied elsewhere.

BUILDING TYPES - SPECIFIC

A type is an artifact intended for a specific use, having become a carrier of meaning through familiarity. It is defined by certain constants. With buildings, these are three: Function, Disposition, and Configuration.

These constants result in a predictable socioeconomic performance. The Function defines the likely uses within a building and its lot. The Disposition is the placement of a building on its lot, as determined by the setback or build-to requirements measured from the lot boundaries. The Configuration is the three-dimensional form of a building, including the form and materials of roofs, walls, openings, and other elements. Access is a key attribute of a building type, essential to the quality of the urbanism. Building access is affected by both Disposition and Configuration.

The main attributes of the building types are described throughout Article 5 of the SmartCode, and in the corresponding tables that allow calibration. The general category of types - Edgeyard, Sideyard, Rearyard, Courtyard, and Specialized - are shown on Table 9.

The building types to be included in the calibration are revealed and identified by the Synoptic Survey and/or the market analysis, by the intent of the client (developer and/or municipality), and by the charrette proceedings. The Transect Zones and the allowed locations of the various building types within the zones will also derive from these analyses.

For each of the Transect Zones, include calibrated form-based pages for each: Edgeyard, Sideyard, Rearyard, and Courtyard. For example, within a TND the Edgeyard building types may be limited to T3 and T4 zones, Sideyard and Courtyard building types to T4 and T5 zones, and Rearyard building types to T4, T5, and T6 zones. Four such summary pages appear as the Form-Based Code Graphics. Finally, a complete list of selected building types is then incorporated into Table 12, Building Function - Specific.

Here is a list of the most common building types and their common definitions. For each project, the definitions provided below are to be calibrated, detailed as appropriate, and then included in the Definitions of Terms section of the SmartCode. Some are already in the model code, some are not.

- **Accessory Building/Unit:** A building located in the back yard of a Lot, which it shares with an Estate House, a House, a Cottage, or a Sideyard House. It generally faces and is accessed from an Alley. (*Syn. & Variants:* Ancillary Building, Outbuilding, Mews House, Carriage House or Apartment, Granny Flat, Studio)
- **Apartment Building:** a Rearyard Residential building type accommodating multiple dwellings disposed above and beside each other, sharing a common entry, accessed directly from and facing the street. (*Variant:* Loft Building)
- **Cottage:** an Edgeward building type. A single-family dwelling, on a regular Lot, often shared with an Accessory Unit in the back yard.
- **Courtyard House:** a Courtyard building type. A single-family dwelling, which surrounds one or more private yards. (*Syn:* Patio House)
- **Courtyard Housing:** a Courtyard building type. A multi-family Residential building, which surrounds one or more private yards, accommodating multiple dwellings disposed above and beside each other. The main entrance to each dwelling is accessed directly from the private yards. Multi-family applies to a building with two or more housing units that share one or more common walls. (*Syn:* Courtyard Apartment Building)
- **Duplex/Triplex/Quadplex:** an Edgeward building type. A multi-family building on a regular Lot, shared with Accessory Buildings in the Rearyard. The main entrance to each dwelling is accessed directly from and faces the street. Multi-family applies to a building with two or more housing units that share one or more common walls.
- **House:** an Edgeward building type. A dwelling on a large Lot, usually single-family, often shared with an Accessory Building in the back yard. (*Syn:* Single)
- **Live-Work:** a dwelling unit that contains, to a limited extent, a Commercial component. A Live-Work Unit is a fee simple unit on its own lot with the Commercial component permitted anywhere in the building. It may be any Disposition type but is typically Rearyard. (*Syn. & Variants:* Flexhouse, Corner Store, Shopfront, Work-Live)
- **Mixed Use Building:** a Rearyard, flexible Commercial building type. The Flex Building variant, for example, has dwellings allowed above and/or behind the Commercial space, which is only allowed on the first floor. The main entrance to the building is accessed directly from and faces the street. (*Syn. & Variants:* Warehouse, Flex Building, Office Building)
- **Rowhouse:** a Rearyard building type. A single-family dwelling with common walls on the side Lot lines, the Facades forming a continuous Frontage Line. (*Syn:* Townhouse, Terrace House)
- **Sideyard House:** a Sideyard building type. A single-family dwelling, which occupies one side of the Lot, with the primary yard to the other side, shared with an Accessory Building in the back yard. The Multi-generation House variant may comprise two or three dwellings. (*Syn. and Variants:* Multi-generation House, Charleston Side House)
- **Twin:** an Sideyard building type sharing a common wall with another Sideyard

house, each with its own Lot. (*Syn:* Double House)

