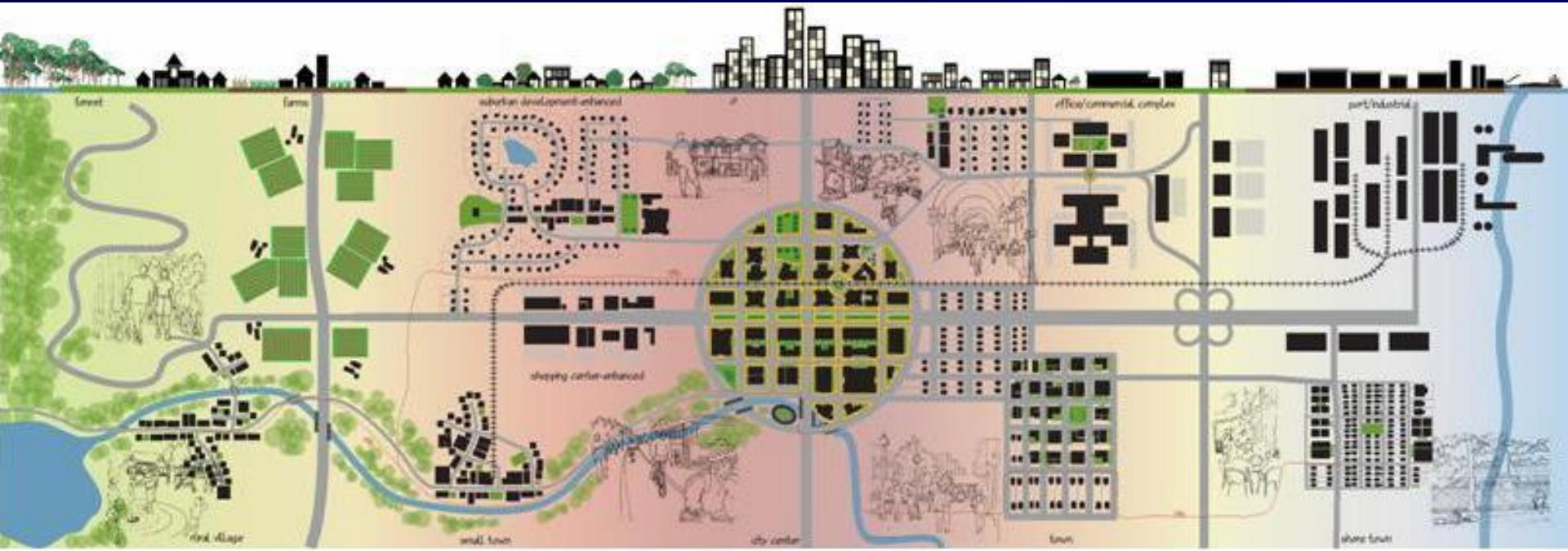


# Mobility & Community Form

A Guide to Linking the  
Circulation and Land Use Elements  
of the Municipal Master Plan



**The  
Timeless Way of  
Building**



**Christopher Alexander**

**A Pattern Language**

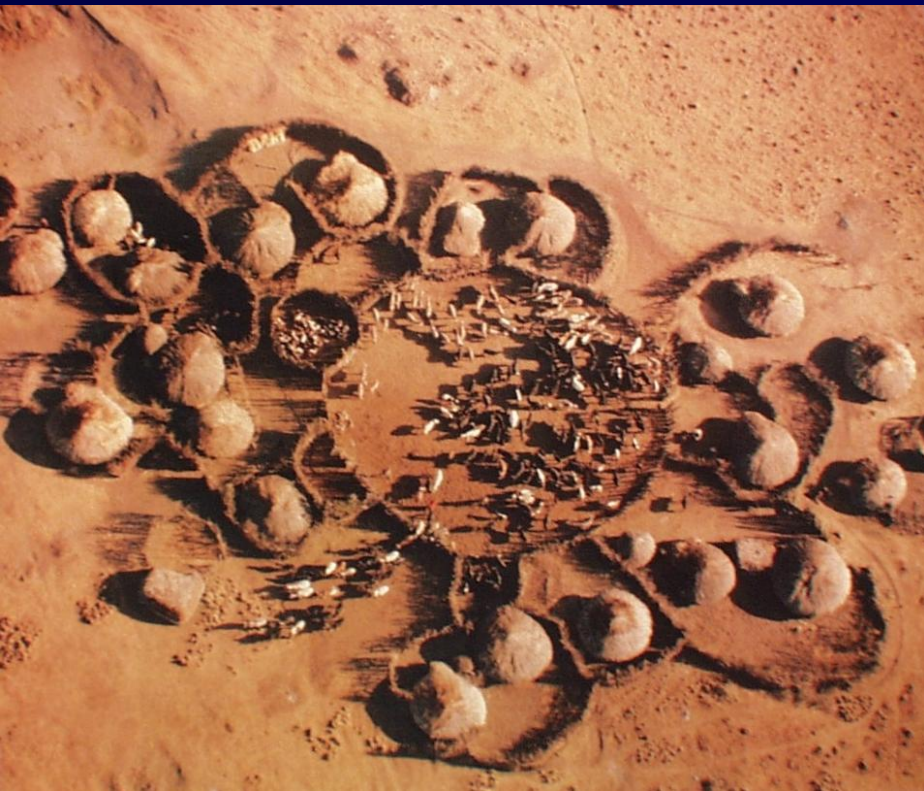
**Towns · Buildings · Construction**



**Christopher Alexander**  
**Sara Ishikawa · Murray Silverstein**  
**WITH**  
**Max Jacobson · Ingrid Fiksdahl-King**  
**Shlomo Angel**



“A building or town is given its character, essentially, by those events which keep on happening there most often.” *Christopher Alexander*





“A building or town is given its character, essentially, by those events which keep on happening there most often.” *Christopher Alexander*

