SPRAWL REPAIR SMART CODE MODULE

PREPARED BY DUANY PLATER-ZYBERK & Co.

"The polycentric reorganization of towns, i.e., the transformation of underdeveloped suburbs into autonomous

urban quarters and villages, will be the impetus for a process of territorial transformation, internal growth,

and the flowering of the suburbs".

Léon Krier.

The Architecture of Community

Municipality

SPRAWL REPAIR

As a comprehensive ordinance, the SmartCode enables both new and infill urbanism in the form of Smart Growth neighborhood patterns. The code now identifies a **G-5 Sprawl Repair Sector**, which is assigned to areas that are currently single-use, disconnected conventional development patterns but that have the potential to be completed or redeveloped in the pattern of CLD, Infill TND or Infill RCD. This Module has been created as a special "plug-in" to the SmartCode, which, when added to the base code, activates the tools and techniques for repair in areas designated G-5 on a Sector Plan, or the equivalent. These methods differ from those used to protect and complete areas assigned to the G-4 Sector, which already take the form of pre-war walkable transect-based tradtional neighborhoods.

Instead, Sprawl Repair is a planning technique that restructures and connects the autocentric patterns of suburbia into complete communities based upon a neighborhood unit that is currently missing. It is a method of re-urbanization, intensification and diversification that transforms single-use, auto-oriented, suburban agglomerations into balanced, mixed-use, walkable places, accommodating a diversity of income levels, building types, modes of transportation, and civic spaces.

The **G-5 Sprawl Repair Sector** consists of individual or aggregate areas of the following Sprawl Types:

- Rural Subdivisions
- Single-family Subdivisions
- Multi-family Subdivisions
- Shopping Centers and Strips
- Business Parks and Suburban Campuses
- Malls
- Edge Cities
- Sprawl Type Thoroughfares
- Sprawl Type Open Space

Some of these areas will be up-zoned to accommodate higher but well-designed density, and justify the introduction of mixed use and transit. This creates the regulatory basis for successional growth and the transformation of sprawl types into viable neighborhoods with more transportation and housing choices. The most important issue will be to allow a flexibility of use within existing structures (houses becoming live-work units, big box retail becoming office space or a civic building, etc.), as well as densification within existing parcels and lots (such as a mansion turned into multifamily units or an assisted living facility, or the addition of accessory units). Another important task is to calm and retrofit dangerous thoroughfares so they are safe for walking and bicycling, while creating connections among residential areas, shops, workplaces, schools and other civic buildings, and recreation.

All structural urban and zoning changes will be reflected in specific Regulating Plans. These annotations are advisory only. The SmartCode itself appears only on the right side of each spread.

TABLE SR1: SECTOR/COMMUNITY ALLOCATION

Table SR1 should replace Table 2 in any calibration of the model SmartCode that guides the assigning of Sectors. This table defines the geography, including both natural and infrastructure elements, determining areas that are or are not suitable for development. Specific Community Units/Walkable Place Types (WPTs) of various intensities are allowable in specific Sectors. This table also allocates the proportions of Transect Zones within each Community Unit/WPT.

The Community Units/WPTs for the G-4 Infill Growth Sector do not have allocation percentages because existing conditions are the main determinant for the mapped T-zones.

The same is true of the G-5 Sprawl Repair Sector, as existing conditions will determine the T-zone allocations and thoroughfare connections necessary to transform Sprawl Types into Community Units/WPTs.

See also "Outline of the Code" in the Introduction of the *SmartCode Version 9 and Manual* or SmartCode booklet, and Article 2 of the base code. If current versions do not yet include the G-5 Sector, it can be added during calibration and would permit the Community Units/Walkable Place Types shown on Table SR1 and Table SR3 of this Module.

