

SMART CODE MODULES

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

Doug Kelbaugh

INCENTIVES	FOR ARTICLE 1
AFFORDABLE HOUSING INCENTIVES	FOR ARTICLE 1
HAZARD MITIGATION STANDARDS	FOR ARTICLE 1
	FOR ARTICLE 2
	FOR ARTICLE 3
	FOR ARTICLE 4
	FOR ARTICLE 5
ENVIRONMENTAL STANDARDS	FOR ARTICLE 3
NATURAL DRAINAGE STANDARDS	FOR ARTICLE 3
	FOR ARTICLE 5
ARCHITECTURAL STANDARDS	FOR ARTICLE 5
LIGHTING STANDARDS	FOR ARTICLE 5
SOUND STANDARDS	FOR ARTICLE 5
VISITABILITY STANDARDS	FOR ARTICLE 5
SUSTAINABILITY TABLES	FOR ARTICLE 6
WIND POWER	
SOLAR ENERGY	
FOOD PRODUCTION	
COMPOSTING AND RECYCLING	
LIGHT IMPRINT STORM DRAINAGE MATRIX	FOR ARTICLE 6
TABLE 4C THOROUGHFARE ASSEMBLIES	FOR ARTICLE 6
DEFINITIONS OF TERMS (WITH MODULES)	FOR ARTICLE 7

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.

SMARTCODE ANNOTATED

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

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

SMARTCODE ANNOTATED

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

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

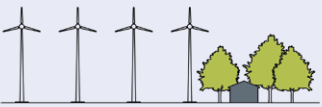

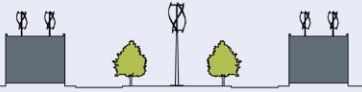
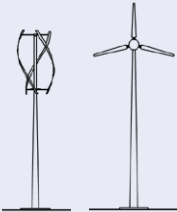
This table prescribes opportunities for the placement of types of wind-powered devices within the Transect. Wind turbines must be placed where there is wind. The best locations in general include shorelines and the edges of open plains. In the urban Transect Zones, T3-4-5-6, this usually means they must 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/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
<p>Horizontal Axis</p> 	▪	▪	▪				▪	<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
<p>Vertical Axis</p> 			▪	▪	▪	▪	▪	<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
<p>Public Furniture</p> 			▪	▪	▪	▪	▪	<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>

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

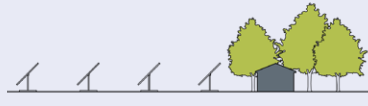
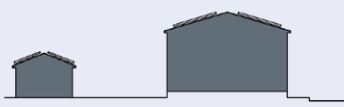

SUSTAINABILITY - SOLAR ENERGY

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



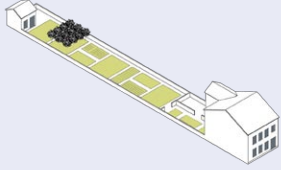
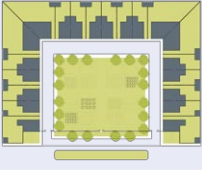
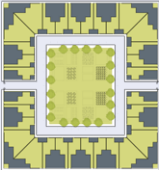
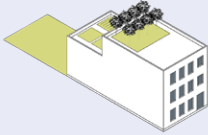
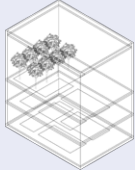
This table shows ways of incorporating types of local food production along the Transect. Cities are increasingly allowing urban agriculture and the raising of animals for household use, to encourage lower-cost food supplies and reduction in the energy consumption for food transport. This code may be 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						

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

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.