- **Villa:** an Edgeyard building type. A single-family dwelling on a very large Lot of rural character, often shared by one or more Accessory Buildings. (*Syn:* Country House, Estate House)
- **Work-Live:** a fee-simple mixed-use unit with a substantial Commercial component that may accommodate employees and walk-in trade. Therefore the unit shall require ADA compliance for accessibility. It may be any Disposition type. (*Syn:* Live-With. *Variant:* **Live-Work.**)

DEVELOPMENT AND DESIGN CENTER (DDC)

- **Public-Private Partnership.** Ideally, the venture includes backing from a municipality or group of municipalities (i.e. a region), a university, and the business community.
- **Visioning.** The DDC should engage in visioning, serving as a catalyst for development, especially infill development.
- **Economic Development Focus.** In order to secure the necessary support, the DDC should present itself as an economic development tool.
- **One-Stop Shop.** It should be housed in the same place as all other planning and development entities that a developer must engage while going through the development process.
- **Forum for Networking.** The DDC should serve as a forum for networking within the design and development professions in the region.
- **Media.** The DDC should serve as the institutional memory for community vision, interacting with the media on developing issues.
- **Education.** The DDC should serve as a training ground by and for professionals by using connections to universities. Engineering students, law students, sociology students, graphic artists, photographers, etc., can all play important roles. The DDC should also provide courses on good design and development practices, to serve as an educational resource.
- **General.** The DDC should produce a web site, an awards program, an e-mail listserv, and tours of areas where development is wanted or tours of places to be celebrated.

SAMPLE ORDINANCE

ADOPTING THE SMARTCODE AS A COMPONENT OF THE MASTER PLAN OF THE MUNICIPALITY IN AN AREA GENERALLY BOUNDED BY [-] ON THE NORTH, BY [-] ON THE EAST, BY [-] ON THE SOUTH AND BY [-] ON THE WEST.

WHEREAS, the Master Plan of the MUNICIPALITY was adopted on [Date]; and

WHEREAS, the STATE CODE allows amendment of the [MASTER PLAN] following a public hearing and review by the PLANNING COMMISSION; and

WHEREAS, a public hearing was held on [Date] by the PLANNING COMMISSION allowing all interested citizens to be heard; and

WHEREAS, the PLANNING COMMISSION has recommended that the GOVERNING BODY amend the Master Plan by adopting the SmartCode; and

WHEREAS, the GOVERNING BODY has considered the effect of this amendment to the Master Plan and has determined that it conforms to the Master Plan Policies:

NOW THEREFORE, BE IT ORDAINED BY THE GOVERNING BODY OF THE MUNICIPALITY:

SECTION 1. The Master Plan of the City of [-] is hereby amended by adopting the SmartCode as a component of the Master Plan for an area bound by [-] on the north, [-] on the east, by [-] on the south and by [-] on the west.

SECTION 2. The SmartCode is attached as Exhibit "A" hereto and incorporated herein for all purposes.

SECTION 3. This ordinance shall be immediately effective upon the affirmative vote of a majority of members of the GOVERNING BODY otherwise it shall be effective [Date].

PASSED AND APPROVED this [Date].

ATTEST: _____ MUNICIPALITY Clerk

APPROVED AS TO FORM: _____ MUNICIPALITY Attorney

THE ORIGINS OF SPRAWL

The word “growth” once had positive connotations for Americans: better jobs, better shops, better education, a better quality of life. How did it come to pass, then, that a nation proud of three centuries of growth, one whose people built constellations of beautiful villages, towns and cities that span a continent, should have so radically changed its outlook?

When we look at older towns, it is obvious that the methods by which municipalities grow have changed. Prior to World War II, areas mapped for development included each of the essential town-making elements — streets, parks, housing, and commercial and civic buildings. Growth was mixed-use and compact. This is no longer the case.