SCA2

SMARTCODE MANUAL VERSION 9.2

RURAL SUBDIVISIONS SINGLE FAMILY SUBDIVISIONS MULTIFAMILY SUBDIVISIONS SHOPPING CENTERS AND STRIPS BUSINESS PARKS AND SUBURBAN CAMPUSES MALLS **EDGE CITIES** SPRAWL TYPE THOROUGHFARES SPRAWL TYPE OPEN SPACE ALREADY DEVELOPED AREAS IN A TRADITIONAL TRANSECT-BASED PATTERN PROXIMITY TO MAJOR THOROUGHEARES AND TRANSIT PROXIMITY TO THOROUGHFARES MEDIUM SLOPES WOODLANDS FLOOD PLAIN OPEN SPACE TO BE ACQUIRED CORRIDORS TO BE ACQUIRED BUFFERS TO BE ACQUIRED LEGACY WOODLAND LEGACY FARMLAND LEGACY VIEWSHEDS CLD RESIDUAL OPEN SPACE BOUNDARY URBAN GROWTH BOUNDARY SURFACE WATERBODIES PROTECTED WETLANDS PROTECTED HABITAT GROWTH RIPARIAN CORRIDORS PURCHASED OPEN SPACE CONSERV. EASEMENTS LAND TRUST TRANSPORT. CORRIDORS CLD OPEN SPACE (PRIMARILY OPEN SPACE) (PRIMARILY NEW COMMUNITIES) (SUCCESSIONAL COMMUNITIES) (SPRAWL TO BE REPAIRED) PRESERVED OPEN SECTOR SPRAWI RESERVED RESTRICTED CONTROLLED INTENDED INFILL G5 GROWTH SECTOR OPEN SECTOR **GROWTH SECTOR GROWTH SECTOR** GROWTH SECTOR REPAIR SECTOR **RCD CLD** CLD TND TND TND **RCD** NO MINIMUM NO MINIMUM 50% MIN 50% MIN NO MINIMUM NO MINIMUM NO MIN NO MIN VARIABLE 10 - 30% 10 - 30% 10 - 30% 10 - 30% VARIABLE VARIABLE VARIABLE 20 - 40% VARIABLE VARIARI F VARIARI F VARIARI F VARIARI F 20 - 40% 30 - 60% 30 - 60% 10 - 30% VARIABLE 10 - 30% 10 - 30% VARIABLE VARIABLE VARIABLE 10 - 30% VARIABLE VARIABLE

SMARTCODE VERSION 9.2

Municipality

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

TABLE SR2: SPRAWL TYPES -

CONVENTIONAL SUBURBAN DEVELOPMENT (CSD)

This table provides descriptions of the character of each Sprawl Type in a manner similar to the descriptions of the T-zones in the SmartCode. The essential difference is that each urban T-zone represents a range of building types in a complex habitat, while each Sprawl Type is a single-use agglomeration, usually a monoculture of a single building type.

The T-1 Natural and T-2 Rural Zone are the same as in the SmartCode Transect, but the T-2 Rural is dubbed S-2 Rural within the G-5 Sector, as in some cases these lands are held speculatively near the encroaching edge of conventional suburban development (CSD).

SCA4
SMARTCODE MANUAL VERSION 9.2

TABLE SR2: Sprawl Types. This table provides descriptions of the character of each Sprawl Type.