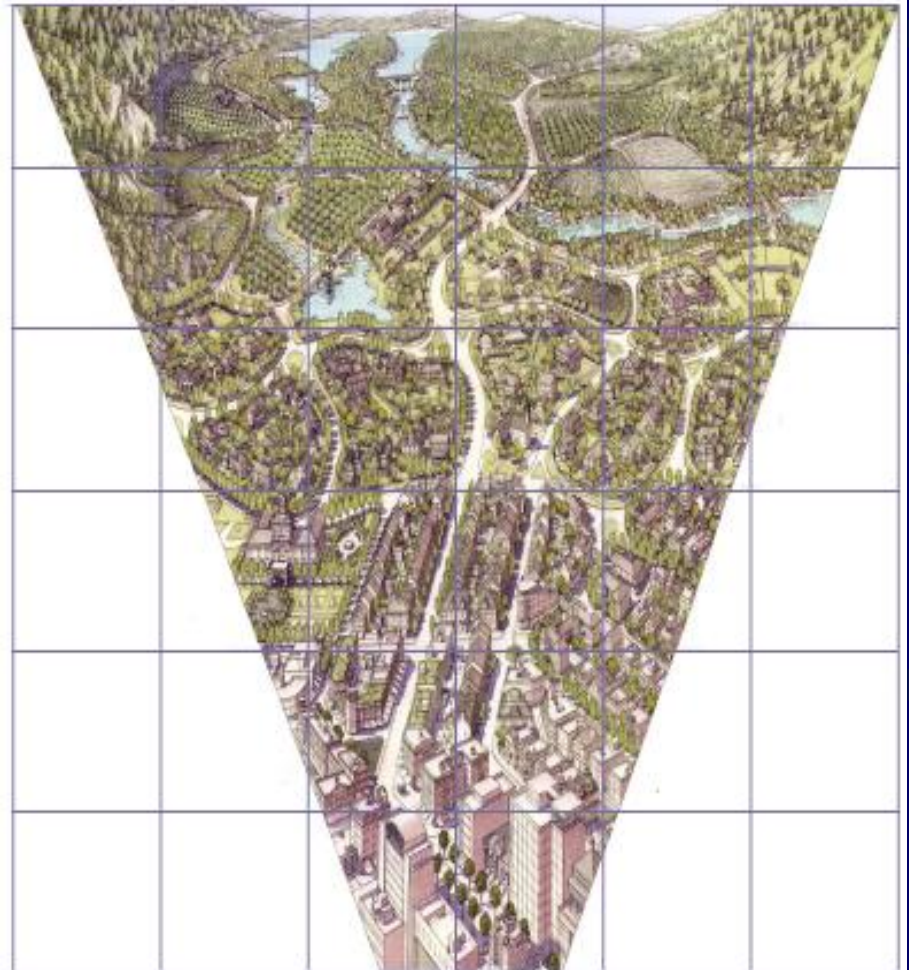






# SMARTCODE

A COMPREHENSIVE FORM-BASED PLANNING ORDINANCE



There is a quality even meaner than outright ugliness or disorder, and this meaner quality is the dishonest mask of pretended order, achieved by ignoring or suppressing the real order that is struggling to exist and to be served.”

Jane Jacobs





**There is a quality even meaner than outright ugliness or disorder, and this meaner quality is the dishonest mask of pretended order, achieved by ignoring or suppressing the real order that is struggling to exist and to be served.”**