The basic genetic material of sprawl consists of the following:

- separated-use zoning
- precise statistical requirements but relaxed physical ones
- federal road building programs with normative standards
- public works practices and their system of arterial and collector roads
- insufficient variety of subdivision, setback, lot size, density, and parking requirements
- segregation of the various development, design, engineering and permitting authorities and professionals
- federal and institutional financing programs that recognize only certain standard development types.

From this material, sprawl replicates. Components of a community spread out and the public realm degrades. Historic buildings and industrial districts decay because use-based zoning keeps them from adapting to societal changes. New development leaps to points further along the highway where there is less regulation and cheaper land. In this way, the loss of open lands and the decay of downtowns are closely related. In spite of six decades of such results, sprawl remains our predominant development pattern.

Euclidean Zoning

At the root of sprawl is the conventional zoning methodology employed in most jurisdictions, commonly referred to as “Euclidean” zoning. Euclidean zoning is based on the Standard State Zoning Enabling Act (“SZEAE”) that was promoted by the Hoover Administration in the 1920s. The typical SZEAE-based statute authorizes the adoption of a zoning ordinance to regulate and restrict the erection, construction, reconstruction, alteration, repair, or use of buildings, structures, or land, to promote health, safety, morals, or the general welfare of the community. In effect, Euclidean zoning results in different uses of land to be completely isolated from each other. Ultimately, all fifty states adopted legislation patterned on the SZEAE, with most of them still using versions of it today.

Euclidean zoning is so called because an ordinance requiring spatial separation of uses was validated in the 1926 U.S. Supreme Court case, *Village of Euclid, Ohio v. Ambler Realty, Co.*; however, the case itself did not create our conventional zoning structure – it simply upheld a zoning ordinance that separated uses.

It is clear that neither the SZEA nor the ordinances that resulted were intended to create sprawl or obstruct traditional villages, towns, or urban neighborhoods. Their primary concern was to protect the public health and safety by separating dangerous or noxious industrial operations from residential areas, and controlling density for health purposes. But in hindsight, at least since the nature of industry has changed during the 20th century, Euclidean zoning has actually had a negative impact on the public health overall. In our present development pattern, we must drive from place to place, enduring the stresses of congested traffic and wasted time, while polluting our air and depleting natural resources. Meanwhile, we walk much less than we would if our daily needs and destinations were close by. The health benefits of walking have been thoroughly documented.

In addition, the rigid and unwarranted separation of different land uses affects the quality of the places that are created in these patterns. Separation of uses that actually are not incompatible prevents the creation of walkable communities. It forbids the diversity in the built environment that is necessary to create a habitat within which daily needs are all close to home.

Subdivision Setbacks, Lot Sizes and Similar Requirements

Separate from zoning per se is subdivision regulation -- the land use regulatory mechanism for the division of tracts of land into smaller parcels for building. In areas that are zoned as well as those that are not, subdivision requirements can result in sprawl. This arises chiefly from excessive lot size and setback requirements (front, rear and side). Development sites become correspondingly larger and each development spreads density more thinly. Worse, walking distances become unmanageable because of the greater gaps in the development pattern.

Lax or Non-Existent Regulation in Outlying Areas

Most open land that lies some distance from metropolitan areas is either free of land use regulation or only loosely regulated. Developers who do not want to be troubled with regulation for plan review are thereby encouraged to locate their projects in more remote locations.

Traffic Engineering and Road Building Practices

Traffic engineering and public works manuals routinely prescribe overwide Thoroughfares to handle once-in-a-decade multiple fire/rescue contingencies and to encourage “traffic flow.” They also prescribe patterns of collectors and arterials to force drivers along a limited number of Thoroughfares where traffic can be easily counted, limiting connectivity, dispersion, and flexibility of route choice. Connective grids, on the other hand, are designed to “calm” traffic, slowing vehicle speeds and making streets smaller and hence more walkable. Providing a choice of alternate driving routes when one is blocked would also benefit emergency response.