IADLE	. 3KZ. 3prawi Type	s. This table provides descriptions of tr	ie character of each Spraw	л туре.
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.	General Character: Building Placement: Frontage Types: Typical Building Height: Type of Civic Space: Type of Thoroughfare:	Natural landscape with some agricultural use Not applicable Not applicable Not applicable Parks, Greenways Roads, Highways, Parkways, Paths
T-2 / S-2 RURAL		T-2/S-2 Rural Zone consists of sparsely settled lands in open or cultivated states. These include woodland, agricultural land, grassland, and irrigable desert. These lands are often held speculatively near the encroaching edge of Conventional Suburban Development.	General Character: Building Placement: Frontage Types: Typical Building Height: Type of Civic Space: Type of Thoroughfare:	Primarily agricultural, but may include woodlands, wetlands, other natural features and scattered buildings (farms, barns, sheds, silos) Not applicable Not applicable 1-to-2-story Parks, Greenways Roads, Highways, Arterials
S-3 RURAL SUBDIVISIONS	7	S-3 Rural Subdivisions consist of single-family detached houses located on 1/2 acre lots or larger. Setbacks are relatively deep and the infrastructure is sporadic. Automobile access is crucial.	General Character: Building Placement: Frontage Types: Typical Building Height: Type of Civic Space: Type of Thoroughfare:	Naturalistic planting, large lawns, rural roads, limited pedestrian activity, no city services, rural sprawl Large and variable front and side yards Yards, fences, naturalistic tree plantings 1-to-2-story Parks, Greenways Local and Collector Streets
S-4 SINGLE FAMILY SUBDIVISIONS		S-4 Single Family Subdivisions consist predominantly of single-family detached housing pods on small, medium or large lots, segregated by market segment. Medium front Setbacks yield front lawns and relatively large backyard.	General Character: Building Placement: Frontage Types: Typical Building Height: Type of Civic Space: Type of Thoroughfare:	Denditric street network, cul-de-sac and collector roads, Snouthouses and Dingbats, occasional pedestrian activity, lack of block structure Variable front and side Setbacks Yards, fences, lawns and landscaping 1-to-2-story, some 3-story Leftover open space, usually in backyards Local and Collector Streets
S-5 MULTI FAMILY SUBDIVISIONS		S-5 Multifamily Subdivisions consist of attached and detached multi-family housing. Townhouses without towns, or auto-dependent apartment or condo clusters.	General Character: Building Placement: Frontage Types: Typical Building Height: Type of Civic Space: Type of Thoroughfare:	Denditric street network, pedestrian unfriendly, underutilized parking lots, limited connectivity, "train wreck" character Scattered or clustered, parking dominates Parking lot, disconnected greens 1-story Parking lot Local and Collector Streets
S-6 SHOPPING CENTERS & STRIPS		S-6 Shopping Centers consist of large retail stores, offering wide choices of goods and services. Includes strip retail, big box retail and fast-food and/or gas station outparcels.	General Character: Building Placement: Frontage Types: Typical Building Height: Type of Civic Space: Type of Thoroughfare:	Traffic congestion, pedestrian unfriendly, underutilized parking lots, limited connectivity Aligned or scattered, deeply set back behind parking Parking lot 1- to 3-story Parking lot Collector and Arterial Streets
S-7 BUSINESS PARKS & SUB. CAMPUSES		S-7 Business Parks and Suburban Campuses consist of clusters of buildings dedicated exclusively to commercial uses from Class A offices towarehouses. Isolated institutional campuses such as colleges and hospitals may also fall into this category.	General Character: Building Placement: Frontage Types: Typical Building Height: Type of Civic Space: Type of Thoroughfare:	Homogenous, auto-dependent, limited connectivity, lack of relationship between building and street Scattered Lawn 1-to-multistory Parking lot, Green, atrium Collector and Arterial Streets, private drives
S-8 MALLS		S-8 Malls consist of large structures, enclosed or open air, dedicated to large concentrations of retail.	General Character: Building Placement: Frontage Types: Typical Building Height: Type of Civic Space: Type of Thoroughfare:	Large structures surrounded by parking, near Arterials & interchanges Random Parking lot 1-to-3-story Parking lot, atrium Collector and Arterial Streets, beltways
S-9 EDGE CITIES		S-9 Edge Cities consist of agglomerations of segregated high intensity commercial, residential, and lodging uses that are statistical but not functional equivalents of the urban core of a city.	General Character: Building Placement: Frontage Types: Typical Building Height: Type of Civic Space: Type of Thoroughfare:	Close to Arterials and highway interchanges, pedestrian unfriendly, limited connectivity, high density/intensity, high rise development Random, free standing Parking lot 1-to-multistorey Parking lot, open plaza Collector and Arterial Streets, private drives, beltways

SMART CODE VERSION 9.2 SC5

Municipality

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

TABLE SR3: SPRAWL TYPES REPAIRED TO COMMUNITY UNITS / WALKABLE PLACE TYPES

The Sprawl Types cannot be repaired in isolation as separate elements, but always in the context of Community Units/Walkable Place Types (WPTs). Single-use and typologically monocultural areas need to be balanced by other required types and uses in order to form the full range of T-zones appropriate to Community Units/WPTs.

The translations on this table are not necessarily one-toone correspondences. They indicate the Transect Zones that either help complete the Sprawl Type or would (along with the Sprawl Type) comprise the Community Units/ WPTs listed at right, depending on scale. For the form of Community Units, see Article 2, Article 3 and Article 4. For the form of Transect Zone elements, see Article 5.

SCA6

SMART CODE MANUAL VERSION 9.2

TABLE SR3: Sprawl Types Repaired. This table provides descriptions of the necessary tools to repair the Sprawl Types into Community Units/ Walkable Place Types.