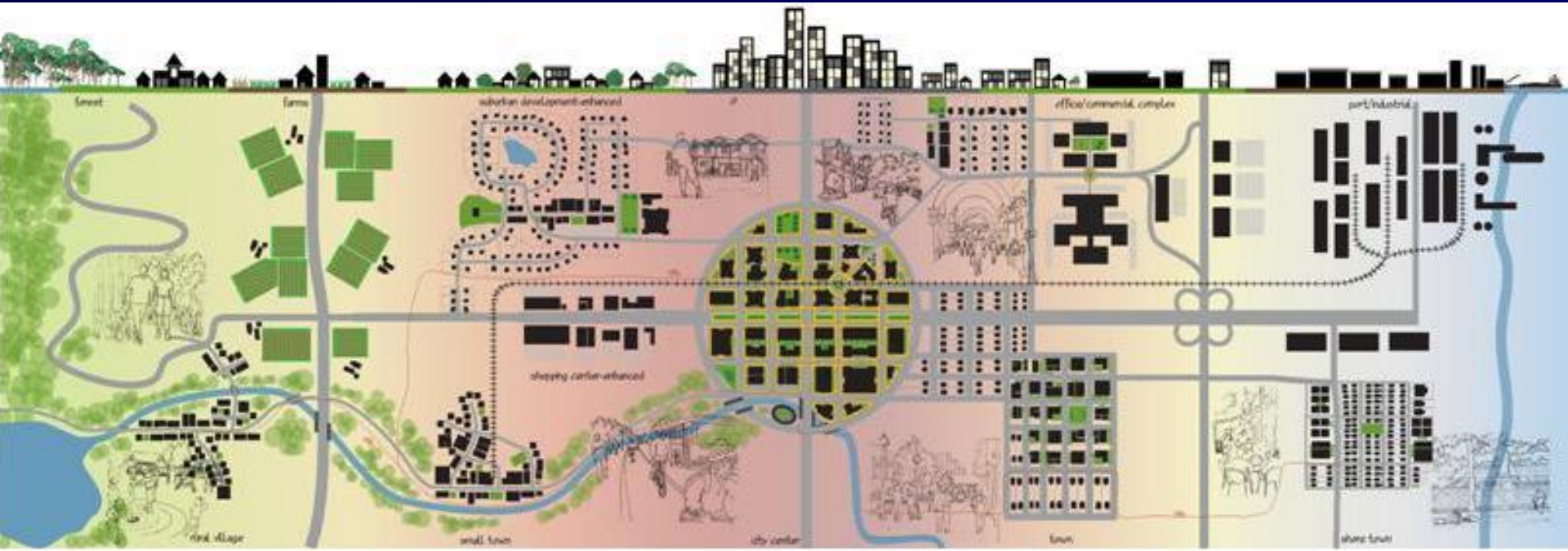




**IF:** Form follows Function

**AND:** Function is derived from Activity Patterns

**THEN:** Activity Patterns determine Form



Rural

Low Density

Town

Dense Suburb

City

Center



Corridor



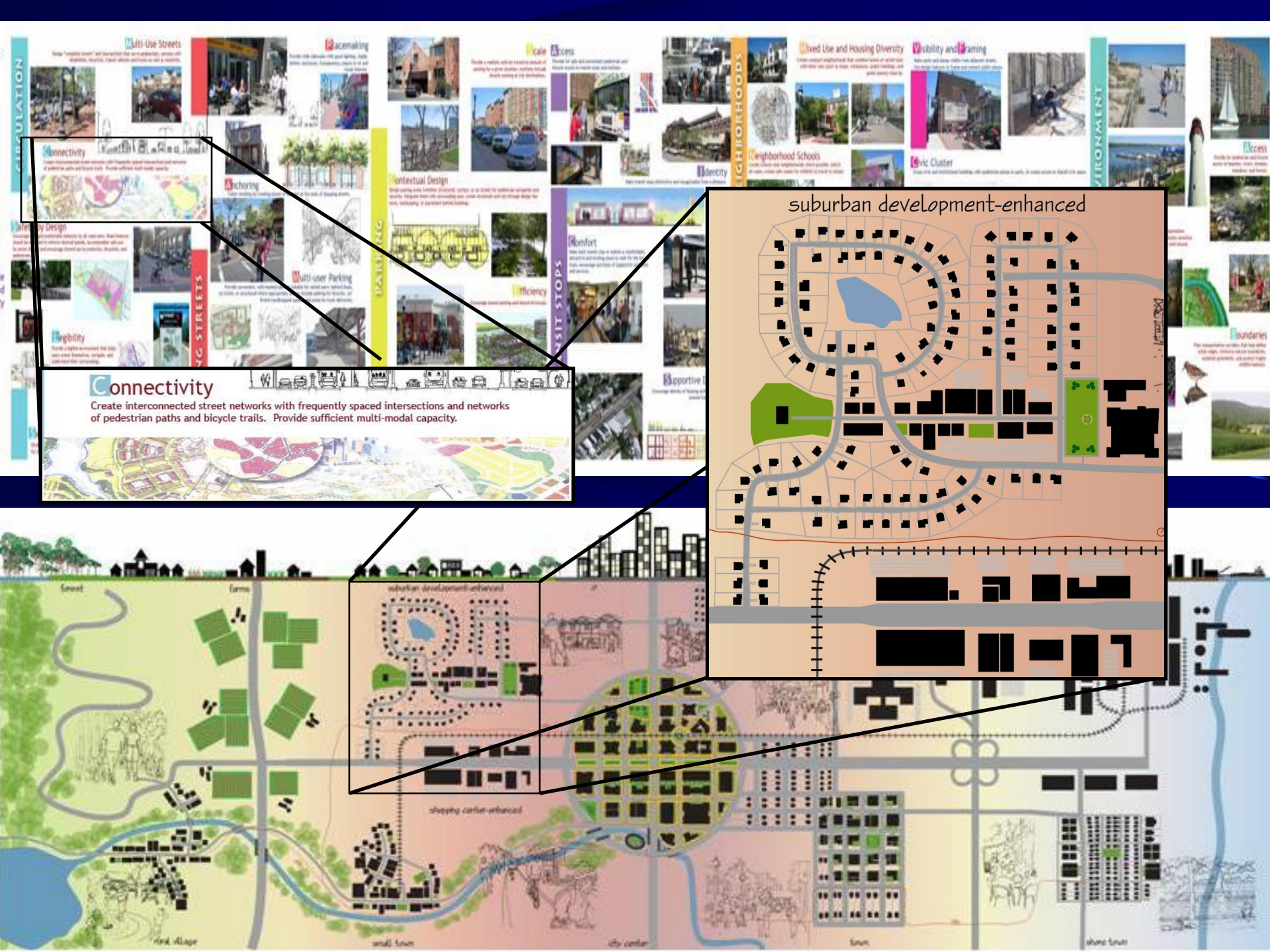
Waterfront





# Pattern Groups:

- Circulation
- Shopping Streets
- Parking
- Transit Stops
- Neighborhoods
- Public Places
- Natural Environment



CIRCULATION

**Connectivity**

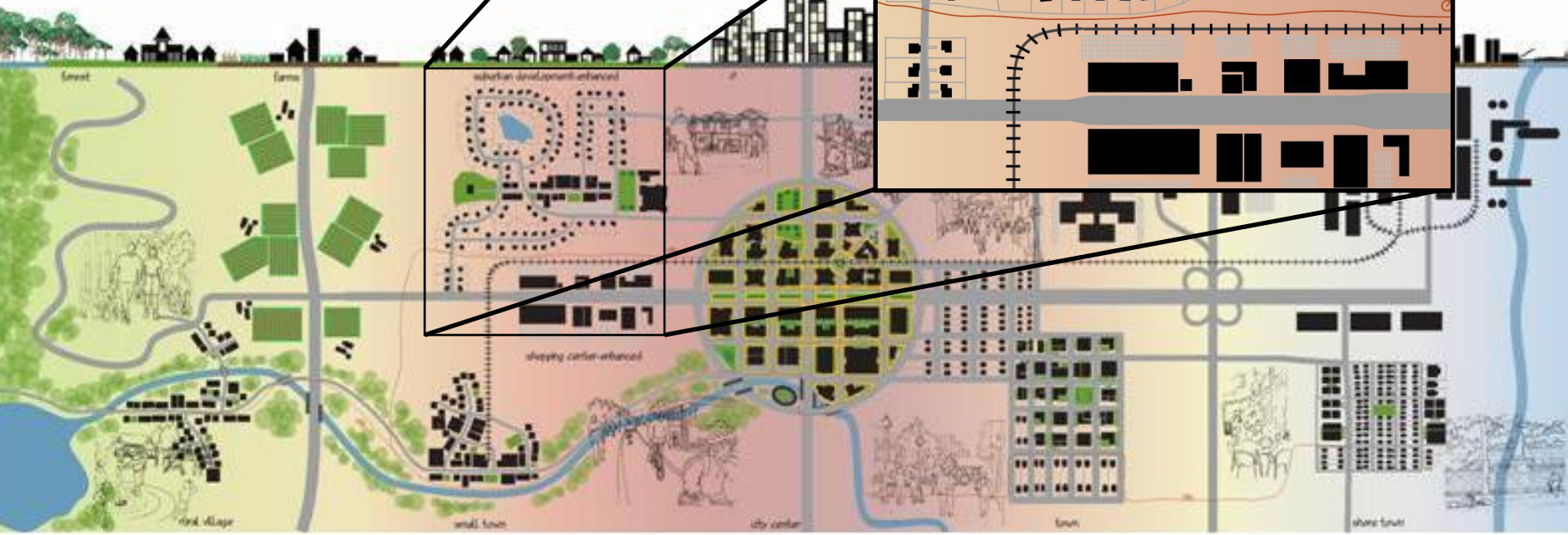
Create interconnected street networks with frequently spaced intersections and networks of pedestrian paths and bicycle trails. Provide sufficient multi-modal capacity.