Federal Housing and Highway Projects

Federal postwar housing finance programs, such as those provided by the FHA and VA, have focused on financing single-use and single-family residential developments. In addition, FHA loans were only available for new residences, so existing urbanism was left behind. As a result, retail and other complementary uses are developed in separate locations, forcing citizens to drive in order to travel between them.

In addition, Cold War-era federal traffic engineering and road building standards prescribed rapid evacuation of cities in the event of a nuclear attack, calling for overwide road designs intended to move massive numbers of cars -- or even, in some cases, land airplanes in emergencies. As we have seen, however, these highways were intended for interstate commerce and cannot possibly handle daily commutes and utility runs. Ironically, at one point, a federal statute was adopted to address federally-generated contributors to sprawl; unfortunately, it was so diluted from its original form, that it became ineffective for that purpose.

Isolation of Professional Disciplines and Permitting

Prior to World War II, professionals involved in planning, design and permitting were multidisciplinary generalists – town planners knew landscape architecture, landscape architects addressed buildings, and engineers knew both, so these functions were carried out in a coordinated way. Our present system tends to isolate the various professionals responsible for planning and design, as well as the numerous permitting authorities. For example, if the traffic engineering standards are inconsistent with New Urbanist principles, the project will be dominated by streets hostile to pedestrians, undermining all the other positive efforts of designers, architects, landscape architects, or planning departments. The SmartCode comprehensively integrates these specialities.

Failure to Recognize Different Contexts

Finally, conventional zoning ordinances, traffic engineering, road design and subdivision regulations do not consider adequately the character of the environments to which they are being applied. Instead, one-size-fits-all requirements are universally mandated. This is a fundamental error that results in poor human and natural environments. The solution is context-based planning and design. In the SmartCode, that means Transect-based planning and design.

ALTERNATIVES TO SPRAWL

PUD Ordinances

Planned Unit Development (PUD) ordinances, introduced in the 1960s, were originally intended to preserve open space by allowing cluster development. They suspended standard prescriptions to allow more negotiation. However, over time, they have gradually acquired an overlay of non-negotiable standards, including some separated uses, that have degraded their original Function. The term PUD is currently tainted with the attributes of conventional suburban development.

Smart Growth, New Urbanism, and Transect-based Planning

The principles of Smart Growth and New Urbanism support communities that are town-centered and transit and pedestrian-oriented, with a mix of housing, commercial and retail uses, while preserving open lands and achieving other environmental goals. While their goals are similar, Smart Growth in the United States is a policy-driven movement and the New Urbanism is a design-oriented movement.

The New Urbanism was born in the early 1980s with the design of the groundbreaking new traditional town of Seaside, Florida. Since then, planning has progressed on over a thousand New Urbanist communities across the continent. On many of these projects it has been difficult to maintain design standards after the designers leave and building begins, often without adequate town planning expertise. In addition, the politically fraught implementation process often confounds the best intentions of a community for its vision. Therefore, though there have been many well-realized new towns built, some disappointing hybrid developments also have labeled themselves as New Urbanist. The SmartCode and this Manual were created to keep standards true to New Urbanist principles, and make it easier for stakeholders to create the compact walkable communities they intend.

The central theoretical framework of the New Urbanism is the rural-to-urban Transect of the built environment, addressed throughout this volume. The Transect is applied in the SmartCode from the regional scale all the way down to the details of individual buildings. The SmartCode is a coherent planning tool largely because of the elegant structure of its Transect categories.

CALIBRATION AND LEGAL ISSUES

The SmartCode is considered a model code to be calibrated to regional character, ideally by a team including urban designers, architects, landscape architects, planners, and civil engineers. It provides a template for community vision, shaped by citizen participation.

The term “calibration” is meant comprehensively to include not only the detailed metric analysis described in Appendix X, but also a number of other customization steps throughout the code. Appendix XVII, Essentials of Local Calibration, summarizes these steps. A Calibration Checklist follows that, listing both legal and physical calibration elements.

Legal Calibration

Just as the physical elements of the Transect must be calibrated for local character in the SmartCode, legal elements must also be locally calibrated to comply with state and local laws. An attorney with expertise in Smart Growth, New Urbanism, land use regulation and the SmartCode should be consulted in this process.