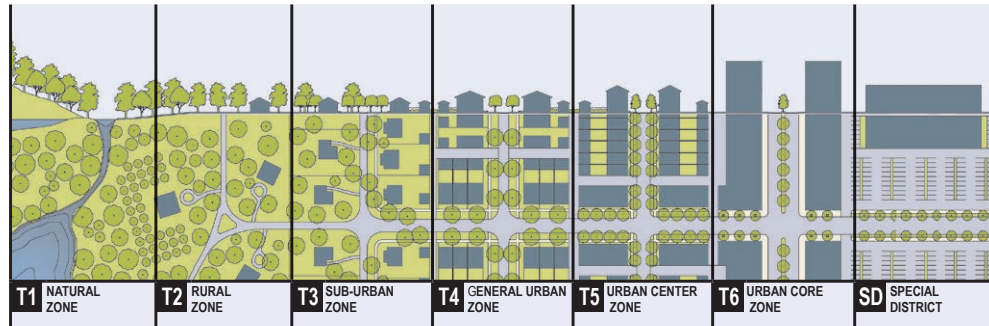
This table summarizes a comprehensive strategy that can supplement the basic Natural Drainage Standards in this volume. The Light Imprint initiative coordinates over sixty tools and resources for environmental, infrastructural, and cost efficiency concerns. Because it is transect-based, all or part of 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.

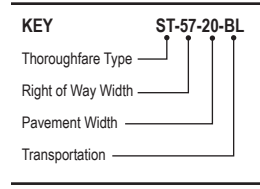
If Thoroughfare Assemblies are used, one or more of the Vehicular Lane or Public Frontage Tables may be removed. Calibrators should take care that provisions listed on the Table 4C Assemblies do not conflict with provisions on the remaining Vehicular Lane or Public Frontage Tables, or with Section 3.7.

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.

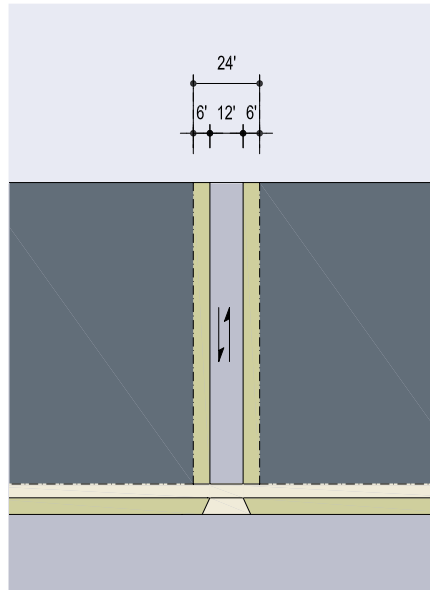
There are several one-way streets included in this Module. They should be used rarely, especially if blocks are long, as they are less connective than two-way streets. If low traffic volumes are expected, consider using the two-way yield movement instead. Specifying a one-way thoroughfare and later allowing 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.