**Connectivity**

Create interconnected street networks with frequently spaced intersections and networks of pedestrian paths and bicycle trails. Provide sufficient multi-modal capacity.



shopping center-enhanced





# Circulation Principles:

## Connectivity

Create interconnected street networks with frequently spaced intersections and interconnected pedestrian pathways and bicycle networks.







# Circulation Principles:

## Multi-Use Streets

Design “complete streets” and intersections that serve pedestrians, persons with disabilities, bicyclists, transit vehicles, and trucks as well as motorists.





FLINER

DONALD & FLINER

DONALD & FLINER

SAVANNAH BOYS

HOTEL VALENCIA

Burke Williams  
beyond the

Tommy Hilf  
PURE FLYING





FIRE LANE

AVEDA

vision of  
beaut



# How do we get there?



# Community Visioning

How would we like to live  
in the future?





# Community Visioning

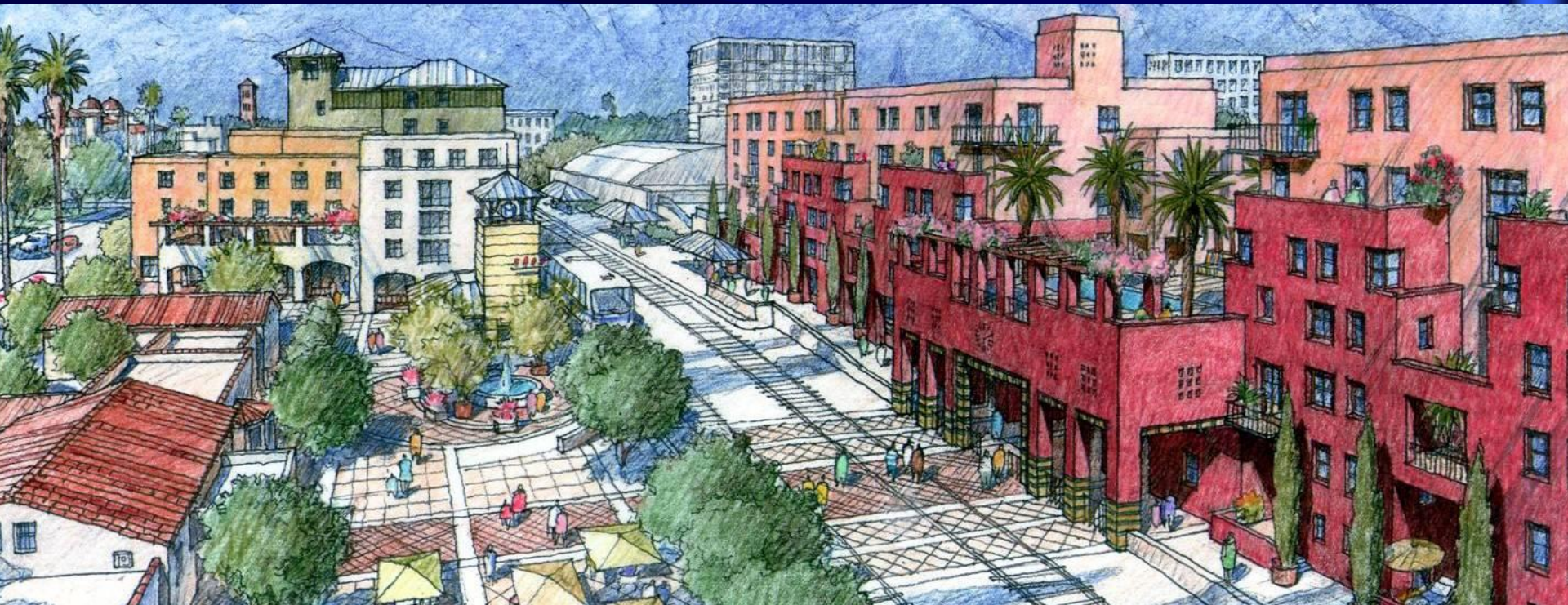
What activity patterns should be encouraged in our community?





# Community Visioning

What community forms & features  
Will help support those activities?





# Community Visioning

How should our transportation system be formed to support desired activities and community form?



# Implementing The Vision

- “Mobility and Community Form”  
Element of the Master Plan
- Form-Based Development Codes
- Infrastructure Planning
- Regional Context
- Working With State Partners



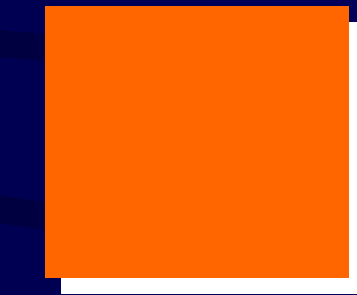
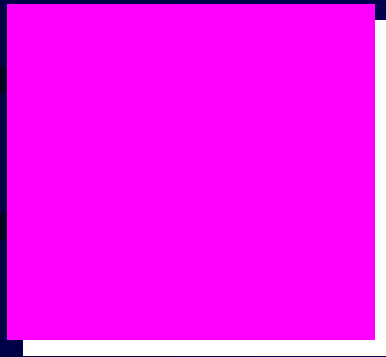
# Implementing The Vision

Replace the traditional Circulation and Land Use Elements of the Master Plan with a combined “*Mobility and Community Form Element*”.



# What is an MCF?

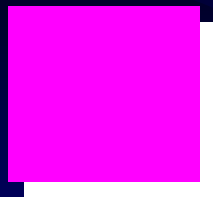
## Conventional Land Use Element



**Use**

**Management**

**Form**

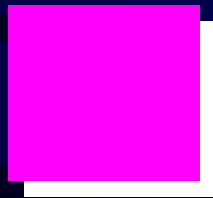


## Conventional Circulation Element



# What is an MCFE?

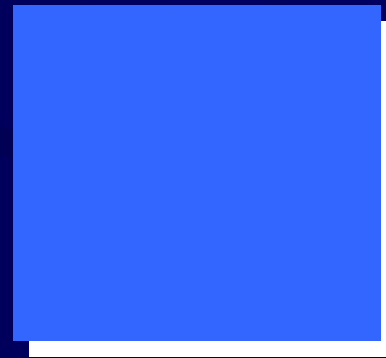
**Mobility & Community Form Element**



**Use**



**Management**



**Form**

# What is an MCF?

## FRONTAGE KEY for BUILDINGS

The frontage is the interface between the street and the building.