The calibrated code should recite that it is adopted pursuant to the applicable authority and comprehensive plan. Under some state laws, the SmartCode must be consistent with the comprehensive plan. Some areas frequently requiring adjustment are: Transfer of Development Rights, fast-tracking approvals, building code waivers, the bifurcated Variance/Warrant system and associated administrative processing of Warrants, and the procedures for various approvals by the CRC, the Planning Office, the Board of Appeals and the Legislative Body, or their local analogs. The CRC concept in particular often requires adoption of additional enabling legislation. Modify the Authority Section accordingly.

There are several sections of the SmartCode that may not be fully enforceable because they are already subject to state or federal oversight, including visitability, stormwater, environmental and riparian regulations. In v9, these sections have been separated from the base SmartCode and are included in this volume as optional Modules. The Modules can be integrated into the base code, or they can be adopted as addenda.

To support enforceability of the SmartCode, keep a record of the preliminary and adopting proceedings, including a detailed legislative record. Review and revise the stated policies of the adopting jurisdiction as necessary to incorporate the principles of Smart Growth and new urbanism. It may be worth preparing a legislative policy statement asserting that sprawl development is detrimental to the municipality.

Enabling Legislation

The adopting jurisdiction should consider the various sources of the enabling authority that permit it to adopt the code. These include the state’s version of the Standard Zoning Enabling Act, the Standard Planning Enabling Act and/or the

Standard State Subdivision Enabling Act, as well as health, safety, environmental, fire and similar laws. Only a handful of states have created legislation specifically to authorize TND ordinances. With or without such legislation, the SmartCode will have to withstand the usual challenges to zoning ordinances, and be implemented with an awareness of the unique elements of state law.

Legal Impediments to PUD Ordinances

While several New Urban projects have been permitted under Planned Unit Development (PUD) ordinances, this approach poses several problems that permitting under the SmartCode does not. First, because they are generally negotiated on a project-by-project basis, each PUD agreement differs from the next. Inevitably, this means that one developer may obtain more favorable PUD provisions than another. This presents a strong legal argument against PUD projects as failing to satisfy the “uniformity” requirement that most jurisdictions require for zoning.

Second, nearly every PUD ordinance contains unique terms that vary from those in other jurisdictions, creating an inconsistency regarding the PUD ordinance provisions themselves. This requires developers to re-learn the PUD ordinance for every jurisdiction in which they operate, as opposed to learning the SmartCode once.

Precedent, General Welfare, and Aesthetics

A zoning ordinance must meet the standard established in *Village of Euclid* and later cases, making clear connections to health, safety, general welfare, transportation, environmental, conservation and other important objectives. In many cases, the “general welfare” portion of the SZEA may suffice for the adoption of the SmartCode.

Although the SmartCode’s emphasis on form may make its purpose seem aesthetic only, its basis is not aesthetic. In any event, the U. S. Supreme Court has affirmed aesthetics as reason enough to exercise the police power for the general welfare; however some jurisdictions may still require other benefits to uphold an ordinance containing aesthetic elements or effect. In this case, make it clear in Article 1 that the SmartCode regulates form to establish a human habitat that promotes the health, safety and welfare of the community, while conserving land and resources.

Modifying Terms and Definitions

The SmartCode does not necessarily employ all terms used in other Smart Growth publications. A list of synonyms for commonly used SmartCode terms is provided in Appendix I. They may be exchanged as necessary. Note that any term in the text of the SmartCode that is dependent on a specific Definition in Article 7 is capitalized. For example, neighborhood is capitalized in the SmartCode because the code uses specific standards to define a neighborhood.

Adoption of the SmartCode

The adoption process depends upon extensive community involvement and consideration by local authorities and agencies. Typically, the process would be initiated by and coordinated through the local Planning Office. The SmartCode must be presented to and supported by the Planning Office, the mayor and the local legislative body. Local counsel and/or the city attorney should be consulted for advice. As with any proposal involving a change to the status quo, it is necessary to educate those involved or affected, to reach a consensus that the proposal has merit. Educational materials, meetings, conferences and seminars are all useful for these purposes.