Walkable Place Types.								
SPRAWL TYPES	T1 T2	T3	T4	T5	T6	TECHNIQUES	INCENTIVES/ BENEFITS	COMMUNITY UNITS
S-3 RURAL SUBDIVISIONS	50% min.	10 - 30 %	20 - 40%			Cluster at intersections through TDR, modified PDRs, purchase of Conservation Easement Concentrate infrastructure Create a rural Green Introduce Live-Works, farmers market	Deferred taxation; higher Density; permitting By Right Packaged Sewer Service within 1/4 square mile Hamlet growing into a village	CLD CLD
S-4 SINGLE FAMILY SUBDIVISIONS	No Minimum	10 - 30 %	30 - 60 %	10 - 30 %		Introduce new building types and Retail/Office/Lodging/Civic uses Connect Thoroughfares Repair Thoroughfares; add pedestrian and bike Paths Define and make usable Open and Civic Space	Higher Density; additions; Out-buildings; permitting By Right Infrastructure incentives Transit potential Neighborhood/Town Square	ONT
S-5 MULTI FAMILY SUBDIVISIONS	No Minimum	10 - 30 %	30 - 60 %	10 - 30 %		Introduce new building types and Retail/Office/Lodging/Civic uses Connect Thoroughfares Rationalize parking; add garages Repair Thoroughfares; add pedestrian and bike Paths Define and make usable Open and Civic Space	Additional development potential; permitting By Right Incentives for infrastructure Incentives for garages Transit potential Community gathering places	ONT OWN
S-6 SHOPPING CENTERS & STRIPS			10 - 30 %	10 - 30 %	40 - 80 %	Introduce new building types and Residential/Office/Lodging/Civic uses Connect Thoroughfares; add Streets in front of stores Rationalize parking; Add garages Define and make usable Open and Civic Space	Additional development potential; permitting By Right; TIFs, CDBG Incentives for infrastructure Incentives for garages Transit potential Community gathering places	RCD/TND
S-7 BUSINESS PARKS & SUB. CAMPUSES CAMPUSES			10 - 30 %	10 - 30 %	40 - 80 %	Introduce new building types and Residential/Office/Lodging/Civic uses Connect Thoroughfares; create urban Blocks Rationalize parking; add garages Define and make usable Open and Civic Space	Additional development potential; permitting By Right; TIFs, CDBG Incentives for infrastructure Incentives for garages Transit potential Community gathering places	RCD / TND
S-8 MALLS			10 - 30 %	10 - 30 %	40 - 80 %	Introduce new building types and Residential/Office/Lodging/Civic uses Connect Thoroughfares; create urban Blocks Rationalize parking; add garages Define and make usable Open and Civic Space	Additional development potential; permitting by Right; TIFs, CDBG Incentives for infrastructure Incentives for garages Transit potential Community gathering places	RCD RCD
S-9 EDGE CITIES			10 - 30 %	10 - 30 %	40 - 80 %	Introduce new building types and Residential/Office/Lodging/Civic uses Connect Thoroughfares; create urban Blocks Rationalize parking; add garages Repair Thoroughfares; resolve complicated interchanges and intersections into urban types Define and make useable Open and Civic Space	Additional development potential; permitting By Right; TIFs, CDBG Incentives for infrastructure Incentives for garages Opening additional real estate for development. Transit potential Community gathering places	RCD RCD

SMART CODE VERSION 9.2 SC7

Municipality

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

TABLE SR4: SPRAWL THOROUGHFARE TYPES REPAIRED TO COMPLETE STREETS

The repair of thoroughfares is a necessary step in the overall retrofit strategy. The post-war suburban system of thoroughfares is simplistic and dendritic, covering a very limited and over-engineered palette of types. These include: the Highway, the Arterial, the Collector, the Local and the Cul-de-sac.

Table SR4 shows typical techniques for retrofitting basic suburban thoroughfare types designed only for fast and efficient movement of cars and maximum capacity, into Complete Streets of multi-modal use, achieving public spaces of specific character.

The shown vehicular lane and parking assemblies are illustrative only. Existing suburban thoroughfares need to be repaired and calibrated locally according to the principles of context sensitive design. (See the ITE/CNU Manual.)

In addition, their public frontages should be assembled along the Transect continuum and according to the needs of local communities. The limited range of suburban types will be expanded to a full assortment of Complete Streets, from very rural types to very urban ones. For Vehicular Lane Dimensions and Target Speeds, see Table 3A & Table 3B. For Public Frontages and Thoroughfare Assemblies, see Table 4A, Table 4B and Module Tables 4C. For recommendations with regard to bicycle accommodations, see the Bicycle SmartCode Module.

SCA8

SMART CODE MANUAL VERSION 9.2

TABLE SR4: Thoroughfare Types Repaired. This table provides descriptions of the necessary tools to repair the Sprawl Thoroughfare Types into Complete Streets.