The frontage is the semi-private space between the street edge (property line) and the front wall of a building. The City regulates the form, size and quality of frontages by specifying a range of common frontage types for each property. This Frontage Code can be used to find the range of Frontage Types allowed for new development on any given property. Frontage Types are assigned independently to Streetscape Types and Land Use Types, which are mapped for each property and each property line. This allows for differing arrangements of the three types in different parts of the city. To use this code, find your property on the Streetscape and Land Use Plans, and then follow the 3 steps below.

### STREETSCAPE

- PUBLIC REALM TRANSECT -

Plan Colors	Entry Boulevards	Crow River Lanes	Big Box Lanes	Garden Streets	Downtown District Streets	Civic Core Plaza Drives	Main Street Alleys	Main Street

**step 1**  
Using the Map and this table, find the Frontages allowed for the Streetscape that your property is in.

	Entry Boulevards	Crow River Lanes	Big Box Lanes	Garden Streets	Downtown District Streets	Civic Core Plaza Drives	Main Street Alleys	Main Street
F1 STOREFRONT								
F2 ARCADE								
F3 DOORWAY								
F4 DOOR YARD								
F5 PORCH YARD								
F6 COURTYARD								
F7 COMMON LAWN								
F8 ALLEY								
F9 GARAGE ENTRY								
F10 PARKING YARD								
F11 SERVICE YARD								
F12 LOBBY ENTRY								

Entry (Address) Spacing	36'-72"	36'-72"	36'-72"	36'-72"	24'-72"	24'-48"	24'-48"	24'-48"
-------------------------	---------	---------	---------	---------	---------	---------	---------	---------

**step 3**

Find the range of Frontage Type(s) allowed for your property by cross-referencing the common Frontages allowed by both Step 1 and Step 2. Then refer to Frontage Design Guidelines for specific requirements.

### LAND USE

- PRIVATE REALM TRANSECT -

Plan Colors	Main Street Commercial	General Commercial	Transitional Commercial	High Density Residential	Medium Density Residential	Industrial	Parking	Civic/Institutional	Park/Open Space

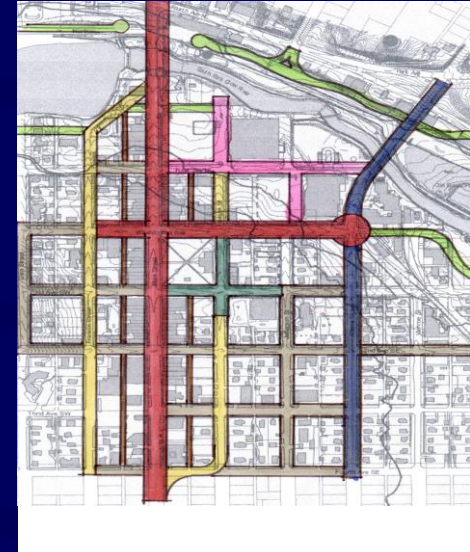
**step 2**  
Find your Land Use Type using the Land Use Map, then use this table to find allowed Frontage Types.

	Main Street Commercial	General Commercial	Transitional Commercial	High Density Residential	Medium Density Residential	Industrial	Parking	Civic/Institutional	Park/Open Space
F1 STOREFRONT									
F2 ARCADE									
F3 DOORWAY									
F4 DOOR YARD									
F5 PORCH YARD									
F6 COURTYARD									
F7 COMMON LAWN									
F8 ALLEY									
F9 GARAGE ENTRY									
F10 PARKING YARD									
F11 SERVICE YARD									
F12 LOBBY ENTRY									

15'-40'	15'-40'	15'-40'	15'-75'	15'-40'	15'-30'	n.a.	per project	n.a.	Height Limit
---------	---------	---------	---------	---------	---------	------	-------------	------	--------------

### VERTICAL USE ZONES

live office studio	live office studio	live office studio	live gather	live	office	n.a.	office gather service	n.a.	Upper Level Uses
service retail	live office studio	live office studio	live office studio	live office studio	office work	parking	office gather service	green	Ground Level Uses
parking service	parking service	parking service	parking service	live parking service	n.a.	n.a.	parking service	n.a.	Below Grade Level Uses





# What is an MCF?

## TRANSPORTATION, LAND USE AND DESIGN

### NARROWING THE STREET



Stripe Lanes



Parking



Rebuild Street



Bulbout

### DEFLECTING THE VEHICLE PATH VERTICALLY



Speed Hump



Speed Table



Textured Crosswalk



Platform Intersection

### DEFLECTING THE VEHICLE PATH HORIZONTALLY



Chicane



Modified Intersection



Knockdown



Roundabout

### Traffic Calming

Given that reductions in vehicular speed do not necessarily dictate lower capacities, traffic-calming programs are becoming very commonplace as a means to re-create safe, slow neighborhood and commercial streets. Generally, the purpose of traffic calming is to control the speed of traffic while not restricting mobility.

Traffic calming is a comprehensive set of design elements that reinforce the appropriate driving behavior. The appropriate traffic calming techniques and roadway design speed are dependent on the context. Generally, traffic calming techniques generally fall into three categories: narrowing the street; deflecting the vehicle path vertically; and deflecting the vehicle path horizontally. In addition to these changes to the cartway, changes to the pedestrian realm and to the visual field can also slow drivers. 'Visual Friction', elements that create a sense of enclosure or elements that break up views, serve to slow drivers. Landscaping and building placement can be used in conjunction with, or independent of, physical changes to the cartway to slow travel speeds.

The purpose of traffic calming is to retrofit existing streets for slower traffic speeds. Where new streets are to be built, however, they can be planned for slow speeds at the outset. The general principles are the same as for traffic calming, with an emphasis on narrow street widths.











### Access Management

Access management is one of the tools recommended in this handbook to manage transportation and land use. Access management is defined as a process that provides or manages access between development and surrounding roadways. As development occurs along highly traveled commercial roadways, certain policies and guidelines need to be in place to manage access within the corridor.