Charrettes

The heart of the community participation process in New Urbanist practice is the charrette, which is a series of interactive working meetings where design ideas are discussed and actual designs reviewed. Charrettes are valuable for gathering input from residents about their community vision, as well as for explaining development patterns and the need for an alternative code. The charrette process has been widely successful for the planning, design and development of individual projects and regional initiatives. See Appendix XX Resources for a listing about charrettes.

Exclusive vs. Parallel Code

The SmartCode may be intended by a city to replace completely its existing conventional zoning and subdivision codes. (Example: Miami, Florida.) More commonly, though, it has been adopted as a parallel or “floating” option to the existing codes for election by an owner or developer. (Example: Montgomery, Alabama.) Such election is subject to minimum acreage requirements or the previous adoption of an Infill Community Plan, including mapped Transect Zones and Special Requirements that constitute the Regulating Plan. The parallel option strategy is often advisable, as attempting a complete replacement up front can result in a heavily compromised SmartCode. The SmartCode should not be blended with elements of a conventional zoning or subdivision code.

In the case of the parallel code available for overlay, some jurisdictions may wish to assign SmartCode Planning Areas during the adoption process to parts of the city they particularly want to preserve or redevelop, such as downtowns or waterfronts. In these key areas the SmartCode would be the exclusive code.

There are two ways for a city pursuing a parallel SmartCode to prepare Community Plans with mapped Transect Zones. One is to prepare them in a series of neighborhood-level charrettes before the code is adopted, and adopt the plan(s) along with the code. The other is to adopt the SmartCode first, and then hold the neighborhood charrettes. (Example: Gulfport, MS.) The latter method may allow for faster adoption, which makes the code available sooner for greenfield election within the jurisdiction. This has been effective in crisis situations like the rapidly sprawling Gulf Coast rebuilding. But there are sprawl crises all over the country.

If the SmartCode is adopted without official maps (Regulating Plan), there must still be a charrette beforehand to analyze existing conditions and determine community vision in order to calibrate the metrics and functions that define the Transect Zones for the city. Any later neighborhood planning will be based on these standards that have been agreed upon by the city at large.

For individual Greenfield projects, where one Community Plan is the sole subject of the regulations, the SmartCode may be adopted as an overlay to the existing codes. The city may make it available for election in other parts of the city by ordinance. This method is sometimes called a “floating zone.” Urban design and mapping would be done, privately or in partnership with the city, following the election of the SmartCode for the site.

Implementation of the SmartCode

After adoption, continuous efforts must be made to encourage the use of the SmartCode. The Planning Office should immediately establish the Consolidated Review Committee (CRC) and the Development and Design Center (DDC). The quality of planning and design can be improved dramatically with a proactive and encouraging Planning Office and DDC.

The optional Incentives Module provides numerous incentives to encourage its use, including expedited review, reduced or waived application fees, tax incentives and others. Owners and developers should be aware of these, and encouraged to use the code.

ESSENTIALS OF LOCAL CALIBRATION**Modules and Articles**

Decide what Modules will be added to the SmartCode, if any. They can be integrated by the section and subsection numbers already in the Modules. Alternatively, they can be adopted as addenda along with the base code, in which case remove the numbers. Next, review the chosen Modules for possible calibration. For example, if you are including the Architectural Standards, you may want to modify, delete, or add some standards first. Also consider marking as “Reserved” any entire Articles being removed. See the Introduction under “Structure of the SmartCode” for guidance on removing Articles.

Site Analysis

Gather stakeholder input on community vision from charrettes, committees, and/or surveys. Analyze the site for Transect Zone characteristics. Include the local citizens in Synoptic Survey work and/or Visual Preference Surveys to determine their most valued blocks and features. Often the most valued urbanism to analyze will be in another location, necessarily so in the case of greenfield, brownfield, and greyfield sites. On the other hand, if the code is going to protect good existing urbanism from non-contextual spot infill, then analyze the place to be protected. It is likely that the most valued patterns are not allowed by the current zoning ordinance, and/or that damaging patterns are allowed; it is important to prove this to the stakeholders. For details, see *Calibrating the Metrics of the SmartCode*.