	SPRAWL TYPES	TECHNIQUES		COMPLETE STREETS				
FREEWAY		Reduce number of lanes Reduce Curb Radii Reduce lane width Introduce Access Lanes Introduce parallel parking Introduce transit - light rail or Bus Rapid Transit Introduce separated bikeways Assemble Public Frontages according to T-zones	PARKWAY	T2 T3	BOULEVARD	T4 T5		
ARTERIAL		Reduce Curb Radii Reduce lane widths Introduce Access Lanes Introduce parallel parking Introduce medians Introduce transit Introduce separated bikeways Assemble Public Frontages according to T-zones	BOULEVARD	T4 T5 T6	AVENUE	T5 T6		
COLLECTOR	,,,,,,	Reduce number of lanes Reduce Curb Radii Reduce lane width Introduce parallel or diagonal parking Introduce medians Assemble Public Frontages according to T-zones	AVENUE	T4 T5	COMMERCIAL STREET	T5 T6		
LOCAL		Reduce Curb Radii Reduce lane widths Introduce parallel parking Eliminate turning lane Assemble Public Frontages according to T-zones	ROAD / STREET	T3 T4	STREET	T5		
CUL-DE-SAC		Introduce a green Civic Space Introduce pedestrian and bicycle Paths Introduce new Thoroughfare connections where possible Assemble Public Frontages according to T-zones	CLOSE	T3	ROAD / STREET	T3 T4		

DRA

Municipality

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

TABLE SR5: SPRAWL INTERSECTION TYPES REPAIRED TO COMPLETE INTERSECTIONS

The repair of suburban intersections will be effective when combined with the simultaneous repair of the corresponding thoroughfares. The goal is to liberate substantial areas of real estate, which currently are misallocated to the single function of handling fast-moving vehicular traffic. In a varied urban environment, intersections can become important landmark opportunities as well as traffic calming devices. Without stopping the flow of traffic, a variety of devices can be used to slow it down, which will be beneficial to pedestrians and bicyclists and even to drivers and their passengers, as car accidents will be reduced. Such devices include traffic circles, roundabouts, change of paving, tightened geometries, and so forth.

Table SR5 shows typical techniques for retrofitting basic suburban intersection types, designed only for fast and efficient movement of cars and maximum capacity, into Complete Intersections of multi-modal use, achieving public spaces of specific character.

The shown vehicular lane and parking assemblies are illustrative only. Existing suburban intersections should be repaired and calibrated locally according to the principles of context sensitive design. In addition, the public frontages should be assembled along the Transect continuum and according to the needs of local communities. The limited range of suburban types will be expanded to the full assortment of Complete Intersections, from very rural types to very urban ones.

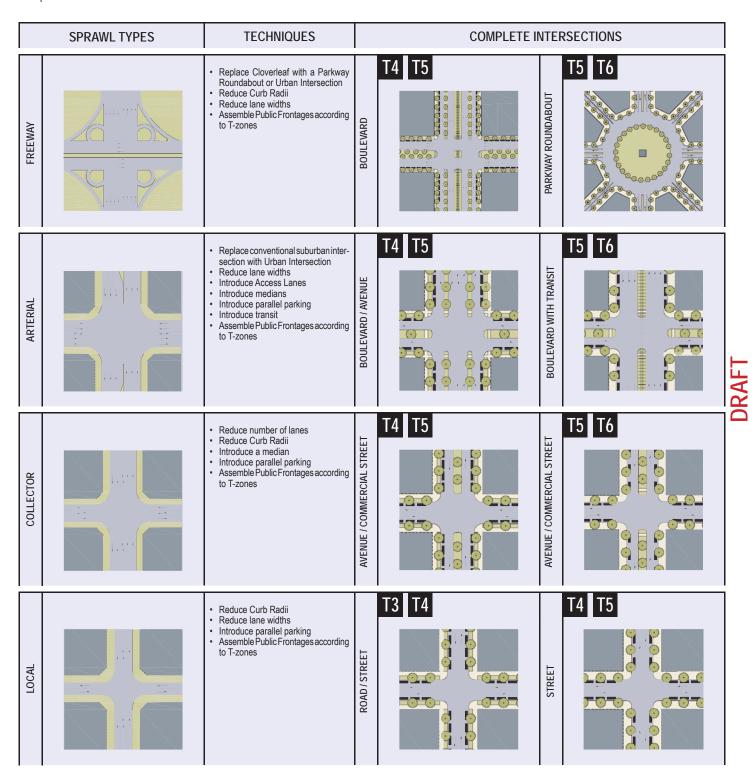
SCA10

SMARTCODE MANUAL VERSION 9.2

Municipalit

Author: Duany Plater-Zyberk & Co. Draft: June 8, 2009

TABLE SR5: Sprawl Intersection Types. This table provides descriptions of the necessary tools to repair the Sprawl Intersection Types into Complete Intersections.