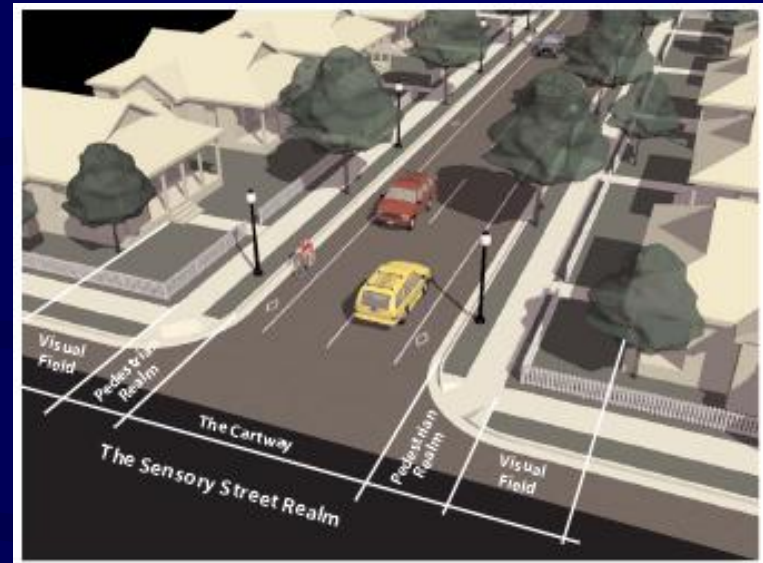
### What is Traffic Calming?

*Traffic calming is the combination of mainly physical measures that reduce the negative effects of motor vehicle use, alter driver behavior and improve conditions for non-motorized street users.*

Source: Institute of Transportation Engineers

Landscaping	Median - wide	Median - narrow	R.O.W. Street Tree	Residential	Screening
<b>Tree Form</b>	Upright - Vase 	Columnar 	Rounded 	Pyramidal 	Evergreen - Pyramidal 
<b>Tree Names</b>	Zakusei "Acer" Chinese Elm Katsura Tree Common Hackberry American Elm (improved varieties)	Greigo "Karpis" Red Maple Pyramidal European Hornbeam Columnar Norway Maple "Fastigiat" American Linden	Freeman Maple Marshall's Seedless Ash Thornless Honeylocust Norway Maple Red Maple	European Linden Turkish Fir Red Oak Sugar Maple	White Spruce Colorado Spruce Norway Spruce Siberian Spruce Douglas Fir White Fir
<b>Tree Form</b>	Broad - Spreading 	"Flowering" - Columnar 	"Flowering" - Rounded 	"Flowering" - Ornamental 	Evergreen - Columnar 
<b>Tree Names</b>	White Oak London Planetree	"Velvet Pillar" Columnar Crabapple Columnar Sargent Cherry "Weeping" Canary Pear Ivory Silk Japanese Tree Lilac	Rugosa Spirea-Tree Columnar Tree Korean Elm Canary Pear Amur Maple	Crabapple Eastern Redbud Flowering Dogwood Kousa Dogwood Weeping King Hawthorn	Servicberry Arbutus "Petal" Columnar Juniper Eastern Redstart Pyramidal Juniper

TOWN OF EAST GREENBUSH ROUTE 9 AND 20 CORRIDOR MASTER PLAN



## Definitions

**Sensory Street Realm:** the space experienced by a motorist, bicyclist or pedestrian

**Cartway Realm:** the physical space devoted to vehicular and/or bicycle travel

**Pedestrian Realm:** area where pedestrian travel is a priority

**Visual Field:** private or public uses abutting the street

## Elements of the Cartway Realm

- Vehicular travel lanes
- Medians
- Bicycle Lanes
- Pavement type
- Parking
- Transit stops
- Traffic calming measures
- Pedestrian crossings
- Intersection design
- Gutter

## Elements of the Pedestrian Realm

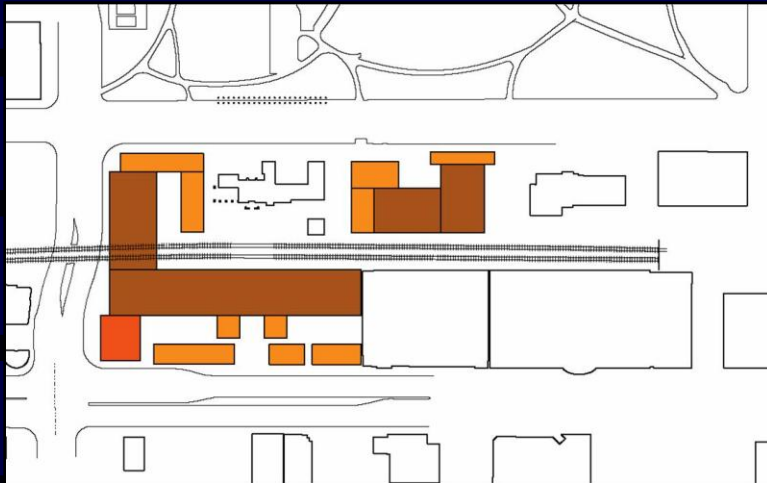
- Curb
- Landscaping
- Streetscaping
- Signs
- Lighting
- Sidewalks
- Transit amenities
- Utility
- Open drainage system

## Elements of the Visual Field

- Pedestrian access
- Vehicular access
- Setbacks
- Building massing
- Bicycle facilities
- Open spaces
- Signage
- Landscaping

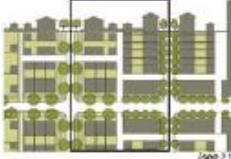


# What is an MCF?



**T5 URBAN CENTER ZONE**

**SMARTCODE SPECIFICATIONS**



**4.6 LOT OCCUPATION**

a. Lot Area	1,500 sq.ft. avg.
b. Lot Coverage	80% max.

**4.8 BUILDING DISPOSITION**

a. Edgtyard	prohibited
b. Sideyard	permitted
c. Rearyard	permitted
d. Courtyard	permitted

**4.16 BUILDING HEIGHT**

a. Principal Building	4 stories max., 2 min.
b. Outbuilding	2 stories max.

**4.7 BUILDING SETBACK**

a. Front	8 ft. min., 12 ft. max.
b. Side	0 ft. min., 24 ft. max.
c. Rear	3 ft.
d. Frontage of Setback	70% min.

**OUTBUILDING SETBACK**

a. Front	25 ft. min.
b. Side	0 ft. min.
c. Rear	3 ft. min.

**4.5 PRIVATE FRONTAGE TYPE (see 22)**

a. Concrete Lawn	prohibited
b. Porch & Fence	prohibited
c. Terrace or L.C.	permitted
d. Forecourt	permitted
e. Stoop	permitted
f. Shopfront & Awning	permitted
g. Gallery	permitted
h. Arcade	permitted

**ENCROACHMENT**

a. At Bldg. Frontage	0 ft. max. (+12 ft. min. setback)
b. At Bldg. Side	0 ft. max.
c. At Bldg. Rear	0 ft.