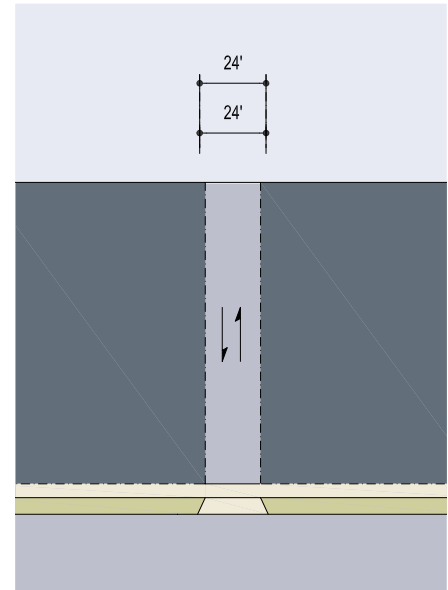
THOROUGHFARE TYPES

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



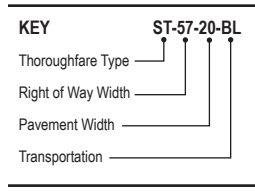
RL-24-12

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



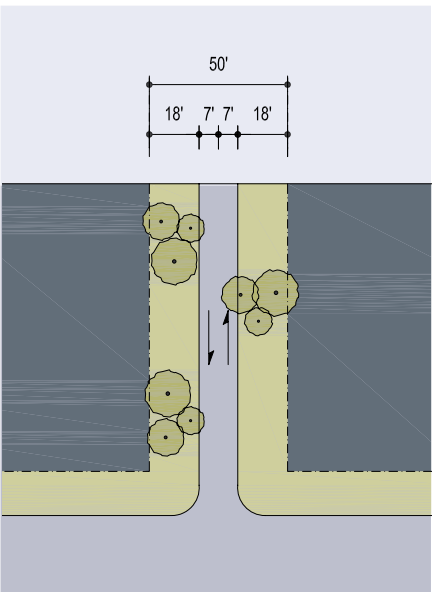
RA-24-24

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



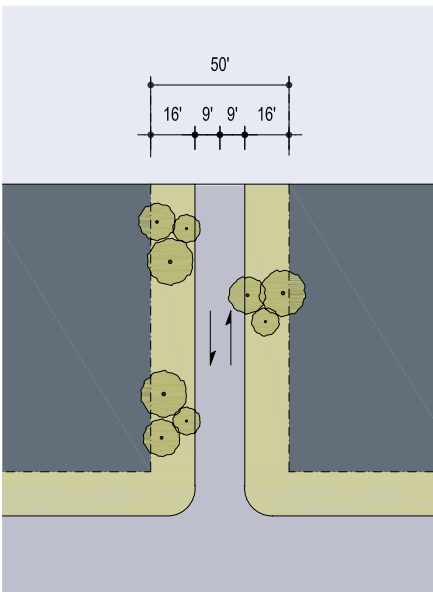
THOROUGHFARE TYPES

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



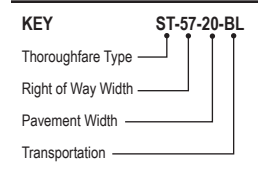
RD-50-14

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



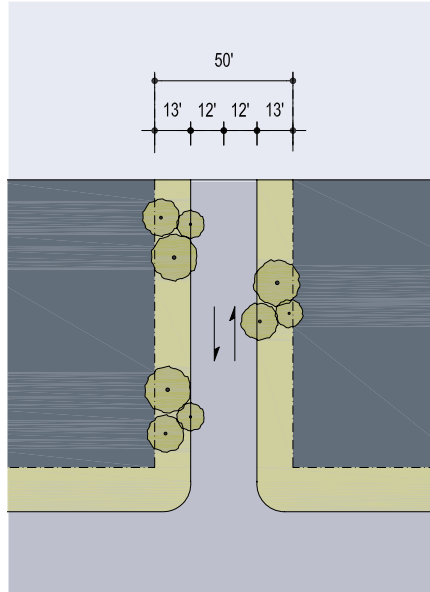
RD-50-18

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



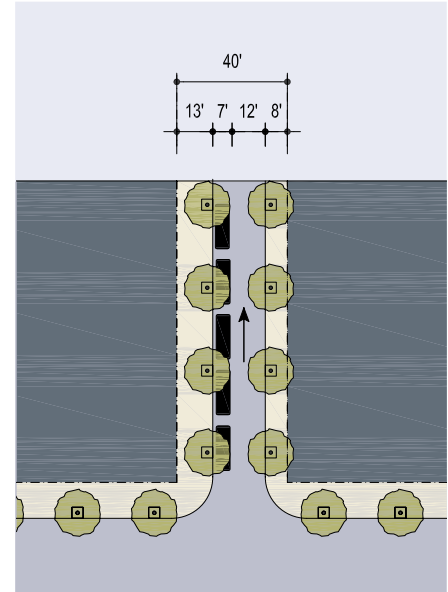
THOROUGHFARE TYPES

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