SMARTCODE VERSION 9.2

Municipality

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

TABLE SR6: SPRAWL BUILDING TYPES REPAIRED INTO NEIGHBORHOOD BUILDING TYPES

The repair of Sprawl Building Types shows techniques for transforming smaller single-use areas and even single structures to prepare them to become part of a future urban fabric within the Transect context. Some building types lend themselves to repair and retrofit, while others are very difficult to modify or not worth the expense; those may require either masking with liners or selective demolition.

Repair strategies shown in Table SR6 include: the transformation of the ubiquitous McMansions into senior housing, student housing, or apartments; small scale infill for individual homeowners using their oversized front and back yards for expansions, family-run businesses or rental outbuildings; drive-through building retrofit; gas station reversal; liner buildings of parking lots and structures; conversion of parking garages into lofts or office buildings; big box redevelopment into recycling centers; infill of a religious institution's parking lot with senior housing, and others.

To allow some of the retrofitted types in the T-3 Zone, calibrators must change Table 10 General Function and Table 12 Specific Use, and possibly Table 9 Building Disposition. Alternatively, the area may be zoned T-4, but setbacks, lot widths, frontage buildout, etc. may have to be adjusted on Table 14 and Table 15B. A sub-zone should also be considered.

SCA12

SMART CODE MANUAL VERSION 9.2

Municipality

Author: Duany Plater-Zyberk & Co. Draft: June 8, 2009

TABLE SR6: Sprawl Building Types Repaired. This table provides descriptions of the necessary tools to repair the Sprawl Building Types into Neighborhood Building Types.

SF	PRAWL BUILDING TYPES	TECHNIQUES		REPAIRED B	UILDIN	NG TYPES	
McMANSION		Subdivide mansion into multiple bedrooms Design a common living/ dining/ entertainment area Subdivide mansion into three or more flats Organize parking behind the building	SENIOR / STUDENT HOUSING	T3 T4	APARTMENTS	T3 T4	
FRONT-LOADED HOUSE		Subdivide the Lot into a duplex Add to the house in the front Setback, creating Live-Work, garage, family room, bedroom, etc.	DUPLEX	T3 T4	LIVE-WORK	T3 T4	
DRIVE-THRU		Add liners in front of building to create a main street Keep drive-thru Replace buildings with perimeter block	LINERS / MAIN STREET	T4 T5	NEIGHBORHOOD STORES	T5 T6	DBAE
GAS STATION		Keep gas station and pumps and build a corner store at the intersection Eliminate gas station; keep the pumps and increase them, plus build a corner store on both sides of intersection	CORNER STORE	T4	CORNER STORES	T4 T5	

SMART CODE VERSION 9.2

SMARTCODE ANNOTATED *Municipality*

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

TABLE SR6 (CONTINUED):
SPRAWL BUILDING TYPES REPAIRED
INTO COMMUNITY BUILDING TYPES
(See previous page)

SCA14 SMARTCODE MANUAL VERSION 9.2

TABLE SR6 (Continued): Sprawl Building Types Repaired. This table provides descriptions of the necessary tools to repair the Sprawl Building Types into Neighborhood Building Types.

	SPRAWL TYPES	TECHNIQUES		REPAIRED TYPES			
PARKING GARAGE		Wrap the garage with a Liner Building Convert the garage into lofts or Offices Create a street Reorganize parking; create on- street parking	LINERS	T5 T6	LOFTS / OFFICES	T5 T6	
STRIP CENTER		Convert the strip center into a recycling center Convert the building into Offices with incubator businesses in the front	RECYCLING CENTER	T4 T5	LINERS	T4 T5	
BIG BOX		Create a main street terminating on building Convert building into Civic, Office, industrial Add lined or underground garages along the main street	LINERS	T5 T6	CIVIC INSTITUTION	T5 T6	
RELIGIOUS BUILDING		Infill the parking lot in front of religious building with Senior Courtyard Housing Create a main street with incubator businesses terminating on building	SENIOR HOUSING CAMPUS	T4	CIVIC GREEN AND LINERS	T4 T5	

SMART CODE VERSION 9.2 SC15