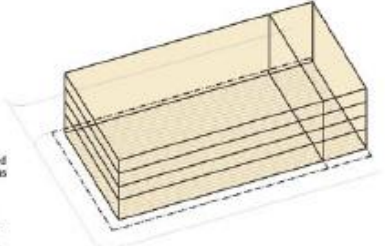
**4.11 BUILDING FUNCTION (see 24.15.26)**

a. Residential	open use
b. Lodging	open use
c. Office	open use
d. Retail	open use

**GRAPHIC SPECIFICATIONS**

**BUILDING HEIGHT**

- Building height shall be measured in number of stories, not including a raised basement, or uninhabited attic. Each story shall not to exceed 14 ft. clear.

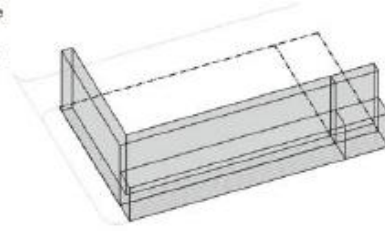


**BUILDING PLACEMENT**

- Buildings shall be placed within the areas hatched as shown in the diagram.
- Buildings shall have facades along frontage lines and elevations along lot lines.
- The facades and elevations of a building shall be distanced from the frontage and lot lines as shown in the diagram.

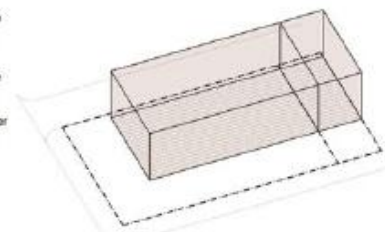
**BUILDING ELEMENTS**

- Scoops, bay windows, open porches and balconies may encroach into the setbacks as shown in the diagram.
- Arcades should overlap the sidewalk as shown in the diagram.



**PARKING PLACEMENT**

- Parking spaces shall be provided within the third layer as shown in the diagram.
- Covered parking shall be provided within the third layer as shown in the diagram.
- Trash containers shall remain within the third layer as shown in the diagram.



# Implementing The Vision

Form-based codes replace traditional Euclidian (use based) zoning with massing and design criteria based on the function of the adjacent public spaces.





# What is a Form-Based Code?

## 5.3.020 - Frontage Type Standards

- A. Purpose.** This Chapter identifies the frontage types allowed within the Specific Plan area, and for each type, provides a description, a statement as to the type's intent and design standards, to ensure that proposed development is consistent with the City's goals for building form, character, and quality within Downtown Neutral.
- B. Applicability.** The provisions of this Chapter work in combination with the underlying Zone as identified on the Regulating Plan.
- C. Allowable Frontage types by zone.** Each Zone identifies the Frontage Types allowed and refers to this Chapter for the appropriate information.
- D. Definitions and Standards**

- 1. Frontyard / Porch** - Frontyards are a common frontage associated with single family houses, where the facade is set back from the right of way with a front yard. An enclosing porch may also be approved to the facade. A fence or wall at the property line may be used to define the private space of the yard. The front yard may also be screened from the sidewalk, creating a small retaining wall at the property line with entry steps to the yard.

  - (1) A great variety of porch designs are possible, but none shall be less than 6 feet deep (6 feet, 11 feet wide (8 feet) and 10 feet tall (8 feet)).
  - (2) Porches may be at grade or raised to transition into the building. In no case shall porches be raised more than 3 feet from the adjacent grade.
  - (3) Fences defining the front yard shall not exceed 4 feet in height from the adjacent sidewalk.
- 2. Stoop / Dooryard** - Stoops are elevated entry porches, screens placed close to the frontage 3 or with the ground story elevated from the sidewalk, serving primarily for the front and front rooms. Dooryards are depressed entries to sub-basements, and are usually paired with a stoop. This type is suitable for ground-floor residential uses at short setbacks. This type may be interspersed with the shopfront frontage type. A porch or stoop shall not exceed more than 3 feet above the adjacent sidewalk.

  - (1) Stoops must correspond directly to the building entry(ies) and be at least 3 feet wide (perpendicular to or parallel with the adjacent sidewalk).
  - (2) Sub-basements accessed by a dooryard shall not be more than 6 feet below the adjacent sidewalk.
- 3. Forecourt** - Forecourts are a recessed court within a storefront, gallery or arcade frontage. The court is suitable for gardens, vehicle drop offs, and utility off-loading. This type should be used sparingly. This type should be deeper than 40 feet.

  - (1) In no case shall the forecourt be deeper than 40 feet.
  - (2) A 4-way fence or wall at the property line may be used to define the private space of the yard.
  - (3) The court may also be raised from the sidewalk, creating a small retaining wall at the property line with entry steps to the court, but should not exceed 3' above the sidewalk grade.
- 4. Storefront** - Storefronts are facades placed at or close to the right-of-way line, with the entrance at sidewalk grade. This type is conventional for retail frontage and is commonly equipped with cantilevered shed roof(s) or awning(s). Recessed storefronts are also acceptable. The absence of a raised ground floor precludes residential use on the ground floor facing the street, although such use is appropriate above.

  - (1) Shopfronts shall be between 10 feet and 16 feet tall, as measured from the adjacent sidewalk.
  - (2) The corresponding storefront(s) opening(s) along the primary frontage shall be at least 65% of the 1st floor wall area and not have opaque or reflective glazing.
- 5. Gallery** - Galleries are storefronts with an attached colonnade, that projects over the sidewalk and encroaches into the public right of way. This frontage type is ideal for retail use but only when the sidewalk is fully absorbed within the colonnade so that a pedestrian cannot bypass it.

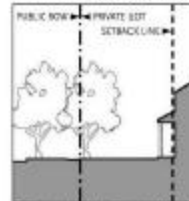
  - (1) Galleries shall be no less than 10 feet wide clear in all directions.
  - (2) Along primary frontages, the arcade shall correspond to storefront openings.
  - (3) Primary frontage storefront openings shall be at least 65% of the 1st floor wall area and not have opaque or reflective glazing.
- 6. Arcade** - Arcades are facades with an attached colonnade, that is covered by upper stories. This type is ideal for retail use, but only when the sidewalk is absorbed within the arcade so that a pedestrian cannot bypass it. For Building Code considerations, this frontage type cannot cover the public (i.e., as can the Gallery frontage type).