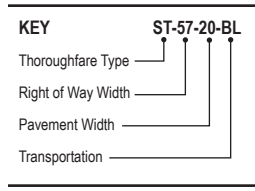
RD-50-24

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



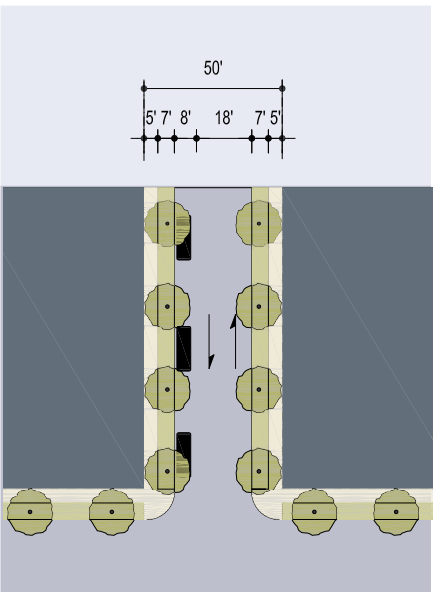
ST-40-19

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	



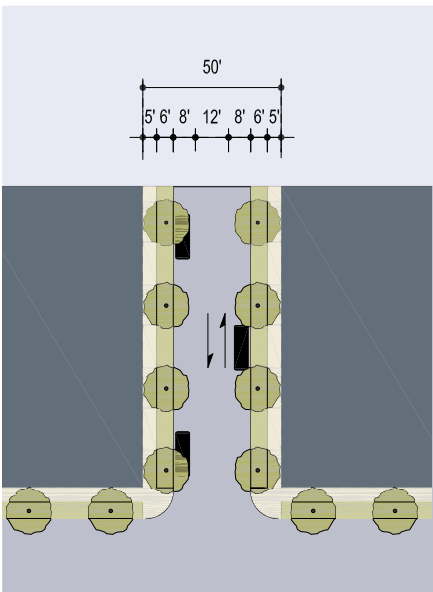
THOROUGHFARE TYPES

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



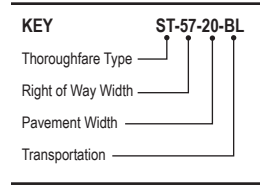
ST-50-26

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	



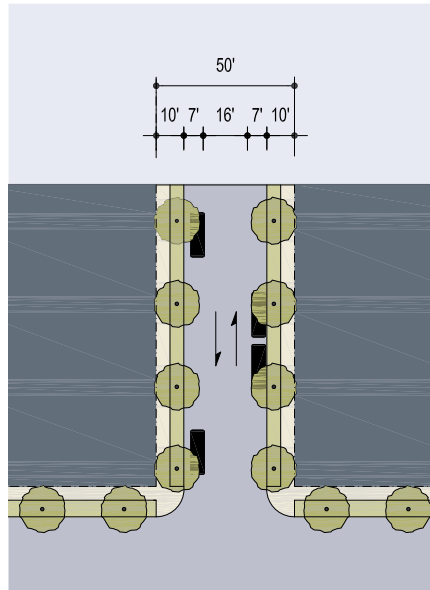
ST-50-28

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	



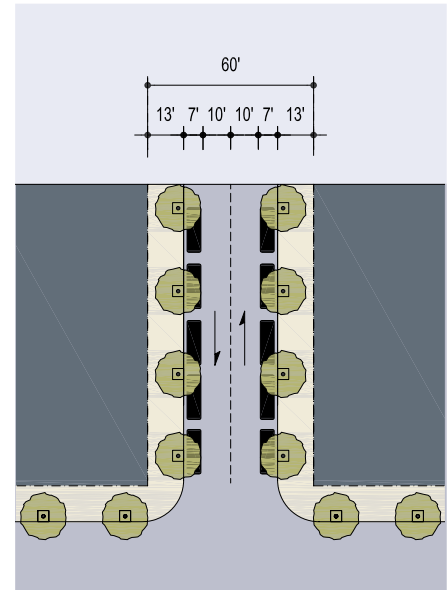
THOROUGHFARE TYPES

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



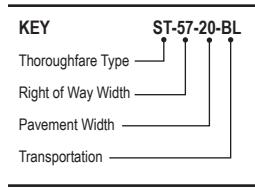
ST-50-30

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	