Metrics

Correlate carefully all metrics between Table 14 and other Tables, and between Table 14 and the Form-Based Code Graphics pages, if they are used. Also correlate the T-zone allocation percentages between Table 2 and Table 14. Some metrics appear in the definitions and text, so correlate those. For example, a common change occurs in the minimum size of a TND or Infill TND. Also, if you have added any subzones, either for form or for functional intensity, make sure to add those subzones to all applicable tables and text sections. Examples of subzones might be T4-O (T4 in form, but Open in functional intensity), or T-5.5, which might have a different height limit or other formal standards from T-5 or T-6. You may need to add a line to the text that any reference to (for example) T-4 applies to all the subzones of T-4 unless otherwise designated.

Names

If any names are changed, be sure to change them everywhere. For example, some jurisdictions don't use the word “zone” so they change Transect Zones to Transect Intensities. Some towns change the word “Urban” in the T-zone names to something else. The descriptions on Table 1 may be adjusted as well. If there is no T-6 Zone in the calibration, that should be stated in Table 1 or it should be deleted. Whether to identify the most urban part of your town as a T-6 zone is a local calibration decision. If it is helpful for the clarity of the code to downsize some T-6 metrics from those in the model SmartCode and make a distinction between T-5 and T-6 in your downtown, then do so. But T-6 is usually prohibited in the TND Community Unit type.

Functions

Review Table 10 Building Function for the functional intensity of your T-zones. You can change the narrative descriptions there, the parking regulations, and/or whether any subzones apply. Adjust the Specific Function & Use Table 12, with stakeholder consultation. If your Warrant/Variance system is different from the template, be careful to address that on this table.

Tables & Definitions

Review all Tables. Remove those not applicable to your calibration and add any new ones while re-numbering or reserving accordingly. Adjust numbers in the text. Adjust Tables and their applicable T-zones for local character. Some examples might be Private Frontage additions or deletions, the sizes of Civic Space, or the applicable Thoroughfare types. The Public Planting Table must be customized by a tree expert, or information transferred from the existing ordinance. Review Article 7 Definitions and remove all definitions that no longer appear in the calibration. Add new definitions made necessary by the calibration. In the rest of the code, do Find/Replace to make sure the newly defined terms are capitalized as appropriate.

Last Steps

Check all instances of colored text for possible adjustment. Occasions of “should” and “shall” are particularly important, as “shall” signals a mandatory provision. When finished, turn all colored text into black, and remove any calibration instruction language from the tops of tables. Place the name of the jurisdiction in master header and cover. Finally, adjust your Table of Contents to reflect the final content and numbering of the SmartCode.

Modules and Articles:

- Modules have been calibrated, and integrated or added to the base SmartCode.
- Articles not applicable to the calibration have been removed and references to them adjusted or removed.
- Language in “Reserved” spots has been adjusted if necessary.
- Cross-referenced section numbers have been adjusted and verified.

Article 1:

- Article 1 is filled in with names of the jurisdiction, legislative bodies, CRC makeup, and Local Health and Safety Codes.
- Article 1 cites references to statutes and comprehensive/general plan.
- List of items not available for Warrants has been reviewed and adjusted if desired.
- If Modules are adopted as addenda, their applicability is activated by Article 1 language.

Metrics:

- Local metrics from Synoptic Survey methods are correlated between Form-Based Code Graphics Tables and Table 14.
- Transect Zone allocation percentages are correlated between Table 2 and Table 14.
- Sizes of Community Unit types are correlated among tables, definitions and text.
- Subzones, if any, are added to all applicable tables and text sections.
- Density line on Table 14 is adjusted, especially if there is no TDR.

Names:

- Newly introduced names and descriptions are changed throughout the code.
- Deleted Transect Zones are accounted for on Table 1 and by one or more “Reserved” pages.
- All instances of colored text have been evaluated and adjusted as necessary.

Functions:

- Building Function Table 10 has been evaluated and adjusted as necessary.
- Specific Function and Use Table 12 has been evaluated and adjusted as necessary.

Tables and Definitions:

- Tables not applicable to the calibration have been removed and noted as “Reserved.”
- Any renumbering necessary for added Tables has been carefully checked throughout the document for cross-references.
- Tables and their applicable T-zones have been evaluated and adjusted for local character.
- The Public Planting Table 6 has been customized by a tree expert.
- Article 7 Definitions of Terms have been evaluated, and definitions that no longer appear in the calibration have been removed.
- Newly defined terms are capitalized throughout the code as appropriate.