  - (1) Arcades shall be no less than 10 feet wide clear in all directions.
  - (2) Along primary frontages, the arcade shall correspond to storefront openings.
  - (3) Primary frontage storefront openings shall be at least 65% of the 1st floor wall area and not have opaque or reflective glazing.

### Frontyard / Porch



Frontyard / Porch : Diagram



Frontyard / Porch : Section Diagram



Frontyard / Porch : Illustrative Photo



Frontyard / Porch : Illustrative Photo

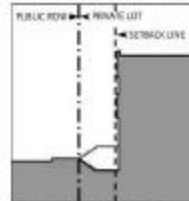


Frontyard / Porch : Illustrative Photo

### Stoop / Dooryard



Stoop / Dooryard : Diagram



Stoop / Dooryard : Section Diagram



Stoop / Dooryard : Illustrative Photo



Stoop / Dooryard : Illustrative Photo

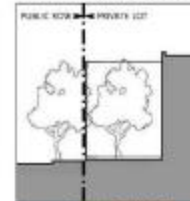


Stoop / Dooryard : Illustrative Photo

### Forecourt



Forecourt : Diagram



Forecourt : Section Diagram



Forecourt : Illustrative Photo



Forecourt : Illustrative Photo

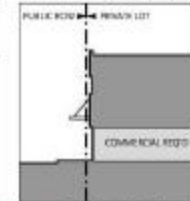


Forecourt : Illustrative Photo

### Storefront



Storefront : Diagram



Storefront : Section Diagram



Storefront : Illustrative Photo



Storefront : Illustrative Photo

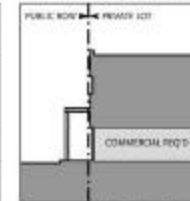


Storefront : Illustrative Photo

### Gallery



Gallery : Diagram



Gallery : Section Diagram



Gallery : Illustrative Photo



Gallery : Illustrative Photo

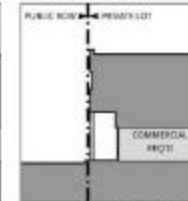


Gallery : Illustrative Photo

### Arcade



Arcade : Diagram



Arcade : Section Diagram



Arcade : Illustrative Photo

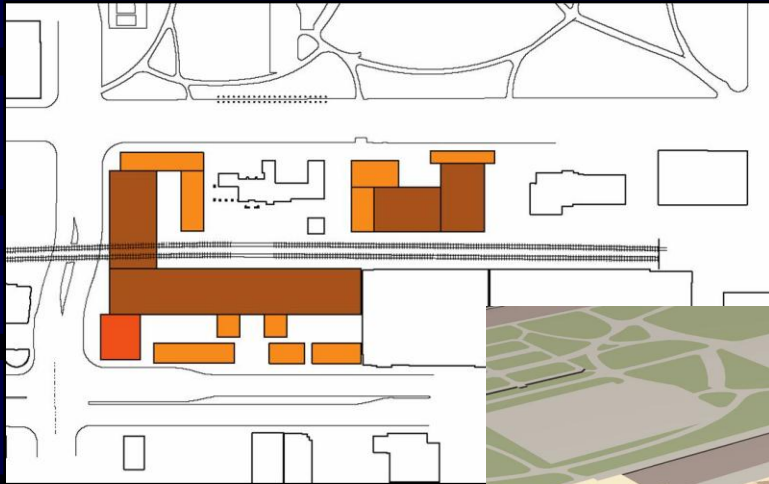


Arcade : Illustrative Photo



Arcade : Illustrative Photo

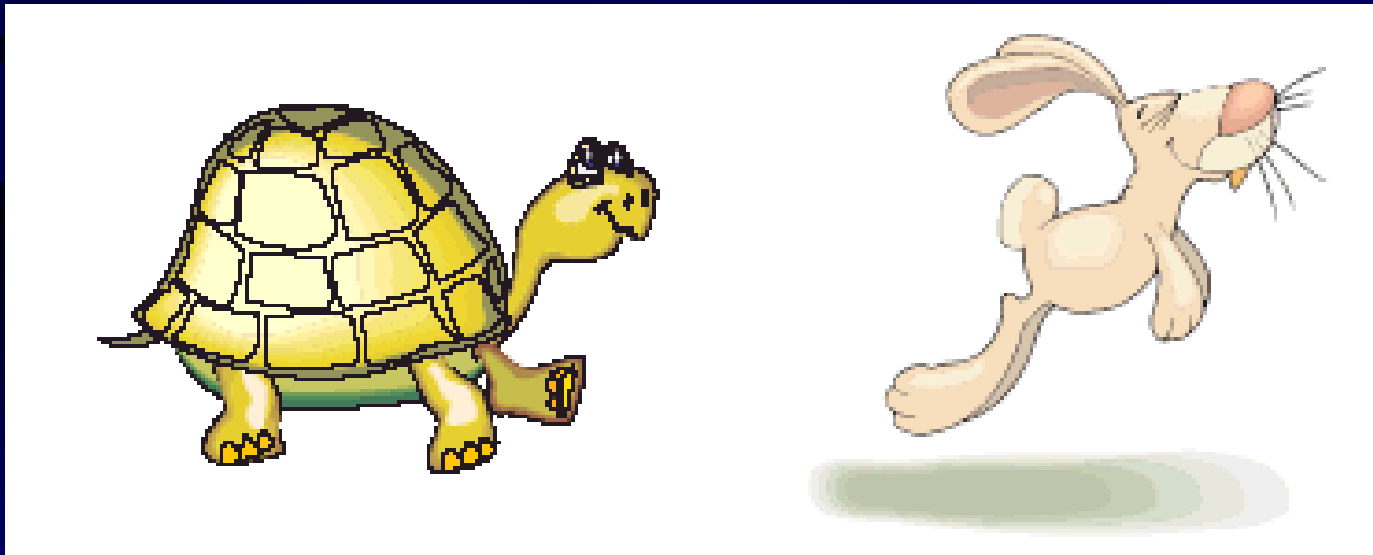
# What is an MCF?





# Implementing The Vision

Infrastructure planning proceeds at a different pace from land development, but they should be clearly linked together.



# Implementing The Vision

Local transportation planning requires thinking about the regional context.





# Implementing The Vision

State agencies, MPOs, counties and other regional planning partners can offer technical assistance, financing, in-kind services, permit expediting and other incentives.





**DEVELOPED BY STEVE PRICE  
IN ASSOCIATION W/ DOVER KOHL & PARTNERS  
& GLATTING JACKSON  
FOR JOHNSON CITY TENNESSEE**