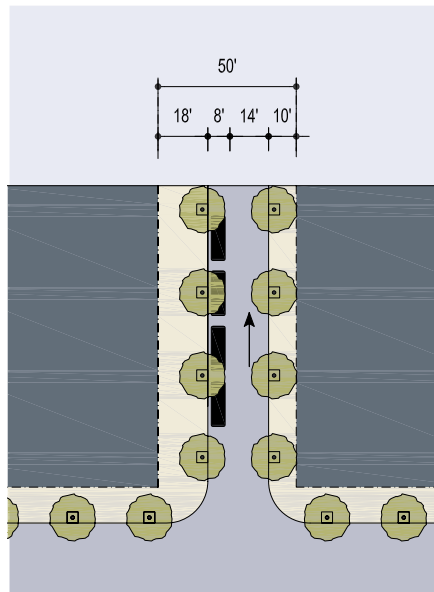
ST-60-34

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



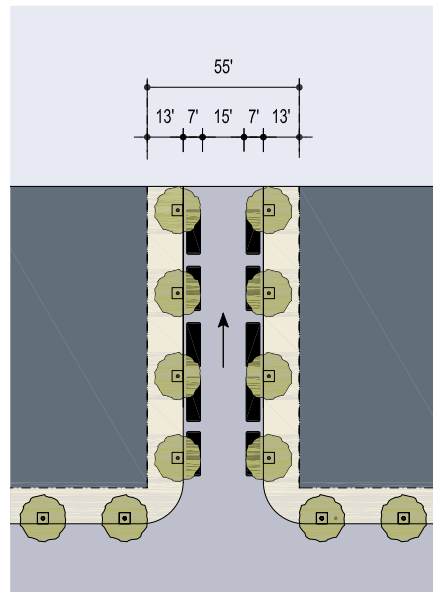
THOROUGHFARE TYPES

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



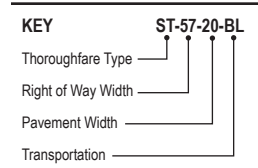
CS-50-22

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	



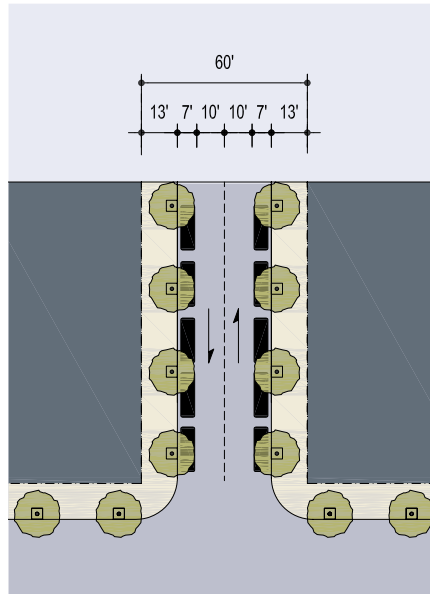
CS-55-29

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	



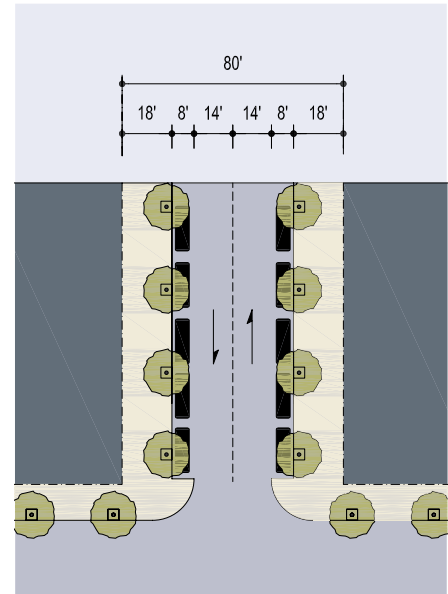
THOROUGHFARE TYPES

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



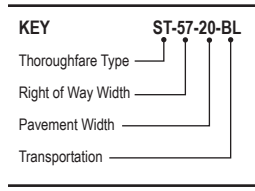
CS-60-34

Thoroughfare Type	Commercial Street
Transect Zone Assignment	T5, T6
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	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	