Last Steps:

- Colored text has been turned to black.
- Instructional language has been removed from tops of tables.
- The jurisdiction name appears on master header and cover.
- The Table of Contents reflects the final content and numbering of the SmartCode.

SmartCode calibration should be done in the context of a public charrette with the advice of urban designers, architects, landscape architects, planners, civil engineers and land use attorneys familiar with the SmartCode.

- Findings Key**
 + Meets Guidelines
 - Does Not Meet Guidelines
 +/- Meets Guidelines with Conditions as Noted
 NA Not Applicable
 NSI Not Sufficient Information

| REF. # | GUIDELINES | FINDINGS | COMMENTS |
|-----------------------------------|---|----------|----------|
| SC9 3.5.3d App.XI | There is a discernible center. This is often a plaza, square or green, and sometimes a busy or memorable intersection. A transit stop should be located at this center. | | |
| Table 1 Table 14f Table 14g | Buildings at the center are placed close to the side-walk and to each other, creating an urban sense of spatial definition. Buildings towards the edges are placed farther away and farther apart from each other, creating a more rural environment. | | |
| SC9 3.2 App. XI | Most of the dwellings are within a five-minute walk from the center. This Pedestrian Shed averages one-quarter of a mile in radius. (Half-mile for center with rail transit.) | | |
| Table 1 Table 9 Code 5.6.3 | There is diversity in dwelling types. These take the form of houses, rowhouses, and apartments, such that younger and older, singles and families, the poorer and the wealthier, can find places to live. | | |
| App. XII | There are places to work in the form of office buildings or live-work units. | | |
| SC9 3.8.4 SC9 5.8 | There are shops sufficiently varied to supply the ordinary needs of a household. A convenience store, a post office, an ATM machine, and a gym are the most important among them. | | |
| Table 14J SC9 5.6.2d | A small accessory building should be permitted within the backyard of each house. It may be used as a rental apartment, or as a place to work. | | |
| SC9 3.5.4b SC9 3.5.4f | There should be an elementary school close enough so that most children can walk from their dwelling. This distance should not exceed one mile. | | |
| SC9 3.5.3e Table 13 | There are playgrounds near every dwelling. This distance should not exceed one-eighth of a mile. | | |
| SC9 3.7.1 | Thoroughfares within the neighborhood form a continuous network, providing a variety of itineraries and dispersing traffic. The Thoroughfares connect to those of adjacent development whenever possible. | | |
| SC9 3.7 Table 3 Table 4 | Thoroughfares are relatively narrow and shaded by rows of trees that slow traffic and create an appropriate environment for the pedestrian and bicyclist. | | |
| SC9 5.7, 5.10 Table 7 | Parking lots and garage doors rarely enfront the Thoroughfares. Parking is relegated to the rear of buildings and usually accessed by rear alleys or lanes. | | |
| SC9 3.5.4 | Certain prominent sites are reserved for civic buildings. A building must be provided at the center for neighborhood meetings. | | |
| Appendix XI | The neighborhood should be self governing, deciding on matters of maintenance, security, and physical evolution. | | |

SmartCode Texts

To purchase a hard copy of *The SmartCode Version 9 and Manual*, contact New Urban News Publications at 607-275-3087 or mail@newurbannews.com, or visit www.newurbannews.com.

For electronic editable files and PDFs of the model v9.0 and v9.2 SmartCodes and annotated v9.2 SmartCode Modules, plus lists and links for new Modules, case studies, news, workshop opportunities, and consultant services, please visit www.SmartCodeCentral.com.

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Available Images:

Transect diagrams/sequences/photographs

<http://www.dpz.com/transect.aspx>

The Town Paper:

www.tndtownpaper.com

Council Reports:

www.tndtownpaper.com/councilreports.htm

SmartCode Websites:

www.SmartCodeCentral.com

www.DPZ.com (DPZ & Company)

www.SmartCodeComplete.com (PlaceMakers LLC)