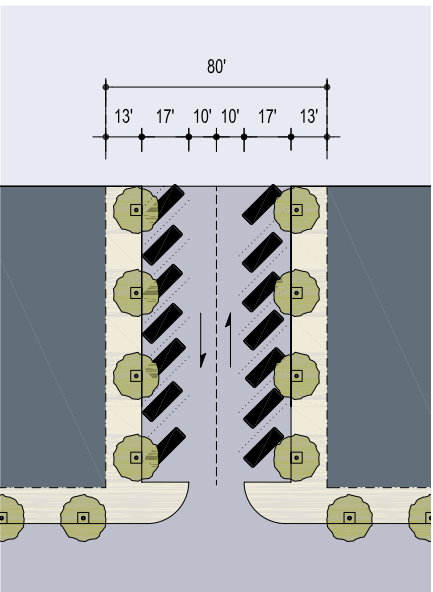


CS-80-44

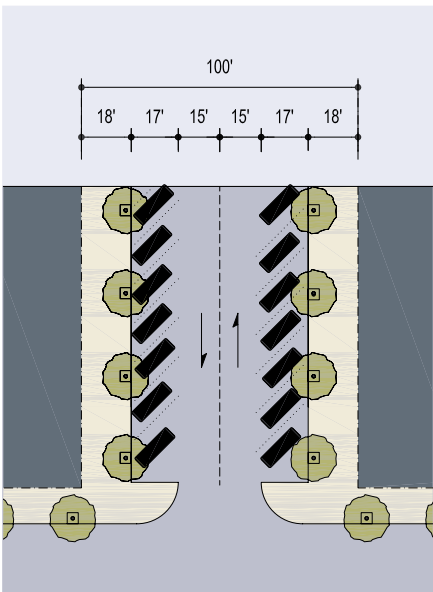
Thoroughfare Type	Commercial Street
Transect Zone Assignment	T5, T6
Right-of-Way Width	80 feet
Pavement Width	44 feet
Movement	Free Movement
Design Speed	25 MPH
Pedestrian Crossing Time	8 seconds at corners
Traffic Lanes	2 lanes
Parking Lanes	Both sides @ 8 feet marked
Curb Radius	10 feet
Walkway Type	18 foot Sidewalk
Planter Type	4x4" tree well
Curb Type	Curb
Landscape Type	Trees at 30' o.c. Avg.
Transportation Provision	



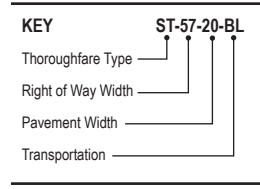
- THOROUGHFARE TYPES**
- Highway: HW
 - Boulevard: BV
 - Avenue: AV
 - Commercial Street: CS
 - Drive: DR
 - Street: ST
 - Road: RD
 - Rear Alley: RA
 - Rear Lane: RL
 - Bicycle Trail: BT
 - Bicycle Lane: BL
 - Bicycle Route: BR
 - Path: PT
 - Passage: PS
 - Transit Route: TR



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	



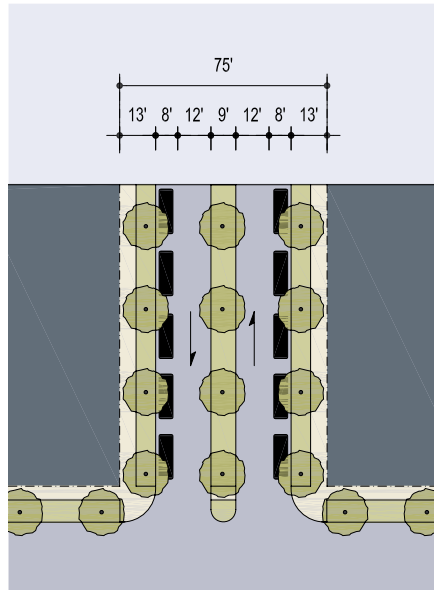
CS-100-64	
Thoroughfare Type	Commercial Street
Transect Zone Assignment	T5, T6
Right-of-Way Width	100 feet
Pavement Width	64 feet
Movement	Slow Movement
Design Speed	25 MPH
Pedestrian Crossing Time	8.5 seconds at corners
Traffic Lanes	2 lanes
Parking Lanes	Both sides angled @ 17 feet marked
Curb Radius	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

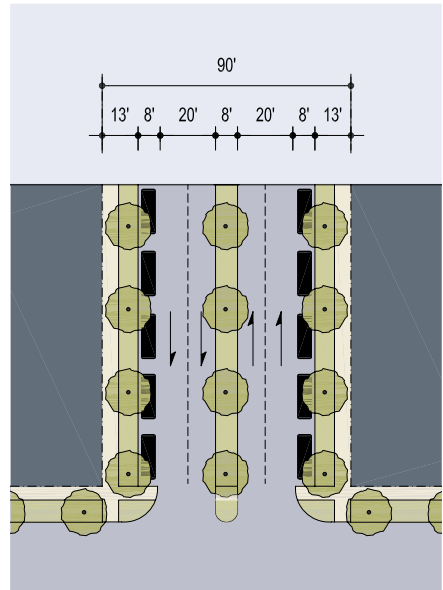
Highway:	HW
Boulevard:	BV
Avenue:	AV
Commercial Street:	CS
Drive:	DR
Street:	ST
Road:	RD
Rear Alley:	RA
Rear Lane:	RL
Bicycle Trail:	BT
Bicycle Lane:	BL
Bicycle Route:	BR
Path:	PT
Passage:	PS
Transit Route:	TR

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



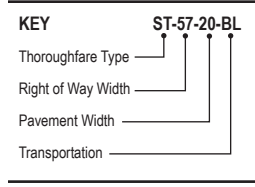
AV-75-40

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



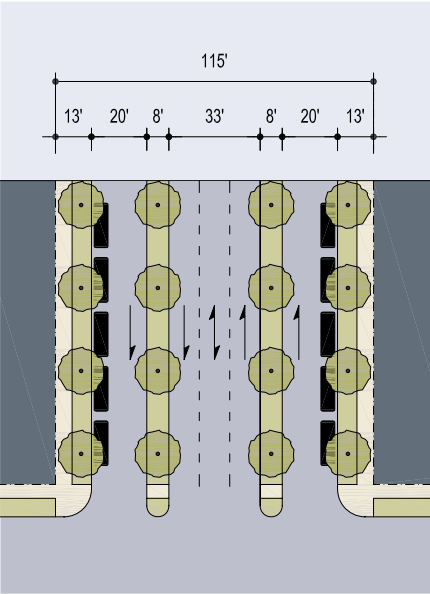
AV-90-56

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

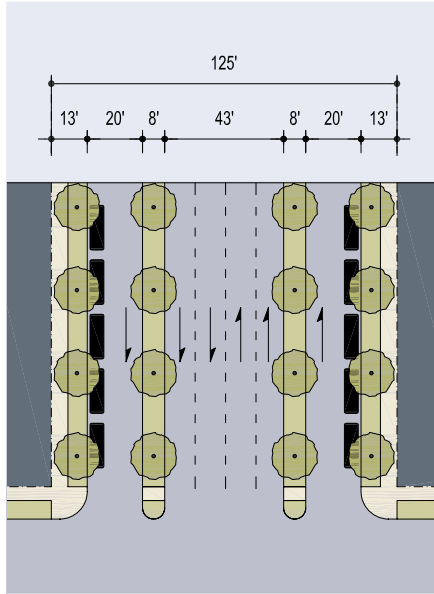


THOROUGHFARE TYPES

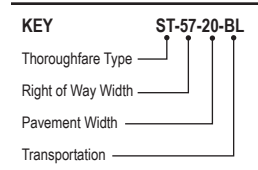
Highway:	HW
Boulevard:	BV
Avenue:	AV
Commercial Street:	CS
Drive:	DR
Street:	ST
Road:	RD
Rear Alley:	RA
Rear Lane:	RL
Bicycle Trail:	BT
Bicycle Lane:	BL
Bicycle Route:	BR
Path:	PT
Passage:	PS
Transit Route:	TR



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

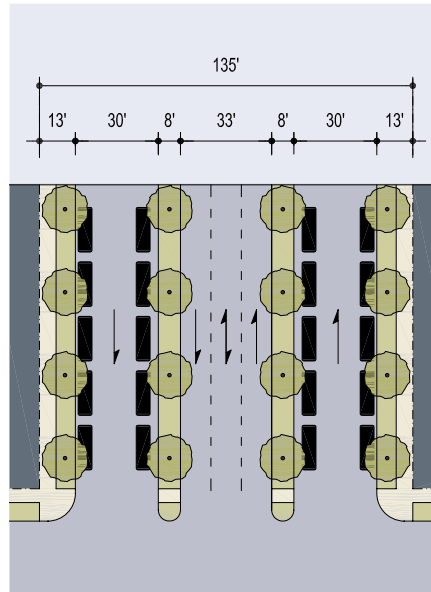


BV-125-43	
Thoroughfare Type	Boulevard
Transect Zone Assignment	T5, T6
Right-of-Way Width	125 feet
Pavement Width	20 feet - 43 feet - 20 feet
Movement	Free Movement (inner lanes)
Design Speed	35 MPH
Pedestrian Crossing Time	5.7 seconds - 12.2 seconds - 5.7 seconds
Traffic Lanes	4 lanes & two one-way 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



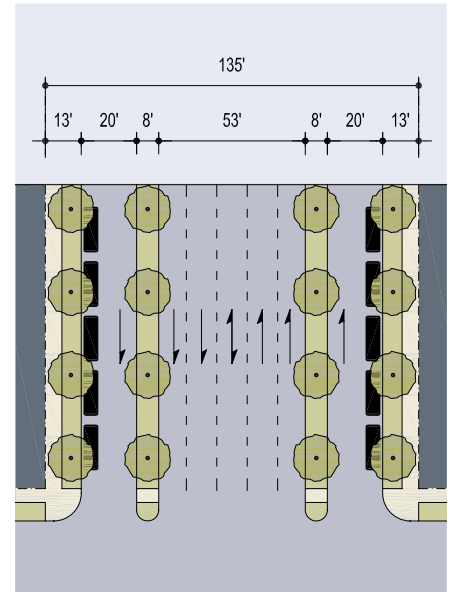
THOROUGHFARE TYPES

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-135-33

Thoroughfare Type	Boulevard
Transect Zone Assignment	T5, T6
Right-of-Way Width	135 feet
Pavement Width	30 feet - 33 feet - 30 feet
Movement	Free Movement
Design Speed	35 MPH
Pedestrian Crossing Time	8.5 seconds - 9.4 seconds - 8.5 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-135-53

Thoroughfare Type	Boulevard
Transect Zone Assignment	T5, T6
Right-of-Way Width	135 feet
Pavement Width	20 feet - 53 feet - 20 feet
Movement	Free Movement
Design Speed	35 MPH
Pedestrian Crossing Time	5.7 seconds - 15.1 seconds - 5.7 seconds
Traffic Lanes	5 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

Thoroughfare Type	Boulevard
Transect Zone Assignment	T5, T6
Right-of-Way Width	135 feet
Pavement Width	30 feet - 33 feet - 30 feet
Movement	Free Movement
Design Speed	35 MPH
Pedestrian Crossing Time	8.5 seconds - 9.4 seconds - 8.5 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